INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

FOR THE

CORRAL HOLLOW ROAD WIDENING PHASE 2 LINNE ROAD TO I-580 – CIP 73161

JUNE 2020

Prepared for:

City of Tracy
Utilities Department
3900 Holly Drive
Tracy, CA 95304

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

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A Land Use Planning, Design, and Environmental Firm

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Proposed Mitigated Negative Declaration for the Corral Hollow Road Widening Phase 2 Linne Road to I-580 – CIP 73161

Lead Agency:
City of Tracy
Public Works Department
3900 Holly Drive
Tracy, CA 95304

Project Title: Corral Hollow Road Widening Phase 2 Linne Road to I-580 – CIP 73161

Project Location: The Corral Hollow Road Widening Phase 2 Linne Road to I-580 project site (project site) is located in the southern portion of the City of Tracy and unincorporated San Joaquin County. The portion of Corral Hollow Road within the project site begins just north of the Union Pacific Railroad at Linne Road, to the north, and terminates at Interstate 580 (I-580) to the south.

Project Description: The proposed project consists of widening Corral Hollow Road from the existing two-lane roadway to a four-lane major arterial with median island, sidewalks, bike facilities, landscaping, and street lights from Linne Road to I-580. The project will include design of at least two traffic signals and the replacement of the bridges over the Delta Mendota Canal and the California Aqueduct. The widening would include railroad crossing improvements at the UPRR, including an at-grade crossing and full sidewalk improvements. The project would also include two stormwater drainage-related facilities: a wet well with storm drain pump station, and a retention basin.

The project will require additional right of way from the fronting property owners. The project also fronts new construction of the first phase of the Tracy Hills development project that is under construction and has obtained entitlements for phased construction.

The purpose of the project is to improve this segment of Corral Hollow Road to accommodate the existing and future transportation functions anticipated through General Plan buildout. The upgraded roadway is needed to increase vehicle capacity, improve level of service, increase safety for vehicles/bikes/pedestrians, and ensure adequate emergency vehicle access to approved development.

Findings:

In accordance with the California Environmental Quality Act, the City of Tracy has prepared an Initial Study to determine whether the proposed project may have a significant adverse effect on the environment. The Initial Study and Proposed Mitigated Negative Declaration reflect the independent judgment of City of Tracy staff. On the basis of the Initial Study, the City of Tracy hereby finds:

> *Although the proposed project could have a significant adverse effect on the environment, there will not be a significant adverse effect in this case because the project has incorporated specific provisions to reduce impacts to a less than significant level and/or the mitigation measures described herein have been added to the project. A Mitigated Negative Declaration has thus been prepared.*

The Initial Study, which provides the basis and reasons for this determination, is attached and/or referenced herein and is hereby made a part of this document.

_____ _____

Signature Date

Proposed Mitigation Measures:

The following Mitigation Measures are extracted from the Initial Study. These measures are designed to avoid or minimize potentially significant impacts, and thereby reduce them to an insignificant level. A Mitigation Monitoring and Reporting Program (MMRP) is an integral part of project implementation to ensure that mitigation is properly implemented by the City and the implementing agencies. The MMRP will describe actions required to implement the appropriate mitigation for each CEQA category including identifying the responsible agency, program timing, and program monitoring requirements. Based on the analysis and conclusions of the Initial Study, the impacts of proposed project would be mitigated to less-than-significant levels with the implementation of the mitigation measures presented below.

AGRICULTURAL RESOURCES

Mitigation Measure AG-1: *The City of Tracy shall pay the adopted agricultural mitigation fee for each acre of Prime Farmland converted. The fee shall be collected prior to construction. The acreage of Prime Farmland developed shall be determined once the final improvements plans are submitted to the City, and the acreage shall be noted on the improvement plans.*

AIR QUALITY

Mitigation Measure AQ-1: *Prior to the commencement of grading activities, the City shall require the contractor hired to complete the grading activities to prepare a construction emissions reduction plan that meets the requirements of SJVAPCD Rule VIII. The construction emissions reductions plan shall be submitted to the SJVAPCD for review and approval. The City of Tracy shall ensure that all required permits from the SJVAPCD have been issued prior to commencement of grading activities.*

Mitigation Measure AQ-2: *The following mitigation measures, in addition to those required under Regulation VIII of the SJVAPCD, shall be implemented by the project's contractor during all phases of project grading and construction to reduce fugitive dust emissions:*

- *Water previously disturbed exposed surfaces (soil) a minimum of two-times/day or whenever visible dust is capable of drifting from the site or approaches 20 percent opacity.*
- *Dust from all on-site and off-site unpaved access roads shall be effectively stabilized by applying water or other approved suppressants.*
- *Reduce speed on unpaved roads to less than 15 miles per hour.*
- *Restrict vehicular access to the area*
- *Limit and remove the accumulation of mud and/or dirt from adjacent public roadways at the end of each workday. (Use of dry rotary brushes is prohibited except when preceded or accompanied by sufficient wetting to limit visible dust emissions and the use of blowers is expressly forbidden.)*
- *Cease grading activities during periods of high winds (greater than 20 mph over a one-hour period).*
- *Asphalt-concrete paving shall comply with SJVAPCD Rule 4641 and restrict use of cutback, slow-sure, and emulsified asphalt paving materials.*

BIOLOGICAL RESOURCES

Mitigation Measure BIO-1: *Prior to commencement of any grading activities, the project proponent shall seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through payment of development fees for conversion of open space lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. In addition, coverage includes incidental take avoidance and minimization measures for species that could be affected as a result of the proposed project. There are a wide variety of incidental take avoidance and minimization measures contained in the SJMSCP that were developed in consultation with the USFWS, CDFW, and local agencies. The applicability of incidental takes avoidance and minimization measures are determined by SJCOG on a project basis. The process of obtaining coverage for a project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a) and California Fish and Game Code Section 2081. The Section 10(a) permit also serves as a special-purpose permit for the incidental take of those species that are also protected under the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species. The SJMSCP includes the implementation of an ongoing Monitoring Plan to ensure success in mitigating the habitat impacts that are covered. The SJMSCP Monitoring Plan includes an Annual Report process, Biological Monitoring Plan, SJMSCP Compliance Monitoring Program, and the SJMSCP Adaptive Management Plan SJCOG.*

CULTURAL RESOURCES

Mitigation Measure CUL-1: *If any cultural resources, including prehistoric or historic artifact, or other indications of archaeological resources are found during grading and construction activities, all work shall be halted immediately within a 200-foot radius of the discovery until the an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, has evaluated the find(s).*

Work cannot continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR; or 3) not a significant Public Trust Resource.

If Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the Applicant's expense.

Mitigation Measure CUL-2*: If human remains are discovered during the course of construction, work shall be halted at the site and any nearby area reasonably suspected to overlie adjacent human remains until he San Joaquin County Coroner has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, either of the following steps will be taken:*

- *The coroner will contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner will make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.*
- *The landowner shall retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:*
    - *The Native American Heritage Commission is unable to identify a descendent.*
    - *The descendant identified fails to make a recommendation.*

The City of Tracy, County of San Joaquin, or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

GEOLOGY AND SOILS

Mitigation Measure GEO-1: *Prior to earthmoving activities, a certified geotechnical engineer, or equivalent, shall be retained to perform a final geotechnical evaluation of the soils at a design-level. The final geotechnical evaluation shall include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures. The grading and improvement plans, shall be designed in accordance with the recommendations provided in the final geotechnical evaluation.*

Mitigation Measure GEO-2: *If paleontological resources are discovered during the course of construction, work shall be halted immediately within 50 meters (165 feet) of the discovery, the City of Tracy or San Joaquin County shall be notified, and a qualified paleontologist shall be retained to determine the significance of the discovery. If the paleontological resource is considered significant, it should be excavated by a qualified paleontologist and given to a local agency, State University, or other applicable institution, where they could be curated and displayed for public education purposes.*

HAZARDS AND HAZARDOUS MATERIALS

Mitigation Measure HAZ-1: *In the event that hazardous materials are encountered during construction, a Soils Management Plan (SMP) shall be submitted and approved by the San Joaquin County Department of Environmental Health. The SMP shall establish management practices for handling and disposal of hazardous materials, including fuels, cleaners, solvents, etc., during construction. The approved SMP shall be posted and maintained onsite during construction activities and all construction personnel shall acknowledge that they have reviewed and understand the plan.*

HYDROLOGY AND WATER QUALITY

Mitigation Measure HYDRO-1: *The project's storm drainage infrastructure plans shall, to the satisfaction of the City, demonstrate adequate infrastructure capacity to collect and direct all stormwater generated on the project site to the City's existing and future stormwater conveyance system, and demonstrate that the project would not result in on- or off-site flooding impacts.*

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INITIAL STUDY CHECKLIST

PROJECT TITLE

Corral Hollow Road Widening Phase 2 Linne Road to I-580

LEAD AGENCY NAME AND ADDRESS

Kuldeep Sharma, Director of Utilities
City of Tracy
Utilities Department
3900 Holly Drive
Tracy, CA 95304
(209) 831-6320

PROJECT LOCATION AND SETTING

The Corral Hollow Road Widening Phase 2 Linne Road to I-580 project site (project site) is located in the southern portion of the City of Tracy and unincorporated San Joaquin County. See Figures 1 and 2 for the regional location and the project vicinity. As shown, the portion of Corral Hollow Road within the project site begins just north of the Union Pacific Railroad (UPRR) at Linne Road, to the north, and terminates at Interstate 580 (I-580) to the south.

The City and County agreed that the City of Tracy would serve as lead agency for the widening of Corral Hollow Road in the county areas. Corral Hollow Road has two existing bridges, one over California Aqueduct and the other over the Delta Mendota Canal. See Figure 3 for the aerial view of the project site. The Aqueduct is within the jurisdiction of State and is managed and operated by Department of Water Resources (DWR). DWR has discretionary approval over actions that directly affect their facilities. DWR will serve as a Responsible Agency. The Delta Mendota Canal is under federal jurisdiction and is managed and operated by U.S. Bureau of Reclamation (USBR). USBR will serve as the federal lead agency for NEPA and other federal approvals.

PROJECT DESCRIPTION

The proposed project consists of widening Corral Hollow Road from the existing two-lane roadway to a four-lane major arterial with median island, sidewalks, bike facilities, landscaping, and street lights from just north of the UPRR at Linne Road to I-580. The project will include design of at least two traffic signals and replacement of the bridges over the Delta Mendota Canal and the California Aqueduct. The widening would include railroad crossing improvements at the UPRR, including an at-grade crossing and full sidewalk improvements.

The project would also include two stormwater drainage-related facilities: a wet well with storm drain pump station, and a retention basin. The retention basin would be located at the southwest corner of the Linne Road and Corral Hollow Road intersection. The wet well and pump station would be located east of Corral Hollow Road and south of the Delta Mendota Canal. The storm drain pump station would include a wet well with a pump which would pump water to the Delta Mendota Canal.

The project will require additional right of way from the fronting property owners. The project also fronts new construction of the first phase of the Tracy Hills development project that is under construction and has obtained entitlements for phased construction.

The purpose of the project is to improve this segment of Corral Hollow Road to accommodate the existing and future transportation functions anticipated through General Plan buildout. The upgraded roadway is needed to increase vehicle capacity, improve level of service, increase safety for vehicles/bikes/pedestrians, and ensure adequate emergency vehicle access to approved development.

REQUESTED ENTITLEMENTS AND OTHER APPROVALS

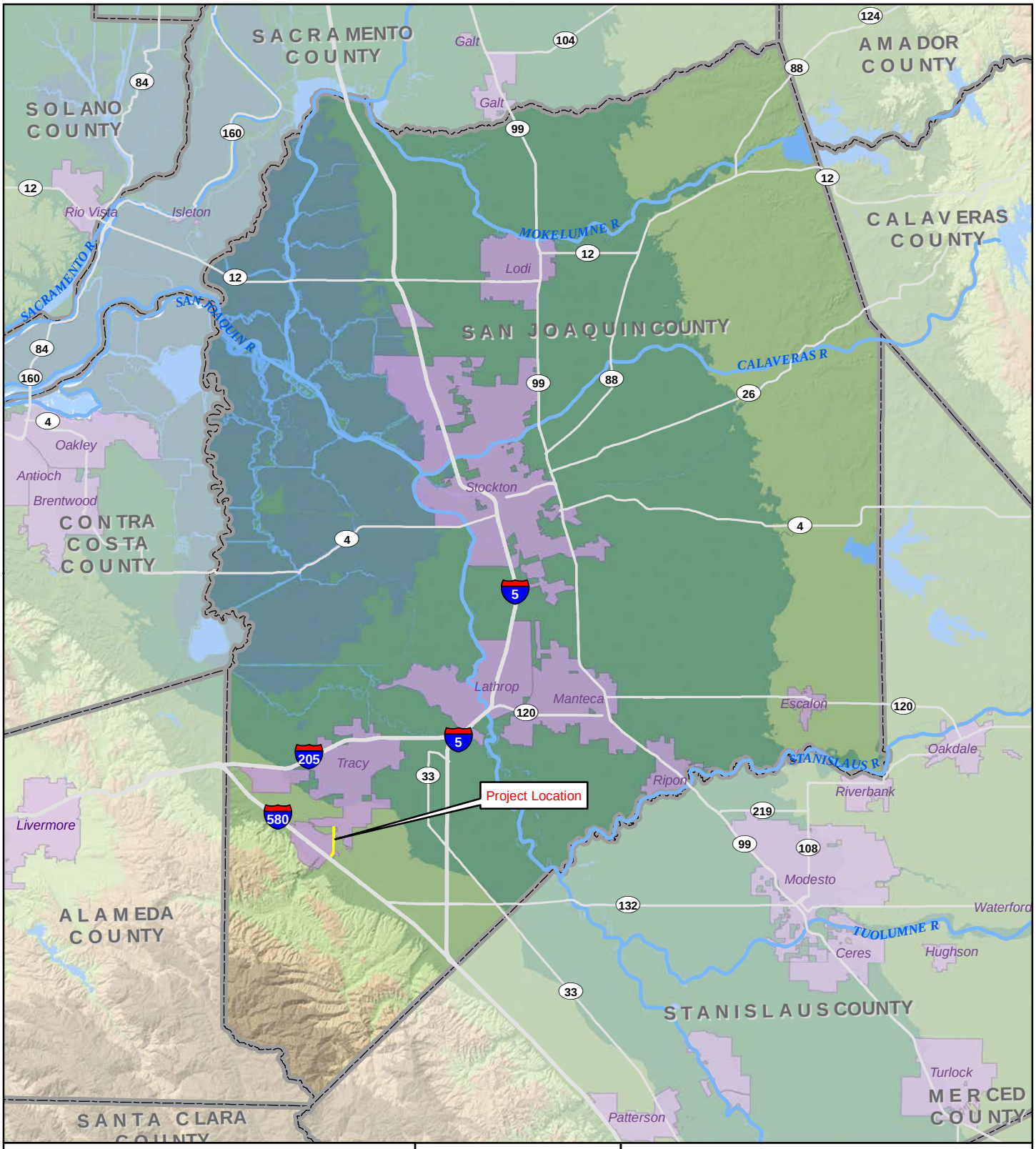
The City of Tracy is the Lead Agency for the proposed project, pursuant to the State Guidelines for Implementation of CEQA, Section 15050.

This document will be used by the City of Tracy to take the following actions:

- Adoption of the Mitigated Negative Declaration (MND);
- Adoption of the Mitigation Monitoring and Reporting Program;
- City review and approval of the Grading and Improvement Plans.

The following agencies may be required to issue permits or approve certain aspects of the proposed project:

- Department of Water Resources (DWR) – Responsible agency for approvals associated with the California Aqueduct.
- RWQCB – Construction activities would be required to be covered under the National Pollution Discharge Elimination System (NPDES);
- RWQCB – The Storm Water Pollution Prevention Plan (SWPPP) would be required to be approved prior to construction activities pursuant to the Clean Water Act;
- San Joaquin Valley Air Pollution Control District (SJVAPCD) – Approval of construction-related air quality permits;
- San Joaquin Council of Governments (SJCOG) – Review of project application to determine consistency with the San Joaquin County Multi-Species Habitat, Conservation, and Open Space Plan (SJMSCP).
- SJCOG – Review of project application to determine consistency with San Joaquin County's Aviation System Airport Land Use Compatibility Plan;
- U.S. Bureau of Reclamation (USBR) – NEPA lead agency for federal approvals associated with the Delta Mendota Canal bridge.



Legend

- Project Location
- City Area
- County Boundary

Sources: CalAtlas; Sacramento County, San Joaquin County, Stanislaus County, Santa Clara County, Alameda County, Contra Costa County, Solano County.
Map date: October 30, 2018.

N

0 2½ 5
Miles

CORRAL HOLLOW ROAD PHASE 2

Figure 1. Regional Location Map

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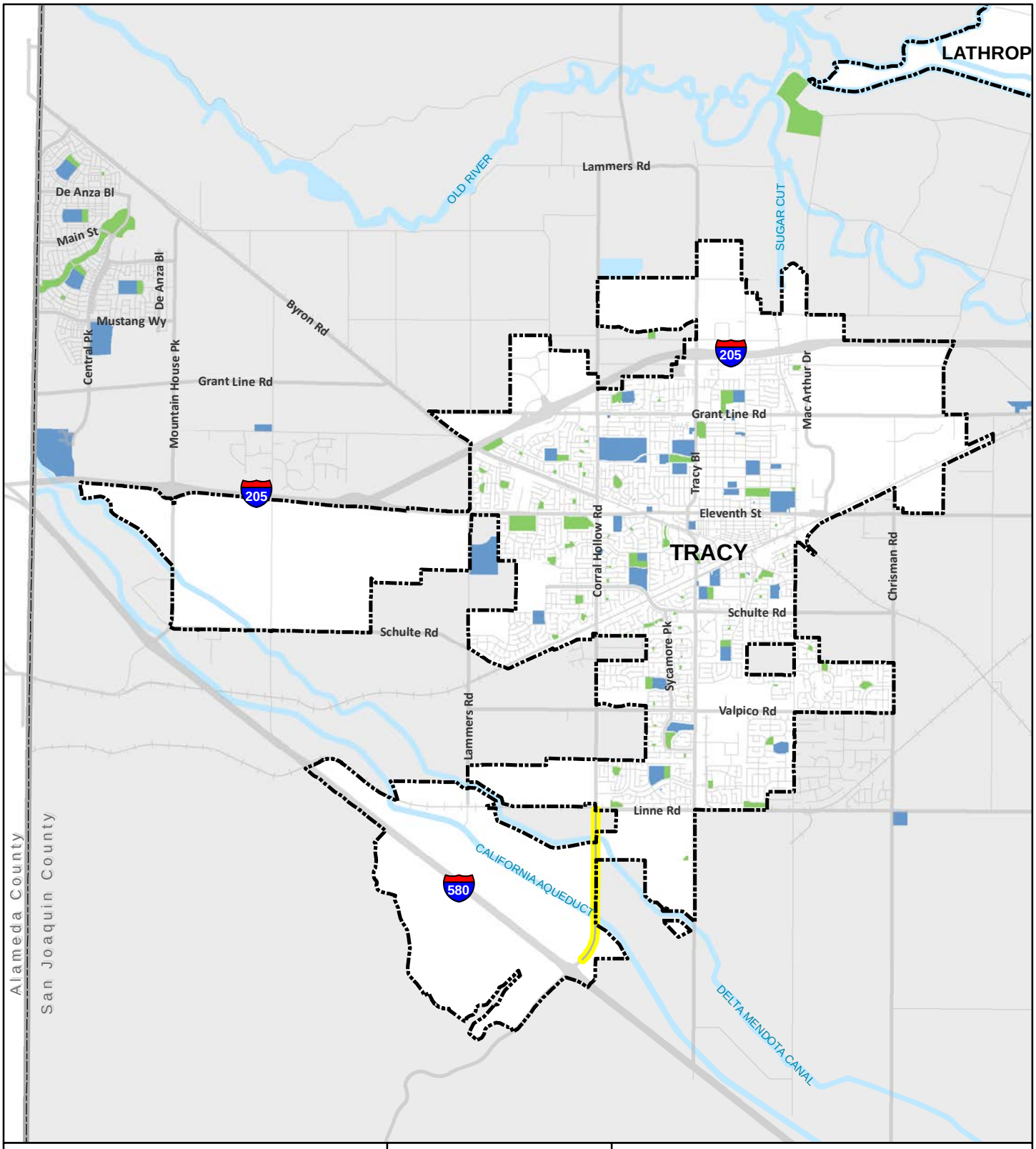

Legend

- Project Location
- City Boundary
- County Boundary
- School
- Park

N

0 ½ 1
Miles

CORRAL HOLLOW ROAD PHASE 2

Figure 2. Vicinity Map

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Sources: San Joaquin County. Map date: October 30, 2018.

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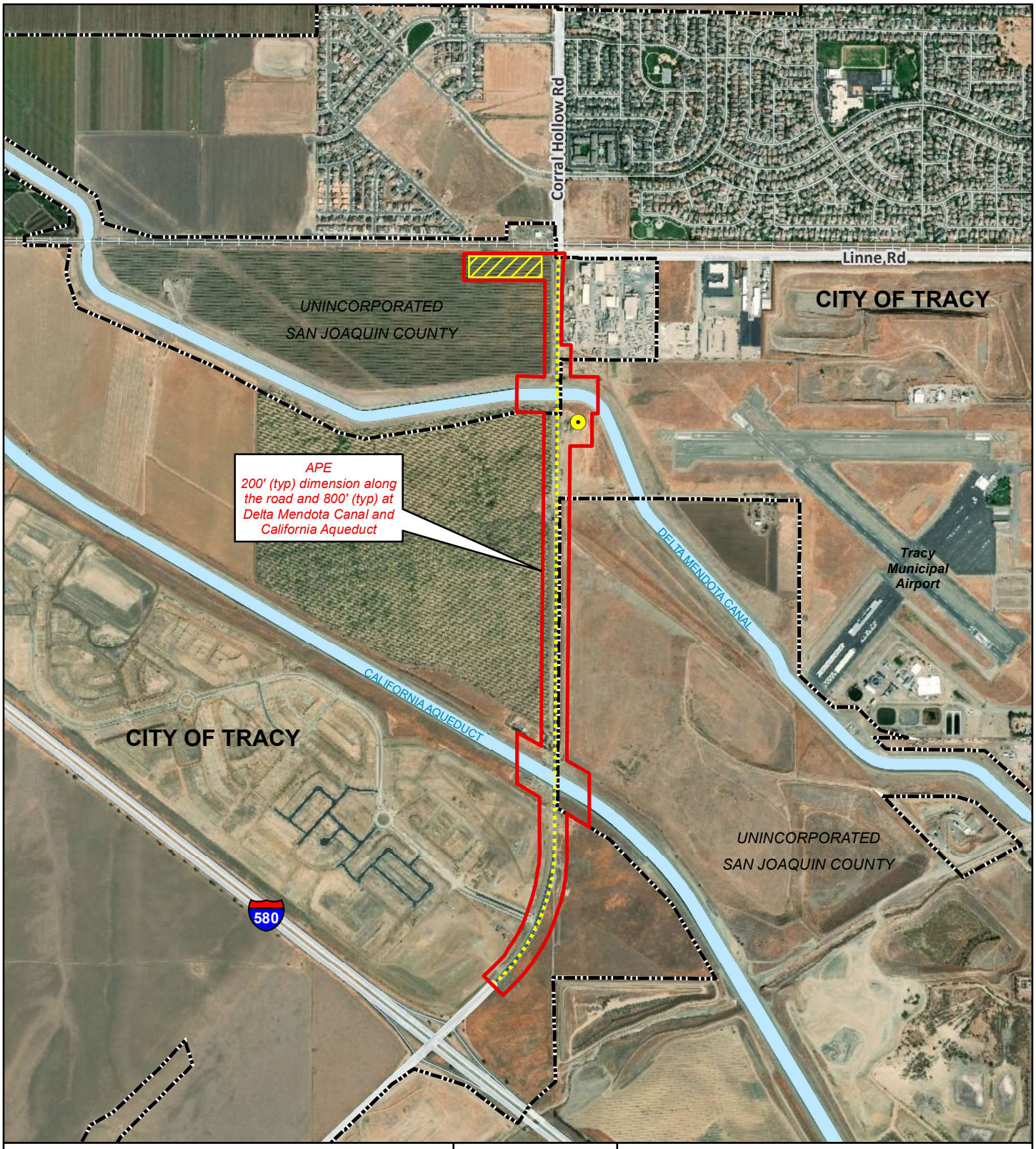

Legend

- Area of Potential Effect (APE)
- Tracy City Limits

Project Features

- Corral Hollow Rd Phase II
- Storm Drain Pump Station
- Basin

N

0 600 1,200
Feet

Sources: San Joaquin County; ArcGIS Online World Imagery Map Service; Rugerri-Jensen-Azar Engineers-Planners-Surveyors. Map date: April 27, 2020.

CORRAL HOLLOW ROAD PHASE 2

Figure 3. Aerial View of Project Site

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ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

None of the environmental factors listed below would have potentially significant impacts as a result of development of this project, as described on the following pages.

	Aesthetics		Agriculture and Forestry Resources		Air Quality
	Biological Resources		Cultural Resources		Energy
	Geology and Soils		Greenhouse Gasses		Hazards and Hazardous Materials
	Hydrology and Water Quality		Land Use and Planning		Mineral Resources
	Noise		Population and Housing		Public Services
	Recreation		Transportation		Tribal Cultural Resources
	Utilities and Service Systems		Wildfire		Mandatory Findings of Significance

DETERMINATION

On the basis of this initial evaluation:

	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
X	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature Date

EVALUATION INSTRUCTIONS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).
5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9) The explanation of each issue should identify:
   a) The significance criteria or threshold, if any, used to evaluate each question; and
   b) The mitigation measure identified, if any, to reduce the impact to less than significant.

EVALUATION OF ENVIRONMENTAL IMPACTS

In each area of potential impact listed in this section, there are one or more questions which assess the degree of potential environmental effect. A response is provided to each question using one of the four impact evaluation criteria described below. A discussion of the response is also included.

- Potentially Significant Impact. This response is appropriate when there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries, upon completion of the Initial Study, an EIR is required.
- Less than Significant With Mitigation Incorporated. This response applies when the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact". The Lead Agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.
- Less than Significant Impact. A less than significant impact is one which is deemed to have little or no adverse effect on the environment. Mitigation measures are, therefore, not necessary, although they may be recommended to further reduce a minor impact.
- No Impact. These issues were either identified as having no impact on the environment, or they are not relevant to the project.

ENVIRONMENTAL CHECKLIST

This section of the Initial Study incorporates the most current Appendix "G" Environmental Checklist Form contained in the CEQA Guidelines. Impact questions and responses are included in both tabular and narrative formats for each of the 21 environmental topic areas.

I. AESTHETICS

Would the project:	***Potentially Significant Impact***	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

Responses to Checklist Questions

Responses a), c): The City of Tracy General Plan does not specifically designate any scenic viewsheds within the city. The existing Tracy General Plan Draft EIR does, however, note Tracy's scenic environmental resources including the views to the surrounding natural hillsides on the western edge of the city, as well as views of agricultural land from highways and other roadways.

For analysis purposes, a scenic vista can be discussed in terms of a foreground, middleground, and background viewshed. The middleground and background viewshed is often referred to as the broad viewshed. Examples of scenic vistas can include mountain ranges, valleys, ridgelines, or water bodies from a focal point of the forefront of the broad viewshed, such as visually important trees, rocks, or historic buildings. An impact would generally occur if a project would change the view to the middle ground or background elements of the broad viewshed, or remove the visually important trees, rocks, or historic buildings in the foreground.

Development of the majority of the proposed improvements will not significantly disrupt views from public viewpoints. The proposed project consists of widening Corral Hollow Road from the existing two-lane roadway to a four-lane major arterial with median island, sidewalks, bike facilities, landscaping, and street lights from Linne Road to I-580. The project will include design of at least two traffic signals and replacement of bridges over the Delta Mendota Canal and California Aqueduct. This would contribute to changes in the visual character of the site. However, the majority of the proposed alterations to the project site would be at the terrestrial ground level and would not be visible from surrounding areas.

However, some of the proposed improvements, including the bridge replacements and traffic signals, would be visible from surrounding areas. For example, the project will include design of at least two traffic signals. The poles required for the traffic signals would blend with the built environment of the roadway and would not significantly alter the visual character of the existing area. As such, the proposed traffic signals would not significantly alter the visual character of the area. The proposed replacement of bridges over the Delta Mendota Canal and California Aqueduct would be visible from public viewpoints in the project area. However, the replacement of bridges would not be considered a substantial alteration of the existing visual character of the existing bridges.

Implementation of the project would not greatly alter the areas overall characteristics. Therefore, implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

Response b): The project site is not located within view of a state scenic highway. There are two official designated scenic highway segments in the City: I-580 between I-205 and I-5, and I-5 between I-205 and the Stanislaus County border. The project site is visible from the segment of I-580 between I-205 and I-5. The project site is not visible from the segment of I-5 between I-205 and the Stanislaus County border. Although the site may be visible from the I-580 segment, there are no trees, rock outcroppings, or historic buildings on the project site. Therefore, the proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. Implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

Response d): There is a potential for the implementation of the proposed project to introduce new sources of light and glare into the project area during construction and operation. Contributors to light and glare impacts would include temporary construction lighting that would create ongoing light impacts to the area, as well as operational lighting of Corral Hollow Road. The City of Tracy Standard Plan #140 establishes street light standards, and requirements for light illumination. The project would be subject to these standards and requirements. Therefore, implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

II. AGRICULTURE AND FORESTRY RESOURCES

Would the project:	***Potentially Significant Impact***	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?		X		
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1222(g)) or timberland (as defined in Public Resources Code section 4526)?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?			X	

Responses to Checklist Questions

Responses a), e): The project site is located on Urban and Built-Up Land, Vacant or Disturbed Land, Farmland of Local Importance, and Prime Farmland. The project will require additional right of way from the fronting property owners. Some of the proposed future improvements would be located on Prime Farmland or Farmland of Local Importance. The proposed project would not result in the conversion of Unique Farmland or Farmland of Statewide Importance to non-agricultural use. However, depending on the ultimate alignment of the proposed roadway alignment, the project may convert some Prime Farmland that is currently located adjacent to Linne Road. Additionally, some of the area adjacent west of Corral Hollow Road and north of the California Aqueduct contains Prime Farmland.

The potential environmental impacts from development of the roadway and project area for urban uses and the associated removal of Prime Farmland for agricultural use were considered and addressed in the City of Tracy General Plan and Final EIR. There, it was determined that buildout of the General Plan would result in the conversion of Prime Farmland, Unique Farmland and Farmland of Statewide Importance to urban uses. The General Plan Draft EIR found this to be a significant and unavoidable impact. On February 1, 2011, the Tracy City Council adopted a Statement of Overriding Considerations (Resolution 2011-028) for the loss of prime agricultural land resulting from adoption of the Plan and EIR, and provided mitigation measures for the agricultural land lost to development in the City of Tracy's urbanized areas. Mitigation measures included the implementation of a "Right to Farm" ordinance by the City (Ord. 10.24 et seq.), intended to preserve and protect existing agricultural operations within the incorporated City, and participation in the City's agricultural mitigation fee program (Tracy Municipal Code, Chapter 13.26).

The proposed project area is identified as Industrial, Public Facilities, Urban Reserve, Commercial, and Residential Low by the Tracy General Plan land use map. Therefore,

development of the project area for future urban land uses was planned in the Tracy General Plan. As such, implementation of the proposed project would not create new impacts over and above those identified in the General Plan Final EIR, nor significantly change previously identified impacts.

As part of the development process for individual site-specific projects, the agricultural mitigation fee adopted by the City shall be paid for each acre of Prime Farmland to be converted. The fee is outlined in Chapter 13.28, Agricultural Mitigation Fee, of the Tracy Municipal Code. The fees shall be collected by the City at the time building permits are issued for such site-specific projects, or as otherwise required by the City. The proposed project would be subject to the agricultural mitigation fee, as required by Mitigation Measure AG-1. With implementation of this mitigation measure, the proposed project would have a ***less than significant*** impact relative to this issue.

> ***Mitigation Measure AG-1:*** *The City of Tracy shall pay the adopted agricultural mitigation fee for each acre of Prime Farmland converted. The fee shall be collected prior to construction. The acreage of Prime Farmland developed shall be determined once the final improvements plans are submitted to the City, and the acreage shall be noted on the improvement plans.*

Response b): The project site is not zoned for agricultural use nor is it under a Williamson Act contract. The proposed project would not conflict with existing zoning for agricultural use, or a Williamson Act contract. Implementation of the proposed project would have ***no impact*** relative to this issue.

Response c): The project site is not forest land (as defined in Public Resources Code section 1222(g)) or timberland (as defined in Public Resources Code section 4526). The proposed project would not conflict with existing zoning for, or cause rezoning of, forest land or timberland. Implementation of the proposed project would have ***no impact*** relative to this issue.

Response d): The project site is not forest land. The proposed project would not result in the loss of forest land or conversion of forest land to non-forest use. Implementation of the proposed project would have ***no impact*** relative to this issue.

III. AIR QUALITY

Would the project:	***Potentially Significant Impact***	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Conflict with or obstruct implementation of the applicable air quality plan?		X		
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?		X		
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

Existing Setting

The project site is located within the San Joaquin Valley Air Pollution Control District (SJVAPCD). This agency is responsible for monitoring air pollution levels and ensuring compliance with federal and state air quality regulations within the San Joaquin Valley Air Basin (SJVAB) and has jurisdiction over most air quality matters within its borders.

The SJVAPCD has primary responsibility for compliance with both the federal and state standards and for ensuring that air quality conditions are maintained. They do this through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues.

Activities of the SJVAPCD include the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, issuance of permits for stationary sources of air pollution, inspection of stationary sources of air pollution and response to citizen complaints, monitoring of ambient air quality and meteorological conditions, and implementation of programs and regulations required by the FCAA and CCAA.

The SJVAPCD has prepared the *2007 Ozone Plan* to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone. The *2007 Ozone Plan* provides a comprehensive list of regulatory and incentive-based measures to reduce emissions of ozone and particulate matter precursors throughout the SJVAB. The 2007 Ozone Plan calls for major advancements in pollution control technologies for mobile and stationary sources of air pollution. The *2007 Ozone Plan* calls for a 75-percent reduction in ozone-forming oxides of nitrogen emissions.

The SJVAPCD has also prepared the *2007 PM_{10} Maintenance Plan and Request for Redesignation* (2007 PM_{10} Plan). On April 24, 2006, the SJVAPCD submitted a Request for Determination of PM_{10} Attainment for the Basin to the California Air Resources Board (CARB). CARB concurred with the request and submitted the request to the U.S. Environmental Protection Agency (EPA) on May 8, 2006. On October 30, 2006, the EPA issued a Final Rule determining that the Basin had attained the National Ambient Air Quality Standards (NAAQS) for PM_{10}. However, the EPA noted that the

Final Rule did not constitute a redesignation to attainment until all of the Federal Clean Air Act requirements under Section 107(d)(3) were met.

The SJVAPCD has prepared the *2008 PM.2.5 Plan* to achieve Federal and State standards for improved air quality in the San Joaquin Valley Air Basin. The *2008 PM.2.5 Plan* provides a comprehensive list of regulatory and incentive-based measures to reduce PM2.5.

In addition to the *2007 Ozone Plan, the 2008 $PM_{2.5}$ Plan,* and the *2007 PM_{10} Plan*, the SJVAPCD prepared the *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI). The GAMAQI is an advisory document that provides Lead Agencies, consultants, and project applicants with analysis guidance and uniform procedures for addressing air quality impacts in environmental documents. Local jurisdictions are not required to utilize the methodology outlined therein. This document describes the criteria that SJVAPCD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for determining whether or not projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts. An update of the GAMAQI was approved on March 19, 2015, and is used as a guidance document for this analysis.

Responses to Checklist Questions

Responses a-b): Air quality emissions would be generated during construction of the proposed project. Operational emissions would be negligible as the project does not propose any new structures or uses that would increase trip generation or vehicle miles travelled (VMT). Construction-related air quality impacts are addressed below.

Construction Emissions

Construction-generated emissions are temporary and short term but have the potential to represent a significant air quality impact. The construction and development of the proposed project would result in the temporary generation of emissions. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities.

The SJVAPCD has adopted guidelines for determining potential adverse impacts to air quality in the region. The SJVAPCD guidelines state that construction activities are considered a potentially significant adverse impact if: the feasible control measures for construction in compliance with Regulation VIII as listed in the SJVAPCD guidelines are not incorporated or implemented; if the project generates emissions of reactive organic gases (ROG) or oxides of nitrogen (NO_X) that exceeds 10 tons per year; or if the project generates emissions of respirable particulate matter (PM_{10}) or fine particulate matter ($PM_{2.5}$) that exceeds 15 tons per year.

The Sacramento Metropolitan Air Quality Management District (SMAQMD) Roadway Construction Emissions Model (version 9.0, May 2018) was used to quantify the construction emissions for the project. Note: Information in the Roadway Construction Emissions Model is based on conversations with knowledgeable individuals at SMAQMD, the California Department of Transportation, the California Air Resources Board, the U.S. EPA, and private industry involved in road construction. Also, the 26th edition of Walker's Building Estimator's Reference Book (1999) was used in the development of the Roadway Construction Emissions Model.

<u>Construction Activities/Schedule</u>: SMAQMD default values were used for the construction schedule and off-road equipment. Construction activities will consist of multiple phases over

approximately 14 months years. These construction activities include the following phases: grubbing/land clearing, grading/excavation, drainage/utilities/sub-grade, and paving. For purposes of this analysis, it is assumed that the entire project is built-out from 2020 through 2021.

The site improvement phase of construction will begin with site preparation. The site preparation step will include the use of dozers, backhoes, and loaders to strip (clear and grub) all organic materials and the upper half-inch to inch of soil from the area adjacent to the existing roadway. After the area to be widened is striped of organic materials, grading will begin. This activity will involve the use of excavators, graders, dozers, scrappers, loaders, and backhoes to move soil around the project site to create specific engineered grade elevations and soil compaction levels. The last task is to install the topside improvements, which includes pouring concrete curbs, gutters, sidewalks, and access aprons and then paving of the street. This task will involve the use of pavers, paving equipment, and rollers.

Construction Emissions: A quantification of the emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ that will be emitted by project construction has been performed. The SMAQMD Roadway Construction Emissions Model and outputs are included in Appendix A.

Table 1 shows the maximum unmitigated construction emissions for each project component.

Table 1: Construction Emissions (Unmitigated)

Project Component	***ROG***	***NO_X***	***PM_{10}***	***$PM_{2.5}$***
	≤ 10 tons/year	***≤ 10 tons/year***	***≤ 15 tons/year***	***≤ 15 tons/year***
Widening	0.37	3.95	5.57	1.29
California Aqueduct Bridge	0.22	2.48	0.51	0.18
Delta Mendota Canal Bridge	0.22	2.48	0.31	0.14
Total	**0.81**	**8.91**	**6.39**	**1.61**
Threshold Exceeded in Any Year?	**No**	**Yes**	**No**	**No**

NOTES: THE AIR DISTRICT IS ATTAINMENT FOR CO AND SO_2.
SOURCE: SMAQMD ROADWAY CONSTRUCTION EMISSIONS MODEL V.9.0.

The SJVAPCD has established construction related emissions thresholds of significance as follows: 10 tons per year of ROG, 10 tons per year of NO_x, or 15 tons per year of PM_{10} or $P_{2.5}$. If the proposed project's emissions will exceed the SJVAPCD's threshold of significance for construction-generated emissions, the proposed project will have a significant impact on air quality and all feasible mitigation are required to be implemented to reduce emissions. As shown in Table 1 above, annual emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ will not exceed the SJVAPCD thresholds of significance in any given year. Nevertheless, regardless of emission quantities, the SJVAPCD requires construction related mitigation in accordance with their rules and regulations. Implementation of the Mitigation Measures AQ-1 and AQ-2 will ensure that the proposed project would reduce construction related emissions to the extent possible. With implementation of the mitigation measures, the proposed project would have ***a less than significant*** impact related to construction emissions.

Air Quality Plan Consistency

As discussed above, annual construction emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ will not exceed the SJVAPCD thresholds of significance in any given year.

The SJVAPCD's various air quality plans (i.e., 2007 Ozone Plan, 2007 PM_{10} Plan, and 2008 $PM_{2.5}$ Plan) includes growth assumptions generated by SJCOG. These growth assumptions are generated based, in part, on the development projections from individual land use authorities (i.e. incorporated cities and unincorporated counties) that are located within their region. It is noted that the consistency with the SJCOG population projection is growth that would generate population that is at, or below, the projections established by SJCOG. Any growth above the SJCOG population projection, would be growth that is inconsistent with the SJCOG projections. Any growth that is at, or below, the SJCOG projections would be consistent with the SJCOG projections.

The purpose of the project is to upgrade a second phase of Corral Hollow Road to accommodate the existing and future transportation functions anticipated through General Plan buildout. The proposed project is consistent with the General Plan vision for the project area, and the proposed project supports the future development that is included within the SJCOG projections.

Overall, the proposed project would be consistent with the regional air quality plan (i.e., SJVAPCD's 2007 Ozone Plan, 2007 PM_{10} Plan, and 2008 $PM_{2.5}$ Plan).

Cumulative Air Quality Impacts

As discussed above, the SJVAPCD is an agency responsible for ensuring that air quality conditions are attained, and where non-attainment is determined, this agency develops strategies to achieve attainment in the future. This effort to achieve attainment is documented in the SJVAPCD's various air quality plans (i.e., 2007 Ozone Plan, 2007 PM_{10} Plan, and 2008 $PM_{2.5}$ Plan), which are updated periodically to accommodate changes. While the scope of the SJVAPCD's strategies to achieve attainment is wide ranging, the agency has established thresholds of significance for individual new projects and if a project exceeds the threshold of significance, then it would also be a significant contribution to a cumulative impact.

The SJVAPCD's air quality significance thresholds represent the maximum emissions from a project that are not expected to conflict with the SJVAPCD's air quality plans, and is not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard. These are developed based on the ambient concentrations of the pollutant for each source. Because the project would not exceed the air quality significance thresholds on the project-level (as discussed above), and would not otherwise conflict with the SJVAPCD's air quality plans, the cumulative emissions would not be a significant contribution to a cumulative impact.

Conclusion

Construction would result in numerous activities that would generate dust. Fine, silty soils and often strong afternoon winds exacerbate the potential for dust, particularly during the summer months. Grading, leveling, earthmoving and excavation are the activities that generate the most particulate emissions. Impacts would be localized and variable. The initial phase of project construction would involve grading and leveling the various project site areas.

Construction activities that could generate dust and vehicle emissions are primarily related to grading and other ground-preparation activities in order to prepare the various project site areas for paving. All construction activities shall comply with all applicable measures from SJVAPCD Rule VIII which limits construction related emissions and particulates.

Because construction activities could generate dust and vehicle emissions, the following mitigation shall be incorporated into the construction plans of this project. With implementation of the following measures, this impact would be ***less than significant.***

> ***Mitigation Measure AQ-1:*** *Prior to the commencement of grading activities, the City shall require the contractor hired to complete the grading activities to prepare a construction emissions reduction plan that meets the requirements of SJVAPCD Rule VIII. The construction emissions reductions plan shall be submitted to the SJVAPCD for review and approval. The City of Tracy shall ensure that all required permits from the SJVAPCD have been issued prior to commencement of grading activities.*
>
> ***Mitigation Measure AQ-2:*** *The following mitigation measures, in addition to those required under Regulation VIII of the SJVAPCD, shall be implemented by the project's contractor during all phases of project grading and construction to reduce fugitive dust emissions:*
>
> - *Water previously disturbed exposed surfaces (soil) a minimum of two-times/day or whenever visible dust is capable of drifting from the site or approaches 20 percent opacity.*
> - *Dust from all on-site and off-site unpaved access roads shall be effectively stabilized by applying water or other approved suppressants.*
> - *Reduce speed on unpaved roads to less than 15 miles per hour.*
> - *Restrict vehicular access to the area*
> - *Limit and remove the accumulation of mud and/or dirt from adjacent public roadways at the end of each workday. (Use of dry rotary brushes is prohibited except when preceded or accompanied by sufficient wetting to limit visible dust emissions and the use of blowers is expressly forbidden.)*
> - *Cease grading activities during periods of high winds (greater than 20 mph over a one-hour period).*
> - *Asphalt-concrete paving shall comply with SJVAPCD Rule 4641 and restrict use of cutback, slow-sure, and emulsified asphalt paving materials.*

Response c):

Carbon Monoxide Hotspots

The SJVAPCD recommends utilizing a screening approach for analyzing CO concentrations to determine if dispersion modeling is warranted. The methodology provides lead agencies with a conservative indication of whether project-generated vehicle trips will result in the generation of CO emissions that contribute to an exceedance of the thresholds of significance. The recommended screening criteria are divided into two tiers, as described below.

First Tier*:* The proposed project will result in a less-than-significant impact to air quality for local CO if:

- Traffic generated by the proposed project will not result in deterioration of intersection level of service (LOS) to LOS E or F; and
- The project will not contribute additional traffic to an intersection that already operates at LOS of E or F.

For the proposed project, the first tier is met because the addition of project trips would not degrade operations at any of the study intersections, and the project would not contribute traffic to an intersection that already operates at LOS E or F. See Section XVII, Transportation, for more information. As such, the proposed project screens out satisfactorily under Tier 1. Implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

Toxic Air Contaminants

A Toxic Air Contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources. In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment. These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter.

The 2007 EPA rule requires controls that will dramatically decrease Mobile Source Air Toxics (MSAT) emissions through cleaner fuels and cleaner engines. According to a Federal Highway Administration (FHWA) analysis using EPA's MOBILE6.2 model, even if vehicle activity (VMT) increases by 145 percent, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050. California maintains stricter standards for clean fuels and emissions compared to the national standards, therefore it is expected that MSAT trends in California will decrease consistent with or more than the U.S. EPA's national projections.

CARB published the *Air Quality and Land Use Handbook: A Community Health Perspective* (2007) to provide information to local planners and decision-makers about land use compatibility issues associated with emissions from industrial, commercial and mobile sources of air pollution. The CARB Handbook indicates that mobile sources continue to be the largest overall contributors to the State's air pollution problems, representing the greatest air pollution health risk to most Californians. The most serious pollutants on a statewide basis include diesel exhaust particulate matter (diesel PM), benzene, and 1,3-butadiene, all of which are emitted by motor vehicles. These mobile source air toxics are largely associated with freeways and high traffic roads. Non-mobile source air toxics are largely associated with industrial and commercial uses. Table 2 provides the CARB minimum separation recommendations on siting sensitive land uses. The proposed project does not include any of the source categories identified in the CARB minimum separation standards.

The nearest school to the project site is Anthony Traina Elementary School, located approximately 0.64 miles northeast of the site. Similarly, there are several existing residences located in the project vicinity to the northwest, north, and northeast. However, implementation of the proposed project would not expose these sensitive receptors to substantial pollutant concentrations. Air emissions would be generated during the construction phase of the project, but would be short term in duration. The construction phase of the project would be temporary and short-term, and the implementation of Mitigation Measures AQ-1 and AQ-2 would greatly reduce pollution concentrations generated during construction activities, and prevent spillover into residential areas.

Table 2: CARB Minimum Separation Recommendations on Siting Sensitive Land Uses

Source Category	*Advisory Recommendations*
Freeways and High-Traffic Roads	• Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the CARB on the status of pending analyses of health risks.
Refineries	• Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloro-ethylene	• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perc dry cleaning operations.
Gasoline Dispensing Facilities	• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

SOURCE: AIR QUALITY AND LAND USE HANDBOOK: A COMMUNITY HEALTH PERSPECTIVE (CARB 2005).

Operation of the proposed project would not result in increased emissions from vehicle trips. As described above, the proposed project would not generate significant concentrations of air emissions. Implementation of the proposed project would not result in a significant increased exposure of sensitive receptors to localized concentrations of TACs, or create a CO hotspot. This project would have a ***less than significant*** impact relative to this topic.

Mitigation Measures: *Implement Mitigation Measure AQ-1 and Mitigation Measure AQ-2. These mitigation measures are previously presented in Responses a-b, and are re-produced below:*

Mitigation Measure AQ-1: *Prior to the commencement of grading activities, the City shall require the contractor hired to complete the grading activities to prepare a construction emissions reduction plan that meets the requirements of SJVAPCD Rule VIII. The construction emissions reductions plan shall be submitted to the SJVAPCD for review and approval. The City of Tracy shall ensure that all required permits from the SJVAPCD have been issued prior to commencement of grading activities.*

Mitigation Measure AQ-2: *The following mitigation measures, in addition to those required under Regulation VIII of the SJVAPCD, shall be implemented by the project's contractor during all phases of project grading and construction to reduce fugitive dust emissions:*

- *Water previously disturbed exposed surfaces (soil) a minimum of two-times/day or whenever visible dust is capable of drifting from the site or approaches 20 percent opacity.*

- *Dust from all on-site and off-site unpaved access roads shall be effectively stabilized by applying water or other approved suppressants.*
- *Reduce speed on unpaved roads to less than 15 miles per hour.*
- *Restrict vehicular access to the area*
- *Limit and remove the accumulation of mud and/or dirt from adjacent public roadways at the end of each workday. (Use of dry rotary brushes is prohibited except when preceded or accompanied by sufficient wetting to limit visible dust emissions and the use of blowers is expressly forbidden.)*
- *Cease grading activities during periods of high winds (greater than 20 mph over a one-hour period).*
- *Asphalt-concrete paving shall comply with SJVAPCD Rule 4641 and restrict use of cutback, slow-sure, and emulsified asphalt paving materials.*

Response d): The proposed project would not generate objectionable odors. People in the immediate vicinity of construction activities may be subject to temporary odors typically associated with construction activities (diesel exhaust, hot asphalt, etc.). However, any odors generated by construction activities would be minor and would be short and temporary in duration.

Examples of facilities that are known producers of operational odors include: Wastewater Treatment Facilities, Chemical Manufacturing, Sanitary Landfill, Fiberglass Manufacturing, Transfer Station, Painting/Coating Operations (e.g. auto body shops), Composting Facility, Food Processing Facility, Petroleum Refinery, Feed Lot/Dairy, Asphalt Batch Plant, and Rendering Plant. If a project would locate receptors and known odor sources in proximity to each other further analysis may be warranted; however, if a project would not locate receptors and known odor sources in proximity to each other, then further analysis is not warranted. The project does not propose sensitive receptors that could be exposed to odors in the vicinity. Although the project would include wastewater system facilities, a wastewater treatment facility would not be constructed as a result of the project. Implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

IV. BIOLOGICAL RESOURCES

Would the project:	***Potentially Significant Impact***	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?			X	
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?		X		

Background

A Biological Assessment was completed for the project in May 2019 by De Novo Planning Group. According to the Biological Assessment, the land surrounding the project limits includes agricultural land, aquatic habitat (Delta Mendota Canal and California Aqueduct), ruderal habitat, and rural/developed areas/roadways. The surrounding agricultural land in the region includes irrigated pastures, alfalfa, vineyards, orchards, and row crops. Most of this land is irrigated by irrigation canals that traverse the region. The irrigation canals are the primary source of aquatic habitat in the immediate vicinity.

The area within the project limits is composed of a gravel shoulder associated with the roadway, disturbed soil associated with the agricultural operations, the Delta Mendota Canal, and the California Aqueduct. Vegetation was largely absent from the gravel shoulder, with the roadway, and agricultural areas in and immediately adjacent to the project limits. This area is best characterized as ruderal in some locations and barren in others. Plants observed included: wild oats (*Avena* spp.), mustard (*Brassica* spp), bromes (*Bromus* spp.), barley (*Hordeum* spp.), and rye (*Lolium* spp.). Other plants that were not observed, but are commonly found in ruderal areas of the region and are likely to occur in the project limits between disturbances include: fiddleneck

(*Amsinkia menziesii*), scarlet pimpernel (*Anagalis arvensis*), field owls clover (*Castilleja campestris*), star thistle (*Centaurea solstitialis*), filaree (*Erodium botrys*), cut-leaf filaree (*Erodium cicutarium*), cut-leaf geranium (*Geranium dissectum*), birdfoot deer vetch (*Lotus corniculatus*), miniature lupine (*Lupinus bicolor*), jointed wild radish (*Raphanus raphanistrum*), wild radish (*Raphanus sativus*), milk thistle (*Silybum marianum*), medusa-head (*Taeniatherum caput-medusae*), rose clover (*Trifolium hirtum*), and cocklebur (*Xanthium strumarium*).

The following discussion is based on the Assessment, which is included as Appendix B.

Responses to Checklist Questions

Response a): There are numerous special-status wildlife and plant species known to occur within the region. A search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) and the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPAC) was completed.

Special-Status Wildlife

The CNDDB documents 76 special status species, 21 of which are listed as federal or state endangered or threatened within a nine-quad radius of the project site. The nine quad search area includes: Clifton Court Forebay, Union Island, Lathrop, Midway, Tracy, Vernalis, Cedar Mountain, Lone Tree Creek, and Solyo USGS 7.5 minute quadrangles. The 21 state or federal species includes three amphibians, four birds, two crustaceans, four fish, three mammals, one insect, two reptiles, and two plants. The full list of species, inclusive of those not listed as endangered or threatened is provided in Appendix B.

In addition to the federally listed species presented above, there are a variety of birds that are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. De Novo Planning Group's biologist initiated a review of potentially occurring birds protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act by reviewing the USFWS IPaC. Below is the list of the nine birds that were provided on the IPaC report:

- Burrowing Owl (*Athene cunicularia*)
- Common Yellowthroat (*Geothlypis trichas sinuosa*)
- Golden Eagle (*Aquila chrysaetos*)
- Long-billed Curlew (*Numenius americanus*)
- Nuttall's Woodpecker (*Picoides nuttallii*)
- Rufous Hummingbird (*Selasphorus rufus*)
- Spotted Towhee (*Pipilo maculatus clementae*)
- Tricolored Blackbird (*Agelaius tricolor*
- Yellow-billed Magpie (*Pica nuttalli*)

Table 4 provided in the Biological Assessment (Appendix B) identifies each of the special status species and their habitat requirements. As shown, habitat is present in the project area for the following special-status animal species: California tiger salamander (CTS) (*Ambystoma californiense*), western pond turtle (*Emys marmorata*), burrowing owl (*Athene cunicularia*), California horned lark (*Eremophila alpestris actia*), ferruginous hawk (*Buteo regalis*), golden eagle (*Aquila chrysaetos*), grasshopper sparrow (*Ammodramus savannarum*), loggerhead shrike (*Lanius ludovicianus*), merlin (*Falco columbarius*), northern harrier (*Circus cyaneus*), short-eared owl (*Asio flammeus*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), American badger (*Taxidea taxus*), pallid bat (*Antrozous pallidus*), San Joaquin kit fox (SJKF) (*Vulpes macrotis mutica*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western

mastiff bat (*Eumops perotis californicus*). Additionally, marginal habitat along the fringes of the project area agricultural fields is present for the following special-status animal species: California glossy snake (*Arizona elegans occidentalis*), coast horned lizard (*Phrynosoma blainvillii*), Giant Garter snake (*Thamnophis gigas*), northern California legless lizard (*Anniella pulchra*), and San Joaquin coachwhip (*Masticophis flagellum ruddocki*).

Raptors and Migratory Birds

Raptors are fully protected under the California Fish and Game Code Section 3503.5. A variety of raptors are very common throughout the Central Valley, while several species are considered rare. Raptor species are often found either foraging or nesting, at various times. Some raptors are migratory and thus are only in the region during certain periods of the year, while many are residents. There was no evidence of a remnant or active nest located in the project site during the surveys. Ground nesters, such as burrowing owl and northern harrier have some potential nesting habitat in the adjacent lands, but not within the project site. Horned lark is documented immediately adjacent to the project site, and would be expected to traverse through the project site at times.

The Pacific Flyway, which is a migratory travel route for millions of birds, and more than 350 species, is located through the Central Valley of California. The project site is located on the western fringe of the Pacific Flyway. Migratory birds travel this avian flyway each year from the Bering Strait to South America. Many of the birds travel from the north to overwinter in California, including the Central Valley region. The birds overwintering arrive as early as August. Other birds travel south to overwinter, and arrive back in California as early as February to nest/breed.

There is a wide variety of migratory birds, including water birds, which use the Central Valley for foraging. A review of the USFWS IPaC revealed the above-listed nine bird species.

The proposed project is located in an area with documented occurrences of a variety of raptors and migratory birds. There was no evidence of active or remnant nests located in the project site or immediate vicinity. The project site does not contain appropriate nesting habitat for most birds given that it lacks trees. Ground nesters, such as burrowing owls can occupy sites where ground squirrels have established burrows. At the time of the survey, there was no evidence of burrows, or burrowing owls within the project site.

Appropriate foraging habitat for raptors and migratory birds, is located in the agricultural fields located immediately adjacent to the project site. Construction activities is not expected to remove foraging habitat for these protected birds, although construction activities could temporarily make the agricultural fields immediately adjacent to the project limits to be less desirable for foraging while construction occurs.

Additionally, cliff swallows are a migratory bird that are very common nesters throughout the Central Valley, and are typically found nesting under bridges. Nesting cliff swallows were not observed within the during the survey, however, these birds can inhabit a bridge for nesting in any given year. The nesting season is February 15 to September 1.

Critical habitat has not been designated for Migratory Birds or Raptors.

The project site lacks trees and burrow habitat for nesting raptors. There is a wide variety of migratory birds, including water birds, which use the Aqueduct and Delta Mendota canal and adjacent agricultural fields for foraging. Migratory birds in this area are use to a relatively high

frequency of disturbance associated with the agricultural production; however, construction would elevate the activities temporarily. Construction activities could temporarily affect these migratory birds if they were using the Aqueduct and Delta Mendota canal and adjacent agricultural fields for foraging at the commencement of construction. The effect would be expected to be temporary and associated with the noise and activities required to rebuild the bridge. At the completion of construction, the migratory birds would have uninterrupted use of the Aqueduct and Delta Mendota canal and adjacent agricultural fields. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, the project would not adversely affect migratory birds.

The bridge itself provides potential nesting habitat for cliff sparrows. This species was not observed during field surveys, but they can easily occupy a bridge in future years. The proposed project would require work on the bridges, which would impact nesting colonies if they were to occupy the bridge in future years. Abandoned young would become deceased without support. In order to avoid impacts to nesting cliff swallows, a preconstruction survey would be necessary, and if they were found to occupy the bridges, the project activities would need to occur outside the nesting season or cliff swallows would need to be excluded prior to the nesting season. The nesting season is February 15 to September 1. These measures would be required for the project in order to seek coverage under the SJMSCP.

Mitigation Measure Bio-1 requires the project proponent to seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through implementation of incidental take and minimization Measures (ITMMs) and payment of fees for conversion of lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. Obtaining coverage for a project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a), California Fish and Game Code Section 2081, and the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species.

Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is a state listed threatened species that nests in the Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. The highest nesting densities occur near Davis and Woodland, Yolo County. Nests commonly occur in oaks or cottonwoods in or near riparian habitats and they forage in grasslands, irrigated pastures, and grain fields.

This species is well documented within the region, and there are many nesting sites located to the east along the San Joaquin River within the riparian habitat. This species forages within a ten-mile radius of their nesting sites. This species was not observed within the project site, nor where there any of active or remnant nest sites. The adjacent agricultural fields are appropriate foraging habitat. There are no critical habitats within the project limits.

The project site lacks trees for nesting Swainson's hawks. This species is well documented throughout the region and is commonly seen foraging over agricultural fields. The proposed project would not directly remove agricultural foraging habitat; however, construction would elevate the amount of activities in the area temporarily. Construction activities could temporarily affect the desirability of the adjacent agricultural fields during the construction period. The effect would be expected to be temporary and associated with the noise and activities required to construction the bridges. At the completion of construction, the birds would have uninterrupted

use of the agricultural fields. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, the project would not adversely affect these birds. With implementation of ITMMs required for the project in order to seek coverage under the SJMSCP (see Mitigation Measure BIO-1), this impact would be less than significant.

California Tiger Salamander (CTS)

CTS is a federal and state listed threatened species that requires both aquatic and upland habitat to complete its life cycle. The aquatic habitat serves as breeding habitat and is usually found in vernal pools and seasonal water sources, including slow moving streams, ponds, and swales that are free of predatory fish and bullfrogs. In early winter, just after sufficient rains have fallen for the ground to be moist and for temporary pools to begin to form, CTS begin their nocturnal breeding migration. On rainy nights, the adults emerge from their underground burrows and disperse up to a mile to lay their eggs in newly replenished vernal pools. Males typically outnumber females and often precede females to the pools/ponds. Shortly after breeding, adults will return to their terrestrial habitat. Larvae hatch from the eggs within two weeks and they continue to live in the pool for four to five months. CTS metamorphosis is considerably slower than other native amphibians, making the time frame of the presence of water critical to their survival. Usually by late spring or early summer, juveniles are ready to disperse to their terrestrial habitat. As the season shifts toward the driest summer months the CTS aestivates, not coming out until the wetter months arrive. The upland habitat is usually found in undisturbed grasslands near the aquatic breeding sites.

The project site is outside the critical habitat for this species. The aquatic habitat in the Delta Mendota and California Aqueduct is populated with aggressive fish predators (striped bass, largemouth bass) that inhibit the use of this habitat for CTS breeding. The upland portion of the project site is disturbed and does not provide quality refugia habitat for estivating CTS.

CTS are not documented in the project site, but there are documented occurrences in the foothills to the east of the project site in the Corral Hollow Creek drainage. The project site is within the 1.3-mile migratory range; however, the project site does not present quality refuge habitat and this species is not believed to migrate to the project site.

The project site does not contain appropriate aquatic breeding habitat given that the aquatic features are fast flowing waterways that lack pools or other stillwaters. CTS do not breed in fast flowing waters because larva or eggs would be washed away. This species is not adapted to breeding in fast flowing waters. Additionally, the project site lacks burrows, and lacks an active ground squirrel population that could establish burrows needed to maintain a population of CTS. The upland areas within the project site also lacks debris, such as wood piles, vehicles, etc., that can serve as refuge habitat for this species. The project site is largely barren and lacks any significant aquatic or upland habitat for CTS.

There are no indications that CTS disperses down the Corral Hollow Creek drainage to the valley floor. While CTS can potentially travel up to a mile to reach suitable habitat, given lack of occurrences, and lack of upland and aquatic habitat within the project site it is unlikely that the species would disperse north to the project site. There are no critical habitats within the project limits.

Potential impacts to CTS are based on the assumption that this species could migrate from their known population located to the east of the project site in the foothill region along Corral Hollow Creek during the active season and find aestivation habitat. First, consideration should be given

to the fact that CTS are not documented in the project site, and the project site does not contain appropriate aquatic breeding habitat given that the aquatic features are fast flowing waterways that lack pools or other stillwaters. Secondly, the project site lacks burrows, and lacks an active ground squirrel population that could establish burrows needed to maintain a population of CTS. The upland areas within the project site also lacks debris, such as wood piles, vehicles, etc., that can serve as refuge habitat for this species. The project site is largely barren and lacks any significant aquatic or upland habitat for CTS.

There are no indications that CTS disperses down the Corral Hollow Creek drainage to the valley floor. While CTS can potentially travel up to a mile to reach suitable habitat, given lack of occurrences, and lack of upland and aquatic habitat within the project site it is unlikely that the species would disperse north to the project site. Nevertheless, with implementation of ITMMs required for the project in order to seek coverage under the SJMSCP (see Mitigation Measure BIO-1), impacts to CTS would be less than significant. The ITMMS may include, but would not be limited to, preconstruction surveys, installation of drift fences to prevent CTS from moving into the area, biological monitoring during construction, and construction worker education for CTS.

Western Pond Turtle

Western pond turtle is a thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation. They need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 kilometers from water for egg-laying. Western pond turtle is documented in many canals and waterbody's through the region. It is anticipated that this species is in the Aqueduct and Delta Mendota Canal in the vicinity of the bridge sites.

This species was not observed during site surveys. Direct effects to western pond turtle could occur as a result of instream construction in Aqueduct and/or Delta Mendota Canal. Construction activities near the Aqueduct and Delta Mendota Canal could also temporarily reduce the availability of upland retreat sites for the turtle. If pond turtles are present in the waterway in the immediate vicinity of construction, they can usually disperse away from such disturbance without difficulty. Potential water quality effects associated with instream construction and roadway runoff could threaten western pond turtles. Implementation of Mitigation Measure BIO-1, which would require implementation of ITMMs while working in and around waterways, will ensure that the proposed project will not directly injure or kill any western pond turtles or impact its habitat.

Giant Garter Snake

The Giant Garter snake (*Thamnophis gigas*) federally listed as threatened. The giant garter snake inhabits marshes, sloughs, ponds, small lakes, low gradient streams, other waterways and agricultural wetlands such as irrigation and drainage canals and rice fields, and the adjacent uplands. Essential habitat components consist of (1) adequate water during the snake's active period (i.e., early spring through mid-fall) to provide a prey base and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat; and (3) upland habitat for basking, cover, refuge from flood waters, and hibernation in burrows. According to USFWS published programmatic biological opinions for giant garter snake (USFWS 1997), a basic giant garter snake habitat unit will typically consist of 2.00 acres (0.81 hectares) of surrounding upland for every 1.00 acre (0.40 hectare) of aquatic habitat. The 2.00 acres (0.81 hectares) of upland also may be defined as 218 linear feet (66 meters) of bankside

habitat which incorporates adjacent uplands to a width of 200 feet (61 meters) from the edge of the bank.

This species is not documented within, or in the regional vicinity of the project site and none were observed during field surveys. The aquatic habitat in the project site is marginal for giant garter snake given the lack of emergent vegetation. The banks of the aquatic facilities were largely void of vegetation, which is anticipated to be a result of regular weed abatement. There was some vegetation along the water edge. Common aquatic plants along the water edge included water-milfoil (*Myriophyllum* spp.), waterweeds (*Elodea* spp.), pondweeds (*Potamogeton* spp.), and duckweeds (*Lemna* spp.) among others.

The project site has poor upland habitat given that it lacks burrows, is largely barren. The adjacent uplands just outside of the project site lands are actively cultivated, which requires active ground disturbance and the use of chemicals such as fertilizers, pesticides, and herbicides, all of which make it poor upland habitat for giant garter snake. These areas also lack burrows. The combination of marginal aquatic habitat and poor upland habitat present a very low likelihood of giant garter snake presence. Based on the absence of quality aquatic and upland habitat, and the absence of recent occurrences, this species is not anticipated to be present in the project site.

There are no critical habitats within the project limits.

Potential impacts to GGS are based on the assumption that this species could transect through the aquatic habitat in the project site during the active season and find hibernation habitat in the uplands. First, consideration should be given to the fact that the aquatic habitat in the California Aqueduct and Delta Mendota Canal is considered marginal. The deeper water habitat does not support rooted-emergent or woody plant species, which is a key component for GGS aquatic habitat. The shallower edges of these facilities do not support a prevalence of emergent vegetation due to the maintenance and weed abatement activities along the Canal bank. The absence of quality emergent vegetation along the water edge makes this marginal habitat for GGS.

The project site has poor upland habitat given that it lacks burrows, is largely barren. Additionally, the adjacent lands outside of the project site lands are poor upland habitat given that they are actively cultivated, and use chemicals such as fertilizers, pesticides, and herbicides. The combination of marginal aquatic habitat and poor upland habitat present a very low likelihood of GGS presence. Based on the absence of quality aquatic and upland habitat, and the absence of recent occurrences, this species is not anticipated to be present in the project site during the active season and it not anticipated to enter the project site to hibernate for the inactive season. With implementation of ITMMS required for the project in order to seek coverage under the SJMSCP (see Mitigation Measure BIO-1), this impact would be less than significant.

Special-Status Plants

There are two plant species documented within the regional vicinity on the CNDDB. The large-flowered fiddleneck (*Amsinckia grandiflora*) requires cismontane woodland, or valley and foothill grassland. The Delta button-celery (*Eryngium racemosum*) requires riparian scrub, seasonally inundated depressions along floodplains on clay soils. The project site is outside the critical habitat for these species and they were not observed during field surveys. There is no evidence of documented occurrences within project site or immediately adjacent. The project site is high disturbed land, and is mostly void of vegetation. Based on this preliminary evaluation of listed plant species in the region and the known site conditions within the project site, it was

determined that no suitable habitat occurs within the project site. Therefore, the project would result in no effect to federally listed plant species or federally proposed plant species.

Conclusion

Mitigation Measure BIO-1 would reduce impacts to migratory birds and raptors, Swainson's hawk, CTS, and western pond turtle. As required by Mitigation Measure BIO-1, participation in the SJMSCP will provide the coverage for the incidental take of a species if it were to occur. Therefore, this potentially significant impact would be reduced to a ***less than significant*** level relative to this topic.

> ***Mitigation Measure BIO-1:*** *Prior to commencement of any grading activities, the project proponent shall seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through payment of development fees for conversion of open space lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. In addition, coverage includes incidental take avoidance and minimization measures for species that could be affected as a result of the proposed project. There are a wide variety of incidental take avoidance and minimization measures contained in the SJMSCP that were developed in consultation with the USFWS, CDFW, and local agencies. The applicability of incidental takes avoidance and minimization measures are determined by SJCOG on a project basis. The process of obtaining coverage for a project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a) and California Fish and Game Code Section 2081. The Section 10(a) permit also serves as a special-purpose permit for the incidental take of those species that are also protected under the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species. The SJMSCP includes the implementation of an ongoing Monitoring Plan to ensure success in mitigating the habitat impacts that are covered. The SJMSCP Monitoring Plan includes an Annual Report process, Biological Monitoring Plan, SJMSCP Compliance Monitoring Program, and the SJMSCP Adaptive Management Plan SJCOG.*

Response b): The records search identified the following five documented sensitive natural communities within the nine-quad search for the project site: Alkali Meadow, Great Valley Cottonwood Riparian Forest, Great Valley Valley Oak Riparian Forest, Northern Claypan Vernal Pool, Valley Sink Scrub. None of these community types are found on the project site. Riparian habitat is also not found on-site, or upland from the project site. Implementation of the proposed project will have a ***less than significant impact*** on riparian habitat and sensitive natural communities.

Response c): A wetland is an area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Wetlands are defined by regulatory agencies as having special vegetation, soil, and hydrology characteristics. Hydrology, or water inundation, is a catalyst for the formation of wetlands. Frequent inundation and low oxygen cause chemical changes to the soil properties resulting in what is known as hydric soils. The prevalent vegetation in wetland communities consists of hydrophytic plants, which are adapted to areas that are frequently inundated with water. Hydrophytic plant species have the ability to grow, effectively compete, reproduce, and persist in low oxygen soil conditions.

Below is a list of wetlands that are found in the Tracy planning area:

- Farmed Wetlands: This category of wetlands includes areas that are currently in agricultural uses. This type of area occurs in the northern portion of the Tracy Planning Area.

- Lakes, Ponds and Open Water: This category of wetlands includes both natural and human-made water bodies such as that associated with working landscapes, municipal water facilities and canals, creeks and rivers.

- Seasonal Wetlands: This category of wetlands includes areas that typically fill with water during the wet winter months and then drain enough to become ideal plant habitats throughout the spring and summer. There are numerous seasonal wetlands throughout the Tracy Planning Area.

- Tidal Salt Ponds and Brackish Marsh: This category of wetlands includes areas affected by irregular tidal flooding with generally poor drainage and standing water. There are minimal occurrences along some of the larger river channels in the northern portion of the Tracy Planning Area.

None of these categories apply to the project site. The Delta Mendota Canal and the California Aqueduct are not subject to regulatory permit, such as Section 401 Water Quality certification, Section 404 Nationwide Permit, or 1600 Streambed Alteration Agreement. Therefore, this impact would be ***less than significant***.

Response d): The CNDDB record search did not reveal any documented wildlife corridors or wildlife nursery sites on or adjacent to the project site. The project would not result in any impacts to Federal fisheries or essential fish habitat because there is no suitable habitat for any listed or protected fish species within the project site. The project includes widening and existing roadway, installing traffic signals, and replacing two bridges. Implementation of the proposed project would have a ***less than significant impact*** in this regard.

Response e): The General Plan includes policies related to the protection of biological resources within the project area as listed below:

- OSC-P1. New development shall meet all federal, State and regional regulations for habitat and species protection.
- OSC-P2. The City shall continue to participate with the San Joaquin Council of Governments and other agencies to implement and enforce the San Joaquin Multi Species Habitat Conservation and Open Space Plan.
- OSC-P3. New development should incorporate native, drought-tolerant vegetation into landscape plans and reduce the use of invasive, non-native plant species.

The project is not inconsistent with any of these policies. As demonstrated above and throughout this Initial Study, the project would be subject to all federal, State and regional regulations for habitat and species protection. Mitigation Measure BIO-6 requires participation in the SJMSCP. Additionally, Chapter 11.28, Water Management, of the Tracy Municipal Code requires landscape design plans which include local native plants, climate adapted non-natives, and avoidance of invasive plants. Therefore, this impact would be ***less than significant***.

Response f): The proposed project is subject to the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). The proposed project does not conflict with the SJMSCP. Mitigation Measure BIO-6 requires participation in the SJMSCP. Therefore, this

potentially significant impact would be reduced to a ***less than significant*** level relative to this topic.

> ***Mitigation Measure****: Implement Mitigation Measure BIO-1. This mitigation measure is previously presented in Response a, and is re-produced below:*
>
> ***Mitigation Measure BIO-1:*** *Prior to commencement of any grading activities, the project proponent shall seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through payment of development fees for conversion of open space lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. In addition, coverage includes incidental take avoidance and minimization measures for species that could be affected as a result of the proposed project. There are a wide variety of incidental take avoidance and minimization measures contained in the SJMSCP that were developed in consultation with the USFWS, CDFW, and local agencies. The applicability of incidental takes avoidance and minimization measures are determined by SJCOG on a project basis. The process of obtaining coverage for a project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a) and California Fish and Game Code Section 2081. The Section 10(a) permit also serves as a special-purpose permit for the incidental take of those species that are also protected under the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species. The SJMSCP includes the implementation of an ongoing Monitoring Plan to ensure success in mitigating the habitat impacts that are covered. The SJMSCP Monitoring Plan includes an Annual Report process, Biological Monitoring Plan, SJMSCP Compliance Monitoring Program, and the SJMSCP Adaptive Management Plan SJCOG.*

V. CULTURAL RESOURCES

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section15064.5?		X		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

Background

A Determination of Eligibility and Effect for the Corral Hollow Road Widening Project was completed by Peak & Associates, Inc. in December 2018. Records of previously recorded cultural resources and cultural resource investigations were examined by the Central California Information Center (CCIC) of the California Historical Resources Information System. Two resources known to the CCIC are within the project area: an unrecorded segment of P-39-000089, the Delta-Mendota Canal, and an unrecorded segment of P-39-000090, the California Aqueduct. Two other resources are recorded within the search radius: P-39-000048 (a seed drill recorded in 1992) and P-39-000362 (land modification related to a gravel pit of unknown age).

Additionally, the Native American Heritage Commission (NAHC) replied to a Sacred Lands file search request from Peak & Associates on November 19, 2018 stating that there were no known Sacred Lands recorded for the project area. The NAHC also provided a list with seven organizations who may have information or concerns regarding cultural resources within or near the project area. On November 21, 2018, letters requesting information and/or comment with a map of the project area were sent to: Rhonda Morningstar Pope, Chairperson, Buena Vista Rancheria of Me-Wuk Indians; the California Valley Miwok Tribe; California Valley Miwok Tribe AKA Sheep Ranch Rancheria of Me-Wuk Indians of CA; Sara Dutschke Setchwaelo, Chairperson, Ione Band of Miwok Indians; Katherine Erolinda Perez, Chairperson, North Valley Yokuts Tribe; Gene Whitehouse, Chairperson, United Auburn Indian Community of the Auburn Rancheria; and, Raymond Hitchcock, Chairperson, Wilton Rancheria . No replies have been received to date.

A complete, intensive inspection of the project area was undertaken on August 16, 2018 by two members of Peak & Associates. The only resources that exist in the project area are the four major structures: Delta Mendota Canal (DMC), Corral Hollow Road bridge that crosses the Canal (Bridge No. 29C0186), California Aqueduct, and the Corral Hollow Road bridge that crosses the Aqueduct (Bridge No. 29C0185). All four of these properties have been field visited and recorded by Peak & Associates, who prepared detailed descriptions, site evaluations, and the Department of Parks and Recreation (DPR) 523 forms. Two of the four major structures are historic properties: DMC and California Aqueduct. See Appendix C for the full Determination of Eligibility and Effect.

Responses to Checklist Questions

Response a): The project site is located in an area known to have historical resources. According to the Determination of Eligibility and Effect, there are two historic properties present within the project area: DMC and California Aqueduct, with only the DMC on federal land. The project does not include changes to the California Aqueduct. The project does include modifications to an existing bridge which crosses the DMC. The existing bridge which crosses the DMC is not considered a contributing feature to the historic quality of the DMC. Therefore, the proposed

changes to and/or replacement of the bridge will not affect the DMC in any way. With regard to Section 106 of the National Historic Preservation Act (NHPA), it is recommended that agency seek concurrence from the California State Historic Preservation Officer (SHPO) with a finding of "no adverse effect" per § 800.4(d) (1) for the project.

Additionally, as with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown historical resource. Implementation of Mitigation Measure CUL-1 would ensure steps would be taken to reduce impacts to historical resources in the event that they are discovered during construction. Therefore, this potentially significant impact would be reduced to a ***less than significant*** level regarding this topic.

> ***Mitigation Measure CUL-1:*** *If any cultural resources, including prehistoric or historic artifact, or other indications of archaeological resources are found during grading and construction activities, all work shall be halted immediately within a 200-foot radius of the discovery until the an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, has evaluated the find(s).*
>
> *Work cannot continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR; or 3) not a significant Public Trust Resource.*
>
> *If Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the Applicant's expense.*

Response b) The project site is located in an area known to have cultural resources. The field and record surveys did not reveal a significant archeological resource or site on the project site. However, as with most projects in the region that involve ground-disturbing activities, there is the potential for discovery of a previously unknown archaeological resource. The implementation of the following mitigation measure would ensure that this potential impact is reduced to a ***less than significant*** level regarding this topic.

> ***Mitigation Measure:*** *Implement Mitigation Measure CUL-1. This mitigation measure is previously presented in Response a, and is re-produced below:*
>
> ***Mitigation Measure CUL-1:*** *If any cultural resources, including prehistoric or historic artifact, or other indications of archaeological resources are found during grading and construction activities, all work shall be halted immediately within a 200-foot radius of the discovery until the an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, has evaluated the find(s).*
>
> *Work cannot continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR; or 3) not a significant Public Trust Resource.*
>
> *If Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the Applicant's expense.*

Response c): Indications are that humans have occupied San Joaquin County for over 10,000 years and it is not always possible to predict where human remains may occur outside of formal

burial sites. Therefore, excavation and construction activities, regardless of depth, may yield human remains that may not be interred in marked, formal burials.

Under CEQA, human remains are protected under the definition of archaeological materials as being "any evidence of human activity." Additionally, Public Resources Code Section 5097 has specific stop-work and notification procedures to follow in the event that human remains are inadvertently discovered during project implementation.

While no human remains were indicated through the records search, or found during field surveys, implementation of the following mitigation measure would ensure that all construction activities that inadvertently discover human remains implement state required consultation methods to determine the disposition and historical significance of any discovered human remains. Implementation of the following mitigation measure would reduce this potential impact to a ***less than significant*** level.

> ***Mitigation Measure CUL-2****: If human remains are discovered during the course of construction, work shall be halted at the site and any nearby area reasonably suspected to overlie adjacent human remains until he San Joaquin County Coroner has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, either of the following steps will be taken:*
>
> - *The coroner will contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner will make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.*
> - *The landowner shall retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:*
> - *The Native American Heritage Commission is unable to identify a descendent.*
> - *The descendant identified fails to make a recommendation.*
>
> *The City of Tracy, County of San Joaquin, or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.*

VI. ENERGY

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

Responses to Checklist Questions

Response a-b): Appendix F of the State CEQA Guidelines requires consideration of the potentially significant energy implications of a project. CEQA requires mitigation measures to reduce "wasteful, inefficient and unnecessary" energy usage (Public Resources Code Section 21100, subdivision [b][3]). According to Appendix F of the CEQA Guidelines, the means to achieve the goal of conserving energy include decreasing overall energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. In particular, the proposed project would be considered "wasteful, inefficient, and unnecessary" if it were to violate state and federal energy standards and/or result in significant adverse impacts related to project energy requirements, energy inefficiencies, energy intensiveness of materials, cause significant impacts on local and regional energy supplies or generate requirements for additional capacity, fail to comply with existing energy standards, otherwise result in significant adverse impacts on energy resources, or conflict or create an inconsistency with applicable plan, policy, or regulation.

The proposed project consists of widening Corral Hollow Road from the existing two-lane roadway to a four-lane major arterial with median island, sidewalks, bike facilities, landscaping, and street lights from Linne Road to I-580. The project will include design of at least two traffic signals and replacement of bridges over the Delta Mendota Canal and California Aqueduct. The amount of operational energy used at the project site would directly correlate to the amount of outdoor lighting and landscape equipment. Operational energy would be negligible as the project does not propose any new structures or uses that would energy use, increase trip generation, or VMT's. Because the project does not include any structures, the amount of electric required for operation of the project would be extremely low. The only electricity required for the project operation would be for the proposed street lights from Linne Road to I-580.

Other major sources of proposed project energy consumption include fuel used by vehicle trips generated during project construction, and fuel used by off-road construction vehicles during construction.

Off-road construction vehicles would use diesel fuel during the construction phase of the proposed project. A non-exhaustive list of off-road constructive vehicles expected to be used during the construction phase of the proposed project includes: cranes, forklifts, generator sets, tractors, excavators, and dozers.

The proposed project would also generate on-road vehicle trips during project construction (from construction workers and vendors). Estimates of vehicle fuel consumed were derived based on the assumed construction schedule, vehicle miles traveled for haulers and workers provided in the SMAQMD Roadway Construction Emissions Model, and Year 2020 gasoline MPG factors provided by EMFAC2014. Table 3 describes gasoline and diesel fuel used by on-road

mobile sources for each project component. As shown, the vast majority of on-road mobile vehicle fuel used during the construction of the proposed project would occur during the widening component of the project. See Appendix A for a detailed calculation.

Table 3: On-Road Mobile Fuel Generated by Project Construction Activities – By Component

Project Component	*Total Worker VMT[(a)]*	*Total Hauling VMT[(a)]*	*Gallons of Gasoline Fuel[(b)]*	*Gallons of Diesel Fuel[(b)]*
Widening	2,600	30	26,732	1,162
California Aqueduct Bridge	2,360	30	12,132	581
Delta Mendota Canal Bridge	2,360	30	12,132	581
Total	**7,320**	**90**	**50,996**	**2,324**

NOTE: [(A)] PROVIDED BY SMAQMD ROADWAY CONSTRUCTION EMISSIONS MODEL. [(B)]SEE APPENDIX A FOR FURTHER DETAIL
SOURCE: SMAQMD ROADWAY CONSTRUCTION EMISSIONS MODEL; DE NOVO PLANNING GROUP, 2019.

Other

Proposed project landscape maintenance activities would generally require the use fossil fuel (i.e. gasoline) energy. For example, lawn mowers require the use of fuel for power. As an approximation, it is estimated that landscape care maintenance would require approximately one individual one full day per week (eight hours per week), or 416 hours per year. Assuming an average of approximately 0.5 gallons of gasoline used per person-hour, the proposed project would require the use of approximately 208 gallons of gasoline per year to power landscape maintenance equipment. The energy used to power landscape maintenance equipment would not differ substantially from the energy required for landscape maintenance for similar project.

Conclusion

The proposed project would use energy resources for the on-road vehicle trips (e.g. gasoline and diesel fuel) generated by the proposed project, from off-road construction activities associated with the proposed project (e.g. diesel fuel), and from landscape maintenance activities (e.g., gasoline and diesel fuel). Each of these activities would require the use of energy resources.

The proposed project would be in compliance with all applicable Federal, State, and local regulations regulating energy usage. For example, PG&E is responsible for the mix of energy resources used to provide electricity for its customers, and it is in the process of implementing the Statewide Renewable Portfolio Standard (RPS) to increase the proportion of renewable energy (e.g. solar and wind) within its energy portfolio. PG&E is expected to achieve at least a 33% mix of renewable energy resources by 2020, and 50% by 2030. Additionally, energy-saving regulations, including the latest State Title 24 building energy efficiency standards ("part 6"), would be applicable to the proposed project (note: as provided under Mitigation Measure 3.7-1, the proposed project would achieve a 15% increase in energy efficiency beyond the 2016 version of the Title 24 Energy code). Other Statewide measures, including those intended to improve the energy efficiency of the statewide passenger and heavy-duty truck vehicle fleet (e.g. the Pavley Bill and the Low Carbon Fuel Standard), would improve vehicle fuel economies, thereby conserving gasoline and diesel fuel. These energy savings would continue to accrue over time. Furthermore, as described previously, the incorporation of the mitigation measures described previously in this section would further reduce project energy consumption.

As a result, the proposed project would not result in any significant adverse impacts related to project energy requirements, energy use inefficiencies, and/or the energy intensiveness of materials by amount and fuel type for each stage of the project including construction, operations,

maintenance, and/or removal. PG&E, the electricity and natural gas provider to the proposed street lights, maintains sufficient capacity to serve the proposed project. The proposed project would comply with all existing energy standards, including those established by the City of Tracy, and would not result in significant adverse impacts on energy resources. For these reasons, the proposed project would not be expected cause an inefficient, wasteful, or unnecessary use of energy resources nor cause a significant impact on any of the threshold as described by Appendix F of the CEQA Guidelines. This is a ***less than significant*** impact.

VII. GEOLOGY AND SOILS

Would the project:	***Potentially Significant Impact***	***Less Than Significant with Mitigation***	***Less Than Significant Impact***	***No Impact***
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:			X	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?		X		
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?			X	
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

Responses to Checklist Questions

Responses a.i), a.ii): The project site is located in an area of low to moderate seismicity. No known active faults cross the project site, and the site is not located within an Alquist-Priolo Earthquake Fault Zone; however, relatively large earthquakes have historically occurred in the Bay Area and along the margins of the Central Valley. Many earthquakes of low magnitude occur every year in California. The nearest earthquake fault zoned as active by the State of California Geological Survey is the Black Butte fault, located approximately 2.7 miles southwest of the site.

The Tracy area has a low-to-moderate seismic history. The largest recorded measurable magnitude earthquake in Tracy measured 3.9 on the Richter scale. The greatest potential for

significant ground shaking in Tracy is believed to be from maximum credible earthquakes occurring on the Calaveras, Hayward, San Andreas, or Greenville faults. Further seismic activity can be expected to continue along the western margin of the Central Valley, and as with all projects in the area, the Project will be designed to accommodate strong earthquake ground shaking, in compliance with the applicable California building code standards.

Other faults capable of producing ground shaking at the site include the San Joaquin fault, 6.7 miles southwest; the Midway fault, 6.9 miles southwest; and the Corral Hollow-Carnegie fault, 10.7 miles southwest of the site. Any one of these faults could generate an earthquake capable of causing strong ground shaking at the subject site. Earthquakes of Moment Magnitude (Mw) 7 and larger have historically occurred in the region and numerous small magnitude earthquakes occur every year.

Since there are no known active faults crossing the project site and the site is not located within an Earthquake Fault Special Study Zone, the potential for ground rupture at the site is considered low.

An earthquake of moderate to high magnitude generated within the San Francisco Bay Region and along the margins of the central valley could cause considerable ground shaking at the site, similar to that which has occurred in the past. In order to minimize potential damage to the proposed project caused by groundshaking, all construction would comply with the latest California Building Code standards, as required by the City of Tracy Municipal Code 9.04.030.

Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. The code-prescribed lateral forces are generally considered to be substantially smaller than the comparable forces that would be associated with a major earthquake. Therefore, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage.

Implementation of the California Building Code standards, which include provisions for seismic building designs, would ensure that impacts associated with groundshaking would be less than significant. Building new structures for human use would increase the number of people exposed to local and regional seismic hazards. Seismic hazards are a significant risk for most property in California.

The Safety Element of the Tracy General Plan includes several goals, objectives and policies to reduce the risks to the community from earthquakes and other geologic hazards. In particular, the following policies would apply to the project site:

> **SA-1.1, Policy P2:** Geotechnical reports shall be required for development in areas where potentially serious geologic risks exist. These reports should address the degree of hazard, design parameters for the project based on the hazard, and appropriate mitigation measures.
>
> **SA-1.2, Policy P1:** All construction in Tracy shall conform to the California Building Code and the Tracy Municipal Code including provisions addressing unreinforced masonry buildings.

The City reviews all proposed projects for consistency with the General Plan policies and California Building Code provisions identified above, as applicable. This review occurs

throughout the project application review and processing stage, and throughout plan check and building inspection phases prior to the issuance of a certificate of occupancy. Since the majority of work under the scope of this project involves roadway and bridges, the relevant Caltrans, state, and FHWA codes and requirements will be enforced.

Consistency with the requirements of the California Building Code and the Tracy General Plan policies identified above would ensure that impacts on humans associated with seismic hazards would be ***less than significant***. No additional mitigation is required.

Responses a.iii), c), d): Liquefaction normally occurs when sites underlain by saturated, loose to medium dense, granular soils are subjected to relatively high ground shaking. During an earthquake, ground shaking may cause certain types of soil deposits to lose shear strength, resulting in ground settlement, oscillation, loss of bearing capacity, landsliding, and the buoyant rise of buried structures. The majority of liquefaction hazards are associated with sandy soils, silty soils of low plasticity, and some gravelly soils. Cohesive soils are generally not considered to be susceptible to liquefaction. In general, liquefaction hazards are most severe within the upper 50 feet of the surface, except where slope faces or deep foundations are present.

Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. Soil expansion can damage structures by cracking foundations, causing settlement and distorting structural elements. Expansion is a typical characteristic of clay-type soils. Expansive soils shrink and swell in volume during changes in moisture content, such as a result of seasonal rain events, and can cause damage to foundations, concrete slabs, roadway improvements, and pavement sections.

Soil expansion is dependent on many factors. The more clayey, critically expansive surface soil and fill materials will be subjected to volume changes during seasonal fluctuations in moisture content. According to the City of Tracy General Plan Draft EIR, portions of the Tracy Planning Area have a moderate to high risk for expansive soils. The General Plan EIR indicates that with the implementation of objectives, policies, and actions from the General Plan Safety Element, this potentially significant impact would be reduced to a ***less than significant*** level.

Responses a.iv): The project site is relatively flat with slopes increasing as vehicles travel south on Corral Hollow towards I-580. According to the City's General Plan EIR, the landslide risk in Tracy is low in most areas. In the wider Tracy Planning Area, some limited potential for risk exists for grading and construction activities in the foothills and mountain terrain of the upland areas in the southwest. The potential for small scale slope failures along river banks also exists. The project site is not located in the foothills, mountain terrain, or along a river bank. As such, the project site is exposed to little or no risk associated with landslides. This is a ***less than significant*** impact and no mitigation is required.

Responses b): During the construction preparation process, existing vegetation would be removed to grade and compact the project site, as necessary. As construction occurs, these exposed surfaces could be susceptible to erosion from wind and water. Effects from erosion include impacts on water quality and air quality. Exposed soils that are not properly contained or capped increase the potential for increased airborne dust and increased discharge of sediment and other pollutants into nearby stormwater drainage facilities. Risks associated with erosive surface soils can be reduced by using appropriate controls during construction and properly re-vegetating exposed areas. Mitigation Measures AQ-1 and AQ-2 require the implementation of various dust control measures during site preparation and construction activities that would reduce the potential for soil erosion and the loss of topsoil. Additionally, implementation of

various best management practices (BMPs) associated with the project-specific SWPPP would reduce the potential for disturbed soils and ground surfaces to result in erosion and sediment discharge into adjacent surface waters during construction activities. The implementation of these required mitigation measures and SWPP would ensure these impacts are ***less than significant***.

Response c): Liquefaction: Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded, fine-grained sands. According to the City of Tracy General Plan Draft EIR, the south central portion of the Tracy Planning Area is moderately susceptible liquefaction due to loose, coarse-grained deposits. The General Plan EIR indicates that with the implementation of objectives, policies, and actions from the General Plan Safety Element, this potentially significant impact would be reduced to a ***less than significant*** level.

Lateral Spreading: Lateral spreading typically results when ground shaking moves soil toward an area where the soil integrity is weak or unsupported, and it typically occurs on the surface of a slope, although it does not occur strictly on steep slopes. Oftentimes, lateral spreading is also directly associated with areas of liquefaction. Since the potential for liquefaction is moderate to high, the potential for lateral spreading is present. The General Plan Draft EIR indicates that with the implementation of goals, policies, and implementation measures from the 2023 General Plan Safety Element this potentially significant impact would be reduced to a ***less than* significant** levels.

Landslides: Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e. cut and fill). The project site is flat; therefore, as previously discussed in part a), the potential for a landslide in the project site is low. Implementation of the proposed project would result in a ***less than significant*** impact relative to this topic.

Collapsible Soils: Collapsible soils undergo a rearrangement of their grains and a loss of cementation, resulting in substantial and rapid settlement under relatively low loads. Collapsible soils occur predominantly at the base of mountain ranges, where Holocene-age alluvial fan and wash sediments have been deposited during rapid run-off events. Differential settlement of structures typically occurs when heavily irrigated landscape areas are near a building foundation. Examples of common problems associated with collapsible soils include tilting floors, cracking or separation in structures, sagging floors, and nonfunctional windows and doors. Soil data from the NRCS Web Soil Survey suggests a low potential for collapsible soils on the project site. Therefore, implementation of the proposed project would result in a ***less than significant*** impact relative to this topic.

Subsidence: Land subsidence is the gradual settling or sinking of an area with little or no horizontal motion due to changes taking place underground. It is a natural process, although it can also occur (and is greatly accelerated) as a result of human activities. Common causes of land subsidence from human activity include: pumping water, oil, and gas from underground reservoirs; dissolution of limestone aquifers (sinkholes); collapse of underground mines; drainage of organic soils; and initial wetting of dry soils. However, subsidence is not a characteristic of the soil series found within the study area. According to the City's General Plan EIR, the project site is not located in an area known to have shallow groundwater levels. Therefore**,** implementation of the proposed project would result in a ***less than significant*** impact relative to this topic.

Conclusion: The project site does not have a significant risk of becoming unstable as a result landslide, subsidence, or collapse. Because the proposed project must be consistent with the current General Plan which provides specific policies and measures to address unstable soils, the proposed project would have a ***less than significant*** impact relative to these topics**.**

Responses d): Expansive soils are those that shrink or swell with the change in moisture content. The volume of change is influenced by the quantity of moisture, by the kind and amount of clay in the soil, and by the original porosity of the soil. Shrinking and swelling can damage roads and other structures unless special engineering design is incorporated into the project plans.

The California Building Standards Code requires a final geotechnical evaluation to be performed at a design-level to ensure that the roadway sections, sidewalks, and other improvements can accommodate the specific soils, including expansive soils, at those locations. The following mitigation measure presented below provides the requirement for a final geotechnical evaluation. The final geotechnical evaluation would include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people on the project site. The grading and improvement plans, as well as the storm drainage outfall, are required to be designed in accordance with the recommendations provided in the final geotechnical evaluation. Therefore, this potential impact would be reduced to a ***less than significant*** level in relation to this topic.

> ***Mitigation Measure GEO-1:*** *Prior to earthmoving activities, a certified geotechnical engineer, or equivalent, shall be retained to perform a final geotechnical evaluation of the soils at a design-level. The final geotechnical evaluation shall include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures. The grading and improvement plans, shall be designed in accordance with the recommendations provided in the final geotechnical evaluation*.

Response e): The proposed project would not require the use of septic tanks or alternative waste water disposal systems for the disposal of waste water. Implementation of the proposed project would result in ***no impact*** relative to this topic.

Response f): The field and record surveys did not reveal any surface evidence of paleontological resources on the project site. The project site is not expected to contain subsurface paleontological resources, although it is possible. Damage to or destruction of a paleontological resource would be considered a potentially significant impact under local, state, or federal criteria. Implementation of the following mitigation measure would ensure steps would be taken to reduce impacts to paleontological resources in the event that they are discovered during construction. This would ensure that any potentially significant impacts would be reduced to a ***less than significant*** level regarding this topic.

> ***Mitigation Measure GEO-2:*** *If paleontological resources are discovered during the course of construction, work shall be halted immediately within 50 meters (165 feet) of the discovery, the City of Tracy or San Joaquin County shall be notified, and a qualified paleontologist shall be retained to determine the significance of the discovery. If the paleontological resource is considered significant, it should be excavated by a qualified paleontologist and given to a local agency, State University, or other applicable institution, where they could be curated and displayed for public education purposes.*

VIII. GREENHOUSE GAS EMISSIONS

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?			X	

Responses to Checklist Questions

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

Naturally occurring greenhouse gases include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. Although the direct greenhouse gases CO_2, CH_4, and N_2O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2011, concentrations of these three greenhouse gases have increased globally by 40, 150, and 20 percent, respectively (Intergovernmental Panel on Climate Change [IPCC], 2013).

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs).

The emissions from a single project will not cause global climate change, however, GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change. Therefore, the analysis of GHGs and climate change presented in this section is presented in terms of the proposed project's contribution to cumulative impacts and potential to result in cumulatively considerable impacts related to GHGs and climate change.

Cumulative impacts are the collective impacts of one or more past, present, and future projects that, when combined, result in adverse changes to the environment. In determining the significance of a proposed project's contribution to anticipated adverse future conditions, a lead agency should generally undertake a two-step analysis. The first question is whether the *combined* effects from *both* the proposed project *and* other projects would be cumulatively significant. If the agency answers this inquiry in the affirmative, the second question is whether "the proposed project's *incremental* effects are cumulatively considerable" and thus significant in and of themselves. The cumulative project list for this issue (climate change) comprises anthropogenic (i.e., human-made) GHG emissions sources across the globe and no project alone would reasonably be expected to contribute to a noticeable incremental change to the global

climate. However, legislation and executive orders on the subject of climate change in California have established a statewide context and process for developing an enforceable statewide cap on GHG emissions. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies consider evaluating the cumulative impacts of GHGs. Small contributions to this cumulative impact (from which significant effects are occurring and are expected to worsen over time) may be potentially considerable and, therefore, significant.

Significance Thresholds

Governor's Office of Planning and Research's (OPR's) Guidance does not include a quantitative threshold of significance to use for assessing a project's GHG emissions under CEQA. Moreover, the California Air Resources Board (CARB) has not established such a threshold or recommended a method for setting a threshold for project-level analysis. In the absence of a consistent statewide threshold, a threshold of significance for analyzing the project's GHG emissions was developed. The issue of setting a GHG threshold is complex and dynamic, especially in light of the California Supreme Court decision in *Center for Biological Diversity v. California Department of Fish and Wildlife* (referred to as the Newhall Ranch decision hereafter). The California Supreme Court ruling also highlighted the need for the threshold to be tailored to the specific project type, its location, and the surrounding setting. Therefore, the threshold used to analyze the project is specific to the analysis herein and the City retains the ability to develop and/or use different thresholds of significance for other projects in its capacity as lead agency and recognizing the need for the individual threshold to be tailored and specific to individual projects.

The SJVAPCD provides guidance for addressing GHG emissions under CEQA. The SJVAPCD requires quantification of GHG emissions for all projects which the lead agency has determined that an EIR is required. Although an EIR is not required for the proposed project, the GHG emissions are quantified below, followed by a consistency analysis with the SJCOG RTP/SCS.

Responses to Checklist Questions

Responses a) and b):

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. Implementation of the proposed project would contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to future development would be primarily associated with increases of CO_2 and other GHG pollutants, such as CH_4 and N_2O, from construction.

Operational emissions would be negligible as the project does not propose any new structures or uses that would increase trip generation or VMT. The proposed project's short-term construction-related GHG emissions for buildout of the proposed project were estimated using the SMAQMD Roadway Construction Emissions Model (version 9.0). Emissions are expressed in metric tons of CO_2 equivalent units of measure (i.e., $MTCO_2e$), based on the global warming potential of the individual pollutants.

Short-Term Construction GHG Emissions

Estimated increases in GHG emissions associated with construction of the proposed project are summarized in Table 4.

Table 4: Construction GHG Emissions (Unmitigated Metric Tons)

Project Component	*CH_4*	*N_2O*	*CO_2e*
Widening	0.15	0.01	531.47
California Aqueduct Bridge	0.10	0.00	310.83
Delta Mendota Canal Bridge	0.10	0.00	310.83
Total	**0.35**	**0.01**	**1,153.13**

SOURCE: SMAQMD ROADWAY CONSTRUCTION EMISSIONS MODEL.

As presented in the table, short-term annual construction emissions of GHG associated with development of the project are estimated to be 1,153.13 $MTCO_2e$. These construction GHG emissions are a one-time release and are comparatively much lower than emissions associated with operational phases of a project. Cumulatively, these construction emissions would not generate a significant contribution to global climate change.

Regional Transportation Plan/Sustainable Communities Strategy

SJCOG adopted the Final Draft of the RTP/SCS on June 2018. The RTP/SCS reflects a region-specific, balanced multimodal plan that only achieves the intent and promise of SB 375 and can be implemented through existing and planned programs or policies. The RTP/SCS foundation comprises recent household and job growth forecasts, market demand and economic studies, and transportation studies including SJCOG's Smart Growth Transit Oriented Development Plan, Goods Movement Study, and Regional Bike/Pedestrian/Safe Routes to School Master Plan.

The purpose of the project is to upgrade a second phase of Corral Hollow Road to accommodate the existing and future transportation functions anticipated through General Plan buildout. The proposed project is consistent with the General Plan vision for the project area, and the proposed project supports the future development that is included within the SJCOG projections. Implementation of the proposed project would not result in intensification of land uses, or the addition of structures or uses that would differ from the current General Plan. Improvements to roadway system created by the project represent a planned effort to coordinate improvements to accommodate the future buildout of the General Plan.

Overall, the proposed project would be generally consistent with the goals and strategies of the RTP/SCS.

Conclusion

The maximum short-term annual construction emissions of GHG associated with development of the project are estimated to be 1,153.13 $MTCO_2e$. As stated previously, short-term construction GHG emissions are a one-time release of GHGs and are not expected to significantly contribute to global climate change over the lifetime of the proposed project. Additionally, the project would be generally consistent with the goals, policies, and measures of the RTP/SCS. Therefore, impacts related to GHG emissions and global climate change would be considered ***less than significant***.

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	***Potentially Significant Impact***	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?		X		
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?			X	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

Responses to Checklist Questions

Response a): Construction equipment and materials would likely require the use of petroleum based products (oil, gasoline, diesel fuel). The use of these materials is normal at any construction site and will not pose a reasonable risk of release into the environment if properly handled, and transported. However, a release into the environment could pose significant impacts to the health and welfare of people and/or wildlife, and could result in contamination of water, habitat, and agricultural resources. This includes fuels and petroleum products. Implementation of the following mitigation measure would ensure any potential impacts would be reduced to ***less than significant*** levels relative to this topic.

> ***Mitigation Measure HAZ-1:*** *In the event that hazardous materials are encountered during construction, a Soils Management Plan (SMP) shall be submitted and approved by the San Joaquin County Department of Environmental Health. The SMP shall establish management practices for handling and disposal of hazardous materials, including fuels, cleaners, solvents, etc., during construction. The approved SMP shall be posted and maintained onsite during construction activities and all construction personnel shall acknowledge that they have reviewed and understand the plan.*

Operational impacts from the proposed project would not result in increased routine transport, use or disposal of hazardous materials. The use, clean up, and disposal of potentially hazardous construction materials is managed according to standard procedures to protect air quality, water quality, and the environment. Implementation of the proposed project would result in a ***less than significant*** impact relative to this topic.

Response b): Operation of the proposed project would not result in a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. The use, clean up, and disposal of any potentially hazardous construction materials encountered during construction will be managed according to standard procedures to protect air quality, water quality, and the environment as per state laws and is not expected to result in a reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. For example, in such event the project would be subject to the San Joaquin County Department of Environmental Health's Hazardous Materials Business Plan Program, which aims to protect the public health and safety and the environment by establishing business and area plans relating to the handling and release or threatened release of hazardous materials. Implementation of the following mitigation measure would reduce any potential impacts to a ***less than significant*** level relative to this topic.

> ***Mitigation Measure:*** *Implement Mitigation Measure HAZ-1. This mitigation measure is previously presented in Response a, and is re-produced below:*
>
> ***Mitigation Measure HAZ-1:*** *In the event that hazardous materials are encountered during construction, a Soils Management Plan (SMP) shall be submitted and approved by the San Joaquin County Department of Environmental Health. The SMP shall establish management practices for handling and disposal of hazardous materials, including fuels, cleaners, solvents, etc., during construction. The approved SMP shall be posted and maintained onsite during construction activities and all construction personnel shall acknowledge that they have reviewed and understand the plan.*

Response c): The proposed project would not emit hazardous emissions or handle hazardous or increase hazardous materials, substances, or waste. The nearest school to the project site is Anthony Traina Elementary School (0.6 miles northeast). Therefore, impacts from project implementation would be considered ***less than significant*** relative to this topic.

Response d): The project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, project implementation would have ***no impact*** relative to this topic.

Response e): The project is located within the airport land use area for the Tracy Municipal Airport, which is located west of the project site. Tracy Municipal Airport is owned and operated by the City of Tracy. Located within the city limits, this general aviation airport provides a range of aviation services including general aviation and jet fuel sales, and hangar and tie down rentals. Portions of the project site are located in Compatibility Zones 2 (Inner Approach/Departure Zone), 3 (Inner Turning Zone), 4 (Outer Approach/Departure Zone), 7 (Traffic Pattern Zone), and 8 (Airport Influence Area). The bridge over the California Aqueduct, which will be replaced as part of the project, is located in Compatibility Zone 7 (Traffic Pattern Zone), and the bridge over the Delta Mendota Canal is located on the border of Compatibility Zones 2 (Inner Approach/Departure Zone) and 3 (Inner Turning Zone).

According to the Airport Land Use Compatibility Plan for this airport, the following actions affect land uses within any compatibility zone:

(1) Proposed residential development, including land divisions, consisting of five or more dwelling units or lots.
(2) Proposed development agreements or amendments to such agreements.
(3) Any proposed expansion of the sphere of influence of a city or special district.
(4) Proposed pre-zoning associated with future annexation of land to a city.
(5) Any discretionary development proposal for projects having a building floor area of 20,000 square feet or greater unless only ministerial approval (e.g., a building permit) is required.
(6) Major capital improvements (e.g., water, sewer, or roads) which would promote urban uses in undeveloped or agricultural areas to the extent that such uses are not reflected in a previously reviewed general plan or specific plan.
(7) Proposed land acquisition by a government entity for any facility accommodating a congregation of people (for example, a school or hospital).
(8) Any off-airport, non-aviation use of land within the runway protection zone (RPZ) of any airport.
(9) Proposals for new development (including buildings, antennas, and other structures) having a height of more than:

- No development is allowed within the RPZ;
- 35 feet above ground level (AGL) within the Inner Approach/Departure Zone;
- 70 feet AGL within Extended Approach/Departure Zone; or
- 150 feet AGL within Sideline Safety or Traffic Pattern Zone.

(10) Any obstruction reviewed by the Federal Aviation Administration (FAA) in accordance with Part 77 of the CFR that receives a finding of anything other than "not a hazard to air navigation."
(11) Any project having the potential to create electrical or visual hazards to aircraft in flight, including:

- Electrical interference with radio communications or navigational signals; Lighting which could be mistaken for airport lighting;
- Glare in the eyes of pilots of aircraft using the airport; and
- Impaired visibility near the airport.

(12) Projects having the potential to cause attraction of birds or other wildlife that can be hazardous to aircraft operations to be increased within the vicinity of an airport accordance with accordance with Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports.*

(13) Proposed non-aviation development of airport property (hotels, motels, restaurants and non-aviation related commercial/office buildings) if such development has not previously been included in an airport master plan or community general plan. (See Policy 3.1.1(f)).

The only action listed above which apply to the proposed project is action 9, reproduced below:

(9) Proposals for new development (including buildings, antennas, and other structures) having a height of more than:

- No development is allowed within the RPZ;
- 35 feet above ground level (AGL) within the Inner Approach/Departure Zone;
- 70 feet AGL within Extended Approach/Departure Zone; or
- 150 feet AGL within Sideline Safety or Traffic Pattern Zone.

The project would include widening of Corral Hollow Road, associated street lighting, and replacement of two bridges (one over the Delta Mendota Canal and one over the California Aqueduct). The roadway widening would not conflict with action 9. The bridge over the California Aqueduct would be located in Compatibility Zone 7 (Traffic Pattern Zone). This bridge would not be over 150 feet AGL, as required by action 9 above. The bridge over the Delta Mendota Canal would be located in Compatibility Zones 2 (Inner Approach/Departure Zone) and 3 (Inner Turning Zone). This bridge would not be over 35 feet AGL, as required by action 9 above. Similarly, if required in Compatibility Zone 2 (Inner Approach/Departure Zone), the roadway lighting would not be over 35 feet AGL.

The proposed roadway widening, traffic signals, and replacement of bridges are not prohibited within the aforementioned Compatibility Zones. The proposed uses and object heights would be allowed within all of the Compatibility Zones. Therefore, the proposed project would not conflict with the Airport Land Use Compatibility Plan for Tracy Municipal Airport, and would not result in a safety hazard or excessive noise for people residing or working in the project area. Further, SJCOG would review the project application to confirm consistency with San Joaquin County's Aviation System Airport Land Use Compatibility Plan.

Implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

Response f): The project site currently connects to an existing network of City streets. The proposed roadway widening and circulation improvements would allow for greater emergency access relative to existing conditions. The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, impacts from project implementation would be considered ***less than significant*** relative to this topic.

Response g): The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point. The County has areas with an abundance of flashy fuels (i.e. grassland) in the foothill areas of the County. The project would not result in development of structures or housing which would subject residents, visitors, or workers to long-term wildfire danger. Therefore, impacts from project implementation would be considered ***less than significant*** relative to this topic.

X. HYDROLOGY AND WATER QUALITY

Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:		X		
(i) Result in substantial erosion or siltation on- or off-site;		X		
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;		X		
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or		X		
(iv) Impede or redirect flood flows?		X		
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

Responses to Checklist Questions

Response a): The proposed project does not contain any drainage connectivity to Waters of the US. The proposed project would not generate wastewater which would require treatment. The proposed project will not result in intensification of land uses, or the addition of structures or uses that would differ from the current General Plan. In order to ensure that stormwater runoff from the project site does not adversely increase pollutant levels in adjacent surface waters and stormwater conveyance infrastructure, the application of BMPs to effectively reduce pollutants from stormwater leaving the site during both the construction and operational phases of the project are required. As noted in the project description, a SWPPP would be required to be approved prior to construction activities pursuant to the Clean Water Act.

Through compliance with the NPDES permit requirements, and compliance with the SWPPP, the proposed project would not result in a violation of any water quality standards or waste discharge requirements. Therefore, through compliance with the NPDES, and SWPPP

requirements, the proposed project would result in a ***less than significant*** impact relative to this topic.

Response b): The proposed project would not require ground water supplies, and would not interfere with groundwater recharge. The project area is not a groundwater recharge area. As such, impacts from project implementation would be ***less than significant*** relative to this topic.

Responses c.i)-c.iv): The proposed project would not alter a stream or river. The road right of way is currently an impervious surface that drains to roadside ditches. The widening of this roadway would result in additional impervious surfaces. As a standard practice, the City requires post-project runoff to be equal to or less than pre-project runoff, which would ensure that the proposed project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

Additionally, the project is subject to the requirements of Chapter 11.34 of the Tracy Municipal Code – Stormwater Management and Discharge Control. The purpose of this Chapter is to *"Protect and promote the health, safety and general welfare of the citizens of the City by controlling non-stormwater discharges to the stormwater conveyance system, by eliminating discharges to the stormwater conveyance system from spills, dumping, or disposal of materials other than stormwater, and by reducing pollutants in urban stormwater discharges to the maximum extent practicable."*

This chapter is intended to assist in the protection and enhancement of the water quality of watercourses, water bodies, and wetlands in a manner pursuant to and consistent with the Federal Water Pollution Control Act (Clean Water Act, 33 USC Section 1251 et seq.), Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.) and NPDES Permit No. CAS000004, as such permit is amended and/or renewed.

New projects in the City of Tracy are required to provide site-specific storm drainage solutions and improvements that are consistent with the overall storm drainage infrastructure approach presented in the 2012 City of Tracy Citywide Storm Drainage Master Plan. Prior to approval of the improvement plans, a detailed storm drainage infrastructure plan shall be coordinated with the City of Tracy Development Services Department and Utilities Department for review and approval. The project's storm drainage infrastructure plans must demonstrate adequate infrastructure capacity to collect and direct all stormwater generated on the project site to the existing stormwater conveyance system, and demonstrate that the project would not result in on- or off-site flooding impacts.

In order to ensure that stormwater runoff from the project site does not adversely increase pollutant levels in adjacent surface waters and stormwater conveyance infrastructure, or otherwise degrade water quality, a SWPPP would be required. The SWPPP would require the application of BMPs to effectively reduce pollutants from stormwater leaving the site, which would ensure that stormwater runoff does not adversely increase pollutant levels, and would reduce the potential for disturbed soils and ground surfaces to result in erosion and sediment discharge into adjacent surface waters during construction and operational phases of the project.

In order to ensure that stormwater runoff generated at the project site as a result of new impervious surfaces does not exceed the capacity of the existing or planned stormwater drainage system, Mitigation Measure HYDRO-1 requires the project applicant to complete and coordinate a detailed storm drainage infrastructure plan with the City for review and approval. The project's storm drainage infrastructure plans shall, to the satisfaction of the Engineer, demonstrate

adequate infrastructure capacity to collect and direct all stormwater generated on the project site to the City's existing stormwater conveyance system, and demonstrate that the project would not result in on- or off-site flooding impacts.

The following mitigation measure would require that a storm drainage plan be designed and engineered to ensure that post-project runoff is equal to or less than pre-project runoff. Therefore, impacts from project implementation would be reduced to a ***less than significant*** level relative to this topic.

> ***Mitigation Measure HYDRO-1:*** *The project's storm drainage infrastructure plans shall, to the satisfaction of the City, demonstrate adequate infrastructure capacity to collect and direct all stormwater generated on the project site to the City's existing and future stormwater conveyance system, and demonstrate that the project would not result in on- or off-site flooding impacts.*

Response d): The project site is not within a 100-year or 200-year flood zone as delineated by FEMA. The project site is not within a tsunami or seiche zine, Development of the proposed project would not place housing or structures in a flood hazard area. As a result, the proposed project would have a ***less than significant*** impact relative to this topic.

Response e): The Water Quality Control Plan for the Central Valley Region and the 2014 Eastern San Joaquin Integrated Water Resources Master Plan (IRWMP) are the two guiding documents for water quality and sustainable groundwater management in the project area. Consistency with the two plans are discussed below.

Water Quality Control Plan for the Central Valley Region

The Water Quality Control Plan for the Central Valley Region (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where known.

As discussed above, impacts related to water quality during construction and operation would be less-than-significant with implementation of the Mitigation Measure HYDRO-1 and the project-specific SWPPP. The proposed project would create new impervious surfaces along Corral Hollow Road. The long-term operations of the proposed project would not result in long-term impacts to surface water quality from urban stormwater runoff.

2014 Eastern San Joaquin IRWMP

The 2014 Eastern San Joaquin IRWMP defines and integrates key water management strategies to establish protocols and courses of action to implement the Eastern San Joaquin Integrated Conjunctive Use Program. The 2014 Eastern San Joaquin IRWMP is an update and expansion of the 2007 IRWMP prepared for the Eastern San Joaquin Region. There has been significant progress toward implementing the goal of improving the sustainability and reliability of water supplies in the Region, but the process is ongoing and as yet incomplete. The IWRMP does not include requirements for individual projects, such as the proposed project. Instead, the IWRMP outlines projects to be carried out which achieve regional goals, such as reduced water demand, improved efficiency, improved water quality, and improved flood management.

As discussed previously, the project would not decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. The proposed project would result in new impervious surfaces along the roadway that could reduce rainwater infiltration and groundwater recharge. Rainwater which falls on the widened roadway would flow to the adjacent stormwater facilities. Additionally, the proposed project would not require ground water supplies, and, as such would not interfere with groundwater recharge.

Conclusion

Overall, implementation of the proposed project would have a ***less than significant*** impact related to conflicts with the Basin Plan and the Groundwater Management Plan.

XI. LAND USE AND PLANNING

Would the project:	***Potentially Significant Impact***	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			X	

Responses to Checklist Questions

Response a): The project site is located in the southern portion of the City of Tracy and unincorporated San Joaquin County. The project site is adjacent primarily to undeveloped land, and agricultural land. The project site would result in the widening of an existing roadway, development of traffic signals, and development of bridge replacements. Development of the project would not result in any physical barriers, such as a wall, or other division, that would divide an existing community, but would serve as an orderly extension of an existing roadway. The project would have ***no impact*** in regards to the physical division of an established community.

Response b): The key planning documents that are directly related to, or that establish a framework within which the proposed project must be consistent, include:

- City of Tracy General Plan; and
- City of Tracy Zoning Ordinance.

The proposed project would not require changes to any land use or zoning designations. Therefore, impacts to land use compatibility would be ***less than significant***.

XII. MINERAL RESOURCES

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?			X	
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?			X	

Responses to Checklist Questions

Response a): As described in the Tracy General Plan EIR, the main mineral resources found in San Joaquin County, and the Tracy Planning Area, are sand and gravel (aggregate), which are primarily used for construction materials like asphalt and concrete. According to the California Geological Survey (CGS) evaluation of the quality and quantity of these resources, the most marketable aggregate materials in San Joaquin County are found in three main areas:

- In the Corral Hollow alluvial fan deposits south of Tracy
- Along the channel and floodplain deposits of the Mokelumne River
- Along the San Joaquin River near Lathrop

Figure 4.8-1 of the General Plan EIR identifies Mineral Resource Zones (MRZs) throughout the Tracy Planning Area. The project site is located within an area designated as MRZ-2. The MRZ-2 designation applies to areas containing mineral resources. The project site is not used for mineral extraction. The project site includes an existing roadway which would be widened as part of the proposed project. The project site fronts a newly proposed development project (Tracy Hills) that has recently obtained entitlements for the construction. The purpose of the project is to upgrade a second phase of Corral Hollow Road to accommodate the existing and future transportation functions anticipated through General Plan buildout. As such, mineral extraction in the project are near existing and future residential and other urban uses is highly unlikely. Therefore, the project would not result in the loss of availability of a known mineral resource. This impact is considered ***less than significant***.

XIII. NOISE

Would the project result in:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X	

Key Noise Terms

Acoustics The science of sound.

Ambient Noise The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.

Attenuation The reduction of noise.

A-Weighting A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.

Decibel or dB Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.

CNEL Community noise equivalent level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.

Frequency The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.

Impulsive Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.

L_{dn} Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.

L_{eq} Equivalent or energy-averaged sound level. This section provides a general description of the existing noise sources in the project vicinity, a discussion of the regulatory setting, and identifies potential noise impacts associated with the proposed project. Project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment.

L_{max} The highest root-mean-square (RMS) sound level measured over a given period of time.

$L_{(n)}$ The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50 percent of the time during the one hour period.

Loudness A subjective term for the sensation of the magnitude of sound.

Noise Unwanted sound.

SEL Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.

Responses to Checklist Questions

Response a): Construction Noise

Construction activities have the potential to create temporary, or periodic increases in ambient noise levels in the project vicinity above levels existing without the project. During the construction of the project, including the roadway widening and bridge construction, noise from construction activities would add to the noise environment in the project vicinity. The site improvements and roadway construction would include the use of heavy equipment including grading and compacting that can generate noise. Noise would also be generated during the construction phase by increased truck traffic on area roadways. A significant project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration and would likely occur primarily during daytime hours.

Table 5 provides a list of the types of equipment which may be associated with construction activities and the associated noise levels. One residence is located along Corral Hollow Road, northwest of the California Aqueduct. The other nearby residences are located northeast and northwest of the Corral Hollow Road and Linne Road intersection. The nearest residential receptors would be located roughly 25 feet or further from construction activities, although most construction activities would be over 500 feet from a receptor.

Table 5: Construction Equipment Noise

Type of Equipment	*Predicted Noise Level (L_{max} Db)*				*Distances To Noise Contours (Feet)*	
	Noise Level At 50'	*Noise Level At 100'*	*Noise Level At 50'*	*Noise Level At 100'*	*Noise Level At 50'*	*Noise Level At 100'*
Backhoe	78	72	66	60	126	223
Compactor	83	77	71	65	223	397
Compressor (air)	78	72	66	60	126	223
Dozer	82	76	70	64	199	354
Dump Truck	76	70	64	58	100	177
Excavator	81	75	69	63	177	315
Generator	81	75	69	63	177	315

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006.

Noise sensitive receptors near the construction site would, at times, experience elevated noise levels from construction activities; however, construction-related noise generally would occur

during daytime hours only. General Plan Noise Element Policy 4 (Goal N-1.2) establishes the following construction requirements:

> *All construction in the vicinity of noise sensitive land uses, such as residences, hospitals, or convalescent homes, shall be limited to daylight hours or 7:00 a.m. to 7:00 p.m. In addition, the following construction noise control measures shall be included as requirements at construction sites to minimize construction noise impacts:*
>
> - *Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.*
> - *Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction area.*
> - *Utilize "quiet" air compressors and other stationary noise sources where technology exists.*

Implementation of these required measures (i.e., engine muffling, placement of construction equipment, and strategic stockpiling and staging of construction vehicles), and compliance with the City Municipal Code requirements, would serve to further reduce exposure to construction noise levels. Adherence to City General Plan, City Municipal Code Title 4.12, Article 9 (Noise Control Ordinance), would minimize any impacts from noise during construction. Requirements stated above are adopted by the City as Conditions of Approval (COAs) for all new projects prior to project approval.

Additionally, the project site and vicinity were assumed for urban development as part of the City's General Plan and General Plan EIR. Build-out of the City's General Plan land use map, including the proposed roadway widening, will inherently result in construction and construction-related noise levels. Adherence to the City General Plan and City Municipal Code (Title 4.12, Article 9, Noise Control Ordinance), would minimize any impacts from noise during construction to the extent practicable. Because of the nature time and duration of construction activities near sensitive receptors noise impacts from construction activities would cease upon project completion. Therefore, implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

Response b): Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by several factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 6 indicates that the threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). One-half this minimum

threshold or 0.1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

Table 6: Effects of Vibration on People and Buildings

Peak Particle Velocity		Human Reaction	Effect on Buildings
mm/sec.	in./sec.		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORN VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

The vibration-generating activities typically happen during construction when activities such as grading and road construction occur. Sensitive receptors which could be impacted by construction-related vibrations, especially vibratory compactors/rollers, are located approximately 25 feet or further from the activity, although most activities would be over 500 feet from a receptor. At this distance, construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 7 shows the typical vibration levels produced by construction equipment.

Table 7: Vibration Levels for Varying Construction Equipment

Type of Equipment	Peak Particle Velocity @ 25 feet (inches/second)	Peak Particle Velocity @ 100 feet (inches/second)
Large Bulldozer	0.089	0.011
Loaded Trucks	0.076	0.010
Small Bulldozer	0.003	0.000
Auger/drill Rigs	0.089	0.011
Jackhammer	0.035	0.004
Vibratory Hammer	0.070	0.009
Vibratory Compactor/roller	0.210	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006.

Table 7 data indicate that construction vibration levels anticipated for the proposed project are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors.

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading and roadway construction occur. Sensitive receptors could be impacted by construction related vibrations. The nearest residential receptors would be located roughly 25 feet or further from construction activities, although most construction activities would be over 500 feet from a receptor. At these distances, construction vibrations are not predicted to exceed acceptable levels. The use of construction equipment near existing receptors will not exceed the 0.1 in/sec threshold of annoyance criteria and threshold for structure damage of 0.2 in/sec. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours. Therefore, this impact would be considered ***less than significant***.

Response c): The project is located within the airport land use area for the Tracy Municipal Airport, which is located west of the project site. Tracy Municipal Airport is owned and operated by the City of Tracy. Located within the city limits, this general aviation airport provides a range of aviation services including general aviation and jet fuel sales, and hangar and tie down rentals. Approximately 500 feet of Corral Hollow Road in the project area is located in the 95 dB single event contour for this airport. The remainder of the site is not in the single event contour.

The project does not include any permanent residents or workers. However, in the short-term, workers along the approximately 500-feet stretch of Corral Hollow Road within the single event contour would likely be subject to noise levels up to 95 dB as a result of the Tracy Municipal Airport operations. These noise levels would be short-term and infrequent. Additionally, as shown in Table 5, the construction workers are subject to loud noises as a result of construction equipment operation. Noise levels can range from 60 dB to 82 dB depending on the equipment type. The infrequent, short-term noise exposure along a small portion of the overall project footprint would not result in health or safety concerns for the workers in the area. Additionally, construction workers typically use safety equipment, such as ear plugs or earmuffs, which can reduce noise levels during particularly noisy activities. Implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

XIV. POPULATION AND HOUSING

Would the project:	***Potentially Significant Impact***	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

Responses to Checklist Questions

Response a): The project does not propose any housing that would result in direct population growth. However, projects that do not directly induce population growth still have the potential to result in indirect population growth through the creation of jobs or the extension of infrastructure into areas that were not previously served. The proposed project will not result in intensification of land uses, or the addition of structures or uses that would differ from the current General Plan. The project will expand the roadway system. However, improvements to the roadway system created by the project represent a planned effort to coordinate improvements to accommodate the future buildout under the General Plan. Any individual future projects would have to be consistent with the General Plan and are subject to environmental review under CEQA. No substantial population increases would result from implementation of the proposed project. Therefore, implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

Response b): The project site is located within the Tracy city limits and contains developed roadways, undeveloped land, and agricultural land. The proposed project would not displace housing or people. Implementation of the proposed project would have ***no impact*** relative to this topic.

XV. PUBLIC SERVICES

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?				X
Police protection?				X
Schools?				X
Parks?				X
Other public facilities?				X

Responses to Checklist Questions

Response a):

Fire Protection

The project site is currently under the jurisdiction of the Tracy Fire Department. The proposed project would not include additional residential units, or people to the City of Tracy. The proposed project will not result in intensification of land use, or the addition of structures or uses that would differ from the current General Plan. No additional demand for fire protection will be created by the project. Implementation of the proposed project wouldn't require additional demands for fire protection services from the Tracy Fire Department. Therefore, implementation of the proposed project will have ***no impact*** to this topic.

Police Protection

The project site is currently under the jurisdiction of the Tracy Police Department. The proposed project would not include additional residential units, or people to the City of Tracy. The proposed project will not result in intensification of land use, or the addition of structures or uses that would differ from the current General Plan. No additional demand for police protection will be created by the project. Implementation of the proposed project wouldn't require additional demands for police protection services from the Tracy Police Department. Therefore, implementation of the proposed project will have ***no impact*** relative to this topic.

Schools

Schools within the City of Tracy are part of the Tracy Unified School District. The proposed project does not include any residential units, or any other type of use that would directly, or indirectly increase the student population in the area. The proposed project will not result in intensification of land use, or the addition of structures or uses that would differ from the current General Plan. Therefore, the proposed project would not result in the need for new school facilities, thus it is anticipated to have ***no impact*** relative to this topic.

Parks

The proposed project does not include any residential units or any other type of use that would directly, or indirectly increase the population, or park demand in the area, or include any other

type of use that would directly increase the park needs. The proposed project will not result in intensification of land use, or the addition of structures or uses that would differ from the current General Plan. Therefore, the proposed project would not have the potential to require construction of additional park and recreational facilities which may cause substantial adverse physical environmental impacts. This, it is anticipated to have ***no impact*** relative to this topic.

Other Public Facilities

The proposed project would not result in a need for other public facilities that are not addressed in the Utilities and Service Section. The proposed project does not trigger the need for new facilities associated with other public services. The proposed project will not result in intensification of land use, or the addition of structures or uses that would differ from the current General Plan. Consequently, new facilities or other public services are not proposed at this time. This, it is anticipated to have ***no impact*** relative to this topic.

XVI. RECREATION

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

Responses to Checklist Questions

Responses a-b): The proposed project does not include any residential units or any other type of use that would increase the population, or park and recreation facility demand in the area, or include any other type of use that would directly increase the use of park and recreation facilities. The proposed project will not result in intensification of land uses, or the addition of structures or uses that would differ from the current General Plan. Therefore, the proposed project would not significantly increase the use of existing facilities. Furthermore, it is not anticipated that any substantial physical deterioration of existing facilities would occur, or be accelerated. Implementation of the proposed project would have a ***no impact*** relative to this topic.

XVII. TRANSPORTATION

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?			X	
b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?			X	

Responses to Checklist Questions

Responses a-b): No new structures, uses, or visitor serving areas are included in the project. Therefore, the project is not expected to result in an overall increase in vehicle trips within the area. The project is not anticipated to increase vehicle trips or congestion, or decrease LOS. The project would include sidewalks and bicycle facilities along the widened roadway. Therefore, impacts are considered ***less than significant*** relative to this topic.

Response c): No site circulation or access issues have been identified that would cause a traffic safety problem/hazard or any unusual traffic congestion or delay that could impede emergency vehicles or emergency access. The project does not include any design features or incompatible uses that pose a significant safety risk. The project would create no adverse impacts to emergency vehicle access or circulation. Therefore, project implementation would have a ***less than significant*** impact relative to this topic.

Response d): No site circulation or access issues have been identified that would cause a traffic safety problem/hazard or any unusual traffic congestion or delay that could impede emergency vehicles or emergency access. The project does not include any design features or incompatible uses that pose a significant safety risk. The project would create no adverse impacts to emergency vehicle access or circulation. Circulation would be improved with the proposed roadway widening and traffic signals. Therefore, project implementation would have a ***less than significant*** impact relative to this topic.

XVIII. TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?		X		
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resources to a California Native American tribe.		X		

Responses to Checklist Questions

Responses a.i), a.ii): Although no tribal cultural resources have been documented in the project site, the project is located in a region where significant cultural resources have been recorded and there remains a potential that undocumented archaeological resources that may meet the tribal cultural resource definition could be unearthed or otherwise discovered during ground-disturbing and construction activities. Examples of significant archaeological discoveries that may meet the tribal cultural resource definition would include villages and cemeteries. Due to the possible presence of undocumented tribal cultural resources within the project site, construction-related impacts on tribal cultural resources would be potentially significant. The implementation of the following mitigation measure would ensure that this potential impact is reduced to a ***less than significant*** level regarding this topic.

> ***Mitigation Measure:*** *Implement Mitigation Measure CUL-1. This mitigation measure is previously presented in Response a of Section V, Cultural Resources, and is re-produced below:*
>
> ***Mitigation Measure CUL-1:*** *If any cultural resources, including prehistoric or historic artifact, or other indications of archaeological resources are found during grading and construction activities, all work shall be halted immediately within a 200-foot radius of the discovery until the an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, has evaluated the find(s).*
>
> *Work cannot continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR; or 3) not a significant Public Trust Resource.*
>
> *If Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the Applicant's expense.*

XIX. UTILITIES AND SERVICE SYSTEMS

Would the project:	***Potentially Significant Impact***	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Require or result in the relocation or construction of new or expanded water, wastewater or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments?			X	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

Responses to Checklist Questions

Response a): The proposed project will not result in intensification of land use, or the addition of structures or uses that would differ from the current General Plan. No additional demand for water, wastewater, storm water drainage, electric power, natural gas, or telecommunications facilities will be created by the project. The project includes widening of Corral Hollow, installation of traffic signals, and bridge replacement. However, improvements to the roadway system created by the project represent a planned effort to coordinate improvements to accommodate the future buildout of the General Plan. Any individual future projects would have to be consistent with the General Plan and are subject to environmental review under CEQA. Therefore, impacts from the proposed project are considered ***less than significant*** relative to this topic.

Response b): As previously stated, the proposed project will not result in intensification of land use, or the addition of structures or uses that would differ from the current General Plan. No additional demand for water supplies will be created by the project operation. The project includes widening of Corral Hollow, installation of traffic signals, and bridge replacement. Improvements to the roadway system created by the project represent a planned effort to coordinate improvements to accommodate the future buildout of the General Plan. Any individual future projects would have to be consistent with the General Plan and are subject to environmental review under CEQA. However, limited amounts of water would be necessary during the construction phase of the project, but this would be a temporary use of water for construction related activities, and would not be in substantial amounts. Therefore, the proposed project would not result in insufficient water supplies available to serve the project from existing

entitlements and resources, and the proposed project would result in a ***less than significant*** impact to water supplies.

Response c): As previously stated, the proposed project will not result in intensification of land use, or the addition of structures or uses that would differ from the current General Plan. No additional demand for wastewater treatment, or other water treatment facilities will be created by the project. The project will extend utility systems. However, improvements to utility systems created by the project represent a planned effort to coordinate improvements to accommodate the future buildout of the General Plan. Any individual future projects would have to be consistent with the General Plan and are subject to environmental review under CEQA. Therefore, implementation of the proposed project will have a **less than significant impact** relative to this topic.

Responses d), e): As previously stated, the proposed project will not result in intensification of land use, or the addition of structures or uses that would differ from the current General Plan. No additional demand for landfill, or other waste facilities will be created by the project operation. The project includes widening of Corral Hollow, installation of traffic signals, and bridge replacement. However, limited amounts of solid waste could be generated during the construction phase of the project, but this would be temporary, and would not be in substantial amounts, and would not interfere with a waste facility's permitted capacity. The project would not interfere with regulations related to solid waste. Therefore, there implementation of the proposed project will have a ***less than significant*** impact relative to this topic.

XX. WILDFIRE

Would the project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
d) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?			X	
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?			X	
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?			X	

Responses to Checklist Questions

Responses a, c) The project includes widening of Corral Hollow, installation of traffic signals, and bridge replacement. The proposed roadway improvements would allow for decreased fire risk relative to existing conditions. The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The proposed improvements would require long-term roadway maintenance; however, the roadway improvements would not exacerbate fire risk. Therefore, impacts from project implementation would be considered ***less than significant*** relative to this topic.

Response b) The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point. The County has areas with an abundance of flashy fuels (i.e. grassland) in the County. The project would not result in development of structures or housing which would subject residents, visitors, or workers to long-term wildfire danger. Therefore, impacts from project implementation would be considered ***less than significant*** relative to this topic.

Response d) The project does not propose any housing that would result in direct population growth. However, projects that do not directly induce population growth still have the potential to result in indirect population growth through the creation of jobs or the extension of infrastructure into areas that were not previously served. The proposed project will not result in intensification of land uses, or the addition of structures or uses that would differ from the current General Plan. The project will expand the roadway system. As such, exposure to people or structures to any significant risk would not result. Therefore, impacts from project implementation would be considered ***less than significant*** relative to this topic.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

Responses to Checklist Questions

Response a): This Initial Study includes an analysis of the project impacts associated with aesthetics, agricultural and forest resources, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic, tribal cultural resources, utilities and service systems, and wildfire. The analysis covers a broad spectrum of topics relative to the potential for the proposed project to have environmental impacts. This includes the potential for the proposed project to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. It was found that the proposed project would have either no impact, a less than significant impact, or a less than significant impact with the implementation of mitigation measures.

For the reasons presented throughout this Initial Study, the proposed project would not substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. With the implementation of mitigation measures presented in this Initial Study, the proposed project would be ***less than significant*** relative to this topic.

Response b): This Initial Study includes an analysis of the project impacts associated with aesthetics, agricultural and forest resources, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic, tribal cultural resources, utilities and service systems, and wildfire. The analysis covers a broad spectrum of topics relative to the potential for the proposed project to have environmental impacts. It was found that the proposed project would have either no impact, a less than significant impact, or a less than significant impact with the implementation of mitigation measures. These mitigation measures would also function to reduce the project's contribution to cumulative impacts.

The project would not increase the population or the use of public services and systems, and would not conflict with any applicable plans for the area. The proposed project would increase the capacity of the roadway system, which could allow for future development near the project area. However, all uses accommodated by the extension of utilities would be in accordance with the General Plan and land use map. Furthermore, any future projects would be subject to environmental review under CEQA. There are no significant cumulative or cumulatively considerable effects that are identified associated with the proposed project after the implementation of all mitigation measures presented in this Initial Study. With the implementation of all mitigation measures presented in this Initial Study, the proposed project would have a ***less than significant*** impact relative to this topic.

Response c): The construction phase could affect surrounding neighbors through increases in air emissions and noise; however, the construction effects are temporary and are not substantial. The operational phase air emissions, and noise would be similar to the existing conditions around the project site. Therefore, the operational phase of the proposed project would not cause substantial adverse effects on human beings. Implementation of the proposed project would have a ***less than significant*** impact relative to this topic.

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Appendix A

SMAQMD Roadway Construction Emissions Model Outputs and Energy Calculations

SMAQMD Roadway Construction Emissions Model Outputs:

Widening

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Corral Hollow

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.37	11.33	13.81	72.61	0.61	72.00	15.52	0.54	14.98	0.02	2,239.36	0.60	0.03	2,262.07
Grading/Excavation	6.29	49.50	69.55	75.05	3.05	72.00	17.74	2.76	14.98	0.10	9,744.45	2.89	0.10	9,847.52
Drainage/Utilities/Sub-Grade	3.78	31.92	37.27	73.82	1.82	72.00	16.67	1.69	14.98	0.06	5,761.75	1.22	0.06	5,810.59
Paving	1.89	19.05	17.54	1.04	1.04	0.00	0.93	0.93	0.00	0.03	3,020.49	0.77	0.05	3,055.98
Maximum (pounds/day)	6.29	49.50	69.55	75.05	3.05	72.00	17.74	2.76	14.98	0.10	9,744.45	2.89	0.10	9,847.52
Total (tons/construction project)	0.37	3.08	3.95	5.57	0.18	5.39	1.29	0.17	1.12	0.01	580.04	0.15	0.01	585.84

Notes:

Project Start Year ->	2020
Project Length (months) ->	8
Total Project Area (acres) ->	18
Maximum Area Disturbed/Day (acres) ->	4
Water Truck Used? ->	No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	360	0
Grading/Excavation	0	0	0	0	960	0
Drainage/Utilities/Sub-Grade	0	0	0	0	720	0
Paving	0	20	0	30	560	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Corral Hollow

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.10	0.12	0.64	0.01	0.63	0.14	0.00	0.13	0.00	19.71	0.01	0.00	18.06
Grading/Excavation	0.22	1.74	2.45	2.64	0.11	2.53	0.62	0.10	0.53	0.00	343.00	0.10	0.00	314.46
Drainage/Utilities/Sub-Grade	0.12	0.98	1.15	2.27	0.06	2.22	0.51	0.05	0.46	0.00	177.46	0.04	0.00	162.36
Paving	0.02	0.25	0.23	0.01	0.01	0.00	0.01	0.01	0.00	0.00	39.87	0.01	0.00	36.60
Maximum (tons/phase)	0.22	1.74	2.45	2.64	0.11	2.53	0.62	0.10	0.53	0.00	343.00	0.10	0.00	314.46
Total (tons/construction project)	0.37	3.08	3.95	5.57	0.18	5.39	1.29	0.17	1.12	0.01	580.04	0.15	0.01	531.47

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model **Version 9.0.0**
Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Corral Hollow	
Construction Start Year	2020	Enter a Year between 2014 and 2040 (inclusive)
Project Type	2	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	8.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	1.61	miles
Total Project Area	18.24	acres
Maximum Area Disturbed/Day	3.60	acres
Water Trucks Used?	2	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	0.00	0.00
Asphalt	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	20.00	0.00

Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation
Off-road Equipment Emissions Mitigation	No Mitigation

Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation).
Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		0.80		1/1/2020
Grading/Excavation		3.20		1/26/2020
Drainage/Utilities/Sub-Grade		2.80		5/3/2020
Paving		1.20		7/28/2020
Totals (Months)	8			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
User Input					
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grading/Excavation (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Draining/Utilities/Sub-Grade (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Paving (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
User Input					
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		1	30.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grading/Excavation (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Draining/Utilities/Sub-Grade (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Paving (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.03	0.09	0.51	0.02	0.01	0.00	125.14	0.00	0.02	131.04
Tons per const. Period - Paving	0.00	0.00	0.01	0.00	0.00	0.00	1.65	0.00	0.00	1.73
Total tons per construction project	0.00	0.00	0.01	0.00	0.00	0.00	1.65	0.00	0.00	1.73

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values		
User Input				
Miles/ one-way trip		20	Calculated Daily Trips	Calculated Daily VMT
One-way trips/day		2		
No. of employees: Grubbing/Land Clearing		9	18	360.00
No. of employees: Grading/Excavation		24	48	960.00
No. of employees: Drainage/Utilities/Sub-Grade		18	36	720.00
No. of employees: Paving		14	28	560.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67
Grading/Excavation (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67
Paving (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67
Grubbing/Land Clearing (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34
Grading/Excavation (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34
Draining/Utilities/Sub-Grade (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34
Paving (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.07	1.09	0.10	0.04	0.02	0.00	281.48	0.01	0.01	284.20
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	2.48	0.00	0.00	2.50
Pounds per day - Grading/Excavation	0.18	2.91	0.28	0.10	0.04	0.01	750.61	0.02	0.02	757.87
Tons per const. Period - Grading/Excavation	0.01	0.10	0.01	0.00	0.00	0.00	26.42	0.00	0.00	26.68
Pounds per day - Drainage/Utilities/Sub-Grade	0.14	2.18	0.21	0.07	0.03	0.01	562.96	0.02	0.02	568.40
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.07	0.01	0.00	0.00	0.00	17.34	0.00	0.00	17.51
Pounds per day - Paving	0.11	1.70	0.16	0.06	0.02	0.00	437.85	0.01	0.01	442.09
Tons per const. Period - Paving	0.00	0.02	0.00	0.00	0.00	0.00	5.78	0.00	0.00	5.84
Total tons per construction project	0.01	0.20	0.02	0.01	0.00	0.00	52.02	0.00	0.00	52.52

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT
User Input								
Grubbing/Land Clearing - Exhaust		0		5	0		8.00	0.00
Grading/Excavation - Exhaust		0		5	0		8.00	0.00
Drainage/Utilities/Subgrade		0		5	0		8.00	0.00
Paving		0		5	0		8.00	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grading/Excavation (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Draining/Utilities/Sub-Grade (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Paving (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		3.60	72.00	0.63	14.98	0.13
Fugitive Dust - Grading/Excavation		3.60	72.00	2.53	14.98	0.53
Fugitive Dust - Drainage/Utilities/Subgrade		3.60	72.00	2.22	14.98	0.46

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Crawler Tractors	0.58	2.50	7.45	0.28	0.26	0.01	760.39	0.25
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Excavators	0.49	6.54	4.83	0.23	0.21	0.01	1,000.24	0.32
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4		Model Default Tier	Signal Boards	0.23	1.20	1.44	0.06	0.06	0.00	197.25	0.02
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day		1.30	10.24	13.71	0.57	0.53	0.02	1,957.88	0.59
	Grubbing/Land Clearing	tons per phase		0.01	0.09	0.12	0.01	0.00	0.00	17.23	0.01

Grading/Excavation	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0		Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Crawler Tractors	0.58	2.50	7.45	0.28	0.26	0.01	760.39	0.25
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Model Default Tier	Excavators	0.74	9.80	7.24	0.35	0.32	0.02	1,500.36	0.49
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Graders	0.95	3.63	12.65	0.40	0.37	0.01	1,285.44	0.42
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Rollers	0.42	3.79	4.16	0.27	0.24	0.01	508.13	0.16
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Rubber Tired Loaders	0.37	1.64	4.41	0.15	0.13	0.01	605.16	0.20
	2		Model Default Tier	Scrapers	1.99	14.92	23.50	0.92	0.84	0.03	2,934.03	0.95
	4		Model Default Tier	Signal Boards	0.23	1.20	1.44	0.06	0.06	0.00	197.25	0.02
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4		Model Default Tier	Tractors/Loaders/Backhoes	0.84	9.12	8.42	0.53	0.49	0.01	1,203.08	0.39
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation		pounds per day	6.11	46.59	69.27	2.95	2.72	0.09	8,993.84	2.87
	Grading/Excavation		tons per phase	0.22	1.64	2.44	0.10	0.10	0.00	316.58	0.10

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Air Compressors	0.32	2.44	2.25	0.15	0.15	0.00	375.26	0.03
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Generator Sets	0.40	3.71	3.48	0.20	0.20	0.01	623.04	0.04
	1		Model Default Tier	Graders	0.48	1.81	6.33	0.20	0.19	0.01	642.72	0.21
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Plate Compactors	0.04	0.21	0.25	0.01	0.01	0.00	34.48	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pumps	0.42	3.76	3.53	0.21	0.21	0.01	623.04	0.04
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Rough Terrain Forklifts	0.13	2.30	1.73	0.07	0.07	0.00	333.68	0.11
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Scrapers	0.99	7.46	11.75	0.46	0.42	0.02	1,467.02	0.47
	4		Model Default Tier	Signal Boards	0.23	1.20	1.44	0.06	0.06	0.00	197.25	0.02
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Model Default Tier	Tractors/Loaders/Backhoes	0.63	6.84	6.32	0.40	0.37	0.01	902.31	0.29
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade		pounds per day	3.65	29.73	37.06	1.75	1.66	0.05	5,198.79	1.21
	Drainage/Utilities/Sub-Grade		tons per phase	0.11	0.92	1.14	0.05	0.05	0.00	160.12	0.04

Paving	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pavers	0.26	2.90	2.81	0.14	0.13	0.00	455.27	0.15
	1		Model Default Tier	Paving Equipment	0.21	2.53	2.14	0.11	0.10	0.00	394.53	0.13
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Rollers	0.42	3.79	4.16	0.27	0.24	0.01	508.13	0.16
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4		Model Default Tier	Signal Boards	0.23	1.20	1.44	0.06	0.06	0.00	197.25	0.02
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Model Default Tier	Tractors/Loaders/Backhoes	0.63	6.84	6.32	0.40	0.37	0.01	902.31	0.29
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving		pounds per day	1.74	17.26	16.87	0.96	0.89	0.03	2,457.49	0.75
	Paving		tons per phase	0.02	0.23	0.22	0.01	0.01	0.00	32.44	0.01
Total Emissions all Phases (tons per construction period) =>				0.36	2.87	3.92	0.18	0.16	0.01	526.37	0.15

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	768.59
0.00	0.00
0.01	1,011.02
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	198.26
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	1,977.86
0.00	17.41

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	768.59
0.00	0.00
0.01	1,516.53
0.00	0.00
0.00	0.00
0.01	1,299.27
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	513.61
0.00	0.00
0.00	0.00
0.01	611.69
0.03	2,965.67
0.00	198.26
0.00	0.00
0.00	0.00
0.00	0.00
0.01	1,216.03
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.08	9,089.65
0.00	319.96

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	376.83
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	625.31
0.01	649.64
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	34.65
0.00	0.00
0.00	625.36
0.00	0.00
0.00	337.28
0.00	0.00
0.00	0.00
0.01	1,482.83
0.00	198.26
0.00	0.00
0.00	0.00
0.00	0.00
0.01	912.02
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.04	5,242.19
0.00	161.46

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	460.18
0.00	398.78
0.00	0.00
0.00	0.00
0.00	0.00
0.00	513.61
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	198.26
0.00	0.00
0.00	0.00
0.00	0.00
0.01	912.02
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	2,482.85
0.00	32.77
0.00	531.59

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

Grubbing/Land Clearing

Equipment Type	Number of Vehicles	Tier	HP

Grading/Excavation

Equipment Type	Number of Vehicles	Tier	HP

Drainage/Utilities/Subgrade

Equipment Type	Number of Vehicles	Tier	HP

Paving

Equipment Type	Number of Vehicles	Tier	HP

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

Year	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0704	-	-	-	-	2.5553	-	-	-	-	0.2855
2015	0.0597	-	-	-	-	2.2699	-	-	-	-	0.2490
2016	0.0491	-	-	-	-	1.9702	-	-	-	-	0.2095
2017	0.0405	-	-	-	-	1.7329	-	-	-	-	0.1791
2018	0.0335	-	-	-	-	1.5296	-	-	-	-	0.1530
2019	0.0279	-	-	-	-	1.3662	-	-	-	-	0.1307
2020	0.0236	0.0236	0.0236	0.0236	0.0236	1.2220	1.2220	1.2220	1.2220	1.2220	0.1123
2021	0.0204	-	-	-	-	1.1018	-	-	-	-	0.0968
2022	0.0178	-	-	-	-	1.0001	-	-	-	-	0.0838
2023	0.0154	-	-	-	-	0.9126	-	-	-	-	0.0726
2024	0.0134	-	-	-	-	0.8386	-	-	-	-	0.0632
2025	0.0117	-	-	-	-	0.7754	-	-	-	-	0.0554
2026	0.0103	-	-	-	-	0.7225	-	-	-	-	0.0491
2027	0.0091	-	-	-	-	0.6774	-	-	-	-	0.0437
2028	0.0081	-	-	-	-	0.6398	-	-	-	-	0.0393
2029	0.0072	-	-	-	-	0.6075	-	-	-	-	0.0355
2030	0.0065	-	-	-	-	0.5801	-	-	-	-	0.0324
2031	0.0059	-	-	-	-	0.5565	-	-	-	-	0.0297
2032	0.0053	-	-	-	-	0.5366	-	-	-	-	0.0275
2033	0.0048	-	-	-	-	0.5196	-	-	-	-	0.0257
2034	0.0044	-	-	-	-	0.5049	-	-	-	-	0.0242
2035	0.0041	-	-	-	-	0.4922	-	-	-	-	0.0229
2036	0.0037	-	-	-	-	0.4811	-	-	-	-	0.0219
2037	0.0035	-	-	-	-	0.4719	-	-	-	-	0.0211
2038	0.0033	-	-	-	-	0.4637	-	-	-	-	0.0203
2039	0.0030	-	-	-	-	0.4566	-	-	-	-	0.0197
2040	0.0029	-	-	-	-	0.4506	-	-	-	-	0.0191
2041	0.0027					0.4452					0.0187
2042	0.0026					0.4404					0.0183
2043	0.0025					0.4367					0.0180
2044	0.0024					0.4339					0.0178
2045	0.0023					0.4317					0.0177
2046	0.0023					0.4300					0.0176
2047	0.0023					0.4286					0.0175
2048	0.0023					0.4274					0.0174
2049	0.0022					0.4268					0.0174
2050	0.0022					0.4264					0.0174
Total		0.0236	0.0236	0.0236	0.0236		1.2220	1.2220	1.2220	1.2220	

Heavy-Heavy Duty Diesel Truck

Water Truck Commute Emissions (EMFAC2017 - web 1.0.2, T7 Single Unit Construction Truck)

Year	ROG	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	1.8521	-	-	-	-	4.0026	-	-	-	-	15.4709
2015	1.5946	-	-	-	-	3.4621	-	-	-	-	13.7491
2016	1.2921	-	-	-	-	2.8379	-	-	-	-	11.7429
2017	1.0636	-	-	-	-	2.3588	-	-	-	-	10.5229
2018	0.9069	-	-	-	-	2.0416	-	-	-	-	9.6970
2019	0.7863	-	-	-	-	1.7985	-	-	-	-	9.0623
2020	0.5270	0.5270	0.5270	0.5270	0.5270	1.2976	1.2976	1.2976	1.2976	1.2976	7.5546
2021	0.4260	-	-	-	-	1.1373	-	-	-	-	6.4922
2022	0.1785	-	-	-	-	0.6644	-	-	-	-	4.7102
2023	0.0441	-	-	-	-	0.4262	-	-	-	-	3.5373
2024	0.0423	-	-	-	-	0.4266	-	-	-	-	3.4943
2025	0.0406	-	-	-	-	0.4273	-	-	-	-	3.4600
2026	0.0391	-	-	-	-	0.4279	-	-	-	-	3.4290
2027	0.0378	-	-	-	-	0.4281	-	-	-	-	3.4003
2028	0.0367	-	-	-	-	0.4288	-	-	-	-	3.3809
2029	0.0359	-	-	-	-	0.4297	-	-	-	-	3.3699
2030	0.0351	-	-	-	-	0.4306	-	-	-	-	3.3633
2031	0.0345	-	-	-	-	0.4315	-	-	-	-	3.3580
2032	0.0339	-	-	-	-	0.4322	-	-	-	-	3.3517
2033	0.0334	-	-	-	-	0.4325	-	-	-	-	3.3446
2034	0.0330	-	-	-	-	0.4325	-	-	-	-	3.3345
2035	0.0326	-	-	-	-	0.4321	-	-	-	-	3.3228
2036	0.0323	-	-	-	-	0.4320	-	-	-	-	3.3141
2037	0.0321	-	-	-	-	0.4317	-	-	-	-	3.3050
2038	0.0319	-	-	-	-	0.4314	-	-	-	-	3.2967
2039	0.0317	-	-	-	-	0.4312	-	-	-	-	3.2899
2040	0.0315	-	-	-	-	0.4308	-	-	-	-	3.2821
2041	0.0314					0.4305					3.2754
2042	0.0313					0.4302					3.2703
2043	0.0312					0.4300					3.2653
2044	0.0311					0.4298					3.2610
2045	0.0310					0.4296					3.2578
2046	0.0309					0.4295					3.2551
2047	0.0309					0.4294					3.2533
2048	0.0309					0.4293					3.2519
2049	0.0309					0.4292					3.2510

2050	0.0308					0.4292					3.2504
Total		0.5270	0.5270	0.5270	0.5270		1.2976	1.2976	1.2976	1.2976	

Year	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0055	-	-	-	-	0.5214	-	-	-	-	0.0236
2015	0.0055	-	-	-	-	0.5173	-	-	-	-	0.0237
2016	0.0055	-	-	-	-	0.5163	-	-	-	-	0.0238
2017	0.0056	-	-	-	-	0.5153	-	-	-	-	0.0239
2018	0.0056	-	-	-	-	0.5147	-	-	-	-	0.0239
2019	0.0055	-	-	-	-	0.5170	-	-	-	-	0.0236
2020	0.0054	0.0054	0.0054	0.0054	0.0054	0.5158	0.5158	0.5158	0.5158	0.5158	0.0232
2021	0.0052	-	-	-	-	0.5136	-	-	-	-	0.0226
2022	0.0051	-	-	-	-	0.5106	-	-	-	-	0.0220
2023	0.0049	-	-	-	-	0.5066	-	-	-	-	0.0213
2024	0.0047	-	-	-	-	0.5012	-	-	-	-	0.0205
2025	0.0044	-	-	-	-	0.4942	-	-	-	-	0.0199
2026	0.0042	-	-	-	-	0.4875	-	-	-	-	0.0193
2027	0.0040	-	-	-	-	0.4813	-	-	-	-	0.0188
2028	0.0038	-	-	-	-	0.4755	-	-	-	-	0.0184
2029	0.0036	-	-	-	-	0.4701	-	-	-	-	0.0181
2030	0.0035	-	-	-	-	0.4650	-	-	-	-	0.0178
2031	0.0033	-	-	-	-	0.4603	-	-	-	-	0.0175
2032	0.0032	-	-	-	-	0.4560	-	-	-	-	0.0174
2033	0.0030	-	-	-	-	0.4521	-	-	-	-	0.0172
2034	0.0029	-	-	-	-	0.4485	-	-	-	-	0.0171
2035	0.0028	-	-	-	-	0.4452	-	-	-	-	0.0171
2036	0.0027	-	-	-	-	0.4423	-	-	-	-	0.0170
2037	0.0026	-	-	-	-	0.4397	-	-	-	-	0.0170
2038	0.0026	-	-	-	-	0.4375	-	-	-	-	0.0171
2039	0.0025	-	-	-	-	0.4355	-	-	-	-	0.0171
2040	0.0024	-	-	-	-	0.4338	-	-	-	-	0.0171
2041	0.0024					0.4323					0.0171
2042	0.0024					0.4310					0.0172
2043	0.0023					0.4300					0.0172
2044	0.0023					0.4291					0.0173
2045	0.0023					0.4283					0.0173
2046	0.0023					0.4277					0.0173
2047	0.0023					0.4272					0.0174
2048	0.0022					0.4268					0.0174
2049	0.0022					0.4265					0.0174
2050	0.0022					0.4262					0.0174
Total		0.0054	0.0054	0.0054	0.0054		0.5158	0.5158	0.5158	0.5158	

Heavy-Heavy Duty Diesel Truck

Water Truck Commute Emissions (EMFAC2017 - web 1.0.2, T7 Single Unit Construction Truck)

Year	ROG	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0583	-	-	-	-	0.4129	-	-	-	-	2.9101
2015	0.0529	-	-	-	-	0.4082	-	-	-	-	2.8491
2016	0.0508	-	-	-	-	0.4094	-	-	-	-	2.8549
2017	0.0476	-	-	-	-	0.4102	-	-	-	-	2.8769
2018	0.0457	-	-	-	-	0.4130	-	-	-	-	2.9175
2019	0.0444	-	-	-	-	0.4157	-	-	-	-	2.9546
2020	0.0425	0.0425	0.0425	0.0425	0.0425	0.4199	0.4199	0.4199	0.4199	0.4199	3.0272
2021	0.0418	-	-	-	-	0.4228	-	-	-	-	3.0635
2022	0.0402	-	-	-	-	0.4233	-	-	-	-	3.0792
2023	0.0291	-	-	-	-	0.4046	-	-	-	-	2.9826
2024	0.0294	-	-	-	-	0.4082	-	-	-	-	3.0228
2025	0.0296	-	-	-	-	0.4118	-	-	-	-	3.0634
2026	0.0298	-	-	-	-	0.4149	-	-	-	-	3.0980
2027	0.0300	-	-	-	-	0.4172	-	-	-	-	3.1232
2028	0.0302	-	-	-	-	0.4197	-	-	-	-	3.1503
2029	0.0303	-	-	-	-	0.4221	-	-	-	-	3.1777
2030	0.0305	-	-	-	-	0.4243	-	-	-	-	3.2028
2031	0.0306	-	-	-	-	0.4263	-	-	-	-	3.2255
2032	0.0307	-	-	-	-	0.4279	-	-	-	-	3.2430
2033	0.0308	-	-	-	-	0.4291	-	-	-	-	3.2559
2034	0.0309	-	-	-	-	0.4297	-	-	-	-	3.2619
2035	0.0309	-	-	-	-	0.4299	-	-	-	-	3.2635
2036	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2652
2037	0.0309	-	-	-	-	0.4302	-	-	-	-	3.2648
2038	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2639
2039	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2635
2040	0.0309	-	-	-	-	0.4300	-	-	-	-	3.2612
2041	0.0309					0.4298					3.2588
2042	0.0309					0.4297					3.2571
2043	0.0308					0.4295					3.2551
2044	0.0308					0.4294					3.2535
2045	0.0308					0.4294					3.2526
2046	0.0308					0.4293					3.2514
2047	0.0308					0.4292					3.2507
2048	0.0308					0.4292					3.2500
2049	0.0308					0.4291					3.2496

2050	0.0308					0.4291					3.2496
Total		0.0425	0.0425	0.0425	0.0425		0.4199	0.4199	0.4199	0.4199	

	B	C	D	E	F	G	H	I	J	K	L	M
5	Emissions (g/bhp-hr)		ROG	ROG	ROG	ROG		CO	CO	CO	CO	
6	Aerial Lifts		Weighted -	Weighted -	Weighted -	Weighted -		Weighted -	Weighted -	Weighted -	Weighted	
7		ROG	Grubbing	Grading	Drainage	Paving	CO	Grubbing	Grading	Drainage	- Paving	NOx
8	2014	0.2023	-	-	-	-	3.2195	-	-	-	-	3.3728
9	2015	0.1906	-	-	-	-	3.2178	-	-	-	-	3.1134
10	2016	0.1655	-	-	-	-	3.2010	-	-	-	-	2.7222
11	2017	0.1427	-	-	-	-	3.1843	-	-	-	-	2.3637
12	2018	0.1219	-	-	-	-	3.1669	-	-	-	-	2.0636
13	2019	0.1182	-	-	-	-	3.1725	-	-	-	-	1.9766
14	2020	0.1149	0.1149	0.1149	0.1149	0.1149	3.1768	3.1768	3.1768	3.1768	3.1768	1.8686
15	2021	0.1088	-	-	-	-	3.1762	-	-	-	-	1.7437
16	2022	0.1047	-	-	-	-	3.1760	-	-	-	-	1.6266
17	2023	0.1005	-	-	-	-	3.1703	-	-	-	-	1.5481
18	2024	0.1005	-	-	-	-	3.1726	-	-	-	-	1.5279
19	2025	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
20	2026	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
21	2027	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
22	2028	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
23	2029	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
24	2030	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
25	2031	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
26	2032	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
27	2033	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
28	2034	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
29	2035	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
30	2036	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
31	2037	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
32	2038	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
33	2039	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
34	2040	0.1610	-	-	-	-	3.3440	-	-	-	-	1.4070
35	Aerial Lifts Total		0.1149	0.1149	0.1149	0.1149		3.1768	3.1768	3.1768	3.1768	

	N	O	P	Q	R	S	T	U	V
5	NOx	NOx	NOx	NOx		PM10	PM10	PM10	PM10
6	Weighted	Weighted	Weighted	Weighted -		Weighted -	Weighted -	Weighted -	Weighted -
7	- Grubbing	- Grading	- Drainage	Paving	PM10	Grubbing	Grading	Drainage	Paving
8	-	-	-	-	0.1608	-	-	-	-
9	-	-	-	-	0.1431	-	-	-	-
10	-	-	-	-	0.1119	-	-	-	-
11	-	-	-	-	0.0834	-	-	-	-
12	-	-	-	-	0.0571	-	-	-	-
13	-	-	-	-	0.0485	-	-	-	-
14	1.8686	1.8686	1.8686	1.8686	0.0416	0.0416	0.0416	0.0416	0.0416
15	-	-	-	-	0.0333	-	-	-	-
16	-	-	-	-	0.0302	-	-	-	-
17	-	-	-	-	0.0267	-	-	-	-
18	-	-	-	-	0.0265	-	-	-	-
19	-	-	-	-	0.0259	-	-	-	-
20	-	-	-	-	0.0259	-	-	-	-
21	-	-	-	-	0.0259	-	-	-	-
22	-	-	-	-	0.0259	-	-	-	-
23	-	-	-	-	0.0259	-	-	-	-
24	-	-	-	-	0.0360	-	-	-	-
25	-	-	-	-	0.0360	-	-	-	-
26	-	-	-	-	0.0360	-	-	-	-
27	-	-	-	-	0.0360	-	-	-	-
28	-	-	-	-	0.0360	-	-	-	-
29	-	-	-	-	0.0170	-	-	-	-
30	-	-	-	-	0.0170	-	-	-	-
31	-	-	-	-	0.0170	-	-	-	-
32	-	-	-	-	0.0170	-	-	-	-
33	-	-	-	-	0.0170	-	-	-	-
34	-	-	-	-	0.0120	-	-	-	-
35	1.8686	1.8686	1.8686	1.8686		0.0416	0.0416	0.0416	0.0416

Off-road Equipment Tier 4 Emission Factors

HP Bin		Emission Factor (g/bhp-hr)					
Low HP	High HP	ROG	CO	NOx	PM10	PM2.5	92
0	11	0.30	6.00	5.32	0.30	0.28	95
11	25	0.30	4.90	5.32	0.30	0.28	1.07
25	50	0.19	4.10	3.33	0.02	0.02	
50	75	0.19	3.70	3.33	0.02	0.02	
75	100	0.15	3.70	0.30	0.02	0.01	
100	175	0.15	3.70	0.30	0.02	0.01	
175	300	0.15	2.60	0.30	0.02	0.01	
300	600	0.15	2.60	0.30	0.02	0.01	
600	750	0.15	2.60	0.30	0.02	0.01	
750	1200	0.15	2.60	2.60	0.03	0.03	
1200	9999	0.15	2.60	2.60	0.03	0.03	

Note:
1. Tier 4 Emission Factors are converted from EPA Non-road Diesel Engine Standards. Available at ww
2. Assume PM2.5 is 92% of PM10.

% of PM2.5 in PM10 (from CEIDARS)
% of NOx in NMHC+NOx (from http://www.arb.ca.gov/msprog/moyer/guidelines/2005_Carl_Moyer_Guidelir
VOC/NMHC

/w.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls

nes_Part4.pdf)

Default Horsepower and Load Factor

OFFROAD Equipment Type	Horsepower	Load Factor
Aerial Lifts	63	0.31
Air Compressors	78	0.48
Bore/Drill Rigs	221	0.5
Cement and Mortar Mixers	9	0.56
Concrete/Industrial Saws	81	0.73
Cranes	231	0.29
Crawler Tractors	212	0.43
Crushing/Proc. Equipment	85	0.78
Excavators	158	0.38
Forklifts	89	0.2
Generator Sets	84	0.74
Graders	187	0.41
Off-Highway Tractors	124	0.44
Off-Highway Trucks	402	0.38
Other Construction Equipment	172	0.42
Other General Industrial Equipment	88	0.34
Other Material Handling Equipment	168	0.4
Pavers	130	0.42
Paving Equipment	132	0.36
Plate Compactors	8	0.43
Pressure Washers	13	0.3
Pumps	84	0.74
Rollers	80	0.38
Rough Terrain Forklifts	100	0.4
Rubber Tired Dozers	247	0.4
Rubber Tired Loaders	203	0.36
Scrapers	367	0.48
Signal Boards	6	0.82
Skid Steer Loaders	65	0.37
Surfacing Equipment	263	0.3
Sweepers/Scrubbers	64	0.46
Tractors/Loaders/Backhoes	97	0.37
Trenchers	78	0.5
Welders	46	0.45

Default Horsepower and Load Factor from CalEEMod2016 Appendix D: Table 3.3

Sacramento Valley Air Basin Fleet Average Emission Factors (Diesel)

2014

2014		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.261	3.233	4.096	0.005
Aerial Lifts	25	0.261	3.233	4.096	0.005
Aerial Lifts	50	0.261	3.233	4.096	0.005
Aerial Lifts	120	0.202	3.220	3.373	0.005
Aerial Lifts	500	0.236	0.983	4.602	0.005
Aerial Lifts	750	0.299	1.178	3.761	0.005
Air Compressors	15	0.891	3.723	5.445	0.008
Air Compressors	25	0.960	2.780	5.000	0.007
Air Compressors	50	2.076	6.181	5.421	0.007
Air Compressors	120	0.901	3.880	5.608	0.006
Air Compressors	175	0.621	3.227	4.973	0.006
Air Compressors	250	0.405	1.237	4.399	0.006
Air Compressors	500	0.373	1.249	3.855	0.005
Air Compressors	750	0.378	1.249	3.991	0.005
Air Compressors	1000	0.445	1.493	5.512	0.005
Bore/Drill Rigs	15	0.834	4.691	5.332	0.006
Bore/Drill Rigs	25	0.834	4.691	5.332	0.006
Bore/Drill Rigs	50	0.834	4.691	5.332	0.006
Bore/Drill Rigs	120	0.319	3.327	4.195	0.005
Bore/Drill Rigs	175	0.308	3.040	4.066	0.005
Bore/Drill Rigs	250	0.217	1.174	3.525	0.005
Bore/Drill Rigs	500	0.202	1.239	3.186	0.005
Bore/Drill Rigs	750	0.157	1.087	2.373	0.005
Bore/Drill Rigs	1000	0.105	0.951	2.984	0.005

Cement and Mortar Mixers	15	0.666	3.469	4.191	0.008
Cement and Mortar Mixers	25	0.837	2.570	4.793	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	1.626	5.313	5.172	0.007
Concrete/Industrial Saws	120	0.749	3.675	5.160	0.006
Concrete/Industrial Saws	175	0.517	3.080	4.531	0.006
Cranes	50	2.115	7.126	6.093	0.005
Cranes	120	1.245	4.923	10.302	0.005
Cranes	175	0.793	3.932	8.471	0.005
Cranes	250	0.661	2.726	7.860	0.005
Cranes	500	0.483	4.177	6.264	0.005
Cranes	750	0.280	1.635	4.327	0.005
Cranes	9999	0.120	0.948	2.281	0.005
Crawler Tractors	50	2.521	8.047	6.396	0.005
Crawler Tractors	120	0.884	4.168	7.524	0.005
Crawler Tractors	175	0.629	3.459	6.875	0.005
Crawler Tractors	250	0.454	1.838	6.238	0.005
Crawler Tractors	500	0.412	2.911	5.616	0.005
Crawler Tractors	750	0.347	1.675	4.895	0.005
Crawler Tractors	1000	0.475	2.080	7.426	0.005
Crushing/Proc. Equipment	50	2.012	6.212	5.399	0.007
Crushing/Proc. Equipment	120	0.877	3.898	5.468	0.006
Crushing/Proc. Equipment	175	0.612	3.256	4.823	0.006
Crushing/Proc. Equipment	250	0.405	1.228	4.239	0.006
Crushing/Proc. Equipment	500	0.377	1.230	3.702	0.005
Crushing/Proc. Equipment	750	0.378	1.218	3.844	0.005
Crushing/Proc. Equipment	9999	0.456	1.460	5.391	0.005

Dumpers/Tenders	25	0.705	2.364	4.433	0.007
Excavators	25	0.825	4.844	4.965	0.005
Excavators	50	0.825	4.844	4.965	0.005
Excavators	120	0.513	3.663	5.131	0.005
Excavators	175	0.390	3.154	4.657	0.005
Excavators	250	0.294	1.346	4.374	0.005
Excavators	500	0.233	1.327	3.353	0.005
Excavators	750	0.239	1.347	3.541	0.005
Forklifts	50	2.114	7.321	6.006	0.005
Forklifts	120	0.795	4.079	6.848	0.005
Forklifts	175	0.578	3.521	6.352	0.005
Forklifts	250	0.615	2.501	7.276	0.005
Forklifts	500	0.541	4.252	6.353	0.005
Generator Sets	15	0.783	3.723	5.369	0.008
Generator Sets	25	0.821	2.780	5.000	0.007
Generator Sets	50	1.427	4.683	5.048	0.007
Generator Sets	120	0.721	3.532	5.147	0.006
Generator Sets	175	0.486	2.945	4.565	0.006
Generator Sets	250	0.311	1.130	4.025	0.006
Generator Sets	500	0.279	1.157	3.603	0.005
Generator Sets	750	0.289	1.157	3.724	0.005
Generator Sets	9999	0.389	1.377	5.150	0.005
Graders	50	3.094	9.065	6.550	0.005
Graders	120	1.269	4.920	9.986	0.005
Graders	175	0.847	3.951	8.702	0.005
Graders	250	0.390	1.462	5.740	0.005
Graders	500	0.314	1.791	3.714	0.005
Graders	750	0.437	1.483	3.876	0.005
Off-Highway Tractors	120	0.698	3.972	6.281	0.005
Off-Highway Tractors	175	0.424	3.265	5.025	0.005
Off-Highway Tractors	250	0.405	1.628	5.661	0.005
Off-Highway Tractors	750	0.267	1.334	4.007	0.005
Off-Highway Tractors	1000	0.085	0.947	2.279	0.005
Off-Highway Trucks	175	0.513	3.473	5.219	0.005
Off-Highway Trucks	250	0.483	1.932	5.441	0.005

Off-Highway Trucks	500	0.393	2.075	4.686	0.005
Off-Highway Trucks	750	0.485	2.953	5.578	0.005
Off-Highway Trucks	1000	0.415	1.779	6.365	0.005
Other Construction Equipment	15	1.301	5.602	5.565	0.005
Other Construction Equipment	25	1.301	5.602	5.565	0.005
Other Construction Equipment	50	1.301	5.602	5.565	0.005
Other Construction Equipment	120	0.729	3.906	6.633	0.005
Other Construction Equipment	175	0.567	3.385	6.372	0.005
Other Construction Equipment	500	0.330	2.476	4.561	0.005
Other General Industrial Equipment	15	1.521	6.288	5.584	0.005
Other General Industrial Equipment	25	1.521	6.288	5.584	0.005
Other General Industrial Equipment	50	1.521	6.288	5.584	0.005
Other General Industrial Equipment	120	0.789	4.090	6.723	0.005
Other General Industrial Equipment	175	0.523	3.469	5.792	0.005
Other General Industrial Equipment	250	0.488	2.054	6.153	0.005
Other General Industrial Equipment	500	0.355	2.499	4.565	0.005

Other General Industrial Equipment	750	0.256	1.489	3.622	0.005
Other General Industrial Equipment	1000	0.346	1.080	6.379	0.005
Other Material Handling Equipment	50	1.695	6.590	5.751	0.005
Other Material Handling Equipment	120	0.558	3.779	5.372	0.005
Other Material Handling Equipment	175	0.528	3.431	5.798	0.005
Other Material Handling Equipment	250	0.475	1.936	6.173	0.005
Other Material Handling Equipment	500	0.331	1.927	4.357	0.005
Other Material Handling Equipment	9999	0.141	0.978	3.436	0.005
Pavers	25	1.898	6.381	5.717	0.005
Pavers	50	1.898	6.381	5.717	0.005
Pavers	120	0.683	3.773	6.199	0.005
Pavers	175	0.502	3.115	5.736	0.005
Pavers	250	0.208	1.023	4.140	0.005
Pavers	500	0.180	1.005	3.047	0.005
Paving Equipment	25	1.053	4.952	5.184	0.005
Paving Equipment	50	1.053	4.952	5.184	0.005
Paving Equipment	120	0.677	3.837	6.370	0.005
Paving Equipment	175	0.415	3.097	5.216	0.005
Paving Equipment	250	0.310	1.370	4.782	0.005
Plate Compactors	15	0.661	3.469	4.142	0.008
Pressure Washers	15	0.783	3.723	5.369	0.008
Pressure Washers	25	0.821	2.780	5.000	0.007
Pressure Washers	50	1.096	3.951	4.873	0.007
Pressure Washers	120	0.634	3.367	4.912	0.006
Pressure Washers	175	0.469	2.923	4.513	0.006

Pressure Washers	250	0.137	0.986	1.047	0.006
Pumps	15	0.891	3.723	5.445	0.008
Pumps	25	0.960	2.780	5.000	0.007
Pumps	50	1.538	4.929	5.107	0.007
Pumps	120	0.751	3.587	5.226	0.006
Pumps	175	0.508	2.989	4.635	0.006
Pumps	250	0.326	1.149	4.090	0.006
Pumps	500	0.294	1.181	3.648	0.005
Pumps	750	0.303	1.181	3.770	0.005
Pumps	9999	0.399	1.406	5.210	0.005
Rollers	15	1.308	5.243	5.393	0.005
Rollers	25	1.308	5.243	5.393	0.005
Rollers	50	1.308	5.243	5.393	0.005
Rollers	120	0.695	3.809	6.390	0.005
Rollers	175	0.368	2.998	4.724	0.005
Rollers	250	0.381	1.760	5.403	0.005
Rollers	500	0.378	3.318	5.183	0.005
Rough Terrain Forklifts	50	1.182	4.887	5.226	0.005
Rough Terrain Forklifts	120	0.351	3.367	4.467	0.005
Rough Terrain Forklifts	175	0.221	2.852	3.594	0.005
Rough Terrain Forklifts	250	0.186	1.212	2.984	0.005
Rough Terrain Forklifts	500	0.170	0.954	3.500	0.005
Rubber Tired Dozers	175	0.961	4.226	9.834	0.005
Rubber Tired Dozers	250	0.721	2.712	7.972	0.005
Rubber Tired Dozers	500	0.707	6.165	8.058	0.005
Rubber Tired Dozers	750	0.513	2.756	7.147	0.005
Rubber Tired Dozers	1000	0.691	3.096	6.849	0.005
Rubber Tired Loaders	25	2.115	7.770	6.103	0.005
Rubber Tired Loaders	50	2.115	7.770	6.103	0.005
Rubber Tired Loaders	120	0.868	4.268	7.129	0.005
Rubber Tired Loaders	175	0.605	3.585	6.272	0.005

Rubber Tired Loaders	250	0.407	1.486	5.495	0.005
Rubber Tired Loaders	500	0.421	2.407	5.194	0.005
Rubber Tired Loaders	750	0.406	1.946	4.810	0.005
Rubber Tired Loaders	1000	0.414	1.457	6.692	0.005
Scrapers	120	0.719	4.100	7.065	0.005
Scrapers	175	0.718	3.807	7.907	0.005
Scrapers	250	0.742	3.061	8.815	0.005
Scrapers	500	0.479	3.898	6.233	0.005
Scrapers	750	0.369	2.846	5.012	0.005
Signal Boards	15	0.661	3.469	4.142	0.008
Signal Boards	50	1.625	5.231	5.139	0.007
Signal Boards	120	0.759	3.658	5.186	0.006
Signal Boards	175	0.520	3.058	4.582	0.006
Signal Boards	250	0.408	1.402	4.857	0.007
Skid Steer Loaders	25	0.664	4.016	4.541	0.005
Skid Steer Loaders	50	0.664	4.016	4.541	0.005
Skid Steer Loaders	120	0.304	3.338	4.013	0.005
Surfacing Equipment	50	1.141	4.877	5.425	0.006
Surfacing Equipment	120	0.559	3.580	5.520	0.005
Surfacing Equipment	175	0.472	3.012	5.711	0.005
Surfacing Equipment	250	0.306	1.434	5.102	0.005
Surfacing Equipment	500	0.237	1.501	3.895	0.005
Surfacing Equipment	750	0.174	1.020	3.284	0.005
Sweepers/Scrubbers	15	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	25	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	50	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	120	0.833	4.071	6.934	0.005
Sweepers/Scrubbers	175	0.875	4.042	9.108	0.005
Sweepers/Scrubbers	250	0.505	2.066	6.704	0.005
Tractors/Loaders/Backhoes	25	1.336	5.772	5.369	0.005

Tractors/Loaders/Backhoes	50	1.336	5.772	5.369	0.005
Tractors/Loaders/Backhoes	120	0.582	3.827	5.581	0.005
Tractors/Loaders/Backhoes	175	0.423	3.239	4.938	0.005
Tractors/Loaders/Backhoes	250	0.327	1.376	4.922	0.005
Tractors/Loaders/Backhoes	500	0.312	1.878	4.488	0.005
Tractors/Loaders/Backhoes	750	0.305	1.833	4.243	0.005
Trenchers	15	1.268	5.293	5.455	0.005
Trenchers	25	1.268	5.293	5.455	0.005
Trenchers	50	1.268	5.293	5.455	0.005
Trenchers	120	0.818	3.999	7.217	0.005
Trenchers	175	0.693	3.668	7.699	0.005
Trenchers	250	0.497	2.070	6.484	0.005
Trenchers	500	0.306	2.035	4.370	0.005
Trenchers	750	0.118	0.964	1.825	0.005
Welders	15	0.891	3.723	5.445	0.008
Welders	25	0.960	2.780	5.000	0.007
Welders	50	1.900	5.749	5.308	0.007
Welders	120	0.849	3.774	5.481	0.006
Welders	175	0.581	3.141	4.862	0.006
Welders	250	0.376	1.207	4.297	0.006
Welders	500	0.343	1.227	3.788	0.005
Water Trucks	175	0.513	3.473	5.219	0.005
Water Trucks	250	0.483	1.932	5.441	0.005
Water Trucks	500	0.393	2.075	4.686	0.005
Water Trucks	750	0.485	2.953	5.578	0.005
Water Trucks	1000	0.415	1.779	6.365	0.005

2015

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.158	0.145	574.665	0.170	0.005
0.158	0.145	574.665	0.170	0.005
0.158	0.145	574.665	0.170	0.005
0.161	0.148	516.703	0.153	0.004
0.101	0.093	516.638	0.153	0.004
0.109	0.109	568.299	0.027	0.004
0.341	0.341	568.300	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.505	0.505	568.299	0.187	0.005
0.495	0.495	568.299	0.081	0.004
0.272	0.272	568.299	0.056	0.004
0.134	0.134	568.299	0.036	0.004
0.125	0.125	568.299	0.033	0.004
0.128	0.128	568.299	0.034	0.004
0.157	0.157	568.300	0.040	0.004
0.382	0.351	591.442	0.175	0.005
0.382	0.351	591.442	0.175	0.005
0.382	0.351	591.442	0.175	0.005
0.249	0.229	501.365	0.148	0.004
0.186	0.171	524.052	0.155	0.004
0.105	0.097	512.336	0.151	0.004
0.101	0.093	506.154	0.150	0.004
0.081	0.074	525.240	0.155	0.004
0.058	0.054	516.600	0.153	0.004

2015		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.248
Aerial Lifts	25	0.248
Aerial Lifts	50	0.248
Aerial Lifts	120	0.191
Aerial Lifts	500	0.239
Aerial Lifts	750	0.278
Air Compressors	15	0.840
Air Compressors	25	0.894
Air Compressors	50	1.868
Air Compressors	120	0.821
Air Compressors	175	0.571
Air Compressors	250	0.381
Air Compressors	500	0.354
Air Compressors	750	0.358
Air Compressors	1000	0.409
Bore/Drill Rigs	15	0.847
Bore/Drill Rigs	25	0.847
Bore/Drill Rigs	50	0.847
Bore/Drill Rigs	120	0.318
Bore/Drill Rigs	175	0.302
Bore/Drill Rigs	250	0.213
Bore/Drill Rigs	500	0.199
Bore/Drill Rigs	750	0.162
Bore/Drill Rigs	1000	0.109

0.177	0.177	568.299	0.060	0.005
0.253	0.253	568.299	0.075	0.005
0.164	0.164	568.299	0.061	0.005
0.424	0.424	568.299	0.146	0.005
0.412	0.412	568.299	0.067	0.004
0.228	0.228	568.299	0.046	0.004
0.607	0.559	567.006	0.168	0.005
0.765	0.704	514.029	0.152	0.004
0.457	0.421	519.511	0.154	0.004
0.360	0.331	517.683	0.153	0.004
0.260	0.239	516.578	0.153	0.004
0.151	0.139	515.607	0.152	0.004
0.054	0.050	516.638	0.153	0.004
0.743	0.684	564.564	0.167	0.005
0.629	0.578	522.119	0.154	0.004
0.374	0.344	516.404	0.153	0.004
0.241	0.222	518.036	0.153	0.004
0.217	0.200	520.515	0.154	0.004
0.179	0.164	517.861	0.153	0.004
0.218	0.201	520.005	0.154	0.004
0.494	0.494	568.299	0.181	0.005
0.481	0.481	568.299	0.079	0.004
0.265	0.265	568.299	0.055	0.004
0.130	0.130	568.299	0.036	0.004
0.121	0.121	568.299	0.034	0.004
0.123	0.123	568.299	0.034	0.004
0.155	0.155	568.299	0.041	0.004

Cement and Mortar Mixers	15	0.663
Cement and Mortar Mixers	25	0.811
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	1.470
Concrete/Industrial Saws	120	0.683
Concrete/Industrial Saws	175	0.475
Cranes	50	2.087
Cranes	120	1.214
Cranes	175	0.782
Cranes	250	0.642
Cranes	500	0.475
Cranes	750	0.286
Cranes	9999	0.131
Crawler Tractors	50	2.513
Crawler Tractors	120	0.885
Crawler Tractors	175	0.632
Crawler Tractors	250	0.451
Crawler Tractors	500	0.408
Crawler Tractors	750	0.351
Crawler Tractors	1000	0.479
Crushing/Proc. Equipment	50	1.796
Crushing/Proc. Equipment	120	0.797
Crushing/Proc. Equipment	175	0.562
Crushing/Proc. Equipment	250	0.382
Crushing/Proc. Equipment	500	0.358
Crushing/Proc. Equipment	750	0.358
Crushing/Proc. Equipment	9999	0.422

0.200	0.200	568.300	0.063	0.005
0.380	0.350	575.267	0.170	0.005
0.380	0.350	575.267	0.170	0.005
0.382	0.352	511.306	0.151	0.004
0.229	0.211	516.907	0.153	0.004
0.139	0.128	517.323	0.153	0.004
0.108	0.099	515.215	0.152	0.004
0.114	0.105	511.945	0.151	0.004
0.656	0.604	575.112	0.170	0.005
0.574	0.528	516.062	0.153	0.004
0.345	0.318	516.694	0.153	0.004
0.330	0.304	518.028	0.153	0.004
0.289	0.266	518.345	0.153	0.004
0.298	0.298	568.299	0.070	0.005
0.272	0.272	568.299	0.074	0.005
0.389	0.389	568.299	0.128	0.005
0.385	0.385	568.299	0.065	0.004
0.212	0.212	568.299	0.043	0.004
0.111	0.111	568.300	0.028	0.004
0.104	0.104	568.299	0.025	0.004
0.106	0.106	568.299	0.026	0.004
0.138	0.138	568.299	0.035	0.004
0.867	0.798	539.122	0.159	0.005
0.832	0.765	515.382	0.152	0.004
0.488	0.449	527.834	0.156	0.004
0.185	0.171	522.330	0.154	0.004
0.143	0.131	517.377	0.153	0.004
0.138	0.138	568.299	0.039	0.004
0.513	0.472	520.824	0.154	0.004
0.258	0.237	518.164	0.153	0.004
0.203	0.187	514.370	0.152	0.004
0.133	0.122	516.904	0.153	0.004
0.054	0.050	516.638	0.153	0.004
0.292	0.269	514.057	0.152	0.004
0.236	0.217	512.833	0.152	0.004

Dumpers/Tenders	25	0.696
Excavators	25	0.833
Excavators	50	0.833
Excavators	120	0.507
Excavators	175	0.384
Excavators	250	0.289
Excavators	500	0.232
Excavators	750	0.242
Forklifts	50	2.073
Forklifts	120	0.768
Forklifts	175	0.566
Forklifts	250	0.565
Forklifts	500	0.454
Generator Sets	15	0.747
Generator Sets	25	0.793
Generator Sets	50	1.281
Generator Sets	120	0.651
Generator Sets	175	0.440
Generator Sets	250	0.287
Generator Sets	500	0.258
Generator Sets	750	0.267
Generator Sets	9999	0.351
Graders	50	3.119
Graders	120	1.239
Graders	175	0.844
Graders	250	0.396
Graders	500	0.326
Graders	750	0.414
Off-Highway Tractors	120	0.674
Off-Highway Tractors	175	0.402
Off-Highway Tractors	250	0.400
Off-Highway Tractors	750	0.262
Off-Highway Tractors	1000	0.096
Off-Highway Trucks	175	0.508
Off-Highway Trucks	250	0.473

0.180	0.165	521.057	0.154	0.004
0.231	0.212	521.230	0.154	0.004
0.187	0.172	516.939	0.153	0.004
0.502	0.462	578.959	0.171	0.005
0.502	0.462	578.959	0.171	0.005
0.502	0.462	578.959	0.171	0.005
0.518	0.476	515.285	0.152	0.004
0.333	0.307	514.552	0.152	0.004
0.168	0.155	520.944	0.154	0.004
0.544	0.500	575.871	0.170	0.005
0.544	0.500	575.871	0.170	0.005
0.544	0.500	575.871	0.170	0.005
0.574	0.528	514.389	0.152	0.004
0.312	0.287	516.414	0.153	0.004
0.255	0.234	517.916	0.153	0.004
0.172	0.159	517.595	0.153	0.004

Off-Highway Trucks	500	0.385
Off-Highway Trucks	750	0.452
Off-Highway Trucks	1000	0.411
Other Construction Equipment	15	1.309
Other Construction Equipment	25	1.309
Other Construction Equipment	50	1.309
Other Construction Equipment	120	0.723
Other Construction Equipment	175	0.557
Other Construction Equipment	500	0.324
Other General Industrial Equipment	15	1.495
Other General Industrial Equipment	25	1.495
Other General Industrial Equipment	50	1.495
Other General Industrial Equipment	120	0.761
Other General Industrial Equipment	175	0.495
Other General Industrial Equipment	250	0.452
Other General Industrial Equipment	500	0.353

0.115	0.106	518.180	0.153	0.004
0.167	0.153	516.638	0.153	0.004
0.575	0.529	573.170	0.169	0.005
0.412	0.379	518.316	0.153	0.004
0.313	0.288	516.818	0.153	0.004
0.242	0.223	516.011	0.153	0.004
0.169	0.155	514.714	0.152	0.004
0.067	0.061	516.638	0.153	0.004
0.595	0.547	577.016	0.171	0.005
0.595	0.547	577.016	0.171	0.005
0.483	0.444	514.377	0.152	0.004
0.287	0.264	516.745	0.153	0.004
0.105	0.097	518.723	0.153	0.004
0.101	0.093	512.191	0.151	0.004
0.437	0.402	569.482	0.168	0.005
0.437	0.402	569.482	0.168	0.005
0.486	0.447	518.076	0.153	0.004
0.249	0.229	515.034	0.152	0.004
0.158	0.146	516.900	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.298	0.298	568.299	0.070	0.005
0.272	0.272	568.299	0.074	0.005
0.332	0.332	568.299	0.098	0.005
0.332	0.332	568.299	0.057	0.004
0.206	0.206	568.299	0.042	0.004

Other General Industrial Equipment	750	0.251
Other General Industrial Equipment	1000	0.355
Other Material Handling Equipment	50	1.733
Other Material Handling Equipment	120	0.528
Other Material Handling Equipment	175	0.525
Other Material Handling Equipment	250	0.423
Other Material Handling Equipment	500	0.333
Other Material Handling Equipment	9999	0.148
Pavers	25	1.853
Pavers	50	1.853
Pavers	120	0.680
Pavers	175	0.489
Pavers	250	0.214
Pavers	500	0.176
Paving Equipment	25	0.981
Paving Equipment	50	0.981
Paving Equipment	120	0.661
Paving Equipment	175	0.411
Paving Equipment	250	0.315
Plate Compactors	15	0.661
Pressure Washers	15	0.747
Pressure Washers	25	0.793
Pressure Washers	50	0.976
Pressure Washers	120	0.567
Pressure Washers	175	0.427

0.014	0.014	568.299	0.012	0.004
0.341	0.341	568.299	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.409	0.409	568.299	0.138	0.005
0.403	0.403	568.299	0.067	0.004
0.222	0.222	568.299	0.045	0.004
0.115	0.115	568.299	0.029	0.004
0.108	0.108	568.299	0.026	0.004
0.110	0.110	568.299	0.027	0.004
0.141	0.141	568.299	0.036	0.004
0.484	0.445	575.795	0.170	0.005
0.484	0.445	575.795	0.170	0.005
0.484	0.445	575.795	0.170	0.005
0.476	0.438	518.787	0.153	0.004
0.219	0.202	516.591	0.153	0.004
0.191	0.176	517.811	0.153	0.004
0.202	0.185	522.052	0.154	0.004
0.436	0.401	575.353	0.170	0.005
0.261	0.240	517.260	0.153	0.004
0.140	0.128	516.091	0.153	0.004
0.087	0.080	517.766	0.153	0.004
0.076	0.070	511.657	0.151	0.004
0.563	0.518	518.335	0.153	0.004
0.393	0.361	520.011	0.154	0.004
0.376	0.346	524.676	0.155	0.004
0.258	0.237	517.790	0.153	0.004
0.236	0.236	568.300	0.062	0.004
0.676	0.622	573.522	0.170	0.005
0.676	0.622	573.522	0.170	0.005
0.619	0.569	510.010	0.151	0.004
0.350	0.322	515.769	0.152	0.004

Pressure Washers	250	0.121
Pumps	15	0.840
Pumps	25	0.894
Pumps	50	1.384
Pumps	120	0.679
Pumps	175	0.461
Pumps	250	0.302
Pumps	500	0.273
Pumps	750	0.281
Pumps	9999	0.363
Rollers	15	1.311
Rollers	25	1.311
Rollers	50	1.311
Rollers	120	0.683
Rollers	175	0.364
Rollers	250	0.347
Rollers	500	0.371
Rough Terrain Forklifts	50	1.189
Rough Terrain Forklifts	120	0.338
Rough Terrain Forklifts	175	0.217
Rough Terrain Forklifts	250	0.140
Rough Terrain Forklifts	500	0.174
Rubber Tired Dozers	175	0.965
Rubber Tired Dozers	250	0.728
Rubber Tired Dozers	500	0.708
Rubber Tired Dozers	750	0.518
Rubber Tired Dozers	1000	0.661
Rubber Tired Loaders	25	2.108
Rubber Tired Loaders	50	2.108
Rubber Tired Loaders	120	0.856
Rubber Tired Loaders	175	0.595

0.187	0.172	514.217	0.152	0.004
0.196	0.180	512.510	0.152	0.004
0.190	0.175	499.695	0.148	0.004
0.195	0.179	515.307	0.152	0.004
0.526	0.484	529.945	0.157	0.004
0.419	0.385	524.171	0.155	0.004
0.403	0.371	512.853	0.152	0.004
0.251	0.231	517.361	0.153	0.004
0.190	0.174	517.394	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.422	0.422	568.299	0.146	0.005
0.414	0.414	568.299	0.068	0.004
0.228	0.228	568.299	0.046	0.004
0.141	0.141	686.695	0.036	0.004
0.286	0.263	577.076	0.171	0.005
0.286	0.263	577.076	0.171	0.005
0.235	0.216	517.062	0.153	0.004
0.434	0.400	582.725	0.172	0.005
0.391	0.360	516.338	0.153	0.004
0.273	0.251	515.820	0.152	0.004
0.149	0.137	521.452	0.154	0.004
0.126	0.116	513.616	0.152	0.004
0.103	0.095	516.321	0.153	0.004
0.603	0.555	574.943	0.170	0.005
0.603	0.555	574.943	0.170	0.005
0.603	0.555	574.943	0.170	0.005
0.610	0.562	518.893	0.153	0.004
0.503	0.463	517.806	0.153	0.004
0.265	0.244	514.527	0.152	0.004
0.488	0.449	564.042	0.167	0.005

Rubber Tired Loaders	250	0.406
Rubber Tired Loaders	500	0.415
Rubber Tired Loaders	750	0.395
Rubber Tired Loaders	1000	0.420
Scrapers	120	0.731
Scrapers	175	0.714
Scrapers	250	0.730
Scrapers	500	0.472
Scrapers	750	0.360
Signal Boards	15	0.661
Signal Boards	50	1.461
Signal Boards	120	0.687
Signal Boards	175	0.474
Signal Boards	250	0.380
Skid Steer Loaders	25	0.639
Skid Steer Loaders	50	0.639
Skid Steer Loaders	120	0.294
Surfacing Equipment	50	1.028
Surfacing Equipment	120	0.548
Surfacing Equipment	175	0.477
Surfacing Equipment	250	0.310
Surfacing Equipment	500	0.241
Surfacing Equipment	750	0.178
Sweepers/Scrubbers	15	1.808
Sweepers/Scrubbers	25	1.808
Sweepers/Scrubbers	50	1.808
Sweepers/Scrubbers	120	0.833
Sweepers/Scrubbers	175	0.839
Sweepers/Scrubbers	250	0.513
Tractors/Loaders/Backhoes	25	1.307

0.488	0.449	564.042	0.167	0.005
0.438	0.403	523.017	0.155	0.004
0.248	0.229	513.890	0.152	0.004
0.159	0.146	515.175	0.152	0.004
0.152	0.140	517.124	0.153	0.004
0.154	0.141	511.337	0.151	0.004
0.501	0.461	577.728	0.171	0.005
0.501	0.461	577.728	0.171	0.005
0.501	0.461	577.728	0.171	0.005
0.563	0.518	520.766	0.154	0.004
0.395	0.364	512.148	0.151	0.004
0.258	0.237	517.719	0.153	0.004
0.161	0.148	513.744	0.152	0.004
0.061	0.056	519.658	0.154	0.004
0.341	0.341	568.300	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.473	0.473	568.300	0.171	0.005
0.464	0.464	568.299	0.076	0.004
0.255	0.255	568.299	0.052	0.004
0.128	0.128	568.299	0.034	0.004
0.119	0.119	568.299	0.031	0.004
0.292	0.269	514.057	0.152	0.004
0.236	0.217	512.833	0.152	0.004
0.180	0.165	521.057	0.154	0.004
0.231	0.212	521.230	0.154	0.004
0.187	0.172	516.939	0.153	0.004

Tractors/Loaders/Backhoes	50	1.307
Tractors/Loaders/Backhoes	120	0.569
Tractors/Loaders/Backhoes	175	0.421
Tractors/Loaders/Backhoes	250	0.326
Tractors/Loaders/Backhoes	500	0.312
Tractors/Loaders/Backhoes	750	0.308
Trenchers	15	1.259
Trenchers	25	1.259
Trenchers	50	1.259
Trenchers	120	0.817
Trenchers	175	0.697
Trenchers	250	0.502
Trenchers	500	0.311
Trenchers	750	0.114
Welders	15	0.840
Welders	25	0.894
Welders	50	1.715
Welders	120	0.772
Welders	175	0.532
Welders	250	0.352
Welders	500	0.324
Water Trucks	175	0.508
Water Trucks	250	0.473
Water Trucks	500	0.385
Water Trucks	750	0.452
Water Trucks	1000	0.411

2016

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.218	3.113	0.005	0.143	0.132	511.457	0.153	0.004
0.988	4.621	0.005	0.102	0.094	511.392	0.153	0.004
1.130	3.380	0.005	0.098	0.098	568.299	0.025	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
5.968	5.223	0.007	0.459	0.459	568.299	0.168	0.005
3.840	5.190	0.006	0.446	0.446	568.299	0.074	0.004
3.218	4.504	0.006	0.245	0.245	568.299	0.051	0.004
1.207	3.967	0.006	0.121	0.121	568.299	0.034	0.004
1.198	3.455	0.005	0.113	0.113	568.300	0.032	0.004
1.198	3.586	0.005	0.116	0.116	568.299	0.032	0.004
1.370	5.157	0.005	0.142	0.142	568.299	0.036	0.004
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
3.335	4.028	0.005	0.239	0.220	496.949	0.148	0.004
3.035	3.904	0.005	0.176	0.162	517.207	0.154	0.004
1.178	3.325	0.005	0.100	0.092	506.505	0.151	0.004
1.256	3.003	0.005	0.096	0.088	499.902	0.149	0.004
1.105	2.376	0.005	0.081	0.074	520.473	0.155	0.004
0.956	2.994	0.005	0.059	0.054	511.253	0.153	0.004

3.469	4.168	0.008	0.171	0.171	568.300	0.059	0.005
2.531	4.712	0.007	0.240	0.240	568.299	0.073	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
5.165	4.989	0.007	0.386	0.386	568.299	0.132	0.005
3.647	4.789	0.006	0.372	0.372	568.300	0.061	0.004
3.077	4.112	0.006	0.207	0.207	568.299	0.042	0.004
7.125	6.075	0.005	0.601	0.553	561.224	0.168	0.005
4.884	10.060	0.005	0.747	0.687	508.837	0.152	0.004
3.918	8.325	0.005	0.450	0.414	514.260	0.154	0.004
2.653	7.622	0.005	0.348	0.320	512.448	0.153	0.004
4.110	6.124	0.005	0.253	0.233	511.197	0.153	0.004
1.643	4.312	0.005	0.152	0.140	510.334	0.152	0.004
0.957	2.295	0.005	0.055	0.051	511.392	0.153	0.004
8.076	6.377	0.005	0.741	0.682	558.888	0.167	0.005
4.189	7.494	0.005	0.630	0.580	516.843	0.154	0.004
3.479	6.849	0.005	0.376	0.346	511.306	0.153	0.004
1.816	6.143	0.005	0.237	0.218	512.897	0.153	0.004
2.845	5.483	0.005	0.212	0.195	515.373	0.154	0.004
1.664	4.883	0.005	0.179	0.165	512.540	0.153	0.004
2.088	7.463	0.005	0.220	0.202	514.830	0.154	0.004
5.996	5.195	0.007	0.446	0.446	568.299	0.162	0.005
3.859	5.040	0.006	0.430	0.430	568.299	0.071	0.004
3.247	4.343	0.006	0.237	0.237	568.299	0.050	0.004
1.201	3.801	0.006	0.117	0.117	568.299	0.034	0.004
1.184	3.304	0.005	0.109	0.109	568.299	0.032	0.004
1.176	3.422	0.005	0.111	0.111	568.299	0.032	0.004
1.343	5.019	0.005	0.140	0.140	568.299	0.038	0.004

2.350	4.402	0.007	0.187	0.187	568.299	0.062	0.005
4.925	4.918	0.005	0.375	0.345	569.512	0.170	0.005
4.925	4.918	0.005	0.375	0.345	569.512	0.170	0.005
3.679	5.019	0.005	0.374	0.344	506.173	0.151	0.004
3.168	4.481	0.005	0.221	0.204	511.687	0.153	0.004
1.331	4.182	0.005	0.133	0.122	512.056	0.153	0.004
1.317	3.214	0.005	0.104	0.096	509.868	0.152	0.004
1.354	3.473	0.005	0.113	0.104	506.682	0.151	0.004
7.300	5.931	0.005	0.643	0.591	569.274	0.170	0.005
4.063	6.601	0.005	0.555	0.510	510.823	0.153	0.004
3.520	6.135	0.005	0.335	0.308	511.448	0.153	0.004
2.325	6.697	0.005	0.298	0.274	512.769	0.153	0.004
3.300	5.332	0.005	0.237	0.218	513.083	0.153	0.004
3.658	5.141	0.008	0.280	0.280	568.299	0.067	0.005
2.666	4.890	0.007	0.256	0.256	568.299	0.071	0.005
4.538	4.858	0.007	0.353	0.353	568.299	0.115	0.005
3.499	4.769	0.006	0.347	0.347	568.299	0.058	0.004
2.938	4.138	0.006	0.191	0.191	568.299	0.039	0.004
1.104	3.633	0.006	0.100	0.100	568.300	0.025	0.004
1.114	3.231	0.005	0.094	0.094	568.299	0.023	0.004
1.114	3.347	0.005	0.096	0.096	568.299	0.024	0.004
1.269	4.822	0.005	0.124	0.124	568.299	0.031	0.004
9.144	6.570	0.005	0.874	0.804	533.681	0.159	0.005
4.884	9.738	0.005	0.813	0.748	509.597	0.152	0.004
3.958	8.637	0.005	0.486	0.447	522.218	0.156	0.004
1.466	5.728	0.005	0.186	0.171	517.128	0.154	0.004
1.791	3.721	0.005	0.144	0.133	512.098	0.153	0.004
1.420	3.501	0.005	0.124	0.124	568.299	0.037	0.004
3.965	6.067	0.005	0.494	0.455	515.320	0.154	0.004
3.264	4.724	0.005	0.239	0.220	512.608	0.153	0.004
1.605	5.528	0.005	0.199	0.183	509.190	0.152	0.004
1.172	3.874	0.005	0.126	0.116	511.081	0.153	0.004
0.960	2.300	0.005	0.056	0.051	511.392	0.153	0.004
3.489	5.104	0.005	0.284	0.262	508.701	0.152	0.004
1.900	5.242	0.005	0.227	0.209	507.809	0.152	0.004

2.037	4.528	0.005	0.173	0.159	515.842	0.154	0.004
2.620	5.124	0.005	0.209	0.192	514.644	0.154	0.004
1.772	6.280	0.005	0.185	0.170	511.137	0.153	0.004
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
3.916	6.536	0.005	0.512	0.471	510.171	0.152	0.004
3.382	6.231	0.005	0.326	0.300	509.307	0.152	0.004
2.407	4.415	0.005	0.163	0.150	515.195	0.154	0.004
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
4.081	6.502	0.005	0.553	0.509	509.166	0.152	0.004
3.454	5.397	0.005	0.294	0.270	511.171	0.153	0.004
1.926	5.643	0.005	0.230	0.211	512.658	0.153	0.004
2.436	4.425	0.005	0.167	0.154	512.340	0.153	0.004

1.491	3.365	0.005	0.109	0.100	512.919	0.153	0.004
1.094	6.448	0.005	0.171	0.158	511.392	0.153	0.004
6.756	5.799	0.005	0.586	0.539	567.351	0.169	0.005
3.758	4.983	0.005	0.383	0.352	513.054	0.153	0.004
3.433	5.645	0.005	0.306	0.282	511.571	0.153	0.004
1.742	5.532	0.005	0.207	0.191	510.772	0.153	0.004
1.918	4.272	0.005	0.166	0.152	509.489	0.152	0.004
0.984	3.458	0.005	0.068	0.063	511.392	0.153	0.004
6.340	5.637	0.005	0.579	0.533	571.086	0.171	0.005
6.340	5.637	0.005	0.579	0.533	571.086	0.171	0.005
3.788	6.141	0.005	0.479	0.441	509.377	0.152	0.004
3.115	5.537	0.005	0.277	0.255	511.646	0.153	0.004
1.031	4.161	0.005	0.107	0.098	513.468	0.153	0.004
0.978	2.917	0.005	0.097	0.089	506.097	0.151	0.004
4.869	5.028	0.005	0.407	0.374	563.553	0.168	0.005
4.869	5.028	0.005	0.407	0.374	563.553	0.168	0.005
3.833	6.145	0.005	0.471	0.433	513.167	0.153	0.004
3.104	4.966	0.005	0.242	0.223	509.894	0.152	0.004
1.379	4.772	0.005	0.159	0.146	511.654	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.657	5.141	0.008	0.280	0.280	568.299	0.067	0.005
2.666	4.890	0.007	0.256	0.256	568.299	0.071	0.005
3.833	4.685	0.007	0.300	0.300	568.299	0.088	0.005
3.336	4.551	0.006	0.297	0.297	568.299	0.051	0.004
2.917	4.115	0.006	0.187	0.187	568.299	0.038	0.004

0.986	0.690	0.006	0.010	0.010	568.299	0.010	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
4.775	4.916	0.007	0.371	0.371	568.300	0.124	0.005
3.554	4.842	0.006	0.364	0.364	568.300	0.061	0.004
2.983	4.202	0.006	0.200	0.200	568.299	0.041	0.004
1.122	3.693	0.006	0.104	0.104	568.299	0.027	0.004
1.134	3.272	0.005	0.097	0.097	568.299	0.024	0.004
1.134	3.389	0.005	0.099	0.099	568.299	0.025	0.004
1.293	4.878	0.005	0.127	0.127	568.299	0.032	0.004
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
3.809	6.272	0.005	0.467	0.430	513.505	0.153	0.004
3.006	4.630	0.005	0.216	0.198	511.394	0.153	0.004
1.650	4.932	0.005	0.171	0.157	512.823	0.153	0.004
3.245	5.031	0.005	0.195	0.179	517.285	0.154	0.004
4.933	5.190	0.005	0.431	0.397	569.488	0.170	0.005
3.366	4.280	0.005	0.247	0.228	512.086	0.153	0.004
2.859	3.420	0.005	0.133	0.122	510.854	0.153	0.004
1.012	2.463	0.005	0.058	0.054	512.164	0.153	0.004
0.958	3.521	0.005	0.077	0.071	506.435	0.151	0.004
4.238	9.844	0.005	0.564	0.519	513.055	0.153	0.004
2.720	7.984	0.005	0.394	0.362	514.736	0.154	0.004
6.102	7.997	0.005	0.373	0.343	519.147	0.155	0.004
2.761	7.158	0.005	0.259	0.238	512.525	0.153	0.004
2.901	6.556	0.005	0.222	0.222	568.299	0.059	0.004
7.834	6.112	0.005	0.675	0.621	567.672	0.170	0.005
7.834	6.112	0.005	0.675	0.621	567.672	0.170	0.005
4.274	7.012	0.005	0.606	0.558	505.023	0.151	0.004
3.588	6.097	0.005	0.341	0.313	510.468	0.152	0.004

1.480	5.369	0.005	0.183	0.169	508.913	0.152	0.004
2.332	5.020	0.005	0.190	0.174	506.372	0.151	0.004
1.789	4.556	0.005	0.179	0.165	495.310	0.148	0.004
1.462	6.713	0.005	0.197	0.181	510.045	0.152	0.004
4.137	7.105	0.005	0.535	0.492	524.560	0.157	0.004
3.809	7.765	0.005	0.415	0.382	518.829	0.155	0.004
3.008	8.663	0.005	0.395	0.364	507.570	0.152	0.004
3.788	6.086	0.005	0.246	0.226	511.947	0.153	0.004
2.685	4.839	0.005	0.182	0.167	512.084	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
5.068	4.943	0.007	0.382	0.382	568.299	0.131	0.005
3.624	4.791	0.006	0.371	0.371	568.299	0.062	0.004
3.052	4.136	0.006	0.205	0.205	568.299	0.042	0.004
1.371	4.365	0.007	0.127	0.127	686.695	0.034	0.004
4.004	4.436	0.005	0.267	0.246	571.420	0.171	0.005
4.004	4.436	0.005	0.267	0.246	571.420	0.171	0.005
3.338	3.811	0.005	0.220	0.203	511.595	0.153	0.004
4.692	5.255	0.006	0.402	0.370	576.771	0.172	0.005
3.575	5.374	0.005	0.378	0.348	510.142	0.152	0.004
3.027	5.733	0.005	0.276	0.254	510.548	0.152	0.004
1.442	5.112	0.005	0.151	0.139	516.058	0.154	0.004
1.513	3.900	0.005	0.127	0.116	508.399	0.152	0.004
1.024	3.287	0.005	0.104	0.096	511.116	0.153	0.004
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
4.097	6.886	0.005	0.610	0.561	513.625	0.153	0.004
3.982	8.697	0.005	0.479	0.441	512.549	0.153	0.004
2.078	6.745	0.005	0.268	0.246	509.304	0.152	0.004
5.791	5.320	0.005	0.477	0.439	558.709	0.167	0.005

5.791	5.320	0.005	0.477	0.439	558.709	0.167	0.005
3.832	5.422	0.005	0.424	0.390	517.365	0.155	0.004
3.256	4.836	0.005	0.244	0.225	508.682	0.152	0.004
1.374	4.783	0.005	0.155	0.143	509.627	0.152	0.004
1.884	4.348	0.005	0.149	0.137	511.869	0.153	0.004
1.823	4.185	0.005	0.152	0.140	506.147	0.151	0.004
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
4.014	7.179	0.005	0.562	0.517	515.396	0.154	0.004
3.684	7.674	0.005	0.396	0.364	506.943	0.151	0.004
2.080	6.510	0.005	0.260	0.239	512.433	0.153	0.004
2.051	4.383	0.005	0.163	0.150	508.330	0.152	0.004
0.965	1.623	0.005	0.053	0.049	514.400	0.154	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
5.562	5.113	0.007	0.430	0.430	568.300	0.154	0.005
3.738	5.077	0.006	0.419	0.419	568.299	0.069	0.004
3.133	4.408	0.006	0.230	0.230	568.299	0.048	0.004
1.178	3.880	0.006	0.116	0.116	568.299	0.031	0.004
1.176	3.398	0.005	0.108	0.108	568.299	0.029	0.004
3.489	5.104	0.005	0.284	0.262	508.701	0.152	0.004
1.900	5.242	0.005	0.227	0.209	507.809	0.152	0.004
2.037	4.528	0.005	0.173	0.159	515.842	0.154	0.004
2.620	5.124	0.005	0.209	0.192	514.644	0.154	0.004
1.772	6.280	0.005	0.185	0.170	511.137	0.153	0.004

2016		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	25	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	50	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	120	0.166	3.201	2.722	0.005	0.112	0.103	506.211
Aerial Lifts	500	0.243	0.992	4.639	0.005	0.103	0.095	506.147
Aerial Lifts	750	0.257	1.089	3.015	0.005	0.088	0.088	568.299
Air Compressors	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Air Compressors	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Air Compressors	50	1.670	5.779	5.042	0.007	0.415	0.415	568.299
Air Compressors	120	0.744	3.804	4.790	0.006	0.397	0.397	568.299
Air Compressors	175	0.522	3.211	4.052	0.006	0.219	0.219	568.299
Air Compressors	250	0.359	1.182	3.553	0.006	0.109	0.109	568.299
Air Compressors	500	0.337	1.155	3.080	0.005	0.102	0.102	568.299
Air Compressors	750	0.340	1.155	3.201	0.005	0.104	0.104	568.299
Air Compressors	1000	0.383	1.295	4.854	0.005	0.131	0.131	568.299
Bore/Drill Rigs	15	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	25	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	50	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	120	0.307	3.326	3.821	0.005	0.221	0.204	491.655
Bore/Drill Rigs	175	0.286	3.023	3.616	0.005	0.162	0.149	511.433
Bore/Drill Rigs	250	0.193	1.133	2.902	0.005	0.085	0.078	502.128
Bore/Drill Rigs	500	0.171	1.133	2.510	0.005	0.077	0.071	494.761
Bore/Drill Rigs	750	0.153	1.120	2.166	0.005	0.072	0.066	514.883
Bore/Drill Rigs	1000	0.115	0.964	3.008	0.005	0.059	0.055	506.000

Cement and Mortar Mixers	15	0.662	3.469	4.153	0.008	0.167	0.167	568.300
Cement and Mortar Mixers	25	0.788	2.496	4.636	0.007	0.227	0.227	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	1.322	5.029	4.818	0.007	0.350	0.350	568.300
Concrete/Industrial Saws	120	0.620	3.620	4.432	0.006	0.333	0.333	568.300
Concrete/Industrial Saws	175	0.435	3.074	3.708	0.006	0.186	0.186	568.299
Cranes	50	2.130	7.268	6.110	0.005	0.610	0.561	555.441
Cranes	120	1.154	4.797	9.608	0.005	0.710	0.653	503.599
Cranes	175	0.744	3.862	7.887	0.005	0.427	0.393	508.952
Cranes	250	0.623	2.582	7.381	0.005	0.335	0.308	507.155
Cranes	500	0.443	3.834	5.649	0.005	0.233	0.215	506.088
Cranes	750	0.292	1.650	4.314	0.005	0.153	0.141	505.070
Cranes	9999	0.142	0.966	2.309	0.005	0.057	0.052	506.147
Crawler Tractors	50	2.519	8.104	6.317	0.005	0.733	0.674	553.214
Crawler Tractors	120	0.869	4.185	7.346	0.005	0.619	0.570	511.268
Crawler Tractors	175	0.624	3.482	6.721	0.005	0.371	0.341	506.034
Crawler Tractors	250	0.449	1.803	6.047	0.005	0.233	0.215	507.355
Crawler Tractors	500	0.398	2.744	5.279	0.005	0.205	0.188	510.339
Crawler Tractors	750	0.346	1.621	4.724	0.005	0.174	0.160	507.253
Crawler Tractors	1000	0.483	2.094	7.499	0.005	0.222	0.204	509.667
Crushing/Proc. Equipment	50	1.593	5.801	5.006	0.007	0.399	0.399	568.299
Crushing/Proc. Equipment	120	0.720	3.823	4.631	0.006	0.379	0.379	568.299
Crushing/Proc. Equipment	175	0.513	3.241	3.883	0.006	0.210	0.210	568.299
Crushing/Proc. Equipment	250	0.360	1.178	3.381	0.006	0.105	0.105	568.299
Crushing/Proc. Equipment	500	0.340	1.146	2.928	0.005	0.098	0.098	568.299
Crushing/Proc. Equipment	750	0.339	1.140	3.021	0.005	0.099	0.099	568.299
Crushing/Proc. Equipment	9999	0.397	1.274	4.700	0.005	0.127	0.127	568.299

Dumpers/Tenders	25	0.690	2.342	4.378	0.007	0.175	0.175	568.299
Excavators	25	0.815	4.942	4.824	0.005	0.359	0.330	563.803
Excavators	50	0.815	4.942	4.824	0.005	0.359	0.330	563.803
Excavators	120	0.476	3.661	4.708	0.005	0.344	0.317	500.966
Excavators	175	0.358	3.158	4.081	0.005	0.201	0.185	506.495
Excavators	250	0.262	1.277	3.667	0.005	0.116	0.107	506.544
Excavators	500	0.213	1.233	2.815	0.005	0.091	0.083	504.290
Excavators	750	0.242	1.349	3.358	0.005	0.110	0.101	501.660
Forklifts	50	1.864	6.935	5.662	0.005	0.583	0.537	563.435
Forklifts	120	0.723	4.023	6.222	0.005	0.520	0.479	505.583
Forklifts	175	0.530	3.473	5.675	0.005	0.310	0.285	506.203
Forklifts	250	0.539	2.226	6.353	0.005	0.280	0.258	507.510
Forklifts	500	0.353	2.572	4.042	0.005	0.174	0.160	507.821
Generator Sets	15	0.720	3.622	4.978	0.008	0.264	0.264	568.299
Generator Sets	25	0.773	2.604	4.803	0.007	0.244	0.244	568.299
Generator Sets	50	1.146	4.410	4.685	0.007	0.318	0.318	568.299
Generator Sets	120	0.583	3.469	4.410	0.006	0.309	0.309	568.299
Generator Sets	175	0.396	2.934	3.731	0.006	0.170	0.170	568.299
Generator Sets	250	0.265	1.081	3.259	0.006	0.090	0.090	568.299
Generator Sets	500	0.239	1.077	2.882	0.005	0.084	0.084	568.299
Generator Sets	750	0.247	1.077	2.989	0.005	0.086	0.086	568.300
Generator Sets	9999	0.324	1.204	4.542	0.005	0.113	0.113	568.299
Graders	50	3.085	9.106	6.520	0.005	0.864	0.795	528.244
Graders	120	1.193	4.829	9.415	0.005	0.780	0.718	503.161
Graders	175	0.810	3.916	8.250	0.005	0.464	0.426	516.131
Graders	250	0.398	1.459	5.663	0.005	0.184	0.169	511.696
Graders	500	0.334	1.774	3.686	0.005	0.144	0.133	506.506
Graders	750	0.393	1.367	3.154	0.005	0.112	0.112	568.299
Off-Highway Tractors	120	0.625	3.925	5.647	0.005	0.454	0.418	509.447
Off-Highway Tractors	175	0.391	3.278	4.511	0.005	0.229	0.211	507.629
Off-Highway Tractors	250	0.359	1.472	4.930	0.005	0.171	0.157	504.123
Off-Highway Tractors	750	0.252	1.143	3.573	0.005	0.117	0.108	505.762
Off-Highway Tractors	1000	0.107	0.973	2.320	0.005	0.057	0.053	506.147
Off-Highway Trucks	175	0.473	3.459	4.647	0.005	0.258	0.237	503.552
Off-Highway Trucks	250	0.446	1.824	4.826	0.005	0.208	0.191	502.473

Off-Highway Trucks	500	0.351	1.885	4.048	0.005	0.153	0.141	509.860
Off-Highway Trucks	750	0.418	2.436	4.642	0.005	0.187	0.172	508.392
Off-Highway Trucks	1000	0.393	1.707	6.035	0.005	0.175	0.161	505.722
Other Construction Equipment	15	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	25	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	50	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	120	0.703	3.909	6.325	0.005	0.496	0.456	505.349
Other Construction Equipment	175	0.524	3.357	5.818	0.005	0.306	0.282	503.964
Other Construction Equipment	500	0.308	2.285	4.090	0.005	0.151	0.139	509.706
Other General Industrial Equipment	15	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	25	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	50	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	120	0.716	4.045	6.144	0.005	0.518	0.476	503.944
Other General Industrial Equipment	175	0.470	3.437	5.055	0.005	0.276	0.254	505.928
Other General Industrial Equipment	250	0.437	1.867	5.407	0.005	0.217	0.200	507.400
Other General Industrial Equipment	500	0.342	2.367	4.150	0.005	0.159	0.146	507.085

Other General Industrial Equipment	750	0.243	1.491	3.102	0.005	0.100	0.092	507.658
Other General Industrial Equipment	1000	0.242	1.045	4.746	0.005	0.112	0.103	506.147
Other Material Handling Equipment	50	1.765	6.892	5.802	0.005	0.593	0.546	561.532
Other Material Handling Equipment	120	0.514	3.766	4.798	0.005	0.367	0.338	507.792
Other Material Handling Equipment	175	0.489	3.418	5.212	0.005	0.280	0.257	506.324
Other Material Handling Equipment	250	0.398	1.643	5.196	0.005	0.189	0.174	505.534
Other Material Handling Equipment	500	0.323	1.871	4.053	0.005	0.156	0.143	504.263
Other Material Handling Equipment	9999	0.159	0.997	3.489	0.005	0.070	0.065	506.147
Pavers	25	1.827	6.340	5.579	0.005	0.569	0.523	565.234
Pavers	50	1.827	6.340	5.579	0.005	0.569	0.523	565.234
Pavers	120	0.650	3.769	5.886	0.005	0.457	0.420	503.780
Pavers	175	0.433	3.080	4.874	0.005	0.242	0.223	506.540
Pavers	250	0.214	1.036	4.024	0.005	0.104	0.096	508.070
Pavers	500	0.180	0.983	2.885	0.005	0.096	0.089	500.936
Paving Equipment	25	0.991	4.937	4.985	0.005	0.404	0.371	557.706
Paving Equipment	50	0.991	4.937	4.985	0.005	0.404	0.371	557.706
Paving Equipment	120	0.623	3.796	5.733	0.005	0.438	0.403	507.910
Paving Equipment	175	0.372	3.081	4.322	0.005	0.215	0.197	504.820
Paving Equipment	250	0.297	1.331	4.428	0.005	0.148	0.136	506.197
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.720	3.622	4.978	0.008	0.264	0.264	568.299
Pressure Washers	25	0.773	2.604	4.803	0.007	0.244	0.244	568.299
Pressure Washers	50	0.865	3.729	4.515	0.007	0.269	0.269	568.299
Pressure Washers	120	0.504	3.308	4.209	0.006	0.264	0.264	568.299
Pressure Washers	175	0.386	2.913	3.726	0.006	0.168	0.168	568.299

Pressure Washers	250	0.107	0.986	0.399	0.006	0.009	0.009	568.299
Pumps	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Pumps	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Pumps	50	1.240	4.640	4.742	0.007	0.335	0.335	568.299
Pumps	120	0.610	3.523	4.478	0.006	0.325	0.325	568.299
Pumps	175	0.417	2.978	3.789	0.006	0.179	0.179	568.299
Pumps	250	0.280	1.099	3.313	0.006	0.094	0.094	568.299
Pumps	500	0.254	1.093	2.919	0.005	0.088	0.088	568.299
Pumps	750	0.262	1.093	3.028	0.005	0.089	0.089	568.299
Pumps	9999	0.335	1.223	4.596	0.005	0.116	0.116	568.300
Rollers	15	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	25	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	50	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	120	0.628	3.755	5.806	0.005	0.428	0.393	508.199
Rollers	175	0.338	2.993	4.239	0.005	0.197	0.181	505.904
Rollers	250	0.308	1.507	4.395	0.005	0.150	0.138	507.694
Rollers	500	0.334	2.956	4.456	0.005	0.173	0.159	513.415
Rough Terrain Forklifts	50	1.159	4.918	5.099	0.005	0.415	0.382	563.360
Rough Terrain Forklifts	120	0.302	3.342	3.840	0.005	0.213	0.196	507.066
Rough Terrain Forklifts	175	0.209	2.865	3.209	0.005	0.124	0.115	505.596
Rough Terrain Forklifts	250	0.144	1.018	2.468	0.005	0.059	0.054	506.896
Rough Terrain Forklifts	500	0.178	0.962	3.542	0.005	0.078	0.072	501.213
Rubber Tired Dozers	175	0.968	4.249	9.853	0.005	0.566	0.521	507.774
Rubber Tired Dozers	250	0.736	2.729	7.995	0.005	0.395	0.364	509.462
Rubber Tired Dozers	500	0.688	5.828	7.710	0.005	0.359	0.330	513.311
Rubber Tired Dozers	750	0.523	2.765	7.168	0.005	0.260	0.239	507.260
Rubber Tired Dozers	1000	0.631	2.723	6.277	0.005	0.208	0.208	568.300
Rubber Tired Loaders	25	2.055	7.791	6.053	0.005	0.660	0.607	561.903
Rubber Tired Loaders	50	2.055	7.791	6.053	0.005	0.660	0.607	561.903
Rubber Tired Loaders	120	0.803	4.212	6.583	0.005	0.565	0.520	499.594
Rubber Tired Loaders	175	0.565	3.562	5.726	0.005	0.319	0.294	505.131

Rubber Tired Loaders	250	0.393	1.452	5.115	0.005	0.175	0.161	503.654
Rubber Tired Loaders	500	0.391	2.155	4.627	0.005	0.174	0.160	500.431
Rubber Tired Loaders	750	0.373	1.703	4.172	0.005	0.164	0.151	491.918
Rubber Tired Loaders	1000	0.425	1.464	6.724	0.005	0.198	0.182	504.780
Scrapers	120	0.742	4.173	7.143	0.005	0.543	0.500	519.167
Scrapers	175	0.688	3.781	7.384	0.005	0.397	0.365	513.436
Scrapers	250	0.684	2.840	8.109	0.005	0.367	0.338	502.255
Scrapers	500	0.452	3.606	5.757	0.005	0.232	0.214	506.350
Scrapers	750	0.340	2.482	4.484	0.005	0.168	0.154	506.638
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	1.306	4.921	4.761	0.007	0.343	0.343	568.299
Signal Boards	120	0.618	3.594	4.414	0.006	0.330	0.330	568.299
Signal Boards	175	0.430	3.047	3.708	0.006	0.183	0.183	568.299
Signal Boards	250	0.354	1.344	3.894	0.007	0.114	0.114	686.695
Skid Steer Loaders	25	0.599	3.957	4.268	0.005	0.241	0.221	565.228
Skid Steer Loaders	50	0.599	3.957	4.268	0.005	0.241	0.221	565.228
Skid Steer Loaders	120	0.273	3.328	3.534	0.005	0.197	0.182	506.297
Surfacing Equipment	50	1.045	4.763	5.273	0.006	0.406	0.374	570.815
Surfacing Equipment	120	0.522	3.550	5.051	0.005	0.349	0.321	505.087
Surfacing Equipment	175	0.458	3.006	5.458	0.005	0.265	0.244	504.558
Surfacing Equipment	250	0.307	1.429	5.048	0.005	0.148	0.137	510.706
Surfacing Equipment	500	0.217	1.425	3.468	0.005	0.111	0.102	502.471
Surfacing Equipment	750	0.162	1.000	2.880	0.005	0.093	0.085	506.967
Sweepers/Scrubbers	15	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	25	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	50	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	120	0.783	4.059	6.454	0.005	0.571	0.525	508.357
Sweepers/Scrubbers	175	0.746	3.839	7.787	0.005	0.419	0.385	507.292
Sweepers/Scrubbers	250	0.521	2.089	6.782	0.005	0.270	0.248	504.080
Tractors/Loaders/Backhoes	25	1.250	5.741	5.214	0.005	0.455	0.418	553.400

Tractors/Loaders/Backhoes	50	1.250	5.741	5.214	0.005	0.455	0.418	553.400
Tractors/Loaders/Backhoes	120	0.538	3.811	5.142	0.005	0.396	0.364	511.346
Tractors/Loaders/Backhoes	175	0.389	3.232	4.379	0.005	0.222	0.204	502.629
Tractors/Loaders/Backhoes	250	0.311	1.347	4.426	0.005	0.145	0.133	504.401
Tractors/Loaders/Backhoes	500	0.284	1.786	3.787	0.005	0.131	0.121	505.270
Tractors/Loaders/Backhoes	750	0.300	1.674	4.022	0.005	0.144	0.133	500.955
Trenchers	15	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	25	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	50	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	120	0.788	3.988	6.902	0.005	0.541	0.498	509.903
Trenchers	175	0.583	3.507	6.503	0.005	0.328	0.302	501.781
Trenchers	250	0.487	2.030	6.312	0.005	0.251	0.231	507.145
Trenchers	500	0.296	1.966	4.099	0.005	0.150	0.138	504.410
Trenchers	750	0.120	0.971	1.630	0.005	0.054	0.050	509.143
Welders	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Welders	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Welders	50	1.540	5.395	4.936	0.007	0.389	0.389	568.299
Welders	120	0.699	3.705	4.692	0.006	0.375	0.375	568.300
Welders	175	0.486	3.128	3.973	0.006	0.206	0.206	568.299
Welders	250	0.330	1.153	3.481	0.006	0.104	0.104	568.299
Welders	500	0.306	1.134	3.032	0.005	0.097	0.097	568.299
Water Trucks	175	0.473	3.459	4.647	0.005	0.258	0.237	503.552
Water Trucks	250	0.446	1.824	4.826	0.005	0.208	0.191	502.473
Water Trucks	500	0.351	1.885	4.048	0.005	0.153	0.141	509.860
Water Trucks	750	0.418	2.436	4.642	0.005	0.187	0.172	508.392
Water Trucks	1000	0.393	1.707	6.035	0.005	0.175	0.161	505.722

2017

g/hp/hr	g/hp/hr
CH4	N2O
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.023	0.004
0.073	0.005
0.077	0.005
0.150	0.005
0.067	0.004
0.047	0.004
0.032	0.004
0.030	0.004
0.030	0.004
0.034	0.004
0.175	0.005
0.175	0.005
0.175	0.005
0.148	0.004
0.154	0.004
0.152	0.004
0.149	0.004
0.155	0.004
0.153	0.004

2017		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.209	3.169
Aerial Lifts	25	0.209	3.169
Aerial Lifts	50	0.209	3.169
Aerial Lifts	120	0.143	3.184
Aerial Lifts	500	0.246	0.997
Aerial Lifts	750	0.239	1.059
Air Compressors	15	0.786	3.599
Air Compressors	25	0.830	2.564
Air Compressors	50	1.481	5.604
Air Compressors	120	0.671	3.772
Air Compressors	175	0.477	3.207
Air Compressors	250	0.339	1.162
Air Compressors	500	0.321	1.123
Air Compressors	750	0.323	1.123
Air Compressors	1000	0.362	1.246
Bore/Drill Rigs	15	0.804	4.652
Bore/Drill Rigs	25	0.804	4.652
Bore/Drill Rigs	50	0.804	4.652
Bore/Drill Rigs	120	0.298	3.331
Bore/Drill Rigs	175	0.245	3.001
Bore/Drill Rigs	250	0.174	1.102
Bore/Drill Rigs	500	0.166	1.119
Bore/Drill Rigs	750	0.155	1.137
Bore/Drill Rigs	1000	0.121	0.971

0.059	0.005
0.071	0.005
0.061	0.005
0.119	0.005
0.055	0.004
0.039	0.004
0.168	0.005
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.167	0.005
0.154	0.004
0.153	0.004
0.153	0.004
0.154	0.004
0.153	0.004
0.154	0.004
0.143	0.005
0.065	0.004
0.046	0.004
0.032	0.004
0.030	0.004
0.030	0.004
0.035	0.004

Cement and Mortar Mixers	15	0.661	3.469
Cement and Mortar Mixers	25	0.767	2.466
Concrete/Industrial Saws	25	0.685	2.340
Concrete/Industrial Saws	50	1.175	4.894
Concrete/Industrial Saws	120	0.557	3.595
Concrete/Industrial Saws	175	0.395	3.073
Cranes	50	2.173	7.408
Cranes	120	1.097	4.710
Cranes	175	0.696	3.787
Cranes	250	0.561	2.385
Cranes	500	0.410	3.547
Cranes	750	0.287	1.633
Cranes	9999	0.152	0.974
Crawler Tractors	50	2.459	8.006
Crawler Tractors	120	0.849	4.176
Crawler Tractors	175	0.614	3.483
Crawler Tractors	250	0.430	1.742
Crawler Tractors	500	0.385	2.635
Crawler Tractors	750	0.324	1.522
Crawler Tractors	1000	0.486	2.100
Crushing/Proc. Equipment	50	1.402	5.623
Crushing/Proc. Equipment	120	0.647	3.791
Crushing/Proc. Equipment	175	0.468	3.236
Crushing/Proc. Equipment	250	0.340	1.160
Crushing/Proc. Equipment	500	0.324	1.118
Crushing/Proc. Equipment	750	0.323	1.114
Crushing/Proc. Equipment	9999	0.378	1.231

0.062	0.005
0.170	0.005
0.170	0.005
0.151	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.151	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.065	0.005
0.069	0.005
0.103	0.005
0.052	0.004
0.035	0.004
0.023	0.004
0.021	0.004
0.022	0.004
0.029	0.004
0.159	0.005
0.152	0.004
0.156	0.004
0.154	0.004
0.153	0.004
0.035	0.004
0.154	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.152	0.004

Dumpers/Tenders	25	0.687	2.340
Excavators	25	0.771	4.889
Excavators	50	0.771	4.889
Excavators	120	0.440	3.639
Excavators	175	0.334	3.151
Excavators	250	0.247	1.249
Excavators	500	0.200	1.199
Excavators	750	0.210	1.228
Forklifts	50	1.703	6.673
Forklifts	120	0.672	3.979
Forklifts	175	0.508	3.452
Forklifts	250	0.496	2.092
Forklifts	500	0.338	2.508
Generator Sets	15	0.699	3.599
Generator Sets	25	0.757	2.564
Generator Sets	50	1.017	4.292
Generator Sets	120	0.520	3.442
Generator Sets	175	0.356	2.931
Generator Sets	250	0.245	1.063
Generator Sets	500	0.224	1.048
Generator Sets	750	0.230	1.048
Generator Sets	9999	0.301	1.161
Graders	50	3.007	8.978
Graders	120	1.164	4.810
Graders	175	0.757	3.845
Graders	250	0.396	1.449
Graders	500	0.334	1.707
Graders	750	0.372	1.323
Off-Highway Tractors	120	0.586	3.901
Off-Highway Tractors	175	0.356	3.259
Off-Highway Tractors	250	0.328	1.403
Off-Highway Tractors	750	0.248	1.145
Off-Highway Tractors	1000	0.118	0.985
Off-Highway Trucks	175	0.441	3.436
Off-Highway Trucks	250	0.417	1.753

0.154	0.004	Off-Highway Trucks	500	0.325	1.748
0.153	0.004	Off-Highway Trucks	750	0.394	2.356
0.153	0.004	Off-Highway Trucks	1000	0.362	1.546
0.171	0.005	Other Construction Equipment	15	1.244	5.655
0.171	0.005	Other Construction Equipment	25	1.244	5.655
0.171	0.005	Other Construction Equipment	50	1.244	5.655
0.152	0.004	Other Construction Equipment	120	0.676	3.885
0.152	0.004	Other Construction Equipment	175	0.500	3.338
0.154	0.004	Other Construction Equipment	500	0.290	2.121
0.170	0.005	Other General Industrial Equipment	15	1.349	6.179
0.170	0.005	Other General Industrial Equipment	25	1.349	6.179
0.170	0.005	Other General Industrial Equipment	50	1.349	6.179
0.152	0.004	Other General Industrial Equipment	120	0.660	3.998
0.153	0.004	Other General Industrial Equipment	175	0.437	3.399
0.153	0.004	Other General Industrial Equipment	250	0.411	1.780
0.153	0.004	Other General Industrial Equipment	500	0.334	2.365

0.153	0.004	Other General Industrial Equipment	750	0.219	1.480
0.153	0.004	Other General Industrial Equipment	1000	0.251	1.057
0.169	0.005	Other Material Handling Equipment	50	1.615	6.635
0.153	0.004	Other Material Handling Equipment	120	0.488	3.758
0.153	0.004	Other Material Handling Equipment	175	0.427	3.351
0.153	0.004	Other Material Handling Equipment	250	0.359	1.512
0.152	0.004	Other Material Handling Equipment	500	0.325	1.863
0.153	0.004	Other Material Handling Equipment	9999	0.169	1.010
0.171	0.005	Pavers	25	1.731	6.199
0.171	0.005	Pavers	50	1.731	6.199
0.152	0.004	Pavers	120	0.625	3.759
0.153	0.004	Pavers	175	0.389	3.063
0.153	0.004	Pavers	250	0.208	1.037
0.151	0.004	Pavers	500	0.168	0.979
0.168	0.005	Paving Equipment	25	0.926	4.804
0.168	0.005	Paving Equipment	50	0.926	4.804
0.153	0.004	Paving Equipment	120	0.563	3.741
0.152	0.004	Paving Equipment	175	0.343	3.073
0.153	0.004	Paving Equipment	250	0.288	1.333
0.059	0.005	Plate Compactors	15	0.661	3.469
0.065	0.005	Pressure Washers	15	0.699	3.599
0.069	0.005	Pressure Washers	25	0.757	2.564
0.078	0.005	Pressure Washers	50	0.760	3.632
0.045	0.004	Pressure Washers	120	0.444	3.283
0.034	0.004	Pressure Washers	175	0.346	2.910

0.009	0.004
0.073	0.005
0.077	0.005
0.111	0.005
0.055	0.004
0.037	0.004
0.025	0.004
0.022	0.004
0.023	0.004
0.030	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.155	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.151	0.004
0.153	0.004
0.154	0.004
0.155	0.004
0.153	0.004
0.057	0.004
0.170	0.005
0.170	0.005
0.151	0.004
0.152	0.004

Pressure Washers	250	0.102	0.986
Pumps	15	0.786	3.599
Pumps	25	0.830	2.564
Pumps	50	1.104	4.514
Pumps	120	0.546	3.495
Pumps	175	0.376	2.975
Pumps	250	0.260	1.080
Pumps	500	0.239	1.062
Pumps	750	0.244	1.062
Pumps	9999	0.313	1.177
Rollers	15	1.198	5.147
Rollers	25	1.198	5.147
Rollers	50	1.198	5.147
Rollers	120	0.580	3.713
Rollers	175	0.314	2.981
Rollers	250	0.274	1.408
Rollers	500	0.297	2.685
Rough Terrain Forklifts	50	1.108	4.833
Rough Terrain Forklifts	120	0.271	3.318
Rough Terrain Forklifts	175	0.194	2.866
Rough Terrain Forklifts	250	0.148	1.024
Rough Terrain Forklifts	500	0.182	0.966
Rubber Tired Dozers	175	0.903	4.149
Rubber Tired Dozers	250	0.707	2.655
Rubber Tired Dozers	500	0.662	5.526
Rubber Tired Dozers	750	0.526	2.767
Rubber Tired Dozers	1000	0.602	2.560
Rubber Tired Loaders	25	1.957	7.660
Rubber Tired Loaders	50	1.957	7.660
Rubber Tired Loaders	120	0.757	4.171
Rubber Tired Loaders	175	0.522	3.518

0.152	0.004
0.151	0.004
0.148	0.004
0.152	0.004
0.157	0.004
0.155	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.059	0.005
0.117	0.005
0.055	0.004
0.038	0.004
0.031	0.004
0.171	0.005
0.171	0.005
0.153	0.004
0.172	0.005
0.152	0.004
0.152	0.004
0.154	0.004
0.152	0.004
0.153	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.152	0.004
0.167	0.005

Rubber Tired Loaders	250	0.373	1.417
Rubber Tired Loaders	500	0.369	2.060
Rubber Tired Loaders	750	0.367	1.700
Rubber Tired Loaders	1000	0.415	1.456
Scrapers	120	0.754	4.207
Scrapers	175	0.629	3.705
Scrapers	250	0.627	2.647
Scrapers	500	0.425	3.337
Scrapers	750	0.325	2.295
Signal Boards	15	0.661	3.469
Signal Boards	50	1.158	4.785
Signal Boards	120	0.553	3.566
Signal Boards	175	0.388	3.044
Signal Boards	250	0.330	1.323
Skid Steer Loaders	25	0.568	3.919
Skid Steer Loaders	50	0.568	3.919
Skid Steer Loaders	120	0.255	3.319
Surfacing Equipment	50	0.928	4.603
Surfacing Equipment	120	0.508	3.556
Surfacing Equipment	175	0.455	3.003
Surfacing Equipment	250	0.274	1.343
Surfacing Equipment	500	0.204	1.396
Surfacing Equipment	750	0.160	1.003
Sweepers/Scrubbers	15	1.712	6.719
Sweepers/Scrubbers	25	1.712	6.719
Sweepers/Scrubbers	50	1.712	6.719
Sweepers/Scrubbers	120	0.721	4.010
Sweepers/Scrubbers	175	0.711	3.784
Sweepers/Scrubbers	250	0.513	2.090
Tractors/Loaders/Backhoes	25	1.194	5.689

0.167	0.005
0.154	0.004
0.152	0.004
0.152	0.004
0.152	0.004
0.151	0.004
0.171	0.005
0.171	0.005
0.171	0.005
0.154	0.004
0.151	0.004
0.153	0.004
0.152	0.004
0.154	0.004
0.073	0.005
0.077	0.005
0.138	0.005
0.063	0.004
0.043	0.004
0.029	0.004
0.027	0.004
0.152	0.004
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004

Tractors/Loaders/Backhoes	50	1.194	5.689
Tractors/Loaders/Backhoes	120	0.501	3.782
Tractors/Loaders/Backhoes	175	0.354	3.200
Tractors/Loaders/Backhoes	250	0.291	1.304
Tractors/Loaders/Backhoes	500	0.272	1.739
Tractors/Loaders/Backhoes	750	0.296	1.646
Trenchers	15	1.149	5.197
Trenchers	25	1.149	5.197
Trenchers	50	1.149	5.197
Trenchers	120	0.762	3.968
Trenchers	175	0.536	3.434
Trenchers	250	0.486	2.037
Trenchers	500	0.265	1.966
Trenchers	750	0.114	0.972
Welders	15	0.786	3.599
Welders	25	0.830	2.564
Welders	50	1.372	5.239
Welders	120	0.630	3.675
Welders	175	0.442	3.124
Welders	250	0.310	1.133
Welders	500	0.290	1.102
Water Trucks	175	0.441	3.436
Water Trucks	250	0.417	1.753
Water Trucks	500	0.325	1.748
Water Trucks	750	0.394	2.356
Water Trucks	1000	0.362	1.546

2018

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2018
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
2.364	0.005	0.083	0.077	498.343	0.153	0.004	Aerial Lifts
4.658	0.005	0.105	0.096	498.280	0.153	0.004	Aerial Lifts
2.680	0.005	0.079	0.079	568.299	0.021	0.004	Aerial Lifts
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Air Compressors
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Air Compressors
4.871	0.007	0.371	0.371	568.299	0.133	0.005	Air Compressors
4.412	0.006	0.350	0.350	568.299	0.060	0.004	Air Compressors
3.627	0.006	0.194	0.194	568.299	0.043	0.004	Air Compressors
3.163	0.006	0.098	0.098	568.299	0.030	0.004	Air Compressors
2.755	0.005	0.092	0.092	568.299	0.029	0.004	Air Compressors
2.845	0.005	0.094	0.094	568.299	0.029	0.004	Air Compressors
4.583	0.005	0.121	0.121	568.299	0.032	0.004	Air Compressors
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
3.685	0.005	0.211	0.194	485.322	0.149	0.004	Bore/Drill Rigs
2.982	0.005	0.131	0.121	503.770	0.154	0.004	Bore/Drill Rigs
2.522	0.005	0.073	0.067	494.138	0.151	0.004	Bore/Drill Rigs
2.367	0.005	0.072	0.067	489.461	0.150	0.004	Bore/Drill Rigs
2.157	0.005	0.072	0.066	505.125	0.155	0.004	Bore/Drill Rigs
3.021	0.005	0.060	0.055	498.123	0.153	0.004	Bore/Drill Rigs

4.145	0.008	0.165	0.165	568.299	0.059	0.005	Cement and Mortar Mixers
4.567	0.007	0.216	0.216	568.299	0.069	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
4.652	0.007	0.313	0.313	568.299	0.106	0.005	Concrete/Industrial Saws
4.086	0.006	0.294	0.294	568.299	0.050	0.004	Concrete/Industrial Saws
3.316	0.006	0.165	0.165	568.299	0.035	0.004	Concrete/Industrial Saws
6.145	0.005	0.620	0.570	546.782	0.168	0.005	Cranes
9.154	0.005	0.678	0.624	495.753	0.152	0.004	Cranes
7.360	0.005	0.397	0.366	501.093	0.154	0.004	Cranes
6.655	0.005	0.297	0.273	499.372	0.153	0.004	Cranes
5.232	0.005	0.212	0.195	498.439	0.153	0.004	Cranes
4.158	0.005	0.147	0.135	497.187	0.152	0.004	Cranes
2.322	0.005	0.058	0.053	498.280	0.153	0.004	Cranes
6.208	0.005	0.712	0.655	544.676	0.167	0.005	Crawler Tractors
7.141	0.005	0.604	0.555	503.279	0.154	0.004	Crawler Tractors
6.552	0.005	0.364	0.335	498.125	0.153	0.004	Crawler Tractors
5.760	0.005	0.220	0.202	499.832	0.153	0.004	Crawler Tractors
5.029	0.005	0.195	0.179	502.422	0.154	0.004	Crawler Tractors
4.361	0.005	0.160	0.147	499.105	0.153	0.004	Crawler Tractors
7.532	0.005	0.223	0.206	501.878	0.154	0.004	Crawler Tractors
4.827	0.007	0.354	0.354	568.299	0.126	0.005	Crushing/Proc. Equipment
4.244	0.006	0.330	0.330	568.299	0.058	0.004	Crushing/Proc. Equipment
3.450	0.006	0.185	0.185	568.299	0.042	0.004	Crushing/Proc. Equipment
2.987	0.006	0.094	0.094	568.299	0.030	0.004	Crushing/Proc. Equipment
2.602	0.005	0.088	0.088	568.299	0.029	0.004	Crushing/Proc. Equipment
2.664	0.005	0.088	0.088	568.299	0.029	0.004	Crushing/Proc. Equipment
4.423	0.005	0.117	0.117	568.299	0.034	0.004	Crushing/Proc. Equipment

4.362	0.007	0.171	0.171	568.299	0.062	0.005	Dumpers/Tenders
4.678	0.005	0.332	0.305	554.910	0.170	0.005	Excavators
4.678	0.005	0.332	0.305	554.910	0.170	0.005	Excavators
4.380	0.005	0.310	0.286	493.409	0.151	0.004	Excavators
3.700	0.005	0.182	0.168	498.522	0.153	0.004	Excavators
3.319	0.005	0.105	0.097	498.436	0.153	0.004	Excavators
2.507	0.005	0.081	0.075	496.810	0.152	0.004	Excavators
2.719	0.005	0.090	0.083	494.550	0.152	0.004	Excavators
5.450	0.005	0.536	0.493	554.677	0.170	0.005	Forklifts
5.818	0.005	0.480	0.442	497.725	0.153	0.004	Forklifts
5.362	0.005	0.294	0.270	498.334	0.153	0.004	Forklifts
5.751	0.005	0.252	0.232	499.621	0.153	0.004	Forklifts
3.780	0.005	0.161	0.148	499.927	0.153	0.004	Forklifts
4.847	0.008	0.250	0.250	568.299	0.063	0.005	Generator Sets
4.729	0.007	0.233	0.233	568.299	0.068	0.005	Generator Sets
4.522	0.007	0.285	0.285	568.299	0.091	0.005	Generator Sets
4.072	0.006	0.274	0.274	568.299	0.046	0.004	Generator Sets
3.347	0.006	0.151	0.151	568.299	0.032	0.004	Generator Sets
2.910	0.006	0.081	0.081	568.299	0.022	0.004	Generator Sets
2.579	0.005	0.076	0.076	568.299	0.020	0.004	Generator Sets
2.660	0.005	0.077	0.077	568.299	0.020	0.004	Generator Sets
4.293	0.005	0.104	0.104	568.299	0.027	0.004	Generator Sets
6.423	0.005	0.843	0.776	520.075	0.159	0.005	Graders
9.191	0.005	0.759	0.698	495.919	0.152	0.004	Graders
7.663	0.005	0.430	0.396	506.748	0.155	0.004	Graders
5.525	0.005	0.180	0.166	503.802	0.154	0.004	Graders
3.557	0.005	0.139	0.128	498.600	0.153	0.004	Graders
2.835	0.005	0.100	0.100	568.299	0.033	0.004	Graders
5.317	0.005	0.423	0.389	501.245	0.154	0.004	Off-Highway Tractors
4.026	0.005	0.205	0.189	499.245	0.153	0.004	Off-Highway Tractors
4.382	0.005	0.151	0.139	496.498	0.152	0.004	Off-Highway Tractors
3.324	0.005	0.112	0.103	497.618	0.153	0.004	Off-Highway Tractors
2.340	0.005	0.059	0.054	498.280	0.153	0.004	Off-Highway Tractors
4.236	0.005	0.233	0.215	495.924	0.152	0.004	Off-Highway Trucks
4.368	0.005	0.189	0.174	494.794	0.152	0.004	Off-Highway Trucks

3.668	0.005	0.136	0.125	501.437	0.154	0.004	Off-Highway Trucks
4.257	0.005	0.170	0.157	500.199	0.153	0.004	Off-Highway Trucks
5.653	0.005	0.159	0.146	497.115	0.152	0.004	Off-Highway Trucks
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
6.070	0.005	0.475	0.437	497.383	0.152	0.004	Other Construction Equipment
5.494	0.005	0.290	0.267	495.931	0.152	0.004	Other Construction Equipment
3.777	0.005	0.138	0.127	501.130	0.154	0.004	Other Construction Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.721	0.005	0.471	0.433	496.111	0.152	0.004	Other General Industrial Equipment
4.534	0.005	0.250	0.230	498.064	0.153	0.004	Other General Industrial Equipment
5.022	0.005	0.199	0.183	499.513	0.153	0.004	Other General Industrial Equipment
3.949	0.005	0.152	0.140	499.203	0.153	0.004	Other General Industrial Equipment

2.592	0.005	0.086	0.079	499.767	0.153	0.004	Other General Industrial Equipment
4.787	0.005	0.115	0.105	498.280	0.153	0.004	Other General Industrial Equipment
5.574	0.005	0.546	0.502	552.804	0.169	0.005	Other Material Handling Equipment
4.561	0.005	0.341	0.314	499.899	0.153	0.004	Other Material Handling Equipment
4.488	0.005	0.238	0.219	498.454	0.153	0.004	Other Material Handling Equipment
4.705	0.005	0.163	0.150	497.676	0.153	0.004	Other Material Handling Equipment
3.971	0.005	0.154	0.141	496.425	0.152	0.004	Other Material Handling Equipment
3.520	0.005	0.072	0.067	498.280	0.153	0.004	Other Material Handling Equipment
5.437	0.005	0.540	0.497	556.453	0.171	0.005	Pavers
5.437	0.005	0.540	0.497	556.453	0.171	0.005	Pavers
5.692	0.005	0.437	0.402	495.925	0.152	0.004	Pavers
4.353	0.005	0.214	0.197	498.967	0.153	0.004	Pavers
3.809	0.005	0.100	0.092	499.562	0.153	0.004	Pavers
2.487	0.005	0.087	0.081	491.784	0.151	0.004	Pavers
4.728	0.005	0.359	0.331	548.648	0.168	0.005	Paving Equipment
4.728	0.005	0.359	0.331	548.648	0.168	0.005	Paving Equipment
5.207	0.005	0.391	0.359	500.165	0.153	0.004	Paving Equipment
3.896	0.005	0.195	0.179	497.148	0.152	0.004	Paving Equipment
4.121	0.005	0.142	0.130	498.732	0.153	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.847	0.008	0.250	0.250	568.299	0.063	0.005	Pressure Washers
4.729	0.007	0.233	0.233	568.299	0.068	0.005	Pressure Washers
4.355	0.007	0.240	0.240	568.299	0.068	0.005	Pressure Washers
3.888	0.006	0.233	0.233	568.300	0.040	0.004	Pressure Washers
3.349	0.006	0.149	0.149	568.299	0.031	0.004	Pressure Washers

0.317	0.006	0.009	0.009	568.299	0.009	0.004	Pressure Washers
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Pumps
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Pumps
4.578	0.007	0.301	0.301	568.299	0.099	0.005	Pumps
4.134	0.006	0.287	0.287	568.299	0.049	0.004	Pumps
3.400	0.006	0.159	0.159	568.299	0.033	0.004	Pumps
2.958	0.006	0.084	0.084	568.299	0.023	0.004	Pumps
2.613	0.005	0.079	0.079	568.299	0.021	0.004	Pumps
2.695	0.005	0.080	0.080	568.299	0.022	0.004	Pumps
4.343	0.005	0.106	0.106	568.299	0.028	0.004	Pumps
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.411	0.005	0.392	0.361	500.153	0.153	0.004	Rollers
3.874	0.005	0.180	0.166	497.909	0.153	0.004	Rollers
3.921	0.005	0.129	0.119	499.702	0.153	0.004	Rollers
3.840	0.005	0.150	0.138	505.832	0.155	0.004	Rollers
4.903	0.005	0.382	0.352	554.623	0.170	0.005	Rough Terrain Forklifts
3.418	0.005	0.182	0.167	499.168	0.153	0.004	Rough Terrain Forklifts
2.902	0.005	0.112	0.103	497.777	0.153	0.004	Rough Terrain Forklifts
2.474	0.005	0.059	0.054	499.001	0.153	0.004	Rough Terrain Forklifts
3.568	0.005	0.079	0.073	493.336	0.151	0.004	Rough Terrain Forklifts
9.129	0.005	0.525	0.483	499.410	0.153	0.004	Rubber Tired Dozers
7.671	0.005	0.376	0.345	501.548	0.154	0.004	Rubber Tired Dozers
7.333	0.005	0.341	0.313	505.849	0.155	0.004	Rubber Tired Dozers
7.172	0.005	0.260	0.239	499.367	0.153	0.004	Rubber Tired Dozers
6.013	0.005	0.195	0.195	568.299	0.054	0.004	Rubber Tired Dozers
5.954	0.005	0.633	0.582	553.583	0.170	0.005	Rubber Tired Loaders
5.954	0.005	0.633	0.582	553.583	0.170	0.005	Rubber Tired Loaders
6.236	0.005	0.530	0.487	491.853	0.151	0.004	Rubber Tired Loaders
5.195	0.005	0.290	0.266	497.353	0.152	0.004	Rubber Tired Loaders

4.755	0.005	0.162	0.149	495.950	0.152	0.004	Rubber Tired Loaders
4.253	0.005	0.160	0.148	492.276	0.151	0.004	Rubber Tired Loaders
4.050	0.005	0.160	0.147	484.366	0.148	0.004	Rubber Tired Loaders
6.553	0.005	0.192	0.177	496.897	0.152	0.004	Rubber Tired Loaders
7.179	0.005	0.551	0.507	511.112	0.157	0.004	Scrapers
6.671	0.005	0.359	0.331	505.331	0.155	0.004	Scrapers
7.399	0.005	0.333	0.306	494.523	0.152	0.004	Scrapers
5.340	0.005	0.214	0.197	498.457	0.153	0.004	Scrapers
4.216	0.005	0.156	0.143	498.693	0.153	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
4.590	0.007	0.306	0.306	568.299	0.104	0.005	Signal Boards
4.059	0.006	0.290	0.290	568.299	0.049	0.004	Signal Boards
3.305	0.006	0.161	0.161	568.299	0.035	0.004	Signal Boards
3.452	0.007	0.101	0.101	686.695	0.029	0.004	Signal Boards
4.113	0.005	0.218	0.200	556.714	0.171	0.005	Skid Steer Loaders
4.113	0.005	0.218	0.200	556.714	0.171	0.005	Skid Steer Loaders
3.286	0.005	0.177	0.163	498.326	0.153	0.004	Skid Steer Loaders
5.064	0.006	0.365	0.336	564.477	0.173	0.005	Surfacing Equipment
4.942	0.005	0.337	0.310	498.360	0.153	0.004	Surfacing Equipment
5.393	0.005	0.264	0.243	496.274	0.152	0.004	Surfacing Equipment
4.468	0.005	0.129	0.119	501.847	0.154	0.004	Surfacing Equipment
3.106	0.005	0.103	0.094	496.885	0.152	0.004	Surfacing Equipment
2.770	0.005	0.090	0.083	499.712	0.153	0.004	Surfacing Equipment
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
6.020	0.005	0.520	0.479	500.456	0.153	0.004	Sweepers/Scrubbers
7.424	0.005	0.395	0.363	499.407	0.153	0.004	Sweepers/Scrubbers
6.509	0.005	0.264	0.243	496.244	0.152	0.004	Sweepers/Scrubbers
5.110	0.005	0.433	0.399	544.929	0.167	0.005	Tractors/Loaders/Backhoes

5.110	0.005	0.433	0.399	544.929	0.167	0.005	Tractors/Loaders/Backhoes
4.809	0.005	0.362	0.333	502.795	0.154	0.004	Tractors/Loaders/Backhoes
3.879	0.005	0.197	0.182	493.912	0.151	0.004	Tractors/Loaders/Backhoes
4.041	0.005	0.132	0.121	496.845	0.152	0.004	Tractors/Loaders/Backhoes
3.490	0.005	0.122	0.112	497.113	0.152	0.004	Tractors/Loaders/Backhoes
3.862	0.005	0.139	0.128	492.953	0.151	0.004	Tractors/Loaders/Backhoes
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
6.679	0.005	0.523	0.481	501.992	0.154	0.004	Trenchers
5.927	0.005	0.300	0.276	493.764	0.151	0.004	Trenchers
6.194	0.005	0.250	0.230	499.228	0.153	0.004	Trenchers
3.442	0.005	0.129	0.119	497.020	0.152	0.004	Trenchers
1.430	0.005	0.046	0.042	501.183	0.154	0.004	Trenchers
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Welders
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Welders
4.768	0.007	0.350	0.350	568.299	0.123	0.005	Welders
4.328	0.006	0.332	0.332	568.299	0.056	0.004	Welders
3.562	0.006	0.183	0.183	568.299	0.039	0.004	Welders
3.105	0.006	0.094	0.094	568.299	0.028	0.004	Welders
2.713	0.005	0.088	0.088	568.299	0.026	0.004	Welders
4.236	0.005	0.233	0.215	495.924	0.152	0.004	Water Trucks
4.368	0.005	0.189	0.174	494.794	0.152	0.004	Water Trucks
3.668	0.005	0.136	0.125	501.437	0.154	0.004	Water Trucks
4.257	0.005	0.170	0.157	500.199	0.153	0.004	Water Trucks
5.653	0.005	0.159	0.146	497.115	0.152	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
25	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
50	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
120	0.122	3.167	2.064	0.005	0.057	0.053	490.474	0.153	0.004
500	0.062	0.937	0.634	0.005	0.009	0.008	490.412	0.153	0.004
750	0.225	1.037	2.385	0.005	0.071	0.071	568.299	0.020	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.299	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.300	0.072	0.005
50	1.300	5.439	4.707	0.007	0.329	0.329	568.299	0.117	0.005
120	0.603	3.744	4.050	0.006	0.304	0.304	568.300	0.054	0.004
175	0.435	3.205	3.228	0.006	0.170	0.170	568.299	0.039	0.004
250	0.321	1.146	2.797	0.006	0.087	0.087	568.300	0.029	0.004
500	0.307	1.101	2.465	0.005	0.083	0.083	568.299	0.027	0.004
750	0.309	1.101	2.533	0.005	0.084	0.084	568.299	0.027	0.004
1000	0.343	1.210	4.325	0.005	0.111	0.111	568.299	0.030	0.004
15	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
25	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
50	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
120	0.269	3.323	3.400	0.005	0.184	0.170	479.672	0.149	0.004
175	0.203	2.961	2.357	0.005	0.103	0.095	495.073	0.154	0.004
250	0.155	1.073	2.153	0.005	0.061	0.056	484.561	0.151	0.004
500	0.135	1.032	1.746	0.005	0.052	0.048	485.689	0.151	0.004
750	0.126	1.006	1.679	0.005	0.055	0.050	489.730	0.153	0.004
1000	0.125	0.978	3.032	0.005	0.060	0.056	490.243	0.153	0.004

15	0.661	3.469	4.142	0.008	0.163	0.163	568.299	0.059	0.005
25	0.749	2.440	4.504	0.007	0.205	0.205	568.299	0.067	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	1.032	4.766	4.492	0.007	0.277	0.277	568.299	0.093	0.005
120	0.498	3.571	3.754	0.006	0.256	0.256	568.299	0.044	0.004
175	0.359	3.072	2.945	0.006	0.145	0.145	568.299	0.032	0.004
50	2.072	7.247	6.004	0.005	0.624	0.574	538.122	0.168	0.005
120	0.932	4.452	7.931	0.005	0.583	0.536	488.117	0.152	0.004
175	0.621	3.666	6.557	0.005	0.351	0.323	493.045	0.154	0.004
250	0.483	2.134	5.773	0.005	0.250	0.230	491.407	0.153	0.004
500	0.370	3.187	4.634	0.005	0.187	0.172	490.891	0.153	0.004
750	0.271	1.613	3.769	0.005	0.137	0.126	489.054	0.152	0.004
9999	0.162	0.983	2.335	0.005	0.059	0.054	490.412	0.153	0.004
50	2.446	8.009	6.163	0.005	0.704	0.648	536.141	0.167	0.005
120	0.798	4.123	6.723	0.005	0.566	0.521	494.922	0.154	0.004
175	0.555	3.421	5.859	0.005	0.326	0.299	490.000	0.153	0.004
250	0.398	1.654	5.290	0.005	0.200	0.184	491.606	0.153	0.004
500	0.344	2.382	4.373	0.005	0.169	0.156	493.510	0.154	0.004
750	0.296	1.445	3.834	0.005	0.142	0.130	491.266	0.153	0.004
1000	0.489	2.105	7.564	0.005	0.225	0.207	494.105	0.154	0.004
50	1.225	5.461	4.657	0.007	0.310	0.310	568.299	0.110	0.005
120	0.580	3.763	3.881	0.006	0.284	0.284	568.299	0.052	0.004
175	0.427	3.234	3.049	0.006	0.161	0.161	568.299	0.038	0.004
250	0.322	1.146	2.622	0.006	0.083	0.083	568.299	0.029	0.004
500	0.309	1.099	2.312	0.005	0.079	0.079	568.299	0.027	0.004
750	0.308	1.097	2.358	0.005	0.079	0.079	568.299	0.027	0.004
9999	0.361	1.198	4.168	0.005	0.107	0.107	568.299	0.032	0.004

25	0.686	2.339	4.350	0.007	0.169	0.169	568.299	0.061	0.005
25	0.687	4.700	4.395	0.005	0.284	0.261	545.347	0.170	0.005
50	0.687	4.700	4.395	0.005	0.284	0.261	545.347	0.170	0.005
120	0.368	3.562	3.764	0.005	0.251	0.230	486.056	0.151	0.004
175	0.273	3.093	2.924	0.005	0.142	0.130	490.673	0.153	0.004
250	0.202	1.152	2.594	0.005	0.079	0.073	490.257	0.153	0.004
500	0.175	1.140	2.050	0.005	0.066	0.061	489.103	0.152	0.004
750	0.189	1.224	2.266	0.005	0.076	0.070	487.653	0.152	0.004
50	1.393	6.103	5.052	0.005	0.447	0.411	545.919	0.170	0.005
120	0.567	3.858	5.015	0.005	0.400	0.368	489.866	0.153	0.004
175	0.427	3.336	4.430	0.005	0.241	0.222	490.466	0.153	0.004
250	0.425	1.835	4.938	0.005	0.207	0.191	491.733	0.153	0.004
500	0.282	1.878	3.019	0.005	0.125	0.115	492.034	0.153	0.004
15	0.679	3.580	4.728	0.008	0.237	0.237	568.299	0.061	0.005
25	0.744	2.531	4.661	0.007	0.224	0.224	568.299	0.067	0.005
50	0.895	4.182	4.366	0.007	0.253	0.253	568.299	0.080	0.005
120	0.461	3.418	3.752	0.006	0.239	0.239	568.299	0.041	0.004
175	0.319	2.930	2.989	0.006	0.133	0.133	568.299	0.028	0.004
250	0.226	1.048	2.582	0.006	0.072	0.072	568.299	0.020	0.004
500	0.211	1.028	2.310	0.005	0.069	0.069	568.299	0.019	0.004
750	0.215	1.028	2.370	0.005	0.070	0.070	568.299	0.019	0.004
9999	0.280	1.128	4.058	0.005	0.095	0.095	568.299	0.025	0.004
50	2.809	8.626	6.180	0.005	0.790	0.726	511.910	0.159	0.005
120	1.075	4.697	8.520	0.005	0.697	0.641	487.698	0.152	0.004
175	0.661	3.710	6.605	0.005	0.371	0.342	497.377	0.155	0.004
250	0.384	1.416	5.271	0.005	0.171	0.158	495.431	0.154	0.004
500	0.324	1.564	3.345	0.005	0.130	0.119	490.576	0.153	0.004
750	0.353	1.286	2.543	0.005	0.090	0.090	568.299	0.031	0.004
120	0.522	3.832	4.787	0.005	0.373	0.343	492.871	0.153	0.004
175	0.315	3.219	3.498	0.005	0.176	0.162	491.313	0.153	0.004
250	0.272	1.295	3.454	0.005	0.119	0.109	488.677	0.152	0.004
750	0.196	1.119	2.166	0.005	0.081	0.074	490.182	0.153	0.004
1000	0.129	0.998	2.359	0.005	0.060	0.055	490.412	0.153	0.004
175	0.383	3.383	3.543	0.005	0.192	0.177	488.044	0.152	0.004
250	0.341	1.543	3.451	0.005	0.141	0.130	487.635	0.152	0.004

500	0.287	1.560	3.090	0.005	0.113	0.104	493.506	0.154	0.004
750	0.348	2.176	3.691	0.005	0.143	0.132	492.114	0.153	0.004
1000	0.297	1.357	4.858	0.005	0.127	0.116	487.790	0.152	0.004
15	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
25	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
50	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
120	0.598	3.799	5.441	0.005	0.417	0.383	490.018	0.153	0.004
175	0.436	3.263	4.755	0.005	0.250	0.230	487.986	0.152	0.004
500	0.251	1.813	3.167	0.005	0.115	0.105	493.360	0.154	0.004
15	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
25	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
50	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
120	0.557	3.876	4.955	0.005	0.392	0.360	488.278	0.152	0.004
175	0.318	3.237	3.237	0.005	0.172	0.158	490.200	0.153	0.004
250	0.303	1.455	3.648	0.005	0.135	0.124	491.626	0.153	0.004
500	0.254	1.583	2.907	0.005	0.104	0.095	491.321	0.153	0.004

750	0.217	1.483	2.419	0.005	0.083	0.076	491.876	0.153	0.004
1000	0.257	1.066	4.810	0.005	0.116	0.107	490.412	0.153	0.004
50	1.289	6.061	5.182	0.005	0.457	0.420	544.075	0.169	0.005
120	0.407	3.675	3.944	0.005	0.271	0.249	492.006	0.153	0.004
175	0.327	3.218	3.332	0.005	0.173	0.159	490.583	0.153	0.004
250	0.316	1.388	4.092	0.005	0.135	0.124	489.817	0.153	0.004
500	0.296	1.633	3.524	0.005	0.134	0.123	488.587	0.152	0.004
9999	0.180	1.023	3.551	0.005	0.074	0.068	490.412	0.153	0.004
25	1.539	5.849	5.121	0.005	0.478	0.440	547.079	0.170	0.005
50	1.539	5.849	5.121	0.005	0.478	0.440	547.079	0.170	0.005
120	0.536	3.660	5.019	0.005	0.375	0.345	488.181	0.152	0.004
175	0.339	3.039	3.747	0.005	0.183	0.168	491.322	0.153	0.004
250	0.198	1.034	3.474	0.005	0.092	0.085	491.543	0.153	0.004
500	0.164	0.981	2.320	0.005	0.083	0.076	484.277	0.151	0.004
25	0.737	4.416	4.312	0.005	0.286	0.263	540.612	0.168	0.005
50	0.737	4.416	4.312	0.005	0.286	0.263	540.612	0.168	0.005
120	0.449	3.607	4.270	0.005	0.302	0.278	492.118	0.153	0.004
175	0.284	3.026	3.172	0.005	0.155	0.143	489.202	0.152	0.004
250	0.258	1.281	3.587	0.005	0.123	0.113	490.683	0.153	0.004
15	0.661	3.470	4.142	0.008	0.161	0.161	568.300	0.059	0.005
15	0.679	3.580	4.728	0.008	0.237	0.237	568.299	0.061	0.005
25	0.744	2.531	4.661	0.007	0.224	0.224	568.299	0.067	0.005
50	0.661	3.542	4.202	0.007	0.212	0.212	568.299	0.059	0.005
120	0.388	3.260	3.584	0.006	0.203	0.203	568.299	0.035	0.004
175	0.309	2.908	2.989	0.006	0.132	0.132	568.299	0.027	0.004

250	0.099	0.986	0.277	0.006	0.009	0.009	568.299	0.008	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.299	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.299	0.072	0.005
50	0.973	4.397	4.422	0.007	0.267	0.267	568.299	0.087	0.005
120	0.485	3.471	3.808	0.006	0.252	0.252	568.299	0.043	0.004
175	0.338	2.974	3.035	0.006	0.140	0.140	568.299	0.030	0.004
250	0.242	1.065	2.624	0.006	0.075	0.075	568.299	0.021	0.004
500	0.226	1.041	2.340	0.005	0.071	0.071	568.299	0.020	0.004
750	0.230	1.041	2.401	0.005	0.072	0.072	568.299	0.020	0.004
9999	0.293	1.144	4.105	0.005	0.098	0.098	568.299	0.026	0.004
15	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
25	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
50	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
120	0.481	3.610	4.650	0.005	0.320	0.294	492.212	0.153	0.004
175	0.265	2.949	3.181	0.005	0.147	0.136	490.181	0.153	0.004
250	0.211	1.243	2.995	0.005	0.094	0.086	491.664	0.153	0.004
500	0.245	2.231	3.098	0.005	0.119	0.110	497.996	0.155	0.004
50	1.070	4.768	4.735	0.005	0.359	0.330	545.869	0.170	0.005
120	0.222	3.270	2.845	0.005	0.136	0.125	491.211	0.153	0.004
175	0.164	2.842	2.342	0.005	0.088	0.081	489.987	0.153	0.004
250	0.152	1.029	2.487	0.005	0.060	0.055	491.100	0.153	0.004
500	0.145	0.958	2.701	0.005	0.060	0.055	485.954	0.151	0.004
175	0.802	3.990	8.021	0.005	0.461	0.424	491.492	0.153	0.004
250	0.669	2.512	7.208	0.005	0.350	0.322	493.634	0.154	0.004
500	0.598	4.982	6.502	0.005	0.300	0.276	498.186	0.155	0.004
750	0.506	2.759	6.727	0.005	0.248	0.228	491.473	0.153	0.004
1000	0.574	2.413	5.764	0.005	0.183	0.183	568.299	0.051	0.004
25	1.765	7.299	5.679	0.005	0.576	0.530	545.053	0.170	0.005
50	1.765	7.299	5.679	0.005	0.576	0.530	545.053	0.170	0.005
120	0.655	4.047	5.470	0.005	0.452	0.416	484.093	0.151	0.004
175	0.448	3.423	4.368	0.005	0.242	0.223	489.511	0.152	0.004

250	0.334	1.346	4.131	0.005	0.140	0.129	487.902	0.152	0.004
500	0.334	1.868	3.726	0.005	0.140	0.128	484.571	0.151	0.004
750	0.331	1.555	3.544	0.005	0.140	0.129	476.566	0.148	0.004
1000	0.336	1.213	5.673	0.005	0.154	0.142	488.404	0.152	0.004
120	0.740	4.204	7.036	0.005	0.543	0.499	502.829	0.157	0.004
175	0.539	3.568	5.641	0.005	0.303	0.279	497.340	0.155	0.004
250	0.557	2.407	6.563	0.005	0.290	0.267	486.991	0.152	0.004
500	0.369	2.828	4.568	0.005	0.180	0.166	490.773	0.153	0.004
750	0.294	1.965	3.746	0.005	0.135	0.124	490.578	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	1.018	4.657	4.427	0.007	0.270	0.270	568.299	0.091	0.005
120	0.492	3.541	3.723	0.006	0.252	0.252	568.299	0.044	0.004
175	0.351	3.043	2.930	0.006	0.141	0.141	568.299	0.031	0.004
250	0.309	1.306	3.040	0.007	0.090	0.090	686.695	0.027	0.004
25	0.487	3.787	3.890	0.005	0.178	0.164	547.558	0.171	0.005
50	0.487	3.787	3.890	0.005	0.178	0.164	547.558	0.171	0.005
120	0.216	3.282	2.860	0.005	0.140	0.129	490.094	0.153	0.004
50	0.779	4.353	4.820	0.006	0.320	0.294	555.736	0.173	0.005
120	0.414	3.489	4.284	0.005	0.269	0.247	491.317	0.153	0.004
175	0.375	2.976	4.475	0.005	0.215	0.198	488.441	0.152	0.004
250	0.241	1.234	3.989	0.005	0.113	0.104	494.139	0.154	0.004
500	0.157	1.226	2.204	0.005	0.076	0.070	487.872	0.152	0.004
750	0.143	0.993	2.269	0.005	0.078	0.072	488.860	0.152	0.004
15	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
25	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
50	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
120	0.600	3.882	5.136	0.005	0.428	0.394	492.554	0.153	0.004
175	0.589	3.588	6.071	0.005	0.320	0.294	491.521	0.153	0.004
250	0.350	1.605	4.302	0.005	0.169	0.156	488.409	0.152	0.004
25	0.992	5.310	4.764	0.005	0.363	0.334	536.112	0.167	0.005

50	0.992	5.310	4.764	0.005	0.363	0.334	536.112	0.167	0.005
120	0.420	3.692	4.154	0.005	0.294	0.271	494.124	0.154	0.004
175	0.297	3.137	3.168	0.005	0.160	0.147	485.775	0.151	0.004
250	0.259	1.242	3.460	0.005	0.112	0.103	489.456	0.152	0.004
500	0.222	1.445	2.669	0.005	0.092	0.085	486.294	0.151	0.004
750	0.271	1.601	3.402	0.005	0.124	0.114	485.010	0.151	0.004
15	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
25	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
50	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
120	0.658	3.855	5.915	0.005	0.450	0.414	493.715	0.154	0.004
175	0.470	3.331	5.127	0.005	0.261	0.240	485.925	0.151	0.004
250	0.419	1.849	5.296	0.005	0.212	0.195	491.565	0.153	0.004
500	0.256	1.974	3.211	0.005	0.121	0.112	489.628	0.152	0.004
750	0.094	0.966	1.025	0.005	0.029	0.026	494.643	0.154	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.300	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.299	0.072	0.005
50	1.210	5.092	4.607	0.007	0.311	0.311	568.299	0.109	0.005
120	0.564	3.648	3.980	0.006	0.290	0.290	568.299	0.050	0.004
175	0.402	3.123	3.176	0.006	0.162	0.162	568.299	0.036	0.004
250	0.292	1.118	2.751	0.006	0.084	0.084	568.299	0.026	0.004
500	0.277	1.080	2.430	0.005	0.080	0.080	568.299	0.025	0.004
175	0.383	3.383	3.543	0.005	0.192	0.177	488.044	0.152	0.004
250	0.341	1.543	3.451	0.005	0.141	0.130	487.635	0.152	0.004
500	0.287	1.560	3.090	0.005	0.113	0.104	493.506	0.154	0.004
750	0.348	2.176	3.691	0.005	0.143	0.132	492.114	0.153	0.004
1000	0.297	1.357	4.858	0.005	0.127	0.116	487.790	0.152	0.004

2019

2019		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10
Aerial Lifts	15	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	25	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	50	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	120	0.118	3.173	1.977	0.005	0.049
Aerial Lifts	500	0.066	0.941	0.636	0.005	0.009
Aerial Lifts	750	0.212	1.023	2.117	0.005	0.064
Air Compressors	15	0.748	3.562	4.647	0.008	0.241
Air Compressors	25	0.787	2.501	4.596	0.007	0.222
Air Compressors	50	1.129	5.283	4.546	0.007	0.287
Air Compressors	120	0.538	3.718	3.706	0.006	0.260
Air Compressors	175	0.401	3.204	2.874	0.006	0.150
Air Compressors	250	0.304	1.132	2.469	0.006	0.078
Air Compressors	500	0.293	1.086	2.193	0.005	0.075
Air Compressors	750	0.294	1.086	2.247	0.005	0.076
Air Compressors	1000	0.324	1.182	4.073	0.005	0.102
Bore/Drill Rigs	15	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	25	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	50	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	120	0.267	3.332	3.321	0.005	0.180
Bore/Drill Rigs	175	0.181	2.956	2.018	0.005	0.088
Bore/Drill Rigs	250	0.143	1.061	1.894	0.005	0.054
Bore/Drill Rigs	500	0.129	1.034	1.551	0.005	0.048
Bore/Drill Rigs	750	0.117	0.971	1.449	0.005	0.048
Bore/Drill Rigs	1000	0.129	0.983	3.041	0.005	0.061

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.162
Cement and Mortar Mixers	25	0.735	2.417	4.469	0.007	0.196
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
Concrete/Industrial Saws	50	0.899	4.645	4.338	0.007	0.242
Concrete/Industrial Saws	120	0.443	3.550	3.441	0.006	0.220
Concrete/Industrial Saws	175	0.330	3.072	2.618	0.006	0.128
Cranes	50	2.045	7.245	5.952	0.005	0.615
Cranes	120	0.803	4.265	6.958	0.005	0.501
Cranes	175	0.568	3.598	5.949	0.005	0.318
Cranes	250	0.427	1.941	5.084	0.005	0.216
Cranes	500	0.349	2.969	4.297	0.005	0.173
Cranes	750	0.252	1.446	3.428	0.005	0.124
Cranes	9999	0.172	0.991	2.349	0.005	0.060
Crawler Tractors	50	2.225	7.589	5.855	0.005	0.640
Crawler Tractors	120	0.757	4.088	6.393	0.005	0.535
Crawler Tractors	175	0.517	3.379	5.382	0.005	0.300
Crawler Tractors	250	0.380	1.604	4.972	0.005	0.188
Crawler Tractors	500	0.319	2.219	3.934	0.005	0.153
Crawler Tractors	750	0.266	1.356	3.343	0.005	0.123
Crawler Tractors	1000	0.460	2.020	7.212	0.005	0.211
Crushing/Proc. Equipment	50	1.064	5.316	4.495	0.007	0.269
Crushing/Proc. Equipment	120	0.519	3.739	3.544	0.006	0.241
Crushing/Proc. Equipment	175	0.394	3.233	2.700	0.006	0.141
Crushing/Proc. Equipment	250	0.304	1.134	2.300	0.006	0.074
Crushing/Proc. Equipment	500	0.295	1.087	2.046	0.005	0.071
Crushing/Proc. Equipment	750	0.294	1.085	2.085	0.005	0.071
Crushing/Proc. Equipment	9999	0.345	1.173	3.927	0.005	0.098

Dumpers/Tenders	25	0.686	2.339	4.341	0.007	0.167
Excavators	25	0.637	4.597	4.199	0.005	0.250
Excavators	50	0.637	4.597	4.199	0.005	0.250
Excavators	120	0.325	3.524	3.369	0.005	0.211
Excavators	175	0.246	3.082	2.533	0.005	0.122
Excavators	250	0.186	1.127	2.242	0.005	0.068
Excavators	500	0.162	1.114	1.780	0.005	0.058
Excavators	750	0.176	1.173	1.987	0.005	0.067
Forklifts	50	1.244	5.880	4.862	0.005	0.401
Forklifts	120	0.510	3.804	4.550	0.005	0.353
Forklifts	175	0.382	3.288	3.865	0.005	0.210
Forklifts	250	0.374	1.677	4.250	0.005	0.175
Forklifts	500	0.268	1.814	2.751	0.005	0.112
Generator Sets	15	0.662	3.562	4.617	0.008	0.224
Generator Sets	25	0.731	2.501	4.596	0.007	0.214
Generator Sets	50	0.779	4.076	4.215	0.007	0.222
Generator Sets	120	0.405	3.396	3.446	0.006	0.206
Generator Sets	175	0.290	2.929	2.669	0.006	0.118
Generator Sets	250	0.211	1.036	2.285	0.006	0.064
Generator Sets	500	0.199	1.015	2.056	0.005	0.062
Generator Sets	750	0.202	1.015	2.104	0.005	0.062
Generator Sets	9999	0.261	1.103	3.829	0.005	0.087
Graders	50	2.616	8.279	5.945	0.005	0.737
Graders	120	1.032	4.642	8.159	0.005	0.665
Graders	175	0.609	3.656	6.014	0.005	0.337
Graders	250	0.360	1.359	4.866	0.005	0.156
Graders	500	0.323	1.528	3.218	0.005	0.124
Graders	750	0.335	1.255	2.276	0.005	0.080
Off-Highway Tractors	120	0.473	3.795	4.421	0.005	0.331
Off-Highway Tractors	175	0.294	3.219	3.208	0.005	0.159
Off-Highway Tractors	250	0.239	1.218	2.914	0.005	0.098
Off-Highway Tractors	750	0.205	1.129	2.177	0.005	0.082
Off-Highway Tractors	1000	0.140	1.010	2.378	0.005	0.062
Off-Highway Trucks	175	0.323	3.326	2.825	0.005	0.149
Off-Highway Trucks	250	0.307	1.461	2.985	0.005	0.119

Off-Highway Trucks	500	0.264	1.483	2.669	0.005	0.097
Off-Highway Trucks	750	0.327	2.041	3.320	0.005	0.129
Off-Highway Trucks	1000	0.295	1.356	4.765	0.005	0.124
Other Construction Equipment	15	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	25	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	50	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	120	0.550	3.754	5.048	0.005	0.379
Other Construction Equipment	175	0.412	3.256	4.433	0.005	0.234
Other Construction Equipment	500	0.234	1.667	2.855	0.005	0.103
Other General Industrial Equipment	15	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	25	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	50	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	120	0.500	3.821	4.497	0.005	0.343
Other General Industrial Equipment	175	0.302	3.241	2.999	0.005	0.157
Other General Industrial Equipment	250	0.259	1.299	3.020	0.005	0.106
Other General Industrial Equipment	500	0.239	1.561	2.575	0.005	0.092

Other General Industrial Equipment	750	0.199	1.474	2.115	0.005	0.076
Other General Industrial Equipment	1000	0.264	1.076	4.834	0.005	0.117
Other Material Handling Equipment	50	1.275	6.139	5.179	0.005	0.452
Other Material Handling Equipment	120	0.360	3.636	3.566	0.005	0.231
Other Material Handling Equipment	175	0.280	3.185	2.774	0.005	0.139
Other Material Handling Equipment	250	0.300	1.341	3.817	0.005	0.123
Other Material Handling Equipment	500	0.291	1.620	3.371	0.005	0.128
Other Material Handling Equipment	9999	0.190	1.036	3.583	0.005	0.076
Pavers	25	1.418	5.657	4.916	0.005	0.436
Pavers	50	1.418	5.657	4.916	0.005	0.436
Pavers	120	0.496	3.622	4.670	0.005	0.346
Pavers	175	0.299	3.013	3.245	0.005	0.159
Pavers	250	0.187	1.032	3.111	0.005	0.084
Pavers	500	0.167	0.986	2.270	0.005	0.081
Paving Equipment	25	0.705	4.408	4.238	0.005	0.270
Paving Equipment	50	0.705	4.408	4.238	0.005	0.270
Paving Equipment	120	0.425	3.598	4.042	0.005	0.281
Paving Equipment	175	0.254	3.011	2.692	0.005	0.134
Paving Equipment	250	0.241	1.244	3.251	0.005	0.112
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161
Pressure Washers	15	0.662	3.562	4.617	0.008	0.224
Pressure Washers	25	0.731	2.501	4.596	0.007	0.214
Pressure Washers	50	0.569	3.457	4.053	0.007	0.184
Pressure Washers	120	0.337	3.240	3.295	0.006	0.174
Pressure Washers	175	0.280	2.907	2.670	0.006	0.117

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
Pumps	15	0.748	3.562	4.647	0.008	0.241
Pumps	25	0.787	2.501	4.596	0.007	0.222
Pumps	50	0.849	4.284	4.269	0.007	0.235
Pumps	120	0.429	3.449	3.497	0.006	0.217
Pumps	175	0.309	2.974	2.711	0.006	0.124
Pumps	250	0.226	1.052	2.323	0.006	0.067
Pumps	500	0.214	1.027	2.084	0.005	0.064
Pumps	750	0.217	1.027	2.133	0.005	0.065
Pumps	9999	0.273	1.118	3.873	0.005	0.089
Rollers	15	0.972	4.778	4.645	0.005	0.349
Rollers	25	0.972	4.778	4.645	0.005	0.349
Rollers	50	0.972	4.778	4.645	0.005	0.349
Rollers	120	0.423	3.557	4.179	0.005	0.275
Rollers	175	0.231	2.933	2.699	0.005	0.124
Rollers	250	0.211	1.249	2.883	0.005	0.092
Rollers	500	0.234	2.101	2.908	0.005	0.111
Rough Terrain Forklifts	50	1.009	4.674	4.557	0.005	0.328
Rough Terrain Forklifts	120	0.202	3.258	2.622	0.005	0.117
Rough Terrain Forklifts	175	0.149	2.841	2.058	0.005	0.075
Rough Terrain Forklifts	250	0.109	0.974	1.639	0.005	0.036
Rough Terrain Forklifts	500	0.116	0.950	1.961	0.005	0.043
Rubber Tired Dozers	175	0.759	3.949	7.520	0.005	0.433
Rubber Tired Dozers	250	0.651	2.459	6.929	0.005	0.338
Rubber Tired Dozers	500	0.572	4.743	6.143	0.005	0.283
Rubber Tired Dozers	750	0.455	2.598	6.122	0.005	0.218
Rubber Tired Dozers	1000	0.547	2.281	5.528	0.005	0.171
Rubber Tired Loaders	25	1.602	6.978	5.432	0.005	0.518
Rubber Tired Loaders	50	1.602	6.978	5.432	0.005	0.518
Rubber Tired Loaders	120	0.595	3.979	5.006	0.005	0.402
Rubber Tired Loaders	175	0.405	3.381	3.859	0.005	0.213

Rubber Tired Loaders	250	0.309	1.302	3.745	0.005	0.126
Rubber Tired Loaders	500	0.306	1.725	3.288	0.005	0.123
Rubber Tired Loaders	750	0.293	1.452	3.019	0.005	0.118
Rubber Tired Loaders	1000	0.323	1.208	5.459	0.005	0.146
Scrapers	120	0.718	4.197	6.841	0.005	0.526
Scrapers	175	0.510	3.533	5.264	0.005	0.283
Scrapers	250	0.501	2.233	5.831	0.005	0.257
Scrapers	500	0.343	2.595	4.156	0.005	0.163
Scrapers	750	0.277	1.829	3.431	0.005	0.123
Signal Boards	15	0.661	3.470	4.142	0.008	0.161
Signal Boards	50	0.887	4.538	4.272	0.007	0.236
Signal Boards	120	0.437	3.519	3.410	0.006	0.216
Signal Boards	175	0.321	3.043	2.601	0.006	0.125
Signal Boards	250	0.291	1.292	2.676	0.007	0.080
Skid Steer Loaders	25	0.446	3.740	3.750	0.005	0.154
Skid Steer Loaders	50	0.446	3.740	3.750	0.005	0.154
Skid Steer Loaders	120	0.199	3.277	2.656	0.005	0.122
Surfacing Equipment	50	0.643	4.100	4.420	0.006	0.250
Surfacing Equipment	120	0.355	3.449	3.823	0.005	0.226
Surfacing Equipment	175	0.357	2.972	4.239	0.005	0.204
Surfacing Equipment	250	0.217	1.216	3.400	0.005	0.101
Surfacing Equipment	500	0.146	1.214	1.899	0.005	0.068
Surfacing Equipment	750	0.142	0.994	2.179	0.005	0.076
Sweepers/Scrubbers	15	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	25	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	50	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	120	0.550	3.846	4.773	0.005	0.387
Sweepers/Scrubbers	175	0.523	3.449	5.301	0.005	0.277
Sweepers/Scrubbers	250	0.235	1.230	2.866	0.005	0.099
Tractors/Loaders/Backhoes	25	0.920	5.203	4.609	0.005	0.330

Tractors/Loaders/Backhoes	50	0.920	5.203	4.609	0.005	0.330
Tractors/Loaders/Backhoes	120	0.368	3.638	3.693	0.005	0.247
Tractors/Loaders/Backhoes	175	0.270	3.122	2.784	0.005	0.140
Tractors/Loaders/Backhoes	250	0.245	1.220	3.147	0.005	0.102
Tractors/Loaders/Backhoes	500	0.206	1.389	2.345	0.005	0.082
Tractors/Loaders/Backhoes	750	0.262	1.603	3.120	0.005	0.117
Trenchers	15	0.955	4.892	4.785	0.005	0.377
Trenchers	25	0.955	4.892	4.785	0.005	0.377
Trenchers	50	0.955	4.892	4.785	0.005	0.377
Trenchers	120	0.631	3.837	5.695	0.005	0.431
Trenchers	175	0.460	3.342	4.960	0.005	0.255
Trenchers	250	0.405	1.810	5.047	0.005	0.203
Trenchers	500	0.254	1.987	3.128	0.005	0.118
Trenchers	750	0.078	0.956	0.707	0.005	0.015
Welders	15	0.748	3.562	4.647	0.008	0.241
Welders	25	0.787	2.501	4.596	0.007	0.222
Welders	50	1.055	4.950	4.449	0.007	0.273
Welders	120	0.503	3.623	3.648	0.006	0.250
Welders	175	0.370	3.122	2.832	0.006	0.143
Welders	250	0.276	1.104	2.432	0.006	0.075
Welders	500	0.264	1.065	2.163	0.005	0.072
Water Trucks	175	0.323	3.326	2.825	0.005	0.149
Water Trucks	250	0.307	1.461	2.985	0.005	0.119
Water Trucks	500	0.264	1.483	2.669	0.005	0.097
Water Trucks	750	0.327	2.041	3.320	0.005	0.129
Water Trucks	1000	0.295	1.356	4.765	0.005	0.124

2020

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.038	536.743	0.170	0.005
0.038	536.743	0.170	0.005
0.038	536.743	0.170	0.005
0.045	482.606	0.153	0.004
0.008	482.545	0.153	0.004
0.064	568.299	0.019	0.004
0.241	568.299	0.067	0.005
0.222	568.299	0.071	0.005
0.287	568.299	0.101	0.005
0.260	568.299	0.048	0.004
0.150	568.299	0.036	0.004
0.078	568.299	0.027	0.004
0.075	568.299	0.026	0.004
0.076	568.299	0.026	0.004
0.102	568.299	0.029	0.004
0.278	545.293	0.173	0.005
0.278	545.293	0.173	0.005
0.278	545.293	0.173	0.005
0.166	472.453	0.150	0.004
0.081	487.355	0.154	0.004
0.049	475.790	0.151	0.004
0.044	477.046	0.151	0.004
0.044	481.836	0.152	0.004
0.056	482.359	0.153	0.004

2020		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.168	3.099
Aerial Lifts	25	0.168	3.099
Aerial Lifts	50	0.168	3.099
Aerial Lifts	120	0.115	3.177
Aerial Lifts	500	0.069	0.946
Aerial Lifts	750	0.200	1.013
Air Compressors	15	0.731	3.546
Air Compressors	25	0.769	2.473
Air Compressors	50	1.001	5.164
Air Compressors	120	0.489	3.698
Air Compressors	175	0.374	3.203
Air Compressors	250	0.288	1.121
Air Compressors	500	0.279	1.076
Air Compressors	750	0.280	1.076
Air Compressors	1000	0.306	1.158
Bore/Drill Rigs	15	0.716	4.510
Bore/Drill Rigs	25	0.716	4.510
Bore/Drill Rigs	50	0.716	4.510
Bore/Drill Rigs	120	0.246	3.323
Bore/Drill Rigs	175	0.174	2.969
Bore/Drill Rigs	250	0.142	1.068
Bore/Drill Rigs	500	0.125	1.013
Bore/Drill Rigs	750	0.109	0.974
Bore/Drill Rigs	1000	0.133	0.988

0.162	568.299	0.059	0.005
0.196	568.299	0.066	0.005
0.161	568.299	0.061	0.005
0.242	568.299	0.081	0.005
0.220	568.300	0.040	0.004
0.128	568.299	0.029	0.004
0.566	529.463	0.168	0.005
0.460	480.325	0.152	0.004
0.292	485.182	0.154	0.004
0.198	483.462	0.153	0.004
0.159	483.142	0.153	0.004
0.114	481.119	0.152	0.004
0.055	482.545	0.153	0.004
0.589	525.977	0.166	0.005
0.492	486.991	0.154	0.004
0.276	481.622	0.152	0.004
0.173	483.449	0.153	0.004
0.141	485.865	0.154	0.004
0.113	483.388	0.153	0.004
0.194	486.255	0.154	0.004
0.269	568.299	0.096	0.005
0.241	568.299	0.046	0.004
0.141	568.299	0.035	0.004
0.074	568.299	0.027	0.004
0.071	568.299	0.026	0.004
0.071	568.299	0.026	0.004
0.098	568.299	0.031	0.004

Cement and Mortar Mixers	15	0.661	3.470
Cement and Mortar Mixers	25	0.723	2.397
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.798	4.552
Concrete/Industrial Saws	120	0.401	3.535
Concrete/Industrial Saws	175	0.306	3.072
Cranes	50	2.084	7.376
Cranes	120	0.732	4.171
Cranes	175	0.537	3.562
Cranes	250	0.384	1.790
Cranes	500	0.321	2.660
Cranes	750	0.242	1.444
Cranes	9999	0.182	0.999
Crawler Tractors	50	2.053	7.300
Crawler Tractors	120	0.715	4.044
Crawler Tractors	175	0.476	3.340
Crawler Tractors	250	0.360	1.555
Crawler Tractors	500	0.301	2.088
Crawler Tractors	750	0.256	1.310
Crawler Tractors	1000	0.463	2.028
Crushing/Proc. Equipment	50	0.947	5.211
Crushing/Proc. Equipment	120	0.473	3.722
Crushing/Proc. Equipment	175	0.367	3.234
Crushing/Proc. Equipment	250	0.289	1.125
Crushing/Proc. Equipment	500	0.281	1.078
Crushing/Proc. Equipment	750	0.281	1.077
Crushing/Proc. Equipment	9999	0.329	1.153

0.167	568.299	0.061	0.005
0.230	536.913	0.170	0.005
0.230	536.913	0.170	0.005
0.194	478.245	0.151	0.004
0.112	482.684	0.153	0.004
0.063	482.250	0.153	0.004
0.053	481.236	0.152	0.004
0.062	479.288	0.152	0.004
0.369	537.161	0.170	0.005
0.324	482.007	0.153	0.004
0.193	482.598	0.153	0.004
0.161	483.844	0.153	0.004
0.103	484.140	0.153	0.004
0.224	568.299	0.059	0.005
0.214	568.299	0.066	0.005
0.222	568.299	0.070	0.005
0.206	568.299	0.036	0.004
0.118	568.299	0.026	0.004
0.064	568.299	0.019	0.004
0.062	568.299	0.018	0.004
0.062	568.299	0.018	0.004
0.087	568.299	0.023	0.004
0.678	503.751	0.159	0.005
0.612	479.901	0.152	0.004
0.310	489.042	0.155	0.004
0.144	486.329	0.154	0.004
0.115	482.588	0.153	0.004
0.080	568.299	0.030	0.004
0.305	484.269	0.153	0.004
0.146	483.431	0.153	0.004
0.090	481.275	0.152	0.004
0.075	482.309	0.153	0.004
0.057	482.545	0.153	0.004
0.138	480.362	0.152	0.004
0.110	480.170	0.152	0.004

Dumpers/Tenders	25	0.685	2.339
Excavators	25	0.593	4.500
Excavators	50	0.593	4.500
Excavators	120	0.299	3.505
Excavators	175	0.231	3.086
Excavators	250	0.177	1.118
Excavators	500	0.153	1.102
Excavators	750	0.170	1.145
Forklifts	50	1.124	5.706
Forklifts	120	0.459	3.760
Forklifts	175	0.338	3.249
Forklifts	250	0.293	1.442
Forklifts	500	0.251	1.478
Generator Sets	15	0.646	3.546
Generator Sets	25	0.721	2.473
Generator Sets	50	0.691	3.995
Generator Sets	120	0.364	3.380
Generator Sets	175	0.267	2.930
Generator Sets	250	0.198	1.026
Generator Sets	500	0.188	1.005
Generator Sets	750	0.191	1.005
Generator Sets	9999	0.242	1.082
Graders	50	2.516	8.134
Graders	120	0.976	4.561
Graders	175	0.567	3.621
Graders	250	0.352	1.342
Graders	500	0.322	1.526
Graders	750	0.319	1.229
Off-Highway Tractors	120	0.448	3.788
Off-Highway Tractors	175	0.271	3.215
Off-Highway Tractors	250	0.221	1.181
Off-Highway Tractors	750	0.201	1.131
Off-Highway Tractors	1000	0.150	1.022
Off-Highway Trucks	175	0.310	3.339
Off-Highway Trucks	250	0.275	1.391

0.089	485.383	0.154	0.004
0.118	483.218	0.153	0.004
0.114	480.348	0.152	0.004
0.402	539.735	0.171	0.005
0.402	539.735	0.171	0.005
0.402	539.735	0.171	0.005
0.349	482.218	0.153	0.004
0.215	480.452	0.152	0.004
0.094	485.413	0.154	0.004
0.344	537.869	0.170	0.005
0.344	537.869	0.170	0.005
0.344	537.869	0.170	0.005
0.316	480.444	0.152	0.004
0.144	482.336	0.153	0.004
0.097	483.739	0.153	0.004
0.085	483.439	0.153	0.004

Off-Highway Trucks	500	0.246	1.414
Off-Highway Trucks	750	0.312	2.027
Off-Highway Trucks	1000	0.303	1.372
Other Construction Equipment	15	1.072	5.404
Other Construction Equipment	25	1.072	5.404
Other Construction Equipment	50	1.072	5.404
Other Construction Equipment	120	0.519	3.732
Other Construction Equipment	175	0.388	3.235
Other Construction Equipment	500	0.224	1.634
Other General Industrial Equipment	15	0.946	5.504
Other General Industrial Equipment	25	0.946	5.504
Other General Industrial Equipment	50	0.946	5.504
Other General Industrial Equipment	120	0.446	3.771
Other General Industrial Equipment	175	0.268	3.229
Other General Industrial Equipment	250	0.237	1.239
Other General Industrial Equipment	500	0.208	1.344

0.070	483.985	0.153	0.004
0.108	482.545	0.153	0.004
0.416	535.347	0.169	0.005
0.212	484.113	0.153	0.004
0.128	482.713	0.153	0.004
0.113	481.959	0.153	0.004
0.118	480.748	0.152	0.004
0.070	482.545	0.153	0.004
0.401	538.325	0.170	0.005
0.401	538.325	0.170	0.005
0.318	480.251	0.152	0.004
0.146	483.394	0.153	0.004
0.077	483.574	0.153	0.004
0.075	476.971	0.151	0.004
0.248	531.861	0.168	0.005
0.248	531.861	0.168	0.005
0.258	484.387	0.153	0.004
0.123	481.225	0.152	0.004
0.103	482.644	0.153	0.004
0.161	568.299	0.059	0.005
0.224	568.299	0.059	0.005
0.214	568.299	0.066	0.005
0.184	568.299	0.051	0.005
0.174	568.299	0.030	0.004
0.117	568.299	0.025	0.004

Other General Industrial Equipment	750	0.175	1.462
Other General Industrial Equipment	1000	0.271	1.085
Other Material Handling Equipment	50	1.245	6.167
Other Material Handling Equipment	120	0.307	3.589
Other Material Handling Equipment	175	0.252	3.171
Other Material Handling Equipment	250	0.291	1.319
Other Material Handling Equipment	500	0.283	1.523
Other Material Handling Equipment	9999	0.200	1.049
Pavers	25	1.318	5.523
Pavers	50	1.318	5.523
Pavers	120	0.470	3.604
Pavers	175	0.273	3.010
Pavers	250	0.176	1.028
Pavers	500	0.165	0.987
Paving Equipment	25	0.621	4.223
Paving Equipment	50	0.621	4.223
Paving Equipment	120	0.397	3.582
Paving Equipment	175	0.248	3.024
Paving Equipment	250	0.244	1.252
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.646	3.546
Pressure Washers	25	0.721	2.473
Pressure Washers	50	0.499	3.393
Pressure Washers	120	0.298	3.225
Pressure Washers	175	0.258	2.907

0.009	568.299	0.008	0.004
0.241	568.300	0.067	0.005
0.222	568.300	0.071	0.005
0.235	568.299	0.076	0.005
0.217	568.299	0.038	0.004
0.124	568.299	0.027	0.004
0.067	568.299	0.020	0.004
0.064	568.300	0.019	0.004
0.065	568.299	0.019	0.004
0.089	568.299	0.024	0.004
0.321	537.546	0.170	0.005
0.321	537.546	0.170	0.005
0.321	537.546	0.170	0.005
0.253	484.336	0.153	0.004
0.114	482.453	0.153	0.004
0.084	483.777	0.153	0.004
0.102	489.977	0.155	0.004
0.302	537.329	0.170	0.005
0.108	483.311	0.153	0.004
0.069	482.119	0.153	0.004
0.034	483.088	0.153	0.004
0.040	477.254	0.151	0.004
0.398	483.559	0.153	0.004
0.311	485.172	0.154	0.004
0.260	490.383	0.155	0.004
0.201	483.579	0.153	0.004
0.171	568.299	0.049	0.004
0.476	536.225	0.170	0.005
0.476	536.225	0.170	0.005
0.370	475.864	0.151	0.004
0.196	481.736	0.152	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.731	3.546
Pumps	25	0.769	2.473
Pumps	50	0.755	4.197
Pumps	120	0.386	3.432
Pumps	175	0.285	2.974
Pumps	250	0.212	1.042
Pumps	500	0.203	1.017
Pumps	750	0.205	1.017
Pumps	9999	0.255	1.096
Rollers	15	0.926	4.725
Rollers	25	0.926	4.725
Rollers	50	0.926	4.725
Rollers	120	0.388	3.531
Rollers	175	0.215	2.933
Rollers	250	0.209	1.253
Rollers	500	0.235	2.113
Rough Terrain Forklifts	50	0.999	4.686
Rough Terrain Forklifts	120	0.189	3.256
Rough Terrain Forklifts	175	0.143	2.845
Rough Terrain Forklifts	250	0.112	0.978
Rough Terrain Forklifts	500	0.089	0.942
Rubber Tired Dozers	175	0.726	3.893
Rubber Tired Dozers	250	0.620	2.371
Rubber Tired Dozers	500	0.535	4.411
Rubber Tired Dozers	750	0.457	2.601
Rubber Tired Dozers	1000	0.522	2.164
Rubber Tired Loaders	25	1.481	6.768
Rubber Tired Loaders	50	1.481	6.768
Rubber Tired Loaders	120	0.556	3.948
Rubber Tired Loaders	175	0.379	3.368

0.116	480.100	0.152	0.004
0.113	477.042	0.151	0.004
0.109	471.187	0.149	0.004
0.135	480.523	0.152	0.004
0.483	494.100	0.156	0.004
0.261	489.255	0.155	0.004
0.236	479.032	0.152	0.004
0.150	482.732	0.153	0.004
0.113	482.596	0.153	0.004
0.161	568.299	0.059	0.005
0.236	568.300	0.080	0.005
0.216	568.299	0.039	0.004
0.125	568.299	0.029	0.004
0.080	686.695	0.026	0.004
0.141	539.267	0.171	0.005
0.141	539.267	0.171	0.005
0.112	482.384	0.153	0.004
0.230	547.046	0.173	0.005
0.208	484.076	0.153	0.004
0.187	479.672	0.152	0.004
0.093	486.842	0.154	0.004
0.063	481.897	0.153	0.004
0.070	480.166	0.152	0.004
0.452	537.002	0.170	0.005
0.452	537.002	0.170	0.005
0.452	537.002	0.170	0.005
0.356	484.652	0.153	0.004
0.255	483.636	0.153	0.004
0.091	480.574	0.152	0.004
0.304	527.684	0.167	0.005

Rubber Tired Loaders	250	0.290	1.269
Rubber Tired Loaders	500	0.289	1.630
Rubber Tired Loaders	750	0.277	1.400
Rubber Tired Loaders	1000	0.312	1.204
Scrapers	120	0.701	4.198
Scrapers	175	0.478	3.501
Scrapers	250	0.446	2.065
Scrapers	500	0.320	2.401
Scrapers	750	0.262	1.725
Signal Boards	15	0.661	3.469
Signal Boards	50	0.788	4.448
Signal Boards	120	0.395	3.504
Signal Boards	175	0.298	3.043
Signal Boards	250	0.274	1.281
Skid Steer Loaders	25	0.439	3.764
Skid Steer Loaders	50	0.439	3.764
Skid Steer Loaders	120	0.188	3.277
Surfacing Equipment	50	0.536	3.934
Surfacing Equipment	120	0.330	3.439
Surfacing Equipment	175	0.308	2.931
Surfacing Equipment	250	0.212	1.218
Surfacing Equipment	500	0.146	1.219
Surfacing Equipment	750	0.142	0.996
Sweepers/Scrubbers	15	1.344	6.155
Sweepers/Scrubbers	25	1.344	6.155
Sweepers/Scrubbers	50	1.344	6.155
Sweepers/Scrubbers	120	0.520	3.828
Sweepers/Scrubbers	175	0.462	3.359
Sweepers/Scrubbers	250	0.207	1.137
Tractors/Loaders/Backhoes	25	0.830	5.035

0.304	527.684	0.167	0.005
0.227	485.855	0.154	0.004
0.129	477.915	0.151	0.004
0.094	481.421	0.152	0.004
0.075	479.083	0.152	0.004
0.107	478.922	0.152	0.004
0.347	539.104	0.171	0.005
0.347	539.104	0.171	0.005
0.347	539.104	0.171	0.005
0.396	485.364	0.154	0.004
0.234	478.129	0.151	0.004
0.187	484.117	0.153	0.004
0.109	482.165	0.153	0.004
0.014	484.542	0.153	0.004
0.241	568.299	0.067	0.005
0.222	568.299	0.071	0.005
0.273	568.299	0.095	0.005
0.250	568.299	0.045	0.004
0.143	568.300	0.033	0.004
0.075	568.299	0.024	0.004
0.072	568.300	0.023	0.004
0.138	480.362	0.152	0.004
0.110	480.170	0.152	0.004
0.089	485.383	0.154	0.004
0.118	483.218	0.153	0.004
0.114	480.348	0.152	0.004

Tractors/Loaders/Backhoes	50	0.830	5.035
Tractors/Loaders/Backhoes	120	0.331	3.601
Tractors/Loaders/Backhoes	175	0.246	3.105
Tractors/Loaders/Backhoes	250	0.225	1.196
Tractors/Loaders/Backhoes	500	0.194	1.358
Tractors/Loaders/Backhoes	750	0.268	1.610
Trenchers	15	0.905	4.833
Trenchers	25	0.905	4.833
Trenchers	50	0.905	4.833
Trenchers	120	0.610	3.833
Trenchers	175	0.421	3.330
Trenchers	250	0.392	1.774
Trenchers	500	0.233	1.859
Trenchers	750	0.070	0.950
Welders	15	0.731	3.546
Welders	25	0.769	2.473
Welders	50	0.937	4.840
Welders	120	0.455	3.605
Welders	175	0.344	3.122
Welders	250	0.261	1.093
Welders	500	0.252	1.055
Water Trucks	175	0.310	3.339
Water Trucks	250	0.275	1.391
Water Trucks	500	0.246	1.414
Water Trucks	750	0.312	2.027
Water Trucks	1000	0.303	1.372

2021

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2021
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
1.869	0.005	0.042	0.038	472.114	0.153	0.004	Aerial Lifts
0.638	0.005	0.009	0.008	472.055	0.153	0.004	Aerial Lifts
1.868	0.005	0.057	0.057	568.299	0.018	0.004	Aerial Lifts
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Air Compressors
4.538	0.007	0.212	0.212	568.300	0.069	0.005	Air Compressors
4.397	0.007	0.250	0.250	568.299	0.090	0.005	Air Compressors
3.400	0.006	0.224	0.224	568.299	0.044	0.004	Air Compressors
2.558	0.006	0.133	0.133	568.299	0.033	0.004	Air Compressors
2.172	0.006	0.069	0.069	568.299	0.026	0.004	Air Compressors
1.935	0.005	0.067	0.067	568.299	0.025	0.004	Air Compressors
1.982	0.005	0.067	0.067	568.299	0.025	0.004	Air Compressors
3.828	0.005	0.093	0.093	568.300	0.027	0.004	Air Compressors
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
3.066	0.005	0.159	0.146	463.583	0.150	0.004	Bore/Drill Rigs
1.871	0.005	0.082	0.076	477.722	0.155	0.004	Bore/Drill Rigs
1.807	0.005	0.052	0.048	466.834	0.151	0.004	Bore/Drill Rigs
1.409	0.005	0.045	0.041	466.822	0.151	0.004	Bore/Drill Rigs
1.231	0.005	0.041	0.038	473.668	0.153	0.004	Bore/Drill Rigs
3.050	0.005	0.061	0.056	471.849	0.153	0.004	Bore/Drill Rigs

4.142	0.008	0.161	0.161	568.299	0.059	0.005	Cement and Mortar Mixers
4.442	0.007	0.187	0.187	568.299	0.065	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
4.196	0.007	0.212	0.212	568.299	0.072	0.005	Concrete/Industrial Saws
3.163	0.006	0.190	0.190	568.299	0.036	0.004	Concrete/Industrial Saws
2.324	0.006	0.114	0.114	568.299	0.027	0.004	Concrete/Industrial Saws
5.985	0.005	0.624	0.574	517.926	0.168	0.005	Cranes
6.381	0.005	0.453	0.417	469.882	0.152	0.004	Cranes
5.570	0.005	0.298	0.274	474.594	0.154	0.004	Cranes
4.563	0.005	0.188	0.173	472.949	0.153	0.004	Cranes
3.862	0.005	0.155	0.142	472.558	0.153	0.004	Cranes
3.105	0.005	0.116	0.107	470.425	0.152	0.004	Cranes
2.361	0.005	0.060	0.056	472.055	0.153	0.004	Cranes
5.643	0.005	0.591	0.544	515.679	0.167	0.005	Crawler Tractors
6.009	0.005	0.501	0.460	476.328	0.154	0.004	Crawler Tractors
4.872	0.005	0.272	0.250	471.015	0.152	0.004	Crawler Tractors
4.632	0.005	0.175	0.161	472.941	0.153	0.004	Crawler Tractors
3.622	0.005	0.141	0.130	475.234	0.154	0.004	Crawler Tractors
3.137	0.005	0.115	0.106	473.312	0.153	0.004	Crawler Tractors
7.237	0.005	0.212	0.195	475.653	0.154	0.004	Crawler Tractors
4.347	0.007	0.233	0.233	568.299	0.085	0.005	Crushing/Proc. Equipment
3.249	0.006	0.206	0.206	568.299	0.042	0.004	Crushing/Proc. Equipment
2.392	0.006	0.124	0.124	568.299	0.033	0.004	Crushing/Proc. Equipment
2.014	0.006	0.065	0.065	568.299	0.026	0.004	Crushing/Proc. Equipment
1.799	0.005	0.063	0.063	568.299	0.025	0.004	Crushing/Proc. Equipment
1.835	0.005	0.063	0.063	568.299	0.025	0.004	Crushing/Proc. Equipment
3.699	0.005	0.089	0.089	568.299	0.029	0.004	Crushing/Proc. Equipment

4.336	0.007	0.165	0.165	568.299	0.061	0.005	Dumpers/Tenders
4.031	0.005	0.222	0.204	525.368	0.170	0.005	Excavators
4.031	0.005	0.222	0.204	525.368	0.170	0.005	Excavators
3.090	0.005	0.185	0.170	468.055	0.151	0.004	Excavators
2.278	0.005	0.110	0.102	472.289	0.153	0.004	Excavators
2.027	0.005	0.061	0.057	471.883	0.153	0.004	Excavators
1.572	0.005	0.052	0.048	470.296	0.152	0.004	Excavators
1.797	0.005	0.061	0.056	468.871	0.152	0.004	Excavators
4.686	0.005	0.360	0.331	525.483	0.170	0.005	Forklifts
4.133	0.005	0.308	0.283	471.529	0.153	0.004	Forklifts
3.320	0.005	0.180	0.165	472.106	0.153	0.004	Forklifts
3.241	0.005	0.126	0.116	473.326	0.153	0.004	Forklifts
2.440	0.005	0.097	0.089	473.615	0.153	0.004	Forklifts
4.516	0.008	0.212	0.212	568.299	0.058	0.005	Generator Sets
4.538	0.007	0.205	0.205	568.299	0.065	0.005	Generator Sets
4.075	0.007	0.194	0.194	568.299	0.062	0.005	Generator Sets
3.173	0.006	0.179	0.179	568.299	0.032	0.004	Generator Sets
2.380	0.006	0.105	0.105	568.299	0.024	0.004	Generator Sets
2.016	0.006	0.057	0.057	568.299	0.017	0.004	Generator Sets
1.816	0.005	0.055	0.055	568.299	0.017	0.004	Generator Sets
1.858	0.005	0.056	0.056	568.299	0.017	0.004	Generator Sets
3.608	0.005	0.079	0.079	568.300	0.021	0.004	Generator Sets
5.825	0.005	0.709	0.652	492.862	0.159	0.005	Graders
7.725	0.005	0.622	0.572	469.337	0.152	0.004	Graders
5.530	0.005	0.309	0.284	478.040	0.155	0.004	Graders
4.678	0.005	0.150	0.138	475.304	0.154	0.004	Graders
3.107	0.005	0.121	0.111	471.980	0.153	0.004	Graders
2.031	0.005	0.072	0.072	568.299	0.028	0.004	Graders
4.183	0.005	0.307	0.283	474.148	0.153	0.004	Off-Highway Tractors
2.890	0.005	0.140	0.129	472.917	0.153	0.004	Off-Highway Tractors
2.575	0.005	0.086	0.079	470.943	0.152	0.004	Off-Highway Tractors
2.047	0.005	0.076	0.070	471.815	0.153	0.004	Off-Highway Tractors
2.396	0.005	0.063	0.058	472.055	0.153	0.004	Off-Highway Tractors
2.628	0.005	0.137	0.126	470.097	0.152	0.004	Off-Highway Trucks
2.507	0.005	0.098	0.090	470.168	0.152	0.004	Off-Highway Trucks

2.347	0.005	0.086	0.079	474.579	0.154	0.004	Off-Highway Trucks
3.058	0.005	0.120	0.110	472.750	0.153	0.004	Off-Highway Trucks
4.794	0.005	0.125	0.115	469.889	0.152	0.004	Off-Highway Trucks
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
4.771	0.005	0.354	0.325	472.216	0.153	0.004	Other Construction Equipment
4.112	0.005	0.217	0.200	469.984	0.152	0.004	Other Construction Equipment
2.637	0.005	0.096	0.088	475.233	0.154	0.004	Other Construction Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.061	0.005	0.296	0.272	470.000	0.152	0.004	Other General Industrial Equipment
2.575	0.005	0.135	0.124	471.850	0.153	0.004	Other General Industrial Equipment
2.668	0.005	0.090	0.083	473.223	0.153	0.004	Other General Industrial Equipment
2.062	0.005	0.072	0.067	472.929	0.153	0.004	Other General Industrial Equipment

1.676	0.005	0.062	0.057	473.464	0.153	0.004	Other General Industrial Equipment
4.857	0.005	0.119	0.109	472.055	0.153	0.004	Other General Industrial Equipment
5.139	0.005	0.439	0.404	523.709	0.169	0.005	Other Material Handling Equipment
3.104	0.005	0.182	0.168	473.588	0.153	0.004	Other Material Handling Equipment
2.367	0.005	0.118	0.109	472.219	0.153	0.004	Other Material Handling Equipment
3.599	0.005	0.115	0.106	471.482	0.153	0.004	Other Material Handling Equipment
3.210	0.005	0.120	0.110	470.297	0.152	0.004	Other Material Handling Equipment
3.614	0.005	0.078	0.072	472.055	0.153	0.004	Other Material Handling Equipment
4.764	0.005	0.402	0.370	526.210	0.170	0.005	Pavers
4.764	0.005	0.402	0.370	526.210	0.170	0.005	Pavers
4.427	0.005	0.325	0.299	469.882	0.152	0.004	Pavers
2.918	0.005	0.142	0.131	472.775	0.153	0.004	Pavers
2.777	0.005	0.076	0.070	472.834	0.153	0.004	Pavers
2.134	0.005	0.077	0.071	466.206	0.151	0.004	Pavers
3.952	0.005	0.217	0.200	520.124	0.168	0.005	Paving Equipment
3.952	0.005	0.217	0.200	520.124	0.168	0.005	Paving Equipment
3.781	0.005	0.256	0.235	473.325	0.153	0.004	Paving Equipment
2.555	0.005	0.128	0.118	470.736	0.152	0.004	Paving Equipment
3.220	0.005	0.111	0.102	472.151	0.153	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.516	0.008	0.212	0.212	568.299	0.058	0.005	Pressure Washers
4.538	0.007	0.205	0.205	568.299	0.065	0.005	Pressure Washers
3.917	0.007	0.161	0.161	568.299	0.045	0.005	Pressure Washers
3.036	0.006	0.151	0.151	568.299	0.026	0.004	Pressure Washers
2.383	0.006	0.104	0.104	568.299	0.023	0.004	Pressure Washers

0.265	0.006	0.009	0.009	568.299	0.008	0.004	Pressure Washers
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Pumps
4.538	0.007	0.212	0.212	568.299	0.069	0.005	Pumps
4.128	0.007	0.206	0.206	568.299	0.068	0.005	Pumps
3.219	0.006	0.189	0.189	568.299	0.034	0.004	Pumps
2.418	0.006	0.111	0.111	568.299	0.025	0.004	Pumps
2.050	0.006	0.060	0.060	568.299	0.019	0.004	Pumps
1.841	0.005	0.057	0.057	568.300	0.018	0.004	Pumps
1.884	0.005	0.058	0.058	568.299	0.018	0.004	Pumps
3.649	0.005	0.081	0.081	568.300	0.023	0.004	Pumps
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
3.882	0.005	0.248	0.228	473.859	0.153	0.004	Rollers
2.452	0.005	0.113	0.104	471.918	0.153	0.004	Rollers
2.751	0.005	0.089	0.082	473.367	0.153	0.004	Rollers
2.828	0.005	0.109	0.101	479.325	0.155	0.004	Rollers
4.495	0.005	0.316	0.291	525.622	0.170	0.005	Rough Terrain Forklifts
2.452	0.005	0.103	0.094	472.984	0.153	0.004	Rough Terrain Forklifts
1.869	0.005	0.068	0.063	471.715	0.153	0.004	Rough Terrain Forklifts
1.609	0.005	0.037	0.034	472.567	0.153	0.004	Rough Terrain Forklifts
1.302	0.005	0.028	0.026	465.771	0.151	0.004	Rough Terrain Forklifts
7.185	0.005	0.411	0.378	473.012	0.153	0.004	Rubber Tired Dozers
6.503	0.005	0.319	0.293	474.793	0.154	0.004	Rubber Tired Dozers
5.641	0.005	0.259	0.238	479.757	0.155	0.004	Rubber Tired Dozers
6.123	0.005	0.218	0.201	473.056	0.153	0.004	Rubber Tired Dozers
5.306	0.005	0.160	0.160	568.299	0.047	0.004	Rubber Tired Dozers
5.254	0.005	0.474	0.436	524.697	0.170	0.005	Rubber Tired Loaders
5.254	0.005	0.474	0.436	524.697	0.170	0.005	Rubber Tired Loaders
4.686	0.005	0.367	0.338	465.674	0.151	0.004	Rubber Tired Loaders
3.517	0.005	0.194	0.178	471.214	0.152	0.004	Rubber Tired Loaders

3.421	0.005	0.114	0.105	469.513	0.152	0.004	Rubber Tired Loaders
3.017	0.005	0.112	0.103	466.783	0.151	0.004	Rubber Tired Loaders
2.767	0.005	0.108	0.099	462.193	0.150	0.004	Rubber Tired Loaders
5.253	0.005	0.139	0.127	469.935	0.152	0.004	Rubber Tired Loaders
6.677	0.005	0.510	0.469	483.745	0.157	0.004	Scrapers
4.869	0.005	0.262	0.241	478.608	0.155	0.004	Scrapers
5.089	0.005	0.223	0.205	468.988	0.152	0.004	Scrapers
3.783	0.005	0.148	0.136	472.175	0.153	0.004	Scrapers
3.126	0.005	0.113	0.104	471.778	0.153	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
4.132	0.007	0.206	0.206	568.299	0.071	0.005	Signal Boards
3.134	0.006	0.187	0.187	568.299	0.035	0.004	Signal Boards
2.309	0.006	0.110	0.110	568.299	0.026	0.004	Signal Boards
2.350	0.007	0.071	0.071	686.695	0.024	0.004	Signal Boards
3.691	0.005	0.145	0.133	527.758	0.171	0.005	Skid Steer Loaders
3.691	0.005	0.145	0.133	527.758	0.171	0.005	Skid Steer Loaders
2.505	0.005	0.108	0.100	471.908	0.153	0.004	Skid Steer Loaders
4.239	0.006	0.216	0.199	535.528	0.173	0.005	Surfacing Equipment
3.612	0.005	0.206	0.190	473.819	0.153	0.004	Surfacing Equipment
3.672	0.005	0.175	0.161	469.208	0.152	0.004	Surfacing Equipment
3.222	0.005	0.097	0.089	476.426	0.154	0.004	Surfacing Equipment
1.838	0.005	0.067	0.062	471.633	0.153	0.004	Surfacing Equipment
2.094	0.005	0.074	0.068	469.625	0.152	0.004	Surfacing Equipment
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
4.482	0.005	0.360	0.331	474.116	0.153	0.004	Sweepers/Scrubbers
4.608	0.005	0.237	0.218	473.122	0.153	0.004	Sweepers/Scrubbers
2.486	0.005	0.079	0.073	470.126	0.152	0.004	Sweepers/Scrubbers
4.398	0.005	0.288	0.265	515.874	0.167	0.005	Tractors/Loaders/Backhoes

4.398	0.005	0.288	0.265	515.874	0.167	0.005	Tractors/Loaders/Backhoes
3.326	0.005	0.210	0.194	475.154	0.154	0.004	Tractors/Loaders/Backhoes
2.415	0.005	0.122	0.112	467.513	0.151	0.004	Tractors/Loaders/Backhoes
2.738	0.005	0.090	0.083	470.500	0.152	0.004	Tractors/Loaders/Backhoes
2.080	0.005	0.073	0.067	468.245	0.151	0.004	Tractors/Loaders/Backhoes
3.119	0.005	0.117	0.108	468.660	0.152	0.004	Tractors/Loaders/Backhoes
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
5.520	0.005	0.413	0.380	475.127	0.154	0.004	Trenchers
4.460	0.005	0.228	0.210	467.735	0.151	0.004	Trenchers
4.809	0.005	0.195	0.179	473.595	0.153	0.004	Trenchers
2.775	0.005	0.105	0.097	470.637	0.152	0.004	Trenchers
0.560	0.005	0.009	0.008	472.656	0.153	0.004	Trenchers
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Welders
4.538	0.007	0.212	0.212	568.299	0.069	0.005	Welders
4.304	0.007	0.238	0.238	568.299	0.084	0.005	Welders
3.351	0.006	0.216	0.216	568.299	0.041	0.004	Welders
2.523	0.006	0.127	0.127	568.299	0.031	0.004	Welders
2.143	0.006	0.066	0.066	568.299	0.023	0.004	Welders
1.910	0.005	0.064	0.064	568.299	0.022	0.004	Welders
2.628	0.005	0.137	0.126	470.097	0.152	0.004	Water Trucks
2.507	0.005	0.098	0.090	470.168	0.152	0.004	Water Trucks
2.347	0.005	0.086	0.079	474.579	0.154	0.004	Water Trucks
3.058	0.005	0.120	0.110	472.750	0.153	0.004	Water Trucks
4.794	0.005	0.125	0.115	469.889	0.152	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
25	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
50	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
120	0.109	3.176	1.744	0.005	0.033	0.031	472.114	0.153	0.004
500	0.072	0.951	0.640	0.005	0.009	0.008	472.055	0.153	0.004
750	0.187	1.004	1.610	0.005	0.050	0.050	568.299	0.016	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.887	5.021	4.221	0.007	0.212	0.212	568.299	0.080	0.005
120	0.442	3.670	3.083	0.006	0.190	0.190	568.299	0.039	0.004
175	0.343	3.192	2.218	0.006	0.115	0.115	568.299	0.030	0.004
250	0.268	1.108	1.859	0.006	0.060	0.060	568.299	0.024	0.004
500	0.261	1.064	1.663	0.005	0.058	0.058	568.299	0.023	0.004
750	0.262	1.064	1.699	0.005	0.058	0.058	568.299	0.023	0.004
1000	0.284	1.134	3.565	0.005	0.082	0.082	568.300	0.025	0.004
15	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
25	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
50	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
120	0.217	3.306	2.737	0.005	0.131	0.121	464.973	0.150	0.004
175	0.154	2.961	1.598	0.005	0.070	0.064	477.048	0.154	0.004
250	0.133	1.064	1.551	0.005	0.047	0.043	467.992	0.151	0.004
500	0.117	1.015	1.221	0.005	0.041	0.038	469.816	0.152	0.004
750	0.098	0.972	0.955	0.005	0.033	0.031	474.079	0.153	0.004
1000	0.136	0.993	3.058	0.005	0.061	0.057	471.816	0.153	0.004

15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.712	2.381	4.419	0.007	0.180	0.180	568.299	0.064	0.005
25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.722	4.481	4.063	0.007	0.184	0.184	568.300	0.065	0.005
120	0.369	3.523	2.913	0.006	0.166	0.166	568.299	0.033	0.004
175	0.286	3.072	2.055	0.006	0.101	0.101	568.299	0.025	0.004
50	2.115	7.489	6.014	0.005	0.631	0.581	517.900	0.168	0.005
120	0.651	4.065	5.731	0.005	0.398	0.366	469.887	0.152	0.004
175	0.498	3.516	5.113	0.005	0.273	0.251	474.546	0.154	0.004
250	0.350	1.678	4.104	0.005	0.167	0.153	472.906	0.153	0.004
500	0.295	2.448	3.443	0.005	0.139	0.127	472.455	0.153	0.004
750	0.228	1.440	2.727	0.005	0.107	0.098	470.550	0.152	0.004
9999	0.192	1.008	2.374	0.005	0.061	0.057	472.055	0.153	0.004
50	2.064	7.349	5.615	0.005	0.591	0.543	516.108	0.167	0.005
120	0.673	4.005	5.657	0.005	0.466	0.429	476.437	0.154	0.004
175	0.436	3.310	4.395	0.005	0.245	0.225	471.421	0.153	0.004
250	0.343	1.515	4.334	0.005	0.163	0.150	472.925	0.153	0.004
500	0.283	2.024	3.276	0.005	0.129	0.119	474.484	0.154	0.004
750	0.239	1.270	2.825	0.005	0.104	0.096	473.094	0.153	0.004
1000	0.399	1.896	6.399	0.005	0.182	0.167	471.822	0.153	0.004
50	0.862	5.136	4.211	0.007	0.201	0.201	568.299	0.077	0.005
120	0.438	3.711	2.989	0.006	0.178	0.178	568.299	0.039	0.004
175	0.344	3.235	2.114	0.006	0.109	0.109	568.299	0.031	0.004
250	0.274	1.119	1.756	0.006	0.057	0.057	568.299	0.024	0.004
500	0.268	1.072	1.574	0.005	0.055	0.055	568.300	0.024	0.004
750	0.268	1.072	1.606	0.005	0.055	0.055	568.299	0.024	0.004
9999	0.314	1.136	3.487	0.005	0.080	0.080	568.299	0.028	0.004

25	0.685	2.339	4.333	0.007	0.163	0.163	568.299	0.061	0.005
25	0.562	4.461	3.919	0.005	0.202	0.186	525.377	0.170	0.005
50	0.562	4.461	3.919	0.005	0.202	0.186	525.377	0.170	0.005
120	0.275	3.492	2.849	0.005	0.161	0.148	467.791	0.151	0.004
175	0.216	3.090	2.034	0.005	0.099	0.091	472.359	0.153	0.004
250	0.163	1.103	1.706	0.005	0.052	0.048	471.793	0.153	0.004
500	0.143	1.088	1.332	0.005	0.045	0.041	469.616	0.152	0.004
750	0.165	1.150	1.619	0.005	0.056	0.052	469.547	0.152	0.004
50	1.002	5.535	4.520	0.005	0.318	0.292	525.483	0.170	0.005
120	0.412	3.720	3.756	0.005	0.267	0.245	471.529	0.153	0.004
175	0.308	3.231	2.921	0.005	0.158	0.145	472.106	0.153	0.004
250	0.249	1.337	2.582	0.005	0.099	0.091	473.326	0.153	0.004
500	0.254	1.485	2.303	0.005	0.094	0.086	473.615	0.153	0.004
15	0.634	3.531	4.441	0.008	0.201	0.201	568.299	0.057	0.005
25	0.712	2.446	4.497	0.007	0.196	0.196	568.299	0.064	0.005
50	0.613	3.905	3.916	0.007	0.165	0.165	568.299	0.055	0.005
120	0.326	3.361	2.888	0.006	0.153	0.153	568.299	0.029	0.004
175	0.243	2.925	2.068	0.006	0.091	0.091	568.299	0.021	0.004
250	0.183	1.016	1.730	0.006	0.049	0.049	568.299	0.016	0.004
500	0.175	0.996	1.562	0.005	0.048	0.048	568.299	0.015	0.004
750	0.177	0.996	1.596	0.005	0.048	0.048	568.299	0.016	0.004
9999	0.220	1.060	3.372	0.005	0.070	0.070	568.300	0.019	0.004
50	2.235	7.626	5.485	0.005	0.631	0.581	492.935	0.159	0.005
120	0.901	4.452	7.125	0.005	0.570	0.524	469.070	0.152	0.004
175	0.505	3.559	4.839	0.005	0.270	0.248	478.529	0.155	0.004
250	0.335	1.307	4.381	0.005	0.139	0.128	474.539	0.154	0.004
500	0.322	1.460	3.013	0.005	0.117	0.108	471.898	0.153	0.004
750	0.303	1.207	1.808	0.005	0.064	0.064	568.299	0.027	0.004
120	0.395	3.743	3.773	0.005	0.261	0.240	474.516	0.154	0.004
175	0.259	3.220	2.660	0.005	0.129	0.118	472.924	0.153	0.004
250	0.200	1.162	2.113	0.005	0.072	0.067	471.003	0.152	0.004
750	0.181	1.122	1.715	0.005	0.063	0.058	471.806	0.153	0.004
1000	0.160	1.033	2.414	0.005	0.064	0.059	472.055	0.153	0.004
175	0.278	3.324	2.246	0.005	0.113	0.104	470.290	0.152	0.004
250	0.249	1.348	2.109	0.005	0.082	0.076	470.193	0.152	0.004

500	0.225	1.338	1.954	0.005	0.072	0.066	474.542	0.154	0.004
750	0.293	1.935	2.668	0.005	0.106	0.098	472.991	0.153	0.004
1000	0.256	1.252	4.158	0.005	0.099	0.091	471.055	0.152	0.004
15	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
25	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
50	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
120	0.482	3.703	4.456	0.005	0.323	0.298	472.275	0.153	0.004
175	0.330	3.183	3.438	0.005	0.180	0.165	469.764	0.152	0.004
500	0.215	1.599	2.428	0.005	0.090	0.083	475.212	0.154	0.004
15	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
25	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
50	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
120	0.404	3.740	3.718	0.005	0.256	0.235	470.000	0.152	0.004
175	0.254	3.234	2.347	0.005	0.121	0.111	471.850	0.153	0.004
250	0.204	1.171	2.094	0.005	0.070	0.064	473.223	0.153	0.004
500	0.195	1.330	1.796	0.005	0.064	0.059	472.929	0.153	0.004

750	0.166	1.463	1.387	0.005	0.054	0.050	473.464	0.153	0.004
1000	0.276	1.093	4.876	0.005	0.120	0.110	472.055	0.153	0.004
50	1.108	5.960	4.966	0.005	0.396	0.364	523.709	0.169	0.005
120	0.294	3.602	2.956	0.005	0.166	0.152	473.588	0.153	0.004
175	0.249	3.196	2.246	0.005	0.114	0.105	472.219	0.153	0.004
250	0.269	1.309	3.082	0.005	0.102	0.094	471.482	0.153	0.004
500	0.254	1.442	2.602	0.005	0.101	0.093	470.297	0.152	0.004
9999	0.073	0.972	2.318	0.005	0.020	0.018	472.055	0.153	0.004
25	1.208	5.302	4.602	0.005	0.370	0.340	526.515	0.170	0.005
50	1.208	5.302	4.602	0.005	0.370	0.340	526.515	0.170	0.005
120	0.420	3.563	4.026	0.005	0.285	0.263	469.774	0.152	0.004
175	0.256	3.016	2.695	0.005	0.130	0.120	472.555	0.153	0.004
250	0.166	1.024	2.484	0.005	0.070	0.064	472.477	0.153	0.004
500	0.164	0.988	2.053	0.005	0.074	0.068	465.591	0.151	0.004
25	0.587	4.211	3.882	0.005	0.200	0.184	520.397	0.168	0.005
50	0.587	4.211	3.882	0.005	0.200	0.184	520.397	0.168	0.005
120	0.355	3.554	3.451	0.005	0.219	0.202	473.221	0.153	0.004
175	0.229	3.032	2.315	0.005	0.114	0.105	470.650	0.152	0.004
250	0.211	1.209	2.582	0.005	0.092	0.085	472.151	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
15	0.634	3.531	4.441	0.008	0.201	0.201	568.299	0.057	0.005
25	0.712	2.446	4.497	0.007	0.196	0.196	568.299	0.064	0.005
50	0.439	3.329	3.765	0.007	0.136	0.136	568.299	0.039	0.005
120	0.264	3.210	2.766	0.006	0.129	0.129	568.299	0.023	0.004
175	0.238	2.907	2.118	0.006	0.093	0.093	568.299	0.021	0.004

250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.671	4.099	3.966	0.007	0.175	0.175	568.299	0.060	0.005
120	0.347	3.412	2.928	0.006	0.162	0.162	568.300	0.031	0.004
175	0.260	2.968	2.101	0.006	0.096	0.096	568.299	0.023	0.004
250	0.197	1.031	1.759	0.006	0.052	0.052	568.299	0.017	0.004
500	0.189	1.007	1.584	0.005	0.050	0.050	568.299	0.017	0.004
750	0.191	1.007	1.618	0.005	0.050	0.050	568.299	0.017	0.004
9999	0.233	1.074	3.409	0.005	0.072	0.072	568.300	0.021	0.004
15	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
25	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
50	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
120	0.353	3.507	3.589	0.005	0.219	0.202	473.901	0.153	0.004
175	0.193	2.926	2.117	0.005	0.097	0.090	471.980	0.153	0.004
250	0.197	1.228	2.493	0.005	0.081	0.075	473.470	0.153	0.004
500	0.221	1.950	2.589	0.005	0.100	0.092	479.329	0.155	0.004
50	0.969	4.657	4.411	0.005	0.304	0.280	525.384	0.170	0.005
120	0.175	3.252	2.285	0.005	0.089	0.082	473.110	0.153	0.004
175	0.130	2.845	1.617	0.005	0.060	0.055	471.758	0.153	0.004
250	0.115	0.984	1.612	0.005	0.037	0.034	472.547	0.153	0.004
500	0.092	0.946	1.302	0.005	0.028	0.026	465.744	0.151	0.004
175	0.691	3.848	6.790	0.005	0.386	0.356	472.975	0.153	0.004
250	0.601	2.317	6.296	0.005	0.306	0.281	474.798	0.154	0.004
500	0.492	4.041	5.081	0.005	0.232	0.214	478.987	0.155	0.004
750	0.458	2.604	6.123	0.005	0.218	0.201	473.046	0.153	0.004
1000	0.497	2.057	5.095	0.005	0.150	0.150	568.299	0.044	0.004
25	1.326	6.449	4.974	0.005	0.409	0.377	524.551	0.170	0.005
50	1.326	6.449	4.974	0.005	0.409	0.377	524.551	0.170	0.005
120	0.498	3.892	4.215	0.005	0.316	0.291	466.421	0.151	0.004
175	0.346	3.354	3.119	0.005	0.171	0.157	471.080	0.152	0.004

250	0.266	1.240	2.998	0.005	0.100	0.092	469.564	0.152	0.004
500	0.264	1.529	2.610	0.005	0.097	0.090	467.928	0.151	0.004
750	0.271	1.397	2.641	0.005	0.102	0.094	462.055	0.149	0.004
1000	0.294	1.206	4.975	0.005	0.128	0.118	471.258	0.152	0.004
120	0.704	4.218	6.659	0.005	0.512	0.471	483.713	0.156	0.004
175	0.432	3.456	4.341	0.005	0.232	0.213	478.654	0.155	0.004
250	0.391	1.884	4.367	0.005	0.189	0.174	469.126	0.152	0.004
500	0.299	2.255	3.445	0.005	0.134	0.123	472.464	0.153	0.004
750	0.250	1.658	2.887	0.005	0.105	0.097	471.786	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	0.714	4.380	4.002	0.007	0.179	0.179	568.299	0.064	0.005
120	0.363	3.493	2.889	0.006	0.162	0.162	568.299	0.032	0.004
175	0.278	3.043	2.043	0.006	0.098	0.098	568.299	0.025	0.004
250	0.260	1.273	2.053	0.007	0.063	0.063	686.695	0.023	0.004
25	0.409	3.732	3.573	0.005	0.126	0.116	527.450	0.171	0.005
50	0.409	3.732	3.573	0.005	0.126	0.116	527.450	0.171	0.005
120	0.178	3.277	2.366	0.005	0.096	0.089	471.977	0.153	0.004
50	0.507	3.932	4.189	0.006	0.204	0.188	535.784	0.173	0.005
120	0.312	3.436	3.461	0.005	0.191	0.175	474.091	0.153	0.004
175	0.258	2.919	3.099	0.005	0.145	0.134	469.169	0.152	0.004
250	0.207	1.219	2.994	0.005	0.092	0.085	476.802	0.154	0.004
500	0.141	1.202	1.753	0.005	0.064	0.058	471.748	0.153	0.004
750	0.125	0.992	1.597	0.005	0.062	0.057	470.409	0.152	0.004
15	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
25	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
50	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
120	0.440	3.757	3.962	0.005	0.291	0.268	474.116	0.153	0.004
175	0.385	3.247	3.707	0.005	0.187	0.172	473.122	0.153	0.004
250	0.164	1.108	1.758	0.005	0.055	0.051	470.126	0.152	0.004
25	0.756	4.902	4.226	0.005	0.255	0.234	515.121	0.167	0.005

50	0.756	4.902	4.226	0.005	0.255	0.234	515.121	0.167	0.005
120	0.296	3.571	2.995	0.005	0.177	0.163	475.362	0.154	0.004
175	0.221	3.091	2.062	0.005	0.104	0.096	467.529	0.151	0.004
250	0.209	1.186	2.369	0.005	0.080	0.074	470.572	0.152	0.004
500	0.179	1.341	1.776	0.005	0.064	0.059	469.303	0.152	0.004
750	0.247	1.433	2.754	0.005	0.104	0.096	466.456	0.151	0.004
15	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
25	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
50	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
120	0.556	3.789	5.106	0.005	0.371	0.341	475.287	0.154	0.004
175	0.407	3.304	4.272	0.005	0.219	0.201	467.734	0.151	0.004
250	0.356	1.668	4.360	0.005	0.172	0.158	473.854	0.153	0.004
500	0.221	1.865	2.491	0.005	0.100	0.092	470.701	0.152	0.004
750	0.066	0.947	0.475	0.005	0.009	0.008	472.529	0.153	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.829	4.708	4.133	0.007	0.203	0.203	568.299	0.074	0.005
120	0.411	3.579	3.042	0.006	0.184	0.184	568.299	0.037	0.004
175	0.315	3.112	2.189	0.006	0.110	0.110	568.299	0.028	0.004
250	0.243	1.081	1.836	0.006	0.057	0.057	568.299	0.021	0.004
500	0.236	1.044	1.642	0.005	0.055	0.055	568.299	0.021	0.004
175	0.278	3.324	2.246	0.005	0.113	0.104	470.290	0.152	0.004
250	0.249	1.348	2.109	0.005	0.082	0.076	470.193	0.152	0.004
500	0.225	1.338	1.954	0.005	0.072	0.066	474.542	0.154	0.004
750	0.293	1.935	2.668	0.005	0.106	0.098	472.991	0.153	0.004
1000	0.256	1.252	4.158	0.005	0.099	0.091	471.055	0.152	0.004

2022

2022		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5
Aerial Lifts	15	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	25	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	50	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	120	0.105	3.176	1.627	0.005	0.030	0.028
Aerial Lifts	500	0.075	0.956	0.642	0.005	0.009	0.008
Aerial Lifts	750	0.177	0.998	1.424	0.005	0.044	0.044
Air Compressors	15	0.707	3.519	4.408	0.008	0.203	0.203
Air Compressors	25	0.739	2.426	4.470	0.007	0.193	0.193
Air Compressors	50	0.814	4.959	4.093	0.007	0.183	0.183
Air Compressors	120	0.413	3.662	2.844	0.006	0.165	0.165
Air Compressors	175	0.322	3.194	1.959	0.006	0.101	0.101
Air Compressors	250	0.255	1.102	1.617	0.006	0.052	0.052
Air Compressors	500	0.249	1.059	1.472	0.005	0.051	0.051
Air Compressors	750	0.250	1.059	1.502	0.005	0.051	0.051
Air Compressors	1000	0.269	1.117	3.378	0.005	0.075	0.075
Bore/Drill Rigs	15	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	25	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	50	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	120	0.191	3.260	2.425	0.005	0.107	0.099
Bore/Drill Rigs	175	0.137	2.954	1.288	0.005	0.057	0.052
Bore/Drill Rigs	250	0.115	1.047	1.163	0.005	0.037	0.034
Bore/Drill Rigs	500	0.108	1.002	1.035	0.005	0.035	0.032
Bore/Drill Rigs	750	0.091	0.975	0.773	0.005	0.028	0.026
Bore/Drill Rigs	1000	0.057	0.945	2.278	0.005	0.018	0.017

Cement and Mortar Mixers	15	0.661	3.470	4.142	0.008	0.161	0.161
Cement and Mortar Mixers	25	0.704	2.367	4.399	0.007	0.175	0.175
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161
Concrete/Industrial Saws	50	0.660	4.422	3.936	0.007	0.158	0.158
Concrete/Industrial Saws	120	0.343	3.514	2.686	0.006	0.144	0.144
Concrete/Industrial Saws	175	0.267	3.072	1.806	0.006	0.089	0.089
Cranes	50	2.028	7.368	5.899	0.005	0.603	0.555
Cranes	120	0.578	3.972	5.149	0.005	0.346	0.318
Cranes	175	0.457	3.475	4.617	0.005	0.246	0.227
Cranes	250	0.316	1.602	3.541	0.005	0.147	0.135
Cranes	500	0.261	2.212	2.894	0.005	0.117	0.108
Cranes	750	0.200	1.283	2.251	0.005	0.089	0.082
Cranes	9999	0.201	1.015	2.386	0.005	0.062	0.057
Crawler Tractors	50	1.899	7.041	5.380	0.005	0.539	0.496
Crawler Tractors	120	0.600	3.925	5.101	0.005	0.408	0.375
Crawler Tractors	175	0.389	3.264	3.827	0.005	0.214	0.197
Crawler Tractors	250	0.306	1.440	3.737	0.005	0.141	0.130
Crawler Tractors	500	0.254	1.916	2.744	0.005	0.111	0.102
Crawler Tractors	750	0.198	1.186	2.126	0.005	0.079	0.073
Crawler Tractors	1000	0.357	1.732	5.923	0.005	0.162	0.149
Crushing/Proc. Equipment	50	0.795	5.081	4.083	0.007	0.172	0.172
Crushing/Proc. Equipment	120	0.410	3.704	2.758	0.006	0.154	0.154
Crushing/Proc. Equipment	175	0.323	3.237	1.861	0.006	0.095	0.095
Crushing/Proc. Equipment	250	0.260	1.114	1.521	0.006	0.050	0.050
Crushing/Proc. Equipment	500	0.255	1.067	1.389	0.005	0.048	0.048
Crushing/Proc. Equipment	750	0.256	1.067	1.416	0.005	0.048	0.048
Crushing/Proc. Equipment	9999	0.300	1.121	3.310	0.005	0.073	0.073

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.162	0.162
Excavators	25	0.478	4.273	3.700	0.005	0.160	0.147
Excavators	50	0.478	4.273	3.700	0.005	0.160	0.147
Excavators	120	0.252	3.473	2.606	0.005	0.138	0.127
Excavators	175	0.191	3.074	1.678	0.005	0.081	0.075
Excavators	250	0.148	1.092	1.386	0.005	0.044	0.040
Excavators	500	0.128	1.061	1.040	0.005	0.035	0.032
Excavators	750	0.150	1.144	1.287	0.005	0.047	0.043
Forklifts	50	0.859	5.304	4.312	0.005	0.270	0.248
Forklifts	120	0.362	3.675	3.360	0.005	0.223	0.205
Forklifts	175	0.273	3.197	2.480	0.005	0.132	0.122
Forklifts	250	0.236	1.317	2.319	0.005	0.090	0.083
Forklifts	500	0.232	1.219	1.991	0.005	0.077	0.071
Generator Sets	15	0.626	3.519	4.390	0.008	0.193	0.193
Generator Sets	25	0.706	2.426	4.470	0.007	0.188	0.188
Generator Sets	50	0.560	3.858	3.796	0.007	0.143	0.143
Generator Sets	120	0.301	3.353	2.671	0.006	0.134	0.134
Generator Sets	175	0.226	2.926	1.830	0.006	0.081	0.081
Generator Sets	250	0.173	1.010	1.508	0.006	0.043	0.043
Generator Sets	500	0.166	0.990	1.384	0.005	0.042	0.042
Generator Sets	750	0.168	0.990	1.412	0.005	0.043	0.043
Generator Sets	9999	0.206	1.045	3.202	0.005	0.063	0.063
Graders	50	2.106	7.428	5.332	0.005	0.595	0.547
Graders	120	0.796	4.330	6.360	0.005	0.493	0.453
Graders	175	0.440	3.493	4.125	0.005	0.229	0.211
Graders	250	0.307	1.273	3.888	0.005	0.124	0.114
Graders	500	0.311	1.390	2.802	0.005	0.108	0.100
Graders	750	0.289	1.187	1.606	0.005	0.057	0.057
Off-Highway Tractors	120	0.348	3.710	3.400	0.005	0.219	0.202
Off-Highway Tractors	175	0.231	3.186	2.239	0.005	0.107	0.099
Off-Highway Tractors	250	0.180	1.143	1.732	0.005	0.060	0.055
Off-Highway Tractors	750	0.171	1.121	1.433	0.005	0.055	0.050
Off-Highway Tractors	1000	0.170	1.044	2.432	0.005	0.066	0.060
Off-Highway Trucks	175	0.241	3.284	1.811	0.005	0.088	0.081
Off-Highway Trucks	250	0.215	1.279	1.618	0.005	0.064	0.059

Off-Highway Trucks	500	0.196	1.247	1.490	0.005	0.054	0.050
Off-Highway Trucks	750	0.263	1.746	2.268	0.005	0.088	0.081
Off-Highway Trucks	1000	0.234	1.214	3.842	0.005	0.086	0.079
Other Construction Equipment	15	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	25	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	50	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	120	0.440	3.666	4.098	0.005	0.288	0.265
Other Construction Equipment	175	0.295	3.155	2.994	0.005	0.156	0.144
Other Construction Equipment	500	0.188	1.438	1.975	0.005	0.074	0.068
Other General Industrial Equipment	15	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	25	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	50	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	120	0.339	3.668	3.200	0.005	0.199	0.183
Other General Industrial Equipment	175	0.244	3.233	2.150	0.005	0.111	0.102
Other General Industrial Equipment	250	0.187	1.138	1.759	0.005	0.057	0.052
Other General Industrial Equipment	500	0.175	1.171	1.433	0.005	0.050	0.046

Other General Industrial Equipment	750	0.149	1.457	1.062	0.005	0.046	0.042
Other General Industrial Equipment	1000	0.187	1.039	3.942	0.005	0.079	0.073
Other Material Handling Equipment	50	1.103	5.984	4.920	0.005	0.385	0.354
Other Material Handling Equipment	120	0.247	3.557	2.567	0.005	0.121	0.111
Other Material Handling Equipment	175	0.226	3.176	1.894	0.005	0.103	0.095
Other Material Handling Equipment	250	0.229	1.239	2.425	0.005	0.083	0.076
Other Material Handling Equipment	500	0.226	1.346	2.063	0.005	0.083	0.077
Other Material Handling Equipment	9999	0.076	0.978	2.328	0.005	0.020	0.018
Pavers	25	1.092	5.114	4.421	0.005	0.330	0.303
Pavers	50	1.092	5.114	4.421	0.005	0.330	0.303
Pavers	120	0.373	3.525	3.659	0.005	0.248	0.228
Pavers	175	0.215	2.995	2.180	0.005	0.104	0.095
Pavers	250	0.140	1.012	1.900	0.005	0.055	0.050
Pavers	500	0.150	0.982	1.810	0.005	0.063	0.058
Paving Equipment	25	0.572	4.244	3.836	0.005	0.188	0.173
Paving Equipment	50	0.572	4.244	3.836	0.005	0.188	0.173
Paving Equipment	120	0.296	3.501	3.000	0.005	0.171	0.157
Paving Equipment	175	0.213	3.038	2.073	0.005	0.101	0.093
Paving Equipment	250	0.196	1.204	2.228	0.005	0.083	0.076
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161
Pressure Washers	15	0.626	3.519	4.390	0.008	0.193	0.193
Pressure Washers	25	0.706	2.426	4.470	0.007	0.188	0.188
Pressure Washers	50	0.398	3.291	3.649	0.007	0.117	0.117
Pressure Washers	120	0.241	3.202	2.560	0.006	0.112	0.112
Pressure Washers	175	0.221	2.907	1.871	0.006	0.082	0.082

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009
Pumps	15	0.707	3.519	4.408	0.008	0.203	0.203
Pumps	25	0.739	2.426	4.470	0.007	0.193	0.193
Pumps	50	0.614	4.048	3.846	0.007	0.152	0.152
Pumps	120	0.321	3.404	2.708	0.006	0.142	0.142
Pumps	175	0.242	2.969	1.860	0.006	0.085	0.085
Pumps	250	0.186	1.025	1.534	0.006	0.045	0.045
Pumps	500	0.180	1.001	1.404	0.005	0.044	0.044
Pumps	750	0.181	1.001	1.432	0.005	0.044	0.044
Pumps	9999	0.219	1.058	3.236	0.005	0.065	0.065
Rollers	15	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	25	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	50	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	120	0.310	3.470	3.219	0.005	0.186	0.171
Rollers	175	0.164	2.913	1.714	0.005	0.079	0.072
Rollers	250	0.187	1.228	2.212	0.005	0.077	0.071
Rollers	500	0.218	1.955	2.463	0.005	0.097	0.089
Rough Terrain Forklifts	50	0.789	4.304	4.041	0.005	0.238	0.219
Rough Terrain Forklifts	120	0.159	3.244	2.098	0.005	0.073	0.067
Rough Terrain Forklifts	175	0.120	2.844	1.405	0.005	0.051	0.047
Rough Terrain Forklifts	250	0.119	0.989	1.617	0.005	0.037	0.034
Rough Terrain Forklifts	500	0.068	0.937	0.558	0.005	0.009	0.008
Rubber Tired Dozers	175	0.600	3.752	5.808	0.005	0.326	0.300
Rubber Tired Dozers	250	0.480	2.056	5.046	0.005	0.240	0.220
Rubber Tired Dozers	500	0.475	3.895	4.808	0.005	0.220	0.202
Rubber Tired Dozers	750	0.460	2.607	6.122	0.005	0.218	0.201
Rubber Tired Dozers	1000	0.475	1.961	4.896	0.005	0.140	0.140
Rubber Tired Loaders	25	1.179	6.204	4.748	0.005	0.354	0.326
Rubber Tired Loaders	50	1.179	6.204	4.748	0.005	0.354	0.326
Rubber Tired Loaders	120	0.440	3.839	3.768	0.005	0.267	0.245
Rubber Tired Loaders	175	0.295	3.302	2.518	0.005	0.136	0.125

Rubber Tired Loaders	250	0.226	1.188	2.347	0.005	0.079	0.072
Rubber Tired Loaders	500	0.237	1.441	2.175	0.005	0.081	0.075
Rubber Tired Loaders	750	0.233	1.315	2.097	0.005	0.080	0.074
Rubber Tired Loaders	1000	0.193	1.162	3.617	0.005	0.075	0.069
Scrapers	120	0.681	4.205	6.455	0.005	0.494	0.454
Scrapers	175	0.390	3.417	3.833	0.005	0.204	0.187
Scrapers	250	0.341	1.743	3.669	0.005	0.160	0.147
Scrapers	500	0.264	2.052	2.879	0.005	0.112	0.103
Scrapers	750	0.224	1.508	2.475	0.005	0.090	0.083
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161
Signal Boards	50	0.655	4.325	3.880	0.007	0.154	0.154
Signal Boards	120	0.337	3.484	2.668	0.006	0.141	0.141
Signal Boards	175	0.260	3.044	1.801	0.006	0.086	0.086
Signal Boards	250	0.247	1.266	1.782	0.007	0.055	0.055
Skid Steer Loaders	25	0.365	3.656	3.433	0.005	0.103	0.095
Skid Steer Loaders	50	0.365	3.656	3.433	0.005	0.103	0.095
Skid Steer Loaders	120	0.164	3.270	2.189	0.005	0.081	0.075
Surfacing Equipment	50	0.428	3.772	3.911	0.006	0.154	0.142
Surfacing Equipment	120	0.293	3.409	3.250	0.005	0.175	0.161
Surfacing Equipment	175	0.239	2.910	2.701	0.005	0.130	0.120
Surfacing Equipment	250	0.196	1.217	2.667	0.005	0.085	0.078
Surfacing Equipment	500	0.132	1.160	1.557	0.005	0.057	0.053
Surfacing Equipment	750	0.115	0.988	1.355	0.005	0.052	0.048
Sweepers/Scrubbers	15	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	25	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	50	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	120	0.372	3.692	3.472	0.005	0.232	0.214
Sweepers/Scrubbers	175	0.321	3.222	3.002	0.005	0.145	0.133
Sweepers/Scrubbers	250	0.152	1.101	1.605	0.005	0.050	0.046
Tractors/Loaders/Backhoes	25	0.688	4.760	4.030	0.005	0.218	0.200

Tractors/Loaders/Backhoes	50	0.688	4.760	4.030	0.005	0.218	0.200
Tractors/Loaders/Backhoes	120	0.260	3.536	2.647	0.005	0.142	0.131
Tractors/Loaders/Backhoes	175	0.200	3.079	1.753	0.005	0.089	0.082
Tractors/Loaders/Backhoes	250	0.187	1.162	1.943	0.005	0.067	0.062
Tractors/Loaders/Backhoes	500	0.160	1.280	1.437	0.005	0.053	0.049
Tractors/Loaders/Backhoes	750	0.232	1.353	2.453	0.005	0.094	0.087
Trenchers	15	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	25	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	50	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	120	0.529	3.778	4.913	0.005	0.348	0.320
Trenchers	175	0.396	3.313	4.103	0.005	0.212	0.195
Trenchers	250	0.335	1.663	3.853	0.005	0.161	0.148
Trenchers	500	0.212	1.872	2.212	0.005	0.094	0.086
Trenchers	750	0.057	0.945	0.301	0.005	0.009	0.008
Welders	15	0.707	3.519	4.408	0.008	0.203	0.203
Welders	25	0.739	2.426	4.470	0.007	0.193	0.193
Welders	50	0.758	4.645	4.007	0.007	0.175	0.175
Welders	120	0.382	3.570	2.808	0.006	0.160	0.160
Welders	175	0.295	3.113	1.935	0.006	0.097	0.097
Welders	250	0.231	1.074	1.598	0.006	0.050	0.050
Welders	500	0.225	1.038	1.454	0.005	0.049	0.049
Water Trucks	175	0.241	3.284	1.811	0.005	0.088	0.081
Water Trucks	250	0.215	1.279	1.618	0.005	0.064	0.059
Water Trucks	500	0.196	1.247	1.490	0.005	0.054	0.050
Water Trucks	750	0.263	1.746	2.268	0.005	0.088	0.081
Water Trucks	1000	0.234	1.214	3.842	0.005	0.086	0.079

2023

g/hp/hr	g/hp/hr	g/hp/hr
CO2	CH4	N2O
525.074	0.170	0.005
525.074	0.170	0.005
525.074	0.170	0.005
472.114	0.153	0.004
472.055	0.153	0.004
568.299	0.016	0.004
568.299	0.063	0.005
568.299	0.066	0.005
568.299	0.073	0.005
568.299	0.037	0.004
568.299	0.029	0.004
568.300	0.023	0.004
568.299	0.022	0.004
568.299	0.022	0.004
568.300	0.024	0.004
529.870	0.171	0.005
529.870	0.171	0.005
529.870	0.171	0.005
462.267	0.150	0.004
477.372	0.154	0.004
468.760	0.152	0.004
467.192	0.151	0.004
477.141	0.154	0.004
472.921	0.153	0.004

2023		g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX
Aerial Lifts	15	0.163	3.122	2.897
Aerial Lifts	25	0.163	3.122	2.897
Aerial Lifts	50	0.163	3.122	2.897
Aerial Lifts	120	0.101	3.170	1.548
Aerial Lifts	500	0.079	0.961	0.645
Aerial Lifts	750	0.169	0.995	1.265
Air Compressors	15	0.698	3.508	4.359
Air Compressors	25	0.728	2.407	4.447
Air Compressors	50	0.753	4.913	3.975
Air Compressors	120	0.387	3.657	2.631
Air Compressors	175	0.303	3.197	1.748
Air Compressors	250	0.243	1.099	1.420
Air Compressors	500	0.238	1.055	1.305
Air Compressors	750	0.239	1.055	1.331
Air Compressors	1000	0.256	1.102	3.221
Bore/Drill Rigs	15	0.606	4.311	4.208
Bore/Drill Rigs	25	0.606	4.311	4.208
Bore/Drill Rigs	50	0.606	4.311	4.208
Bore/Drill Rigs	120	0.187	3.258	2.357
Bore/Drill Rigs	175	0.125	2.969	1.078
Bore/Drill Rigs	250	0.110	1.043	1.047
Bore/Drill Rigs	500	0.101	0.989	0.898
Bore/Drill Rigs	750	0.091	0.982	0.717
Bore/Drill Rigs	1000	0.053	0.936	2.262

568.299	0.059	0.005
568.299	0.063	0.005
568.299	0.061	0.005
568.300	0.059	0.005
568.299	0.031	0.004
568.300	0.024	0.004
517.872	0.168	0.005
469.993	0.152	0.004
474.589	0.154	0.004
472.983	0.153	0.004
472.181	0.153	0.004
470.476	0.152	0.004
472.055	0.153	0.004
516.148	0.167	0.005
476.022	0.154	0.004
471.567	0.153	0.004
472.098	0.153	0.004
474.412	0.153	0.004
472.876	0.153	0.004
470.701	0.152	0.004
568.299	0.071	0.005
568.299	0.037	0.004
568.299	0.029	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.027	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142
Cement and Mortar Mixers	25	0.697	2.356	4.382
Concrete/Industrial Saws	25	0.685	2.340	4.332
Concrete/Industrial Saws	50	0.606	4.372	3.815
Concrete/Industrial Saws	120	0.320	3.507	2.478
Concrete/Industrial Saws	175	0.250	3.072	1.599
Cranes	50	2.047	7.453	5.923
Cranes	120	0.552	3.944	4.875
Cranes	175	0.423	3.443	4.222
Cranes	250	0.297	1.553	3.229
Cranes	500	0.236	2.010	2.511
Cranes	750	0.195	1.282	2.073
Cranes	9999	0.211	1.023	2.399
Crawler Tractors	50	1.873	7.027	5.325
Crawler Tractors	120	0.558	3.889	4.762
Crawler Tractors	175	0.347	3.235	3.330
Crawler Tractors	250	0.276	1.395	3.187
Crawler Tractors	500	0.241	1.852	2.476
Crawler Tractors	750	0.184	1.159	1.867
Crawler Tractors	1000	0.268	1.610	4.770
Crushing/Proc. Equipment	50	0.739	5.039	3.962
Crushing/Proc. Equipment	120	0.385	3.700	2.552
Crushing/Proc. Equipment	175	0.304	3.240	1.654
Crushing/Proc. Equipment	250	0.248	1.111	1.330
Crushing/Proc. Equipment	500	0.244	1.064	1.227
Crushing/Proc. Equipment	750	0.244	1.065	1.251
Crushing/Proc. Equipment	9999	0.287	1.107	3.160

568.299	0.061	0.005
525.447	0.170	0.005
525.447	0.170	0.005
467.626	0.151	0.004
472.192	0.153	0.004
472.041	0.153	0.004
469.711	0.152	0.004
469.289	0.152	0.004
525.483	0.170	0.005
471.529	0.153	0.004
472.106	0.153	0.004
473.326	0.153	0.004
473.615	0.153	0.004
568.299	0.056	0.005
568.299	0.063	0.005
568.299	0.050	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.018	0.004
493.025	0.160	0.005
469.630	0.152	0.004
478.566	0.155	0.004
474.239	0.153	0.004
471.928	0.153	0.004
568.299	0.026	0.004
475.234	0.154	0.004
472.811	0.153	0.004
471.131	0.152	0.004
471.939	0.153	0.004
472.055	0.153	0.004
470.181	0.152	0.004
469.615	0.152	0.004

Dumpers/Tenders	25	0.685	2.339	4.332
Excavators	25	0.450	4.234	3.594
Excavators	50	0.450	4.234	3.594
Excavators	120	0.230	3.454	2.381
Excavators	175	0.178	3.076	1.462
Excavators	250	0.142	1.090	1.209
Excavators	500	0.122	1.051	0.893
Excavators	750	0.144	1.132	1.159
Forklifts	50	0.766	5.166	4.152
Forklifts	120	0.327	3.647	3.057
Forklifts	175	0.244	3.180	2.112
Forklifts	250	0.204	1.235	1.807
Forklifts	500	0.220	1.216	1.788
Generator Sets	15	0.618	3.508	4.345
Generator Sets	25	0.701	2.407	4.447
Generator Sets	50	0.514	3.819	3.685
Generator Sets	120	0.279	3.347	2.477
Generator Sets	175	0.211	2.927	1.635
Generator Sets	250	0.164	1.006	1.328
Generator Sets	500	0.158	0.986	1.228
Generator Sets	750	0.160	0.986	1.253
Generator Sets	9999	0.194	1.031	3.058
Graders	50	1.947	7.191	5.148
Graders	120	0.719	4.228	5.740
Graders	175	0.390	3.450	3.548
Graders	250	0.284	1.252	3.441
Graders	500	0.309	1.385	2.705
Graders	750	0.276	1.170	1.425
Off-Highway Tractors	120	0.316	3.687	3.095
Off-Highway Tractors	175	0.201	3.143	1.785
Off-Highway Tractors	250	0.171	1.138	1.491
Off-Highway Tractors	750	0.168	1.124	1.289
Off-Highway Tractors	1000	0.180	1.055	2.449
Off-Highway Trucks	175	0.236	3.304	1.683
Off-Highway Trucks	250	0.207	1.273	1.456

474.714	0.154	0.004
473.977	0.153	0.004
472.344	0.153	0.004
529.183	0.171	0.005
529.183	0.171	0.005
529.183	0.171	0.005
472.318	0.153	0.004
469.613	0.152	0.004
475.998	0.154	0.004
526.176	0.170	0.005
526.176	0.170	0.005
526.176	0.170	0.005
470.000	0.152	0.004
471.850	0.153	0.004
473.223	0.153	0.004
472.929	0.153	0.004

Off-Highway Trucks	500	0.187	1.221	1.324
Off-Highway Trucks	750	0.263	1.719	2.182
Off-Highway Trucks	1000	0.214	1.194	3.544
Other Construction Equipment	15	0.866	5.074	4.594
Other Construction Equipment	25	0.866	5.074	4.594
Other Construction Equipment	50	0.866	5.074	4.594
Other Construction Equipment	120	0.406	3.632	3.790
Other Construction Equipment	175	0.274	3.142	2.698
Other Construction Equipment	500	0.180	1.396	1.812
Other General Industrial Equipment	15	0.603	4.883	3.993
Other General Industrial Equipment	25	0.603	4.883	3.993
Other General Industrial Equipment	50	0.603	4.883	3.993
Other General Industrial Equipment	120	0.308	3.647	2.924
Other General Industrial Equipment	175	0.201	3.175	1.609
Other General Industrial Equipment	250	0.181	1.140	1.530
Other General Industrial Equipment	500	0.164	1.121	1.256

473.464	0.153	0.004
472.055	0.153	0.004
523.709	0.169	0.005
473.588	0.153	0.004
472.219	0.153	0.004
471.482	0.153	0.004
470.297	0.152	0.004
472.055	0.153	0.004
526.896	0.170	0.005
526.896	0.170	0.005
470.185	0.152	0.004
472.760	0.153	0.004
472.372	0.153	0.004
466.004	0.151	0.004
520.659	0.168	0.005
520.659	0.168	0.005
473.448	0.153	0.004
470.665	0.152	0.004
472.169	0.153	0.004
568.299	0.059	0.005
568.299	0.056	0.005
568.299	0.063	0.005
568.300	0.035	0.005
568.299	0.021	0.004
568.299	0.019	0.004

Other General Industrial Equipment	750	0.111	1.105	0.626
Other General Industrial Equipment	1000	0.193	1.049	3.956
Other Material Handling Equipment	50	1.011	5.757	4.684
Other Material Handling Equipment	120	0.225	3.515	2.298
Other Material Handling Equipment	175	0.217	3.171	1.769
Other Material Handling Equipment	250	0.207	1.209	2.004
Other Material Handling Equipment	500	0.218	1.344	1.870
Other Material Handling Equipment	9999	0.054	0.939	2.268
Pavers	25	1.007	5.007	4.285
Pavers	50	1.007	5.007	4.285
Pavers	120	0.349	3.507	3.427
Pavers	175	0.199	2.994	1.955
Pavers	250	0.130	1.010	1.611
Pavers	500	0.152	0.987	1.771
Paving Equipment	25	0.541	4.241	3.774
Paving Equipment	50	0.541	4.241	3.774
Paving Equipment	120	0.278	3.503	2.837
Paving Equipment	175	0.204	3.051	1.913
Paving Equipment	250	0.175	1.165	1.885
Plate Compactors	15	0.661	3.469	4.142
Pressure Washers	15	0.618	3.508	4.345
Pressure Washers	25	0.701	2.407	4.447
Pressure Washers	50	0.363	3.260	3.541
Pressure Washers	120	0.222	3.196	2.377
Pressure Washers	175	0.205	2.907	1.665

568.299	0.008	0.004
568.299	0.063	0.005
568.299	0.066	0.005
568.299	0.055	0.005
568.299	0.029	0.004
568.299	0.021	0.004
568.299	0.016	0.004
568.300	0.016	0.004
568.300	0.016	0.004
568.299	0.019	0.004
525.691	0.170	0.005
525.691	0.170	0.005
525.691	0.170	0.005
473.929	0.153	0.004
471.948	0.153	0.004
473.514	0.153	0.004
478.982	0.155	0.004
525.015	0.170	0.005
473.089	0.153	0.004
471.677	0.153	0.004
472.541	0.153	0.004
466.560	0.151	0.004
473.912	0.153	0.004
474.617	0.154	0.004
479.311	0.155	0.004
473.035	0.153	0.004
568.299	0.042	0.004
524.791	0.170	0.005
524.791	0.170	0.005
466.494	0.151	0.004
470.927	0.152	0.004

Pressure Washers	250	0.098	0.986	0.265
Pumps	15	0.698	3.508	4.359
Pumps	25	0.728	2.407	4.447
Pumps	50	0.565	4.007	3.734
Pumps	120	0.299	3.398	2.511
Pumps	175	0.227	2.971	1.662
Pumps	250	0.177	1.021	1.351
Pumps	500	0.171	0.998	1.246
Pumps	750	0.173	0.998	1.271
Pumps	9999	0.207	1.043	3.090
Rollers	15	0.661	4.252	3.921
Rollers	25	0.661	4.252	3.921
Rollers	50	0.661	4.252	3.921
Rollers	120	0.287	3.455	3.003
Rollers	175	0.150	2.909	1.483
Rollers	250	0.188	1.234	2.173
Rollers	500	0.211	1.956	2.290
Rough Terrain Forklifts	50	0.690	4.125	3.853
Rough Terrain Forklifts	120	0.150	3.242	1.984
Rough Terrain Forklifts	175	0.111	2.843	1.218
Rough Terrain Forklifts	250	0.116	0.990	1.474
Rough Terrain Forklifts	500	0.069	0.938	0.558
Rubber Tired Dozers	175	0.588	3.766	5.656
Rubber Tired Dozers	250	0.393	1.783	4.090
Rubber Tired Dozers	500	0.447	3.686	4.408
Rubber Tired Dozers	750	0.423	2.591	5.334
Rubber Tired Dozers	1000	0.453	1.874	4.709
Rubber Tired Loaders	25	1.049	5.972	4.521
Rubber Tired Loaders	50	1.049	5.972	4.521
Rubber Tired Loaders	120	0.412	3.827	3.512
Rubber Tired Loaders	175	0.269	3.292	2.196

469.904	0.152	0.004
468.129	0.151	0.004
463.819	0.150	0.004
472.858	0.153	0.004
483.448	0.156	0.004
478.741	0.155	0.004
469.269	0.152	0.004
473.230	0.153	0.004
471.279	0.152	0.004
568.300	0.059	0.005
568.299	0.059	0.005
568.299	0.030	0.004
568.299	0.023	0.004
686.695	0.022	0.004
527.273	0.171	0.005
527.273	0.171	0.005
472.432	0.153	0.004
535.836	0.173	0.005
473.636	0.153	0.004
469.126	0.152	0.004
476.951	0.154	0.004
470.525	0.152	0.004
470.400	0.152	0.004
525.328	0.170	0.005
525.328	0.170	0.005
525.328	0.170	0.005
474.116	0.153	0.004
473.122	0.153	0.004
470.126	0.152	0.004
514.461	0.166	0.005

Rubber Tired Loaders	250	0.210	1.171	2.060
Rubber Tired Loaders	500	0.217	1.384	1.866
Rubber Tired Loaders	750	0.227	1.323	1.927
Rubber Tired Loaders	1000	0.193	1.174	3.528
Scrapers	120	0.630	4.144	6.026
Scrapers	175	0.361	3.395	3.479
Scrapers	250	0.317	1.678	3.284
Scrapers	500	0.253	1.975	2.666
Scrapers	750	0.222	1.513	2.386
Signal Boards	15	0.661	3.469	4.142
Signal Boards	50	0.603	4.282	3.767
Signal Boards	120	0.315	3.478	2.472
Signal Boards	175	0.244	3.045	1.602
Signal Boards	250	0.235	1.263	1.562
Skid Steer Loaders	25	0.353	3.654	3.371
Skid Steer Loaders	50	0.353	3.654	3.371
Skid Steer Loaders	120	0.153	3.266	2.039
Surfacing Equipment	50	0.437	3.832	3.924
Surfacing Equipment	120	0.270	3.396	3.058
Surfacing Equipment	175	0.224	2.914	2.455
Surfacing Equipment	250	0.192	1.219	2.502
Surfacing Equipment	500	0.132	1.163	1.476
Surfacing Equipment	750	0.100	0.985	1.081
Sweepers/Scrubbers	15	0.759	4.971	4.127
Sweepers/Scrubbers	25	0.759	4.971	4.127
Sweepers/Scrubbers	50	0.759	4.971	4.127
Sweepers/Scrubbers	120	0.351	3.695	3.285
Sweepers/Scrubbers	175	0.292	3.223	2.609
Sweepers/Scrubbers	250	0.159	1.114	1.610
Tractors/Loaders/Backhoes	25	0.621	4.629	3.857

514.461	0.166	0.005
475.898	0.154	0.004
467.800	0.151	0.004
470.124	0.152	0.004
469.256	0.152	0.004
466.633	0.151	0.004
527.026	0.171	0.005
527.026	0.171	0.005
527.026	0.171	0.005
475.326	0.154	0.004
467.734	0.151	0.004
473.851	0.153	0.004
470.585	0.152	0.004
474.289	0.153	0.004
568.300	0.063	0.005
568.299	0.066	0.005
568.299	0.068	0.005
568.299	0.034	0.004
568.300	0.026	0.004
568.299	0.020	0.004
568.300	0.020	0.004
470.181	0.152	0.004
469.615	0.152	0.004
474.714	0.154	0.004
473.977	0.153	0.004
472.344	0.153	0.004

Tractors/Loaders/Backhoes	50	0.621	4.629	3.857
Tractors/Loaders/Backhoes	120	0.239	3.525	2.426
Tractors/Loaders/Backhoes	175	0.184	3.078	1.521
Tractors/Loaders/Backhoes	250	0.169	1.148	1.588
Tractors/Loaders/Backhoes	500	0.152	1.279	1.247
Tractors/Loaders/Backhoes	750	0.234	1.361	2.419
Trenchers	15	0.642	4.302	3.959
Trenchers	25	0.642	4.302	3.959
Trenchers	50	0.642	4.302	3.959
Trenchers	120	0.504	3.768	4.700
Trenchers	175	0.359	3.291	3.657
Trenchers	250	0.328	1.639	3.737
Trenchers	500	0.199	1.723	2.005
Trenchers	750	0.060	0.951	0.303
Welders	15	0.698	3.508	4.359
Welders	25	0.728	2.407	4.447
Welders	50	0.697	4.596	3.891
Welders	120	0.357	3.564	2.599
Welders	175	0.277	3.115	1.726
Welders	250	0.000	1.071	1.404
Welders	500	0.215	1.034	1.289
Water Trucks	175	0.236	3.304	1.683
Water Trucks	250	0.207	1.273	1.456
Water Trucks	500	0.187	1.221	1.324
Water Trucks	750	0.263	1.719	2.182
Water Trucks	1000	0.214	1.194	3.544

2024

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
SOX	PM10	PM2.5	CO2	CH4	N2O
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.027	0.025	472.114	0.153	0.004
0.005	0.009	0.009	472.055	0.153	0.004
0.005	0.038	0.038	568.299	0.015	0.004
0.008	0.194	0.194	568.299	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.156	0.156	568.299	0.067	0.005
0.006	0.143	0.143	568.299	0.034	0.004
0.006	0.089	0.089	568.299	0.027	0.004
0.006	0.045	0.045	568.299	0.021	0.004
0.005	0.044	0.044	568.299	0.021	0.004
0.005	0.044	0.044	568.299	0.021	0.004
0.005	0.068	0.068	568.299	0.023	0.004
0.006	0.226	0.208	531.986	0.172	0.005
0.006	0.226	0.208	531.986	0.172	0.005
0.006	0.226	0.208	531.986	0.172	0.005
0.005	0.102	0.093	461.214	0.149	0.004
0.005	0.048	0.044	479.647	0.155	0.004
0.005	0.034	0.031	469.706	0.152	0.004
0.005	0.030	0.028	464.041	0.150	0.004
0.005	0.026	0.024	479.220	0.155	0.004
0.005	0.018	0.016	472.020	0.153	0.004

2024	
Equipment	**MaxHP**
Aerial Lifts	15
Aerial Lifts	25
Aerial Lifts	50
Aerial Lifts	120
Aerial Lifts	500
Aerial Lifts	750
Air Compressors	15
Air Compressors	25
Air Compressors	50
Air Compressors	120
Air Compressors	175
Air Compressors	250
Air Compressors	500
Air Compressors	750
Air Compressors	1000
Bore/Drill Rigs	15
Bore/Drill Rigs	25
Bore/Drill Rigs	50
Bore/Drill Rigs	120
Bore/Drill Rigs	175
Bore/Drill Rigs	250
Bore/Drill Rigs	500
Bore/Drill Rigs	750
Bore/Drill Rigs	1000

0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.172	0.172	568.299	0.062	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.134	0.134	568.299	0.054	0.005
0.006	0.123	0.123	568.300	0.028	0.004
0.006	0.077	0.077	568.299	0.022	0.004
0.005	0.608	0.559	517.872	0.168	0.005
0.005	0.323	0.297	469.889	0.152	0.004
0.005	0.224	0.206	474.595	0.154	0.004
0.005	0.135	0.124	472.974	0.153	0.004
0.005	0.102	0.093	472.294	0.153	0.004
0.005	0.084	0.077	470.251	0.152	0.004
0.005	0.063	0.058	472.055	0.153	0.004
0.005	0.526	0.484	516.159	0.167	0.005
0.005	0.373	0.343	476.158	0.154	0.004
0.005	0.185	0.170	471.781	0.153	0.004
0.005	0.124	0.114	471.624	0.153	0.004
0.005	0.102	0.094	474.613	0.154	0.004
0.005	0.069	0.064	472.530	0.153	0.004
0.005	0.118	0.109	473.666	0.153	0.004
0.007	0.146	0.146	568.299	0.066	0.005
0.006	0.132	0.132	568.299	0.034	0.004
0.006	0.083	0.083	568.299	0.027	0.004
0.006	0.043	0.043	568.299	0.022	0.004
0.005	0.042	0.042	568.299	0.022	0.004
0.005	0.042	0.042	568.300	0.022	0.004
0.005	0.066	0.066	568.299	0.025	0.004

Cement and Mortar Mixers	15
Cement and Mortar Mixers	25
Concrete/Industrial Saws	25
Concrete/Industrial Saws	50
Concrete/Industrial Saws	120
Concrete/Industrial Saws	175
Cranes	50
Cranes	120
Cranes	175
Cranes	250
Cranes	500
Cranes	750
Cranes	9999
Crawler Tractors	50
Crawler Tractors	120
Crawler Tractors	175
Crawler Tractors	250
Crawler Tractors	500
Crawler Tractors	750
Crawler Tractors	1000
Crushing/Proc. Equipment	50
Crushing/Proc. Equipment	120
Crushing/Proc. Equipment	175
Crushing/Proc. Equipment	250
Crushing/Proc. Equipment	500
Crushing/Proc. Equipment	750
Crushing/Proc. Equipment	9999

0.007	0.162	0.162	568.299	0.061	0.005
0.005	0.139	0.128	525.429	0.170	0.005
0.005	0.139	0.128	525.429	0.170	0.005
0.005	0.116	0.107	467.157	0.151	0.004
0.005	0.072	0.066	472.277	0.153	0.004
0.005	0.039	0.036	472.213	0.153	0.004
0.005	0.030	0.028	469.889	0.152	0.004
0.005	0.043	0.040	468.683	0.152	0.004
0.005	0.232	0.213	525.483	0.170	0.005
0.005	0.189	0.174	471.529	0.153	0.004
0.005	0.111	0.102	472.106	0.153	0.004
0.005	0.069	0.063	473.326	0.153	0.004
0.005	0.069	0.063	473.615	0.153	0.004
0.008	0.186	0.186	568.299	0.055	0.005
0.007	0.182	0.182	568.299	0.063	0.005
0.007	0.124	0.124	568.299	0.046	0.005
0.006	0.117	0.117	568.299	0.025	0.004
0.006	0.071	0.071	568.299	0.019	0.004
0.006	0.038	0.038	568.299	0.014	0.004
0.005	0.037	0.037	568.299	0.014	0.004
0.005	0.037	0.037	568.299	0.014	0.004
0.005	0.058	0.058	568.299	0.017	0.004
0.005	0.549	0.505	494.020	0.160	0.005
0.005	0.436	0.401	469.286	0.152	0.004
0.005	0.195	0.180	478.463	0.155	0.004
0.005	0.112	0.103	473.926	0.153	0.004
0.005	0.105	0.097	471.031	0.152	0.004
0.005	0.051	0.051	568.300	0.024	0.004
0.005	0.187	0.172	476.087	0.154	0.004
0.005	0.085	0.079	472.996	0.153	0.004
0.005	0.053	0.049	470.845	0.152	0.004
0.005	0.051	0.047	471.932	0.153	0.004
0.005	0.067	0.062	472.055	0.153	0.004
0.005	0.081	0.074	470.292	0.152	0.004
0.005	0.059	0.054	469.446	0.152	0.004

Dumpers/Tenders	25
Excavators	25
Excavators	50
Excavators	120
Excavators	175
Excavators	250
Excavators	500
Excavators	750
Forklifts	50
Forklifts	120
Forklifts	175
Forklifts	250
Forklifts	500
Generator Sets	15
Generator Sets	25
Generator Sets	50
Generator Sets	120
Generator Sets	175
Generator Sets	250
Generator Sets	500
Generator Sets	750
Generator Sets	9999
Graders	50
Graders	120
Graders	175
Graders	250
Graders	500
Graders	750
Off-Highway Tractors	120
Off-Highway Tractors	175
Off-Highway Tractors	250
Off-Highway Tractors	750
Off-Highway Tractors	1000
Off-Highway Trucks	175
Off-Highway Trucks	250

0.005	0.048	0.044	475.049	0.154	0.004	Off-Highway Trucks	500
0.005	0.084	0.078	473.767	0.153	0.004	Off-Highway Trucks	750
0.005	0.074	0.068	472.857	0.153	0.004	Off-Highway Trucks	1000
0.006	0.322	0.296	529.339	0.171	0.005	Other Construction Equipment	15
0.006	0.322	0.296	529.339	0.171	0.005	Other Construction Equipment	25
0.006	0.322	0.296	529.339	0.171	0.005	Other Construction Equipment	50
0.005	0.259	0.238	471.990	0.153	0.004	Other Construction Equipment	120
0.005	0.141	0.129	469.558	0.152	0.004	Other Construction Equipment	175
0.005	0.069	0.063	476.185	0.154	0.004	Other Construction Equipment	500
0.005	0.194	0.179	526.176	0.170	0.005	Other General Industrial Equipment	15
0.005	0.194	0.179	526.176	0.170	0.005	Other General Industrial Equipment	25
0.005	0.194	0.179	526.176	0.170	0.005	Other General Industrial Equipment	50
0.005	0.169	0.155	470.000	0.152	0.004	Other General Industrial Equipment	120
0.005	0.080	0.074	471.850	0.153	0.004	Other General Industrial Equipment	175
0.005	0.051	0.047	473.223	0.153	0.004	Other General Industrial Equipment	250
0.005	0.043	0.040	472.929	0.153	0.004	Other General Industrial Equipment	500

0.005	0.023	0.021	473.464	0.153	0.004	Other General Industrial Equipment	750
0.005	0.080	0.073	472.055	0.153	0.004	Other General Industrial Equipment	1000
0.005	0.340	0.313	523.709	0.169	0.005	Other Material Handling Equipment	50
0.005	0.104	0.095	473.588	0.153	0.004	Other Material Handling Equipment	120
0.005	0.096	0.088	472.219	0.153	0.004	Other Material Handling Equipment	175
0.005	0.069	0.064	471.482	0.153	0.004	Other Material Handling Equipment	250
0.005	0.078	0.072	470.297	0.152	0.004	Other Material Handling Equipment	500
0.005	0.018	0.017	472.055	0.153	0.004	Other Material Handling Equipment	9999
0.005	0.299	0.275	526.860	0.170	0.005	Pavers	25
0.005	0.299	0.275	526.860	0.170	0.005	Pavers	50
0.005	0.226	0.208	470.084	0.152	0.004	Pavers	120
0.005	0.092	0.085	472.718	0.153	0.004	Pavers	175
0.005	0.047	0.043	472.605	0.153	0.004	Pavers	250
0.005	0.062	0.057	466.004	0.151	0.004	Pavers	500
0.005	0.173	0.159	521.114	0.169	0.005	Paving Equipment	25
0.005	0.173	0.159	521.114	0.169	0.005	Paving Equipment	50
0.005	0.153	0.140	473.427	0.153	0.004	Paving Equipment	120
0.005	0.093	0.086	470.663	0.152	0.004	Paving Equipment	175
0.005	0.070	0.065	472.169	0.153	0.004	Paving Equipment	250
0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors	15
0.008	0.186	0.186	568.299	0.055	0.005	Pressure Washers	15
0.007	0.182	0.182	568.299	0.063	0.005	Pressure Washers	25
0.007	0.101	0.101	568.299	0.032	0.005	Pressure Washers	50
0.006	0.097	0.097	568.299	0.020	0.004	Pressure Washers	120
0.006	0.072	0.072	568.299	0.018	0.004	Pressure Washers	175

0.006	0.009	0.009	568.299	0.008	0.004
0.008	0.194	0.194	568.299	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.131	0.131	568.299	0.051	0.005
0.006	0.123	0.123	568.299	0.026	0.004
0.006	0.075	0.075	568.299	0.020	0.004
0.006	0.040	0.040	568.299	0.015	0.004
0.005	0.038	0.038	568.300	0.015	0.004
0.005	0.039	0.039	568.299	0.015	0.004
0.005	0.059	0.059	568.299	0.018	0.004
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.165	0.152	473.936	0.153	0.004
0.005	0.068	0.062	471.935	0.153	0.004
0.005	0.076	0.070	473.516	0.153	0.004
0.005	0.093	0.085	478.303	0.155	0.004
0.005	0.204	0.187	524.802	0.170	0.005
0.005	0.064	0.059	473.158	0.153	0.004
0.005	0.044	0.040	471.622	0.153	0.004
0.005	0.034	0.032	472.778	0.153	0.004
0.005	0.009	0.008	466.554	0.151	0.004
0.005	0.316	0.291	473.901	0.153	0.004
0.005	0.184	0.169	474.597	0.154	0.004
0.005	0.202	0.185	479.468	0.155	0.004
0.005	0.196	0.180	473.023	0.153	0.004
0.005	0.131	0.131	568.299	0.040	0.004
0.005	0.304	0.279	524.304	0.170	0.005
0.005	0.304	0.279	524.304	0.170	0.005
0.005	0.239	0.219	466.558	0.151	0.004
0.005	0.118	0.108	470.660	0.152	0.004

Pressure Washers	250
Pumps	15
Pumps	25
Pumps	50
Pumps	120
Pumps	175
Pumps	250
Pumps	500
Pumps	750
Pumps	9999
Rollers	15
Rollers	25
Rollers	50
Rollers	120
Rollers	175
Rollers	250
Rollers	500
Rough Terrain Forklifts	50
Rough Terrain Forklifts	120
Rough Terrain Forklifts	175
Rough Terrain Forklifts	250
Rough Terrain Forklifts	500
Rubber Tired Dozers	175
Rubber Tired Dozers	250
Rubber Tired Dozers	500
Rubber Tired Dozers	750
Rubber Tired Dozers	1000
Rubber Tired Loaders	25
Rubber Tired Loaders	50
Rubber Tired Loaders	120
Rubber Tired Loaders	175

0.005	0.069	0.064	469.824	0.152	0.004
0.005	0.069	0.064	468.466	0.152	0.004
0.005	0.075	0.069	464.555	0.150	0.004
0.005	0.071	0.065	472.303	0.153	0.004
0.005	0.458	0.421	483.030	0.156	0.004
0.005	0.184	0.169	478.681	0.155	0.004
0.005	0.144	0.133	469.560	0.152	0.004
0.005	0.105	0.096	473.177	0.153	0.004
0.005	0.087	0.080	471.295	0.152	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.132	0.132	568.299	0.054	0.005
0.006	0.122	0.122	568.299	0.028	0.004
0.006	0.075	0.075	568.299	0.022	0.004
0.007	0.048	0.048	686.695	0.021	0.004
0.005	0.093	0.086	527.423	0.171	0.005
0.005	0.093	0.086	527.423	0.171	0.005
0.005	0.069	0.063	472.656	0.153	0.004
0.006	0.156	0.143	535.930	0.173	0.005
0.005	0.157	0.144	474.470	0.154	0.004
0.005	0.119	0.110	470.014	0.152	0.004
0.005	0.082	0.075	476.961	0.154	0.004
0.005	0.056	0.051	470.375	0.152	0.004
0.005	0.040	0.037	472.447	0.153	0.004
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.210	0.193	474.116	0.153	0.004
0.005	0.126	0.116	473.122	0.153	0.004
0.005	0.050	0.046	470.126	0.152	0.004
0.005	0.185	0.170	513.796	0.166	0.005

Rubber Tired Loaders	250
Rubber Tired Loaders	500
Rubber Tired Loaders	750
Rubber Tired Loaders	1000
Scrapers	120
Scrapers	175
Scrapers	250
Scrapers	500
Scrapers	750
Signal Boards	15
Signal Boards	50
Signal Boards	120
Signal Boards	175
Signal Boards	250
Skid Steer Loaders	25
Skid Steer Loaders	50
Skid Steer Loaders	120
Surfacing Equipment	50
Surfacing Equipment	120
Surfacing Equipment	175
Surfacing Equipment	250
Surfacing Equipment	500
Surfacing Equipment	750
Sweepers/Scrubbers	15
Sweepers/Scrubbers	25
Sweepers/Scrubbers	50
Sweepers/Scrubbers	120
Sweepers/Scrubbers	175
Sweepers/Scrubbers	250
Tractors/Loaders/Backhoes	25

0.005	0.185	0.170	513.796	0.166	0.005
0.005	0.120	0.110	476.431	0.154	0.004
0.005	0.077	0.070	468.821	0.152	0.004
0.005	0.058	0.053	469.752	0.152	0.004
0.005	0.047	0.043	469.465	0.152	0.004
0.005	0.095	0.087	466.676	0.151	0.004
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.326	0.300	475.690	0.154	0.004
0.005	0.186	0.171	467.733	0.151	0.004
0.005	0.155	0.143	473.849	0.153	0.004
0.005	0.085	0.078	471.613	0.153	0.004
0.005	0.009	0.008	474.471	0.154	0.004
0.008	0.194	0.194	568.300	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.151	0.151	568.299	0.062	0.005
0.006	0.139	0.139	568.299	0.032	0.004
0.006	0.085	0.085	568.299	0.025	0.004
0.006	0.044	0.044	568.299	0.019	0.004
0.005	0.042	0.042	568.299	0.019	0.004
0.005	0.081	0.074	470.292	0.152	0.004
0.005	0.059	0.054	469.446	0.152	0.004
0.005	0.048	0.044	475.049	0.154	0.004
0.005	0.084	0.078	473.767	0.153	0.004
0.005	0.074	0.068	472.857	0.153	0.004

Tractors/Loaders/Backhoes	50
Tractors/Loaders/Backhoes	120
Tractors/Loaders/Backhoes	175
Tractors/Loaders/Backhoes	250
Tractors/Loaders/Backhoes	500
Tractors/Loaders/Backhoes	750
Trenchers	15
Trenchers	25
Trenchers	50
Trenchers	120
Trenchers	175
Trenchers	250
Trenchers	500
Trenchers	750
Welders	15
Welders	25
Welders	50
Welders	120
Welders	175
Welders	250
Welders	500
Water Trucks	175
Water Trucks	250
Water Trucks	500
Water Trucks	750
Water Trucks	1000

2025

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.101	3.173	1.528	0.005	0.027	0.024	472.114	0.153	0.004
0.082	0.966	0.647	0.005	0.009	0.009	472.055	0.153	0.004
0.161	0.991	1.115	0.005	0.033	0.033	568.299	0.014	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.300	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.300	0.064	0.005
0.702	4.880	3.864	0.007	0.135	0.135	568.299	0.063	0.005
0.365	3.655	2.461	0.006	0.123	0.123	568.299	0.032	0.004
0.286	3.202	1.561	0.006	0.077	0.077	568.299	0.025	0.004
0.232	1.096	1.247	0.006	0.039	0.039	568.299	0.020	0.004
0.228	1.053	1.148	0.005	0.038	0.038	568.299	0.020	0.004
0.228	1.053	1.171	0.005	0.038	0.038	568.299	0.020	0.004
0.243	1.090	3.082	0.005	0.061	0.061	568.299	0.021	0.004
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.177	3.251	2.216	0.005	0.090	0.083	461.208	0.149	0.004
0.125	2.978	1.029	0.005	0.046	0.043	478.944	0.155	0.004
0.108	1.046	0.975	0.005	0.032	0.030	470.712	0.152	0.004
0.103	0.994	0.861	0.005	0.029	0.027	464.480	0.150	0.004
0.089	0.985	0.671	0.005	0.026	0.024	480.225	0.155	0.004
0.057	0.943	2.273	0.005	0.018	0.017	471.926	0.153	0.004

0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.693	2.349	4.369	0.007	0.170	0.170	568.299	0.062	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.561	4.330	3.701	0.007	0.115	0.115	568.300	0.050	0.005
0.300	3.500	2.315	0.006	0.106	0.106	568.299	0.027	0.004
0.235	3.072	1.418	0.006	0.067	0.067	568.299	0.021	0.004
1.937	7.269	5.788	0.005	0.577	0.531	517.872	0.168	0.005
0.524	3.906	4.619	0.005	0.301	0.277	469.903	0.152	0.004
0.381	3.389	3.703	0.005	0.196	0.181	474.636	0.154	0.004
0.281	1.502	2.966	0.005	0.123	0.114	472.964	0.153	0.004
0.231	1.933	2.383	0.005	0.096	0.089	472.066	0.153	0.004
0.191	1.283	1.900	0.005	0.080	0.073	470.331	0.152	0.004
0.220	1.031	2.411	0.005	0.064	0.059	472.055	0.153	0.004
1.756	6.685	4.975	0.005	0.466	0.429	515.466	0.167	0.005
0.513	3.852	4.409	0.005	0.335	0.309	476.234	0.154	0.004
0.326	3.227	3.041	0.005	0.170	0.157	471.829	0.153	0.004
0.264	1.370	2.953	0.005	0.115	0.106	471.860	0.153	0.004
0.228	1.780	2.244	0.005	0.093	0.085	474.025	0.153	0.004
0.181	1.159	1.767	0.005	0.066	0.061	472.283	0.153	0.004
0.263	1.588	4.689	0.005	0.115	0.106	474.645	0.154	0.004
0.694	5.008	3.850	0.007	0.125	0.125	568.299	0.062	0.005
0.364	3.697	2.389	0.006	0.112	0.112	568.299	0.032	0.004
0.287	3.243	1.472	0.006	0.071	0.071	568.299	0.025	0.004
0.236	1.109	1.165	0.006	0.036	0.036	568.299	0.021	0.004
0.232	1.062	1.077	0.005	0.035	0.035	568.299	0.021	0.004
0.233	1.063	1.098	0.005	0.036	0.036	568.299	0.021	0.004
0.274	1.096	3.029	0.005	0.059	0.059	568.299	0.024	0.004

0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.417	4.205	3.508	0.005	0.120	0.110	525.979	0.170	0.005
0.417	4.205	3.508	0.005	0.120	0.110	525.979	0.170	0.005
0.217	3.453	2.248	0.005	0.102	0.094	467.384	0.151	0.004
0.170	3.083	1.325	0.005	0.065	0.060	472.428	0.153	0.004
0.139	1.090	1.108	0.005	0.036	0.033	472.442	0.153	0.004
0.121	1.054	0.831	0.005	0.029	0.026	469.711	0.152	0.004
0.142	1.134	1.105	0.005	0.041	0.037	468.652	0.152	0.004
0.692	5.089	4.039	0.005	0.203	0.187	525.483	0.170	0.005
0.300	3.629	2.814	0.005	0.163	0.150	471.529	0.153	0.004
0.224	3.174	1.861	0.005	0.096	0.088	472.106	0.153	0.004
0.196	1.218	1.625	0.005	0.061	0.057	473.326	0.153	0.004
0.218	1.219	1.723	0.005	0.065	0.060	473.615	0.153	0.004
0.612	3.499	4.305	0.008	0.181	0.181	568.299	0.055	0.005
0.697	2.390	4.426	0.007	0.178	0.178	568.299	0.062	0.005
0.475	3.787	3.582	0.007	0.107	0.107	568.299	0.042	0.005
0.260	3.342	2.321	0.006	0.101	0.101	568.299	0.023	0.004
0.197	2.929	1.462	0.006	0.062	0.062	568.299	0.017	0.004
0.155	1.003	1.169	0.006	0.033	0.033	568.299	0.014	0.004
0.151	0.983	1.082	0.005	0.032	0.032	568.300	0.013	0.004
0.152	0.983	1.104	0.005	0.032	0.032	568.299	0.013	0.004
0.183	1.018	2.929	0.005	0.052	0.052	568.300	0.016	0.004
1.850	7.051	5.028	0.005	0.520	0.479	493.791	0.160	0.005
0.683	4.200	5.434	0.005	0.408	0.375	469.821	0.152	0.004
0.364	3.432	3.202	0.005	0.177	0.163	478.497	0.155	0.004
0.262	1.225	3.073	0.005	0.100	0.092	473.669	0.153	0.004
0.293	1.356	2.432	0.005	0.095	0.088	470.266	0.152	0.004
0.264	1.155	1.265	0.005	0.046	0.046	568.300	0.023	0.004
0.302	3.691	2.949	0.005	0.171	0.157	476.371	0.154	0.004
0.183	3.133	1.496	0.005	0.072	0.066	473.097	0.153	0.004
0.169	1.135	1.377	0.005	0.049	0.045	470.689	0.152	0.004
0.169	1.130	1.235	0.005	0.048	0.044	471.925	0.153	0.004
0.189	1.066	2.466	0.005	0.068	0.063	472.055	0.153	0.004
0.224	3.325	1.494	0.005	0.070	0.064	470.264	0.152	0.004
0.202	1.259	1.355	0.005	0.054	0.050	469.113	0.152	0.004

0.185	1.206	1.235	0.005	0.045	0.041	475.220	0.154	0.004
0.259	1.650	2.085	0.005	0.079	0.073	473.839	0.153	0.004
0.209	1.200	3.439	0.005	0.069	0.064	473.097	0.153	0.004
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.382	3.620	3.582	0.005	0.237	0.218	472.125	0.153	0.004
0.261	3.150	2.520	0.005	0.130	0.120	469.545	0.152	0.004
0.175	1.382	1.677	0.005	0.064	0.059	476.484	0.154	0.004
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.287	3.639	2.708	0.005	0.146	0.134	470.000	0.152	0.004
0.191	3.185	1.448	0.005	0.073	0.067	471.850	0.153	0.004
0.173	1.141	1.319	0.005	0.046	0.042	473.223	0.153	0.004
0.158	1.110	1.153	0.005	0.040	0.036	472.929	0.153	0.004

0.115	1.112	0.628	0.005	0.023	0.021	473.464	0.153	0.004
0.198	1.058	3.971	0.005	0.080	0.074	472.055	0.153	0.004
0.943	5.669	4.579	0.005	0.314	0.289	523.709	0.169	0.005
0.220	3.510	2.222	0.005	0.096	0.089	473.588	0.153	0.004
0.208	3.181	1.639	0.005	0.088	0.081	472.219	0.153	0.004
0.210	1.218	1.986	0.005	0.068	0.063	471.482	0.153	0.004
0.212	1.262	1.756	0.005	0.072	0.066	470.297	0.152	0.004
0.058	0.946	2.278	0.005	0.018	0.017	472.055	0.153	0.004
0.950	4.956	4.203	0.005	0.279	0.257	526.857	0.170	0.005
0.950	4.956	4.203	0.005	0.279	0.257	526.857	0.170	0.005
0.337	3.508	3.277	0.005	0.213	0.196	470.226	0.152	0.004
0.191	3.004	1.809	0.005	0.085	0.078	472.661	0.153	0.004
0.119	1.009	1.343	0.005	0.041	0.038	473.236	0.153	0.004
0.143	0.986	1.548	0.005	0.054	0.049	467.171	0.151	0.004
0.523	4.275	3.743	0.005	0.164	0.151	521.058	0.169	0.005
0.523	4.275	3.743	0.005	0.164	0.151	521.058	0.169	0.005
0.262	3.503	2.673	0.005	0.135	0.125	473.175	0.153	0.004
0.197	3.066	1.785	0.005	0.086	0.079	470.661	0.152	0.004
0.138	1.114	1.296	0.005	0.048	0.044	472.212	0.153	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.612	3.499	4.305	0.008	0.181	0.181	568.299	0.055	0.005
0.697	2.390	4.426	0.007	0.178	0.178	568.299	0.062	0.005
0.333	3.233	3.441	0.007	0.087	0.087	568.299	0.030	0.005
0.204	3.191	2.229	0.006	0.084	0.084	568.299	0.018	0.004
0.191	2.907	1.482	0.006	0.062	0.062	568.299	0.017	0.004

0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.299	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.299	0.064	0.005
0.523	3.974	3.630	0.007	0.114	0.114	568.299	0.047	0.005
0.279	3.393	2.352	0.006	0.107	0.107	568.299	0.025	0.004
0.213	2.973	1.486	0.006	0.065	0.065	568.299	0.019	0.004
0.168	1.018	1.189	0.006	0.034	0.034	568.300	0.015	0.004
0.164	0.994	1.098	0.005	0.033	0.033	568.299	0.014	0.004
0.164	0.994	1.120	0.005	0.034	0.034	568.299	0.014	0.004
0.196	1.031	2.960	0.005	0.054	0.054	568.299	0.017	0.004
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.272	3.451	2.843	0.005	0.151	0.138	474.007	0.153	0.004
0.141	2.914	1.324	0.005	0.061	0.056	472.012	0.153	0.004
0.179	1.214	1.977	0.005	0.070	0.064	473.512	0.153	0.004
0.210	1.961	2.216	0.005	0.090	0.083	477.900	0.155	0.004
0.570	3.918	3.653	0.005	0.166	0.152	524.924	0.170	0.005
0.145	3.245	1.914	0.005	0.058	0.054	473.063	0.153	0.004
0.103	2.834	1.044	0.005	0.039	0.036	471.535	0.153	0.004
0.119	0.995	1.480	0.005	0.035	0.032	472.853	0.153	0.004
0.066	0.937	0.476	0.005	0.009	0.008	466.548	0.151	0.004
0.532	3.696	5.014	0.005	0.279	0.257	473.515	0.153	0.004
0.399	1.797	4.090	0.005	0.184	0.170	474.585	0.154	0.004
0.417	3.457	4.030	0.005	0.182	0.168	479.394	0.155	0.004
0.425	2.596	5.334	0.005	0.196	0.180	473.011	0.153	0.004
0.433	1.796	4.532	0.005	0.123	0.123	568.299	0.039	0.004
1.009	5.987	4.468	0.005	0.286	0.263	524.230	0.170	0.005
1.009	5.987	4.468	0.005	0.286	0.263	524.230	0.170	0.005
0.397	3.832	3.339	0.005	0.221	0.203	466.808	0.151	0.004
0.246	3.288	1.884	0.005	0.101	0.092	470.357	0.152	0.004

0.197	1.161	1.806	0.005	0.060	0.056	469.788	0.152	0.004
0.209	1.352	1.702	0.005	0.063	0.058	468.513	0.152	0.004
0.226	1.333	1.881	0.005	0.072	0.066	464.866	0.150	0.004
0.201	1.191	3.544	0.005	0.071	0.066	472.345	0.153	0.004
0.575	4.095	5.632	0.005	0.414	0.381	482.701	0.156	0.004
0.336	3.372	3.156	0.005	0.167	0.153	478.809	0.155	0.004
0.301	1.627	3.014	0.005	0.133	0.123	469.352	0.152	0.004
0.245	1.921	2.477	0.005	0.098	0.090	472.846	0.153	0.004
0.213	1.461	2.187	0.005	0.081	0.074	471.429	0.153	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.559	4.247	3.662	0.007	0.114	0.114	568.299	0.050	0.005
0.296	3.474	2.315	0.006	0.105	0.105	568.299	0.026	0.004
0.229	3.047	1.427	0.006	0.065	0.065	568.299	0.020	0.004
0.224	1.259	1.370	0.007	0.041	0.041	686.695	0.020	0.004
0.350	3.671	3.346	0.005	0.089	0.082	527.801	0.171	0.005
0.350	3.671	3.346	0.005	0.089	0.082	527.801	0.171	0.005
0.147	3.264	1.948	0.005	0.063	0.058	472.847	0.153	0.004
0.333	3.662	3.721	0.006	0.116	0.107	536.030	0.173	0.005
0.251	3.389	2.883	0.005	0.142	0.131	475.381	0.154	0.004
0.228	2.930	2.464	0.005	0.120	0.111	470.077	0.152	0.004
0.176	1.183	2.236	0.005	0.071	0.065	477.096	0.154	0.004
0.134	1.168	1.478	0.005	0.056	0.051	470.252	0.152	0.004
0.094	0.985	0.947	0.005	0.035	0.032	472.983	0.153	0.004
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.332	3.693	3.098	0.005	0.189	0.173	474.116	0.153	0.004
0.266	3.234	2.253	0.005	0.107	0.099	473.122	0.153	0.004
0.164	1.127	1.614	0.005	0.051	0.047	470.126	0.152	0.004
0.590	4.609	3.768	0.005	0.166	0.153	513.852	0.166	0.005

0.590	4.609	3.768	0.005	0.166	0.153	513.852	0.166	0.005
0.227	3.532	2.288	0.005	0.105	0.097	476.731	0.154	0.004
0.176	3.089	1.376	0.005	0.069	0.063	469.403	0.152	0.004
0.168	1.151	1.491	0.005	0.055	0.050	469.914	0.152	0.004
0.150	1.277	1.163	0.005	0.044	0.041	470.084	0.152	0.004
0.221	1.311	2.215	0.005	0.085	0.079	466.638	0.151	0.004
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.494	3.769	4.593	0.005	0.318	0.292	475.632	0.154	0.004
0.364	3.311	3.667	0.005	0.187	0.172	467.733	0.151	0.004
0.312	1.598	3.483	0.005	0.146	0.134	473.846	0.153	0.004
0.192	1.668	1.859	0.005	0.080	0.074	469.994	0.152	0.004
0.064	0.958	0.304	0.005	0.009	0.008	474.478	0.154	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.299	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.299	0.064	0.005
0.646	4.557	3.782	0.007	0.130	0.130	568.299	0.058	0.005
0.336	3.560	2.430	0.006	0.120	0.120	568.299	0.030	0.004
0.261	3.118	1.541	0.006	0.074	0.074	568.299	0.023	0.004
0.210	1.068	1.234	0.006	0.038	0.038	568.299	0.018	0.004
0.206	1.032	1.135	0.005	0.037	0.037	568.299	0.018	0.004
0.224	3.325	1.494	0.005	0.070	0.064	470.264	0.152	0.004
0.202	1.259	1.355	0.005	0.054	0.050	469.113	0.152	0.004
0.185	1.206	1.235	0.005	0.045	0.041	475.220	0.154	0.004
0.259	1.650	2.085	0.005	0.079	0.073	473.839	0.153	0.004
0.209	1.200	3.439	0.005	0.069	0.064	473.097	0.153	0.004

2025		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026	0.024	472.114
Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009	0.009	472.055
Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028	0.028	568.299
Air Compressors	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300
Air Compressors	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Air Compressors	50	0.659	4.851	3.755	0.007	0.116	0.116	568.299
Air Compressors	120	0.345	3.653	2.313	0.006	0.104	0.104	568.299
Air Compressors	175	0.269	3.205	1.383	0.006	0.065	0.065	568.299
Air Compressors	250	0.220	1.094	1.086	0.006	0.033	0.033	568.299
Air Compressors	500	0.217	1.051	1.001	0.005	0.032	0.032	568.299
Air Compressors	750	0.217	1.051	1.021	0.005	0.032	0.032	568.299
Air Compressors	1000	0.231	1.079	2.954	0.005	0.055	0.055	568.299
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067	0.062	459.829
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039	0.036	478.266
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031	0.029	470.654
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028	0.026	467.289
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023	0.021	481.250
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019	0.017	471.917

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168	0.168	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099	0.099	568.299
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089	0.089	568.300
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056	0.056	568.300
Cranes	50	1.811	7.072	5.636	0.005	0.543	0.499	517.872
Cranes	120	0.463	3.831	4.135	0.005	0.260	0.240	469.533
Cranes	175	0.334	3.335	3.160	0.005	0.166	0.153	474.748
Cranes	250	0.265	1.470	2.681	0.005	0.114	0.105	472.980
Cranes	500	0.218	1.834	2.154	0.005	0.088	0.081	471.967
Cranes	750	0.172	1.274	1.638	0.005	0.068	0.062	470.276
Cranes	9999	0.229	1.038	2.422	0.005	0.065	0.060	472.055
Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456	0.420	516.128
Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285	0.262	476.134
Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150	0.138	471.592
Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096	0.088	471.622
Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081	0.074	474.007
Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057	0.052	472.408
Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112	0.103	475.490
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107	0.107	568.299
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095	0.095	568.299
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060	0.060	568.299
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031	0.031	568.299
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030	0.030	568.299
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030	0.030	568.299
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053	0.053	568.299

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	25	0.403	4.219	3.453	0.005	0.107	0.099	525.777
Excavators	50	0.403	4.219	3.453	0.005	0.107	0.099	525.777
Excavators	120	0.201	3.439	2.082	0.005	0.085	0.078	466.738
Excavators	175	0.158	3.078	1.154	0.005	0.057	0.052	472.496
Excavators	250	0.131	1.081	0.962	0.005	0.032	0.029	472.560
Excavators	500	0.115	1.051	0.726	0.005	0.026	0.024	470.292
Excavators	750	0.139	1.135	1.026	0.005	0.038	0.035	468.558
Forklifts	50	0.636	5.029	3.932	0.005	0.178	0.164	525.483
Forklifts	120	0.277	3.611	2.607	0.005	0.140	0.128	471.529
Forklifts	175	0.209	3.170	1.653	0.005	0.084	0.078	472.106
Forklifts	250	0.191	1.214	1.466	0.005	0.056	0.052	473.326
Forklifts	500	0.215	1.222	1.658	0.005	0.062	0.057	473.615
Generator Sets	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299
Generator Sets	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299
Generator Sets	50	0.440	3.758	3.481	0.007	0.093	0.093	568.300
Generator Sets	120	0.243	3.338	2.185	0.006	0.087	0.087	568.299
Generator Sets	175	0.184	2.930	1.297	0.006	0.053	0.053	568.299
Generator Sets	250	0.147	1.000	1.020	0.006	0.028	0.028	568.299
Generator Sets	500	0.144	0.981	0.945	0.005	0.027	0.027	568.300
Generator Sets	750	0.145	0.981	0.964	0.005	0.027	0.027	568.299
Generator Sets	9999	0.173	1.008	2.812	0.005	0.047	0.047	568.299
Graders	50	1.864	7.125	5.043	0.005	0.522	0.480	493.532
Graders	120	0.638	4.149	5.074	0.005	0.371	0.342	468.316
Graders	175	0.329	3.418	2.774	0.005	0.152	0.140	478.508
Graders	250	0.230	1.179	2.556	0.005	0.082	0.076	473.470
Graders	500	0.280	1.315	2.265	0.005	0.088	0.081	470.753
Graders	750	0.253	1.141	1.125	0.005	0.041	0.041	568.300
Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144	0.132	476.921
Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065	0.060	473.302
Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040	0.037	470.861
Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045	0.041	471.917
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070	0.064	472.055
Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004
Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126

Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970
Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314
Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369
Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203	0.187	472.748
Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112	0.103	469.843
Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059	0.055	476.296
Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118	0.109	470.000
Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070	0.065	471.850
Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036	0.033	473.223
Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035	0.033	472.929

Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023	0.021	473.464
Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081	0.074	472.055
Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239	0.219	523.709
Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081	0.074	473.588
Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072	0.067	472.219
Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060	0.055	471.482
Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067	0.061	470.297
Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019	0.017	472.055
Pavers	25	0.918	4.945	4.131	0.005	0.265	0.243	526.853
Pavers	50	0.918	4.945	4.131	0.005	0.265	0.243	526.853
Pavers	120	0.314	3.493	3.068	0.005	0.191	0.175	469.899
Pavers	175	0.181	3.007	1.644	0.005	0.077	0.071	472.485
Pavers	250	0.107	1.004	1.035	0.005	0.034	0.031	473.483
Pavers	500	0.115	0.969	1.134	0.005	0.039	0.036	465.882
Paving Equipment	25	0.476	4.203	3.627	0.005	0.142	0.130	520.998
Paving Equipment	50	0.476	4.203	3.627	0.005	0.142	0.130	520.998
Paving Equipment	120	0.242	3.483	2.496	0.005	0.118	0.108	473.424
Paving Equipment	175	0.175	3.038	1.509	0.005	0.075	0.069	470.484
Paving Equipment	250	0.133	1.117	1.110	0.005	0.043	0.040	472.234
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299
Pressure Washers	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299
Pressure Washers	50	0.306	3.210	3.344	0.007	0.075	0.075	568.299
Pressure Washers	120	0.189	3.186	2.100	0.006	0.072	0.072	568.299
Pressure Washers	175	0.178	2.907	1.310	0.006	0.053	0.053	568.299

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299
Pumps	15	0.683	3.491	4.278	0.008	0.183	0.183	568.299
Pumps	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Pumps	50	0.485	3.943	3.528	0.007	0.099	0.099	568.299
Pumps	120	0.261	3.389	2.213	0.006	0.092	0.092	568.299
Pumps	175	0.199	2.974	1.318	0.006	0.056	0.056	568.300
Pumps	250	0.159	1.016	1.038	0.006	0.029	0.029	568.299
Pumps	500	0.156	0.992	0.958	0.005	0.028	0.028	568.300
Pumps	750	0.157	0.992	0.977	0.005	0.029	0.029	568.300
Pumps	9999	0.186	1.020	2.840	0.005	0.049	0.049	568.299
Rollers	15	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	25	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	50	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	120	0.255	3.444	2.691	0.005	0.135	0.125	473.851
Rollers	175	0.127	2.909	1.101	0.005	0.049	0.046	471.970
Rollers	250	0.173	1.215	1.783	0.005	0.066	0.060	473.681
Rollers	500	0.212	1.968	2.200	0.005	0.091	0.083	477.573
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128	0.118	525.027
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051	0.047	473.037
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030	0.028	471.475
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035	0.033	472.927
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009	0.008	466.541
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231	0.212	474.103
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167	0.153	474.573
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151	0.139	479.092
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196	0.181	472.998
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115	0.115	568.299
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259	0.238	523.908
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259	0.238	523.908
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179	0.165	466.898
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084	0.077	470.459

Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048	0.045	469.871
Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053	0.048	469.143
Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064	0.059	465.052
Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052	0.048	472.456
Scrapers	120	0.566	4.094	5.503	0.005	0.405	0.372	482.363
Scrapers	175	0.290	3.321	2.631	0.005	0.137	0.126	478.948
Scrapers	250	0.291	1.602	2.803	0.005	0.125	0.115	469.446
Scrapers	500	0.216	1.732	2.051	0.005	0.081	0.074	472.539
Scrapers	750	0.184	1.338	1.713	0.005	0.064	0.059	472.115
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	0.522	4.217	3.561	0.007	0.098	0.098	568.299
Signal Boards	120	0.278	3.470	2.179	0.006	0.089	0.089	568.299
Signal Boards	175	0.215	3.049	1.262	0.006	0.055	0.055	568.299
Signal Boards	250	0.213	1.257	1.192	0.007	0.035	0.035	686.695
Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084	0.077	527.861
Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084	0.077	527.861
Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057	0.052	472.630
Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082	0.075	536.140
Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124	0.114	476.766
Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094	0.087	471.040
Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055	0.051	477.110
Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051	0.047	470.283
Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027	0.025	470.551
Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160	0.147	474.116
Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072	0.066	473.122
Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051	0.047	470.126
Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145	0.133	513.803

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145	0.133	513.803
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086	0.079	477.188
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059	0.054	469.329
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047	0.044	470.598
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039	0.036	470.910
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067	0.062	466.452
Trenchers	15	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	25	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	50	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	120	0.457	3.734	4.279	0.005	0.285	0.262	475.901
Trenchers	175	0.358	3.309	3.549	0.005	0.179	0.165	467.732
Trenchers	250	0.307	1.601	3.315	0.005	0.144	0.133	473.917
Trenchers	500	0.191	1.676	1.826	0.005	0.079	0.072	470.439
Trenchers	750	0.067	0.962	0.305	0.005	0.009	0.009	474.486
Welders	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300
Welders	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Welders	50	0.602	4.524	3.676	0.007	0.112	0.112	568.299
Welders	120	0.316	3.557	2.283	0.006	0.102	0.102	568.299
Welders	175	0.245	3.121	1.365	0.006	0.063	0.063	568.299
Welders	250	0.199	1.065	1.075	0.006	0.032	0.032	568.299
Welders	500	0.196	1.029	0.990	0.005	0.031	0.031	568.299
Water Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004
Water Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126
Water Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970
Water Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369

2026

g/hp/hr	g/hp/hr
CH4	N2O
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.013	0.004
0.061	0.005
0.064	0.005
0.059	0.005
0.031	0.004
0.024	0.004
0.019	0.004
0.019	0.004
0.019	0.004
0.020	0.004
0.172	0.005
0.172	0.005
0.172	0.005
0.149	0.004
0.155	0.004
0.152	0.004
0.151	0.004
0.156	0.004
0.153	0.004

2026		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.154	3.088	2.879	0.005
Aerial Lifts	25	0.154	3.088	2.879	0.005
Aerial Lifts	50	0.154	3.088	2.879	0.005
Aerial Lifts	120	0.099	3.167	1.511	0.005
Aerial Lifts	500	0.085	0.970	0.649	0.005
Aerial Lifts	750	0.153	0.989	0.974	0.005
Air Compressors	15	0.683	3.491	4.278	0.008
Air Compressors	25	0.709	2.376	4.407	0.007
Air Compressors	50	0.659	4.851	3.755	0.007
Air Compressors	120	0.345	3.653	2.313	0.006
Air Compressors	175	0.269	3.205	1.383	0.006
Air Compressors	250	0.220	1.094	1.086	0.006
Air Compressors	500	0.217	1.051	1.001	0.005
Air Compressors	750	0.217	1.051	1.021	0.005
Air Compressors	1000	0.231	1.079	2.954	0.005
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005

0.059	0.005
0.062	0.005
0.061	0.005
0.047	0.005
0.025	0.004
0.019	0.004
0.168	0.005
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.167	0.005
0.154	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.154	0.004
0.059	0.005
0.031	0.004
0.024	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.023	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006
Cranes	50	1.811	7.072	5.636	0.005
Cranes	120	0.463	3.831	4.135	0.005
Cranes	175	0.334	3.335	3.160	0.005
Cranes	250	0.265	1.470	2.681	0.005
Cranes	500	0.218	1.834	2.154	0.005
Cranes	750	0.172	1.274	1.638	0.005
Cranes	9999	0.229	1.038	2.422	0.005
Crawler Tractors	50	1.744	6.686	4.936	0.005
Crawler Tractors	120	0.454	3.788	3.961	0.005
Crawler Tractors	175	0.298	3.209	2.688	0.005
Crawler Tractors	250	0.232	1.308	2.462	0.005
Crawler Tractors	500	0.208	1.717	1.920	0.005
Crawler Tractors	750	0.167	1.122	1.545	0.005
Crawler Tractors	1000	0.260	1.593	4.598	0.005
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005

					0.061	0.005
					0.170	0.005
					0.170	0.005
					0.151	0.004
					0.153	0.004
					0.153	0.004
					0.152	0.004
					0.152	0.004
					0.170	0.005
					0.153	0.004
					0.153	0.004
					0.153	0.004
					0.153	0.004
					0.054	0.005
					0.062	0.005
					0.039	0.005
					0.021	0.004
					0.016	0.004
					0.013	0.004
					0.013	0.004
					0.013	0.004
					0.015	0.004
					0.160	0.005
					0.152	0.004
					0.155	0.004
					0.153	0.004
					0.152	0.004
					0.022	0.004
					0.154	0.004
					0.153	0.004
					0.152	0.004
					0.153	0.004
					0.153	0.004
					0.152	0.004
					0.152	0.004

Dumpers/Tenders	25	0.685	2.339	4.332	0.007
Excavators	25	0.403	4.219	3.453	0.005
Excavators	50	0.403	4.219	3.453	0.005
Excavators	120	0.201	3.439	2.082	0.005
Excavators	175	0.158	3.078	1.154	0.005
Excavators	250	0.131	1.081	0.962	0.005
Excavators	500	0.115	1.051	0.726	0.005
Excavators	750	0.139	1.135	1.026	0.005
Forklifts	50	0.636	5.029	3.932	0.005
Forklifts	120	0.277	3.611	2.607	0.005
Forklifts	175	0.209	3.170	1.653	0.005
Forklifts	250	0.191	1.214	1.466	0.005
Forklifts	500	0.215	1.222	1.658	0.005
Generator Sets	15	0.607	3.491	4.269	0.008
Generator Sets	25	0.694	2.376	4.407	0.007
Generator Sets	50	0.440	3.758	3.481	0.007
Generator Sets	120	0.243	3.338	2.185	0.006
Generator Sets	175	0.184	2.930	1.297	0.006
Generator Sets	250	0.147	1.000	1.020	0.006
Generator Sets	500	0.144	0.981	0.945	0.005
Generator Sets	750	0.145	0.981	0.964	0.005
Generator Sets	9999	0.173	1.008	2.812	0.005
Graders	50	1.864	7.125	5.043	0.005
Graders	120	0.638	4.149	5.074	0.005
Graders	175	0.329	3.418	2.774	0.005
Graders	250	0.230	1.179	2.556	0.005
Graders	500	0.280	1.315	2.265	0.005
Graders	750	0.253	1.141	1.125	0.005
Off-Highway Tractors	120	0.276	3.669	2.707	0.005
Off-Highway Tractors	175	0.175	3.142	1.349	0.005
Off-Highway Tractors	250	0.155	1.130	1.116	0.005
Off-Highway Tractors	750	0.167	1.135	1.118	0.005
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005
Off-Highway Trucks	175	0.214	3.328	1.335	0.005
Off-Highway Trucks	250	0.185	1.213	1.129	0.005

0.154	0.004
0.154	0.004
0.153	0.004
0.171	0.005
0.171	0.005
0.171	0.005
0.153	0.004
0.152	0.004
0.154	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.152	0.004
0.153	0.004
0.153	0.004
0.153	0.004

Off-Highway Trucks	500	0.177	1.182	1.064	0.005
Off-Highway Trucks	750	0.235	1.578	1.751	0.005
Off-Highway Trucks	1000	0.187	1.146	3.135	0.005
Other Construction Equipment	15	0.757	4.874	4.306	0.006
Other Construction Equipment	25	0.757	4.874	4.306	0.006
Other Construction Equipment	50	0.757	4.874	4.306	0.006
Other Construction Equipment	120	0.341	3.584	3.252	0.005
Other Construction Equipment	175	0.235	3.136	2.167	0.005
Other Construction Equipment	500	0.168	1.358	1.552	0.005
Other General Industrial Equipment	15	0.492	4.680	3.717	0.005
Other General Industrial Equipment	25	0.492	4.680	3.717	0.005
Other General Industrial Equipment	50	0.492	4.680	3.717	0.005
Other General Industrial Equipment	120	0.258	3.612	2.439	0.005
Other General Industrial Equipment	175	0.189	3.204	1.364	0.005
Other General Industrial Equipment	250	0.155	1.132	1.028	0.005
Other General Industrial Equipment	500	0.152	1.109	1.053	0.005

		Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.153	0.004
		Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.153	0.004
		Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.169	0.005
		Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.153	0.004
		Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.153	0.004
		Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.153	0.004
		Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.152	0.004
		Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.153	0.004
		Pavers	25	0.918	4.945	4.131	0.005	0.170	0.005
		Pavers	50	0.918	4.945	4.131	0.005	0.170	0.005
		Pavers	120	0.314	3.493	3.068	0.005	0.152	0.004
		Pavers	175	0.181	3.007	1.644	0.005	0.153	0.004
		Pavers	250	0.107	1.004	1.035	0.005	0.153	0.004
		Pavers	500	0.115	0.969	1.134	0.005	0.151	0.004
		Paving Equipment	25	0.476	4.203	3.627	0.005	0.169	0.005
		Paving Equipment	50	0.476	4.203	3.627	0.005	0.169	0.005
		Paving Equipment	120	0.242	3.483	2.496	0.005	0.153	0.004
		Paving Equipment	175	0.175	3.038	1.509	0.005	0.152	0.004
		Paving Equipment	250	0.133	1.117	1.110	0.005	0.153	0.004
		Plate Compactors	15	0.661	3.469	4.142	0.008	0.059	0.005
		Pressure Washers	15	0.607	3.491	4.269	0.008	0.054	0.005
		Pressure Washers	25	0.694	2.376	4.407	0.007	0.062	0.005
		Pressure Washers	50	0.306	3.210	3.344	0.007	0.027	0.005
		Pressure Washers	120	0.189	3.186	2.100	0.006	0.017	0.004
		Pressure Washers	175	0.178	2.907	1.310	0.006	0.016	0.004

0.008	0.004
0.061	0.005
0.064	0.005
0.043	0.005
0.023	0.004
0.018	0.004
0.014	0.004
0.014	0.004
0.014	0.004
0.016	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.155	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.151	0.004
0.153	0.004
0.154	0.004
0.155	0.004
0.153	0.004
0.037	0.004
0.169	0.005
0.169	0.005
0.151	0.004
0.152	0.004

Pressure Washers	250	0.098	0.986	0.265	0.006
Pumps	15	0.683	3.491	4.278	0.008
Pumps	25	0.709	2.376	4.407	0.007
Pumps	50	0.485	3.943	3.528	0.007
Pumps	120	0.261	3.389	2.213	0.006
Pumps	175	0.199	2.974	1.318	0.006
Pumps	250	0.159	1.016	1.038	0.006
Pumps	500	0.156	0.992	0.958	0.005
Pumps	750	0.157	0.992	0.977	0.005
Pumps	9999	0.186	1.020	2.840	0.005
Rollers	15	0.569	4.125	3.689	0.005
Rollers	25	0.569	4.125	3.689	0.005
Rollers	50	0.569	4.125	3.689	0.005
Rollers	120	0.255	3.444	2.691	0.005
Rollers	175	0.127	2.909	1.101	0.005
Rollers	250	0.173	1.215	1.783	0.005
Rollers	500	0.212	1.968	2.200	0.005
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005

		Rubber Tired Loaders	250	0.177	1.142	1.442	0.005
0.152	0.004						
		Rubber Tired Loaders	500	0.193	1.276	1.433	0.005
0.152	0.004						
		Rubber Tired Loaders	750	0.212	1.333	1.654	0.005
0.150	0.004						
		Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005
0.153	0.004						
0.156	0.004	Scrapers	120	0.566	4.094	5.503	0.005
0.155	0.004	Scrapers	175	0.290	3.321	2.631	0.005
0.152	0.004	Scrapers	250	0.291	1.602	2.803	0.005
0.153	0.004	Scrapers	500	0.216	1.732	2.051	0.005
0.153	0.004	Scrapers	750	0.184	1.338	1.713	0.005
		Signal Boards	15	0.661	3.469	4.142	0.008
0.059	0.005						
		Signal Boards	50	0.522	4.217	3.561	0.007
0.047	0.005						
		Signal Boards	120	0.278	3.470	2.179	0.006
0.025	0.004						
		Signal Boards	175	0.215	3.049	1.262	0.006
0.019	0.004						
		Signal Boards	250	0.213	1.257	1.192	0.007
0.019	0.004						
		Skid Steer Loaders	25	0.341	3.660	3.309	0.006
0.171	0.005						
		Skid Steer Loaders	50	0.341	3.660	3.309	0.006
0.171	0.005						
		Skid Steer Loaders	120	0.140	3.252	1.867	0.005
0.153	0.004						
		Surfacing Equipment	50	0.235	3.537	3.576	0.006
0.173	0.005						
		Surfacing Equipment	120	0.232	3.385	2.659	0.005
0.154	0.004						
		Surfacing Equipment	175	0.187	2.926	1.999	0.005
0.152	0.004						
		Surfacing Equipment	250	0.148	1.143	1.747	0.005
0.154	0.004						
		Surfacing Equipment	500	0.128	1.169	1.327	0.005
0.152	0.004						
		Surfacing Equipment	750	0.085	0.978	0.768	0.005
0.152	0.004						
		Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005
0.170	0.005						
		Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005
0.170	0.005						
		Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005
0.170	0.005						
		Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005
0.153	0.004						
		Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005
0.153	0.004						
		Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005
0.152	0.004						
		Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005
0.166	0.005						

0.166	0.005
0.154	0.004
0.152	0.004
0.152	0.004
0.152	0.004
0.151	0.004
0.171	0.005
0.171	0.005
0.171	0.005
0.154	0.004
0.151	0.004
0.153	0.004
0.152	0.004
0.154	0.004
0.061	0.005
0.064	0.005
0.054	0.005
0.028	0.004
0.022	0.004
0.018	0.004
0.017	0.004
0.152	0.004
0.152	0.004
0.154	0.004
0.154	0.004
0.153	0.004

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005
Trenchers	15	0.542	4.120	3.657	0.005
Trenchers	25	0.542	4.120	3.657	0.005
Trenchers	50	0.542	4.120	3.657	0.005
Trenchers	120	0.457	3.734	4.279	0.005
Trenchers	175	0.358	3.309	3.549	0.005
Trenchers	250	0.307	1.601	3.315	0.005
Trenchers	500	0.191	1.676	1.826	0.005
Trenchers	750	0.067	0.962	0.305	0.005
Welders	15	0.683	3.491	4.278	0.008
Welders	25	0.709	2.376	4.407	0.007
Welders	50	0.602	4.524	3.676	0.007
Welders	120	0.316	3.557	2.283	0.006
Welders	175	0.245	3.121	1.365	0.006
Welders	250	0.199	1.065	1.075	0.006
Welders	500	0.196	1.029	0.990	0.005
Water Trucks	175	0.214	3.328	1.335	0.005
Water Trucks	250	0.185	1.213	1.129	0.005
Water Trucks	500	0.177	1.182	1.064	0.005
Water Trucks	750	0.235	1.578	1.751	0.005
Water Trucks	1000	0.187	1.146	3.135	0.005

2027

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.021	0.019	525.074	0.170	0.005
0.021	0.019	525.074	0.170	0.005
0.021	0.019	525.074	0.170	0.005
0.026	0.024	472.114	0.153	0.004
0.009	0.009	472.055	0.153	0.004
0.028	0.028	568.299	0.013	0.004
0.183	0.183	568.300	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.116	0.116	568.299	0.059	0.005
0.104	0.104	568.299	0.031	0.004
0.065	0.065	568.299	0.024	0.004
0.033	0.033	568.299	0.019	0.004
0.032	0.032	568.299	0.019	0.004
0.032	0.032	568.299	0.019	0.004
0.055	0.055	568.299	0.020	0.004
0.193	0.178	532.821	0.172	0.005
0.193	0.178	532.821	0.172	0.005
0.193	0.178	532.821	0.172	0.005
0.067	0.062	459.829	0.149	0.004
0.039	0.036	478.266	0.155	0.004
0.031	0.029	470.654	0.152	0.004
0.028	0.026	467.289	0.151	0.004
0.023	0.021	481.250	0.156	0.004
0.019	0.017	471.917	0.153	0.004

2027		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.154
Aerial Lifts	25	0.154
Aerial Lifts	50	0.154
Aerial Lifts	120	0.099
Aerial Lifts	500	0.085
Aerial Lifts	750	0.153
Air Compressors	15	0.683
Air Compressors	25	0.709
Air Compressors	50	0.659
Air Compressors	120	0.345
Air Compressors	175	0.269
Air Compressors	250	0.220
Air Compressors	500	0.217
Air Compressors	750	0.217
Air Compressors	1000	0.231
Bore/Drill Rigs	15	0.591
Bore/Drill Rigs	25	0.591
Bore/Drill Rigs	50	0.591
Bore/Drill Rigs	120	0.155
Bore/Drill Rigs	175	0.114
Bore/Drill Rigs	250	0.107
Bore/Drill Rigs	500	0.102
Bore/Drill Rigs	750	0.085
Bore/Drill Rigs	1000	0.062

0.161	0.161	568.299	0.059	0.005
0.168	0.168	568.299	0.062	0.005
0.161	0.161	568.299	0.061	0.005
0.099	0.099	568.299	0.047	0.005
0.089	0.089	568.300	0.025	0.004
0.056	0.056	568.300	0.019	0.004
0.543	0.499	517.872	0.168	0.005
0.260	0.240	469.533	0.152	0.004
0.166	0.153	474.748	0.154	0.004
0.114	0.105	472.980	0.153	0.004
0.088	0.081	471.967	0.153	0.004
0.068	0.062	470.276	0.152	0.004
0.065	0.060	472.055	0.153	0.004
0.456	0.420	516.128	0.167	0.005
0.285	0.262	476.134	0.154	0.004
0.150	0.138	471.592	0.153	0.004
0.096	0.088	471.622	0.153	0.004
0.081	0.074	474.007	0.153	0.004
0.057	0.052	472.408	0.153	0.004
0.112	0.103	475.490	0.154	0.004
0.107	0.107	568.299	0.059	0.005
0.095	0.095	568.299	0.031	0.004
0.060	0.060	568.299	0.024	0.004
0.031	0.031	568.299	0.020	0.004
0.030	0.030	568.299	0.020	0.004
0.030	0.030	568.299	0.020	0.004
0.053	0.053	568.299	0.023	0.004

Cement and Mortar Mixers	15	0.661
Cement and Mortar Mixers	25	0.689
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	0.525
Concrete/Industrial Saws	120	0.283
Concrete/Industrial Saws	175	0.220
Cranes	50	1.811
Cranes	120	0.463
Cranes	175	0.334
Cranes	250	0.265
Cranes	500	0.218
Cranes	750	0.172
Cranes	9999	0.229
Crawler Tractors	50	1.744
Crawler Tractors	120	0.454
Crawler Tractors	175	0.298
Crawler Tractors	250	0.232
Crawler Tractors	500	0.208
Crawler Tractors	750	0.167
Crawler Tractors	1000	0.260
Crushing/Proc. Equipment	50	0.656
Crushing/Proc. Equipment	120	0.345
Crushing/Proc. Equipment	175	0.270
Crushing/Proc. Equipment	250	0.224
Crushing/Proc. Equipment	500	0.221
Crushing/Proc. Equipment	750	0.222
Crushing/Proc. Equipment	9999	0.261

0.161	0.161	568.299	0.061	0.005
0.107	0.099	525.777	0.170	0.005
0.107	0.099	525.777	0.170	0.005
0.085	0.078	466.738	0.151	0.004
0.057	0.052	472.496	0.153	0.004
0.032	0.029	472.560	0.153	0.004
0.026	0.024	470.292	0.152	0.004
0.038	0.035	468.558	0.152	0.004
0.178	0.164	525.483	0.170	0.005
0.140	0.128	471.529	0.153	0.004
0.084	0.078	472.106	0.153	0.004
0.056	0.052	473.326	0.153	0.004
0.062	0.057	473.615	0.153	0.004
0.178	0.178	568.299	0.054	0.005
0.175	0.175	568.299	0.062	0.005
0.093	0.093	568.300	0.039	0.005
0.087	0.087	568.299	0.021	0.004
0.053	0.053	568.299	0.016	0.004
0.028	0.028	568.299	0.013	0.004
0.027	0.027	568.300	0.013	0.004
0.027	0.027	568.299	0.013	0.004
0.047	0.047	568.299	0.015	0.004
0.522	0.480	493.532	0.160	0.005
0.371	0.342	468.316	0.152	0.004
0.152	0.140	478.508	0.155	0.004
0.082	0.076	473.470	0.153	0.004
0.088	0.081	470.753	0.152	0.004
0.041	0.041	568.300	0.022	0.004
0.144	0.132	476.921	0.154	0.004
0.065	0.060	473.302	0.153	0.004
0.040	0.037	470.861	0.152	0.004
0.045	0.041	471.917	0.153	0.004
0.070	0.064	472.055	0.153	0.004
0.065	0.060	470.004	0.152	0.004
0.043	0.040	469.126	0.152	0.004

Dumpers/Tenders	25	0.685
Excavators	25	0.403
Excavators	50	0.403
Excavators	120	0.201
Excavators	175	0.158
Excavators	250	0.131
Excavators	500	0.115
Excavators	750	0.139
Forklifts	50	0.636
Forklifts	120	0.277
Forklifts	175	0.209
Forklifts	250	0.191
Forklifts	500	0.215
Generator Sets	15	0.607
Generator Sets	25	0.694
Generator Sets	50	0.440
Generator Sets	120	0.243
Generator Sets	175	0.184
Generator Sets	250	0.147
Generator Sets	500	0.144
Generator Sets	750	0.145
Generator Sets	9999	0.173
Graders	50	1.864
Graders	120	0.638
Graders	175	0.329
Graders	250	0.230
Graders	500	0.280
Graders	750	0.253
Off-Highway Tractors	120	0.276
Off-Highway Tractors	175	0.175
Off-Highway Tractors	250	0.155
Off-Highway Tractors	750	0.167
Off-Highway Tractors	1000	0.198
Off-Highway Trucks	175	0.214
Off-Highway Trucks	250	0.185

0.038	0.035	474.970	0.154	0.004
0.066	0.061	476.314	0.154	0.004
0.057	0.052	473.369	0.153	0.004
0.268	0.246	528.954	0.171	0.005
0.268	0.246	528.954	0.171	0.005
0.268	0.246	528.954	0.171	0.005
0.203	0.187	472.748	0.153	0.004
0.112	0.103	469.843	0.152	0.004
0.059	0.055	476.296	0.154	0.004
0.136	0.125	526.176	0.170	0.005
0.136	0.125	526.176	0.170	0.005
0.136	0.125	526.176	0.170	0.005
0.118	0.109	470.000	0.152	0.004
0.070	0.065	471.850	0.153	0.004
0.036	0.033	473.223	0.153	0.004
0.035	0.033	472.929	0.153	0.004

Off-Highway Trucks	500	0.177
Off-Highway Trucks	750	0.235
Off-Highway Trucks	1000	0.187
Other Construction Equipment	15	0.757
Other Construction Equipment	25	0.757
Other Construction Equipment	50	0.757
Other Construction Equipment	120	0.341
Other Construction Equipment	175	0.235
Other Construction Equipment	500	0.168
Other General Industrial Equipment	15	0.492
Other General Industrial Equipment	25	0.492
Other General Industrial Equipment	50	0.492
Other General Industrial Equipment	120	0.258
Other General Industrial Equipment	175	0.189
Other General Industrial Equipment	250	0.155
Other General Industrial Equipment	500	0.152

0.023	0.021	473.464	0.153	0.004
0.081	0.074	472.055	0.153	0.004
0.239	0.219	523.709	0.169	0.005
0.081	0.074	473.588	0.153	0.004
0.072	0.067	472.219	0.153	0.004
0.060	0.055	471.482	0.153	0.004
0.067	0.061	470.297	0.152	0.004
0.019	0.017	472.055	0.153	0.004
0.265	0.243	526.853	0.170	0.005
0.265	0.243	526.853	0.170	0.005
0.191	0.175	469.899	0.152	0.004
0.077	0.071	472.485	0.153	0.004
0.034	0.031	473.483	0.153	0.004
0.039	0.036	465.882	0.151	0.004
0.142	0.130	520.998	0.169	0.005
0.142	0.130	520.998	0.169	0.005
0.118	0.108	473.424	0.153	0.004
0.075	0.069	470.484	0.152	0.004
0.043	0.040	472.234	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.178	0.178	568.299	0.054	0.005
0.175	0.175	568.299	0.062	0.005
0.075	0.075	568.299	0.027	0.005
0.072	0.072	568.299	0.017	0.004
0.053	0.053	568.299	0.016	0.004

Other General Industrial Equipment	750	0.117
Other General Industrial Equipment	1000	0.203
Other Material Handling Equipment	50	0.744
Other Material Handling Equipment	120	0.203
Other Material Handling Equipment	175	0.189
Other Material Handling Equipment	250	0.200
Other Material Handling Equipment	500	0.204
Other Material Handling Equipment	9999	0.065
Pavers	25	0.918
Pavers	50	0.918
Pavers	120	0.314
Pavers	175	0.181
Pavers	250	0.107
Pavers	500	0.115
Paving Equipment	25	0.476
Paving Equipment	50	0.476
Paving Equipment	120	0.242
Paving Equipment	175	0.175
Paving Equipment	250	0.133
Plate Compactors	15	0.661
Pressure Washers	15	0.607
Pressure Washers	25	0.694
Pressure Washers	50	0.306
Pressure Washers	120	0.189
Pressure Washers	175	0.178

0.009	0.009	568.299	0.008	0.004
0.183	0.183	568.299	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.099	0.099	568.299	0.043	0.005
0.092	0.092	568.299	0.023	0.004
0.056	0.056	568.300	0.018	0.004
0.029	0.029	568.299	0.014	0.004
0.028	0.028	568.300	0.014	0.004
0.029	0.029	568.300	0.014	0.004
0.049	0.049	568.299	0.016	0.004
0.167	0.154	526.141	0.170	0.005
0.167	0.154	526.141	0.170	0.005
0.167	0.154	526.141	0.170	0.005
0.135	0.125	473.851	0.153	0.004
0.049	0.046	471.970	0.153	0.004
0.066	0.060	473.681	0.153	0.004
0.091	0.083	477.573	0.155	0.004
0.128	0.118	525.027	0.170	0.005
0.051	0.047	473.037	0.153	0.004
0.030	0.028	471.475	0.153	0.004
0.035	0.033	472.927	0.153	0.004
0.009	0.008	466.541	0.151	0.004
0.231	0.212	474.103	0.153	0.004
0.167	0.153	474.573	0.154	0.004
0.151	0.139	479.092	0.155	0.004
0.196	0.181	472.998	0.153	0.004
0.115	0.115	568.299	0.037	0.004
0.259	0.238	523.908	0.169	0.005
0.259	0.238	523.908	0.169	0.005
0.179	0.165	466.898	0.151	0.004
0.084	0.077	470.459	0.152	0.004

Pressure Washers	250	0.098
Pumps	15	0.683
Pumps	25	0.709
Pumps	50	0.485
Pumps	120	0.261
Pumps	175	0.199
Pumps	250	0.159
Pumps	500	0.156
Pumps	750	0.157
Pumps	9999	0.186
Rollers	15	0.569
Rollers	25	0.569
Rollers	50	0.569
Rollers	120	0.255
Rollers	175	0.127
Rollers	250	0.173
Rollers	500	0.212
Rough Terrain Forklifts	50	0.456
Rough Terrain Forklifts	120	0.137
Rough Terrain Forklifts	175	0.087
Rough Terrain Forklifts	250	0.123
Rough Terrain Forklifts	500	0.069
Rubber Tired Dozers	175	0.461
Rubber Tired Dozers	250	0.372
Rubber Tired Dozers	500	0.367
Rubber Tired Dozers	750	0.428
Rubber Tired Dozers	1000	0.414
Rubber Tired Loaders	25	0.960
Rubber Tired Loaders	50	0.960
Rubber Tired Loaders	120	0.352
Rubber Tired Loaders	175	0.224

0.048	0.045	469.871	0.152	0.004
0.053	0.048	469.143	0.152	0.004
0.064	0.059	465.052	0.150	0.004
0.052	0.048	472.456	0.153	0.004
0.405	0.372	482.363	0.156	0.004
0.137	0.126	478.948	0.155	0.004
0.125	0.115	469.446	0.152	0.004
0.081	0.074	472.539	0.153	0.004
0.064	0.059	472.115	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.098	0.098	568.299	0.047	0.005
0.089	0.089	568.299	0.025	0.004
0.055	0.055	568.299	0.019	0.004
0.035	0.035	686.695	0.019	0.004
0.084	0.077	527.861	0.171	0.005
0.084	0.077	527.861	0.171	0.005
0.057	0.052	472.630	0.153	0.004
0.082	0.075	536.140	0.173	0.005
0.124	0.114	476.766	0.154	0.004
0.094	0.087	471.040	0.152	0.004
0.055	0.051	477.110	0.154	0.004
0.051	0.047	470.283	0.152	0.004
0.027	0.025	470.551	0.152	0.004
0.191	0.176	525.328	0.170	0.005
0.191	0.176	525.328	0.170	0.005
0.191	0.176	525.328	0.170	0.005
0.160	0.147	474.116	0.153	0.004
0.072	0.066	473.122	0.153	0.004
0.051	0.047	470.126	0.152	0.004
0.145	0.133	513.803	0.166	0.005

Rubber Tired Loaders	250	0.177
Rubber Tired Loaders	500	0.193
Rubber Tired Loaders	750	0.212
Rubber Tired Loaders	1000	0.166
Scrapers	120	0.566
Scrapers	175	0.290
Scrapers	250	0.291
Scrapers	500	0.216
Scrapers	750	0.184
Signal Boards	15	0.661
Signal Boards	50	0.522
Signal Boards	120	0.278
Signal Boards	175	0.215
Signal Boards	250	0.213
Skid Steer Loaders	25	0.341
Skid Steer Loaders	50	0.341
Skid Steer Loaders	120	0.140
Surfacing Equipment	50	0.235
Surfacing Equipment	120	0.232
Surfacing Equipment	175	0.187
Surfacing Equipment	250	0.148
Surfacing Equipment	500	0.128
Surfacing Equipment	750	0.085
Sweepers/Scrubbers	15	0.622
Sweepers/Scrubbers	25	0.622
Sweepers/Scrubbers	50	0.622
Sweepers/Scrubbers	120	0.303
Sweepers/Scrubbers	175	0.213
Sweepers/Scrubbers	250	0.170
Tractors/Loaders/Backhoes	25	0.550

0.145	0.133	513.803	0.166	0.005
0.086	0.079	477.188	0.154	0.004
0.059	0.054	469.329	0.152	0.004
0.047	0.044	470.598	0.152	0.004
0.039	0.036	470.910	0.152	0.004
0.067	0.062	466.452	0.151	0.004
0.163	0.150	527.160	0.171	0.005
0.163	0.150	527.160	0.171	0.005
0.163	0.150	527.160	0.171	0.005
0.285	0.262	475.901	0.154	0.004
0.179	0.165	467.732	0.151	0.004
0.144	0.133	473.917	0.153	0.004
0.079	0.072	470.439	0.152	0.004
0.009	0.009	474.486	0.154	0.004
0.183	0.183	568.300	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.112	0.112	568.299	0.054	0.005
0.102	0.102	568.299	0.028	0.004
0.063	0.063	568.299	0.022	0.004
0.032	0.032	568.299	0.018	0.004
0.031	0.031	568.299	0.017	0.004
0.065	0.060	470.004	0.152	0.004
0.043	0.040	469.126	0.152	0.004
0.038	0.035	474.970	0.154	0.004
0.066	0.061	476.314	0.154	0.004
0.057	0.052	473.369	0.153	0.004

Tractors/Loaders/Backhoes	50	0.550
Tractors/Loaders/Backhoes	120	0.209
Tractors/Loaders/Backhoes	175	0.162
Tractors/Loaders/Backhoes	250	0.154
Tractors/Loaders/Backhoes	500	0.144
Tractors/Loaders/Backhoes	750	0.187
Trenchers	15	0.542
Trenchers	25	0.542
Trenchers	50	0.542
Trenchers	120	0.457
Trenchers	175	0.358
Trenchers	250	0.307
Trenchers	500	0.191
Trenchers	750	0.067
Welders	15	0.683
Welders	25	0.709
Welders	50	0.602
Welders	120	0.316
Welders	175	0.245
Welders	250	0.199
Welders	500	0.196
Water Trucks	175	0.214
Water Trucks	250	0.185
Water Trucks	500	0.177
Water Trucks	750	0.235
Water Trucks	1000	0.187

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g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.167	1.511	0.005	0.026	0.024	472.114	0.153	0.004
0.970	0.649	0.005	0.009	0.009	472.055	0.153	0.004
0.989	0.974	0.005	0.028	0.028	568.299	0.013	0.004
3.491	4.278	0.008	0.183	0.183	568.300	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
4.851	3.755	0.007	0.116	0.116	568.299	0.059	0.005
3.653	2.313	0.006	0.104	0.104	568.299	0.031	0.004
3.205	1.383	0.006	0.065	0.065	568.299	0.024	0.004
1.094	1.086	0.006	0.033	0.033	568.299	0.019	0.004
1.051	1.001	0.005	0.032	0.032	568.299	0.019	0.004
1.051	1.021	0.005	0.032	0.032	568.299	0.019	0.004
1.079	2.954	0.005	0.055	0.055	568.299	0.020	0.004
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
3.218	1.964	0.005	0.067	0.062	459.829	0.149	0.004
2.974	0.888	0.005	0.039	0.036	478.266	0.155	0.004
1.045	0.957	0.005	0.031	0.029	470.654	0.152	0.004
0.997	0.823	0.005	0.028	0.026	467.289	0.151	0.004
0.983	0.596	0.005	0.023	0.021	481.250	0.156	0.004
0.953	2.289	0.005	0.019	0.017	471.917	0.153	0.004

3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.344	4.357	0.007	0.168	0.168	568.299	0.062	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.297	3.592	0.007	0.099	0.099	568.299	0.047	0.005
3.495	2.176	0.006	0.089	0.089	568.300	0.025	0.004
3.073	1.249	0.006	0.056	0.056	568.300	0.019	0.004
7.072	5.636	0.005	0.543	0.499	517.872	0.168	0.005
3.831	4.135	0.005	0.260	0.240	469.533	0.152	0.004
3.335	3.160	0.005	0.166	0.153	474.748	0.154	0.004
1.470	2.681	0.005	0.114	0.105	472.980	0.153	0.004
1.834	2.154	0.005	0.088	0.081	471.967	0.153	0.004
1.274	1.638	0.005	0.068	0.062	470.276	0.152	0.004
1.038	2.422	0.005	0.065	0.060	472.055	0.153	0.004
6.686	4.936	0.005	0.456	0.420	516.128	0.167	0.005
3.788	3.961	0.005	0.285	0.262	476.134	0.154	0.004
3.209	2.688	0.005	0.150	0.138	471.592	0.153	0.004
1.308	2.462	0.005	0.096	0.088	471.622	0.153	0.004
1.717	1.920	0.005	0.081	0.074	474.007	0.153	0.004
1.122	1.545	0.005	0.057	0.052	472.408	0.153	0.004
1.593	4.598	0.005	0.112	0.103	475.490	0.154	0.004
4.982	3.742	0.007	0.107	0.107	568.299	0.059	0.005
3.694	2.248	0.006	0.095	0.095	568.299	0.031	0.004
3.246	1.301	0.006	0.060	0.060	568.299	0.024	0.004
1.108	1.012	0.006	0.031	0.031	568.299	0.020	0.004
1.061	0.937	0.005	0.030	0.030	568.299	0.020	0.004
1.061	0.955	0.005	0.030	0.030	568.299	0.020	0.004
1.087	2.910	0.005	0.053	0.053	568.299	0.023	0.004

2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.219	3.453	0.005	0.107	0.099	525.777	0.170	0.005
4.219	3.453	0.005	0.107	0.099	525.777	0.170	0.005
3.439	2.082	0.005	0.085	0.078	466.738	0.151	0.004
3.078	1.154	0.005	0.057	0.052	472.496	0.153	0.004
1.081	0.962	0.005	0.032	0.029	472.560	0.153	0.004
1.051	0.726	0.005	0.026	0.024	470.292	0.152	0.004
1.135	1.026	0.005	0.038	0.035	468.558	0.152	0.004
5.029	3.932	0.005	0.178	0.164	525.483	0.170	0.005
3.611	2.607	0.005	0.140	0.128	471.529	0.153	0.004
3.170	1.653	0.005	0.084	0.078	472.106	0.153	0.004
1.214	1.466	0.005	0.056	0.052	473.326	0.153	0.004
1.222	1.658	0.005	0.062	0.057	473.615	0.153	0.004
3.491	4.269	0.008	0.178	0.178	568.299	0.054	0.005
2.376	4.407	0.007	0.175	0.175	568.299	0.062	0.005
3.758	3.481	0.007	0.093	0.093	568.300	0.039	0.005
3.338	2.185	0.006	0.087	0.087	568.299	0.021	0.004
2.930	1.297	0.006	0.053	0.053	568.299	0.016	0.004
1.000	1.020	0.006	0.028	0.028	568.299	0.013	0.004
0.981	0.945	0.005	0.027	0.027	568.300	0.013	0.004
0.981	0.964	0.005	0.027	0.027	568.299	0.013	0.004
1.008	2.812	0.005	0.047	0.047	568.299	0.015	0.004
7.125	5.043	0.005	0.522	0.480	493.532	0.160	0.005
4.149	5.074	0.005	0.371	0.342	468.316	0.152	0.004
3.418	2.774	0.005	0.152	0.140	478.508	0.155	0.004
1.179	2.556	0.005	0.082	0.076	473.470	0.153	0.004
1.315	2.265	0.005	0.088	0.081	470.753	0.152	0.004
1.141	1.125	0.005	0.041	0.041	568.300	0.022	0.004
3.669	2.707	0.005	0.144	0.132	476.921	0.154	0.004
3.142	1.349	0.005	0.065	0.060	473.302	0.153	0.004
1.130	1.116	0.005	0.040	0.037	470.861	0.152	0.004
1.135	1.118	0.005	0.045	0.041	471.917	0.153	0.004
1.077	2.482	0.005	0.070	0.064	472.055	0.153	0.004
3.328	1.335	0.005	0.065	0.060	470.004	0.152	0.004
1.213	1.129	0.005	0.043	0.040	469.126	0.152	0.004

1.182	1.064	0.005	0.038	0.035	474.970	0.154	0.004
1.578	1.751	0.005	0.066	0.061	476.314	0.154	0.004
1.146	3.135	0.005	0.057	0.052	473.369	0.153	0.004
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
3.584	3.252	0.005	0.203	0.187	472.748	0.153	0.004
3.136	2.167	0.005	0.112	0.103	469.843	0.152	0.004
1.358	1.552	0.005	0.059	0.055	476.296	0.154	0.004
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
3.612	2.439	0.005	0.118	0.109	470.000	0.152	0.004
3.204	1.364	0.005	0.070	0.065	471.850	0.153	0.004
1.132	1.028	0.005	0.036	0.033	473.223	0.153	0.004
1.109	1.053	0.005	0.035	0.033	472.929	0.153	0.004

1.115	0.629	0.005	0.023	0.021	473.464	0.153	0.004
1.067	3.985	0.005	0.081	0.074	472.055	0.153	0.004
5.248	4.233	0.005	0.239	0.219	523.709	0.169	0.005
3.497	2.055	0.005	0.081	0.074	473.588	0.153	0.004
3.168	1.396	0.005	0.072	0.067	472.219	0.153	0.004
1.197	1.774	0.005	0.060	0.055	471.482	0.153	0.004
1.260	1.601	0.005	0.067	0.061	470.297	0.152	0.004
0.959	2.298	0.005	0.019	0.017	472.055	0.153	0.004
4.945	4.131	0.005	0.265	0.243	526.853	0.170	0.005
4.945	4.131	0.005	0.265	0.243	526.853	0.170	0.005
3.493	3.068	0.005	0.191	0.175	469.899	0.152	0.004
3.007	1.644	0.005	0.077	0.071	472.485	0.153	0.004
1.004	1.035	0.005	0.034	0.031	473.483	0.153	0.004
0.969	1.134	0.005	0.039	0.036	465.882	0.151	0.004
4.203	3.627	0.005	0.142	0.130	520.998	0.169	0.005
4.203	3.627	0.005	0.142	0.130	520.998	0.169	0.005
3.483	2.496	0.005	0.118	0.108	473.424	0.153	0.004
3.038	1.509	0.005	0.075	0.069	470.484	0.152	0.004
1.117	1.110	0.005	0.043	0.040	472.234	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.491	4.269	0.008	0.178	0.178	568.299	0.054	0.005
2.376	4.407	0.007	0.175	0.175	568.299	0.062	0.005
3.210	3.344	0.007	0.075	0.075	568.299	0.027	0.005
3.186	2.100	0.006	0.072	0.072	568.299	0.017	0.004
2.907	1.310	0.006	0.053	0.053	568.299	0.016	0.004

0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
3.491	4.278	0.008	0.183	0.183	568.299	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
3.943	3.528	0.007	0.099	0.099	568.299	0.043	0.005
3.389	2.213	0.006	0.092	0.092	568.299	0.023	0.004
2.974	1.318	0.006	0.056	0.056	568.300	0.018	0.004
1.016	1.038	0.006	0.029	0.029	568.299	0.014	0.004
0.992	0.958	0.005	0.028	0.028	568.300	0.014	0.004
0.992	0.977	0.005	0.029	0.029	568.300	0.014	0.004
1.020	2.840	0.005	0.049	0.049	568.299	0.016	0.004
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
3.444	2.691	0.005	0.135	0.125	473.851	0.153	0.004
2.909	1.101	0.005	0.049	0.046	471.970	0.153	0.004
1.215	1.783	0.005	0.066	0.060	473.681	0.153	0.004
1.968	2.200	0.005	0.091	0.083	477.573	0.155	0.004
3.740	3.477	0.005	0.128	0.118	525.027	0.170	0.005
3.240	1.821	0.005	0.051	0.047	473.037	0.153	0.004
2.821	0.786	0.005	0.030	0.028	471.475	0.153	0.004
1.001	1.489	0.005	0.035	0.033	472.927	0.153	0.004
0.942	0.477	0.005	0.009	0.008	466.541	0.151	0.004
3.612	4.229	0.005	0.231	0.212	474.103	0.153	0.004
1.720	3.805	0.005	0.167	0.153	474.573	0.154	0.004
2.959	3.370	0.005	0.151	0.139	479.092	0.155	0.004
2.601	5.333	0.005	0.196	0.181	472.998	0.153	0.004
1.725	4.365	0.005	0.115	0.115	568.299	0.037	0.004
5.941	4.348	0.005	0.259	0.238	523.908	0.169	0.005
5.941	4.348	0.005	0.259	0.238	523.908	0.169	0.005
3.791	2.970	0.005	0.179	0.165	466.898	0.151	0.004
3.281	1.590	0.005	0.084	0.077	470.459	0.152	0.004

1.142	1.442	0.005	0.048	0.045	469.871	0.152	0.004
1.276	1.433	0.005	0.053	0.048	469.143	0.152	0.004
1.333	1.654	0.005	0.064	0.059	465.052	0.150	0.004
1.122	3.089	0.005	0.052	0.048	472.456	0.153	0.004
4.094	5.503	0.005	0.405	0.372	482.363	0.156	0.004
3.321	2.631	0.005	0.137	0.126	478.948	0.155	0.004
1.602	2.803	0.005	0.125	0.115	469.446	0.152	0.004
1.732	2.051	0.005	0.081	0.074	472.539	0.153	0.004
1.338	1.713	0.005	0.064	0.059	472.115	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.217	3.561	0.007	0.098	0.098	568.299	0.047	0.005
3.470	2.179	0.006	0.089	0.089	568.299	0.025	0.004
3.049	1.262	0.006	0.055	0.055	568.299	0.019	0.004
1.257	1.192	0.007	0.035	0.035	686.695	0.019	0.004
3.660	3.309	0.006	0.084	0.077	527.861	0.171	0.005
3.660	3.309	0.006	0.084	0.077	527.861	0.171	0.005
3.252	1.867	0.005	0.057	0.052	472.630	0.153	0.004
3.537	3.576	0.006	0.082	0.075	536.140	0.173	0.005
3.385	2.659	0.005	0.124	0.114	476.766	0.154	0.004
2.926	1.999	0.005	0.094	0.087	471.040	0.152	0.004
1.143	1.747	0.005	0.055	0.051	477.110	0.154	0.004
1.169	1.327	0.005	0.051	0.047	470.283	0.152	0.004
0.978	0.768	0.005	0.027	0.025	470.551	0.152	0.004
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
3.664	2.817	0.005	0.160	0.147	474.116	0.153	0.004
3.201	1.638	0.005	0.072	0.066	473.122	0.153	0.004
1.140	1.616	0.005	0.051	0.047	470.126	0.152	0.004
4.560	3.662	0.005	0.145	0.133	513.803	0.166	0.005

4.560	3.662	0.005	0.145	0.133	513.803	0.166	0.005
3.522	2.109	0.005	0.086	0.079	477.188	0.154	0.004
3.083	1.180	0.005	0.059	0.054	469.329	0.152	0.004
1.146	1.235	0.005	0.047	0.044	470.598	0.152	0.004
1.234	1.046	0.005	0.039	0.036	470.910	0.152	0.004
1.261	1.649	0.005	0.067	0.062	466.452	0.151	0.004
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
3.734	4.279	0.005	0.285	0.262	475.901	0.154	0.004
3.309	3.549	0.005	0.179	0.165	467.732	0.151	0.004
1.601	3.315	0.005	0.144	0.133	473.917	0.153	0.004
1.676	1.826	0.005	0.079	0.072	470.439	0.152	0.004
0.962	0.305	0.005	0.009	0.009	474.486	0.154	0.004
3.491	4.278	0.008	0.183	0.183	568.300	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
4.524	3.676	0.007	0.112	0.112	568.299	0.054	0.005
3.557	2.283	0.006	0.102	0.102	568.299	0.028	0.004
3.121	1.365	0.006	0.063	0.063	568.299	0.022	0.004
1.065	1.075	0.006	0.032	0.032	568.299	0.018	0.004
1.029	0.990	0.005	0.031	0.031	568.299	0.017	0.004
3.328	1.335	0.005	0.065	0.060	470.004	0.152	0.004
1.213	1.129	0.005	0.043	0.040	469.126	0.152	0.004
1.182	1.064	0.005	0.038	0.035	474.970	0.154	0.004
1.578	1.751	0.005	0.066	0.061	476.314	0.154	0.004
1.146	3.135	0.005	0.057	0.052	473.369	0.153	0.004

2028		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4
Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026	0.024	472.114	0.153
Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009	0.009	472.055	0.153
Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028	0.028	568.299	0.013
Air Compressors	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300	0.061
Air Compressors	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Air Compressors	50	0.659	4.851	3.755	0.007	0.116	0.116	568.299	0.059
Air Compressors	120	0.345	3.653	2.313	0.006	0.104	0.104	568.299	0.031
Air Compressors	175	0.269	3.205	1.383	0.006	0.065	0.065	568.299	0.024
Air Compressors	250	0.220	1.094	1.086	0.006	0.033	0.033	568.299	0.019
Air Compressors	500	0.217	1.051	1.001	0.005	0.032	0.032	568.299	0.019
Air Compressors	750	0.217	1.051	1.021	0.005	0.032	0.032	568.299	0.019
Air Compressors	1000	0.231	1.079	2.954	0.005	0.055	0.055	568.299	0.020
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067	0.062	459.829	0.149
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039	0.036	478.266	0.155
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031	0.029	470.654	0.152
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028	0.026	467.289	0.151
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023	0.021	481.250	0.156
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019	0.017	471.917	0.153

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168	0.168	568.299	0.062
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099	0.099	568.299	0.047
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089	0.089	568.300	0.025
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056	0.056	568.300	0.019
Cranes	50	1.811	7.072	5.636	0.005	0.543	0.499	517.872	0.168
Cranes	120	0.463	3.831	4.135	0.005	0.260	0.240	469.533	0.152
Cranes	175	0.334	3.335	3.160	0.005	0.166	0.153	474.748	0.154
Cranes	250	0.265	1.470	2.681	0.005	0.114	0.105	472.980	0.153
Cranes	500	0.218	1.834	2.154	0.005	0.088	0.081	471.967	0.153
Cranes	750	0.172	1.274	1.638	0.005	0.068	0.062	470.276	0.152
Cranes	9999	0.229	1.038	2.422	0.005	0.065	0.060	472.055	0.153
Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456	0.420	516.128	0.167
Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285	0.262	476.134	0.154
Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150	0.138	471.592	0.153
Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096	0.088	471.622	0.153
Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081	0.074	474.007	0.153
Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057	0.052	472.408	0.153
Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112	0.103	475.490	0.154
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107	0.107	568.299	0.059
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095	0.095	568.299	0.031
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060	0.060	568.299	0.024
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031	0.031	568.299	0.020
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030	0.030	568.299	0.020
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030	0.030	568.299	0.020
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053	0.053	568.299	0.023

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	25	0.403	4.219	3.453	0.005	0.107	0.099	525.777	0.170
Excavators	50	0.403	4.219	3.453	0.005	0.107	0.099	525.777	0.170
Excavators	120	0.201	3.439	2.082	0.005	0.085	0.078	466.738	0.151
Excavators	175	0.158	3.078	1.154	0.005	0.057	0.052	472.496	0.153
Excavators	250	0.131	1.081	0.962	0.005	0.032	0.029	472.560	0.153
Excavators	500	0.115	1.051	0.726	0.005	0.026	0.024	470.292	0.152
Excavators	750	0.139	1.135	1.026	0.005	0.038	0.035	468.558	0.152
Forklifts	50	0.636	5.029	3.932	0.005	0.178	0.164	525.483	0.170
Forklifts	120	0.277	3.611	2.607	0.005	0.140	0.128	471.529	0.153
Forklifts	175	0.209	3.170	1.653	0.005	0.084	0.078	472.106	0.153
Forklifts	250	0.191	1.214	1.466	0.005	0.056	0.052	473.326	0.153
Forklifts	500	0.215	1.222	1.658	0.005	0.062	0.057	473.615	0.153
Generator Sets	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299	0.054
Generator Sets	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299	0.062
Generator Sets	50	0.440	3.758	3.481	0.007	0.093	0.093	568.300	0.039
Generator Sets	120	0.243	3.338	2.185	0.006	0.087	0.087	568.299	0.021
Generator Sets	175	0.184	2.930	1.297	0.006	0.053	0.053	568.299	0.016
Generator Sets	250	0.147	1.000	1.020	0.006	0.028	0.028	568.299	0.013
Generator Sets	500	0.144	0.981	0.945	0.005	0.027	0.027	568.300	0.013
Generator Sets	750	0.145	0.981	0.964	0.005	0.027	0.027	568.299	0.013
Generator Sets	9999	0.173	1.008	2.812	0.005	0.047	0.047	568.299	0.015
Graders	50	1.864	7.125	5.043	0.005	0.522	0.480	493.532	0.160
Graders	120	0.638	4.149	5.074	0.005	0.371	0.342	468.316	0.152
Graders	175	0.329	3.418	2.774	0.005	0.152	0.140	478.508	0.155
Graders	250	0.230	1.179	2.556	0.005	0.082	0.076	473.470	0.153
Graders	500	0.280	1.315	2.265	0.005	0.088	0.081	470.753	0.152
Graders	750	0.253	1.141	1.125	0.005	0.041	0.041	568.300	0.022
Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144	0.132	476.921	0.154
Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065	0.060	473.302	0.153
Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040	0.037	470.861	0.152
Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045	0.041	471.917	0.153
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070	0.064	472.055	0.153
Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004	0.152
Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126	0.152

Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970	0.154
Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314	0.154
Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369	0.153
Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203	0.187	472.748	0.153
Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112	0.103	469.843	0.152
Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059	0.055	476.296	0.154
Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118	0.109	470.000	0.152
Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070	0.065	471.850	0.153
Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036	0.033	473.223	0.153
Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035	0.033	472.929	0.153

Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023	0.021	473.464	0.153
Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081	0.074	472.055	0.153
Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239	0.219	523.709	0.169
Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081	0.074	473.588	0.153
Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072	0.067	472.219	0.153
Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060	0.055	471.482	0.153
Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067	0.061	470.297	0.152
Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019	0.017	472.055	0.153
Pavers	25	0.918	4.945	4.131	0.005	0.265	0.243	526.853	0.170
Pavers	50	0.918	4.945	4.131	0.005	0.265	0.243	526.853	0.170
Pavers	120	0.314	3.493	3.068	0.005	0.191	0.175	469.899	0.152
Pavers	175	0.181	3.007	1.644	0.005	0.077	0.071	472.485	0.153
Pavers	250	0.107	1.004	1.035	0.005	0.034	0.031	473.483	0.153
Pavers	500	0.115	0.969	1.134	0.005	0.039	0.036	465.882	0.151
Paving Equipment	25	0.476	4.203	3.627	0.005	0.142	0.130	520.998	0.169
Paving Equipment	50	0.476	4.203	3.627	0.005	0.142	0.130	520.998	0.169
Paving Equipment	120	0.242	3.483	2.496	0.005	0.118	0.108	473.424	0.153
Paving Equipment	175	0.175	3.038	1.509	0.005	0.075	0.069	470.484	0.152
Paving Equipment	250	0.133	1.117	1.110	0.005	0.043	0.040	472.234	0.153
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Pressure Washers	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299	0.054
Pressure Washers	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299	0.062
Pressure Washers	50	0.306	3.210	3.344	0.007	0.075	0.075	568.299	0.027
Pressure Washers	120	0.189	3.186	2.100	0.006	0.072	0.072	568.299	0.017
Pressure Washers	175	0.178	2.907	1.310	0.006	0.053	0.053	568.299	0.016

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008
Pumps	15	0.683	3.491	4.278	0.008	0.183	0.183	568.299	0.061
Pumps	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Pumps	50	0.485	3.943	3.528	0.007	0.099	0.099	568.299	0.043
Pumps	120	0.261	3.389	2.213	0.006	0.092	0.092	568.299	0.023
Pumps	175	0.199	2.974	1.318	0.006	0.056	0.056	568.300	0.018
Pumps	250	0.159	1.016	1.038	0.006	0.029	0.029	568.299	0.014
Pumps	500	0.156	0.992	0.958	0.005	0.028	0.028	568.300	0.014
Pumps	750	0.157	0.992	0.977	0.005	0.029	0.029	568.300	0.014
Pumps	9999	0.186	1.020	2.840	0.005	0.049	0.049	568.299	0.016
Rollers	15	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	25	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	50	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	120	0.255	3.444	2.691	0.005	0.135	0.125	473.851	0.153
Rollers	175	0.127	2.909	1.101	0.005	0.049	0.046	471.970	0.153
Rollers	250	0.173	1.215	1.783	0.005	0.066	0.060	473.681	0.153
Rollers	500	0.212	1.968	2.200	0.005	0.091	0.083	477.573	0.155
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128	0.118	525.027	0.170
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051	0.047	473.037	0.153
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030	0.028	471.475	0.153
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035	0.033	472.927	0.153
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009	0.008	466.541	0.151
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231	0.212	474.103	0.153
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167	0.153	474.573	0.154
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151	0.139	479.092	0.155
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196	0.181	472.998	0.153
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115	0.115	568.299	0.037
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259	0.238	523.908	0.169
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259	0.238	523.908	0.169
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179	0.165	466.898	0.151
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084	0.077	470.459	0.152

Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048	0.045	469.871	0.152
Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053	0.048	469.143	0.152
Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064	0.059	465.052	0.150
Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052	0.048	472.456	0.153
Scrapers	120	0.566	4.094	5.503	0.005	0.405	0.372	482.363	0.156
Scrapers	175	0.290	3.321	2.631	0.005	0.137	0.126	478.948	0.155
Scrapers	250	0.291	1.602	2.803	0.005	0.125	0.115	469.446	0.152
Scrapers	500	0.216	1.732	2.051	0.005	0.081	0.074	472.539	0.153
Scrapers	750	0.184	1.338	1.713	0.005	0.064	0.059	472.115	0.153
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Signal Boards	50	0.522	4.217	3.561	0.007	0.098	0.098	568.299	0.047
Signal Boards	120	0.278	3.470	2.179	0.006	0.089	0.089	568.299	0.025
Signal Boards	175	0.215	3.049	1.262	0.006	0.055	0.055	568.299	0.019
Signal Boards	250	0.213	1.257	1.192	0.007	0.035	0.035	686.695	0.019
Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084	0.077	527.861	0.171
Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084	0.077	527.861	0.171
Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057	0.052	472.630	0.153
Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082	0.075	536.140	0.173
Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124	0.114	476.766	0.154
Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094	0.087	471.040	0.152
Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055	0.051	477.110	0.154
Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051	0.047	470.283	0.152
Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027	0.025	470.551	0.152
Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160	0.147	474.116	0.153
Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072	0.066	473.122	0.153
Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051	0.047	470.126	0.152
Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145	0.133	513.803	0.166

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145	0.133	513.803	0.166
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086	0.079	477.188	0.154
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059	0.054	469.329	0.152
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047	0.044	470.598	0.152
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039	0.036	470.910	0.152
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067	0.062	466.452	0.151
Trenchers	15	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	25	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	50	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	120	0.457	3.734	4.279	0.005	0.285	0.262	475.901	0.154
Trenchers	175	0.358	3.309	3.549	0.005	0.179	0.165	467.732	0.151
Trenchers	250	0.307	1.601	3.315	0.005	0.144	0.133	473.917	0.153
Trenchers	500	0.191	1.676	1.826	0.005	0.079	0.072	470.439	0.152
Trenchers	750	0.067	0.962	0.305	0.005	0.009	0.009	474.486	0.154
Welders	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300	0.061
Welders	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Welders	50	0.602	4.524	3.676	0.007	0.112	0.112	568.299	0.054
Welders	120	0.316	3.557	2.283	0.006	0.102	0.102	568.299	0.028
Welders	175	0.245	3.121	1.365	0.006	0.063	0.063	568.299	0.022
Welders	250	0.199	1.065	1.075	0.006	0.032	0.032	568.299	0.018
Welders	500	0.196	1.029	0.990	0.005	0.031	0.031	568.299	0.017
Water Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004	0.152
Water Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126	0.152
Water Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970	0.154
Water Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314	0.154
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369	0.153

2029

g/hp/hr	2029		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
N2O	**Equipment**	**MaxHP**	ROG	CO	NOX	SOX	PM10
0.005	Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021
0.005	Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021
0.005	Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021
0.004	Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026
0.004	Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009
0.004	Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028
0.005	Air Compressors	15	0.683	3.491	4.278	0.008	0.183
0.005	Air Compressors	25	0.709	2.376	4.407	0.007	0.177
0.005	Air Compressors	50	0.659	4.851	3.755	0.007	0.116
0.004	Air Compressors	120	0.345	3.653	2.313	0.006	0.104
0.004	Air Compressors	175	0.269	3.205	1.383	0.006	0.065
0.004	Air Compressors	250	0.220	1.094	1.086	0.006	0.033
0.004	Air Compressors	500	0.217	1.051	1.001	0.005	0.032
0.004	Air Compressors	750	0.217	1.051	1.021	0.005	0.032
0.004	Air Compressors	1000	0.231	1.079	2.954	0.005	0.055
0.005	Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193
0.005	Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193
0.005	Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193
0.004	Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067
0.004	Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039
0.004	Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031
0.004	Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028
0.004	Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023
0.004	Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019

0.005	Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161
0.005	Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168
0.005	Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099
0.004	Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089
0.004	Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056
0.005	Cranes	50	1.811	7.072	5.636	0.005	0.543
0.004	Cranes	120	0.463	3.831	4.135	0.005	0.260
0.004	Cranes	175	0.334	3.335	3.160	0.005	0.166
0.004	Cranes	250	0.265	1.470	2.681	0.005	0.114
0.004	Cranes	500	0.218	1.834	2.154	0.005	0.088
0.004	Cranes	750	0.172	1.274	1.638	0.005	0.068
0.004	Cranes	9999	0.229	1.038	2.422	0.005	0.065
0.005	Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456
0.004	Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285
0.004	Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150
0.004	Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096
0.004	Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081
0.004	Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057
0.004	Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112
0.005	Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107
0.004	Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095
0.004	Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060
0.004	Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031
0.004	Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030
0.004	Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030
0.004	Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053

0.005	Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	25	0.403	4.219	3.453	0.005	0.107
0.005	Excavators	50	0.403	4.219	3.453	0.005	0.107
0.004	Excavators	120	0.201	3.439	2.082	0.005	0.085
0.004	Excavators	175	0.158	3.078	1.154	0.005	0.057
0.004	Excavators	250	0.131	1.081	0.962	0.005	0.032
0.004	Excavators	500	0.115	1.051	0.726	0.005	0.026
0.004	Excavators	750	0.139	1.135	1.026	0.005	0.038
0.005	Forklifts	50	0.636	5.029	3.932	0.005	0.178
0.004	Forklifts	120	0.277	3.611	2.607	0.005	0.140
0.004	Forklifts	175	0.209	3.170	1.653	0.005	0.084
0.004	Forklifts	250	0.191	1.214	1.466	0.005	0.056
0.004	Forklifts	500	0.215	1.222	1.658	0.005	0.062
0.005	Generator Sets	15	0.607	3.491	4.269	0.008	0.178
0.005	Generator Sets	25	0.694	2.376	4.407	0.007	0.175
0.005	Generator Sets	50	0.440	3.758	3.481	0.007	0.093
0.004	Generator Sets	120	0.243	3.338	2.185	0.006	0.087
0.004	Generator Sets	175	0.184	2.930	1.297	0.006	0.053
0.004	Generator Sets	250	0.147	1.000	1.020	0.006	0.028
0.004	Generator Sets	500	0.144	0.981	0.945	0.005	0.027
0.004	Generator Sets	750	0.145	0.981	0.964	0.005	0.027
0.004	Generator Sets	9999	0.173	1.008	2.812	0.005	0.047
0.005	Graders	50	1.864	7.125	5.043	0.005	0.522
0.004	Graders	120	0.638	4.149	5.074	0.005	0.371
0.004	Graders	175	0.329	3.418	2.774	0.005	0.152
0.004	Graders	250	0.230	1.179	2.556	0.005	0.082
0.004	Graders	500	0.280	1.315	2.265	0.005	0.088
0.004	Graders	750	0.253	1.141	1.125	0.005	0.041
0.004	Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144
0.004	Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065
0.004	Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040
0.004	Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045
0.004	Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070
0.004	Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065
0.004	Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043

0.004	Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038
0.004	Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066
0.004	Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057
0.005	Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268
0.005	Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268
0.005	Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268
0.004	Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203
0.004	Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112
0.004	Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059
0.005	Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136
0.005	Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136
0.005	Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136
0.004	Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118
0.004	Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070
0.004	Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036
0.004	Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035

0.004	Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023
0.004	Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081
0.005	Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239
0.004	Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081
0.004	Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072
0.004	Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060
0.004	Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067
0.004	Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019
0.005	Pavers	25	0.918	4.945	4.131	0.005	0.265
0.005	Pavers	50	0.918	4.945	4.131	0.005	0.265
0.004	Pavers	120	0.314	3.493	3.068	0.005	0.191
0.004	Pavers	175	0.181	3.007	1.644	0.005	0.077
0.004	Pavers	250	0.107	1.004	1.035	0.005	0.034
0.004	Pavers	500	0.115	0.969	1.134	0.005	0.039
0.005	Paving Equipment	25	0.476	4.203	3.627	0.005	0.142
0.005	Paving Equipment	50	0.476	4.203	3.627	0.005	0.142
0.004	Paving Equipment	120	0.242	3.483	2.496	0.005	0.118
0.004	Paving Equipment	175	0.175	3.038	1.509	0.005	0.075
0.004	Paving Equipment	250	0.133	1.117	1.110	0.005	0.043
0.005	Plate Compactors	15	0.661	3.469	4.142	0.008	0.161
0.005	Pressure Washers	15	0.607	3.491	4.269	0.008	0.178
0.005	Pressure Washers	25	0.694	2.376	4.407	0.007	0.175
0.005	Pressure Washers	50	0.306	3.210	3.344	0.007	0.075
0.004	Pressure Washers	120	0.189	3.186	2.100	0.006	0.072
0.004	Pressure Washers	175	0.178	2.907	1.310	0.006	0.053

0.004	Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
0.005	Pumps	15	0.683	3.491	4.278	0.008	0.183
0.005	Pumps	25	0.709	2.376	4.407	0.007	0.177
0.005	Pumps	50	0.485	3.943	3.528	0.007	0.099
0.004	Pumps	120	0.261	3.389	2.213	0.006	0.092
0.004	Pumps	175	0.199	2.974	1.318	0.006	0.056
0.004	Pumps	250	0.159	1.016	1.038	0.006	0.029
0.004	Pumps	500	0.156	0.992	0.958	0.005	0.028
0.004	Pumps	750	0.157	0.992	0.977	0.005	0.029
0.004	Pumps	9999	0.186	1.020	2.840	0.005	0.049
0.005	Rollers	15	0.569	4.125	3.689	0.005	0.167
0.005	Rollers	25	0.569	4.125	3.689	0.005	0.167
0.005	Rollers	50	0.569	4.125	3.689	0.005	0.167
0.004	Rollers	120	0.255	3.444	2.691	0.005	0.135
0.004	Rollers	175	0.127	2.909	1.101	0.005	0.049
0.004	Rollers	250	0.173	1.215	1.783	0.005	0.066
0.004	Rollers	500	0.212	1.968	2.200	0.005	0.091
0.005	Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128
0.004	Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051
0.004	Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030
0.004	Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035
0.004	Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009
0.004	Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231
0.004	Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167
0.004	Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151
0.004	Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196
0.004	Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115
0.005	Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259
0.005	Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259
0.004	Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179
0.004	Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084

0.004	Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048
0.004	Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053
0.004	Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064
0.004	Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052
0.004	Scrapers	120	0.566	4.094	5.503	0.005	0.405
0.004	Scrapers	175	0.290	3.321	2.631	0.005	0.137
0.004	Scrapers	250	0.291	1.602	2.803	0.005	0.125
0.004	Scrapers	500	0.216	1.732	2.051	0.005	0.081
0.004	Scrapers	750	0.184	1.338	1.713	0.005	0.064
0.005	Signal Boards	15	0.661	3.469	4.142	0.008	0.161
0.005	Signal Boards	50	0.522	4.217	3.561	0.007	0.098
0.004	Signal Boards	120	0.278	3.470	2.179	0.006	0.089
0.004	Signal Boards	175	0.215	3.049	1.262	0.006	0.055
0.004	Signal Boards	250	0.213	1.257	1.192	0.007	0.035
0.005	Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084
0.005	Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084
0.004	Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057
0.005	Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082
0.004	Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124
0.004	Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094
0.004	Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055
0.004	Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051
0.004	Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027
0.005	Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191
0.005	Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191
0.005	Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191
0.004	Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160
0.004	Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072
0.004	Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051
0.005	Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067
Trenchers	15	0.542	4.120	3.657	0.005	0.163
Trenchers	25	0.542	4.120	3.657	0.005	0.163
Trenchers	50	0.542	4.120	3.657	0.005	0.163
Trenchers	120	0.457	3.734	4.279	0.005	0.285
Trenchers	175	0.358	3.309	3.549	0.005	0.179
Trenchers	250	0.307	1.601	3.315	0.005	0.144
Trenchers	500	0.191	1.676	1.826	0.005	0.079
Trenchers	750	0.067	0.962	0.305	0.005	0.009
Welders	15	0.683	3.491	4.278	0.008	0.183
Welders	25	0.709	2.376	4.407	0.007	0.177
Welders	50	0.602	4.524	3.676	0.007	0.112
Welders	120	0.316	3.557	2.283	0.006	0.102
Welders	175	0.245	3.121	1.365	0.006	0.063
Welders	250	0.199	1.065	1.075	0.006	0.032
Welders	500	0.196	1.029	0.990	0.005	0.031
Water Trucks	175	0.214	3.328	1.335	0.005	0.065
Water Trucks	250	0.185	1.213	1.129	0.005	0.043
Water Trucks	500	0.177	1.182	1.064	0.005	0.038
Water Trucks	750	0.235	1.578	1.751	0.005	0.066
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057

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2030

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.019	525.074	0.170	0.005
0.019	525.074	0.170	0.005
0.019	525.074	0.170	0.005
0.024	472.114	0.153	0.004
0.009	472.055	0.153	0.004
0.028	568.299	0.013	0.004
0.183	568.300	0.061	0.005
0.177	568.299	0.064	0.005
0.116	568.299	0.059	0.005
0.104	568.299	0.031	0.004
0.065	568.299	0.024	0.004
0.033	568.299	0.019	0.004
0.032	568.299	0.019	0.004
0.032	568.299	0.019	0.004
0.055	568.299	0.020	0.004
0.178	532.821	0.172	0.005
0.178	532.821	0.172	0.005
0.178	532.821	0.172	0.005
0.062	459.829	0.149	0.004
0.036	478.266	0.155	0.004
0.029	470.654	0.152	0.004
0.026	467.289	0.151	0.004
0.021	481.250	0.156	0.004
0.017	471.917	0.153	0.004

2030		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.661	3.469
Aerial Lifts	25	0.685	2.339
Aerial Lifts	50	0.339	3.764
Aerial Lifts	120	0.188	3.352
Aerial Lifts	500	0.126	0.986
Aerial Lifts	750	0.126	0.986
Air Compressors	15	0.663	3.470
Air Compressors	25	0.687	2.340
Air Compressors	50	0.506	4.712
Air Compressors	120	0.264	3.630
Air Compressors	175	0.193	3.205
Air Compressors	250	0.179	1.092
Air Compressors	500	0.178	1.048
Air Compressors	750	0.178	1.048
Air Compressors	1000	0.182	1.049
Bore/Drill Rigs	15	0.661	3.469
Bore/Drill Rigs	25	0.685	2.339
Bore/Drill Rigs	50	0.348	4.029
Bore/Drill Rigs	120	0.183	3.434
Bore/Drill Rigs	175	0.127	3.038
Bore/Drill Rigs	250	0.127	1.035
Bore/Drill Rigs	500	0.127	1.006
Bore/Drill Rigs	750	0.127	1.006
Bore/Drill Rigs	1000	0.127	1.006

0.161	568.299	0.059	0.005
0.168	568.299	0.062	0.005
0.161	568.299	0.061	0.005
0.099	568.299	0.047	0.005
0.089	568.300	0.025	0.004
0.056	568.300	0.019	0.004
0.499	517.872	0.168	0.005
0.240	469.533	0.152	0.004
0.153	474.748	0.154	0.004
0.105	472.980	0.153	0.004
0.081	471.967	0.153	0.004
0.062	470.276	0.152	0.004
0.060	472.055	0.153	0.004
0.420	516.128	0.167	0.005
0.262	476.134	0.154	0.004
0.138	471.592	0.153	0.004
0.088	471.622	0.153	0.004
0.074	474.007	0.153	0.004
0.052	472.408	0.153	0.004
0.103	475.490	0.154	0.004
0.107	568.299	0.059	0.005
0.095	568.299	0.031	0.004
0.060	568.299	0.024	0.004
0.031	568.299	0.020	0.004
0.030	568.299	0.020	0.004
0.030	568.299	0.020	0.004
0.053	568.299	0.023	0.004

Cement and Mortar Mixers	15	0.661	3.469
Cement and Mortar Mixers	25	0.685	2.339
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.409	4.199
Concrete/Industrial Saws	120	0.221	3.480
Concrete/Industrial Saws	175	0.163	3.074
Cranes	50	0.684	5.366
Cranes	120	0.343	3.812
Cranes	175	0.253	3.356
Cranes	250	0.224	1.147
Cranes	500	0.222	1.090
Cranes	750	0.222	1.090
Cranes	9999	0.245	1.108
Crawler Tractors	50	0.833	5.605
Crawler Tractors	120	0.405	3.871
Crawler Tractors	175	0.296	3.397
Crawler Tractors	250	0.262	1.207
Crawler Tractors	500	0.257	1.200
Crawler Tractors	750	0.257	1.200
Crawler Tractors	1000	0.265	1.225
Crushing/Proc. Equipment	50	0.525	4.857
Crushing/Proc. Equipment	120	0.272	3.673
Crushing/Proc. Equipment	175	0.197	3.244
Crushing/Proc. Equipment	250	0.185	1.105
Crushing/Proc. Equipment	500	0.184	1.058
Crushing/Proc. Equipment	750	0.184	1.058
Crushing/Proc. Equipment	9999	0.196	1.059

0.161	568.299	0.061	0.005
0.099	525.777	0.170	0.005
0.099	525.777	0.170	0.005
0.078	466.738	0.151	0.004
0.052	472.496	0.153	0.004
0.029	472.560	0.153	0.004
0.024	470.292	0.152	0.004
0.035	468.558	0.152	0.004
0.164	525.483	0.170	0.005
0.128	471.529	0.153	0.004
0.078	472.106	0.153	0.004
0.052	473.326	0.153	0.004
0.057	473.615	0.153	0.004
0.178	568.299	0.054	0.005
0.175	568.299	0.062	0.005
0.093	568.300	0.039	0.005
0.087	568.299	0.021	0.004
0.053	568.299	0.016	0.004
0.028	568.299	0.013	0.004
0.027	568.300	0.013	0.004
0.027	568.299	0.013	0.004
0.047	568.299	0.015	0.004
0.480	493.532	0.160	0.005
0.342	468.316	0.152	0.004
0.140	478.508	0.155	0.004
0.076	473.470	0.153	0.004
0.081	470.753	0.152	0.004
0.041	568.300	0.022	0.004
0.132	476.921	0.154	0.004
0.060	473.302	0.153	0.004
0.037	470.861	0.152	0.004
0.041	471.917	0.153	0.004
0.064	472.055	0.153	0.004
0.060	470.004	0.152	0.004
0.040	469.126	0.152	0.004

Dumpers/Tenders	25	0.685	2.340
Excavators	25	0.685	2.339
Excavators	50	0.602	5.309
Excavators	120	0.301	3.806
Excavators	175	0.213	3.362
Excavators	250	0.203	1.145
Excavators	500	0.202	1.088
Excavators	750	0.202	1.088
Forklifts	50	0.565	5.272
Forklifts	120	0.283	3.799
Forklifts	175	0.199	3.360
Forklifts	250	0.195	1.144
Forklifts	500	0.195	1.088
Generator Sets	15	0.592	3.470
Generator Sets	25	0.686	2.340
Generator Sets	50	0.315	3.640
Generator Sets	120	0.178	3.316
Generator Sets	175	0.130	2.929
Generator Sets	250	0.120	0.998
Generator Sets	500	0.119	0.978
Generator Sets	750	0.119	0.978
Generator Sets	9999	0.128	0.979
Graders	50	0.648	5.239
Graders	120	0.323	3.775
Graders	175	0.237	3.326
Graders	250	0.216	1.148
Graders	500	0.214	1.097
Graders	750	0.214	1.097
Off-Highway Tractors	120	0.518	3.944
Off-Highway Tractors	175	0.373	3.435
Off-Highway Tractors	250	0.315	1.286
Off-Highway Tractors	750	0.304	1.351
Off-Highway Tractors	1000	0.318	1.409
Off-Highway Trucks	175	0.229	3.425
Off-Highway Trucks	250	0.217	1.166

0.035	474.970	0.154	0.004
0.061	476.314	0.154	0.004
0.052	473.369	0.153	0.004
0.246	528.954	0.171	0.005
0.246	528.954	0.171	0.005
0.246	528.954	0.171	0.005
0.187	472.748	0.153	0.004
0.103	469.843	0.152	0.004
0.055	476.296	0.154	0.004
0.125	526.176	0.170	0.005
0.125	526.176	0.170	0.005
0.125	526.176	0.170	0.005
0.109	470.000	0.152	0.004
0.065	471.850	0.153	0.004
0.033	473.223	0.153	0.004
0.033	472.929	0.153	0.004

Off-Highway Trucks	500	0.216	1.104
Off-Highway Trucks	750	0.217	1.104
Off-Highway Trucks	1000	0.220	1.107
Other Construction Equipment	15	0.661	3.469
Other Construction Equipment	25	0.685	2.339
Other Construction Equipment	50	0.429	4.390
Other Construction Equipment	120	0.225	3.538
Other Construction Equipment	175	0.161	3.127
Other Construction Equipment	500	0.154	1.028
Other General Industrial Equipment	15	0.589	3.469
Other General Industrial Equipment	25	0.685	2.339
Other General Industrial Equipment	50	0.609	5.299
Other General Industrial Equipment	120	0.309	3.802
Other General Industrial Equipment	175	0.223	3.357
Other General Industrial Equipment	250	0.209	1.143
Other General Industrial Equipment	500	0.208	1.087

0.021	473.464	0.153	0.004
0.074	472.055	0.153	0.004
0.219	523.709	0.169	0.005
0.074	473.588	0.153	0.004
0.067	472.219	0.153	0.004
0.055	471.482	0.153	0.004
0.061	470.297	0.152	0.004
0.017	472.055	0.153	0.004
0.243	526.853	0.170	0.005
0.243	526.853	0.170	0.005
0.175	469.899	0.152	0.004
0.071	472.485	0.153	0.004
0.031	473.483	0.153	0.004
0.036	465.882	0.151	0.004
0.130	520.998	0.169	0.005
0.130	520.998	0.169	0.005
0.108	473.424	0.153	0.004
0.069	470.484	0.152	0.004
0.040	472.234	0.153	0.004
0.161	568.299	0.059	0.005
0.178	568.299	0.054	0.005
0.175	568.299	0.062	0.005
0.075	568.299	0.027	0.005
0.072	568.299	0.017	0.004
0.053	568.299	0.016	0.004

Other General Industrial Equipment	750	0.208	1.087
Other General Industrial Equipment	1000	0.212	1.088
Other Material Handling Equipment	50	0.598	5.237
Other Material Handling Equipment	120	0.304	3.784
Other Material Handling Equipment	175	0.220	3.341
Other Material Handling Equipment	250	0.206	1.138
Other Material Handling Equipment	500	0.205	1.083
Other Material Handling Equipment	9999	0.218	1.084
Pavers	25	0.685	2.339
Pavers	50	0.845	5.396
Pavers	120	0.408	3.800
Pavers	175	0.300	3.326
Pavers	250	0.259	1.192
Pavers	500	0.253	1.181
Paving Equipment	25	0.685	2.339
Paving Equipment	50	0.802	5.309
Paving Equipment	120	0.390	3.774
Paving Equipment	175	0.290	3.306
Paving Equipment	250	0.250	1.171
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.592	3.470
Pressure Washers	25	0.686	2.340
Pressure Washers	50	0.215	3.124
Pressure Washers	120	0.134	3.167
Pressure Washers	175	0.126	2.907

0.009	568.299	0.008	0.004
0.183	568.299	0.061	0.005
0.177	568.299	0.064	0.005
0.099	568.299	0.043	0.005
0.092	568.299	0.023	0.004
0.056	568.300	0.018	0.004
0.029	568.299	0.014	0.004
0.028	568.300	0.014	0.004
0.029	568.300	0.014	0.004
0.049	568.299	0.016	0.004
0.154	526.141	0.170	0.005
0.154	526.141	0.170	0.005
0.154	526.141	0.170	0.005
0.125	473.851	0.153	0.004
0.046	471.970	0.153	0.004
0.060	473.681	0.153	0.004
0.083	477.573	0.155	0.004
0.118	525.027	0.170	0.005
0.047	473.037	0.153	0.004
0.028	471.475	0.153	0.004
0.033	472.927	0.153	0.004
0.008	466.541	0.151	0.004
0.212	474.103	0.153	0.004
0.153	474.573	0.154	0.004
0.139	479.092	0.155	0.004
0.181	472.998	0.153	0.004
0.115	568.299	0.037	0.004
0.238	523.908	0.169	0.005
0.238	523.908	0.169	0.005
0.165	466.898	0.151	0.004
0.077	470.459	0.152	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.663	3.470
Pumps	25	0.687	2.340
Pumps	50	0.348	3.814
Pumps	120	0.193	3.367
Pumps	175	0.142	2.973
Pumps	250	0.130	1.013
Pumps	500	0.129	0.989
Pumps	750	0.129	0.989
Pumps	9999	0.139	0.990
Rollers	15	0.661	3.469
Rollers	25	0.685	2.339
Rollers	50	0.587	4.784
Rollers	120	0.299	3.639
Rollers	175	0.223	3.203
Rollers	250	0.195	1.099
Rollers	500	0.193	1.056
Rough Terrain Forklifts	50	0.548	5.031
Rough Terrain Forklifts	120	0.279	3.725
Rough Terrain Forklifts	175	0.200	3.291
Rough Terrain Forklifts	250	0.191	1.121
Rough Terrain Forklifts	500	0.190	1.070
Rubber Tired Dozers	175	0.398	3.496
Rubber Tired Dozers	250	0.335	1.322
Rubber Tired Dozers	500	0.322	1.401
Rubber Tired Dozers	750	0.323	1.401
Rubber Tired Dozers	1000	0.338	1.465
Rubber Tired Loaders	25	0.685	2.339
Rubber Tired Loaders	50	0.634	5.181
Rubber Tired Loaders	120	0.317	3.759
Rubber Tired Loaders	175	0.232	3.312

0.045	469.871	0.152	0.004
0.048	469.143	0.152	0.004
0.059	465.052	0.150	0.004
0.048	472.456	0.153	0.004
0.372	482.363	0.156	0.004
0.126	478.948	0.155	0.004
0.115	469.446	0.152	0.004
0.074	472.539	0.153	0.004
0.059	472.115	0.153	0.004
0.161	568.299	0.059	0.005
0.098	568.299	0.047	0.005
0.089	568.299	0.025	0.004
0.055	568.299	0.019	0.004
0.035	686.695	0.019	0.004
0.077	527.861	0.171	0.005
0.077	527.861	0.171	0.005
0.052	472.630	0.153	0.004
0.075	536.140	0.173	0.005
0.114	476.766	0.154	0.004
0.087	471.040	0.152	0.004
0.051	477.110	0.154	0.004
0.047	470.283	0.152	0.004
0.025	470.551	0.152	0.004
0.176	525.328	0.170	0.005
0.176	525.328	0.170	0.005
0.176	525.328	0.170	0.005
0.147	474.116	0.153	0.004
0.066	473.122	0.153	0.004
0.047	470.126	0.152	0.004
0.133	513.803	0.166	0.005

Rubber Tired Loaders	250	0.210	1.138
Rubber Tired Loaders	500	0.208	1.085
Rubber Tired Loaders	750	0.208	1.085
Rubber Tired Loaders	1000	0.214	1.099
Scrapers	120	0.410	3.866
Scrapers	175	0.301	3.389
Scrapers	250	0.264	1.206
Scrapers	500	0.259	1.184
Scrapers	750	0.259	1.184
Signal Boards	15	0.661	3.470
Signal Boards	50	0.393	4.099
Signal Boards	120	0.213	3.451
Signal Boards	175	0.157	3.048
Signal Boards	250	0.176	1.255
Skid Steer Loaders	25	0.685	2.340
Skid Steer Loaders	50	0.411	4.386
Skid Steer Loaders	120	0.214	3.538
Surfacing Equipment	50	0.518	4.295
Surfacing Equipment	120	0.264	3.492
Surfacing Equipment	175	0.197	3.071
Surfacing Equipment	250	0.172	1.064
Surfacing Equipment	500	0.169	1.032
Surfacing Equipment	750	0.169	1.032
Sweepers/Scrubbers	15	0.589	3.470
Sweepers/Scrubbers	25	0.685	2.340
Sweepers/Scrubbers	50	0.509	4.947
Sweepers/Scrubbers	120	0.261	3.703
Sweepers/Scrubbers	175	0.187	3.275
Sweepers/Scrubbers	250	0.182	1.116
Tractors/Loaders/Backhoes	25	0.685	2.339

0.133	513.803	0.166	0.005
0.079	477.188	0.154	0.004
0.054	469.329	0.152	0.004
0.044	470.598	0.152	0.004
0.036	470.910	0.152	0.004
0.062	466.452	0.151	0.004
0.150	527.160	0.171	0.005
0.150	527.160	0.171	0.005
0.150	527.160	0.171	0.005
0.262	475.901	0.154	0.004
0.165	467.732	0.151	0.004
0.133	473.917	0.153	0.004
0.072	470.439	0.152	0.004
0.009	474.486	0.154	0.004
0.183	568.300	0.061	0.005
0.177	568.299	0.064	0.005
0.112	568.299	0.054	0.005
0.102	568.299	0.028	0.004
0.063	568.299	0.022	0.004
0.032	568.299	0.018	0.004
0.031	568.299	0.017	0.004
0.060	470.004	0.152	0.004
0.040	469.126	0.152	0.004
0.035	474.970	0.154	0.004
0.061	476.314	0.154	0.004
0.052	473.369	0.153	0.004

Tractors/Loaders/Backhoes	50	0.539	4.966
Tractors/Loaders/Backhoes	120	0.272	3.705
Tractors/Loaders/Backhoes	175	0.193	3.273
Tractors/Loaders/Backhoes	250	0.183	1.115
Tractors/Loaders/Backhoes	500	0.182	1.066
Tractors/Loaders/Backhoes	750	0.182	1.066
Trenchers	15	0.661	3.469
Trenchers	25	0.685	2.339
Trenchers	50	0.851	5.208
Trenchers	120	0.409	3.743
Trenchers	175	0.300	3.273
Trenchers	250	0.256	1.188
Trenchers	500	0.249	1.209
Trenchers	750	0.249	1.209
Welders	15	0.663	3.470
Welders	25	0.687	2.340
Welders	50	0.449	4.387
Welders	120	0.239	3.535
Welders	175	0.176	3.121
Welders	250	0.162	1.063
Welders	500	0.161	1.027
Water Trucks	175	0.229	3.425
Water Trucks	250	0.217	1.166
Water Trucks	500	0.216	1.104
Water Trucks	750	0.217	1.104
Water Trucks	1000	0.220	1.107

2031

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2031
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Aerial Lifts
4.332	0.007	0.162	0.162	568.299	0.061	0.005	Aerial Lifts
3.135	0.007	0.040	0.040	568.300	0.030	0.005	Aerial Lifts
1.657	0.006	0.036	0.036	568.299	0.017	0.004	Aerial Lifts
0.479	0.005	0.016	0.016	568.299	0.011	0.004	Aerial Lifts
0.485	0.005	0.016	0.016	568.299	0.011	0.004	Aerial Lifts
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Air Compressors
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Air Compressors
3.340	0.007	0.046	0.046	568.299	0.045	0.005	Air Compressors
1.729	0.006	0.041	0.041	568.299	0.023	0.004	Air Compressors
0.633	0.006	0.027	0.027	568.299	0.017	0.004	Air Compressors
0.529	0.006	0.018	0.018	568.299	0.016	0.004	Air Compressors
0.499	0.005	0.017	0.017	568.299	0.016	0.004	Air Compressors
0.505	0.005	0.017	0.017	568.300	0.016	0.004	Air Compressors
2.600	0.005	0.033	0.033	568.299	0.016	0.004	Air Compressors
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Bore/Drill Rigs
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Bore/Drill Rigs
3.020	0.007	0.013	0.013	568.299	0.031	0.005	Bore/Drill Rigs
1.415	0.006	0.012	0.012	568.299	0.016	0.004	Bore/Drill Rigs
0.279	0.006	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.006	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.005	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.005	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
2.372	0.005	0.021	0.021	568.299	0.011	0.004	Bore/Drill Rigs

4.142	0.008	0.161	0.161	568.299	0.059	0.005	Cement and Mortar Mixers
4.333	0.007	0.162	0.162	568.299	0.061	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
3.222	0.007	0.041	0.041	568.299	0.036	0.005	Concrete/Industrial Saws
1.667	0.006	0.036	0.036	568.299	0.019	0.004	Concrete/Industrial Saws
0.590	0.006	0.025	0.025	568.299	0.014	0.004	Concrete/Industrial Saws
3.598	0.007	0.075	0.075	568.299	0.061	0.005	Cranes
1.987	0.006	0.067	0.067	568.299	0.030	0.004	Cranes
0.916	0.006	0.042	0.042	568.299	0.022	0.004	Cranes
0.748	0.006	0.024	0.024	568.299	0.020	0.004	Cranes
0.697	0.005	0.023	0.023	568.299	0.020	0.004	Cranes
0.709	0.005	0.024	0.024	568.300	0.020	0.004	Cranes
2.800	0.005	0.043	0.043	568.299	0.022	0.004	Cranes
3.808	0.007	0.116	0.116	568.299	0.075	0.005	Crawler Tractors
2.341	0.006	0.105	0.105	568.299	0.036	0.004	Crawler Tractors
1.266	0.006	0.065	0.065	568.299	0.026	0.004	Crawler Tractors
1.104	0.006	0.040	0.040	568.299	0.023	0.004	Crawler Tractors
1.016	0.005	0.038	0.038	568.299	0.023	0.004	Crawler Tractors
1.033	0.005	0.038	0.038	568.299	0.023	0.004	Crawler Tractors
3.094	0.005	0.056	0.056	568.300	0.023	0.004	Crawler Tractors
3.351	0.007	0.043	0.043	568.299	0.047	0.005	Crushing/Proc. Equipment
1.708	0.006	0.038	0.038	568.299	0.024	0.004	Crushing/Proc. Equipment
0.600	0.006	0.025	0.025	568.299	0.017	0.004	Crushing/Proc. Equipment
0.502	0.006	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
0.476	0.005	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
0.478	0.005	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
2.590	0.005	0.032	0.032	568.299	0.017	0.004	Crushing/Proc. Equipment

4.332	0.007	0.161	0.161	568.299	0.061	0.005	Dumpers/Tenders
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Excavators
3.393	0.007	0.038	0.038	568.299	0.054	0.005	Excavators
1.676	0.006	0.034	0.034	568.299	0.027	0.004	Excavators
0.525	0.006	0.023	0.023	568.299	0.019	0.004	Excavators
0.452	0.006	0.016	0.016	568.299	0.018	0.004	Excavators
0.433	0.005	0.016	0.016	568.299	0.018	0.004	Excavators
0.437	0.005	0.016	0.016	568.299	0.018	0.004	Excavators
3.330	0.007	0.023	0.023	568.299	0.051	0.005	Forklifts
1.555	0.006	0.021	0.021	568.299	0.025	0.004	Forklifts
0.391	0.006	0.015	0.015	568.299	0.018	0.004	Forklifts
0.341	0.006	0.012	0.012	568.299	0.017	0.004	Forklifts
0.341	0.005	0.012	0.012	568.299	0.017	0.004	Forklifts
4.164	0.008	0.166	0.166	568.299	0.053	0.005	Generator Sets
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Generator Sets
3.107	0.007	0.038	0.038	568.299	0.028	0.005	Generator Sets
1.645	0.006	0.034	0.034	568.299	0.016	0.004	Generator Sets
0.601	0.006	0.023	0.023	568.299	0.011	0.004	Generator Sets
0.504	0.006	0.016	0.016	568.299	0.010	0.004	Generator Sets
0.476	0.005	0.015	0.015	568.299	0.010	0.004	Generator Sets
0.482	0.005	0.015	0.015	568.299	0.010	0.004	Generator Sets
2.483	0.005	0.029	0.029	568.299	0.011	0.004	Generator Sets
3.530	0.007	0.065	0.065	568.299	0.058	0.005	Graders
1.903	0.006	0.058	0.058	568.299	0.029	0.004	Graders
0.815	0.006	0.038	0.038	568.300	0.021	0.004	Graders
0.684	0.006	0.024	0.024	568.299	0.019	0.004	Graders
0.647	0.005	0.023	0.023	568.299	0.019	0.004	Graders
0.654	0.005	0.023	0.023	568.299	0.019	0.004	Graders
2.959	0.006	0.175	0.175	568.299	0.046	0.004	Off-Highway Tractors
1.916	0.006	0.104	0.104	568.299	0.033	0.004	Off-Highway Tractors
1.715	0.006	0.064	0.064	568.299	0.028	0.004	Off-Highway Tractors
1.590	0.005	0.060	0.060	568.299	0.027	0.004	Off-Highway Tractors
3.569	0.005	0.078	0.078	568.300	0.028	0.004	Off-Highway Tractors
0.563	0.006	0.025	0.025	568.299	0.020	0.004	Off-Highway Trucks
0.481	0.006	0.017	0.017	568.300	0.019	0.004	Off-Highway Trucks

0.458	0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks
0.463	0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks
2.651	0.005	0.033	0.033	568.300	0.019	0.004	Off-Highway Trucks
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Other Construction Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Other Construction Equipment
3.190	0.007	0.030	0.030	568.299	0.038	0.005	Other Construction Equipment
1.576	0.006	0.027	0.027	568.300	0.020	0.004	Other Construction Equipment
0.459	0.006	0.019	0.019	568.299	0.014	0.004	Other Construction Equipment
0.391	0.005	0.014	0.014	568.300	0.013	0.004	Other Construction Equipment
4.142	0.008	0.161	0.161	568.299	0.053	0.005	Other General Industrial Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Other General Industrial Equipment
3.460	0.007	0.048	0.048	568.299	0.054	0.005	Other General Industrial Equipment
1.766	0.006	0.043	0.043	568.299	0.027	0.004	Other General Industrial Equipment
0.641	0.006	0.028	0.028	568.299	0.020	0.004	Other General Industrial Equipment
0.536	0.006	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment
0.506	0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment

0.512	0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment
2.660	0.005	0.035	0.035	568.299	0.019	0.004	Other General Industrial Equipment
3.447	0.007	0.048	0.048	568.299	0.053	0.005	Other Material Handling Equipment
1.762	0.006	0.043	0.043	568.299	0.027	0.004	Other Material Handling Equipment
0.640	0.006	0.028	0.028	568.299	0.019	0.004	Other Material Handling Equipment
0.535	0.006	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment
0.505	0.005	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment
2.653	0.005	0.035	0.035	568.299	0.019	0.004	Other Material Handling Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Pavers
3.841	0.007	0.134	0.134	568.299	0.076	0.005	Pavers
2.468	0.006	0.121	0.121	568.300	0.036	0.004	Pavers
1.425	0.006	0.074	0.074	568.299	0.027	0.004	Pavers
1.246	0.006	0.045	0.045	568.299	0.023	0.004	Pavers
1.141	0.005	0.043	0.043	568.299	0.022	0.004	Pavers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Paving Equipment
3.809	0.007	0.126	0.126	568.299	0.072	0.005	Paving Equipment
2.393	0.006	0.114	0.114	568.300	0.035	0.004	Paving Equipment
1.363	0.006	0.070	0.070	568.299	0.026	0.004	Paving Equipment
1.176	0.006	0.042	0.042	568.299	0.022	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.164	0.008	0.166	0.166	568.300	0.053	0.005	Pressure Washers
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Pressure Washers
2.989	0.007	0.030	0.030	568.299	0.019	0.005	Pressure Washers
1.594	0.006	0.028	0.028	568.300	0.012	0.004	Pressure Washers
0.619	0.006	0.024	0.024	568.299	0.011	0.004	Pressure Washers

0.265	0.006	0.009	0.009	568.299	0.008	0.004	Pressure Washers
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Pumps
4.347	0.007	0.165	0.165	568.300	0.061	0.005	Pumps
3.146	0.007	0.040	0.040	568.299	0.031	0.005	Pumps
1.662	0.006	0.036	0.036	568.299	0.017	0.004	Pumps
0.610	0.006	0.024	0.024	568.299	0.012	0.004	Pumps
0.511	0.006	0.016	0.016	568.299	0.011	0.004	Pumps
0.482	0.005	0.016	0.016	568.299	0.011	0.004	Pumps
0.488	0.005	0.016	0.016	568.299	0.011	0.004	Pumps
2.504	0.005	0.030	0.030	568.299	0.012	0.004	Pumps
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Rollers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Rollers
3.480	0.007	0.073	0.073	568.299	0.053	0.005	Rollers
1.950	0.006	0.066	0.066	568.299	0.027	0.004	Rollers
0.907	0.006	0.042	0.042	568.299	0.020	0.004	Rollers
0.745	0.006	0.024	0.024	568.299	0.017	0.004	Rollers
0.697	0.005	0.023	0.023	568.299	0.017	0.004	Rollers
3.359	0.007	0.039	0.039	568.299	0.049	0.005	Rough Terrain Forklifts
1.671	0.006	0.034	0.034	568.299	0.025	0.004	Rough Terrain Forklifts
0.537	0.006	0.023	0.023	568.299	0.018	0.004	Rough Terrain Forklifts
0.463	0.006	0.016	0.016	568.299	0.017	0.004	Rough Terrain Forklifts
0.443	0.005	0.016	0.016	568.300	0.017	0.004	Rough Terrain Forklifts
2.034	0.006	0.111	0.111	568.299	0.035	0.004	Rubber Tired Dozers
1.828	0.006	0.069	0.069	568.299	0.030	0.004	Rubber Tired Dozers
1.658	0.005	0.064	0.064	568.299	0.029	0.004	Rubber Tired Dozers
1.694	0.005	0.064	0.064	568.299	0.029	0.004	Rubber Tired Dozers
3.676	0.005	0.082	0.082	568.299	0.030	0.004	Rubber Tired Dozers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Rubber Tired Loaders
3.500	0.007	0.062	0.062	568.300	0.057	0.005	Rubber Tired Loaders
1.875	0.006	0.056	0.056	568.299	0.028	0.004	Rubber Tired Loaders
0.787	0.006	0.036	0.036	568.299	0.020	0.004	Rubber Tired Loaders

0.655	0.006	0.022	0.022	568.299	0.018	0.004	Rubber Tired Loaders
0.619	0.005	0.021	0.021	568.299	0.018	0.004	Rubber Tired Loaders
0.627	0.005	0.022	0.022	568.299	0.018	0.004	Rubber Tired Loaders
2.722	0.005	0.039	0.039	568.299	0.019	0.004	Rubber Tired Loaders
2.384	0.006	0.111	0.111	568.299	0.037	0.004	Scrapers
1.320	0.006	0.068	0.068	568.299	0.027	0.004	Scrapers
1.149	0.006	0.042	0.042	568.299	0.023	0.004	Scrapers
1.057	0.005	0.040	0.040	568.299	0.023	0.004	Scrapers
1.075	0.005	0.040	0.040	568.299	0.023	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
3.193	0.007	0.040	0.040	568.299	0.035	0.005	Signal Boards
1.657	0.006	0.035	0.035	568.300	0.019	0.004	Signal Boards
0.586	0.006	0.024	0.024	568.299	0.014	0.004	Signal Boards
0.594	0.007	0.019	0.019	686.695	0.015	0.004	Signal Boards
4.332	0.007	0.162	0.162	568.299	0.061	0.005	Skid Steer Loaders
3.128	0.007	0.018	0.018	568.299	0.037	0.005	Skid Steer Loaders
1.477	0.006	0.017	0.017	568.299	0.019	0.004	Skid Steer Loaders
3.400	0.007	0.075	0.075	568.299	0.046	0.005	Surfacing Equipment
1.959	0.006	0.068	0.068	568.299	0.023	0.004	Surfacing Equipment
0.939	0.006	0.043	0.043	568.299	0.017	0.004	Surfacing Equipment
0.789	0.006	0.026	0.026	568.299	0.015	0.004	Surfacing Equipment
0.738	0.005	0.025	0.025	568.299	0.015	0.004	Surfacing Equipment
0.749	0.005	0.025	0.025	568.299	0.015	0.004	Surfacing Equipment
4.142	0.008	0.161	0.161	568.299	0.053	0.005	Sweepers/Scrubbers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Sweepers/Scrubbers
3.294	0.007	0.026	0.026	568.299	0.046	0.005	Sweepers/Scrubbers
1.569	0.006	0.023	0.023	568.299	0.023	0.004	Sweepers/Scrubbers
0.431	0.006	0.017	0.017	568.299	0.016	0.004	Sweepers/Scrubbers
0.370	0.006	0.013	0.013	568.299	0.016	0.004	Sweepers/Scrubbers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Tractors/Loaders/Backhoes

3.299	0.007	0.033	0.033	568.299	0.048	0.005	Tractors/Loaders/Backhoes
1.624	0.006	0.030	0.030	568.299	0.024	0.004	Tractors/Loaders/Backhoes
0.485	0.006	0.020	0.020	568.299	0.017	0.004	Tractors/Loaders/Backhoes
0.418	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
0.403	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
0.407	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Trenchers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Trenchers
3.835	0.007	0.144	0.144	568.299	0.076	0.005	Trenchers
2.559	0.006	0.132	0.132	568.299	0.036	0.004	Trenchers
1.529	0.006	0.080	0.080	568.300	0.027	0.004	Trenchers
1.348	0.006	0.049	0.049	568.300	0.023	0.004	Trenchers
1.231	0.005	0.046	0.046	568.299	0.022	0.004	Trenchers
1.254	0.005	0.047	0.047	568.299	0.022	0.004	Trenchers
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Welders
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Welders
3.273	0.007	0.045	0.045	568.299	0.040	0.005	Welders
1.707	0.006	0.040	0.040	568.299	0.021	0.004	Welders
0.628	0.006	0.027	0.027	568.299	0.015	0.004	Welders
0.525	0.006	0.017	0.017	568.299	0.014	0.004	Welders
0.495	0.005	0.017	0.017	568.299	0.014	0.004	Welders
0.563	0.006	0.025	0.025	568.299	0.020	0.004	Water Trucks
0.481	0.006	0.017	0.017	568.300	0.019	0.004	Water Trucks
0.458	0.005	0.017	0.017	568.299	0.019	0.004	Water Trucks
0.463	0.005	0.017	0.017	568.299	0.019	0.004	Water Trucks
2.651	0.005	0.033	0.033	568.300	0.019	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
50	0.339	3.764	3.135	0.007	0.040	0.040	568.300	0.030	0.005
120	0.188	3.352	1.657	0.006	0.036	0.036	568.299	0.017	0.004
500	0.126	0.986	0.479	0.005	0.016	0.016	568.299	0.011	0.004
750	0.126	0.986	0.485	0.005	0.016	0.016	568.299	0.011	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.506	4.712	3.340	0.007	0.046	0.046	568.299	0.045	0.005
120	0.264	3.630	1.729	0.006	0.041	0.041	568.299	0.023	0.004
175	0.193	3.205	0.633	0.006	0.027	0.027	568.299	0.017	0.004
250	0.179	1.092	0.529	0.006	0.018	0.018	568.299	0.016	0.004
500	0.178	1.048	0.499	0.005	0.017	0.017	568.299	0.016	0.004
750	0.178	1.048	0.505	0.005	0.017	0.017	568.300	0.016	0.004
1000	0.182	1.049	2.600	0.005	0.033	0.033	568.299	0.016	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.348	4.029	3.020	0.007	0.013	0.013	568.299	0.031	0.005
120	0.183	3.434	1.415	0.006	0.012	0.012	568.299	0.016	0.004
175	0.127	3.038	0.279	0.006	0.010	0.010	568.299	0.011	0.004
250	0.127	1.035	0.274	0.006	0.010	0.010	568.299	0.011	0.004
500	0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
750	0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
1000	0.127	1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.333	0.007	0.162	0.162	568.299	0.061	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.409	4.199	3.222	0.007	0.041	0.041	568.299	0.036	0.005
120	0.221	3.480	1.667	0.006	0.036	0.036	568.299	0.019	0.004
175	0.163	3.074	0.590	0.006	0.025	0.025	568.299	0.014	0.004
50	0.684	5.366	3.598	0.007	0.075	0.075	568.299	0.061	0.005
120	0.343	3.812	1.987	0.006	0.067	0.067	568.299	0.030	0.004
175	0.253	3.356	0.916	0.006	0.042	0.042	568.299	0.022	0.004
250	0.224	1.147	0.748	0.006	0.024	0.024	568.299	0.020	0.004
500	0.222	1.090	0.697	0.005	0.023	0.023	568.299	0.020	0.004
750	0.222	1.090	0.709	0.005	0.024	0.024	568.300	0.020	0.004
9999	0.245	1.108	2.800	0.005	0.043	0.043	568.299	0.022	0.004
50	0.833	5.605	3.808	0.007	0.116	0.116	568.299	0.075	0.005
120	0.405	3.871	2.341	0.006	0.105	0.105	568.299	0.036	0.004
175	0.296	3.397	1.266	0.006	0.065	0.065	568.299	0.026	0.004
250	0.262	1.207	1.104	0.006	0.040	0.040	568.299	0.023	0.004
500	0.257	1.200	1.016	0.005	0.038	0.038	568.299	0.023	0.004
750	0.257	1.200	1.033	0.005	0.038	0.038	568.299	0.023	0.004
1000	0.265	1.225	3.094	0.005	0.056	0.056	568.300	0.023	0.004
50	0.525	4.857	3.351	0.007	0.043	0.043	568.299	0.047	0.005
120	0.272	3.673	1.708	0.006	0.038	0.038	568.299	0.024	0.004
175	0.197	3.244	0.600	0.006	0.025	0.025	568.299	0.017	0.004
250	0.185	1.105	0.502	0.006	0.017	0.017	568.299	0.016	0.004
500	0.184	1.058	0.476	0.005	0.017	0.017	568.299	0.016	0.004
750	0.184	1.058	0.478	0.005	0.017	0.017	568.299	0.016	0.004
9999	0.196	1.059	2.590	0.005	0.032	0.032	568.299	0.017	0.004

25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.602	5.309	3.393	0.007	0.038	0.038	568.299	0.054	0.005
120	0.301	3.806	1.676	0.006	0.034	0.034	568.299	0.027	0.004
175	0.213	3.362	0.525	0.006	0.023	0.023	568.299	0.019	0.004
250	0.203	1.145	0.452	0.006	0.016	0.016	568.299	0.018	0.004
500	0.202	1.088	0.433	0.005	0.016	0.016	568.299	0.018	0.004
750	0.202	1.088	0.437	0.005	0.016	0.016	568.299	0.018	0.004
50	0.565	5.272	3.330	0.007	0.023	0.023	568.299	0.051	0.005
120	0.283	3.799	1.555	0.006	0.021	0.021	568.299	0.025	0.004
175	0.199	3.360	0.391	0.006	0.015	0.015	568.299	0.018	0.004
250	0.195	1.144	0.341	0.006	0.012	0.012	568.299	0.017	0.004
500	0.195	1.088	0.341	0.005	0.012	0.012	568.299	0.017	0.004
15	0.592	3.470	4.164	0.008	0.166	0.166	568.299	0.053	0.005
25	0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.315	3.640	3.107	0.007	0.038	0.038	568.299	0.028	0.005
120	0.178	3.316	1.645	0.006	0.034	0.034	568.299	0.016	0.004
175	0.130	2.929	0.601	0.006	0.023	0.023	568.299	0.011	0.004
250	0.120	0.998	0.504	0.006	0.016	0.016	568.299	0.010	0.004
500	0.119	0.978	0.476	0.005	0.015	0.015	568.299	0.010	0.004
750	0.119	0.978	0.482	0.005	0.015	0.015	568.299	0.010	0.004
9999	0.128	0.979	2.483	0.005	0.029	0.029	568.299	0.011	0.004
50	0.648	5.239	3.530	0.007	0.065	0.065	568.299	0.058	0.005
120	0.323	3.775	1.903	0.006	0.058	0.058	568.299	0.029	0.004
175	0.237	3.326	0.815	0.006	0.038	0.038	568.300	0.021	0.004
250	0.216	1.148	0.684	0.006	0.024	0.024	568.299	0.019	0.004
500	0.214	1.097	0.647	0.005	0.023	0.023	568.299	0.019	0.004
750	0.214	1.097	0.654	0.005	0.023	0.023	568.299	0.019	0.004
120	0.518	3.944	2.959	0.006	0.175	0.175	568.299	0.046	0.004
175	0.373	3.435	1.916	0.006	0.104	0.104	568.299	0.033	0.004
250	0.315	1.286	1.715	0.006	0.064	0.064	568.299	0.028	0.004
750	0.304	1.351	1.590	0.005	0.060	0.060	568.299	0.027	0.004
1000	0.318	1.409	3.569	0.005	0.078	0.078	568.300	0.028	0.004
175	0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
250	0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004

500	0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
750	0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
1000	0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.429	4.390	3.190	0.007	0.030	0.030	568.299	0.038	0.005
120	0.225	3.538	1.576	0.006	0.027	0.027	568.300	0.020	0.004
175	0.161	3.127	0.459	0.006	0.019	0.019	568.299	0.014	0.004
500	0.154	1.028	0.391	0.005	0.014	0.014	568.300	0.013	0.004
15	0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.609	5.299	3.460	0.007	0.048	0.048	568.299	0.054	0.005
120	0.309	3.802	1.766	0.006	0.043	0.043	568.299	0.027	0.004
175	0.223	3.357	0.641	0.006	0.028	0.028	568.299	0.020	0.004
250	0.209	1.143	0.536	0.006	0.018	0.018	568.299	0.018	0.004
500	0.208	1.087	0.506	0.005	0.018	0.018	568.299	0.018	0.004

750	0.208	1.087	0.512	0.005	0.018	0.018	568.299	0.018	0.004
1000	0.212	1.088	2.660	0.005	0.035	0.035	568.299	0.019	0.004
50	0.598	5.237	3.447	0.007	0.048	0.048	568.299	0.053	0.005
120	0.304	3.784	1.762	0.006	0.043	0.043	568.299	0.027	0.004
175	0.220	3.341	0.640	0.006	0.028	0.028	568.299	0.019	0.004
250	0.206	1.138	0.535	0.006	0.018	0.018	568.299	0.018	0.004
500	0.205	1.083	0.505	0.005	0.018	0.018	568.299	0.018	0.004
9999	0.218	1.084	2.653	0.005	0.035	0.035	568.299	0.019	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.845	5.396	3.841	0.007	0.134	0.134	568.299	0.076	0.005
120	0.408	3.800	2.468	0.006	0.121	0.121	568.300	0.036	0.004
175	0.300	3.326	1.425	0.006	0.074	0.074	568.299	0.027	0.004
250	0.259	1.192	1.246	0.006	0.045	0.045	568.299	0.023	0.004
500	0.253	1.181	1.141	0.005	0.043	0.043	568.299	0.022	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.802	5.309	3.809	0.007	0.126	0.126	568.299	0.072	0.005
120	0.390	3.774	2.393	0.006	0.114	0.114	568.300	0.035	0.004
175	0.290	3.306	1.363	0.006	0.070	0.070	568.299	0.026	0.004
250	0.250	1.171	1.176	0.006	0.042	0.042	568.299	0.022	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
15	0.592	3.470	4.164	0.008	0.166	0.166	568.300	0.053	0.005
25	0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.215	3.124	2.989	0.007	0.030	0.030	568.299	0.019	0.005
120	0.134	3.167	1.594	0.006	0.028	0.028	568.300	0.012	0.004
175	0.126	2.907	0.619	0.006	0.024	0.024	568.299	0.011	0.004

250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.300	0.061	0.005
50	0.348	3.814	3.146	0.007	0.040	0.040	568.299	0.031	0.005
120	0.193	3.367	1.662	0.006	0.036	0.036	568.299	0.017	0.004
175	0.142	2.973	0.610	0.006	0.024	0.024	568.299	0.012	0.004
250	0.130	1.013	0.511	0.006	0.016	0.016	568.299	0.011	0.004
500	0.129	0.989	0.482	0.005	0.016	0.016	568.299	0.011	0.004
750	0.129	0.989	0.488	0.005	0.016	0.016	568.299	0.011	0.004
9999	0.139	0.990	2.504	0.005	0.030	0.030	568.299	0.012	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.587	4.784	3.480	0.007	0.073	0.073	568.299	0.053	0.005
120	0.299	3.639	1.950	0.006	0.066	0.066	568.299	0.027	0.004
175	0.223	3.203	0.907	0.006	0.042	0.042	568.299	0.020	0.004
250	0.195	1.099	0.745	0.006	0.024	0.024	568.299	0.017	0.004
500	0.193	1.056	0.697	0.005	0.023	0.023	568.299	0.017	0.004
50	0.548	5.031	3.359	0.007	0.039	0.039	568.299	0.049	0.005
120	0.279	3.725	1.671	0.006	0.034	0.034	568.299	0.025	0.004
175	0.200	3.291	0.537	0.006	0.023	0.023	568.299	0.018	0.004
250	0.191	1.121	0.463	0.006	0.016	0.016	568.299	0.017	0.004
500	0.190	1.070	0.443	0.005	0.016	0.016	568.300	0.017	0.004
175	0.398	3.496	2.034	0.006	0.111	0.111	568.299	0.035	0.004
250	0.335	1.322	1.828	0.006	0.069	0.069	568.299	0.030	0.004
500	0.322	1.401	1.658	0.005	0.064	0.064	568.299	0.029	0.004
750	0.323	1.401	1.694	0.005	0.064	0.064	568.299	0.029	0.004
1000	0.338	1.465	3.676	0.005	0.082	0.082	568.299	0.030	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.634	5.181	3.500	0.007	0.062	0.062	568.300	0.057	0.005
120	0.317	3.759	1.875	0.006	0.056	0.056	568.299	0.028	0.004
175	0.232	3.312	0.787	0.006	0.036	0.036	568.299	0.020	0.004

250	0.210	1.138	0.655	0.006	0.022	0.022	568.299	0.018	0.004
500	0.208	1.085	0.619	0.005	0.021	0.021	568.299	0.018	0.004
750	0.208	1.085	0.627	0.005	0.022	0.022	568.299	0.018	0.004
1000	0.214	1.099	2.722	0.005	0.039	0.039	568.299	0.019	0.004
120	0.410	3.866	2.384	0.006	0.111	0.111	568.299	0.037	0.004
175	0.301	3.389	1.320	0.006	0.068	0.068	568.299	0.027	0.004
250	0.264	1.206	1.149	0.006	0.042	0.042	568.299	0.023	0.004
500	0.259	1.184	1.057	0.005	0.040	0.040	568.299	0.023	0.004
750	0.259	1.184	1.075	0.005	0.040	0.040	568.299	0.023	0.004
15	0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	0.393	4.099	3.193	0.007	0.040	0.040	568.299	0.035	0.005
120	0.213	3.451	1.657	0.006	0.035	0.035	568.300	0.019	0.004
175	0.157	3.048	0.586	0.006	0.024	0.024	568.299	0.014	0.004
250	0.176	1.255	0.594	0.007	0.019	0.019	686.695	0.015	0.004
25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
50	0.411	4.386	3.128	0.007	0.018	0.018	568.299	0.037	0.005
120	0.214	3.538	1.477	0.006	0.017	0.017	568.299	0.019	0.004
50	0.518	4.295	3.400	0.007	0.075	0.075	568.299	0.046	0.005
120	0.264	3.492	1.959	0.006	0.068	0.068	568.299	0.023	0.004
175	0.197	3.071	0.939	0.006	0.043	0.043	568.299	0.017	0.004
250	0.172	1.064	0.789	0.006	0.026	0.026	568.299	0.015	0.004
500	0.169	1.032	0.738	0.005	0.025	0.025	568.299	0.015	0.004
750	0.169	1.032	0.749	0.005	0.025	0.025	568.299	0.015	0.004
15	0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.509	4.947	3.294	0.007	0.026	0.026	568.299	0.046	0.005
120	0.261	3.703	1.569	0.006	0.023	0.023	568.299	0.023	0.004
175	0.187	3.275	0.431	0.006	0.017	0.017	568.299	0.016	0.004
250	0.182	1.116	0.370	0.006	0.013	0.013	568.299	0.016	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

50	0.539	4.966	3.299	0.007	0.033	0.033	568.299	0.048	0.005
120	0.272	3.705	1.624	0.006	0.030	0.030	568.299	0.024	0.004
175	0.193	3.273	0.485	0.006	0.020	0.020	568.299	0.017	0.004
250	0.183	1.115	0.418	0.006	0.014	0.014	568.299	0.016	0.004
500	0.182	1.066	0.403	0.006	0.014	0.014	568.299	0.016	0.004
750	0.182	1.066	0.407	0.006	0.014	0.014	568.299	0.016	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.851	5.208	3.835	0.007	0.144	0.144	568.299	0.076	0.005
120	0.409	3.743	2.559	0.006	0.132	0.132	568.299	0.036	0.004
175	0.300	3.273	1.529	0.006	0.080	0.080	568.300	0.027	0.004
250	0.256	1.188	1.348	0.006	0.049	0.049	568.300	0.023	0.004
500	0.249	1.209	1.231	0.005	0.046	0.046	568.299	0.022	0.004
750	0.249	1.209	1.254	0.005	0.047	0.047	568.299	0.022	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.449	4.387	3.273	0.007	0.045	0.045	568.299	0.040	0.005
120	0.239	3.535	1.707	0.006	0.040	0.040	568.299	0.021	0.004
175	0.176	3.121	0.628	0.006	0.027	0.027	568.299	0.015	0.004
250	0.162	1.063	0.525	0.006	0.017	0.017	568.299	0.014	0.004
500	0.161	1.027	0.495	0.005	0.017	0.017	568.299	0.014	0.004
175	0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
250	0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004
500	0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
750	0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
1000	0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004

2032

2032		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.162	0.162
Aerial Lifts	50	0.339	3.764	3.135	0.007	0.040	0.040
Aerial Lifts	120	0.188	3.352	1.657	0.006	0.036	0.036
Aerial Lifts	500	0.126	0.986	0.479	0.005	0.016	0.016
Aerial Lifts	750	0.126	0.986	0.485	0.005	0.016	0.016
Air Compressors	15	0.663	3.470	4.164	0.008	0.166	0.166
Air Compressors	25	0.687	2.340	4.347	0.007	0.165	0.165
Air Compressors	50	0.506	4.712	3.340	0.007	0.046	0.046
Air Compressors	120	0.264	3.630	1.729	0.006	0.041	0.041
Air Compressors	175	0.193	3.205	0.633	0.006	0.027	0.027
Air Compressors	250	0.179	1.092	0.529	0.006	0.018	0.018
Air Compressors	500	0.178	1.048	0.499	0.005	0.017	0.017
Air Compressors	750	0.178	1.048	0.505	0.005	0.017	0.017
Air Compressors	1000	0.182	1.049	2.600	0.005	0.033	0.033
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161
Bore/Drill Rigs	50	0.348	4.029	3.020	0.007	0.013	0.013
Bore/Drill Rigs	120	0.183	3.434	1.415	0.006	0.012	0.012
Bore/Drill Rigs	175	0.127	3.038	0.279	0.006	0.010	0.010
Bore/Drill Rigs	250	0.127	1.035	0.274	0.006	0.010	0.010
Bore/Drill Rigs	500	0.127	1.006	0.274	0.005	0.010	0.010
Bore/Drill Rigs	750	0.127	1.006	0.274	0.005	0.010	0.010
Bore/Drill Rigs	1000	0.127	1.006	2.372	0.005	0.021	0.021

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161
Cement and Mortar Mixers	25	0.685	2.339	4.333	0.007	0.162	0.162
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161
Concrete/Industrial Saws	50	0.409	4.199	3.222	0.007	0.041	0.041
Concrete/Industrial Saws	120	0.221	3.480	1.667	0.006	0.036	0.036
Concrete/Industrial Saws	175	0.163	3.074	0.590	0.006	0.025	0.025
Cranes	50	0.684	5.366	3.598	0.007	0.075	0.075
Cranes	120	0.343	3.812	1.987	0.006	0.067	0.067
Cranes	175	0.253	3.356	0.916	0.006	0.042	0.042
Cranes	250	0.224	1.147	0.748	0.006	0.024	0.024
Cranes	500	0.222	1.090	0.697	0.005	0.023	0.023
Cranes	750	0.222	1.090	0.709	0.005	0.024	0.024
Cranes	9999	0.245	1.108	2.800	0.005	0.043	0.043
Crawler Tractors	50	0.833	5.605	3.808	0.007	0.116	0.116
Crawler Tractors	120	0.405	3.871	2.341	0.006	0.105	0.105
Crawler Tractors	175	0.296	3.397	1.266	0.006	0.065	0.065
Crawler Tractors	250	0.262	1.207	1.104	0.006	0.040	0.040
Crawler Tractors	500	0.257	1.200	1.016	0.005	0.038	0.038
Crawler Tractors	750	0.257	1.200	1.033	0.005	0.038	0.038
Crawler Tractors	1000	0.265	1.225	3.094	0.005	0.056	0.056
Crushing/Proc. Equipment	50	0.525	4.857	3.351	0.007	0.043	0.043
Crushing/Proc. Equipment	120	0.272	3.673	1.708	0.006	0.038	0.038
Crushing/Proc. Equipment	175	0.197	3.244	0.600	0.006	0.025	0.025
Crushing/Proc. Equipment	250	0.185	1.105	0.502	0.006	0.017	0.017
Crushing/Proc. Equipment	500	0.184	1.058	0.476	0.005	0.017	0.017
Crushing/Proc. Equipment	750	0.184	1.058	0.478	0.005	0.017	0.017
Crushing/Proc. Equipment	9999	0.196	1.059	2.590	0.005	0.032	0.032

Dumpers/Tenders	25	0.685	2.340	4.332	0.007	0.161	0.161
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161
Excavators	50	0.602	5.309	3.393	0.007	0.038	0.038
Excavators	120	0.301	3.806	1.676	0.006	0.034	0.034
Excavators	175	0.213	3.362	0.525	0.006	0.023	0.023
Excavators	250	0.203	1.145	0.452	0.006	0.016	0.016
Excavators	500	0.202	1.088	0.433	0.005	0.016	0.016
Excavators	750	0.202	1.088	0.437	0.005	0.016	0.016
Forklifts	50	0.565	5.272	3.330	0.007	0.023	0.023
Forklifts	120	0.283	3.799	1.555	0.006	0.021	0.021
Forklifts	175	0.199	3.360	0.391	0.006	0.015	0.015
Forklifts	250	0.195	1.144	0.341	0.006	0.012	0.012
Forklifts	500	0.195	1.088	0.341	0.005	0.012	0.012
Generator Sets	15	0.592	3.470	4.164	0.008	0.166	0.166
Generator Sets	25	0.686	2.340	4.347	0.007	0.165	0.165
Generator Sets	50	0.315	3.640	3.107	0.007	0.038	0.038
Generator Sets	120	0.178	3.316	1.645	0.006	0.034	0.034
Generator Sets	175	0.130	2.929	0.601	0.006	0.023	0.023
Generator Sets	250	0.120	0.998	0.504	0.006	0.016	0.016
Generator Sets	500	0.119	0.978	0.476	0.005	0.015	0.015
Generator Sets	750	0.119	0.978	0.482	0.005	0.015	0.015
Generator Sets	9999	0.128	0.979	2.483	0.005	0.029	0.029
Graders	50	0.648	5.239	3.530	0.007	0.065	0.065
Graders	120	0.323	3.775	1.903	0.006	0.058	0.058
Graders	175	0.237	3.326	0.815	0.006	0.038	0.038
Graders	250	0.216	1.148	0.684	0.006	0.024	0.024
Graders	500	0.214	1.097	0.647	0.005	0.023	0.023
Graders	750	0.214	1.097	0.654	0.005	0.023	0.023
Off-Highway Tractors	120	0.518	3.944	2.959	0.006	0.175	0.175
Off-Highway Tractors	175	0.373	3.435	1.916	0.006	0.104	0.104
Off-Highway Tractors	250	0.315	1.286	1.715	0.006	0.064	0.064
Off-Highway Tractors	750	0.304	1.351	1.590	0.005	0.060	0.060
Off-Highway Tractors	1000	0.318	1.409	3.569	0.005	0.078	0.078
Off-Highway Trucks	175	0.229	3.425	0.563	0.006	0.025	0.025
Off-Highway Trucks	250	0.217	1.166	0.481	0.006	0.017	0.017

Off-Highway Trucks	500	0.216	1.104	0.458	0.005	0.017	0.017
Off-Highway Trucks	750	0.217	1.104	0.463	0.005	0.017	0.017
Off-Highway Trucks	1000	0.220	1.107	2.651	0.005	0.033	0.033
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Other Construction Equipment	50	0.429	4.390	3.190	0.007	0.030	0.030
Other Construction Equipment	120	0.225	3.538	1.576	0.006	0.027	0.027
Other Construction Equipment	175	0.161	3.127	0.459	0.006	0.019	0.019
Other Construction Equipment	500	0.154	1.028	0.391	0.005	0.014	0.014
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Other General Industrial Equipment	50	0.609	5.299	3.460	0.007	0.048	0.048
Other General Industrial Equipment	120	0.309	3.802	1.766	0.006	0.043	0.043
Other General Industrial Equipment	175	0.223	3.357	0.641	0.006	0.028	0.028
Other General Industrial Equipment	250	0.209	1.143	0.536	0.006	0.018	0.018
Other General Industrial Equipment	500	0.208	1.087	0.506	0.005	0.018	0.018

Other General Industrial Equipment	750	0.208	1.087	0.512	0.005	0.018	0.018
Other General Industrial Equipment	1000	0.212	1.088	2.660	0.005	0.035	0.035
Other Material Handling Equipment	50	0.598	5.237	3.447	0.007	0.048	0.048
Other Material Handling Equipment	120	0.304	3.784	1.762	0.006	0.043	0.043
Other Material Handling Equipment	175	0.220	3.341	0.640	0.006	0.028	0.028
Other Material Handling Equipment	250	0.206	1.138	0.535	0.006	0.018	0.018
Other Material Handling Equipment	500	0.205	1.083	0.505	0.005	0.018	0.018
Other Material Handling Equipment	9999	0.218	1.084	2.653	0.005	0.035	0.035
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161
Pavers	50	0.845	5.396	3.841	0.007	0.134	0.134
Pavers	120	0.408	3.800	2.468	0.006	0.121	0.121
Pavers	175	0.300	3.326	1.425	0.006	0.074	0.074
Pavers	250	0.259	1.192	1.246	0.006	0.045	0.045
Pavers	500	0.253	1.181	1.141	0.005	0.043	0.043
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Paving Equipment	50	0.802	5.309	3.809	0.007	0.126	0.126
Paving Equipment	120	0.390	3.774	2.393	0.006	0.114	0.114
Paving Equipment	175	0.290	3.306	1.363	0.006	0.070	0.070
Paving Equipment	250	0.250	1.171	1.176	0.006	0.042	0.042
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161
Pressure Washers	15	0.592	3.470	4.164	0.008	0.166	0.166
Pressure Washers	25	0.686	2.340	4.347	0.007	0.165	0.165
Pressure Washers	50	0.215	3.124	2.989	0.007	0.030	0.030
Pressure Washers	120	0.134	3.167	1.594	0.006	0.028	0.028
Pressure Washers	175	0.126	2.907	0.619	0.006	0.024	0.024

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009
Pumps	15	0.663	3.470	4.164	0.008	0.166	0.166
Pumps	25	0.687	2.340	4.347	0.007	0.165	0.165
Pumps	50	0.348	3.814	3.146	0.007	0.040	0.040
Pumps	120	0.193	3.367	1.662	0.006	0.036	0.036
Pumps	175	0.142	2.973	0.610	0.006	0.024	0.024
Pumps	250	0.130	1.013	0.511	0.006	0.016	0.016
Pumps	500	0.129	0.989	0.482	0.005	0.016	0.016
Pumps	750	0.129	0.989	0.488	0.005	0.016	0.016
Pumps	9999	0.139	0.990	2.504	0.005	0.030	0.030
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161
Rollers	25	0.685	2.339	4.332	0.007	0.161	0.161
Rollers	50	0.587	4.784	3.480	0.007	0.073	0.073
Rollers	120	0.299	3.639	1.950	0.006	0.066	0.066
Rollers	175	0.223	3.203	0.907	0.006	0.042	0.042
Rollers	250	0.195	1.099	0.745	0.006	0.024	0.024
Rollers	500	0.193	1.056	0.697	0.005	0.023	0.023
Rough Terrain Forklifts	50	0.548	5.031	3.359	0.007	0.039	0.039
Rough Terrain Forklifts	120	0.279	3.725	1.671	0.006	0.034	0.034
Rough Terrain Forklifts	175	0.200	3.291	0.537	0.006	0.023	0.023
Rough Terrain Forklifts	250	0.191	1.121	0.463	0.006	0.016	0.016
Rough Terrain Forklifts	500	0.190	1.070	0.443	0.005	0.016	0.016
Rubber Tired Dozers	175	0.398	3.496	2.034	0.006	0.111	0.111
Rubber Tired Dozers	250	0.335	1.322	1.828	0.006	0.069	0.069
Rubber Tired Dozers	500	0.322	1.401	1.658	0.005	0.064	0.064
Rubber Tired Dozers	750	0.323	1.401	1.694	0.005	0.064	0.064
Rubber Tired Dozers	1000	0.338	1.465	3.676	0.005	0.082	0.082
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161
Rubber Tired Loaders	50	0.634	5.181	3.500	0.007	0.062	0.062
Rubber Tired Loaders	120	0.317	3.759	1.875	0.006	0.056	0.056
Rubber Tired Loaders	175	0.232	3.312	0.787	0.006	0.036	0.036

Rubber Tired Loaders	250	0.210	1.138	0.655	0.006	0.022	0.022
Rubber Tired Loaders	500	0.208	1.085	0.619	0.005	0.021	0.021
Rubber Tired Loaders	750	0.208	1.085	0.627	0.005	0.022	0.022
Rubber Tired Loaders	1000	0.214	1.099	2.722	0.005	0.039	0.039
Scrapers	120	0.410	3.866	2.384	0.006	0.111	0.111
Scrapers	175	0.301	3.389	1.320	0.006	0.068	0.068
Scrapers	250	0.264	1.206	1.149	0.006	0.042	0.042
Scrapers	500	0.259	1.184	1.057	0.005	0.040	0.040
Scrapers	750	0.259	1.184	1.075	0.005	0.040	0.040
Signal Boards	15	0.661	3.470	4.142	0.008	0.161	0.161
Signal Boards	50	0.393	4.099	3.193	0.007	0.040	0.040
Signal Boards	120	0.213	3.451	1.657	0.006	0.035	0.035
Signal Boards	175	0.157	3.048	0.586	0.006	0.024	0.024
Signal Boards	250	0.176	1.255	0.594	0.007	0.019	0.019
Skid Steer Loaders	25	0.685	2.340	4.332	0.007	0.162	0.162
Skid Steer Loaders	50	0.411	4.386	3.128	0.007	0.018	0.018
Skid Steer Loaders	120	0.214	3.538	1.477	0.006	0.017	0.017
Surfacing Equipment	50	0.518	4.295	3.400	0.007	0.075	0.075
Surfacing Equipment	120	0.264	3.492	1.959	0.006	0.068	0.068
Surfacing Equipment	175	0.197	3.071	0.939	0.006	0.043	0.043
Surfacing Equipment	250	0.172	1.064	0.789	0.006	0.026	0.026
Surfacing Equipment	500	0.169	1.032	0.738	0.005	0.025	0.025
Surfacing Equipment	750	0.169	1.032	0.749	0.005	0.025	0.025
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161
Sweepers/Scrubbers	50	0.509	4.947	3.294	0.007	0.026	0.026
Sweepers/Scrubbers	120	0.261	3.703	1.569	0.006	0.023	0.023
Sweepers/Scrubbers	175	0.187	3.275	0.431	0.006	0.017	0.017
Sweepers/Scrubbers	250	0.182	1.116	0.370	0.006	0.013	0.013
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161

Tractors/Loaders/Backhoes	50	0.539	4.966	3.299	0.007	0.033	0.033
Tractors/Loaders/Backhoes	120	0.272	3.705	1.624	0.006	0.030	0.030
Tractors/Loaders/Backhoes	175	0.193	3.273	0.485	0.006	0.020	0.020
Tractors/Loaders/Backhoes	250	0.183	1.115	0.418	0.006	0.014	0.014
Tractors/Loaders/Backhoes	500	0.182	1.066	0.403	0.006	0.014	0.014
Tractors/Loaders/Backhoes	750	0.182	1.066	0.407	0.006	0.014	0.014
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161
Trenchers	50	0.851	5.208	3.835	0.007	0.144	0.144
Trenchers	120	0.409	3.743	2.559	0.006	0.132	0.132
Trenchers	175	0.300	3.273	1.529	0.006	0.080	0.080
Trenchers	250	0.256	1.188	1.348	0.006	0.049	0.049
Trenchers	500	0.249	1.209	1.231	0.005	0.046	0.046
Trenchers	750	0.249	1.209	1.254	0.005	0.047	0.047
Welders	15	0.663	3.470	4.164	0.008	0.166	0.166
Welders	25	0.687	2.340	4.347	0.007	0.165	0.165
Welders	50	0.449	4.387	3.273	0.007	0.045	0.045
Welders	120	0.239	3.535	1.707	0.006	0.040	0.040
Welders	175	0.176	3.121	0.628	0.006	0.027	0.027
Welders	250	0.162	1.063	0.525	0.006	0.017	0.017
Welders	500	0.161	1.027	0.495	0.005	0.017	0.017
Water Trucks	175	0.229	3.425	0.563	0.006	0.025	0.025
Water Trucks	250	0.217	1.166	0.481	0.006	0.017	0.017
Water Trucks	500	0.216	1.104	0.458	0.005	0.017	0.017
Water Trucks	750	0.217	1.104	0.463	0.005	0.017	0.017
Water Trucks	1000	0.220	1.107	2.651	0.005	0.033	0.033

2033

g/hp/hr	g/hp/hr	g/hp/hr
CO2	CH4	N2O
568.299	0.059	0.005
568.299	0.061	0.005
568.300	0.030	0.005
568.299	0.017	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.045	0.005
568.299	0.023	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.300	0.016	0.004
568.299	0.016	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.031	0.005
568.299	0.016	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004

2033		g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX
Aerial Lifts	15	0.661	3.469	4.142
Aerial Lifts	25	0.685	2.339	4.332
Aerial Lifts	50	0.339	3.764	3.135
Aerial Lifts	120	0.188	3.352	1.657
Aerial Lifts	500	0.126	0.986	0.479
Aerial Lifts	750	0.126	0.986	0.485
Air Compressors	15	0.663	3.470	4.164
Air Compressors	25	0.687	2.340	4.347
Air Compressors	50	0.506	4.712	3.340
Air Compressors	120	0.264	3.630	1.729
Air Compressors	175	0.193	3.205	0.633
Air Compressors	250	0.179	1.092	0.529
Air Compressors	500	0.178	1.048	0.499
Air Compressors	750	0.178	1.048	0.505
Air Compressors	1000	0.182	1.049	2.600
Bore/Drill Rigs	15	0.661	3.469	4.142
Bore/Drill Rigs	25	0.685	2.339	4.332
Bore/Drill Rigs	50	0.348	4.029	3.020
Bore/Drill Rigs	120	0.183	3.434	1.415
Bore/Drill Rigs	175	0.127	3.038	0.279
Bore/Drill Rigs	250	0.127	1.035	0.274
Bore/Drill Rigs	500	0.127	1.006	0.274
Bore/Drill Rigs	750	0.127	1.006	0.274
Bore/Drill Rigs	1000	0.127	1.006	2.372

568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.061	0.005
568.299	0.036	0.005
568.299	0.019	0.004
568.299	0.014	0.004
568.299	0.061	0.005
568.299	0.030	0.004
568.299	0.022	0.004
568.299	0.020	0.004
568.299	0.020	0.004
568.300	0.020	0.004
568.299	0.022	0.004
568.299	0.075	0.005
568.299	0.036	0.004
568.299	0.026	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.300	0.023	0.004
568.299	0.047	0.005
568.299	0.024	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.017	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142
Cement and Mortar Mixers	25	0.685	2.339	4.333
Concrete/Industrial Saws	25	0.685	2.339	4.332
Concrete/Industrial Saws	50	0.409	4.199	3.222
Concrete/Industrial Saws	120	0.221	3.480	1.667
Concrete/Industrial Saws	175	0.163	3.074	0.590
Cranes	50	0.684	5.366	3.598
Cranes	120	0.343	3.812	1.987
Cranes	175	0.253	3.356	0.916
Cranes	250	0.224	1.147	0.748
Cranes	500	0.222	1.090	0.697
Cranes	750	0.222	1.090	0.709
Cranes	9999	0.245	1.108	2.800
Crawler Tractors	50	0.833	5.605	3.808
Crawler Tractors	120	0.405	3.871	2.341
Crawler Tractors	175	0.296	3.397	1.266
Crawler Tractors	250	0.262	1.207	1.104
Crawler Tractors	500	0.257	1.200	1.016
Crawler Tractors	750	0.257	1.200	1.033
Crawler Tractors	1000	0.265	1.225	3.094
Crushing/Proc. Equipment	50	0.525	4.857	3.351
Crushing/Proc. Equipment	120	0.272	3.673	1.708
Crushing/Proc. Equipment	175	0.197	3.244	0.600
Crushing/Proc. Equipment	250	0.185	1.105	0.502
Crushing/Proc. Equipment	500	0.184	1.058	0.476
Crushing/Proc. Equipment	750	0.184	1.058	0.478
Crushing/Proc. Equipment	9999	0.196	1.059	2.590

568.299	0.061	0.005
568.299	0.061	0.005
568.299	0.054	0.005
568.299	0.027	0.004
568.299	0.019	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.051	0.005
568.299	0.025	0.004
568.299	0.018	0.004
568.299	0.017	0.004
568.299	0.017	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.028	0.005
568.299	0.016	0.004
568.299	0.011	0.004
568.299	0.010	0.004
568.299	0.010	0.004
568.299	0.010	0.004
568.299	0.011	0.004
568.299	0.058	0.005
568.299	0.029	0.004
568.300	0.021	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.299	0.046	0.004
568.299	0.033	0.004
568.299	0.028	0.004
568.299	0.027	0.004
568.300	0.028	0.004
568.299	0.020	0.004
568.300	0.019	0.004

Dumpers/Tenders	25	0.685	2.340	4.332
Excavators	25	0.685	2.339	4.332
Excavators	50	0.602	5.309	3.393
Excavators	120	0.301	3.806	1.676
Excavators	175	0.213	3.362	0.525
Excavators	250	0.203	1.145	0.452
Excavators	500	0.202	1.088	0.433
Excavators	750	0.202	1.088	0.437
Forklifts	50	0.565	5.272	3.330
Forklifts	120	0.283	3.799	1.555
Forklifts	175	0.199	3.360	0.391
Forklifts	250	0.195	1.144	0.341
Forklifts	500	0.195	1.088	0.341
Generator Sets	15	0.592	3.470	4.164
Generator Sets	25	0.686	2.340	4.347
Generator Sets	50	0.315	3.640	3.107
Generator Sets	120	0.178	3.316	1.645
Generator Sets	175	0.130	2.929	0.601
Generator Sets	250	0.120	0.998	0.504
Generator Sets	500	0.119	0.978	0.476
Generator Sets	750	0.119	0.978	0.482
Generator Sets	9999	0.128	0.979	2.483
Graders	50	0.648	5.239	3.530
Graders	120	0.323	3.775	1.903
Graders	175	0.237	3.326	0.815
Graders	250	0.216	1.148	0.684
Graders	500	0.214	1.097	0.647
Graders	750	0.214	1.097	0.654
Off-Highway Tractors	120	0.518	3.944	2.959
Off-Highway Tractors	175	0.373	3.435	1.916
Off-Highway Tractors	250	0.315	1.286	1.715
Off-Highway Tractors	750	0.304	1.351	1.590
Off-Highway Tractors	1000	0.318	1.409	3.569
Off-Highway Trucks	175	0.229	3.425	0.563
Off-Highway Trucks	250	0.217	1.166	0.481

568.299	0.019	0.004
568.299	0.019	0.004
568.300	0.019	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.038	0.005
568.300	0.020	0.004
568.299	0.014	0.004
568.300	0.013	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.054	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.018	0.004
568.299	0.018	0.004

Off-Highway Trucks	500	0.216	1.104	0.458
Off-Highway Trucks	750	0.217	1.104	0.463
Off-Highway Trucks	1000	0.220	1.107	2.651
Other Construction Equipment	15	0.661	3.469	4.142
Other Construction Equipment	25	0.685	2.339	4.332
Other Construction Equipment	50	0.429	4.390	3.190
Other Construction Equipment	120	0.225	3.538	1.576
Other Construction Equipment	175	0.161	3.127	0.459
Other Construction Equipment	500	0.154	1.028	0.391
Other General Industrial Equipment	15	0.589	3.469	4.142
Other General Industrial Equipment	25	0.685	2.339	4.332
Other General Industrial Equipment	50	0.609	5.299	3.460
Other General Industrial Equipment	120	0.309	3.802	1.766
Other General Industrial Equipment	175	0.223	3.357	0.641
Other General Industrial Equipment	250	0.209	1.143	0.536
Other General Industrial Equipment	500	0.208	1.087	0.506

568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.053	0.005
568.299	0.027	0.004
568.299	0.019	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.061	0.005
568.299	0.076	0.005
568.300	0.036	0.004
568.299	0.027	0.004
568.299	0.023	0.004
568.299	0.022	0.004
568.299	0.061	0.005
568.299	0.072	0.005
568.300	0.035	0.004
568.299	0.026	0.004
568.299	0.022	0.004
568.299	0.059	0.005
568.300	0.053	0.005
568.299	0.061	0.005
568.299	0.019	0.005
568.300	0.012	0.004
568.299	0.011	0.004

Other General Industrial Equipment	750	0.208	1.087	0.512
Other General Industrial Equipment	1000	0.212	1.088	2.660
Other Material Handling Equipment	50	0.598	5.237	3.447
Other Material Handling Equipment	120	0.304	3.784	1.762
Other Material Handling Equipment	175	0.220	3.341	0.640
Other Material Handling Equipment	250	0.206	1.138	0.535
Other Material Handling Equipment	500	0.205	1.083	0.505
Other Material Handling Equipment	9999	0.218	1.084	2.653
Pavers	25	0.685	2.339	4.332
Pavers	50	0.845	5.396	3.841
Pavers	120	0.408	3.800	2.468
Pavers	175	0.300	3.326	1.425
Pavers	250	0.259	1.192	1.246
Pavers	500	0.253	1.181	1.141
Paving Equipment	25	0.685	2.339	4.332
Paving Equipment	50	0.802	5.309	3.809
Paving Equipment	120	0.390	3.774	2.393
Paving Equipment	175	0.290	3.306	1.363
Paving Equipment	250	0.250	1.171	1.176
Plate Compactors	15	0.661	3.469	4.142
Pressure Washers	15	0.592	3.470	4.164
Pressure Washers	25	0.686	2.340	4.347
Pressure Washers	50	0.215	3.124	2.989
Pressure Washers	120	0.134	3.167	1.594
Pressure Washers	175	0.126	2.907	0.619

568.299	0.008	0.004
568.299	0.059	0.005
568.300	0.061	0.005
568.299	0.031	0.005
568.299	0.017	0.004
568.299	0.012	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.012	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.053	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.017	0.004
568.299	0.017	0.004
568.299	0.049	0.005
568.299	0.025	0.004
568.299	0.018	0.004
568.299	0.017	0.004
568.300	0.017	0.004
568.299	0.035	0.004
568.299	0.030	0.004
568.299	0.029	0.004
568.299	0.029	0.004
568.299	0.030	0.004
568.299	0.061	0.005
568.300	0.057	0.005
568.299	0.028	0.004
568.299	0.020	0.004

Pressure Washers	250	0.098	0.986	0.265
Pumps	15	0.663	3.470	4.164
Pumps	25	0.687	2.340	4.347
Pumps	50	0.348	3.814	3.146
Pumps	120	0.193	3.367	1.662
Pumps	175	0.142	2.973	0.610
Pumps	250	0.130	1.013	0.511
Pumps	500	0.129	0.989	0.482
Pumps	750	0.129	0.989	0.488
Pumps	9999	0.139	0.990	2.504
Rollers	15	0.661	3.469	4.142
Rollers	25	0.685	2.339	4.332
Rollers	50	0.587	4.784	3.480
Rollers	120	0.299	3.639	1.950
Rollers	175	0.223	3.203	0.907
Rollers	250	0.195	1.099	0.745
Rollers	500	0.193	1.056	0.697
Rough Terrain Forklifts	50	0.548	5.031	3.359
Rough Terrain Forklifts	120	0.279	3.725	1.671
Rough Terrain Forklifts	175	0.200	3.291	0.537
Rough Terrain Forklifts	250	0.191	1.121	0.463
Rough Terrain Forklifts	500	0.190	1.070	0.443
Rubber Tired Dozers	175	0.398	3.496	2.034
Rubber Tired Dozers	250	0.335	1.322	1.828
Rubber Tired Dozers	500	0.322	1.401	1.658
Rubber Tired Dozers	750	0.323	1.401	1.694
Rubber Tired Dozers	1000	0.338	1.465	3.676
Rubber Tired Loaders	25	0.685	2.339	4.332
Rubber Tired Loaders	50	0.634	5.181	3.500
Rubber Tired Loaders	120	0.317	3.759	1.875
Rubber Tired Loaders	175	0.232	3.312	0.787

568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.037	0.004
568.299	0.027	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.059	0.005
568.299	0.035	0.005
568.300	0.019	0.004
568.299	0.014	0.004
686.695	0.015	0.004
568.299	0.061	0.005
568.299	0.037	0.005
568.299	0.019	0.004
568.299	0.046	0.005
568.299	0.023	0.004
568.299	0.017	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.046	0.005
568.299	0.023	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.061	0.005

Rubber Tired Loaders	250	0.210	1.138	0.655
Rubber Tired Loaders	500	0.208	1.085	0.619
Rubber Tired Loaders	750	0.208	1.085	0.627
Rubber Tired Loaders	1000	0.214	1.099	2.722
Scrapers	120	0.410	3.866	2.384
Scrapers	175	0.301	3.389	1.320
Scrapers	250	0.264	1.206	1.149
Scrapers	500	0.259	1.184	1.057
Scrapers	750	0.259	1.184	1.075
Signal Boards	15	0.661	3.470	4.142
Signal Boards	50	0.393	4.099	3.193
Signal Boards	120	0.213	3.451	1.657
Signal Boards	175	0.157	3.048	0.586
Signal Boards	250	0.176	1.255	0.594
Skid Steer Loaders	25	0.685	2.340	4.332
Skid Steer Loaders	50	0.411	4.386	3.128
Skid Steer Loaders	120	0.214	3.538	1.477
Surfacing Equipment	50	0.518	4.295	3.400
Surfacing Equipment	120	0.264	3.492	1.959
Surfacing Equipment	175	0.197	3.071	0.939
Surfacing Equipment	250	0.172	1.064	0.789
Surfacing Equipment	500	0.169	1.032	0.738
Surfacing Equipment	750	0.169	1.032	0.749
Sweepers/Scrubbers	15	0.589	3.470	4.142
Sweepers/Scrubbers	25	0.685	2.340	4.332
Sweepers/Scrubbers	50	0.509	4.947	3.294
Sweepers/Scrubbers	120	0.261	3.703	1.569
Sweepers/Scrubbers	175	0.187	3.275	0.431
Sweepers/Scrubbers	250	0.182	1.116	0.370
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332

568.299	0.048	0.005
568.299	0.024	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.076	0.005
568.299	0.036	0.004
568.300	0.027	0.004
568.300	0.023	0.004
568.299	0.022	0.004
568.299	0.022	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.040	0.005
568.299	0.021	0.004
568.299	0.015	0.004
568.299	0.014	0.004
568.299	0.014	0.004
568.299	0.020	0.004
568.300	0.019	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.300	0.019	0.004

Tractors/Loaders/Backhoes	50	0.539	4.966	3.299
Tractors/Loaders/Backhoes	120	0.272	3.705	1.624
Tractors/Loaders/Backhoes	175	0.193	3.273	0.485
Tractors/Loaders/Backhoes	250	0.183	1.115	0.418
Tractors/Loaders/Backhoes	500	0.182	1.066	0.403
Tractors/Loaders/Backhoes	750	0.182	1.066	0.407
Trenchers	15	0.661	3.469	4.142
Trenchers	25	0.685	2.339	4.332
Trenchers	50	0.851	5.208	3.835
Trenchers	120	0.409	3.743	2.559
Trenchers	175	0.300	3.273	1.529
Trenchers	250	0.256	1.188	1.348
Trenchers	500	0.249	1.209	1.231
Trenchers	750	0.249	1.209	1.254
Welders	15	0.663	3.470	4.164
Welders	25	0.687	2.340	4.347
Welders	50	0.449	4.387	3.273
Welders	120	0.239	3.535	1.707
Welders	175	0.176	3.121	0.628
Welders	250	0.162	1.063	0.525
Welders	500	0.161	1.027	0.495
Water Trucks	175	0.229	3.425	0.563
Water Trucks	250	0.217	1.166	0.481
Water Trucks	500	0.216	1.104	0.458
Water Trucks	750	0.217	1.104	0.463
Water Trucks	1000	0.220	1.107	2.651

2034

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
SOX	PM10	PM2.5	CO2	CH4	N2O
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.040	0.040	568.300	0.030	0.005
0.006	0.036	0.036	568.299	0.017	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.046	0.046	568.299	0.045	0.005
0.006	0.041	0.041	568.299	0.023	0.004
0.006	0.027	0.027	568.299	0.017	0.004
0.006	0.018	0.018	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.300	0.016	0.004
0.005	0.033	0.033	568.299	0.016	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.013	0.013	568.299	0.031	0.005
0.006	0.012	0.012	568.299	0.016	0.004
0.006	0.010	0.010	568.299	0.011	0.004
0.006	0.010	0.010	568.299	0.011	0.004
0.005	0.010	0.010	568.299	0.011	0.004
0.005	0.010	0.010	568.299	0.011	0.004
0.005	0.021	0.021	568.299	0.011	0.004

2034	
Equipment	**MaxHP**
Aerial Lifts	15
Aerial Lifts	25
Aerial Lifts	50
Aerial Lifts	120
Aerial Lifts	500
Aerial Lifts	750
Air Compressors	15
Air Compressors	25
Air Compressors	50
Air Compressors	120
Air Compressors	175
Air Compressors	250
Air Compressors	500
Air Compressors	750
Air Compressors	1000
Bore/Drill Rigs	15
Bore/Drill Rigs	25
Bore/Drill Rigs	50
Bore/Drill Rigs	120
Bore/Drill Rigs	175
Bore/Drill Rigs	250
Bore/Drill Rigs	500
Bore/Drill Rigs	750
Bore/Drill Rigs	1000

0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.041	0.041	568.299	0.036	0.005
0.006	0.036	0.036	568.299	0.019	0.004
0.006	0.025	0.025	568.299	0.014	0.004
0.007	0.075	0.075	568.299	0.061	0.005
0.006	0.067	0.067	568.299	0.030	0.004
0.006	0.042	0.042	568.299	0.022	0.004
0.006	0.024	0.024	568.299	0.020	0.004
0.005	0.023	0.023	568.299	0.020	0.004
0.005	0.024	0.024	568.300	0.020	0.004
0.005	0.043	0.043	568.299	0.022	0.004
0.007	0.116	0.116	568.299	0.075	0.005
0.006	0.105	0.105	568.299	0.036	0.004
0.006	0.065	0.065	568.299	0.026	0.004
0.006	0.040	0.040	568.299	0.023	0.004
0.005	0.038	0.038	568.299	0.023	0.004
0.005	0.038	0.038	568.299	0.023	0.004
0.005	0.056	0.056	568.300	0.023	0.004
0.007	0.043	0.043	568.299	0.047	0.005
0.006	0.038	0.038	568.299	0.024	0.004
0.006	0.025	0.025	568.299	0.017	0.004
0.006	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.032	0.032	568.299	0.017	0.004

Cement and Mortar Mixers	15
Cement and Mortar Mixers	25
Concrete/Industrial Saws	25
Concrete/Industrial Saws	50
Concrete/Industrial Saws	120
Concrete/Industrial Saws	175
Cranes	50
Cranes	120
Cranes	175
Cranes	250
Cranes	500
Cranes	750
Cranes	9999
Crawler Tractors	50
Crawler Tractors	120
Crawler Tractors	175
Crawler Tractors	250
Crawler Tractors	500
Crawler Tractors	750
Crawler Tractors	1000
Crushing/Proc. Equipment	50
Crushing/Proc. Equipment	120
Crushing/Proc. Equipment	175
Crushing/Proc. Equipment	250
Crushing/Proc. Equipment	500
Crushing/Proc. Equipment	750
Crushing/Proc. Equipment	9999

0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.038	0.038	568.299	0.054	0.005
0.006	0.034	0.034	568.299	0.027	0.004
0.006	0.023	0.023	568.299	0.019	0.004
0.006	0.016	0.016	568.299	0.018	0.004
0.005	0.016	0.016	568.299	0.018	0.004
0.005	0.016	0.016	568.299	0.018	0.004
0.007	0.023	0.023	568.299	0.051	0.005
0.006	0.021	0.021	568.299	0.025	0.004
0.006	0.015	0.015	568.299	0.018	0.004
0.006	0.012	0.012	568.299	0.017	0.004
0.005	0.012	0.012	568.299	0.017	0.004
0.008	0.166	0.166	568.299	0.053	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.038	0.038	568.299	0.028	0.005
0.006	0.034	0.034	568.299	0.016	0.004
0.006	0.023	0.023	568.299	0.011	0.004
0.006	0.016	0.016	568.299	0.010	0.004
0.005	0.015	0.015	568.299	0.010	0.004
0.005	0.015	0.015	568.299	0.010	0.004
0.005	0.029	0.029	568.299	0.011	0.004
0.007	0.065	0.065	568.299	0.058	0.005
0.006	0.058	0.058	568.299	0.029	0.004
0.006	0.038	0.038	568.300	0.021	0.004
0.006	0.024	0.024	568.299	0.019	0.004
0.005	0.023	0.023	568.299	0.019	0.004
0.005	0.023	0.023	568.299	0.019	0.004
0.006	0.175	0.175	568.299	0.046	0.004
0.006	0.104	0.104	568.299	0.033	0.004
0.006	0.064	0.064	568.299	0.028	0.004
0.005	0.060	0.060	568.299	0.027	0.004
0.005	0.078	0.078	568.300	0.028	0.004
0.006	0.025	0.025	568.299	0.020	0.004
0.006	0.017	0.017	568.300	0.019	0.004

Dumpers/Tenders	25
Excavators	25
Excavators	50
Excavators	120
Excavators	175
Excavators	250
Excavators	500
Excavators	750
Forklifts	50
Forklifts	120
Forklifts	175
Forklifts	250
Forklifts	500
Generator Sets	15
Generator Sets	25
Generator Sets	50
Generator Sets	120
Generator Sets	175
Generator Sets	250
Generator Sets	500
Generator Sets	750
Generator Sets	9999
Graders	50
Graders	120
Graders	175
Graders	250
Graders	500
Graders	750
Off-Highway Tractors	120
Off-Highway Tractors	175
Off-Highway Tractors	250
Off-Highway Tractors	750
Off-Highway Tractors	1000
Off-Highway Trucks	175
Off-Highway Trucks	250

0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks	500
0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks	750
0.005	0.033	0.033	568.300	0.019	0.004	Off-Highway Trucks	1000
0.008	0.161	0.161	568.299	0.059	0.005	Other Construction Equipment	15
0.007	0.161	0.161	568.299	0.061	0.005	Other Construction Equipment	25
0.007	0.030	0.030	568.299	0.038	0.005	Other Construction Equipment	50
0.006	0.027	0.027	568.300	0.020	0.004	Other Construction Equipment	120
0.006	0.019	0.019	568.299	0.014	0.004	Other Construction Equipment	175
0.005	0.014	0.014	568.300	0.013	0.004	Other Construction Equipment	500
0.008	0.161	0.161	568.299	0.053	0.005	Other General Industrial Equipment	15
0.007	0.161	0.161	568.299	0.061	0.005	Other General Industrial Equipment	25
0.007	0.048	0.048	568.299	0.054	0.005	Other General Industrial Equipment	50
0.006	0.043	0.043	568.299	0.027	0.004	Other General Industrial Equipment	120
0.006	0.028	0.028	568.299	0.020	0.004	Other General Industrial Equipment	175
0.006	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment	250
0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment	500

0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment	750
0.005	0.035	0.035	568.299	0.019	0.004	Other General Industrial Equipment	1000
0.007	0.048	0.048	568.299	0.053	0.005	Other Material Handling Equipment	50
0.006	0.043	0.043	568.299	0.027	0.004	Other Material Handling Equipment	120
0.006	0.028	0.028	568.299	0.019	0.004	Other Material Handling Equipment	175
0.006	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment	250
0.005	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment	500
0.005	0.035	0.035	568.299	0.019	0.004	Other Material Handling Equipment	9999
0.007	0.161	0.161	568.299	0.061	0.005	Pavers	25
0.007	0.134	0.134	568.299	0.076	0.005	Pavers	50
0.006	0.121	0.121	568.300	0.036	0.004	Pavers	120
0.006	0.074	0.074	568.299	0.027	0.004	Pavers	175
0.006	0.045	0.045	568.299	0.023	0.004	Pavers	250
0.005	0.043	0.043	568.299	0.022	0.004	Pavers	500
0.007	0.161	0.161	568.299	0.061	0.005	Paving Equipment	25
0.007	0.126	0.126	568.299	0.072	0.005	Paving Equipment	50
0.006	0.114	0.114	568.300	0.035	0.004	Paving Equipment	120
0.006	0.070	0.070	568.299	0.026	0.004	Paving Equipment	175
0.006	0.042	0.042	568.299	0.022	0.004	Paving Equipment	250
0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors	15
0.008	0.166	0.166	568.300	0.053	0.005	Pressure Washers	15
0.007	0.165	0.165	568.299	0.061	0.005	Pressure Washers	25
0.007	0.030	0.030	568.299	0.019	0.005	Pressure Washers	50
0.006	0.028	0.028	568.300	0.012	0.004	Pressure Washers	120
0.006	0.024	0.024	568.299	0.011	0.004	Pressure Washers	175

0.006	0.009	0.009	568.299	0.008	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.300	0.061	0.005
0.007	0.040	0.040	568.299	0.031	0.005
0.006	0.036	0.036	568.299	0.017	0.004
0.006	0.024	0.024	568.299	0.012	0.004
0.006	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.030	0.030	568.299	0.012	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.073	0.073	568.299	0.053	0.005
0.006	0.066	0.066	568.299	0.027	0.004
0.006	0.042	0.042	568.299	0.020	0.004
0.006	0.024	0.024	568.299	0.017	0.004
0.005	0.023	0.023	568.299	0.017	0.004
0.007	0.039	0.039	568.299	0.049	0.005
0.006	0.034	0.034	568.299	0.025	0.004
0.006	0.023	0.023	568.299	0.018	0.004
0.006	0.016	0.016	568.299	0.017	0.004
0.005	0.016	0.016	568.300	0.017	0.004
0.006	0.111	0.111	568.299	0.035	0.004
0.006	0.069	0.069	568.299	0.030	0.004
0.005	0.064	0.064	568.299	0.029	0.004
0.005	0.064	0.064	568.299	0.029	0.004
0.005	0.082	0.082	568.299	0.030	0.004
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.062	0.062	568.300	0.057	0.005
0.006	0.056	0.056	568.299	0.028	0.004
0.006	0.036	0.036	568.299	0.020	0.004

Pressure Washers	250
Pumps	15
Pumps	25
Pumps	50
Pumps	120
Pumps	175
Pumps	250
Pumps	500
Pumps	750
Pumps	9999
Rollers	15
Rollers	25
Rollers	50
Rollers	120
Rollers	175
Rollers	250
Rollers	500
Rough Terrain Forklifts	50
Rough Terrain Forklifts	120
Rough Terrain Forklifts	175
Rough Terrain Forklifts	250
Rough Terrain Forklifts	500
Rubber Tired Dozers	175
Rubber Tired Dozers	250
Rubber Tired Dozers	500
Rubber Tired Dozers	750
Rubber Tired Dozers	1000
Rubber Tired Loaders	25
Rubber Tired Loaders	50
Rubber Tired Loaders	120
Rubber Tired Loaders	175

0.006	0.022	0.022	568.299	0.018	0.004
0.005	0.021	0.021	568.299	0.018	0.004
0.005	0.022	0.022	568.299	0.018	0.004
0.005	0.039	0.039	568.299	0.019	0.004
0.006	0.111	0.111	568.299	0.037	0.004
0.006	0.068	0.068	568.299	0.027	0.004
0.006	0.042	0.042	568.299	0.023	0.004
0.005	0.040	0.040	568.299	0.023	0.004
0.005	0.040	0.040	568.299	0.023	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.040	0.040	568.299	0.035	0.005
0.006	0.035	0.035	568.300	0.019	0.004
0.006	0.024	0.024	568.299	0.014	0.004
0.007	0.019	0.019	686.695	0.015	0.004
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.018	0.018	568.299	0.037	0.005
0.006	0.017	0.017	568.299	0.019	0.004
0.007	0.075	0.075	568.299	0.046	0.005
0.006	0.068	0.068	568.299	0.023	0.004
0.006	0.043	0.043	568.299	0.017	0.004
0.006	0.026	0.026	568.299	0.015	0.004
0.005	0.025	0.025	568.299	0.015	0.004
0.005	0.025	0.025	568.299	0.015	0.004
0.008	0.161	0.161	568.299	0.053	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.026	0.026	568.299	0.046	0.005
0.006	0.023	0.023	568.299	0.023	0.004
0.006	0.017	0.017	568.299	0.016	0.004
0.006	0.013	0.013	568.299	0.016	0.004
0.007	0.161	0.161	568.299	0.061	0.005

Rubber Tired Loaders	250
Rubber Tired Loaders	500
Rubber Tired Loaders	750
Rubber Tired Loaders	1000
Scrapers	120
Scrapers	175
Scrapers	250
Scrapers	500
Scrapers	750
Signal Boards	15
Signal Boards	50
Signal Boards	120
Signal Boards	175
Signal Boards	250
Skid Steer Loaders	25
Skid Steer Loaders	50
Skid Steer Loaders	120
Surfacing Equipment	50
Surfacing Equipment	120
Surfacing Equipment	175
Surfacing Equipment	250
Surfacing Equipment	500
Surfacing Equipment	750
Sweepers/Scrubbers	15
Sweepers/Scrubbers	25
Sweepers/Scrubbers	50
Sweepers/Scrubbers	120
Sweepers/Scrubbers	175
Sweepers/Scrubbers	250
Tractors/Loaders/Backhoes	25

0.007	0.033	0.033	568.299	0.048	0.005
0.006	0.030	0.030	568.299	0.024	0.004
0.006	0.020	0.020	568.299	0.017	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.144	0.144	568.299	0.076	0.005
0.006	0.132	0.132	568.299	0.036	0.004
0.006	0.080	0.080	568.300	0.027	0.004
0.006	0.049	0.049	568.300	0.023	0.004
0.005	0.046	0.046	568.299	0.022	0.004
0.005	0.047	0.047	568.299	0.022	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.045	0.045	568.299	0.040	0.005
0.006	0.040	0.040	568.299	0.021	0.004
0.006	0.027	0.027	568.299	0.015	0.004
0.006	0.017	0.017	568.299	0.014	0.004
0.005	0.017	0.017	568.299	0.014	0.004
0.006	0.025	0.025	568.299	0.020	0.004
0.006	0.017	0.017	568.300	0.019	0.004
0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.033	0.033	568.300	0.019	0.004

Tractors/Loaders/Backhoes	50
Tractors/Loaders/Backhoes	120
Tractors/Loaders/Backhoes	175
Tractors/Loaders/Backhoes	250
Tractors/Loaders/Backhoes	500
Tractors/Loaders/Backhoes	750
Trenchers	15
Trenchers	25
Trenchers	50
Trenchers	120
Trenchers	175
Trenchers	250
Trenchers	500
Trenchers	750
Welders	15
Welders	25
Welders	50
Welders	120
Welders	175
Welders	250
Welders	500
Water Trucks	175
Water Trucks	250
Water Trucks	500
Water Trucks	750
Water Trucks	1000

2035

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
0.339	3.764	3.135	0.007	0.040	0.040	568.300	0.030	0.005
0.188	3.352	1.657	0.006	0.036	0.036	568.299	0.017	0.004
0.126	0.986	0.479	0.005	0.016	0.016	568.299	0.011	0.004
0.126	0.986	0.485	0.005	0.016	0.016	568.299	0.011	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.506	4.712	3.340	0.007	0.046	0.046	568.299	0.045	0.005
0.264	3.630	1.729	0.006	0.041	0.041	568.299	0.023	0.004
0.193	3.205	0.633	0.006	0.027	0.027	568.299	0.017	0.004
0.179	1.092	0.529	0.006	0.018	0.018	568.299	0.016	0.004
0.178	1.048	0.499	0.005	0.017	0.017	568.299	0.016	0.004
0.178	1.048	0.505	0.005	0.017	0.017	568.300	0.016	0.004
0.182	1.049	2.600	0.005	0.033	0.033	568.299	0.016	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.348	4.029	3.020	0.007	0.013	0.013	568.299	0.031	0.005
0.183	3.434	1.415	0.006	0.012	0.012	568.299	0.016	0.004
0.127	3.038	0.279	0.006	0.010	0.010	568.299	0.011	0.004
0.127	1.035	0.274	0.006	0.010	0.010	568.299	0.011	0.004
0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
0.127	1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.333	0.007	0.162	0.162	568.299	0.061	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.409	4.199	3.222	0.007	0.041	0.041	568.299	0.036	0.005
0.221	3.480	1.667	0.006	0.036	0.036	568.299	0.019	0.004
0.163	3.074	0.590	0.006	0.025	0.025	568.299	0.014	0.004
0.684	5.366	3.598	0.007	0.075	0.075	568.299	0.061	0.005
0.343	3.812	1.987	0.006	0.067	0.067	568.299	0.030	0.004
0.253	3.356	0.916	0.006	0.042	0.042	568.299	0.022	0.004
0.224	1.147	0.748	0.006	0.024	0.024	568.299	0.020	0.004
0.222	1.090	0.697	0.005	0.023	0.023	568.299	0.020	0.004
0.222	1.090	0.709	0.005	0.024	0.024	568.300	0.020	0.004
0.245	1.108	2.800	0.005	0.043	0.043	568.299	0.022	0.004
0.833	5.605	3.808	0.007	0.116	0.116	568.299	0.075	0.005
0.405	3.871	2.341	0.006	0.105	0.105	568.299	0.036	0.004
0.296	3.397	1.266	0.006	0.065	0.065	568.299	0.026	0.004
0.262	1.207	1.104	0.006	0.040	0.040	568.299	0.023	0.004
0.257	1.200	1.016	0.005	0.038	0.038	568.299	0.023	0.004
0.257	1.200	1.033	0.005	0.038	0.038	568.299	0.023	0.004
0.265	1.225	3.094	0.005	0.056	0.056	568.300	0.023	0.004
0.525	4.857	3.351	0.007	0.043	0.043	568.299	0.047	0.005
0.272	3.673	1.708	0.006	0.038	0.038	568.299	0.024	0.004
0.197	3.244	0.600	0.006	0.025	0.025	568.299	0.017	0.004
0.185	1.105	0.502	0.006	0.017	0.017	568.299	0.016	0.004
0.184	1.058	0.476	0.005	0.017	0.017	568.299	0.016	0.004
0.184	1.058	0.478	0.005	0.017	0.017	568.299	0.016	0.004
0.196	1.059	2.590	0.005	0.032	0.032	568.299	0.017	0.004

0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.602	5.309	3.393	0.007	0.038	0.038	568.299	0.054	0.005
0.301	3.806	1.676	0.006	0.034	0.034	568.299	0.027	0.004
0.213	3.362	0.525	0.006	0.023	0.023	568.299	0.019	0.004
0.203	1.145	0.452	0.006	0.016	0.016	568.299	0.018	0.004
0.202	1.088	0.433	0.005	0.016	0.016	568.299	0.018	0.004
0.202	1.088	0.437	0.005	0.016	0.016	568.299	0.018	0.004
0.565	5.272	3.330	0.007	0.023	0.023	568.299	0.051	0.005
0.283	3.799	1.555	0.006	0.021	0.021	568.299	0.025	0.004
0.199	3.360	0.391	0.006	0.015	0.015	568.299	0.018	0.004
0.195	1.144	0.341	0.006	0.012	0.012	568.299	0.017	0.004
0.195	1.088	0.341	0.005	0.012	0.012	568.299	0.017	0.004
0.592	3.470	4.164	0.008	0.166	0.166	568.299	0.053	0.005
0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.315	3.640	3.107	0.007	0.038	0.038	568.299	0.028	0.005
0.178	3.316	1.645	0.006	0.034	0.034	568.299	0.016	0.004
0.130	2.929	0.601	0.006	0.023	0.023	568.299	0.011	0.004
0.120	0.998	0.504	0.006	0.016	0.016	568.299	0.010	0.004
0.119	0.978	0.476	0.005	0.015	0.015	568.299	0.010	0.004
0.119	0.978	0.482	0.005	0.015	0.015	568.299	0.010	0.004
0.128	0.979	2.483	0.005	0.029	0.029	568.299	0.011	0.004
0.648	5.239	3.530	0.007	0.065	0.065	568.299	0.058	0.005
0.323	3.775	1.903	0.006	0.058	0.058	568.299	0.029	0.004
0.237	3.326	0.815	0.006	0.038	0.038	568.300	0.021	0.004
0.216	1.148	0.684	0.006	0.024	0.024	568.299	0.019	0.004
0.214	1.097	0.647	0.005	0.023	0.023	568.299	0.019	0.004
0.214	1.097	0.654	0.005	0.023	0.023	568.299	0.019	0.004
0.518	3.944	2.959	0.006	0.175	0.175	568.299	0.046	0.004
0.373	3.435	1.916	0.006	0.104	0.104	568.299	0.033	0.004
0.315	1.286	1.715	0.006	0.064	0.064	568.299	0.028	0.004
0.304	1.351	1.590	0.005	0.060	0.060	568.299	0.027	0.004
0.318	1.409	3.569	0.005	0.078	0.078	568.300	0.028	0.004
0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004

0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.429	4.390	3.190	0.007	0.030	0.030	568.299	0.038	0.005
0.225	3.538	1.576	0.006	0.027	0.027	568.300	0.020	0.004
0.161	3.127	0.459	0.006	0.019	0.019	568.299	0.014	0.004
0.154	1.028	0.391	0.005	0.014	0.014	568.300	0.013	0.004
0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.609	5.299	3.460	0.007	0.048	0.048	568.299	0.054	0.005
0.309	3.802	1.766	0.006	0.043	0.043	568.299	0.027	0.004
0.223	3.357	0.641	0.006	0.028	0.028	568.299	0.020	0.004
0.209	1.143	0.536	0.006	0.018	0.018	568.299	0.018	0.004
0.208	1.087	0.506	0.005	0.018	0.018	568.299	0.018	0.004

0.208	1.087	0.512	0.005	0.018	0.018	568.299	0.018	0.004
0.212	1.088	2.660	0.005	0.035	0.035	568.299	0.019	0.004
0.598	5.237	3.447	0.007	0.048	0.048	568.299	0.053	0.005
0.304	3.784	1.762	0.006	0.043	0.043	568.299	0.027	0.004
0.220	3.341	0.640	0.006	0.028	0.028	568.299	0.019	0.004
0.206	1.138	0.535	0.006	0.018	0.018	568.299	0.018	0.004
0.205	1.083	0.505	0.005	0.018	0.018	568.299	0.018	0.004
0.218	1.084	2.653	0.005	0.035	0.035	568.299	0.019	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.845	5.396	3.841	0.007	0.134	0.134	568.299	0.076	0.005
0.408	3.800	2.468	0.006	0.121	0.121	568.300	0.036	0.004
0.300	3.326	1.425	0.006	0.074	0.074	568.299	0.027	0.004
0.259	1.192	1.246	0.006	0.045	0.045	568.299	0.023	0.004
0.253	1.181	1.141	0.005	0.043	0.043	568.299	0.022	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.802	5.309	3.809	0.007	0.126	0.126	568.299	0.072	0.005
0.390	3.774	2.393	0.006	0.114	0.114	568.300	0.035	0.004
0.290	3.306	1.363	0.006	0.070	0.070	568.299	0.026	0.004
0.250	1.171	1.176	0.006	0.042	0.042	568.299	0.022	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.592	3.470	4.164	0.008	0.166	0.166	568.300	0.053	0.005
0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.215	3.124	2.989	0.007	0.030	0.030	568.299	0.019	0.005
0.134	3.167	1.594	0.006	0.028	0.028	568.300	0.012	0.004
0.126	2.907	0.619	0.006	0.024	0.024	568.299	0.011	0.004

0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.300	0.061	0.005
0.348	3.814	3.146	0.007	0.040	0.040	568.299	0.031	0.005
0.193	3.367	1.662	0.006	0.036	0.036	568.299	0.017	0.004
0.142	2.973	0.610	0.006	0.024	0.024	568.299	0.012	0.004
0.130	1.013	0.511	0.006	0.016	0.016	568.299	0.011	0.004
0.129	0.989	0.482	0.005	0.016	0.016	568.299	0.011	0.004
0.129	0.989	0.488	0.005	0.016	0.016	568.299	0.011	0.004
0.139	0.990	2.504	0.005	0.030	0.030	568.299	0.012	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.587	4.784	3.480	0.007	0.073	0.073	568.299	0.053	0.005
0.299	3.639	1.950	0.006	0.066	0.066	568.299	0.027	0.004
0.223	3.203	0.907	0.006	0.042	0.042	568.299	0.020	0.004
0.195	1.099	0.745	0.006	0.024	0.024	568.299	0.017	0.004
0.193	1.056	0.697	0.005	0.023	0.023	568.299	0.017	0.004
0.548	5.031	3.359	0.007	0.039	0.039	568.299	0.049	0.005
0.279	3.725	1.671	0.006	0.034	0.034	568.299	0.025	0.004
0.200	3.291	0.537	0.006	0.023	0.023	568.299	0.018	0.004
0.191	1.121	0.463	0.006	0.016	0.016	568.299	0.017	0.004
0.190	1.070	0.443	0.005	0.016	0.016	568.300	0.017	0.004
0.398	3.496	2.034	0.006	0.111	0.111	568.299	0.035	0.004
0.335	1.322	1.828	0.006	0.069	0.069	568.299	0.030	0.004
0.322	1.401	1.658	0.005	0.064	0.064	568.299	0.029	0.004
0.323	1.401	1.694	0.005	0.064	0.064	568.299	0.029	0.004
0.338	1.465	3.676	0.005	0.082	0.082	568.299	0.030	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.634	5.181	3.500	0.007	0.062	0.062	568.300	0.057	0.005
0.317	3.759	1.875	0.006	0.056	0.056	568.299	0.028	0.004
0.232	3.312	0.787	0.006	0.036	0.036	568.299	0.020	0.004

0.210	1.138	0.655	0.006	0.022	0.022	568.299	0.018	0.004
0.208	1.085	0.619	0.005	0.021	0.021	568.299	0.018	0.004
0.208	1.085	0.627	0.005	0.022	0.022	568.299	0.018	0.004
0.214	1.099	2.722	0.005	0.039	0.039	568.299	0.019	0.004
0.410	3.866	2.384	0.006	0.111	0.111	568.299	0.037	0.004
0.301	3.389	1.320	0.006	0.068	0.068	568.299	0.027	0.004
0.264	1.206	1.149	0.006	0.042	0.042	568.299	0.023	0.004
0.259	1.184	1.057	0.005	0.040	0.040	568.299	0.023	0.004
0.259	1.184	1.075	0.005	0.040	0.040	568.299	0.023	0.004
0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.393	4.099	3.193	0.007	0.040	0.040	568.299	0.035	0.005
0.213	3.451	1.657	0.006	0.035	0.035	568.300	0.019	0.004
0.157	3.048	0.586	0.006	0.024	0.024	568.299	0.014	0.004
0.176	1.255	0.594	0.007	0.019	0.019	686.695	0.015	0.004
0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
0.411	4.386	3.128	0.007	0.018	0.018	568.299	0.037	0.005
0.214	3.538	1.477	0.006	0.017	0.017	568.299	0.019	0.004
0.518	4.295	3.400	0.007	0.075	0.075	568.299	0.046	0.005
0.264	3.492	1.959	0.006	0.068	0.068	568.299	0.023	0.004
0.197	3.071	0.939	0.006	0.043	0.043	568.299	0.017	0.004
0.172	1.064	0.789	0.006	0.026	0.026	568.299	0.015	0.004
0.169	1.032	0.738	0.005	0.025	0.025	568.299	0.015	0.004
0.169	1.032	0.749	0.005	0.025	0.025	568.299	0.015	0.004
0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.509	4.947	3.294	0.007	0.026	0.026	568.299	0.046	0.005
0.261	3.703	1.569	0.006	0.023	0.023	568.299	0.023	0.004
0.187	3.275	0.431	0.006	0.017	0.017	568.299	0.016	0.004
0.182	1.116	0.370	0.006	0.013	0.013	568.299	0.016	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

0.539	4.966	3.299	0.007	0.033	0.033	568.299	0.048	0.005
0.272	3.705	1.624	0.006	0.030	0.030	568.299	0.024	0.004
0.193	3.273	0.485	0.006	0.020	0.020	568.299	0.017	0.004
0.183	1.115	0.418	0.006	0.014	0.014	568.299	0.016	0.004
0.182	1.066	0.403	0.006	0.014	0.014	568.299	0.016	0.004
0.182	1.066	0.407	0.006	0.014	0.014	568.299	0.016	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.851	5.208	3.835	0.007	0.144	0.144	568.299	0.076	0.005
0.409	3.743	2.559	0.006	0.132	0.132	568.299	0.036	0.004
0.300	3.273	1.529	0.006	0.080	0.080	568.300	0.027	0.004
0.256	1.188	1.348	0.006	0.049	0.049	568.300	0.023	0.004
0.249	1.209	1.231	0.005	0.046	0.046	568.299	0.022	0.004
0.249	1.209	1.254	0.005	0.047	0.047	568.299	0.022	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.449	4.387	3.273	0.007	0.045	0.045	568.299	0.040	0.005
0.239	3.535	1.707	0.006	0.040	0.040	568.299	0.021	0.004
0.176	3.121	0.628	0.006	0.027	0.027	568.299	0.015	0.004
0.162	1.063	0.525	0.006	0.017	0.017	568.299	0.014	0.004
0.161	1.027	0.495	0.005	0.017	0.017	568.299	0.014	0.004
0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004
0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004

2035		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019	0.019	568.299
Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017	0.017	568.299
Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011	0.011	568.299
Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011	0.011	568.299
Air Compressors	15	0.661	3.469	4.143	0.008	0.162	0.162	568.300
Air Compressors	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299
Air Compressors	50	0.463	4.674	3.215	0.007	0.023	0.023	568.299
Air Compressors	120	0.238	3.623	1.530	0.006	0.020	0.020	568.299
Air Compressors	175	0.170	3.205	0.391	0.006	0.015	0.015	568.300
Air Compressors	250	0.166	1.091	0.347	0.006	0.012	0.012	568.299
Air Compressors	500	0.166	1.048	0.343	0.005	0.012	0.012	568.299
Air Compressors	750	0.166	1.048	0.344	0.005	0.012	0.012	568.299
Air Compressors	1000	0.167	1.048	2.473	0.005	0.026	0.026	568.299
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013	0.013	568.299
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012	0.012	568.300
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010	0.010	568.299
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010	0.010	568.299
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010	0.010	568.299
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010	0.010	568.299
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021	0.021	568.299

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021	0.021	568.300
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018	0.018	568.299
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014	0.014	568.299
Cranes	50	0.600	5.292	3.401	0.007	0.039	0.039	568.299
Cranes	120	0.300	3.801	1.676	0.006	0.036	0.036	568.300
Cranes	175	0.212	3.357	0.519	0.006	0.024	0.024	568.299
Cranes	250	0.203	1.143	0.463	0.006	0.016	0.016	568.299
Cranes	500	0.202	1.087	0.441	0.005	0.016	0.016	568.299
Cranes	750	0.202	1.087	0.446	0.005	0.016	0.016	568.299
Cranes	9999	0.209	1.089	2.618	0.005	0.031	0.031	568.299
Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066	0.066	568.299
Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060	0.060	568.299
Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038	0.038	568.299
Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026	0.026	568.299
Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025	0.025	568.299
Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025	0.025	568.299
Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041	0.041	568.299
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023	0.023	568.299
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020	0.020	568.299
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015	0.015	568.299
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012	0.012	568.300
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012	0.012	568.299
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012	0.012	568.299
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026	0.026	568.299

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	50	0.572	5.287	3.323	0.007	0.024	0.024	568.299
Excavators	120	0.284	3.802	1.551	0.006	0.021	0.021	568.299
Excavators	175	0.197	3.363	0.365	0.006	0.015	0.015	568.299
Excavators	250	0.195	1.145	0.342	0.006	0.013	0.013	568.300
Excavators	500	0.195	1.089	0.337	0.005	0.013	0.013	568.299
Excavators	750	0.195	1.088	0.338	0.005	0.013	0.013	568.299
Forklifts	50	0.558	5.234	3.268	0.007	0.017	0.017	568.299
Forklifts	120	0.275	3.787	1.495	0.006	0.016	0.016	568.299
Forklifts	175	0.189	3.350	0.299	0.006	0.012	0.012	568.300
Forklifts	250	0.188	1.141	0.290	0.006	0.011	0.011	568.300
Forklifts	500	0.188	1.085	0.290	0.005	0.011	0.011	568.299
Generator Sets	15	0.589	3.470	4.143	0.008	0.162	0.162	568.299
Generator Sets	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Generator Sets	50	0.276	3.607	2.991	0.007	0.018	0.018	568.299
Generator Sets	120	0.156	3.310	1.458	0.006	0.016	0.016	568.299
Generator Sets	175	0.113	2.929	0.373	0.006	0.013	0.013	568.299
Generator Sets	250	0.110	0.998	0.331	0.006	0.011	0.011	568.299
Generator Sets	500	0.110	0.978	0.328	0.005	0.011	0.011	568.299
Generator Sets	750	0.110	0.978	0.328	0.005	0.011	0.011	568.299
Generator Sets	9999	0.114	0.978	2.362	0.005	0.022	0.022	568.299
Graders	50	0.593	5.189	3.356	0.007	0.037	0.037	568.299
Graders	120	0.293	3.767	1.661	0.006	0.034	0.034	568.299
Graders	175	0.206	3.326	0.506	0.006	0.022	0.022	568.300
Graders	250	0.196	1.137	0.452	0.006	0.016	0.016	568.299
Graders	500	0.195	1.083	0.434	0.005	0.016	0.016	568.299
Graders	750	0.195	1.083	0.438	0.005	0.016	0.016	568.299
Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107	0.107	568.299
Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065	0.065	568.299
Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042	0.042	568.299
Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040	0.040	568.299
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056	0.056	568.299
Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299
Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299

Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018	0.018	568.299
Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017	0.017	568.299
Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013	0.013	568.299
Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011	0.011	568.299
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161	568.299
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025	0.025	568.299
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022	0.022	568.300
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016	0.016	568.300
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013	0.013	568.299
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013	0.013	568.299

Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013	0.013	568.299
Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028	0.028	568.299
Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025	0.025	568.299
Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022	0.022	568.299
Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016	0.016	568.299
Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013	0.013	568.299
Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013	0.013	568.299
Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027	0.027	568.299
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Pavers	50	0.694	5.260	3.555	0.007	0.076	0.076	568.299
Pavers	120	0.338	3.774	1.986	0.006	0.069	0.069	568.299
Pavers	175	0.244	3.319	0.889	0.006	0.043	0.043	568.299
Pavers	250	0.221	1.157	0.772	0.006	0.027	0.027	568.300
Pavers	500	0.218	1.111	0.722	0.005	0.026	0.026	568.299
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Paving Equipment	50	0.664	5.181	3.511	0.007	0.070	0.070	568.300
Paving Equipment	120	0.326	3.753	1.928	0.006	0.064	0.064	568.299
Paving Equipment	175	0.235	3.303	0.832	0.006	0.040	0.040	568.299
Paving Equipment	250	0.212	1.140	0.714	0.006	0.024	0.024	568.299
Plate Compactors	15	0.661	3.470	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.589	3.470	4.143	0.008	0.162	0.162	568.300
Pressure Washers	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Pressure Washers	50	0.188	3.101	2.882	0.007	0.015	0.015	568.299
Pressure Washers	120	0.116	3.161	1.421	0.006	0.014	0.014	568.299
Pressure Washers	175	0.109	2.907	0.382	0.006	0.013	0.013	568.299

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299
Pumps	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299
Pumps	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Pumps	50	0.306	3.778	3.028	0.007	0.019	0.019	568.299
Pumps	120	0.170	3.360	1.470	0.006	0.017	0.017	568.299
Pumps	175	0.123	2.973	0.377	0.006	0.014	0.014	568.299
Pumps	250	0.119	1.012	0.335	0.006	0.011	0.011	568.299
Pumps	500	0.119	0.989	0.331	0.005	0.011	0.011	568.299
Pumps	750	0.119	0.989	0.331	0.005	0.011	0.011	568.299
Pumps	9999	0.124	0.989	2.380	0.005	0.023	0.023	568.299
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Rollers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300
Rollers	50	0.507	4.711	3.280	0.007	0.038	0.038	568.299
Rollers	120	0.258	3.629	1.650	0.006	0.035	0.035	568.299
Rollers	175	0.184	3.204	0.523	0.006	0.023	0.023	568.299
Rollers	250	0.173	1.091	0.465	0.006	0.016	0.016	568.299
Rollers	500	0.172	1.048	0.442	0.005	0.016	0.016	568.300
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022	0.022	568.299
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020	0.020	568.299
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015	0.015	568.299
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012	0.012	568.299
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012	0.012	568.300
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071	0.071	568.299
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046	0.046	568.299
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043	0.043	568.300
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043	0.043	568.299
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060	0.060	568.299
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035	0.035	568.299
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033	0.033	568.299
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022	0.022	568.299

Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015	0.015	568.299
Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015	0.015	568.299
Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015	0.015	568.299
Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030	0.030	568.299
Scrapers	120	0.348	3.842	1.943	0.006	0.064	0.064	568.299
Scrapers	175	0.250	3.382	0.824	0.006	0.040	0.040	568.299
Scrapers	250	0.229	1.175	0.717	0.006	0.026	0.026	568.299
Scrapers	500	0.226	1.123	0.674	0.005	0.025	0.025	568.300
Scrapers	750	0.226	1.123	0.682	0.005	0.025	0.025	568.299
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	0.356	4.067	3.082	0.007	0.020	0.020	568.299
Signal Boards	120	0.192	3.445	1.482	0.006	0.018	0.018	568.299
Signal Boards	175	0.138	3.048	0.372	0.006	0.014	0.014	568.299
Signal Boards	250	0.162	1.254	0.401	0.007	0.014	0.014	686.695
Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015	0.015	568.299
Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014	0.014	568.299
Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041	0.041	568.299
Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038	0.038	568.299
Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025	0.025	568.299
Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016	0.016	568.299
Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016	0.016	568.299
Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016	0.016	568.300
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161	568.299
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300
Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017	0.017	568.299
Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016	0.016	568.299
Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012	0.012	568.299
Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011	0.011	568.299
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022	0.022	568.299
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020	0.020	568.299
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015	0.015	568.299
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012	0.012	568.299
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012	0.012	568.299
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012	0.012	568.299
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Trenchers	50	0.681	5.055	3.548	0.007	0.084	0.084	568.299
Trenchers	120	0.332	3.713	2.049	0.006	0.076	0.076	568.300
Trenchers	175	0.241	3.264	0.966	0.006	0.048	0.048	568.299
Trenchers	250	0.216	1.149	0.847	0.006	0.031	0.031	568.299
Trenchers	500	0.213	1.126	0.790	0.005	0.029	0.029	568.299
Trenchers	750	0.213	1.126	0.801	0.005	0.029	0.029	568.300
Welders	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299
Welders	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299
Welders	50	0.406	4.349	3.147	0.007	0.022	0.022	568.299
Welders	120	0.214	3.528	1.509	0.006	0.019	0.019	568.299
Welders	175	0.153	3.121	0.387	0.006	0.015	0.015	568.299
Welders	250	0.149	1.063	0.343	0.006	0.012	0.012	568.299
Welders	500	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Water Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299
Water Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299
Water Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Water Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Water Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299

2036

g/hp/hr	g/hp/hr
CH4	N2O
0.059	0.005
0.061	0.005
0.026	0.005
0.014	0.004
0.010	0.004
0.010	0.004
0.059	0.005
0.061	0.005
0.041	0.005
0.021	0.004
0.015	0.004
0.014	0.004
0.014	0.004
0.014	0.004
0.015	0.004
0.059	0.005
0.061	0.005
0.031	0.005
0.016	0.004
0.011	0.004
0.011	0.004
0.011	0.004
0.011	0.004
0.011	0.004

2036		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.661	3.469	4.142	0.008
Aerial Lifts	25	0.685	2.339	4.332	0.007
Aerial Lifts	50	0.297	3.726	3.017	0.007
Aerial Lifts	120	0.166	3.345	1.466	0.006
Aerial Lifts	500	0.116	0.986	0.330	0.005
Aerial Lifts	750	0.116	0.986	0.330	0.005
Air Compressors	15	0.661	3.469	4.143	0.008
Air Compressors	25	0.685	2.339	4.332	0.007
Air Compressors	50	0.463	4.674	3.215	0.007
Air Compressors	120	0.238	3.623	1.530	0.006
Air Compressors	175	0.170	3.205	0.391	0.006
Air Compressors	250	0.166	1.091	0.347	0.006
Air Compressors	500	0.166	1.048	0.343	0.005
Air Compressors	750	0.166	1.048	0.344	0.005
Air Compressors	1000	0.167	1.048	2.473	0.005
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005

0.059	0.005
0.061	0.005
0.061	0.005
0.033	0.005
0.018	0.004
0.012	0.004
0.054	0.005
0.027	0.004
0.019	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.063	0.005
0.031	0.004
0.022	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.044	0.005
0.022	0.004
0.015	0.004
0.015	0.004
0.015	0.004
0.015	0.004
0.016	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006
Cranes	50	0.600	5.292	3.401	0.007
Cranes	120	0.300	3.801	1.676	0.006
Cranes	175	0.212	3.357	0.519	0.006
Cranes	250	0.203	1.143	0.463	0.006
Cranes	500	0.202	1.087	0.441	0.005
Cranes	750	0.202	1.087	0.446	0.005
Cranes	9999	0.209	1.089	2.618	0.005
Crawler Tractors	50	0.708	5.493	3.558	0.007
Crawler Tractors	120	0.345	3.850	1.922	0.006
Crawler Tractors	175	0.247	3.391	0.794	0.006
Crawler Tractors	250	0.229	1.182	0.695	0.006
Crawler Tractors	500	0.227	1.145	0.657	0.005
Crawler Tractors	750	0.227	1.145	0.664	0.005
Crawler Tractors	1000	0.231	1.159	2.792	0.005
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005

0.061	0.005
0.061	0.005
0.051	0.005
0.025	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.050	0.005
0.024	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.053	0.005
0.061	0.005
0.024	0.005
0.014	0.004
0.010	0.004
0.009	0.004
0.009	0.004
0.009	0.004
0.010	0.004
0.053	0.005
0.026	0.004
0.018	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.037	0.004
0.027	0.004
0.024	0.004
0.023	0.004
0.024	0.004
0.019	0.004
0.018	0.004

Dumpers/Tenders	25	0.685	2.339	4.332	0.007
Excavators	25	0.685	2.339	4.332	0.007
Excavators	50	0.572	5.287	3.323	0.007
Excavators	120	0.284	3.802	1.551	0.006
Excavators	175	0.197	3.363	0.365	0.006
Excavators	250	0.195	1.145	0.342	0.006
Excavators	500	0.195	1.089	0.337	0.005
Excavators	750	0.195	1.088	0.338	0.005
Forklifts	50	0.558	5.234	3.268	0.007
Forklifts	120	0.275	3.787	1.495	0.006
Forklifts	175	0.189	3.350	0.299	0.006
Forklifts	250	0.188	1.141	0.290	0.006
Forklifts	500	0.188	1.085	0.290	0.005
Generator Sets	15	0.589	3.470	4.143	0.008
Generator Sets	25	0.685	2.340	4.332	0.007
Generator Sets	50	0.276	3.607	2.991	0.007
Generator Sets	120	0.156	3.310	1.458	0.006
Generator Sets	175	0.113	2.929	0.373	0.006
Generator Sets	250	0.110	0.998	0.331	0.006
Generator Sets	500	0.110	0.978	0.328	0.005
Generator Sets	750	0.110	0.978	0.328	0.005
Generator Sets	9999	0.114	0.978	2.362	0.005
Graders	50	0.593	5.189	3.356	0.007
Graders	120	0.293	3.767	1.661	0.006
Graders	175	0.206	3.326	0.506	0.006
Graders	250	0.196	1.137	0.452	0.006
Graders	500	0.195	1.083	0.434	0.005
Graders	750	0.195	1.083	0.438	0.005
Off-Highway Tractors	120	0.418	3.902	2.350	0.006
Off-Highway Tractors	175	0.301	3.421	1.252	0.006
Off-Highway Tractors	250	0.268	1.232	1.115	0.006
Off-Highway Tractors	750	0.262	1.238	1.045	0.005
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005
Off-Highway Trucks	175	0.211	3.425	0.380	0.006
Off-Highway Trucks	250	0.208	1.167	0.353	0.006

0.018	0.004
0.018	0.004
0.018	0.004
0.059	0.005
0.061	0.005
0.037	0.005
0.019	0.004
0.013	0.004
0.013	0.004
0.053	0.005
0.061	0.005
0.050	0.005
0.025	0.004
0.018	0.004
0.017	0.004
0.017	0.004

Off-Highway Trucks	500	0.208	1.105	0.348	0.005
Off-Highway Trucks	750	0.208	1.105	0.348	0.005
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005
Other Construction Equipment	15	0.661	3.469	4.142	0.008
Other Construction Equipment	25	0.685	2.339	4.332	0.007
Other Construction Equipment	50	0.410	4.377	3.124	0.007
Other Construction Equipment	120	0.213	3.536	1.474	0.006
Other Construction Equipment	175	0.150	3.128	0.334	0.006
Other Construction Equipment	500	0.147	1.029	0.311	0.005
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005

0.017	0.004	Other General Industrial Equipment	750	0.195	1.087	0.351	0.005
0.017	0.004	Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005
0.049	0.005	Other Material Handling Equipment	50	0.552	5.189	3.321	0.007
0.025	0.004	Other Material Handling Equipment	120	0.277	3.774	1.563	0.006
0.017	0.004	Other Material Handling Equipment	175	0.196	3.338	0.398	0.006
0.017	0.004	Other Material Handling Equipment	250	0.192	1.137	0.354	0.006
0.017	0.004	Other Material Handling Equipment	500	0.192	1.082	0.350	0.005
0.017	0.004	Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005
0.061	0.005	Pavers	25	0.685	2.339	4.332	0.007
0.062	0.005	Pavers	50	0.694	5.260	3.555	0.007
0.030	0.004	Pavers	120	0.338	3.774	1.986	0.006
0.022	0.004	Pavers	175	0.244	3.319	0.889	0.006
0.019	0.004	Pavers	250	0.221	1.157	0.772	0.006
0.019	0.004	Pavers	500	0.218	1.111	0.722	0.005
0.061	0.005	Paving Equipment	25	0.685	2.339	4.332	0.007
0.059	0.005	Paving Equipment	50	0.664	5.181	3.511	0.007
0.029	0.004	Paving Equipment	120	0.326	3.753	1.928	0.006
0.021	0.004	Paving Equipment	175	0.235	3.303	0.832	0.006
0.019	0.004	Paving Equipment	250	0.212	1.140	0.714	0.006
0.059	0.005	Plate Compactors	15	0.661	3.470	4.142	0.008
0.053	0.005	Pressure Washers	15	0.589	3.470	4.143	0.008
0.061	0.005	Pressure Washers	25	0.685	2.340	4.332	0.007
0.016	0.005	Pressure Washers	50	0.188	3.101	2.882	0.007
0.010	0.004	Pressure Washers	120	0.116	3.161	1.421	0.006
0.009	0.004	Pressure Washers	175	0.109	2.907	0.382	0.006

0.008	0.004
0.059	0.005
0.061	0.005
0.027	0.005
0.015	0.004
0.011	0.004
0.010	0.004
0.010	0.004
0.010	0.004
0.011	0.004
0.059	0.005
0.061	0.005
0.045	0.005
0.023	0.004
0.016	0.004
0.015	0.004
0.015	0.004
0.047	0.005
0.023	0.004
0.016	0.004
0.016	0.004
0.016	0.004
0.029	0.004
0.025	0.004
0.025	0.004
0.025	0.004
0.025	0.004
0.061	0.005
0.051	0.005
0.025	0.004
0.018	0.004

Pressure Washers	250	0.098	0.986	0.265	0.006
Pumps	15	0.661	3.469	4.143	0.008
Pumps	25	0.685	2.340	4.332	0.007
Pumps	50	0.306	3.778	3.028	0.007
Pumps	120	0.170	3.360	1.470	0.006
Pumps	175	0.123	2.973	0.377	0.006
Pumps	250	0.119	1.012	0.335	0.006
Pumps	500	0.119	0.989	0.331	0.005
Pumps	750	0.119	0.989	0.331	0.005
Pumps	9999	0.124	0.989	2.380	0.005
Rollers	15	0.661	3.469	4.142	0.008
Rollers	25	0.685	2.340	4.332	0.007
Rollers	50	0.507	4.711	3.280	0.007
Rollers	120	0.258	3.629	1.650	0.006
Rollers	175	0.184	3.204	0.523	0.006
Rollers	250	0.173	1.091	0.465	0.006
Rollers	500	0.172	1.048	0.442	0.005
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006

		Rubber Tired Loaders	250	0.191	1.129	0.434	0.006
		Rubber Tired Loaders	500	0.191	1.076	0.416	0.005
		Rubber Tired Loaders	750	0.191	1.076	0.421	0.005
		Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005
		Scrapers	120	0.348	3.842	1.943	0.006
		Scrapers	175	0.250	3.382	0.824	0.006
		Scrapers	250	0.229	1.175	0.717	0.006
		Scrapers	500	0.226	1.123	0.674	0.005
		Scrapers	750	0.226	1.123	0.682	0.005
		Signal Boards	15	0.661	3.469	4.142	0.008
		Signal Boards	50	0.356	4.067	3.082	0.007
		Signal Boards	120	0.192	3.445	1.482	0.006
		Signal Boards	175	0.138	3.048	0.372	0.006
		Signal Boards	250	0.162	1.254	0.401	0.007
		Skid Steer Loaders	25	0.685	2.339	4.332	0.007
		Skid Steer Loaders	50	0.411	4.390	3.097	0.007
		Skid Steer Loaders	120	0.211	3.540	1.442	0.006
		Surfacing Equipment	50	0.439	4.221	3.193	0.007
		Surfacing Equipment	120	0.226	3.482	1.659	0.006
		Surfacing Equipment	175	0.162	3.072	0.567	0.006
		Surfacing Equipment	250	0.149	1.050	0.497	0.006
		Surfacing Equipment	500	0.148	1.018	0.471	0.005
		Surfacing Equipment	750	0.148	1.018	0.477	0.005
		Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008
		Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007
		Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007
		Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006
		Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006
		Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006
		Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007

0.046	0.005
0.023	0.004
0.016	0.004
0.016	0.004
0.015	0.004
0.015	0.004
0.059	0.005
0.061	0.005
0.061	0.005
0.030	0.004
0.021	0.004
0.019	0.004
0.019	0.004
0.019	0.004
0.059	0.005
0.061	0.005
0.036	0.005
0.019	0.004
0.013	0.004
0.013	0.004
0.000	0.004
0.019	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.018	0.004

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006
Trenchers	15	0.661	3.469	4.142	0.008
Trenchers	25	0.685	2.339	4.332	0.007
Trenchers	50	0.681	5.055	3.548	0.007
Trenchers	120	0.332	3.713	2.049	0.006
Trenchers	175	0.241	3.264	0.966	0.006
Trenchers	250	0.216	1.149	0.847	0.006
Trenchers	500	0.213	1.126	0.790	0.005
Trenchers	750	0.213	1.126	0.801	0.005
Welders	15	0.661	3.469	4.143	0.008
Welders	25	0.685	2.339	4.332	0.007
Welders	50	0.406	4.349	3.147	0.007
Welders	120	0.214	3.528	1.509	0.006
Welders	175	0.153	3.121	0.387	0.006
Welders	250	0.149	1.063	0.343	0.006
Welders	500	0.149	1.027	0.339	0.005
Water Trucks	175	0.211	3.425	0.380	0.006
Water Trucks	250	0.208	1.167	0.353	0.006
Water Trucks	500	0.208	1.105	0.348	0.005
Water Trucks	750	0.208	1.105	0.348	0.005
Water Trucks	1000	0.209	1.105	2.565	0.005

2037

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.019	0.019	568.299	0.026	0.005
0.017	0.017	568.299	0.014	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.162	0.162	568.300	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.023	0.023	568.299	0.041	0.005
0.020	0.020	568.299	0.021	0.004
0.015	0.015	568.300	0.015	0.004
0.012	0.012	568.299	0.014	0.004
0.012	0.012	568.299	0.014	0.004
0.012	0.012	568.299	0.014	0.004
0.026	0.026	568.299	0.015	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.013	0.013	568.299	0.031	0.005
0.012	0.012	568.300	0.016	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.021	0.021	568.299	0.011	0.004

2037		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.661
Aerial Lifts	25	0.685
Aerial Lifts	50	0.297
Aerial Lifts	120	0.166
Aerial Lifts	500	0.116
Aerial Lifts	750	0.116
Air Compressors	15	0.661
Air Compressors	25	0.685
Air Compressors	50	0.463
Air Compressors	120	0.238
Air Compressors	175	0.170
Air Compressors	250	0.166
Air Compressors	500	0.166
Air Compressors	750	0.166
Air Compressors	1000	0.167
Bore/Drill Rigs	15	0.661
Bore/Drill Rigs	25	0.685
Bore/Drill Rigs	50	0.348
Bore/Drill Rigs	120	0.183
Bore/Drill Rigs	175	0.126
Bore/Drill Rigs	250	0.126
Bore/Drill Rigs	500	0.126
Bore/Drill Rigs	750	0.126
Bore/Drill Rigs	1000	0.126

0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.161	0.161	568.299	0.061	0.005
0.021	0.021	568.300	0.033	0.005
0.018	0.018	568.299	0.018	0.004
0.014	0.014	568.299	0.012	0.004
0.039	0.039	568.299	0.054	0.005
0.036	0.036	568.300	0.027	0.004
0.024	0.024	568.299	0.019	0.004
0.016	0.016	568.299	0.018	0.004
0.016	0.016	568.299	0.018	0.004
0.016	0.016	568.299	0.018	0.004
0.031	0.031	568.299	0.018	0.004
0.066	0.066	568.299	0.063	0.005
0.060	0.060	568.299	0.031	0.004
0.038	0.038	568.299	0.022	0.004
0.026	0.026	568.299	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.041	0.041	568.299	0.020	0.004
0.023	0.023	568.299	0.044	0.005
0.020	0.020	568.299	0.022	0.004
0.015	0.015	568.299	0.015	0.004
0.012	0.012	568.300	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.026	0.026	568.299	0.016	0.004

Cement and Mortar Mixers	15	0.661
Cement and Mortar Mixers	25	0.685
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	0.375
Concrete/Industrial Saws	120	0.200
Concrete/Industrial Saws	175	0.143
Cranes	50	0.600
Cranes	120	0.300
Cranes	175	0.212
Cranes	250	0.203
Cranes	500	0.202
Cranes	750	0.202
Cranes	9999	0.209
Crawler Tractors	50	0.708
Crawler Tractors	120	0.345
Crawler Tractors	175	0.247
Crawler Tractors	250	0.229
Crawler Tractors	500	0.227
Crawler Tractors	750	0.227
Crawler Tractors	1000	0.231
Crushing/Proc. Equipment	50	0.487
Crushing/Proc. Equipment	120	0.249
Crushing/Proc. Equipment	175	0.176
Crushing/Proc. Equipment	250	0.172
Crushing/Proc. Equipment	500	0.172
Crushing/Proc. Equipment	750	0.172
Crushing/Proc. Equipment	9999	0.177

0.161	0.161	568.299	0.061	0.005
0.161	0.161	568.299	0.061	0.005
0.024	0.024	568.299	0.051	0.005
0.021	0.021	568.299	0.025	0.004
0.015	0.015	568.299	0.017	0.004
0.013	0.013	568.300	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.017	0.017	568.299	0.050	0.005
0.016	0.016	568.299	0.024	0.004
0.012	0.012	568.300	0.017	0.004
0.011	0.011	568.300	0.017	0.004
0.011	0.011	568.299	0.017	0.004
0.162	0.162	568.299	0.053	0.005
0.162	0.162	568.299	0.061	0.005
0.018	0.018	568.299	0.024	0.005
0.016	0.016	568.299	0.014	0.004
0.013	0.013	568.299	0.010	0.004
0.011	0.011	568.299	0.009	0.004
0.011	0.011	568.299	0.009	0.004
0.011	0.011	568.299	0.009	0.004
0.022	0.022	568.299	0.010	0.004
0.037	0.037	568.299	0.053	0.005
0.034	0.034	568.299	0.026	0.004
0.022	0.022	568.300	0.018	0.004
0.016	0.016	568.299	0.017	0.004
0.016	0.016	568.299	0.017	0.004
0.016	0.016	568.299	0.017	0.004
0.107	0.107	568.299	0.037	0.004
0.065	0.065	568.299	0.027	0.004
0.042	0.042	568.299	0.024	0.004
0.040	0.040	568.299	0.023	0.004
0.056	0.056	568.299	0.024	0.004
0.016	0.016	568.299	0.019	0.004
0.013	0.013	568.299	0.018	0.004

Dumpers/Tenders	25	0.685
Excavators	25	0.685
Excavators	50	0.572
Excavators	120	0.284
Excavators	175	0.197
Excavators	250	0.195
Excavators	500	0.195
Excavators	750	0.195
Forklifts	50	0.558
Forklifts	120	0.275
Forklifts	175	0.189
Forklifts	250	0.188
Forklifts	500	0.188
Generator Sets	15	0.589
Generator Sets	25	0.685
Generator Sets	50	0.276
Generator Sets	120	0.156
Generator Sets	175	0.113
Generator Sets	250	0.110
Generator Sets	500	0.110
Generator Sets	750	0.110
Generator Sets	9999	0.114
Graders	50	0.593
Graders	120	0.293
Graders	175	0.206
Graders	250	0.196
Graders	500	0.195
Graders	750	0.195
Off-Highway Tractors	120	0.418
Off-Highway Tractors	175	0.301
Off-Highway Tractors	250	0.268
Off-Highway Tractors	750	0.262
Off-Highway Tractors	1000	0.269
Off-Highway Trucks	175	0.211
Off-Highway Trucks	250	0.208

0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.028	0.028	568.299	0.018	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.018	0.018	568.299	0.037	0.005
0.017	0.017	568.299	0.019	0.004
0.013	0.013	568.299	0.013	0.004
0.011	0.011	568.299	0.013	0.004
0.161	0.161	568.299	0.053	0.005
0.161	0.161	568.299	0.061	0.005
0.025	0.025	568.299	0.050	0.005
0.022	0.022	568.300	0.025	0.004
0.016	0.016	568.300	0.018	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004

Off-Highway Trucks	500	0.208
Off-Highway Trucks	750	0.208
Off-Highway Trucks	1000	0.209
Other Construction Equipment	15	0.661
Other Construction Equipment	25	0.685
Other Construction Equipment	50	0.410
Other Construction Equipment	120	0.213
Other Construction Equipment	175	0.150
Other Construction Equipment	500	0.147
Other General Industrial Equipment	15	0.589
Other General Industrial Equipment	25	0.685
Other General Industrial Equipment	50	0.564
Other General Industrial Equipment	120	0.282
Other General Industrial Equipment	175	0.199
Other General Industrial Equipment	250	0.195
Other General Industrial Equipment	500	0.195

0.013	0.013	568.299	0.017	0.004
0.028	0.028	568.299	0.017	0.004
0.025	0.025	568.299	0.049	0.005
0.022	0.022	568.299	0.025	0.004
0.016	0.016	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.027	0.027	568.299	0.017	0.004
0.161	0.161	568.299	0.061	0.005
0.076	0.076	568.299	0.062	0.005
0.069	0.069	568.299	0.030	0.004
0.043	0.043	568.299	0.022	0.004
0.027	0.027	568.300	0.019	0.004
0.026	0.026	568.299	0.019	0.004
0.161	0.161	568.299	0.061	0.005
0.070	0.070	568.300	0.059	0.005
0.064	0.064	568.299	0.029	0.004
0.040	0.040	568.299	0.021	0.004
0.024	0.024	568.299	0.019	0.004
0.161	0.161	568.299	0.059	0.005
0.162	0.162	568.300	0.053	0.005
0.162	0.162	568.299	0.061	0.005
0.015	0.015	568.299	0.016	0.005
0.014	0.014	568.299	0.010	0.004
0.013	0.013	568.299	0.009	0.004

Other General Industrial Equipment	750	0.195
Other General Industrial Equipment	1000	0.196
Other Material Handling Equipment	50	0.552
Other Material Handling Equipment	120	0.277
Other Material Handling Equipment	175	0.196
Other Material Handling Equipment	250	0.192
Other Material Handling Equipment	500	0.192
Other Material Handling Equipment	9999	0.197
Pavers	25	0.685
Pavers	50	0.694
Pavers	120	0.338
Pavers	175	0.244
Pavers	250	0.221
Pavers	500	0.218
Paving Equipment	25	0.685
Paving Equipment	50	0.664
Paving Equipment	120	0.326
Paving Equipment	175	0.235
Paving Equipment	250	0.212
Plate Compactors	15	0.661
Pressure Washers	15	0.589
Pressure Washers	25	0.685
Pressure Washers	50	0.188
Pressure Washers	120	0.116
Pressure Washers	175	0.109

0.009	0.009	568.299	0.008	0.004
0.162	0.162	568.299	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.019	0.019	568.299	0.027	0.005
0.017	0.017	568.299	0.015	0.004
0.014	0.014	568.299	0.011	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.023	0.023	568.299	0.011	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.300	0.061	0.005
0.038	0.038	568.299	0.045	0.005
0.035	0.035	568.299	0.023	0.004
0.023	0.023	568.299	0.016	0.004
0.016	0.016	568.299	0.015	0.004
0.016	0.016	568.300	0.015	0.004
0.022	0.022	568.299	0.047	0.005
0.020	0.020	568.299	0.023	0.004
0.015	0.015	568.299	0.016	0.004
0.012	0.012	568.299	0.016	0.004
0.012	0.012	568.300	0.016	0.004
0.071	0.071	568.299	0.029	0.004
0.046	0.046	568.299	0.025	0.004
0.043	0.043	568.300	0.025	0.004
0.043	0.043	568.299	0.025	0.004
0.060	0.060	568.299	0.025	0.004
0.161	0.161	568.299	0.061	0.005
0.035	0.035	568.299	0.051	0.005
0.033	0.033	568.299	0.025	0.004
0.022	0.022	568.299	0.018	0.004

Pressure Washers	250	0.098
Pumps	15	0.661
Pumps	25	0.685
Pumps	50	0.306
Pumps	120	0.170
Pumps	175	0.123
Pumps	250	0.119
Pumps	500	0.119
Pumps	750	0.119
Pumps	9999	0.124
Rollers	15	0.661
Rollers	25	0.685
Rollers	50	0.507
Rollers	120	0.258
Rollers	175	0.184
Rollers	250	0.173
Rollers	500	0.172
Rough Terrain Forklifts	50	0.521
Rough Terrain Forklifts	120	0.262
Rough Terrain Forklifts	175	0.184
Rough Terrain Forklifts	250	0.181
Rough Terrain Forklifts	500	0.181
Rubber Tired Dozers	175	0.322
Rubber Tired Dozers	250	0.286
Rubber Tired Dozers	500	0.279
Rubber Tired Dozers	750	0.279
Rubber Tired Dozers	1000	0.287
Rubber Tired Loaders	25	0.685
Rubber Tired Loaders	50	0.575
Rubber Tired Loaders	120	0.286
Rubber Tired Loaders	175	0.200

0.015	0.015	568.299	0.017	0.004
0.015	0.015	568.299	0.017	0.004
0.015	0.015	568.299	0.017	0.004
0.030	0.030	568.299	0.017	0.004
0.064	0.064	568.299	0.031	0.004
0.040	0.040	568.299	0.022	0.004
0.026	0.026	568.299	0.020	0.004
0.025	0.025	568.300	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.161	0.161	568.299	0.059	0.005
0.020	0.020	568.299	0.032	0.005
0.018	0.018	568.299	0.017	0.004
0.014	0.014	568.299	0.012	0.004
0.014	0.014	686.695	0.014	0.004
0.161	0.161	568.299	0.061	0.005
0.015	0.015	568.299	0.037	0.005
0.014	0.014	568.299	0.019	0.004
0.041	0.041	568.299	0.039	0.005
0.038	0.038	568.299	0.020	0.004
0.025	0.025	568.299	0.014	0.004
0.016	0.016	568.299	0.013	0.004
0.016	0.016	568.299	0.013	0.004
0.016	0.016	568.300	0.013	0.004
0.161	0.161	568.299	0.053	0.005
0.161	0.161	568.300	0.061	0.005
0.017	0.017	568.299	0.045	0.005
0.016	0.016	568.299	0.022	0.004
0.012	0.012	568.299	0.015	0.004
0.011	0.011	568.299	0.015	0.004
0.161	0.161	568.299	0.061	0.005

Rubber Tired Loaders	250	0.191
Rubber Tired Loaders	500	0.191
Rubber Tired Loaders	750	0.191
Rubber Tired Loaders	1000	0.193
Scrapers	120	0.348
Scrapers	175	0.250
Scrapers	250	0.229
Scrapers	500	0.226
Scrapers	750	0.226
Signal Boards	15	0.661
Signal Boards	50	0.356
Signal Boards	120	0.192
Signal Boards	175	0.138
Signal Boards	250	0.162
Skid Steer Loaders	25	0.685
Skid Steer Loaders	50	0.411
Skid Steer Loaders	120	0.211
Surfacing Equipment	50	0.439
Surfacing Equipment	120	0.226
Surfacing Equipment	175	0.162
Surfacing Equipment	250	0.149
Surfacing Equipment	500	0.148
Surfacing Equipment	750	0.148
Sweepers/Scrubbers	15	0.589
Sweepers/Scrubbers	25	0.685
Sweepers/Scrubbers	50	0.505
Sweepers/Scrubbers	120	0.253
Sweepers/Scrubbers	175	0.175
Sweepers/Scrubbers	250	0.173
Tractors/Loaders/Backhoes	25	0.685

0.022	0.022	568.299	0.046	0.005
0.020	0.020	568.299	0.023	0.004
0.015	0.015	568.299	0.016	0.004
0.012	0.012	568.299	0.016	0.004
0.012	0.012	568.299	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.084	0.084	568.299	0.061	0.005
0.076	0.076	568.300	0.030	0.004
0.048	0.048	568.299	0.021	0.004
0.031	0.031	568.299	0.019	0.004
0.029	0.029	568.299	0.019	0.004
0.029	0.029	568.300	0.019	0.004
0.162	0.162	568.299	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.022	0.022	568.299	0.036	0.005
0.019	0.019	568.299	0.019	0.004
0.015	0.015	568.299	0.013	0.004
0.012	0.012	568.299	0.013	0.004
0.012	0.012	568.299	0.013	0.004
0.016	0.016	568.299	0.019	0.004
0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.028	0.028	568.299	0.018	0.004

Tractors/Loaders/Backhoes	50	0.515
Tractors/Loaders/Backhoes	120	0.258
Tractors/Loaders/Backhoes	175	0.179
Tractors/Loaders/Backhoes	250	0.177
Tractors/Loaders/Backhoes	500	0.177
Tractors/Loaders/Backhoes	750	0.177
Trenchers	15	0.661
Trenchers	25	0.685
Trenchers	50	0.681
Trenchers	120	0.332
Trenchers	175	0.241
Trenchers	250	0.216
Trenchers	500	0.213
Trenchers	750	0.213
Welders	15	0.661
Welders	25	0.685
Welders	50	0.406
Welders	120	0.214
Welders	175	0.153
Welders	250	0.149
Welders	500	0.149
Water Trucks	175	0.211
Water Trucks	250	0.208
Water Trucks	500	0.208
Water Trucks	750	0.208
Water Trucks	1000	0.209

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g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.726	3.017	0.007	0.019	0.019	568.299	0.026	0.005
3.345	1.466	0.006	0.017	0.017	568.299	0.014	0.004
0.986	0.330	0.005	0.011	0.011	568.299	0.010	0.004
0.986	0.330	0.005	0.011	0.011	568.299	0.010	0.004
3.469	4.143	0.008	0.162	0.162	568.300	0.059	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
4.674	3.215	0.007	0.023	0.023	568.299	0.041	0.005
3.623	1.530	0.006	0.020	0.020	568.299	0.021	0.004
3.205	0.391	0.006	0.015	0.015	568.300	0.015	0.004
1.091	0.347	0.006	0.012	0.012	568.299	0.014	0.004
1.048	0.343	0.005	0.012	0.012	568.299	0.014	0.004
1.048	0.344	0.005	0.012	0.012	568.299	0.014	0.004
1.048	2.473	0.005	0.026	0.026	568.299	0.015	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.030	3.019	0.007	0.013	0.013	568.299	0.031	0.005
3.434	1.411	0.006	0.012	0.012	568.300	0.016	0.004
3.039	0.272	0.006	0.010	0.010	568.299	0.011	0.004
1.035	0.272	0.006	0.010	0.010	568.299	0.011	0.004
1.006	0.272	0.005	0.010	0.010	568.299	0.011	0.004
1.006	0.272	0.005	0.010	0.010	568.299	0.011	0.004
1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.174	3.107	0.007	0.021	0.021	568.300	0.033	0.005
3.476	1.491	0.006	0.018	0.018	568.299	0.018	0.004
3.075	0.374	0.006	0.014	0.014	568.299	0.012	0.004
5.292	3.401	0.007	0.039	0.039	568.299	0.054	0.005
3.801	1.676	0.006	0.036	0.036	568.300	0.027	0.004
3.357	0.519	0.006	0.024	0.024	568.299	0.019	0.004
1.143	0.463	0.006	0.016	0.016	568.299	0.018	0.004
1.087	0.441	0.005	0.016	0.016	568.299	0.018	0.004
1.087	0.446	0.005	0.016	0.016	568.299	0.018	0.004
1.089	2.618	0.005	0.031	0.031	568.299	0.018	0.004
5.493	3.558	0.007	0.066	0.066	568.299	0.063	0.005
3.850	1.922	0.006	0.060	0.060	568.299	0.031	0.004
3.391	0.794	0.006	0.038	0.038	568.299	0.022	0.004
1.182	0.695	0.006	0.026	0.026	568.299	0.020	0.004
1.145	0.657	0.005	0.025	0.025	568.299	0.020	0.004
1.145	0.664	0.005	0.025	0.025	568.299	0.020	0.004
1.159	2.792	0.005	0.041	0.041	568.299	0.020	0.004
4.819	3.237	0.007	0.023	0.023	568.299	0.044	0.005
3.665	1.531	0.006	0.020	0.020	568.299	0.022	0.004
3.242	0.382	0.006	0.015	0.015	568.299	0.015	0.004
1.104	0.342	0.006	0.012	0.012	568.300	0.015	0.004
1.058	0.338	0.005	0.012	0.012	568.299	0.015	0.004
1.058	0.338	0.005	0.012	0.012	568.299	0.015	0.004
1.058	2.482	0.005	0.026	0.026	568.299	0.016	0.004

2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.287	3.323	0.007	0.024	0.024	568.299	0.051	0.005
3.802	1.551	0.006	0.021	0.021	568.299	0.025	0.004
3.363	0.365	0.006	0.015	0.015	568.299	0.017	0.004
1.145	0.342	0.006	0.013	0.013	568.300	0.017	0.004
1.089	0.337	0.005	0.013	0.013	568.299	0.017	0.004
1.088	0.338	0.005	0.013	0.013	568.299	0.017	0.004
5.234	3.268	0.007	0.017	0.017	568.299	0.050	0.005
3.787	1.495	0.006	0.016	0.016	568.299	0.024	0.004
3.350	0.299	0.006	0.012	0.012	568.300	0.017	0.004
1.141	0.290	0.006	0.011	0.011	568.300	0.017	0.004
1.085	0.290	0.005	0.011	0.011	568.299	0.017	0.004
3.470	4.143	0.008	0.162	0.162	568.299	0.053	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.607	2.991	0.007	0.018	0.018	568.299	0.024	0.005
3.310	1.458	0.006	0.016	0.016	568.299	0.014	0.004
2.929	0.373	0.006	0.013	0.013	568.299	0.010	0.004
0.998	0.331	0.006	0.011	0.011	568.299	0.009	0.004
0.978	0.328	0.005	0.011	0.011	568.299	0.009	0.004
0.978	0.328	0.005	0.011	0.011	568.299	0.009	0.004
0.978	2.362	0.005	0.022	0.022	568.299	0.010	0.004
5.189	3.356	0.007	0.037	0.037	568.299	0.053	0.005
3.767	1.661	0.006	0.034	0.034	568.299	0.026	0.004
3.326	0.506	0.006	0.022	0.022	568.300	0.018	0.004
1.137	0.452	0.006	0.016	0.016	568.299	0.017	0.004
1.083	0.434	0.005	0.016	0.016	568.299	0.017	0.004
1.083	0.438	0.005	0.016	0.016	568.299	0.017	0.004
3.902	2.350	0.006	0.107	0.107	568.299	0.037	0.004
3.421	1.252	0.006	0.065	0.065	568.299	0.027	0.004
1.232	1.115	0.006	0.042	0.042	568.299	0.024	0.004
1.238	1.045	0.005	0.040	0.040	568.299	0.023	0.004
1.268	3.116	0.005	0.056	0.056	568.299	0.024	0.004
3.425	0.380	0.006	0.016	0.016	568.299	0.019	0.004
1.167	0.353	0.006	0.013	0.013	568.299	0.018	0.004

1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	2.565	0.005	0.028	0.028	568.299	0.018	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.377	3.124	0.007	0.018	0.018	568.299	0.037	0.005
3.536	1.474	0.006	0.017	0.017	568.299	0.019	0.004
3.128	0.334	0.006	0.013	0.013	568.299	0.013	0.004
1.029	0.311	0.005	0.011	0.011	568.299	0.013	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.255	3.334	0.007	0.025	0.025	568.299	0.050	0.005
3.794	1.567	0.006	0.022	0.022	568.300	0.025	0.004
3.355	0.399	0.006	0.016	0.016	568.300	0.018	0.004
1.143	0.355	0.006	0.013	0.013	568.299	0.017	0.004
1.087	0.351	0.005	0.013	0.013	568.299	0.017	0.004

1.087	0.351	0.005	0.013	0.013	568.299	0.017	0.004
1.087	2.532	0.005	0.028	0.028	568.299	0.017	0.004
5.189	3.321	0.007	0.025	0.025	568.299	0.049	0.005
3.774	1.563	0.006	0.022	0.022	568.299	0.025	0.004
3.338	0.398	0.006	0.016	0.016	568.299	0.017	0.004
1.137	0.354	0.006	0.013	0.013	568.299	0.017	0.004
1.082	0.350	0.005	0.013	0.013	568.299	0.017	0.004
1.082	2.525	0.005	0.027	0.027	568.299	0.017	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.260	3.555	0.007	0.076	0.076	568.299	0.062	0.005
3.774	1.986	0.006	0.069	0.069	568.299	0.030	0.004
3.319	0.889	0.006	0.043	0.043	568.299	0.022	0.004
1.157	0.772	0.006	0.027	0.027	568.300	0.019	0.004
1.111	0.722	0.005	0.026	0.026	568.299	0.019	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.181	3.511	0.007	0.070	0.070	568.300	0.059	0.005
3.753	1.928	0.006	0.064	0.064	568.299	0.029	0.004
3.303	0.832	0.006	0.040	0.040	568.299	0.021	0.004
1.140	0.714	0.006	0.024	0.024	568.299	0.019	0.004
3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.470	4.143	0.008	0.162	0.162	568.300	0.053	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.101	2.882	0.007	0.015	0.015	568.299	0.016	0.005
3.161	1.421	0.006	0.014	0.014	568.299	0.010	0.004
2.907	0.382	0.006	0.013	0.013	568.299	0.009	0.004

0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
3.469	4.143	0.008	0.162	0.162	568.299	0.059	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.778	3.028	0.007	0.019	0.019	568.299	0.027	0.005
3.360	1.470	0.006	0.017	0.017	568.299	0.015	0.004
2.973	0.377	0.006	0.014	0.014	568.299	0.011	0.004
1.012	0.335	0.006	0.011	0.011	568.299	0.010	0.004
0.989	0.331	0.005	0.011	0.011	568.299	0.010	0.004
0.989	0.331	0.005	0.011	0.011	568.299	0.010	0.004
0.989	2.380	0.005	0.023	0.023	568.299	0.011	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.340	4.332	0.007	0.161	0.161	568.300	0.061	0.005
4.711	3.280	0.007	0.038	0.038	568.299	0.045	0.005
3.629	1.650	0.006	0.035	0.035	568.299	0.023	0.004
3.204	0.523	0.006	0.023	0.023	568.299	0.016	0.004
1.091	0.465	0.006	0.016	0.016	568.299	0.015	0.004
1.048	0.442	0.005	0.016	0.016	568.300	0.015	0.004
5.011	3.267	0.007	0.022	0.022	568.299	0.047	0.005
3.722	1.530	0.006	0.020	0.020	568.299	0.023	0.004
3.292	0.364	0.006	0.015	0.015	568.299	0.016	0.004
1.121	0.334	0.006	0.012	0.012	568.299	0.016	0.004
1.071	0.331	0.005	0.012	0.012	568.300	0.016	0.004
3.481	1.345	0.006	0.071	0.071	568.299	0.029	0.004
1.262	1.203	0.006	0.046	0.046	568.299	0.025	0.004
1.279	1.107	0.005	0.043	0.043	568.300	0.025	0.004
1.279	1.126	0.005	0.043	0.043	568.299	0.025	0.004
1.312	3.204	0.005	0.060	0.060	568.299	0.025	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.126	3.337	0.007	0.035	0.035	568.299	0.051	0.005
3.751	1.639	0.006	0.033	0.033	568.299	0.025	0.004
3.312	0.481	0.006	0.022	0.022	568.299	0.018	0.004

1.129	0.434	0.006	0.015	0.015	568.299	0.017	0.004
1.076	0.416	0.005	0.015	0.015	568.299	0.017	0.004
1.076	0.421	0.005	0.015	0.015	568.299	0.017	0.004
1.082	2.584	0.005	0.030	0.030	568.299	0.017	0.004
3.842	1.943	0.006	0.064	0.064	568.299	0.031	0.004
3.382	0.824	0.006	0.040	0.040	568.299	0.022	0.004
1.175	0.717	0.006	0.026	0.026	568.299	0.020	0.004
1.123	0.674	0.005	0.025	0.025	568.300	0.020	0.004
1.123	0.682	0.005	0.025	0.025	568.299	0.020	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.067	3.082	0.007	0.020	0.020	568.299	0.032	0.005
3.445	1.482	0.006	0.018	0.018	568.299	0.017	0.004
3.048	0.372	0.006	0.014	0.014	568.299	0.012	0.004
1.254	0.401	0.007	0.014	0.014	686.695	0.014	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.390	3.097	0.007	0.015	0.015	568.299	0.037	0.005
3.540	1.442	0.006	0.014	0.014	568.299	0.019	0.004
4.221	3.193	0.007	0.041	0.041	568.299	0.039	0.005
3.482	1.659	0.006	0.038	0.038	568.299	0.020	0.004
3.072	0.567	0.006	0.025	0.025	568.299	0.014	0.004
1.050	0.497	0.006	0.016	0.016	568.299	0.013	0.004
1.018	0.471	0.005	0.016	0.016	568.299	0.013	0.004
1.018	0.477	0.005	0.016	0.016	568.300	0.013	0.004
3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
2.340	4.332	0.007	0.161	0.161	568.300	0.061	0.005
4.929	3.214	0.007	0.017	0.017	568.299	0.045	0.005
3.698	1.486	0.006	0.016	0.016	568.299	0.022	0.004
3.271	0.313	0.006	0.012	0.012	568.299	0.015	0.004
1.114	0.294	0.006	0.011	0.011	568.299	0.015	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

4.949	3.244	0.007	0.022	0.022	568.299	0.046	0.005
3.703	1.521	0.006	0.020	0.020	568.299	0.023	0.004
3.275	0.348	0.006	0.015	0.015	568.299	0.016	0.004
1.115	0.331	0.006	0.012	0.012	568.299	0.016	0.004
1.066	0.326	0.006	0.012	0.012	568.299	0.015	0.004
1.066	0.327	0.006	0.012	0.012	568.299	0.015	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.055	3.548	0.007	0.084	0.084	568.299	0.061	0.005
3.713	2.049	0.006	0.076	0.076	568.300	0.030	0.004
3.264	0.966	0.006	0.048	0.048	568.299	0.021	0.004
1.149	0.847	0.006	0.031	0.031	568.299	0.019	0.004
1.126	0.790	0.005	0.029	0.029	568.299	0.019	0.004
1.126	0.801	0.005	0.029	0.029	568.300	0.019	0.004
3.469	4.143	0.008	0.162	0.162	568.299	0.059	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
4.349	3.147	0.007	0.022	0.022	568.299	0.036	0.005
3.528	1.509	0.006	0.019	0.019	568.299	0.019	0.004
3.121	0.387	0.006	0.015	0.015	568.299	0.013	0.004
1.063	0.343	0.006	0.012	0.012	568.299	0.013	0.004
1.027	0.339	0.005	0.012	0.012	568.299	0.013	0.004
3.425	0.380	0.006	0.016	0.016	568.299	0.019	0.004
1.167	0.353	0.006	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	2.565	0.005	0.028	0.028	568.299	0.018	0.004

2038		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019	0.019	568.299	0.026
Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017	0.017	568.299	0.014
Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011	0.011	568.299	0.010
Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011	0.011	568.299	0.010
Air Compressors	15	0.661	3.469	4.143	0.008	0.162	0.162	568.300	0.059
Air Compressors	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061
Air Compressors	50	0.463	4.674	3.215	0.007	0.023	0.023	568.299	0.041
Air Compressors	120	0.238	3.623	1.530	0.006	0.020	0.020	568.299	0.021
Air Compressors	175	0.170	3.205	0.391	0.006	0.015	0.015	568.300	0.015
Air Compressors	250	0.166	1.091	0.347	0.006	0.012	0.012	568.299	0.014
Air Compressors	500	0.166	1.048	0.343	0.005	0.012	0.012	568.299	0.014
Air Compressors	750	0.166	1.048	0.344	0.005	0.012	0.012	568.299	0.014
Air Compressors	1000	0.167	1.048	2.473	0.005	0.026	0.026	568.299	0.015
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013	0.013	568.299	0.031
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012	0.012	568.300	0.016
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010	0.010	568.299	0.011
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010	0.010	568.299	0.011
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010	0.010	568.299	0.011
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010	0.010	568.299	0.011
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021	0.021	568.299	0.011

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021	0.021	568.300	0.033
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018	0.018	568.299	0.018
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014	0.014	568.299	0.012
Cranes	50	0.600	5.292	3.401	0.007	0.039	0.039	568.299	0.054
Cranes	120	0.300	3.801	1.676	0.006	0.036	0.036	568.300	0.027
Cranes	175	0.212	3.357	0.519	0.006	0.024	0.024	568.299	0.019
Cranes	250	0.203	1.143	0.463	0.006	0.016	0.016	568.299	0.018
Cranes	500	0.202	1.087	0.441	0.005	0.016	0.016	568.299	0.018
Cranes	750	0.202	1.087	0.446	0.005	0.016	0.016	568.299	0.018
Cranes	9999	0.209	1.089	2.618	0.005	0.031	0.031	568.299	0.018
Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066	0.066	568.299	0.063
Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060	0.060	568.299	0.031
Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038	0.038	568.299	0.022
Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026	0.026	568.299	0.020
Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025	0.025	568.299	0.020
Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025	0.025	568.299	0.020
Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041	0.041	568.299	0.020
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023	0.023	568.299	0.044
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020	0.020	568.299	0.022
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015	0.015	568.299	0.015
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012	0.012	568.300	0.015
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012	0.012	568.299	0.015
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012	0.012	568.299	0.015
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026	0.026	568.299	0.016

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	50	0.572	5.287	3.323	0.007	0.024	0.024	568.299	0.051
Excavators	120	0.284	3.802	1.551	0.006	0.021	0.021	568.299	0.025
Excavators	175	0.197	3.363	0.365	0.006	0.015	0.015	568.299	0.017
Excavators	250	0.195	1.145	0.342	0.006	0.013	0.013	568.300	0.017
Excavators	500	0.195	1.089	0.337	0.005	0.013	0.013	568.299	0.017
Excavators	750	0.195	1.088	0.338	0.005	0.013	0.013	568.299	0.017
Forklifts	50	0.558	5.234	3.268	0.007	0.017	0.017	568.299	0.050
Forklifts	120	0.275	3.787	1.495	0.006	0.016	0.016	568.299	0.024
Forklifts	175	0.189	3.350	0.299	0.006	0.012	0.012	568.300	0.017
Forklifts	250	0.188	1.141	0.290	0.006	0.011	0.011	568.300	0.017
Forklifts	500	0.188	1.085	0.290	0.005	0.011	0.011	568.299	0.017
Generator Sets	15	0.589	3.470	4.143	0.008	0.162	0.162	568.299	0.053
Generator Sets	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Generator Sets	50	0.276	3.607	2.991	0.007	0.018	0.018	568.299	0.024
Generator Sets	120	0.156	3.310	1.458	0.006	0.016	0.016	568.299	0.014
Generator Sets	175	0.113	2.929	0.373	0.006	0.013	0.013	568.299	0.010
Generator Sets	250	0.110	0.998	0.331	0.006	0.011	0.011	568.299	0.009
Generator Sets	500	0.110	0.978	0.328	0.005	0.011	0.011	568.299	0.009
Generator Sets	750	0.110	0.978	0.328	0.005	0.011	0.011	568.299	0.009
Generator Sets	9999	0.114	0.978	2.362	0.005	0.022	0.022	568.299	0.010
Graders	50	0.593	5.189	3.356	0.007	0.037	0.037	568.299	0.053
Graders	120	0.293	3.767	1.661	0.006	0.034	0.034	568.299	0.026
Graders	175	0.206	3.326	0.506	0.006	0.022	0.022	568.300	0.018
Graders	250	0.196	1.137	0.452	0.006	0.016	0.016	568.299	0.017
Graders	500	0.195	1.083	0.434	0.005	0.016	0.016	568.299	0.017
Graders	750	0.195	1.083	0.438	0.005	0.016	0.016	568.299	0.017
Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107	0.107	568.299	0.037
Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065	0.065	568.299	0.027
Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042	0.042	568.299	0.024
Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040	0.040	568.299	0.023
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056	0.056	568.299	0.024
Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299	0.019
Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299	0.018

Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299	0.018
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018	0.018	568.299	0.037
Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017	0.017	568.299	0.019
Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013	0.013	568.299	0.013
Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011	0.011	568.299	0.013
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025	0.025	568.299	0.050
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022	0.022	568.300	0.025
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016	0.016	568.300	0.018
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013	0.013	568.299	0.017
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013	0.013	568.299	0.017

Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013	0.013	568.299	0.017
Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028	0.028	568.299	0.017
Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025	0.025	568.299	0.049
Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022	0.022	568.299	0.025
Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016	0.016	568.299	0.017
Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013	0.013	568.299	0.017
Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013	0.013	568.299	0.017
Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027	0.027	568.299	0.017
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Pavers	50	0.694	5.260	3.555	0.007	0.076	0.076	568.299	0.062
Pavers	120	0.338	3.774	1.986	0.006	0.069	0.069	568.299	0.030
Pavers	175	0.244	3.319	0.889	0.006	0.043	0.043	568.299	0.022
Pavers	250	0.221	1.157	0.772	0.006	0.027	0.027	568.300	0.019
Pavers	500	0.218	1.111	0.722	0.005	0.026	0.026	568.299	0.019
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Paving Equipment	50	0.664	5.181	3.511	0.007	0.070	0.070	568.300	0.059
Paving Equipment	120	0.326	3.753	1.928	0.006	0.064	0.064	568.299	0.029
Paving Equipment	175	0.235	3.303	0.832	0.006	0.040	0.040	568.299	0.021
Paving Equipment	250	0.212	1.140	0.714	0.006	0.024	0.024	568.299	0.019
Plate Compactors	15	0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059
Pressure Washers	15	0.589	3.470	4.143	0.008	0.162	0.162	568.300	0.053
Pressure Washers	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Pressure Washers	50	0.188	3.101	2.882	0.007	0.015	0.015	568.299	0.016
Pressure Washers	120	0.116	3.161	1.421	0.006	0.014	0.014	568.299	0.010
Pressure Washers	175	0.109	2.907	0.382	0.006	0.013	0.013	568.299	0.009

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008
Pumps	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299	0.059
Pumps	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Pumps	50	0.306	3.778	3.028	0.007	0.019	0.019	568.299	0.027
Pumps	120	0.170	3.360	1.470	0.006	0.017	0.017	568.299	0.015
Pumps	175	0.123	2.973	0.377	0.006	0.014	0.014	568.299	0.011
Pumps	250	0.119	1.012	0.335	0.006	0.011	0.011	568.299	0.010
Pumps	500	0.119	0.989	0.331	0.005	0.011	0.011	568.299	0.010
Pumps	750	0.119	0.989	0.331	0.005	0.011	0.011	568.299	0.010
Pumps	9999	0.124	0.989	2.380	0.005	0.023	0.023	568.299	0.011
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Rollers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300	0.061
Rollers	50	0.507	4.711	3.280	0.007	0.038	0.038	568.299	0.045
Rollers	120	0.258	3.629	1.650	0.006	0.035	0.035	568.299	0.023
Rollers	175	0.184	3.204	0.523	0.006	0.023	0.023	568.299	0.016
Rollers	250	0.173	1.091	0.465	0.006	0.016	0.016	568.299	0.015
Rollers	500	0.172	1.048	0.442	0.005	0.016	0.016	568.300	0.015
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022	0.022	568.299	0.047
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020	0.020	568.299	0.023
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015	0.015	568.299	0.016
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012	0.012	568.299	0.016
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012	0.012	568.300	0.016
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071	0.071	568.299	0.029
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046	0.046	568.299	0.025
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043	0.043	568.300	0.025
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043	0.043	568.299	0.025
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060	0.060	568.299	0.025
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035	0.035	568.299	0.051
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033	0.033	568.299	0.025
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022	0.022	568.299	0.018

Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015	0.015	568.299	0.017
Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015	0.015	568.299	0.017
Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015	0.015	568.299	0.017
Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030	0.030	568.299	0.017
Scrapers	120	0.348	3.842	1.943	0.006	0.064	0.064	568.299	0.031
Scrapers	175	0.250	3.382	0.824	0.006	0.040	0.040	568.299	0.022
Scrapers	250	0.229	1.175	0.717	0.006	0.026	0.026	568.299	0.020
Scrapers	500	0.226	1.123	0.674	0.005	0.025	0.025	568.300	0.020
Scrapers	750	0.226	1.123	0.682	0.005	0.025	0.025	568.299	0.020
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Signal Boards	50	0.356	4.067	3.082	0.007	0.020	0.020	568.299	0.032
Signal Boards	120	0.192	3.445	1.482	0.006	0.018	0.018	568.299	0.017
Signal Boards	175	0.138	3.048	0.372	0.006	0.014	0.014	568.299	0.012
Signal Boards	250	0.162	1.254	0.401	0.007	0.014	0.014	686.695	0.014
Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015	0.015	568.299	0.037
Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014	0.014	568.299	0.019
Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041	0.041	568.299	0.039
Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038	0.038	568.299	0.020
Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025	0.025	568.299	0.014
Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016	0.016	568.299	0.013
Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016	0.016	568.299	0.013
Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016	0.016	568.300	0.013
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300	0.061
Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017	0.017	568.299	0.045
Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016	0.016	568.299	0.022
Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012	0.012	568.299	0.015
Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011	0.011	568.299	0.015
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022	0.022	568.299	0.046
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020	0.020	568.299	0.023
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015	0.015	568.299	0.016
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012	0.012	568.299	0.016
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012	0.012	568.299	0.015
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012	0.012	568.299	0.015
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Trenchers	50	0.681	5.055	3.548	0.007	0.084	0.084	568.299	0.061
Trenchers	120	0.332	3.713	2.049	0.006	0.076	0.076	568.300	0.030
Trenchers	175	0.241	3.264	0.966	0.006	0.048	0.048	568.299	0.021
Trenchers	250	0.216	1.149	0.847	0.006	0.031	0.031	568.299	0.019
Trenchers	500	0.213	1.126	0.790	0.005	0.029	0.029	568.299	0.019
Trenchers	750	0.213	1.126	0.801	0.005	0.029	0.029	568.300	0.019
Welders	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299	0.059
Welders	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061
Welders	50	0.406	4.349	3.147	0.007	0.022	0.022	568.299	0.036
Welders	120	0.214	3.528	1.509	0.006	0.019	0.019	568.299	0.019
Welders	175	0.153	3.121	0.387	0.006	0.015	0.015	568.299	0.013
Welders	250	0.149	1.063	0.343	0.006	0.012	0.012	568.299	0.013
Welders	500	0.149	1.027	0.339	0.005	0.012	0.012	568.299	0.013
Water Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299	0.019
Water Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299	0.018
Water Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Water Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Water Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299	0.018

2039

g/hp/hr	2039		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
N2O	**Equipment**	**MaxHP**	ROG	CO	NOX	SOX	PM10
0.005	Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161
0.005	Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161
0.005	Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019
0.004	Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017
0.004	Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011
0.004	Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011
0.005	Air Compressors	15	0.661	3.469	4.143	0.008	0.162
0.005	Air Compressors	25	0.685	2.339	4.332	0.007	0.162
0.005	Air Compressors	50	0.463	4.674	3.215	0.007	0.023
0.004	Air Compressors	120	0.238	3.623	1.530	0.006	0.020
0.004	Air Compressors	175	0.170	3.205	0.391	0.006	0.015
0.004	Air Compressors	250	0.166	1.091	0.347	0.006	0.012
0.004	Air Compressors	500	0.166	1.048	0.343	0.005	0.012
0.004	Air Compressors	750	0.166	1.048	0.344	0.005	0.012
0.004	Air Compressors	1000	0.167	1.048	2.473	0.005	0.026
0.005	Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161
0.005	Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161
0.005	Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013
0.004	Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012
0.004	Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010
0.004	Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010
0.004	Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010
0.004	Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010
0.004	Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021

0.005	Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161
0.005	Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021
0.004	Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018
0.004	Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014
0.005	Cranes	50	0.600	5.292	3.401	0.007	0.039
0.004	Cranes	120	0.300	3.801	1.676	0.006	0.036
0.004	Cranes	175	0.212	3.357	0.519	0.006	0.024
0.004	Cranes	250	0.203	1.143	0.463	0.006	0.016
0.004	Cranes	500	0.202	1.087	0.441	0.005	0.016
0.004	Cranes	750	0.202	1.087	0.446	0.005	0.016
0.004	Cranes	9999	0.209	1.089	2.618	0.005	0.031
0.005	Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066
0.004	Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060
0.004	Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038
0.004	Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026
0.004	Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025
0.004	Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025
0.004	Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041
0.005	Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023
0.004	Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020
0.004	Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015
0.004	Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012
0.004	Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012
0.004	Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012
0.004	Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026

0.005	Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	50	0.572	5.287	3.323	0.007	0.024
0.004	Excavators	120	0.284	3.802	1.551	0.006	0.021
0.004	Excavators	175	0.197	3.363	0.365	0.006	0.015
0.004	Excavators	250	0.195	1.145	0.342	0.006	0.013
0.004	Excavators	500	0.195	1.089	0.337	0.005	0.013
0.004	Excavators	750	0.195	1.088	0.338	0.005	0.013
0.005	Forklifts	50	0.558	5.234	3.268	0.007	0.017
0.004	Forklifts	120	0.275	3.787	1.495	0.006	0.016
0.004	Forklifts	175	0.189	3.350	0.299	0.006	0.012
0.004	Forklifts	250	0.188	1.141	0.290	0.006	0.011
0.004	Forklifts	500	0.188	1.085	0.290	0.005	0.011
0.005	Generator Sets	15	0.589	3.470	4.143	0.008	0.162
0.005	Generator Sets	25	0.685	2.340	4.332	0.007	0.162
0.005	Generator Sets	50	0.276	3.607	2.991	0.007	0.018
0.004	Generator Sets	120	0.156	3.310	1.458	0.006	0.016
0.004	Generator Sets	175	0.113	2.929	0.373	0.006	0.013
0.004	Generator Sets	250	0.110	0.998	0.331	0.006	0.011
0.004	Generator Sets	500	0.110	0.978	0.328	0.005	0.011
0.004	Generator Sets	750	0.110	0.978	0.328	0.005	0.011
0.004	Generator Sets	9999	0.114	0.978	2.362	0.005	0.022
0.005	Graders	50	0.593	5.189	3.356	0.007	0.037
0.004	Graders	120	0.293	3.767	1.661	0.006	0.034
0.004	Graders	175	0.206	3.326	0.506	0.006	0.022
0.004	Graders	250	0.196	1.137	0.452	0.006	0.016
0.004	Graders	500	0.195	1.083	0.434	0.005	0.016
0.004	Graders	750	0.195	1.083	0.438	0.005	0.016
0.004	Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107
0.004	Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065
0.004	Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042
0.004	Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040
0.004	Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056
0.004	Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016
0.004	Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013

0.004	Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013
0.004	Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013
0.004	Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028
0.005	Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161
0.005	Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018
0.004	Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017
0.004	Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013
0.004	Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011
0.005	Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161
0.005	Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025
0.004	Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022
0.004	Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016
0.004	Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013
0.004	Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013

0.004	Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013
0.004	Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028
0.005	Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025
0.004	Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022
0.004	Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016
0.004	Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013
0.004	Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013
0.004	Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027
0.005	Pavers	25	0.685	2.339	4.332	0.007	0.161
0.005	Pavers	50	0.694	5.260	3.555	0.007	0.076
0.004	Pavers	120	0.338	3.774	1.986	0.006	0.069
0.004	Pavers	175	0.244	3.319	0.889	0.006	0.043
0.004	Pavers	250	0.221	1.157	0.772	0.006	0.027
0.004	Pavers	500	0.218	1.111	0.722	0.005	0.026
0.005	Paving Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Paving Equipment	50	0.664	5.181	3.511	0.007	0.070
0.004	Paving Equipment	120	0.326	3.753	1.928	0.006	0.064
0.004	Paving Equipment	175	0.235	3.303	0.832	0.006	0.040
0.004	Paving Equipment	250	0.212	1.140	0.714	0.006	0.024
0.005	Plate Compactors	15	0.661	3.470	4.142	0.008	0.161
0.005	Pressure Washers	15	0.589	3.470	4.143	0.008	0.162
0.005	Pressure Washers	25	0.685	2.340	4.332	0.007	0.162
0.005	Pressure Washers	50	0.188	3.101	2.882	0.007	0.015
0.004	Pressure Washers	120	0.116	3.161	1.421	0.006	0.014
0.004	Pressure Washers	175	0.109	2.907	0.382	0.006	0.013

0.004	Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
0.005	Pumps	15	0.661	3.469	4.143	0.008	0.162
0.005	Pumps	25	0.685	2.340	4.332	0.007	0.162
0.005	Pumps	50	0.306	3.778	3.028	0.007	0.019
0.004	Pumps	120	0.170	3.360	1.470	0.006	0.017
0.004	Pumps	175	0.123	2.973	0.377	0.006	0.014
0.004	Pumps	250	0.119	1.012	0.335	0.006	0.011
0.004	Pumps	500	0.119	0.989	0.331	0.005	0.011
0.004	Pumps	750	0.119	0.989	0.331	0.005	0.011
0.004	Pumps	9999	0.124	0.989	2.380	0.005	0.023
0.005	Rollers	15	0.661	3.469	4.142	0.008	0.161
0.005	Rollers	25	0.685	2.340	4.332	0.007	0.161
0.005	Rollers	50	0.507	4.711	3.280	0.007	0.038
0.004	Rollers	120	0.258	3.629	1.650	0.006	0.035
0.004	Rollers	175	0.184	3.204	0.523	0.006	0.023
0.004	Rollers	250	0.173	1.091	0.465	0.006	0.016
0.004	Rollers	500	0.172	1.048	0.442	0.005	0.016
0.005	Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022
0.004	Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020
0.004	Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015
0.004	Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012
0.004	Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012
0.004	Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071
0.004	Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046
0.004	Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043
0.004	Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043
0.004	Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060
0.005	Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161
0.005	Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035
0.004	Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033
0.004	Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022

0.004	Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015
0.004	Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015
0.004	Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015
0.004	Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030
0.004	Scrapers	120	0.348	3.842	1.943	0.006	0.064
0.004	Scrapers	175	0.250	3.382	0.824	0.006	0.040
0.004	Scrapers	250	0.229	1.175	0.717	0.006	0.026
0.004	Scrapers	500	0.226	1.123	0.674	0.005	0.025
0.004	Scrapers	750	0.226	1.123	0.682	0.005	0.025
0.005	Signal Boards	15	0.661	3.469	4.142	0.008	0.161
0.005	Signal Boards	50	0.356	4.067	3.082	0.007	0.020
0.004	Signal Boards	120	0.192	3.445	1.482	0.006	0.018
0.004	Signal Boards	175	0.138	3.048	0.372	0.006	0.014
0.004	Signal Boards	250	0.162	1.254	0.401	0.007	0.014
0.005	Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161
0.005	Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015
0.004	Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014
0.005	Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041
0.004	Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038
0.004	Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025
0.004	Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016
0.004	Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016
0.004	Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016
0.005	Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161
0.005	Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161
0.005	Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017
0.004	Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016
0.004	Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012
0.004	Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011
0.005	Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161

0.005	Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022
0.004	Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020
0.004	Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015
0.004	Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012
0.004	Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012
0.004	Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012
0.005	Trenchers	15	0.661	3.469	4.142	0.008	0.161
0.005	Trenchers	25	0.685	2.339	4.332	0.007	0.161
0.005	Trenchers	50	0.681	5.055	3.548	0.007	0.084
0.004	Trenchers	120	0.332	3.713	2.049	0.006	0.076
0.004	Trenchers	175	0.241	3.264	0.966	0.006	0.048
0.004	Trenchers	250	0.216	1.149	0.847	0.006	0.031
0.004	Trenchers	500	0.213	1.126	0.790	0.005	0.029
0.004	Trenchers	750	0.213	1.126	0.801	0.005	0.029
0.005	Welders	15	0.661	3.469	4.143	0.008	0.162
0.005	Welders	25	0.685	2.339	4.332	0.007	0.162
0.005	Welders	50	0.406	4.349	3.147	0.007	0.022
0.004	Welders	120	0.214	3.528	1.509	0.006	0.019
0.004	Welders	175	0.153	3.121	0.387	0.006	0.015
0.004	Welders	250	0.149	1.063	0.343	0.006	0.012
0.004	Welders	500	0.149	1.027	0.339	0.005	0.012
0.004	Water Trucks	175	0.211	3.425	0.380	0.006	0.016
0.004	Water Trucks	250	0.208	1.167	0.353	0.006	0.013
0.004	Water Trucks	500	0.208	1.105	0.348	0.005	0.013
0.004	Water Trucks	750	0.208	1.105	0.348	0.005	0.013
0.004	Water Trucks	1000	0.209	1.105	2.565	0.005	0.028

2040

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.019	568.299	0.026	0.005
0.017	568.299	0.014	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.162	568.300	0.059	0.005
0.162	568.299	0.061	0.005
0.023	568.299	0.041	0.005
0.020	568.299	0.021	0.004
0.015	568.300	0.015	0.004
0.012	568.299	0.014	0.004
0.012	568.299	0.014	0.004
0.012	568.299	0.014	0.004
0.026	568.299	0.015	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.013	568.299	0.031	0.005
0.012	568.300	0.016	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.021	568.299	0.011	0.004

2040		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.661	3.469
Aerial Lifts	25	0.685	2.339
Aerial Lifts	50	0.295	3.723
Aerial Lifts	120	0.161	3.344
Aerial Lifts	500	0.112	0.986
Aerial Lifts	750	0.112	0.986
Air Compressors	15	0.661	3.469
Air Compressors	25	0.685	2.339
Air Compressors	50	0.458	4.659
Air Compressors	120	0.232	3.619
Air Compressors	175	0.161	3.201
Air Compressors	250	0.160	1.090
Air Compressors	500	0.160	1.047
Air Compressors	750	0.160	1.047
Air Compressors	1000	0.160	1.047
Bore/Drill Rigs	15	0.661	3.469
Bore/Drill Rigs	25	0.685	2.339
Bore/Drill Rigs	50	0.348	4.032
Bore/Drill Rigs	120	0.183	3.435
Bore/Drill Rigs	175	0.127	3.039
Bore/Drill Rigs	250	0.127	1.035
Bore/Drill Rigs	500	0.127	1.006
Bore/Drill Rigs	750	0.127	1.006
Bore/Drill Rigs	1000	0.127	1.006

0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.161	568.299	0.061	0.005
0.021	568.300	0.033	0.005
0.018	568.299	0.018	0.004
0.014	568.299	0.012	0.004
0.039	568.299	0.054	0.005
0.036	568.300	0.027	0.004
0.024	568.299	0.019	0.004
0.016	568.299	0.018	0.004
0.016	568.299	0.018	0.004
0.016	568.299	0.018	0.004
0.031	568.299	0.018	0.004
0.066	568.299	0.063	0.005
0.060	568.299	0.031	0.004
0.038	568.299	0.022	0.004
0.026	568.299	0.020	0.004
0.025	568.299	0.020	0.004
0.025	568.299	0.020	0.004
0.041	568.299	0.020	0.004
0.023	568.299	0.044	0.005
0.020	568.299	0.022	0.004
0.015	568.299	0.015	0.004
0.012	568.300	0.015	0.004
0.012	568.299	0.015	0.004
0.012	568.299	0.015	0.004
0.026	568.299	0.016	0.004

Cement and Mortar Mixers	15	0.661	3.470
Cement and Mortar Mixers	25	0.685	2.339
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.373	4.175
Concrete/Industrial Saws	120	0.195	3.477
Concrete/Industrial Saws	175	0.136	3.076
Cranes	50	0.567	5.268
Cranes	120	0.282	3.797
Cranes	175	0.197	3.358
Cranes	250	0.195	1.144
Cranes	500	0.195	1.087
Cranes	750	0.195	1.087
Cranes	9999	0.198	1.087
Crawler Tractors	50	0.653	5.443
Crawler Tractors	120	0.316	3.839
Crawler Tractors	175	0.221	3.388
Crawler Tractors	250	0.211	1.167
Crawler Tractors	500	0.210	1.113
Crawler Tractors	750	0.210	1.113
Crawler Tractors	1000	0.213	1.122
Crushing/Proc. Equipment	50	0.488	4.833
Crushing/Proc. Equipment	120	0.245	3.670
Crushing/Proc. Equipment	175	0.170	3.246
Crushing/Proc. Equipment	250	0.168	1.106
Crushing/Proc. Equipment	500	0.168	1.059
Crushing/Proc. Equipment	750	0.169	1.059
Crushing/Proc. Equipment	9999	0.170	1.059

0.161	568.299	0.061	0.005
0.161	568.299	0.061	0.005
0.024	568.299	0.051	0.005
0.021	568.299	0.025	0.004
0.015	568.299	0.017	0.004
0.013	568.300	0.017	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.017	568.299	0.050	0.005
0.016	568.299	0.024	0.004
0.012	568.300	0.017	0.004
0.011	568.300	0.017	0.004
0.011	568.299	0.017	0.004
0.162	568.299	0.053	0.005
0.162	568.299	0.061	0.005
0.018	568.299	0.024	0.005
0.016	568.299	0.014	0.004
0.013	568.299	0.010	0.004
0.011	568.299	0.009	0.004
0.011	568.299	0.009	0.004
0.011	568.299	0.009	0.004
0.022	568.299	0.010	0.004
0.037	568.299	0.053	0.005
0.034	568.299	0.026	0.004
0.022	568.300	0.018	0.004
0.016	568.299	0.017	0.004
0.016	568.299	0.017	0.004
0.016	568.299	0.017	0.004
0.107	568.299	0.037	0.004
0.065	568.299	0.027	0.004
0.042	568.299	0.024	0.004
0.040	568.299	0.023	0.004
0.056	568.299	0.024	0.004
0.016	568.299	0.019	0.004
0.013	568.299	0.018	0.004

Dumpers/Tenders	25	0.685	2.339
Excavators	25	0.685	2.339
Excavators	50	0.567	5.283
Excavators	120	0.279	3.802
Excavators	175	0.193	3.363
Excavators	250	0.192	1.145
Excavators	500	0.192	1.089
Excavators	750	0.192	1.089
Forklifts	50	0.562	5.256
Forklifts	120	0.276	3.794
Forklifts	175	0.189	3.356
Forklifts	250	0.189	1.143
Forklifts	500	0.189	1.087
Generator Sets	15	0.589	3.469
Generator Sets	25	0.685	2.339
Generator Sets	50	0.273	3.601
Generator Sets	120	0.152	3.308
Generator Sets	175	0.107	2.928
Generator Sets	250	0.106	0.997
Generator Sets	500	0.106	0.978
Generator Sets	750	0.106	0.978
Generator Sets	9999	0.107	0.978
Graders	50	0.563	5.161
Graders	120	0.278	3.764
Graders	175	0.193	3.326
Graders	250	0.188	1.133
Graders	500	0.188	1.079
Graders	750	0.188	1.079
Off-Highway Tractors	120	0.362	3.878
Off-Highway Tractors	175	0.257	3.412
Off-Highway Tractors	250	0.237	1.198
Off-Highway Tractors	750	0.234	1.164
Off-Highway Tractors	1000	0.238	1.183
Off-Highway Trucks	175	0.205	3.426
Off-Highway Trucks	250	0.204	1.167

0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.028	568.299	0.018	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.018	568.299	0.037	0.005
0.017	568.299	0.019	0.004
0.013	568.299	0.013	0.004
0.011	568.299	0.013	0.004
0.161	568.299	0.053	0.005
0.161	568.299	0.061	0.005
0.025	568.299	0.050	0.005
0.022	568.300	0.025	0.004
0.016	568.300	0.018	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004

Off-Highway Trucks	500	0.204	1.105
Off-Highway Trucks	750	0.204	1.105
Off-Highway Trucks	1000	0.205	1.105
Other Construction Equipment	15	0.661	3.470
Other Construction Equipment	25	0.685	2.339
Other Construction Equipment	50	0.409	4.377
Other Construction Equipment	120	0.210	3.536
Other Construction Equipment	175	0.145	3.128
Other Construction Equipment	500	0.145	1.029
Other General Industrial Equipment	15	0.589	3.470
Other General Industrial Equipment	25	0.685	2.339
Other General Industrial Equipment	50	0.562	5.257
Other General Industrial Equipment	120	0.277	3.794
Other General Industrial Equipment	175	0.191	3.356
Other General Industrial Equipment	250	0.190	1.143
Other General Industrial Equipment	500	0.190	1.087

0.013	568.299	0.017	0.004
0.028	568.299	0.017	0.004
0.025	568.299	0.049	0.005
0.022	568.299	0.025	0.004
0.016	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.027	568.299	0.017	0.004
0.161	568.299	0.061	0.005
0.076	568.299	0.062	0.005
0.069	568.299	0.030	0.004
0.043	568.299	0.022	0.004
0.027	568.300	0.019	0.004
0.026	568.299	0.019	0.004
0.161	568.299	0.061	0.005
0.070	568.300	0.059	0.005
0.064	568.299	0.029	0.004
0.040	568.299	0.021	0.004
0.024	568.299	0.019	0.004
0.161	568.299	0.059	0.005
0.162	568.300	0.053	0.005
0.162	568.299	0.061	0.005
0.015	568.299	0.016	0.005
0.014	568.299	0.010	0.004
0.013	568.299	0.009	0.004

Other General Industrial Equipment	750	0.190	1.087
Other General Industrial Equipment	1000	0.191	1.087
Other Material Handling Equipment	50	0.551	5.191
Other Material Handling Equipment	120	0.272	3.775
Other Material Handling Equipment	175	0.188	3.339
Other Material Handling Equipment	250	0.187	1.137
Other Material Handling Equipment	500	0.187	1.082
Other Material Handling Equipment	9999	0.189	1.082
Pavers	25	0.685	2.339
Pavers	50	0.618	5.189
Pavers	120	0.302	3.763
Pavers	175	0.213	3.319
Pavers	250	0.200	1.138
Pavers	500	0.198	1.085
Paving Equipment	25	0.685	2.339
Paving Equipment	50	0.589	5.111
Paving Equipment	120	0.291	3.744
Paving Equipment	175	0.205	3.304
Paving Equipment	250	0.193	1.127
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.589	3.469
Pressure Washers	25	0.685	2.339
Pressure Washers	50	0.186	3.098
Pressure Washers	120	0.113	3.160
Pressure Washers	175	0.103	2.907

0.009	568.299	0.008	0.004
0.162	568.299	0.059	0.005
0.162	568.299	0.061	0.005
0.019	568.299	0.027	0.005
0.017	568.299	0.015	0.004
0.014	568.299	0.011	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.023	568.299	0.011	0.004
0.161	568.299	0.059	0.005
0.161	568.300	0.061	0.005
0.038	568.299	0.045	0.005
0.035	568.299	0.023	0.004
0.023	568.299	0.016	0.004
0.016	568.299	0.015	0.004
0.016	568.300	0.015	0.004
0.022	568.299	0.047	0.005
0.020	568.299	0.023	0.004
0.015	568.299	0.016	0.004
0.012	568.299	0.016	0.004
0.012	568.300	0.016	0.004
0.071	568.299	0.029	0.004
0.046	568.299	0.025	0.004
0.043	568.300	0.025	0.004
0.043	568.299	0.025	0.004
0.060	568.299	0.025	0.004
0.161	568.299	0.061	0.005
0.035	568.299	0.051	0.005
0.033	568.299	0.025	0.004
0.022	568.299	0.018	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.661	3.469
Pumps	25	0.685	2.339
Pumps	50	0.303	3.770
Pumps	120	0.165	3.358
Pumps	175	0.116	2.971
Pumps	250	0.114	1.012
Pumps	500	0.114	0.989
Pumps	750	0.114	0.989
Pumps	9999	0.116	0.989
Rollers	15	0.661	3.469
Rollers	25	0.685	2.339
Rollers	50	0.469	4.682
Rollers	120	0.240	3.625
Rollers	175	0.168	3.205
Rollers	250	0.165	1.092
Rollers	500	0.165	1.048
Rough Terrain Forklifts	50	0.519	5.010
Rough Terrain Forklifts	120	0.258	3.722
Rough Terrain Forklifts	175	0.178	3.292
Rough Terrain Forklifts	250	0.177	1.121
Rough Terrain Forklifts	500	0.177	1.071
Rubber Tired Dozers	175	0.275	3.470
Rubber Tired Dozers	250	0.253	1.225
Rubber Tired Dozers	500	0.249	1.198
Rubber Tired Dozers	750	0.250	1.198
Rubber Tired Dozers	1000	0.254	1.218
Rubber Tired Loaders	25	0.685	2.339
Rubber Tired Loaders	50	0.545	5.102
Rubber Tired Loaders	120	0.271	3.748
Rubber Tired Loaders	175	0.188	3.314

0.015	568.299	0.017	0.004
0.015	568.299	0.017	0.004
0.015	568.299	0.017	0.004
0.030	568.299	0.017	0.004
0.064	568.299	0.031	0.004
0.040	568.299	0.022	0.004
0.026	568.299	0.020	0.004
0.025	568.300	0.020	0.004
0.025	568.299	0.020	0.004
0.161	568.299	0.059	0.005
0.020	568.299	0.032	0.005
0.018	568.299	0.017	0.004
0.014	568.299	0.012	0.004
0.014	686.695	0.014	0.004
0.161	568.299	0.061	0.005
0.015	568.299	0.037	0.005
0.014	568.299	0.019	0.004
0.041	568.299	0.039	0.005
0.038	568.299	0.020	0.004
0.025	568.299	0.014	0.004
0.016	568.299	0.013	0.004
0.016	568.299	0.013	0.004
0.016	568.300	0.013	0.004
0.161	568.299	0.053	0.005
0.161	568.300	0.061	0.005
0.017	568.299	0.045	0.005
0.016	568.299	0.022	0.004
0.012	568.299	0.015	0.004
0.011	568.299	0.015	0.004
0.161	568.299	0.061	0.005

Rubber Tired Loaders	250	0.185	1.128
Rubber Tired Loaders	500	0.185	1.076
Rubber Tired Loaders	750	0.185	1.076
Rubber Tired Loaders	1000	0.186	1.076
Scrapers	120	0.316	3.833
Scrapers	175	0.221	3.381
Scrapers	250	0.210	1.159
Scrapers	500	0.209	1.100
Scrapers	750	0.209	1.100
Signal Boards	15	0.661	3.469
Signal Boards	50	0.356	4.074
Signal Boards	120	0.188	3.447
Signal Boards	175	0.131	3.050
Signal Boards	250	0.157	1.255
Skid Steer Loaders	25	0.685	2.339
Skid Steer Loaders	50	0.411	4.392
Skid Steer Loaders	120	0.211	3.540
Surfacing Equipment	50	0.395	4.183
Surfacing Equipment	120	0.206	3.477
Surfacing Equipment	175	0.146	3.073
Surfacing Equipment	250	0.140	1.047
Surfacing Equipment	500	0.140	1.015
Surfacing Equipment	750	0.140	1.015
Sweepers/Scrubbers	15	0.589	3.470
Sweepers/Scrubbers	25	0.685	2.340
Sweepers/Scrubbers	50	0.504	4.925
Sweepers/Scrubbers	120	0.251	3.697
Sweepers/Scrubbers	175	0.172	3.270
Sweepers/Scrubbers	250	0.172	1.114
Tractors/Loaders/Backhoes	25	0.685	2.339

0.022	568.299	0.046	0.005
0.020	568.299	0.023	0.004
0.015	568.299	0.016	0.004
0.012	568.299	0.016	0.004
0.012	568.299	0.015	0.004
0.012	568.299	0.015	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.084	568.299	0.061	0.005
0.076	568.300	0.030	0.004
0.048	568.299	0.021	0.004
0.031	568.299	0.019	0.004
0.029	568.299	0.019	0.004
0.029	568.300	0.019	0.004
0.162	568.299	0.059	0.005
0.162	568.299	0.061	0.005
0.022	568.299	0.036	0.005
0.019	568.299	0.019	0.004
0.015	568.299	0.013	0.004
0.012	568.299	0.013	0.004
0.012	568.299	0.013	0.004
0.016	568.299	0.019	0.004
0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.028	568.299	0.018	0.004

Tractors/Loaders/Backhoes	50	0.508	4.946
Tractors/Loaders/Backhoes	120	0.254	3.703
Tractors/Loaders/Backhoes	175	0.175	3.276
Tractors/Loaders/Backhoes	250	0.174	1.116
Tractors/Loaders/Backhoes	500	0.174	1.066
Tractors/Loaders/Backhoes	750	0.174	1.066
Trenchers	15	0.661	3.469
Trenchers	25	0.685	2.339
Trenchers	50	0.598	4.980
Trenchers	120	0.293	3.699
Trenchers	175	0.207	3.260
Trenchers	250	0.193	1.126
Trenchers	500	0.191	1.081
Trenchers	750	0.191	1.081
Welders	15	0.661	3.469
Welders	25	0.685	2.339
Welders	50	0.402	4.336
Welders	120	0.208	3.524
Welders	175	0.145	3.118
Welders	250	0.143	1.062
Welders	500	0.143	1.026
Water Trucks	175	0.205	3.426
Water Trucks	250	0.204	1.167
Water Trucks	500	0.204	1.105
Water Trucks	750	0.204	1.105
Water Trucks	1000	0.205	1.105

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.966	0.007	0.013	0.013	568.299	0.026	0.005
1.407	0.006	0.012	0.012	568.299	0.014	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.300	0.061	0.005
3.159	0.007	0.016	0.016	568.300	0.041	0.005
1.468	0.006	0.015	0.015	568.299	0.020	0.004
0.307	0.006	0.012	0.012	568.299	0.014	0.004
0.291	0.006	0.010	0.010	568.299	0.014	0.004
0.291	0.005	0.010	0.010	568.300	0.014	0.004
0.291	0.005	0.010	0.010	568.299	0.014	0.004
2.439	0.005	0.023	0.023	568.299	0.014	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.019	0.007	0.013	0.013	568.300	0.031	0.005
1.411	0.006	0.012	0.012	568.299	0.016	0.004
0.272	0.006	0.010	0.010	568.299	0.011	0.004
0.272	0.006	0.010	0.010	568.300	0.011	0.004
0.272	0.005	0.010	0.010	568.299	0.011	0.004
0.272	0.005	0.010	0.010	568.299	0.011	0.004
2.372	0.005	0.021	0.021	568.299	0.011	0.004

4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.058	0.007	0.014	0.014	568.299	0.033	0.005
1.434	0.006	0.013	0.013	568.299	0.017	0.004
0.297	0.006	0.011	0.011	568.300	0.012	0.004
3.324	0.007	0.024	0.024	568.299	0.051	0.005
1.552	0.006	0.021	0.021	568.299	0.025	0.004
0.371	0.006	0.016	0.016	568.299	0.017	0.004
0.344	0.006	0.013	0.013	568.299	0.017	0.004
0.340	0.005	0.013	0.013	568.299	0.017	0.004
0.341	0.005	0.013	0.013	568.299	0.017	0.004
2.534	0.005	0.027	0.027	568.299	0.017	0.004
3.420	0.007	0.042	0.042	568.299	0.058	0.005
1.709	0.006	0.039	0.039	568.299	0.028	0.004
0.539	0.006	0.025	0.025	568.299	0.020	0.004
0.491	0.006	0.018	0.018	568.299	0.019	0.004
0.470	0.005	0.018	0.018	568.299	0.018	0.004
0.475	0.005	0.018	0.018	568.299	0.019	0.004
2.652	0.005	0.032	0.032	568.299	0.019	0.004
3.194	0.007	0.017	0.017	568.299	0.044	0.005
1.477	0.006	0.015	0.015	568.299	0.022	0.004
0.306	0.006	0.012	0.012	568.299	0.015	0.004
0.292	0.006	0.011	0.011	568.299	0.015	0.004
0.292	0.005	0.011	0.011	568.299	0.015	0.004
0.292	0.005	0.011	0.011	568.299	0.015	0.004
2.457	0.005	0.024	0.024	568.299	0.015	0.004

4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.332	0.007	0.161	0.161	568.300	0.061	0.005
3.290	0.007	0.019	0.019	568.299	0.051	0.005
1.507	0.006	0.017	0.017	568.299	0.025	0.004
0.311	0.006	0.013	0.013	568.299	0.017	0.004
0.300	0.006	0.011	0.011	568.299	0.017	0.004
0.300	0.005	0.011	0.011	568.299	0.017	0.004
0.300	0.005	0.011	0.011	568.299	0.017	0.004
3.272	0.007	0.017	0.017	568.299	0.050	0.005
1.491	0.006	0.016	0.016	568.299	0.024	0.004
0.288	0.006	0.012	0.012	568.299	0.017	0.004
0.288	0.006	0.011	0.011	568.299	0.017	0.004
0.288	0.005	0.011	0.011	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.941	0.007	0.012	0.012	568.300	0.024	0.005
1.399	0.006	0.012	0.012	568.299	0.013	0.004
0.293	0.006	0.010	0.010	568.299	0.009	0.004
0.277	0.006	0.009	0.009	568.299	0.009	0.004
0.277	0.005	0.009	0.009	568.299	0.009	0.004
0.277	0.005	0.009	0.009	568.300	0.009	0.004
2.330	0.005	0.020	0.020	568.299	0.009	0.004
3.298	0.007	0.026	0.026	568.300	0.050	0.005
1.560	0.006	0.024	0.024	568.299	0.025	0.004
0.380	0.006	0.017	0.017	568.299	0.017	0.004
0.360	0.006	0.013	0.013	568.299	0.017	0.004
0.351	0.005	0.013	0.013	568.299	0.017	0.004
0.353	0.005	0.013	0.013	568.299	0.017	0.004
1.976	0.006	0.067	0.067	568.299	0.032	0.004
0.836	0.006	0.041	0.041	568.299	0.023	0.004
0.747	0.006	0.028	0.028	568.299	0.021	0.004
0.710	0.005	0.027	0.027	568.299	0.021	0.004
2.844	0.005	0.042	0.042	568.299	0.021	0.004
0.318	0.006	0.013	0.013	568.299	0.018	0.004
0.305	0.006	0.012	0.012	568.300	0.018	0.004

0.305	0.005	0.012	0.012	568.299	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
2.532	0.005	0.026	0.026	568.299	0.018	0.004
4.142	0.008	0.161	0.161	568.300	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.096	0.007	0.015	0.015	568.300	0.036	0.005
1.441	0.006	0.014	0.014	568.299	0.018	0.004
0.290	0.006	0.011	0.011	568.299	0.013	0.004
0.282	0.005	0.010	0.010	568.299	0.013	0.004
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.283	0.007	0.019	0.019	568.299	0.050	0.005
1.506	0.006	0.017	0.017	568.299	0.025	0.004
0.315	0.006	0.012	0.012	568.299	0.017	0.004
0.299	0.006	0.011	0.011	568.299	0.017	0.004
0.299	0.005	0.011	0.011	568.299	0.017	0.004

0.299	0.005	0.011	0.011	568.299	0.017	0.004
2.500	0.005	0.025	0.025	568.299	0.017	0.004
3.269	0.007	0.018	0.018	568.299	0.049	0.005
1.502	0.006	0.017	0.017	568.300	0.024	0.004
0.314	0.006	0.012	0.012	568.299	0.017	0.004
0.298	0.006	0.011	0.011	568.299	0.016	0.004
0.298	0.005	0.011	0.011	568.299	0.016	0.004
2.493	0.005	0.025	0.025	568.300	0.017	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.393	0.007	0.047	0.047	568.299	0.055	0.005
1.731	0.006	0.043	0.043	568.299	0.027	0.004
0.583	0.006	0.027	0.027	568.299	0.019	0.004
0.525	0.006	0.018	0.018	568.299	0.018	0.004
0.498	0.005	0.018	0.018	568.299	0.017	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.361	0.007	0.042	0.042	568.300	0.053	0.005
1.687	0.006	0.039	0.039	568.299	0.026	0.004
0.536	0.006	0.025	0.025	568.299	0.018	0.004
0.485	0.006	0.017	0.017	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.836	0.007	0.010	0.010	568.299	0.016	0.005
1.365	0.006	0.010	0.010	568.299	0.010	0.004
0.293	0.006	0.010	0.010	568.299	0.009	0.004

0.265	0.006	0.009	0.009	568.299	0.008	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.976	0.007	0.013	0.013	568.299	0.027	0.005
1.410	0.006	0.012	0.012	568.299	0.014	0.004
0.295	0.006	0.010	0.010	568.299	0.010	0.004
0.279	0.006	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
2.347	0.005	0.020	0.020	568.299	0.010	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.207	0.007	0.024	0.024	568.299	0.042	0.005
1.525	0.006	0.021	0.021	568.299	0.021	0.004
0.373	0.006	0.015	0.015	568.299	0.015	0.004
0.348	0.006	0.012	0.012	568.299	0.014	0.004
0.341	0.005	0.012	0.012	568.299	0.014	0.004
3.228	0.007	0.017	0.017	568.300	0.046	0.005
1.485	0.006	0.016	0.016	568.299	0.023	0.004
0.303	0.006	0.012	0.012	568.300	0.016	0.004
0.292	0.006	0.011	0.011	568.299	0.016	0.004
0.292	0.005	0.011	0.011	568.299	0.016	0.004
0.903	0.006	0.045	0.045	568.299	0.024	0.004
0.810	0.006	0.031	0.031	568.299	0.022	0.004
0.758	0.005	0.029	0.029	568.299	0.022	0.004
0.767	0.005	0.029	0.029	568.300	0.022	0.004
2.910	0.005	0.045	0.045	568.300	0.023	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.283	0.007	0.024	0.024	568.300	0.049	0.005
1.543	0.006	0.022	0.022	568.300	0.024	0.004
0.365	0.006	0.016	0.016	568.299	0.017	0.004

0.346	0.006	0.013	0.013	568.299	0.016	0.004
0.338	0.005	0.013	0.013	568.300	0.016	0.004
0.340	0.005	0.013	0.013	568.299	0.016	0.004
2.522	0.005	0.026	0.026	568.299	0.016	0.004
1.715	0.006	0.040	0.040	568.299	0.028	0.004
0.549	0.006	0.026	0.026	568.299	0.020	0.004
0.498	0.006	0.018	0.018	568.300	0.018	0.004
0.475	0.005	0.017	0.017	568.299	0.018	0.004
0.480	0.005	0.017	0.017	568.299	0.018	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.037	0.007	0.014	0.014	568.299	0.032	0.005
1.428	0.006	0.013	0.013	568.299	0.016	0.004
0.296	0.006	0.011	0.011	568.299	0.011	0.004
0.341	0.007	0.012	0.012	686.695	0.014	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.093	0.007	0.014	0.014	568.299	0.037	0.005
1.435	0.006	0.013	0.013	568.300	0.019	0.004
3.114	0.007	0.025	0.025	568.299	0.035	0.005
1.521	0.006	0.024	0.024	568.299	0.018	0.004
0.397	0.006	0.017	0.017	568.299	0.013	0.004
0.370	0.006	0.013	0.013	568.299	0.012	0.004
0.358	0.005	0.012	0.012	568.299	0.012	0.004
0.361	0.005	0.013	0.013	568.299	0.012	0.004
4.142	0.008	0.161	0.161	568.300	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.203	0.007	0.016	0.016	568.300	0.045	0.005
1.469	0.006	0.015	0.015	568.299	0.022	0.004
0.284	0.006	0.011	0.011	568.299	0.015	0.004
0.284	0.006	0.011	0.011	568.299	0.015	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005

3.220	0.007	0.018	0.018	568.299	0.045	0.005
1.485	0.006	0.016	0.016	568.299	0.022	0.004
0.305	0.006	0.012	0.012	568.299	0.015	0.004
0.297	0.006	0.011	0.011	568.300	0.015	0.004
0.297	0.006	0.011	0.011	568.299	0.015	0.004
0.297	0.006	0.011	0.011	568.299	0.015	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.374	0.007	0.052	0.052	568.299	0.054	0.005
1.767	0.006	0.047	0.047	568.299	0.026	0.004
0.639	0.006	0.030	0.030	568.300	0.018	0.004
0.573	0.006	0.020	0.020	568.300	0.017	0.004
0.542	0.005	0.020	0.020	568.300	0.017	0.004
0.549	0.005	0.020	0.020	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.093	0.007	0.015	0.015	568.300	0.036	0.005
1.447	0.006	0.014	0.014	568.299	0.018	0.004
0.303	0.006	0.011	0.011	568.299	0.013	0.004
0.287	0.006	0.010	0.010	568.300	0.012	0.004
0.287	0.005	0.010	0.010	568.299	0.012	0.004
0.318	0.006	0.013	0.013	568.299	0.018	0.004
0.305	0.006	0.012	0.012	568.300	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
2.532	0.005	0.026	0.026	568.299	0.018	0.004

Basic Conversions	Factor	Value	Units	Source
	1 pound equals	453.592	grams	
	1 MT equals	1.102	tons	
	Total # of days in a week	7	days	
	1 kg equals	1,000	grams	
	1 Year equals	365	days	
	1 ton equals	2,000	pounds	
	Global Warming Potential of CH4	25	N/A	http://www.arb.ca.gov/cc/inventory/backgro
	Global Warming Potential of N2O	298	N/A	http://www.arb.ca.gov/cc/inventory/backgro

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SMAQMD Roadway Construction Emissions Model Outputs:

California Aqueduct Bridge

Welcome to the Road Construction Emissions Model, Version 9.0.0
User Instructions

This spreadsheet system contains the following individual worksheets:

1 This worksheet of User Instructions
2 Updates
3 Emission Estimates
4 Data Entry
5 Non-default Off-road Equipment
6 EMFAC2017
7 On-road Mitigation EF
8 OFFROAD Convert
9 Off-road Tier 4 EF
10 OFFROAD HP & LF
11 OFFROAD EF
12 x-ref

The Emission Estimates worksheet calculates a project's emissions in pounds per day (and tons) by project phase and tons over the entire construction period.
The worksheet can be used to estimate emissions for both vehicle exhaust and fugitive dust. The methodology used to estimate fugitive dust emissions is a simplified methodology involving estimates of the maximum area (acreage) of land disturbed daily. Detailed fugitive dust emission estimates associated with individual materials handling operations and/or activity/vehicle types cannot be conducted with this version of the model.
The Emission Estimates worksheet cannot be modified directly, it is a protected worksheet. It can only be modified indirectly by entering information for the project in selected areas of the Data Entry worksheet.
The last seven of these worksheets - EMFAC2017, On-road Mitigation EF, OFFROAD Convert, Off-road Tier 4 EF, OFFROAD HP & LP, OFFROAD EF and x-ref - cannot be modified by the user. They are protected worksheets.
Even though all or portions of several worksheets are protected, the individual formulas used in the calculations can be seen by the user.
The Data Entry worksheet includes several areas that can be modified by the user.
User instructions in the Data Entry worksheet are highlighted in red.
On the Data Entry worksheet, the user has two options for entering project data: required data and optional data. Required data is entered in the data input section (yellow cells). That required data is then used by the worksheet to calculate default values for the project.
The user can override the default values (blue cells) calculated for a project and is encouraged to do so if project specific information is available. Due to the difficulty in developing reliable default values for road construction projects, the user is encouraged to enter as much site specific information as is available for the project being analyzed.
The Data Entry Worksheet also includes a button that allows the user to clear previously entered data. This button is found just at the top of and to the right of the data entry portion of the worksheet.
When projects are discontinuous, the user must make adjustments to the spreadsheet manually, since the program cannot be setup to anticipate unexpected project delays.

#VALUE! <- This error message may occur during use of the spreadsheets. This occurs whenever the user enters a non numeric value, including a space character, into a cell that is used to calculate a numeric value. Consequently, to erase values entered into the spreadsheets, use the delete key instead of the space bar!

Note: Information in this worksheet is based on conversations with knowledgeable individuals at the Sacramento Metropolitan Air Quality Management District, the California Department of Transportation, the California Air Resources Board, the U.S. EPA, and private industry involved in road construction. Also, the 26th edition of Walker's Building Estimator's Reference Book (1999) was used in the development of this spreadsheet. This spreadsheet was prepared by Jones & Stokes, TIAX LLC and Ramboll Environ with the financial support and direction of the Sacramento Metropolitan Air Quality Management District.

http://www.airquality.org
Karen Huss

http://www.ramboll.com/
John Grant

Road Construction Emissions Model, Version 9.0.0
Updates Log

Changes from previous version of Road Construction Emissions Model

(Version 8.1.0 to 9.0.0) (updated by SMAQMD 04/22/18 with assistance from Ramboll)

1) Project length changed to include calendar years 2014 through 2040.
2) On-road vehicle emission factors have been updated to EMFAC2017 version 1.0.2.
3) Off-road emission rates updated to include calendar years 2014 through 2040.
4) Average Offroad HP by Equipment Type updated to be consistent with CalEEMod (version 2016.3.2)
5) Modified 'Data Entry' tab to calculate NOx start emissions form heavy duty trucks in "soil hauling", "asphalt hauling"

(Version 7.1.5 to 8.1.0) (updated by SMAQMD 05/09/16 with assistance from Ramboll ENVIRON US Corporatio

1) Project length changed to include calendar years 2014 through 2025.
2) Added a new project type: Type 4: Other Linear Project Type. Note that there are no default vehicle or equipment a
3) Emissions estimates were extended to include SOx, CH4, N2O and CO2e.
4) Updated off-road equipment emission factors and default average horsepower by equipment type to be consistent
5) On-road vehicle emission factors have been updated to EMFAC2014.
6) Revised pollutant order for consistency throughout the calculator.
7) Added flexibility for users to specify a non-default number of working days per month.
8) Modified soil hauling import and export quantity and haul truck capacity data requests to allow users to specify soil
9) Soil hauling emissions are now estimated separately for each construction phase.
10) Added a new feature to allow users to provide asphalt hauling quantities by phase in the "Data Entry" tab.
11) New component added where the user can specify construction start date and duration by phase.
12) The maximum daily emissions calculation was modified to sum emissions from overlapping construction phases.
13) Water truck activity can be specified and emissions estimated for the paving phase.
14) Mitigation options were added for on-road vehicles and off-road equipment. Emissions calculations include the eff
15) Model allows user to estimate emissions from non-default off-road equipment for all phases and for all project type equipment type for horsepower, number of equipment, load factor, hours of operation and emission factors in the "No
16) New table of total project emissions with units of tons/phase was added in the "Emission Estimates" tab.
17) Removed table of daily emissions in metric units from the "Emission Estimates" tab.
18) Removed unnecessary data from all tabs.

(Version 7.1.4 to 7.1.5) (updated by SMAQMD 12/11/13 with assistance from ENVIRON Corporation)

1) Grubbing and Land Clearing Phase calculation of active months in 2007, 2017, 2019 fixed.
2) Soil Hauling Emissions calculation to select override if it exists for round trips/day.
3) Worker Commute Emissions calculation of starting and hot soak emissions; drainage phase PM_{10} emission rate.
4) Water Truck Emissions calculation to select number of months for Grubbing and Land Clearing Phase; maximum a

(Version 6.3.2 to Version 7.1.0, 7.1.1, 7.1.2, 7.1.3 & 7.1.4) (updated by SMAQMD 8/2/13)

1) EMFAC2011 emission factors added (previous EMFAC versions dropped).
2) OFFROAD2011 emission factors added (and fixed error).
3) OFFROAD2007 for categories not in OFFROAD2011 (and fixed error)
4) Project length changed to include calendar years 2009 through 2025.
5) Average Offroad HP by Equipment Type calculation updated and corrected
6) Load Factor Adjustment deactivated (default load factors already incorporated in ARB's calculation of emission fact
7) Crawler Tractor equipment added to model
8) Air Compressors ROG & Default Excavators calculation on Data Entry sheet corrected.
9) Default equipment list updated
10) Corrections to Worker Commute Emissions calculations

' and "water truck" section

n)

ctivities available for the Project Type 4.

with CalEEMod (version 2013.2.2).

hauling activity by phase.

ects of mitigations if a mitigation option is selected by the user.
es. Non-default off-road equipment specification must be included by
n-default Off-road Equipment" tab.

acreage/day after 2025.

tors)

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Corral Hollow

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.16	9.94	12.69	14.95	0.55	14.40	3.49	0.50	3.00	0.02	1,966.32	0.58	0.02	1,987.06
Grading/Excavation	9.95	72.49	113.96	19.12	4.72	14.40	7.28	4.29	3.00	0.16	15,337.79	4.69	0.16	15,501.89
Drainage/Utilities/Sub-Grade	6.86	52.92	75.67	17.63	3.23	14.40	5.97	2.98	3.00	0.11	10,356.81	2.74	0.10	10,456.03
Paving	1.25	13.24	12.20	0.71	0.71	0.00	0.63	0.63	0.00	0.02	2,130.06	0.57	0.04	2,157.01
Maximum (pounds/day)	9.95	72.49	113.96	19.12	4.72	14.40	7.28	4.29	3.00	0.16	15,337.79	4.69	0.16	15,501.89
Total (tons/construction project)	0.22	1.67	2.48	0.51	0.10	0.40	0.18	0.10	0.08	0.00	339.11	0.10	0.00	342.63

Notes:

Project Start Year ->	2020
Project Length (months) ->	3
Total Project Area (acres) ->	1
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	200	0
Grading/Excavation	0	0	0	0	1,120	0
Drainage/Utilities/Sub-Grade	0	0	0	0	720	0
Paving	0	4	0	30	320	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Corral Hollow

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.03	0.04	0.05	0.00	0.05	0.01	0.00	0.01	0.00	6.49	0.00	0.00	5.95
Grading/Excavation	0.13	0.96	1.50	0.25	0.06	0.19	0.10	0.06	0.04	0.00	202.46	0.06	0.00	185.63
Drainage/Utilities/Sub-Grade	0.08	0.61	0.87	0.20	0.04	0.17	0.07	0.03	0.03	0.00	119.62	0.03	0.00	109.56
Paving	0.01	0.07	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.54	0.00	0.00	9.69
Maximum (tons/phase)	0.13	0.96	1.50	0.25	0.06	0.19	0.10	0.06	0.04	0.00	202.46	0.06	0.00	185.63
Total (tons/construction project)	0.22	1.67	2.48	0.51	0.10	0.40	0.18	0.10	0.08	0.00	339.11	0.10	0.00	310.83

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model
Data Entry Worksheet

Version 9.0.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Corral Hollow	
Construction Start Year	2020	Enter a Year between 2014 and 2040 (inclusive)
Project Type	3	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	3.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.06	miles
Total Project Area	0.72	acres
Maximum Area Disturbed/Day	0.72	acres
Water Trucks Used?	2	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	0.00	0.00
Asphalt	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	4.00	0.00

Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		0.30		1/1/2020
Grading/Excavation		1.20		1/11/2020
Drainage/Utilities/Sub-Grade		1.05		2/17/2020
Paving		0.45		3/20/2020
Totals (Months)	3			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
User Input					
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grading/Excavation (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Draining/Utilities/Sub-Grade (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Paving (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
User Input					
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		1	30.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grading/Excavation (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Draining/Utilities/Sub-Grade (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Paving (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.03	0.09	0.51	0.02	0.01	0.00	125.14	0.00	0.02	131.04
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.65
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.65

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values		
User Input				
Miles/ one-way trip		20	Calculated Daily Trips	Calculated Daily VMT
One-way trips/day		2		
No. of employees: Grubbing/Land Clearing		5	10	200.00
No. of employees: Grading/Excavation		28	56	1,120.00
No. of employees: Drainage/Utilities/Sub-Grade		18	36	720.00
No. of employees: Paving		8	16	320.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67
Grading/Excavation (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67
Paving (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67
Grubbing/Land Clearing (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34
Grading/Excavation (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34
Draining/Utilities/Sub-Grade (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34
Paving (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.04	0.61	0.06	0.02	0.01	0.00	156.38	0.00	0.00	157.89
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.52
Pounds per day - Grading/Excavation	0.21	3.39	0.32	0.12	0.05	0.01	875.71	0.02	0.03	884.18
Tons per const. Period - Grading/Excavation	0.00	0.04	0.00	0.00	0.00	0.00	11.56	0.00	0.00	11.67
Pounds per day - Drainage/Utilities/Sub-Grade	0.14	2.18	0.21	0.07	0.03	0.01	562.96	0.02	0.02	568.40
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.03	0.00	0.00	0.00	0.00	6.50	0.00	0.00	6.57
Pounds per day - Paving	0.06	0.97	0.09	0.03	0.01	0.00	250.20	0.01	0.01	252.62
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	1.24	0.00	0.00	1.25
Total tons per construction project	0.00	0.08	0.01	0.00	0.00	0.00	19.82	0.00	0.00	20.01

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT
User Input								
Grubbing/Land Clearing - Exhaust		0		5	0		8.00	0.00
Grading/Excavation - Exhaust		0		5	0		8.00	0.00
Drainage/Utilities/Subgrade		0		5	0		8.00	0.00
Paving		0		5	0		8.00	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grading/Excavation (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Draining/Utilities/Sub-Grade (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Paving (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.72	14.40	0.05	3.00	0.01
Fugitive Dust - Grading/Excavation		0.72	14.40	0.19	3.00	0.04
Fugitive Dust - Drainage/Utilities/Subgrade		0.72	14.40	0.17	3.00	0.03

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Crawler Tractors	0.58	2.50	7.45	0.28	0.26	0.01	760.39	0.25
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Excavators	0.49	6.54	4.83	0.23	0.21	0.01	1,000.24	0.32
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Signal Boards	0.06	0.30	0.36	0.01	0.01	0.00	49.31	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing		pounds per day	1.13	9.34	12.63	0.53	0.49	0.02	1,809.94	0.57
	Grubbing/Land Clearing		tons per phase	0.00	0.03	0.04	0.00	0.00	0.00	5.97	0.00

Grading/Excavation	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Cranes	0.45	2.12	5.39	0.22	0.20	0.01	558.79	0.18
	2		Model Default Tier	Crawler Tractors	1.16	5.00	14.90	0.56	0.52	0.02	1,520.78	0.49
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4		Model Default Tier	Excavators	0.98	13.07	9.65	0.47	0.43	0.02	2,000.48	0.65
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Graders	0.95	3.63	12.65	0.40	0.37	0.01	1,285.44	0.42
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Model Default Tier	Rollers	0.62	5.68	6.24	0.40	0.37	0.01	762.20	0.25
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Model Default Tier	Rubber Tired Loaders	1.12	4.91	13.23	0.44	0.40	0.02	1,815.48	0.59
	4		Model Default Tier	Scrapers	3.97	29.83	47.01	1.83	1.69	0.06	5,868.07	1.90
	1		Model Default Tier	Signal Boards	0.06	0.30	0.36	0.01	0.01	0.00	49.31	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Tractors/Loaders/Backhoes	0.42	4.56	4.21	0.27	0.24	0.01	601.54	0.19
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation		pounds per day	9.74	69.10	113.64	4.61	4.24	0.15	14,462.08	4.67
	Grading/Excavation		tons per phase	0.13	0.91	1.50	0.06	0.06	0.00	190.90	0.06

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Air Compressors	0.32	2.44	2.25	0.15	0.15	0.00	375.26	0.03
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Generator Sets	0.40	3.71	3.48	0.20	0.20	0.01	623.04	0.04
	2		Model Default Tier	Graders	0.95	3.63	12.65	0.40	0.37	0.01	1,285.44	0.42
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Plate Compactors	0.04	0.21	0.25	0.01	0.01	0.00	34.48	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pumps	0.42	3.76	3.53	0.21	0.21	0.01	623.04	0.04
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Rough Terrain Forklifts	0.13	2.30	1.73	0.07	0.07	0.00	333.68	0.11
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4		Model Default Tier	Scrapers	3.97	29.83	47.01	1.83	1.69	0.06	5,868.07	1.90
	1		Model Default Tier	Signal Boards	0.06	0.30	0.36	0.01	0.01	0.00	49.31	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Tractors/Loaders/Backhoes	0.42	4.56	4.21	0.27	0.24	0.01	601.54	0.19
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade		pounds per day	6.72	50.74	75.46	3.15	2.95	0.10	9,793.85	2.73
	Drainage/Utilities/Sub-Grade		tons per phase	0.08	0.59	0.87	0.04	0.03	0.00	113.12	0.03

Paving	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pavers	0.26	2.90	2.81	0.14	0.13	0.00	455.27	0.15
	1		Model Default Tier	Paving Equipment	0.21	2.53	2.14	0.11	0.10	0.00	394.53	0.13
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Rollers	0.21	1.89	2.08	0.13	0.12	0.00	254.07	0.08
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Signal Boards	0.06	0.30	0.36	0.01	0.01	0.00	49.31	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Tractors/Loaders/Backhoes	0.42	4.56	4.21	0.27	0.24	0.01	601.54	0.19
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving		pounds per day	1.15	12.19	11.60	0.66	0.61	0.02	1,754.72	0.56
	Paving		tons per phase	0.01	0.06	0.06	0.00	0.00	0.00	8.69	0.00
Total Emissions all Phases (tons per construction period) =>				0.22	1.59	2.47	0.10	0.09	0.00	318.68	0.10

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	768.59
0.00	0.00
0.01	1,011.02
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	49.56
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	1,829.17
0.00	6.04

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	564.81
0.01	1,537.17
0.00	0.00
0.02	2,022.04
0.00	0.00
0.00	0.00
0.01	1,299.27
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	770.41
0.00	0.00
0.00	0.00
0.02	1,835.08
0.05	5,931.34
0.00	49.56
0.00	0.00
0.00	0.00
0.00	0.00
0.01	608.01
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.13	14,617.71
0.00	192.95

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	376.83
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	625.31
0.01	1,299.27
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	34.65
0.00	0.00
0.00	625.36
0.00	0.00
0.00	337.28
0.00	0.00
0.00	0.00
0.05	5,931.34
0.00	49.56
0.00	0.00
0.00	0.00
0.00	0.00
0.01	608.01
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.09	9,887.63
0.00	114.20

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	460.18
0.00	398.78
0.00	0.00
0.00	0.00
0.00	0.00
0.00	256.80
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	49.56
0.00	0.00
0.00	0.00
0.00	0.00
0.01	608.01
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	1,773.35
0.00	8.78
0.00	321.97

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

Grubbing/Land Clearing

Equipment Type	Number of Vehicles	Tier	HP

Grading/Excavation

Equipment Type	Number of Vehicles	Tier	HP

Drainage/Utilities/Subgrade

Equipment Type	Number of Vehicles	Tier	HP

Paving

Equipment Type	Number of Vehicles	Tier	HP

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

Year	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0704	-	-	-	-	2.5553	-	-	-	-	0.2855
2015	0.0597	-	-	-	-	2.2699	-	-	-	-	0.2490
2016	0.0491	-	-	-	-	1.9702	-	-	-	-	0.2095
2017	0.0405	-	-	-	-	1.7329	-	-	-	-	0.1791
2018	0.0335	-	-	-	-	1.5296	-	-	-	-	0.1530
2019	0.0279	-	-	-	-	1.3662	-	-	-	-	0.1307
2020	0.0236	0.0236	0.0236	0.0236	0.0236	1.2220	1.2220	1.2220	1.2220	1.2220	0.1123
2021	0.0204	-	-	-	-	1.1018	-	-	-	-	0.0968
2022	0.0178	-	-	-	-	1.0001	-	-	-	-	0.0838
2023	0.0154	-	-	-	-	0.9126	-	-	-	-	0.0726
2024	0.0134	-	-	-	-	0.8386	-	-	-	-	0.0632
2025	0.0117	-	-	-	-	0.7754	-	-	-	-	0.0554
2026	0.0103	-	-	-	-	0.7225	-	-	-	-	0.0491
2027	0.0091	-	-	-	-	0.6774	-	-	-	-	0.0437
2028	0.0081	-	-	-	-	0.6398	-	-	-	-	0.0393
2029	0.0072	-	-	-	-	0.6075	-	-	-	-	0.0355
2030	0.0065	-	-	-	-	0.5801	-	-	-	-	0.0324
2031	0.0059	-	-	-	-	0.5565	-	-	-	-	0.0297
2032	0.0053	-	-	-	-	0.5366	-	-	-	-	0.0275
2033	0.0048	-	-	-	-	0.5196	-	-	-	-	0.0257
2034	0.0044	-	-	-	-	0.5049	-	-	-	-	0.0242
2035	0.0041	-	-	-	-	0.4922	-	-	-	-	0.0229
2036	0.0037	-	-	-	-	0.4811	-	-	-	-	0.0219
2037	0.0035	-	-	-	-	0.4719	-	-	-	-	0.0211
2038	0.0033	-	-	-	-	0.4637	-	-	-	-	0.0203
2039	0.0030	-	-	-	-	0.4566	-	-	-	-	0.0197
2040	0.0029	-	-	-	-	0.4506	-	-	-	-	0.0191
2041	0.0027					0.4452					0.0187
2042	0.0026					0.4404					0.0183
2043	0.0025					0.4367					0.0180
2044	0.0024					0.4339					0.0178
2045	0.0023					0.4317					0.0177
2046	0.0023					0.4300					0.0176
2047	0.0023					0.4286					0.0175
2048	0.0023					0.4274					0.0174
2049	0.0022					0.4268					0.0174
2050	0.0022					0.4264					0.0174
Total		0.0236	0.0236	0.0236	0.0236		1.2220	1.2220	1.2220	1.2220	

Heavy-Heavy Duty Diesel Truck

Water Truck Commute Emissions (EMFAC2017 - web 1.0.2, T7 Single Unit Construction Truck)

Year	ROG	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	1.8521	-	-	-	-	4.0026	-	-	-	-	15.4709
2015	1.5946	-	-	-	-	3.4621	-	-	-	-	13.7491
2016	1.2921	-	-	-	-	2.8379	-	-	-	-	11.7429
2017	1.0636	-	-	-	-	2.3588	-	-	-	-	10.5229
2018	0.9069	-	-	-	-	2.0416	-	-	-	-	9.6970
2019	0.7863	-	-	-	-	1.7985	-	-	-	-	9.0623
2020	0.5270	0.5270	0.5270	0.5270	0.5270	1.2976	1.2976	1.2976	1.2976	1.2976	7.5546
2021	0.4260	-	-	-	-	1.1373	-	-	-	-	6.4922
2022	0.1785	-	-	-	-	0.6644	-	-	-	-	4.7102
2023	0.0441	-	-	-	-	0.4262	-	-	-	-	3.5373
2024	0.0423	-	-	-	-	0.4266	-	-	-	-	3.4943
2025	0.0406	-	-	-	-	0.4273	-	-	-	-	3.4600
2026	0.0391	-	-	-	-	0.4279	-	-	-	-	3.4290
2027	0.0378	-	-	-	-	0.4281	-	-	-	-	3.4003
2028	0.0367	-	-	-	-	0.4288	-	-	-	-	3.3809
2029	0.0359	-	-	-	-	0.4297	-	-	-	-	3.3699
2030	0.0351	-	-	-	-	0.4306	-	-	-	-	3.3633
2031	0.0345	-	-	-	-	0.4315	-	-	-	-	3.3580
2032	0.0339	-	-	-	-	0.4322	-	-	-	-	3.3517
2033	0.0334	-	-	-	-	0.4325	-	-	-	-	3.3446
2034	0.0330	-	-	-	-	0.4325	-	-	-	-	3.3345
2035	0.0326	-	-	-	-	0.4321	-	-	-	-	3.3228
2036	0.0323	-	-	-	-	0.4320	-	-	-	-	3.3141
2037	0.0321	-	-	-	-	0.4317	-	-	-	-	3.3050
2038	0.0319	-	-	-	-	0.4314	-	-	-	-	3.2967
2039	0.0317	-	-	-	-	0.4312	-	-	-	-	3.2899
2040	0.0315	-	-	-	-	0.4308	-	-	-	-	3.2821
2041	0.0314					0.4305					3.2754
2042	0.0313					0.4302					3.2703
2043	0.0312					0.4300					3.2653
2044	0.0311					0.4298					3.2610
2045	0.0310					0.4296					3.2578
2046	0.0309					0.4295					3.2551
2047	0.0309					0.4294					3.2533
2048	0.0309					0.4293					3.2519
2049	0.0309					0.4292					3.2510

2050	0.0308					0.4292					3.2504
Total		0.5270	0.5270	0.5270	0.5270		1.2976	1.2976	1.2976	1.2976	

Year	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0055	-	-	-	-	0.5214	-	-	-	-	0.0236
2015	0.0055	-	-	-	-	0.5173	-	-	-	-	0.0237
2016	0.0055	-	-	-	-	0.5163	-	-	-	-	0.0238
2017	0.0056	-	-	-	-	0.5153	-	-	-	-	0.0239
2018	0.0056	-	-	-	-	0.5147	-	-	-	-	0.0239
2019	0.0055	-	-	-	-	0.5170	-	-	-	-	0.0236
2020	0.0054	0.0054	0.0054	0.0054	0.0054	0.5158	0.5158	0.5158	0.5158	0.5158	0.0232
2021	0.0052	-	-	-	-	0.5136	-	-	-	-	0.0226
2022	0.0051	-	-	-	-	0.5106	-	-	-	-	0.0220
2023	0.0049	-	-	-	-	0.5066	-	-	-	-	0.0213
2024	0.0047	-	-	-	-	0.5012	-	-	-	-	0.0205
2025	0.0044	-	-	-	-	0.4942	-	-	-	-	0.0199
2026	0.0042	-	-	-	-	0.4875	-	-	-	-	0.0193
2027	0.0040	-	-	-	-	0.4813	-	-	-	-	0.0188
2028	0.0038	-	-	-	-	0.4755	-	-	-	-	0.0184
2029	0.0036	-	-	-	-	0.4701	-	-	-	-	0.0181
2030	0.0035	-	-	-	-	0.4650	-	-	-	-	0.0178
2031	0.0033	-	-	-	-	0.4603	-	-	-	-	0.0175
2032	0.0032	-	-	-	-	0.4560	-	-	-	-	0.0174
2033	0.0030	-	-	-	-	0.4521	-	-	-	-	0.0172
2034	0.0029	-	-	-	-	0.4485	-	-	-	-	0.0171
2035	0.0028	-	-	-	-	0.4452	-	-	-	-	0.0171
2036	0.0027	-	-	-	-	0.4423	-	-	-	-	0.0170
2037	0.0026	-	-	-	-	0.4397	-	-	-	-	0.0170
2038	0.0026	-	-	-	-	0.4375	-	-	-	-	0.0171
2039	0.0025	-	-	-	-	0.4355	-	-	-	-	0.0171
2040	0.0024	-	-	-	-	0.4338	-	-	-	-	0.0171
2041	0.0024					0.4323					0.0171
2042	0.0024					0.4310					0.0172
2043	0.0023					0.4300					0.0172
2044	0.0023					0.4291					0.0173
2045	0.0023					0.4283					0.0173
2046	0.0023					0.4277					0.0173
2047	0.0023					0.4272					0.0174
2048	0.0022					0.4268					0.0174
2049	0.0022					0.4265					0.0174
2050	0.0022					0.4262					0.0174
Total		0.0054	0.0054	0.0054	0.0054		0.5158	0.5158	0.5158	0.5158	

Heavy-Heavy Duty Diesel Truck

Water Truck Commute Emissions (EMFAC2017 - web 1.0.2, T7 Single Unit Construction Truck)

Year	ROG	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0583	-	-	-	-	0.4129	-	-	-	-	2.9101
2015	0.0529	-	-	-	-	0.4082	-	-	-	-	2.8491
2016	0.0508	-	-	-	-	0.4094	-	-	-	-	2.8549
2017	0.0476	-	-	-	-	0.4102	-	-	-	-	2.8769
2018	0.0457	-	-	-	-	0.4130	-	-	-	-	2.9175
2019	0.0444	-	-	-	-	0.4157	-	-	-	-	2.9546
2020	0.0425	0.0425	0.0425	0.0425	0.0425	0.4199	0.4199	0.4199	0.4199	0.4199	3.0272
2021	0.0418	-	-	-	-	0.4228	-	-	-	-	3.0635
2022	0.0402	-	-	-	-	0.4233	-	-	-	-	3.0792
2023	0.0291	-	-	-	-	0.4046	-	-	-	-	2.9826
2024	0.0294	-	-	-	-	0.4082	-	-	-	-	3.0228
2025	0.0296	-	-	-	-	0.4118	-	-	-	-	3.0634
2026	0.0298	-	-	-	-	0.4149	-	-	-	-	3.0980
2027	0.0300	-	-	-	-	0.4172	-	-	-	-	3.1232
2028	0.0302	-	-	-	-	0.4197	-	-	-	-	3.1503
2029	0.0303	-	-	-	-	0.4221	-	-	-	-	3.1777
2030	0.0305	-	-	-	-	0.4243	-	-	-	-	3.2028
2031	0.0306	-	-	-	-	0.4263	-	-	-	-	3.2255
2032	0.0307	-	-	-	-	0.4279	-	-	-	-	3.2430
2033	0.0308	-	-	-	-	0.4291	-	-	-	-	3.2559
2034	0.0309	-	-	-	-	0.4297	-	-	-	-	3.2619
2035	0.0309	-	-	-	-	0.4299	-	-	-	-	3.2635
2036	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2652
2037	0.0309	-	-	-	-	0.4302	-	-	-	-	3.2648
2038	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2639
2039	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2635
2040	0.0309	-	-	-	-	0.4300	-	-	-	-	3.2612
2041	0.0309					0.4298					3.2588
2042	0.0309					0.4297					3.2571
2043	0.0308					0.4295					3.2551
2044	0.0308					0.4294					3.2535
2045	0.0308					0.4294					3.2526
2046	0.0308					0.4293					3.2514
2047	0.0308					0.4292					3.2507
2048	0.0308					0.4292					3.2500
2049	0.0308					0.4291					3.2496

2050	0.0308					0.4291					3.2496
Total		0.0425	0.0425	0.0425	0.0425		0.4199	0.4199	0.4199	0.4199	

	B	C	D	E	F	G	H	I	J	K	L	M
5	Emissions (g/bhp-hr)		ROG	ROG	ROG	ROG		CO	CO	CO	CO	
6	Aerial Lifts		Weighted -	Weighted -	Weighted -	Weighted -		Weighted -	Weighted -	Weighted -	Weighted	
7		ROG	Grubbing	Grading	Drainage	Paving	CO	Grubbing	Grading	Drainage	- Paving	NOx
8	2014	0.2023	-	-	-	-	3.2195	-	-	-	-	3.3728
9	2015	0.1906	-	-	-	-	3.2178	-	-	-	-	3.1134
10	2016	0.1655	-	-	-	-	3.2010	-	-	-	-	2.7222
11	2017	0.1427	-	-	-	-	3.1843	-	-	-	-	2.3637
12	2018	0.1219	-	-	-	-	3.1669	-	-	-	-	2.0636
13	2019	0.1182	-	-	-	-	3.1725	-	-	-	-	1.9766
14	2020	0.1149	0.1149	0.1149	0.1149	0.1149	3.1768	3.1768	3.1768	3.1768	3.1768	1.8686
15	2021	0.1088	-	-	-	-	3.1762	-	-	-	-	1.7437
16	2022	0.1047	-	-	-	-	3.1760	-	-	-	-	1.6266
17	2023	0.1005	-	-	-	-	3.1703	-	-	-	-	1.5481
18	2024	0.1005	-	-	-	-	3.1726	-	-	-	-	1.5279
19	2025	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
20	2026	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
21	2027	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
22	2028	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
23	2029	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
24	2030	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
25	2031	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
26	2032	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
27	2033	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
28	2034	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
29	2035	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
30	2036	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
31	2037	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
32	2038	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
33	2039	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
34	2040	0.1610	-	-	-	-	3.3440	-	-	-	-	1.4070
35	Aerial Lifts Total		0.1149	0.1149	0.1149	0.1149		3.1768	3.1768	3.1768	3.1768	

	N	O	P	Q	R	S	T	U	V
5	NOx	NOx	NOx	NOx		PM10	PM10	PM10	PM10
6	Weighted	Weighted	Weighted	Weighted -		Weighted -	Weighted -	Weighted -	Weighted -
7	- Grubbing	- Grading	- Drainage	Paving	PM10	Grubbing	Grading	Drainage	Paving
8	-	-	-	-	0.1608	-	-	-	-
9	-	-	-	-	0.1431	-	-	-	-
10	-	-	-	-	0.1119	-	-	-	-
11	-	-	-	-	0.0834	-	-	-	-
12	-	-	-	-	0.0571	-	-	-	-
13	-	-	-	-	0.0485	-	-	-	-
14	1.8686	1.8686	1.8686	1.8686	0.0416	0.0416	0.0416	0.0416	0.0416
15	-	-	-	-	0.0333	-	-	-	-
16	-	-	-	-	0.0302	-	-	-	-
17	-	-	-	-	0.0267	-	-	-	-
18	-	-	-	-	0.0265	-	-	-	-
19	-	-	-	-	0.0259	-	-	-	-
20	-	-	-	-	0.0259	-	-	-	-
21	-	-	-	-	0.0259	-	-	-	-
22	-	-	-	-	0.0259	-	-	-	-
23	-	-	-	-	0.0259	-	-	-	-
24	-	-	-	-	0.0360	-	-	-	-
25	-	-	-	-	0.0360	-	-	-	-
26	-	-	-	-	0.0360	-	-	-	-
27	-	-	-	-	0.0360	-	-	-	-
28	-	-	-	-	0.0360	-	-	-	-
29	-	-	-	-	0.0170	-	-	-	-
30	-	-	-	-	0.0170	-	-	-	-
31	-	-	-	-	0.0170	-	-	-	-
32	-	-	-	-	0.0170	-	-	-	-
33	-	-	-	-	0.0170	-	-	-	-
34	-	-	-	-	0.0120	-	-	-	-
35	1.8686	1.8686	1.8686	1.8686		0.0416	0.0416	0.0416	0.0416

Off-road Equipment Tier 4 Emission Factors

HP Bin		Emission Factor (g/bhp-hr)					
Low HP	High HP	ROG	CO	NOx	PM10	PM2.5	92
0	11	0.30	6.00	5.32	0.30	0.28	95
11	25	0.30	4.90	5.32	0.30	0.28	1.07
25	50	0.19	4.10	3.33	0.02	0.02	
50	75	0.19	3.70	3.33	0.02	0.02	
75	100	0.15	3.70	0.30	0.02	0.01	
100	175	0.15	3.70	0.30	0.02	0.01	
175	300	0.15	2.60	0.30	0.02	0.01	
300	600	0.15	2.60	0.30	0.02	0.01	
600	750	0.15	2.60	0.30	0.02	0.01	
750	1200	0.15	2.60	2.60	0.03	0.03	
1200	9999	0.15	2.60	2.60	0.03	0.03	

Note:
1. Tier 4 Emission Factors are converted from EPA Non-road Diesel Engine Standards. Available at ww
2. Assume PM2.5 is 92% of PM10.

% of PM2.5 in PM10 (from CEIDARS)
% of NOx in NMHC+NOx (from http://www.arb.ca.gov/msprog/moyer/guidelines/2005_Carl_Moyer_Guidelir
VOC/NMHC

/w.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls

nes_Part4.pdf)

Default Horsepower and Load Factor

OFFROAD Equipment Type	Horsepower	Load Factor
Aerial Lifts	63	0.31
Air Compressors	78	0.48
Bore/Drill Rigs	221	0.5
Cement and Mortar Mixers	9	0.56
Concrete/Industrial Saws	81	0.73
Cranes	231	0.29
Crawler Tractors	212	0.43
Crushing/Proc. Equipment	85	0.78
Excavators	158	0.38
Forklifts	89	0.2
Generator Sets	84	0.74
Graders	187	0.41
Off-Highway Tractors	124	0.44
Off-Highway Trucks	402	0.38
Other Construction Equipment	172	0.42
Other General Industrial Equipment	88	0.34
Other Material Handling Equipment	168	0.4
Pavers	130	0.42
Paving Equipment	132	0.36
Plate Compactors	8	0.43
Pressure Washers	13	0.3
Pumps	84	0.74
Rollers	80	0.38
Rough Terrain Forklifts	100	0.4
Rubber Tired Dozers	247	0.4
Rubber Tired Loaders	203	0.36
Scrapers	367	0.48
Signal Boards	6	0.82
Skid Steer Loaders	65	0.37
Surfacing Equipment	263	0.3
Sweepers/Scrubbers	64	0.46
Tractors/Loaders/Backhoes	97	0.37
Trenchers	78	0.5
Welders	46	0.45

Default Horsepower and Load Factor from CalEEMod2016 Appendix D: Table 3.3

Sacramento Valley Air Basin Fleet Average Emission Factors (Diesel)

2014

2014		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.261	3.233	4.096	0.005
Aerial Lifts	25	0.261	3.233	4.096	0.005
Aerial Lifts	50	0.261	3.233	4.096	0.005
Aerial Lifts	120	0.202	3.220	3.373	0.005
Aerial Lifts	500	0.236	0.983	4.602	0.005
Aerial Lifts	750	0.299	1.178	3.761	0.005
Air Compressors	15	0.891	3.723	5.445	0.008
Air Compressors	25	0.960	2.780	5.000	0.007
Air Compressors	50	2.076	6.181	5.421	0.007
Air Compressors	120	0.901	3.880	5.608	0.006
Air Compressors	175	0.621	3.227	4.973	0.006
Air Compressors	250	0.405	1.237	4.399	0.006
Air Compressors	500	0.373	1.249	3.855	0.005
Air Compressors	750	0.378	1.249	3.991	0.005
Air Compressors	1000	0.445	1.493	5.512	0.005
Bore/Drill Rigs	15	0.834	4.691	5.332	0.006
Bore/Drill Rigs	25	0.834	4.691	5.332	0.006
Bore/Drill Rigs	50	0.834	4.691	5.332	0.006
Bore/Drill Rigs	120	0.319	3.327	4.195	0.005
Bore/Drill Rigs	175	0.308	3.040	4.066	0.005
Bore/Drill Rigs	250	0.217	1.174	3.525	0.005
Bore/Drill Rigs	500	0.202	1.239	3.186	0.005
Bore/Drill Rigs	750	0.157	1.087	2.373	0.005
Bore/Drill Rigs	1000	0.105	0.951	2.984	0.005

Cement and Mortar Mixers	15	0.666	3.469	4.191	0.008
Cement and Mortar Mixers	25	0.837	2.570	4.793	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	1.626	5.313	5.172	0.007
Concrete/Industrial Saws	120	0.749	3.675	5.160	0.006
Concrete/Industrial Saws	175	0.517	3.080	4.531	0.006
Cranes	50	2.115	7.126	6.093	0.005
Cranes	120	1.245	4.923	10.302	0.005
Cranes	175	0.793	3.932	8.471	0.005
Cranes	250	0.661	2.726	7.860	0.005
Cranes	500	0.483	4.177	6.264	0.005
Cranes	750	0.280	1.635	4.327	0.005
Cranes	9999	0.120	0.948	2.281	0.005
Crawler Tractors	50	2.521	8.047	6.396	0.005
Crawler Tractors	120	0.884	4.168	7.524	0.005
Crawler Tractors	175	0.629	3.459	6.875	0.005
Crawler Tractors	250	0.454	1.838	6.238	0.005
Crawler Tractors	500	0.412	2.911	5.616	0.005
Crawler Tractors	750	0.347	1.675	4.895	0.005
Crawler Tractors	1000	0.475	2.080	7.426	0.005
Crushing/Proc. Equipment	50	2.012	6.212	5.399	0.007
Crushing/Proc. Equipment	120	0.877	3.898	5.468	0.006
Crushing/Proc. Equipment	175	0.612	3.256	4.823	0.006
Crushing/Proc. Equipment	250	0.405	1.228	4.239	0.006
Crushing/Proc. Equipment	500	0.377	1.230	3.702	0.005
Crushing/Proc. Equipment	750	0.378	1.218	3.844	0.005
Crushing/Proc. Equipment	9999	0.456	1.460	5.391	0.005

Dumpers/Tenders	25	0.705	2.364	4.433	0.007
Excavators	25	0.825	4.844	4.965	0.005
Excavators	50	0.825	4.844	4.965	0.005
Excavators	120	0.513	3.663	5.131	0.005
Excavators	175	0.390	3.154	4.657	0.005
Excavators	250	0.294	1.346	4.374	0.005
Excavators	500	0.233	1.327	3.353	0.005
Excavators	750	0.239	1.347	3.541	0.005
Forklifts	50	2.114	7.321	6.006	0.005
Forklifts	120	0.795	4.079	6.848	0.005
Forklifts	175	0.578	3.521	6.352	0.005
Forklifts	250	0.615	2.501	7.276	0.005
Forklifts	500	0.541	4.252	6.353	0.005
Generator Sets	15	0.783	3.723	5.369	0.008
Generator Sets	25	0.821	2.780	5.000	0.007
Generator Sets	50	1.427	4.683	5.048	0.007
Generator Sets	120	0.721	3.532	5.147	0.006
Generator Sets	175	0.486	2.945	4.565	0.006
Generator Sets	250	0.311	1.130	4.025	0.006
Generator Sets	500	0.279	1.157	3.603	0.005
Generator Sets	750	0.289	1.157	3.724	0.005
Generator Sets	9999	0.389	1.377	5.150	0.005
Graders	50	3.094	9.065	6.550	0.005
Graders	120	1.269	4.920	9.986	0.005
Graders	175	0.847	3.951	8.702	0.005
Graders	250	0.390	1.462	5.740	0.005
Graders	500	0.314	1.791	3.714	0.005
Graders	750	0.437	1.483	3.876	0.005
Off-Highway Tractors	120	0.698	3.972	6.281	0.005
Off-Highway Tractors	175	0.424	3.265	5.025	0.005
Off-Highway Tractors	250	0.405	1.628	5.661	0.005
Off-Highway Tractors	750	0.267	1.334	4.007	0.005
Off-Highway Tractors	1000	0.085	0.947	2.279	0.005
Off-Highway Trucks	175	0.513	3.473	5.219	0.005
Off-Highway Trucks	250	0.483	1.932	5.441	0.005

Off-Highway Trucks	500	0.393	2.075	4.686	0.005
Off-Highway Trucks	750	0.485	2.953	5.578	0.005
Off-Highway Trucks	1000	0.415	1.779	6.365	0.005
Other Construction Equipment	15	1.301	5.602	5.565	0.005
Other Construction Equipment	25	1.301	5.602	5.565	0.005
Other Construction Equipment	50	1.301	5.602	5.565	0.005
Other Construction Equipment	120	0.729	3.906	6.633	0.005
Other Construction Equipment	175	0.567	3.385	6.372	0.005
Other Construction Equipment	500	0.330	2.476	4.561	0.005
Other General Industrial Equipment	15	1.521	6.288	5.584	0.005
Other General Industrial Equipment	25	1.521	6.288	5.584	0.005
Other General Industrial Equipment	50	1.521	6.288	5.584	0.005
Other General Industrial Equipment	120	0.789	4.090	6.723	0.005
Other General Industrial Equipment	175	0.523	3.469	5.792	0.005
Other General Industrial Equipment	250	0.488	2.054	6.153	0.005
Other General Industrial Equipment	500	0.355	2.499	4.565	0.005

Other General Industrial Equipment	750	0.256	1.489	3.622	0.005
Other General Industrial Equipment	1000	0.346	1.080	6.379	0.005
Other Material Handling Equipment	50	1.695	6.590	5.751	0.005
Other Material Handling Equipment	120	0.558	3.779	5.372	0.005
Other Material Handling Equipment	175	0.528	3.431	5.798	0.005
Other Material Handling Equipment	250	0.475	1.936	6.173	0.005
Other Material Handling Equipment	500	0.331	1.927	4.357	0.005
Other Material Handling Equipment	9999	0.141	0.978	3.436	0.005
Pavers	25	1.898	6.381	5.717	0.005
Pavers	50	1.898	6.381	5.717	0.005
Pavers	120	0.683	3.773	6.199	0.005
Pavers	175	0.502	3.115	5.736	0.005
Pavers	250	0.208	1.023	4.140	0.005
Pavers	500	0.180	1.005	3.047	0.005
Paving Equipment	25	1.053	4.952	5.184	0.005
Paving Equipment	50	1.053	4.952	5.184	0.005
Paving Equipment	120	0.677	3.837	6.370	0.005
Paving Equipment	175	0.415	3.097	5.216	0.005
Paving Equipment	250	0.310	1.370	4.782	0.005
Plate Compactors	15	0.661	3.469	4.142	0.008
Pressure Washers	15	0.783	3.723	5.369	0.008
Pressure Washers	25	0.821	2.780	5.000	0.007
Pressure Washers	50	1.096	3.951	4.873	0.007
Pressure Washers	120	0.634	3.367	4.912	0.006
Pressure Washers	175	0.469	2.923	4.513	0.006

Pressure Washers	250	0.137	0.986	1.047	0.006
Pumps	15	0.891	3.723	5.445	0.008
Pumps	25	0.960	2.780	5.000	0.007
Pumps	50	1.538	4.929	5.107	0.007
Pumps	120	0.751	3.587	5.226	0.006
Pumps	175	0.508	2.989	4.635	0.006
Pumps	250	0.326	1.149	4.090	0.006
Pumps	500	0.294	1.181	3.648	0.005
Pumps	750	0.303	1.181	3.770	0.005
Pumps	9999	0.399	1.406	5.210	0.005
Rollers	15	1.308	5.243	5.393	0.005
Rollers	25	1.308	5.243	5.393	0.005
Rollers	50	1.308	5.243	5.393	0.005
Rollers	120	0.695	3.809	6.390	0.005
Rollers	175	0.368	2.998	4.724	0.005
Rollers	250	0.381	1.760	5.403	0.005
Rollers	500	0.378	3.318	5.183	0.005
Rough Terrain Forklifts	50	1.182	4.887	5.226	0.005
Rough Terrain Forklifts	120	0.351	3.367	4.467	0.005
Rough Terrain Forklifts	175	0.221	2.852	3.594	0.005
Rough Terrain Forklifts	250	0.186	1.212	2.984	0.005
Rough Terrain Forklifts	500	0.170	0.954	3.500	0.005
Rubber Tired Dozers	175	0.961	4.226	9.834	0.005
Rubber Tired Dozers	250	0.721	2.712	7.972	0.005
Rubber Tired Dozers	500	0.707	6.165	8.058	0.005
Rubber Tired Dozers	750	0.513	2.756	7.147	0.005
Rubber Tired Dozers	1000	0.691	3.096	6.849	0.005
Rubber Tired Loaders	25	2.115	7.770	6.103	0.005
Rubber Tired Loaders	50	2.115	7.770	6.103	0.005
Rubber Tired Loaders	120	0.868	4.268	7.129	0.005
Rubber Tired Loaders	175	0.605	3.585	6.272	0.005

Rubber Tired Loaders	250	0.407	1.486	5.495	0.005
Rubber Tired Loaders	500	0.421	2.407	5.194	0.005
Rubber Tired Loaders	750	0.406	1.946	4.810	0.005
Rubber Tired Loaders	1000	0.414	1.457	6.692	0.005
Scrapers	120	0.719	4.100	7.065	0.005
Scrapers	175	0.718	3.807	7.907	0.005
Scrapers	250	0.742	3.061	8.815	0.005
Scrapers	500	0.479	3.898	6.233	0.005
Scrapers	750	0.369	2.846	5.012	0.005
Signal Boards	15	0.661	3.469	4.142	0.008
Signal Boards	50	1.625	5.231	5.139	0.007
Signal Boards	120	0.759	3.658	5.186	0.006
Signal Boards	175	0.520	3.058	4.582	0.006
Signal Boards	250	0.408	1.402	4.857	0.007
Skid Steer Loaders	25	0.664	4.016	4.541	0.005
Skid Steer Loaders	50	0.664	4.016	4.541	0.005
Skid Steer Loaders	120	0.304	3.338	4.013	0.005
Surfacing Equipment	50	1.141	4.877	5.425	0.006
Surfacing Equipment	120	0.559	3.580	5.520	0.005
Surfacing Equipment	175	0.472	3.012	5.711	0.005
Surfacing Equipment	250	0.306	1.434	5.102	0.005
Surfacing Equipment	500	0.237	1.501	3.895	0.005
Surfacing Equipment	750	0.174	1.020	3.284	0.005
Sweepers/Scrubbers	15	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	25	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	50	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	120	0.833	4.071	6.934	0.005
Sweepers/Scrubbers	175	0.875	4.042	9.108	0.005
Sweepers/Scrubbers	250	0.505	2.066	6.704	0.005
Tractors/Loaders/Backhoes	25	1.336	5.772	5.369	0.005

Tractors/Loaders/Backhoes	50	1.336	5.772	5.369	0.005
Tractors/Loaders/Backhoes	120	0.582	3.827	5.581	0.005
Tractors/Loaders/Backhoes	175	0.423	3.239	4.938	0.005
Tractors/Loaders/Backhoes	250	0.327	1.376	4.922	0.005
Tractors/Loaders/Backhoes	500	0.312	1.878	4.488	0.005
Tractors/Loaders/Backhoes	750	0.305	1.833	4.243	0.005
Trenchers	15	1.268	5.293	5.455	0.005
Trenchers	25	1.268	5.293	5.455	0.005
Trenchers	50	1.268	5.293	5.455	0.005
Trenchers	120	0.818	3.999	7.217	0.005
Trenchers	175	0.693	3.668	7.699	0.005
Trenchers	250	0.497	2.070	6.484	0.005
Trenchers	500	0.306	2.035	4.370	0.005
Trenchers	750	0.118	0.964	1.825	0.005
Welders	15	0.891	3.723	5.445	0.008
Welders	25	0.960	2.780	5.000	0.007
Welders	50	1.900	5.749	5.308	0.007
Welders	120	0.849	3.774	5.481	0.006
Welders	175	0.581	3.141	4.862	0.006
Welders	250	0.376	1.207	4.297	0.006
Welders	500	0.343	1.227	3.788	0.005
Water Trucks	175	0.513	3.473	5.219	0.005
Water Trucks	250	0.483	1.932	5.441	0.005
Water Trucks	500	0.393	2.075	4.686	0.005
Water Trucks	750	0.485	2.953	5.578	0.005
Water Trucks	1000	0.415	1.779	6.365	0.005

2015

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.158	0.145	574.665	0.170	0.005
0.158	0.145	574.665	0.170	0.005
0.158	0.145	574.665	0.170	0.005
0.161	0.148	516.703	0.153	0.004
0.101	0.093	516.638	0.153	0.004
0.109	0.109	568.299	0.027	0.004
0.341	0.341	568.300	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.505	0.505	568.299	0.187	0.005
0.495	0.495	568.299	0.081	0.004
0.272	0.272	568.299	0.056	0.004
0.134	0.134	568.299	0.036	0.004
0.125	0.125	568.299	0.033	0.004
0.128	0.128	568.299	0.034	0.004
0.157	0.157	568.300	0.040	0.004
0.382	0.351	591.442	0.175	0.005
0.382	0.351	591.442	0.175	0.005
0.382	0.351	591.442	0.175	0.005
0.249	0.229	501.365	0.148	0.004
0.186	0.171	524.052	0.155	0.004
0.105	0.097	512.336	0.151	0.004
0.101	0.093	506.154	0.150	0.004
0.081	0.074	525.240	0.155	0.004
0.058	0.054	516.600	0.153	0.004

2015		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.248
Aerial Lifts	25	0.248
Aerial Lifts	50	0.248
Aerial Lifts	120	0.191
Aerial Lifts	500	0.239
Aerial Lifts	750	0.278
Air Compressors	15	0.840
Air Compressors	25	0.894
Air Compressors	50	1.868
Air Compressors	120	0.821
Air Compressors	175	0.571
Air Compressors	250	0.381
Air Compressors	500	0.354
Air Compressors	750	0.358
Air Compressors	1000	0.409
Bore/Drill Rigs	15	0.847
Bore/Drill Rigs	25	0.847
Bore/Drill Rigs	50	0.847
Bore/Drill Rigs	120	0.318
Bore/Drill Rigs	175	0.302
Bore/Drill Rigs	250	0.213
Bore/Drill Rigs	500	0.199
Bore/Drill Rigs	750	0.162
Bore/Drill Rigs	1000	0.109

0.177	0.177	568.299	0.060	0.005
0.253	0.253	568.299	0.075	0.005
0.164	0.164	568.299	0.061	0.005
0.424	0.424	568.299	0.146	0.005
0.412	0.412	568.299	0.067	0.004
0.228	0.228	568.299	0.046	0.004
0.607	0.559	567.006	0.168	0.005
0.765	0.704	514.029	0.152	0.004
0.457	0.421	519.511	0.154	0.004
0.360	0.331	517.683	0.153	0.004
0.260	0.239	516.578	0.153	0.004
0.151	0.139	515.607	0.152	0.004
0.054	0.050	516.638	0.153	0.004
0.743	0.684	564.564	0.167	0.005
0.629	0.578	522.119	0.154	0.004
0.374	0.344	516.404	0.153	0.004
0.241	0.222	518.036	0.153	0.004
0.217	0.200	520.515	0.154	0.004
0.179	0.164	517.861	0.153	0.004
0.218	0.201	520.005	0.154	0.004
0.494	0.494	568.299	0.181	0.005
0.481	0.481	568.299	0.079	0.004
0.265	0.265	568.299	0.055	0.004
0.130	0.130	568.299	0.036	0.004
0.121	0.121	568.299	0.034	0.004
0.123	0.123	568.299	0.034	0.004
0.155	0.155	568.299	0.041	0.004

Cement and Mortar Mixers	15	0.663
Cement and Mortar Mixers	25	0.811
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	1.470
Concrete/Industrial Saws	120	0.683
Concrete/Industrial Saws	175	0.475
Cranes	50	2.087
Cranes	120	1.214
Cranes	175	0.782
Cranes	250	0.642
Cranes	500	0.475
Cranes	750	0.286
Cranes	9999	0.131
Crawler Tractors	50	2.513
Crawler Tractors	120	0.885
Crawler Tractors	175	0.632
Crawler Tractors	250	0.451
Crawler Tractors	500	0.408
Crawler Tractors	750	0.351
Crawler Tractors	1000	0.479
Crushing/Proc. Equipment	50	1.796
Crushing/Proc. Equipment	120	0.797
Crushing/Proc. Equipment	175	0.562
Crushing/Proc. Equipment	250	0.382
Crushing/Proc. Equipment	500	0.358
Crushing/Proc. Equipment	750	0.358
Crushing/Proc. Equipment	9999	0.422

0.200	0.200	568.300	0.063	0.005
0.380	0.350	575.267	0.170	0.005
0.380	0.350	575.267	0.170	0.005
0.382	0.352	511.306	0.151	0.004
0.229	0.211	516.907	0.153	0.004
0.139	0.128	517.323	0.153	0.004
0.108	0.099	515.215	0.152	0.004
0.114	0.105	511.945	0.151	0.004
0.656	0.604	575.112	0.170	0.005
0.574	0.528	516.062	0.153	0.004
0.345	0.318	516.694	0.153	0.004
0.330	0.304	518.028	0.153	0.004
0.289	0.266	518.345	0.153	0.004
0.298	0.298	568.299	0.070	0.005
0.272	0.272	568.299	0.074	0.005
0.389	0.389	568.299	0.128	0.005
0.385	0.385	568.299	0.065	0.004
0.212	0.212	568.299	0.043	0.004
0.111	0.111	568.300	0.028	0.004
0.104	0.104	568.299	0.025	0.004
0.106	0.106	568.299	0.026	0.004
0.138	0.138	568.299	0.035	0.004
0.867	0.798	539.122	0.159	0.005
0.832	0.765	515.382	0.152	0.004
0.488	0.449	527.834	0.156	0.004
0.185	0.171	522.330	0.154	0.004
0.143	0.131	517.377	0.153	0.004
0.138	0.138	568.299	0.039	0.004
0.513	0.472	520.824	0.154	0.004
0.258	0.237	518.164	0.153	0.004
0.203	0.187	514.370	0.152	0.004
0.133	0.122	516.904	0.153	0.004
0.054	0.050	516.638	0.153	0.004
0.292	0.269	514.057	0.152	0.004
0.236	0.217	512.833	0.152	0.004

Dumpers/Tenders	25	0.696
Excavators	25	0.833
Excavators	50	0.833
Excavators	120	0.507
Excavators	175	0.384
Excavators	250	0.289
Excavators	500	0.232
Excavators	750	0.242
Forklifts	50	2.073
Forklifts	120	0.768
Forklifts	175	0.566
Forklifts	250	0.565
Forklifts	500	0.454
Generator Sets	15	0.747
Generator Sets	25	0.793
Generator Sets	50	1.281
Generator Sets	120	0.651
Generator Sets	175	0.440
Generator Sets	250	0.287
Generator Sets	500	0.258
Generator Sets	750	0.267
Generator Sets	9999	0.351
Graders	50	3.119
Graders	120	1.239
Graders	175	0.844
Graders	250	0.396
Graders	500	0.326
Graders	750	0.414
Off-Highway Tractors	120	0.674
Off-Highway Tractors	175	0.402
Off-Highway Tractors	250	0.400
Off-Highway Tractors	750	0.262
Off-Highway Tractors	1000	0.096
Off-Highway Trucks	175	0.508
Off-Highway Trucks	250	0.473

0.180	0.165	521.057	0.154	0.004
0.231	0.212	521.230	0.154	0.004
0.187	0.172	516.939	0.153	0.004
0.502	0.462	578.959	0.171	0.005
0.502	0.462	578.959	0.171	0.005
0.502	0.462	578.959	0.171	0.005
0.518	0.476	515.285	0.152	0.004
0.333	0.307	514.552	0.152	0.004
0.168	0.155	520.944	0.154	0.004
0.544	0.500	575.871	0.170	0.005
0.544	0.500	575.871	0.170	0.005
0.544	0.500	575.871	0.170	0.005
0.574	0.528	514.389	0.152	0.004
0.312	0.287	516.414	0.153	0.004
0.255	0.234	517.916	0.153	0.004
0.172	0.159	517.595	0.153	0.004

Off-Highway Trucks	500	0.385
Off-Highway Trucks	750	0.452
Off-Highway Trucks	1000	0.411
Other Construction Equipment	15	1.309
Other Construction Equipment	25	1.309
Other Construction Equipment	50	1.309
Other Construction Equipment	120	0.723
Other Construction Equipment	175	0.557
Other Construction Equipment	500	0.324
Other General Industrial Equipment	15	1.495
Other General Industrial Equipment	25	1.495
Other General Industrial Equipment	50	1.495
Other General Industrial Equipment	120	0.761
Other General Industrial Equipment	175	0.495
Other General Industrial Equipment	250	0.452
Other General Industrial Equipment	500	0.353

0.115	0.106	518.180	0.153	0.004
0.167	0.153	516.638	0.153	0.004
0.575	0.529	573.170	0.169	0.005
0.412	0.379	518.316	0.153	0.004
0.313	0.288	516.818	0.153	0.004
0.242	0.223	516.011	0.153	0.004
0.169	0.155	514.714	0.152	0.004
0.067	0.061	516.638	0.153	0.004
0.595	0.547	577.016	0.171	0.005
0.595	0.547	577.016	0.171	0.005
0.483	0.444	514.377	0.152	0.004
0.287	0.264	516.745	0.153	0.004
0.105	0.097	518.723	0.153	0.004
0.101	0.093	512.191	0.151	0.004
0.437	0.402	569.482	0.168	0.005
0.437	0.402	569.482	0.168	0.005
0.486	0.447	518.076	0.153	0.004
0.249	0.229	515.034	0.152	0.004
0.158	0.146	516.900	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.298	0.298	568.299	0.070	0.005
0.272	0.272	568.299	0.074	0.005
0.332	0.332	568.299	0.098	0.005
0.332	0.332	568.299	0.057	0.004
0.206	0.206	568.299	0.042	0.004

Other General Industrial Equipment	750	0.251
Other General Industrial Equipment	1000	0.355
Other Material Handling Equipment	50	1.733
Other Material Handling Equipment	120	0.528
Other Material Handling Equipment	175	0.525
Other Material Handling Equipment	250	0.423
Other Material Handling Equipment	500	0.333
Other Material Handling Equipment	9999	0.148
Pavers	25	1.853
Pavers	50	1.853
Pavers	120	0.680
Pavers	175	0.489
Pavers	250	0.214
Pavers	500	0.176
Paving Equipment	25	0.981
Paving Equipment	50	0.981
Paving Equipment	120	0.661
Paving Equipment	175	0.411
Paving Equipment	250	0.315
Plate Compactors	15	0.661
Pressure Washers	15	0.747
Pressure Washers	25	0.793
Pressure Washers	50	0.976
Pressure Washers	120	0.567
Pressure Washers	175	0.427

0.014	0.014	568.299	0.012	0.004
0.341	0.341	568.299	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.409	0.409	568.299	0.138	0.005
0.403	0.403	568.299	0.067	0.004
0.222	0.222	568.299	0.045	0.004
0.115	0.115	568.299	0.029	0.004
0.108	0.108	568.299	0.026	0.004
0.110	0.110	568.299	0.027	0.004
0.141	0.141	568.299	0.036	0.004
0.484	0.445	575.795	0.170	0.005
0.484	0.445	575.795	0.170	0.005
0.484	0.445	575.795	0.170	0.005
0.476	0.438	518.787	0.153	0.004
0.219	0.202	516.591	0.153	0.004
0.191	0.176	517.811	0.153	0.004
0.202	0.185	522.052	0.154	0.004
0.436	0.401	575.353	0.170	0.005
0.261	0.240	517.260	0.153	0.004
0.140	0.128	516.091	0.153	0.004
0.087	0.080	517.766	0.153	0.004
0.076	0.070	511.657	0.151	0.004
0.563	0.518	518.335	0.153	0.004
0.393	0.361	520.011	0.154	0.004
0.376	0.346	524.676	0.155	0.004
0.258	0.237	517.790	0.153	0.004
0.236	0.236	568.300	0.062	0.004
0.676	0.622	573.522	0.170	0.005
0.676	0.622	573.522	0.170	0.005
0.619	0.569	510.010	0.151	0.004
0.350	0.322	515.769	0.152	0.004

Pressure Washers	250	0.121
Pumps	15	0.840
Pumps	25	0.894
Pumps	50	1.384
Pumps	120	0.679
Pumps	175	0.461
Pumps	250	0.302
Pumps	500	0.273
Pumps	750	0.281
Pumps	9999	0.363
Rollers	15	1.311
Rollers	25	1.311
Rollers	50	1.311
Rollers	120	0.683
Rollers	175	0.364
Rollers	250	0.347
Rollers	500	0.371
Rough Terrain Forklifts	50	1.189
Rough Terrain Forklifts	120	0.338
Rough Terrain Forklifts	175	0.217
Rough Terrain Forklifts	250	0.140
Rough Terrain Forklifts	500	0.174
Rubber Tired Dozers	175	0.965
Rubber Tired Dozers	250	0.728
Rubber Tired Dozers	500	0.708
Rubber Tired Dozers	750	0.518
Rubber Tired Dozers	1000	0.661
Rubber Tired Loaders	25	2.108
Rubber Tired Loaders	50	2.108
Rubber Tired Loaders	120	0.856
Rubber Tired Loaders	175	0.595

0.187	0.172	514.217	0.152	0.004
0.196	0.180	512.510	0.152	0.004
0.190	0.175	499.695	0.148	0.004
0.195	0.179	515.307	0.152	0.004
0.526	0.484	529.945	0.157	0.004
0.419	0.385	524.171	0.155	0.004
0.403	0.371	512.853	0.152	0.004
0.251	0.231	517.361	0.153	0.004
0.190	0.174	517.394	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.422	0.422	568.299	0.146	0.005
0.414	0.414	568.299	0.068	0.004
0.228	0.228	568.299	0.046	0.004
0.141	0.141	686.695	0.036	0.004
0.286	0.263	577.076	0.171	0.005
0.286	0.263	577.076	0.171	0.005
0.235	0.216	517.062	0.153	0.004
0.434	0.400	582.725	0.172	0.005
0.391	0.360	516.338	0.153	0.004
0.273	0.251	515.820	0.152	0.004
0.149	0.137	521.452	0.154	0.004
0.126	0.116	513.616	0.152	0.004
0.103	0.095	516.321	0.153	0.004
0.603	0.555	574.943	0.170	0.005
0.603	0.555	574.943	0.170	0.005
0.603	0.555	574.943	0.170	0.005
0.610	0.562	518.893	0.153	0.004
0.503	0.463	517.806	0.153	0.004
0.265	0.244	514.527	0.152	0.004
0.488	0.449	564.042	0.167	0.005

Rubber Tired Loaders	250	0.406
Rubber Tired Loaders	500	0.415
Rubber Tired Loaders	750	0.395
Rubber Tired Loaders	1000	0.420
Scrapers	120	0.731
Scrapers	175	0.714
Scrapers	250	0.730
Scrapers	500	0.472
Scrapers	750	0.360
Signal Boards	15	0.661
Signal Boards	50	1.461
Signal Boards	120	0.687
Signal Boards	175	0.474
Signal Boards	250	0.380
Skid Steer Loaders	25	0.639
Skid Steer Loaders	50	0.639
Skid Steer Loaders	120	0.294
Surfacing Equipment	50	1.028
Surfacing Equipment	120	0.548
Surfacing Equipment	175	0.477
Surfacing Equipment	250	0.310
Surfacing Equipment	500	0.241
Surfacing Equipment	750	0.178
Sweepers/Scrubbers	15	1.808
Sweepers/Scrubbers	25	1.808
Sweepers/Scrubbers	50	1.808
Sweepers/Scrubbers	120	0.833
Sweepers/Scrubbers	175	0.839
Sweepers/Scrubbers	250	0.513
Tractors/Loaders/Backhoes	25	1.307

0.488	0.449	564.042	0.167	0.005
0.438	0.403	523.017	0.155	0.004
0.248	0.229	513.890	0.152	0.004
0.159	0.146	515.175	0.152	0.004
0.152	0.140	517.124	0.153	0.004
0.154	0.141	511.337	0.151	0.004
0.501	0.461	577.728	0.171	0.005
0.501	0.461	577.728	0.171	0.005
0.501	0.461	577.728	0.171	0.005
0.563	0.518	520.766	0.154	0.004
0.395	0.364	512.148	0.151	0.004
0.258	0.237	517.719	0.153	0.004
0.161	0.148	513.744	0.152	0.004
0.061	0.056	519.658	0.154	0.004
0.341	0.341	568.300	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.473	0.473	568.300	0.171	0.005
0.464	0.464	568.299	0.076	0.004
0.255	0.255	568.299	0.052	0.004
0.128	0.128	568.299	0.034	0.004
0.119	0.119	568.299	0.031	0.004
0.292	0.269	514.057	0.152	0.004
0.236	0.217	512.833	0.152	0.004
0.180	0.165	521.057	0.154	0.004
0.231	0.212	521.230	0.154	0.004
0.187	0.172	516.939	0.153	0.004

Tractors/Loaders/Backhoes	50	1.307
Tractors/Loaders/Backhoes	120	0.569
Tractors/Loaders/Backhoes	175	0.421
Tractors/Loaders/Backhoes	250	0.326
Tractors/Loaders/Backhoes	500	0.312
Tractors/Loaders/Backhoes	750	0.308
Trenchers	15	1.259
Trenchers	25	1.259
Trenchers	50	1.259
Trenchers	120	0.817
Trenchers	175	0.697
Trenchers	250	0.502
Trenchers	500	0.311
Trenchers	750	0.114
Welders	15	0.840
Welders	25	0.894
Welders	50	1.715
Welders	120	0.772
Welders	175	0.532
Welders	250	0.352
Welders	500	0.324
Water Trucks	175	0.508
Water Trucks	250	0.473
Water Trucks	500	0.385
Water Trucks	750	0.452
Water Trucks	1000	0.411

2016

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.218	3.113	0.005	0.143	0.132	511.457	0.153	0.004
0.988	4.621	0.005	0.102	0.094	511.392	0.153	0.004
1.130	3.380	0.005	0.098	0.098	568.299	0.025	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
5.968	5.223	0.007	0.459	0.459	568.299	0.168	0.005
3.840	5.190	0.006	0.446	0.446	568.299	0.074	0.004
3.218	4.504	0.006	0.245	0.245	568.299	0.051	0.004
1.207	3.967	0.006	0.121	0.121	568.299	0.034	0.004
1.198	3.455	0.005	0.113	0.113	568.300	0.032	0.004
1.198	3.586	0.005	0.116	0.116	568.299	0.032	0.004
1.370	5.157	0.005	0.142	0.142	568.299	0.036	0.004
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
3.335	4.028	0.005	0.239	0.220	496.949	0.148	0.004
3.035	3.904	0.005	0.176	0.162	517.207	0.154	0.004
1.178	3.325	0.005	0.100	0.092	506.505	0.151	0.004
1.256	3.003	0.005	0.096	0.088	499.902	0.149	0.004
1.105	2.376	0.005	0.081	0.074	520.473	0.155	0.004
0.956	2.994	0.005	0.059	0.054	511.253	0.153	0.004

3.469	4.168	0.008	0.171	0.171	568.300	0.059	0.005
2.531	4.712	0.007	0.240	0.240	568.299	0.073	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
5.165	4.989	0.007	0.386	0.386	568.299	0.132	0.005
3.647	4.789	0.006	0.372	0.372	568.300	0.061	0.004
3.077	4.112	0.006	0.207	0.207	568.299	0.042	0.004
7.125	6.075	0.005	0.601	0.553	561.224	0.168	0.005
4.884	10.060	0.005	0.747	0.687	508.837	0.152	0.004
3.918	8.325	0.005	0.450	0.414	514.260	0.154	0.004
2.653	7.622	0.005	0.348	0.320	512.448	0.153	0.004
4.110	6.124	0.005	0.253	0.233	511.197	0.153	0.004
1.643	4.312	0.005	0.152	0.140	510.334	0.152	0.004
0.957	2.295	0.005	0.055	0.051	511.392	0.153	0.004
8.076	6.377	0.005	0.741	0.682	558.888	0.167	0.005
4.189	7.494	0.005	0.630	0.580	516.843	0.154	0.004
3.479	6.849	0.005	0.376	0.346	511.306	0.153	0.004
1.816	6.143	0.005	0.237	0.218	512.897	0.153	0.004
2.845	5.483	0.005	0.212	0.195	515.373	0.154	0.004
1.664	4.883	0.005	0.179	0.165	512.540	0.153	0.004
2.088	7.463	0.005	0.220	0.202	514.830	0.154	0.004
5.996	5.195	0.007	0.446	0.446	568.299	0.162	0.005
3.859	5.040	0.006	0.430	0.430	568.299	0.071	0.004
3.247	4.343	0.006	0.237	0.237	568.299	0.050	0.004
1.201	3.801	0.006	0.117	0.117	568.299	0.034	0.004
1.184	3.304	0.005	0.109	0.109	568.299	0.032	0.004
1.176	3.422	0.005	0.111	0.111	568.299	0.032	0.004
1.343	5.019	0.005	0.140	0.140	568.299	0.038	0.004

2.350	4.402	0.007	0.187	0.187	568.299	0.062	0.005
4.925	4.918	0.005	0.375	0.345	569.512	0.170	0.005
4.925	4.918	0.005	0.375	0.345	569.512	0.170	0.005
3.679	5.019	0.005	0.374	0.344	506.173	0.151	0.004
3.168	4.481	0.005	0.221	0.204	511.687	0.153	0.004
1.331	4.182	0.005	0.133	0.122	512.056	0.153	0.004
1.317	3.214	0.005	0.104	0.096	509.868	0.152	0.004
1.354	3.473	0.005	0.113	0.104	506.682	0.151	0.004
7.300	5.931	0.005	0.643	0.591	569.274	0.170	0.005
4.063	6.601	0.005	0.555	0.510	510.823	0.153	0.004
3.520	6.135	0.005	0.335	0.308	511.448	0.153	0.004
2.325	6.697	0.005	0.298	0.274	512.769	0.153	0.004
3.300	5.332	0.005	0.237	0.218	513.083	0.153	0.004
3.658	5.141	0.008	0.280	0.280	568.299	0.067	0.005
2.666	4.890	0.007	0.256	0.256	568.299	0.071	0.005
4.538	4.858	0.007	0.353	0.353	568.299	0.115	0.005
3.499	4.769	0.006	0.347	0.347	568.299	0.058	0.004
2.938	4.138	0.006	0.191	0.191	568.299	0.039	0.004
1.104	3.633	0.006	0.100	0.100	568.300	0.025	0.004
1.114	3.231	0.005	0.094	0.094	568.299	0.023	0.004
1.114	3.347	0.005	0.096	0.096	568.299	0.024	0.004
1.269	4.822	0.005	0.124	0.124	568.299	0.031	0.004
9.144	6.570	0.005	0.874	0.804	533.681	0.159	0.005
4.884	9.738	0.005	0.813	0.748	509.597	0.152	0.004
3.958	8.637	0.005	0.486	0.447	522.218	0.156	0.004
1.466	5.728	0.005	0.186	0.171	517.128	0.154	0.004
1.791	3.721	0.005	0.144	0.133	512.098	0.153	0.004
1.420	3.501	0.005	0.124	0.124	568.299	0.037	0.004
3.965	6.067	0.005	0.494	0.455	515.320	0.154	0.004
3.264	4.724	0.005	0.239	0.220	512.608	0.153	0.004
1.605	5.528	0.005	0.199	0.183	509.190	0.152	0.004
1.172	3.874	0.005	0.126	0.116	511.081	0.153	0.004
0.960	2.300	0.005	0.056	0.051	511.392	0.153	0.004
3.489	5.104	0.005	0.284	0.262	508.701	0.152	0.004
1.900	5.242	0.005	0.227	0.209	507.809	0.152	0.004

2.037	4.528	0.005	0.173	0.159	515.842	0.154	0.004
2.620	5.124	0.005	0.209	0.192	514.644	0.154	0.004
1.772	6.280	0.005	0.185	0.170	511.137	0.153	0.004
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
3.916	6.536	0.005	0.512	0.471	510.171	0.152	0.004
3.382	6.231	0.005	0.326	0.300	509.307	0.152	0.004
2.407	4.415	0.005	0.163	0.150	515.195	0.154	0.004
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
4.081	6.502	0.005	0.553	0.509	509.166	0.152	0.004
3.454	5.397	0.005	0.294	0.270	511.171	0.153	0.004
1.926	5.643	0.005	0.230	0.211	512.658	0.153	0.004
2.436	4.425	0.005	0.167	0.154	512.340	0.153	0.004

1.491	3.365	0.005	0.109	0.100	512.919	0.153	0.004
1.094	6.448	0.005	0.171	0.158	511.392	0.153	0.004
6.756	5.799	0.005	0.586	0.539	567.351	0.169	0.005
3.758	4.983	0.005	0.383	0.352	513.054	0.153	0.004
3.433	5.645	0.005	0.306	0.282	511.571	0.153	0.004
1.742	5.532	0.005	0.207	0.191	510.772	0.153	0.004
1.918	4.272	0.005	0.166	0.152	509.489	0.152	0.004
0.984	3.458	0.005	0.068	0.063	511.392	0.153	0.004
6.340	5.637	0.005	0.579	0.533	571.086	0.171	0.005
6.340	5.637	0.005	0.579	0.533	571.086	0.171	0.005
3.788	6.141	0.005	0.479	0.441	509.377	0.152	0.004
3.115	5.537	0.005	0.277	0.255	511.646	0.153	0.004
1.031	4.161	0.005	0.107	0.098	513.468	0.153	0.004
0.978	2.917	0.005	0.097	0.089	506.097	0.151	0.004
4.869	5.028	0.005	0.407	0.374	563.553	0.168	0.005
4.869	5.028	0.005	0.407	0.374	563.553	0.168	0.005
3.833	6.145	0.005	0.471	0.433	513.167	0.153	0.004
3.104	4.966	0.005	0.242	0.223	509.894	0.152	0.004
1.379	4.772	0.005	0.159	0.146	511.654	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.657	5.141	0.008	0.280	0.280	568.299	0.067	0.005
2.666	4.890	0.007	0.256	0.256	568.299	0.071	0.005
3.833	4.685	0.007	0.300	0.300	568.299	0.088	0.005
3.336	4.551	0.006	0.297	0.297	568.299	0.051	0.004
2.917	4.115	0.006	0.187	0.187	568.299	0.038	0.004

0.986	0.690	0.006	0.010	0.010	568.299	0.010	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
4.775	4.916	0.007	0.371	0.371	568.300	0.124	0.005
3.554	4.842	0.006	0.364	0.364	568.300	0.061	0.004
2.983	4.202	0.006	0.200	0.200	568.299	0.041	0.004
1.122	3.693	0.006	0.104	0.104	568.299	0.027	0.004
1.134	3.272	0.005	0.097	0.097	568.299	0.024	0.004
1.134	3.389	0.005	0.099	0.099	568.299	0.025	0.004
1.293	4.878	0.005	0.127	0.127	568.299	0.032	0.004
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
3.809	6.272	0.005	0.467	0.430	513.505	0.153	0.004
3.006	4.630	0.005	0.216	0.198	511.394	0.153	0.004
1.650	4.932	0.005	0.171	0.157	512.823	0.153	0.004
3.245	5.031	0.005	0.195	0.179	517.285	0.154	0.004
4.933	5.190	0.005	0.431	0.397	569.488	0.170	0.005
3.366	4.280	0.005	0.247	0.228	512.086	0.153	0.004
2.859	3.420	0.005	0.133	0.122	510.854	0.153	0.004
1.012	2.463	0.005	0.058	0.054	512.164	0.153	0.004
0.958	3.521	0.005	0.077	0.071	506.435	0.151	0.004
4.238	9.844	0.005	0.564	0.519	513.055	0.153	0.004
2.720	7.984	0.005	0.394	0.362	514.736	0.154	0.004
6.102	7.997	0.005	0.373	0.343	519.147	0.155	0.004
2.761	7.158	0.005	0.259	0.238	512.525	0.153	0.004
2.901	6.556	0.005	0.222	0.222	568.299	0.059	0.004
7.834	6.112	0.005	0.675	0.621	567.672	0.170	0.005
7.834	6.112	0.005	0.675	0.621	567.672	0.170	0.005
4.274	7.012	0.005	0.606	0.558	505.023	0.151	0.004
3.588	6.097	0.005	0.341	0.313	510.468	0.152	0.004

1.480	5.369	0.005	0.183	0.169	508.913	0.152	0.004
2.332	5.020	0.005	0.190	0.174	506.372	0.151	0.004
1.789	4.556	0.005	0.179	0.165	495.310	0.148	0.004
1.462	6.713	0.005	0.197	0.181	510.045	0.152	0.004
4.137	7.105	0.005	0.535	0.492	524.560	0.157	0.004
3.809	7.765	0.005	0.415	0.382	518.829	0.155	0.004
3.008	8.663	0.005	0.395	0.364	507.570	0.152	0.004
3.788	6.086	0.005	0.246	0.226	511.947	0.153	0.004
2.685	4.839	0.005	0.182	0.167	512.084	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
5.068	4.943	0.007	0.382	0.382	568.299	0.131	0.005
3.624	4.791	0.006	0.371	0.371	568.299	0.062	0.004
3.052	4.136	0.006	0.205	0.205	568.299	0.042	0.004
1.371	4.365	0.007	0.127	0.127	686.695	0.034	0.004
4.004	4.436	0.005	0.267	0.246	571.420	0.171	0.005
4.004	4.436	0.005	0.267	0.246	571.420	0.171	0.005
3.338	3.811	0.005	0.220	0.203	511.595	0.153	0.004
4.692	5.255	0.006	0.402	0.370	576.771	0.172	0.005
3.575	5.374	0.005	0.378	0.348	510.142	0.152	0.004
3.027	5.733	0.005	0.276	0.254	510.548	0.152	0.004
1.442	5.112	0.005	0.151	0.139	516.058	0.154	0.004
1.513	3.900	0.005	0.127	0.116	508.399	0.152	0.004
1.024	3.287	0.005	0.104	0.096	511.116	0.153	0.004
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
4.097	6.886	0.005	0.610	0.561	513.625	0.153	0.004
3.982	8.697	0.005	0.479	0.441	512.549	0.153	0.004
2.078	6.745	0.005	0.268	0.246	509.304	0.152	0.004
5.791	5.320	0.005	0.477	0.439	558.709	0.167	0.005

5.791	5.320	0.005	0.477	0.439	558.709	0.167	0.005
3.832	5.422	0.005	0.424	0.390	517.365	0.155	0.004
3.256	4.836	0.005	0.244	0.225	508.682	0.152	0.004
1.374	4.783	0.005	0.155	0.143	509.627	0.152	0.004
1.884	4.348	0.005	0.149	0.137	511.869	0.153	0.004
1.823	4.185	0.005	0.152	0.140	506.147	0.151	0.004
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
4.014	7.179	0.005	0.562	0.517	515.396	0.154	0.004
3.684	7.674	0.005	0.396	0.364	506.943	0.151	0.004
2.080	6.510	0.005	0.260	0.239	512.433	0.153	0.004
2.051	4.383	0.005	0.163	0.150	508.330	0.152	0.004
0.965	1.623	0.005	0.053	0.049	514.400	0.154	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
5.562	5.113	0.007	0.430	0.430	568.300	0.154	0.005
3.738	5.077	0.006	0.419	0.419	568.299	0.069	0.004
3.133	4.408	0.006	0.230	0.230	568.299	0.048	0.004
1.178	3.880	0.006	0.116	0.116	568.299	0.031	0.004
1.176	3.398	0.005	0.108	0.108	568.299	0.029	0.004
3.489	5.104	0.005	0.284	0.262	508.701	0.152	0.004
1.900	5.242	0.005	0.227	0.209	507.809	0.152	0.004
2.037	4.528	0.005	0.173	0.159	515.842	0.154	0.004
2.620	5.124	0.005	0.209	0.192	514.644	0.154	0.004
1.772	6.280	0.005	0.185	0.170	511.137	0.153	0.004

2016		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	25	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	50	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	120	0.166	3.201	2.722	0.005	0.112	0.103	506.211
Aerial Lifts	500	0.243	0.992	4.639	0.005	0.103	0.095	506.147
Aerial Lifts	750	0.257	1.089	3.015	0.005	0.088	0.088	568.299
Air Compressors	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Air Compressors	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Air Compressors	50	1.670	5.779	5.042	0.007	0.415	0.415	568.299
Air Compressors	120	0.744	3.804	4.790	0.006	0.397	0.397	568.299
Air Compressors	175	0.522	3.211	4.052	0.006	0.219	0.219	568.299
Air Compressors	250	0.359	1.182	3.553	0.006	0.109	0.109	568.299
Air Compressors	500	0.337	1.155	3.080	0.005	0.102	0.102	568.299
Air Compressors	750	0.340	1.155	3.201	0.005	0.104	0.104	568.299
Air Compressors	1000	0.383	1.295	4.854	0.005	0.131	0.131	568.299
Bore/Drill Rigs	15	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	25	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	50	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	120	0.307	3.326	3.821	0.005	0.221	0.204	491.655
Bore/Drill Rigs	175	0.286	3.023	3.616	0.005	0.162	0.149	511.433
Bore/Drill Rigs	250	0.193	1.133	2.902	0.005	0.085	0.078	502.128
Bore/Drill Rigs	500	0.171	1.133	2.510	0.005	0.077	0.071	494.761
Bore/Drill Rigs	750	0.153	1.120	2.166	0.005	0.072	0.066	514.883
Bore/Drill Rigs	1000	0.115	0.964	3.008	0.005	0.059	0.055	506.000

Cement and Mortar Mixers	15	0.662	3.469	4.153	0.008	0.167	0.167	568.300
Cement and Mortar Mixers	25	0.788	2.496	4.636	0.007	0.227	0.227	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	1.322	5.029	4.818	0.007	0.350	0.350	568.300
Concrete/Industrial Saws	120	0.620	3.620	4.432	0.006	0.333	0.333	568.300
Concrete/Industrial Saws	175	0.435	3.074	3.708	0.006	0.186	0.186	568.299
Cranes	50	2.130	7.268	6.110	0.005	0.610	0.561	555.441
Cranes	120	1.154	4.797	9.608	0.005	0.710	0.653	503.599
Cranes	175	0.744	3.862	7.887	0.005	0.427	0.393	508.952
Cranes	250	0.623	2.582	7.381	0.005	0.335	0.308	507.155
Cranes	500	0.443	3.834	5.649	0.005	0.233	0.215	506.088
Cranes	750	0.292	1.650	4.314	0.005	0.153	0.141	505.070
Cranes	9999	0.142	0.966	2.309	0.005	0.057	0.052	506.147
Crawler Tractors	50	2.519	8.104	6.317	0.005	0.733	0.674	553.214
Crawler Tractors	120	0.869	4.185	7.346	0.005	0.619	0.570	511.268
Crawler Tractors	175	0.624	3.482	6.721	0.005	0.371	0.341	506.034
Crawler Tractors	250	0.449	1.803	6.047	0.005	0.233	0.215	507.355
Crawler Tractors	500	0.398	2.744	5.279	0.005	0.205	0.188	510.339
Crawler Tractors	750	0.346	1.621	4.724	0.005	0.174	0.160	507.253
Crawler Tractors	1000	0.483	2.094	7.499	0.005	0.222	0.204	509.667
Crushing/Proc. Equipment	50	1.593	5.801	5.006	0.007	0.399	0.399	568.299
Crushing/Proc. Equipment	120	0.720	3.823	4.631	0.006	0.379	0.379	568.299
Crushing/Proc. Equipment	175	0.513	3.241	3.883	0.006	0.210	0.210	568.299
Crushing/Proc. Equipment	250	0.360	1.178	3.381	0.006	0.105	0.105	568.299
Crushing/Proc. Equipment	500	0.340	1.146	2.928	0.005	0.098	0.098	568.299
Crushing/Proc. Equipment	750	0.339	1.140	3.021	0.005	0.099	0.099	568.299
Crushing/Proc. Equipment	9999	0.397	1.274	4.700	0.005	0.127	0.127	568.299

Dumpers/Tenders	25	0.690	2.342	4.378	0.007	0.175	0.175	568.299
Excavators	25	0.815	4.942	4.824	0.005	0.359	0.330	563.803
Excavators	50	0.815	4.942	4.824	0.005	0.359	0.330	563.803
Excavators	120	0.476	3.661	4.708	0.005	0.344	0.317	500.966
Excavators	175	0.358	3.158	4.081	0.005	0.201	0.185	506.495
Excavators	250	0.262	1.277	3.667	0.005	0.116	0.107	506.544
Excavators	500	0.213	1.233	2.815	0.005	0.091	0.083	504.290
Excavators	750	0.242	1.349	3.358	0.005	0.110	0.101	501.660
Forklifts	50	1.864	6.935	5.662	0.005	0.583	0.537	563.435
Forklifts	120	0.723	4.023	6.222	0.005	0.520	0.479	505.583
Forklifts	175	0.530	3.473	5.675	0.005	0.310	0.285	506.203
Forklifts	250	0.539	2.226	6.353	0.005	0.280	0.258	507.510
Forklifts	500	0.353	2.572	4.042	0.005	0.174	0.160	507.821
Generator Sets	15	0.720	3.622	4.978	0.008	0.264	0.264	568.299
Generator Sets	25	0.773	2.604	4.803	0.007	0.244	0.244	568.299
Generator Sets	50	1.146	4.410	4.685	0.007	0.318	0.318	568.299
Generator Sets	120	0.583	3.469	4.410	0.006	0.309	0.309	568.299
Generator Sets	175	0.396	2.934	3.731	0.006	0.170	0.170	568.299
Generator Sets	250	0.265	1.081	3.259	0.006	0.090	0.090	568.299
Generator Sets	500	0.239	1.077	2.882	0.005	0.084	0.084	568.299
Generator Sets	750	0.247	1.077	2.989	0.005	0.086	0.086	568.300
Generator Sets	9999	0.324	1.204	4.542	0.005	0.113	0.113	568.299
Graders	50	3.085	9.106	6.520	0.005	0.864	0.795	528.244
Graders	120	1.193	4.829	9.415	0.005	0.780	0.718	503.161
Graders	175	0.810	3.916	8.250	0.005	0.464	0.426	516.131
Graders	250	0.398	1.459	5.663	0.005	0.184	0.169	511.696
Graders	500	0.334	1.774	3.686	0.005	0.144	0.133	506.506
Graders	750	0.393	1.367	3.154	0.005	0.112	0.112	568.299
Off-Highway Tractors	120	0.625	3.925	5.647	0.005	0.454	0.418	509.447
Off-Highway Tractors	175	0.391	3.278	4.511	0.005	0.229	0.211	507.629
Off-Highway Tractors	250	0.359	1.472	4.930	0.005	0.171	0.157	504.123
Off-Highway Tractors	750	0.252	1.143	3.573	0.005	0.117	0.108	505.762
Off-Highway Tractors	1000	0.107	0.973	2.320	0.005	0.057	0.053	506.147
Off-Highway Trucks	175	0.473	3.459	4.647	0.005	0.258	0.237	503.552
Off-Highway Trucks	250	0.446	1.824	4.826	0.005	0.208	0.191	502.473

Off-Highway Trucks	500	0.351	1.885	4.048	0.005	0.153	0.141	509.860
Off-Highway Trucks	750	0.418	2.436	4.642	0.005	0.187	0.172	508.392
Off-Highway Trucks	1000	0.393	1.707	6.035	0.005	0.175	0.161	505.722
Other Construction Equipment	15	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	25	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	50	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	120	0.703	3.909	6.325	0.005	0.496	0.456	505.349
Other Construction Equipment	175	0.524	3.357	5.818	0.005	0.306	0.282	503.964
Other Construction Equipment	500	0.308	2.285	4.090	0.005	0.151	0.139	509.706
Other General Industrial Equipment	15	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	25	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	50	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	120	0.716	4.045	6.144	0.005	0.518	0.476	503.944
Other General Industrial Equipment	175	0.470	3.437	5.055	0.005	0.276	0.254	505.928
Other General Industrial Equipment	250	0.437	1.867	5.407	0.005	0.217	0.200	507.400
Other General Industrial Equipment	500	0.342	2.367	4.150	0.005	0.159	0.146	507.085

Other General Industrial Equipment	750	0.243	1.491	3.102	0.005	0.100	0.092	507.658
Other General Industrial Equipment	1000	0.242	1.045	4.746	0.005	0.112	0.103	506.147
Other Material Handling Equipment	50	1.765	6.892	5.802	0.005	0.593	0.546	561.532
Other Material Handling Equipment	120	0.514	3.766	4.798	0.005	0.367	0.338	507.792
Other Material Handling Equipment	175	0.489	3.418	5.212	0.005	0.280	0.257	506.324
Other Material Handling Equipment	250	0.398	1.643	5.196	0.005	0.189	0.174	505.534
Other Material Handling Equipment	500	0.323	1.871	4.053	0.005	0.156	0.143	504.263
Other Material Handling Equipment	9999	0.159	0.997	3.489	0.005	0.070	0.065	506.147
Pavers	25	1.827	6.340	5.579	0.005	0.569	0.523	565.234
Pavers	50	1.827	6.340	5.579	0.005	0.569	0.523	565.234
Pavers	120	0.650	3.769	5.886	0.005	0.457	0.420	503.780
Pavers	175	0.433	3.080	4.874	0.005	0.242	0.223	506.540
Pavers	250	0.214	1.036	4.024	0.005	0.104	0.096	508.070
Pavers	500	0.180	0.983	2.885	0.005	0.096	0.089	500.936
Paving Equipment	25	0.991	4.937	4.985	0.005	0.404	0.371	557.706
Paving Equipment	50	0.991	4.937	4.985	0.005	0.404	0.371	557.706
Paving Equipment	120	0.623	3.796	5.733	0.005	0.438	0.403	507.910
Paving Equipment	175	0.372	3.081	4.322	0.005	0.215	0.197	504.820
Paving Equipment	250	0.297	1.331	4.428	0.005	0.148	0.136	506.197
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.720	3.622	4.978	0.008	0.264	0.264	568.299
Pressure Washers	25	0.773	2.604	4.803	0.007	0.244	0.244	568.299
Pressure Washers	50	0.865	3.729	4.515	0.007	0.269	0.269	568.299
Pressure Washers	120	0.504	3.308	4.209	0.006	0.264	0.264	568.299
Pressure Washers	175	0.386	2.913	3.726	0.006	0.168	0.168	568.299

Pressure Washers	250	0.107	0.986	0.399	0.006	0.009	0.009	568.299
Pumps	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Pumps	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Pumps	50	1.240	4.640	4.742	0.007	0.335	0.335	568.299
Pumps	120	0.610	3.523	4.478	0.006	0.325	0.325	568.299
Pumps	175	0.417	2.978	3.789	0.006	0.179	0.179	568.299
Pumps	250	0.280	1.099	3.313	0.006	0.094	0.094	568.299
Pumps	500	0.254	1.093	2.919	0.005	0.088	0.088	568.299
Pumps	750	0.262	1.093	3.028	0.005	0.089	0.089	568.299
Pumps	9999	0.335	1.223	4.596	0.005	0.116	0.116	568.300
Rollers	15	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	25	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	50	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	120	0.628	3.755	5.806	0.005	0.428	0.393	508.199
Rollers	175	0.338	2.993	4.239	0.005	0.197	0.181	505.904
Rollers	250	0.308	1.507	4.395	0.005	0.150	0.138	507.694
Rollers	500	0.334	2.956	4.456	0.005	0.173	0.159	513.415
Rough Terrain Forklifts	50	1.159	4.918	5.099	0.005	0.415	0.382	563.360
Rough Terrain Forklifts	120	0.302	3.342	3.840	0.005	0.213	0.196	507.066
Rough Terrain Forklifts	175	0.209	2.865	3.209	0.005	0.124	0.115	505.596
Rough Terrain Forklifts	250	0.144	1.018	2.468	0.005	0.059	0.054	506.896
Rough Terrain Forklifts	500	0.178	0.962	3.542	0.005	0.078	0.072	501.213
Rubber Tired Dozers	175	0.968	4.249	9.853	0.005	0.566	0.521	507.774
Rubber Tired Dozers	250	0.736	2.729	7.995	0.005	0.395	0.364	509.462
Rubber Tired Dozers	500	0.688	5.828	7.710	0.005	0.359	0.330	513.311
Rubber Tired Dozers	750	0.523	2.765	7.168	0.005	0.260	0.239	507.260
Rubber Tired Dozers	1000	0.631	2.723	6.277	0.005	0.208	0.208	568.300
Rubber Tired Loaders	25	2.055	7.791	6.053	0.005	0.660	0.607	561.903
Rubber Tired Loaders	50	2.055	7.791	6.053	0.005	0.660	0.607	561.903
Rubber Tired Loaders	120	0.803	4.212	6.583	0.005	0.565	0.520	499.594
Rubber Tired Loaders	175	0.565	3.562	5.726	0.005	0.319	0.294	505.131

Rubber Tired Loaders	250	0.393	1.452	5.115	0.005	0.175	0.161	503.654
Rubber Tired Loaders	500	0.391	2.155	4.627	0.005	0.174	0.160	500.431
Rubber Tired Loaders	750	0.373	1.703	4.172	0.005	0.164	0.151	491.918
Rubber Tired Loaders	1000	0.425	1.464	6.724	0.005	0.198	0.182	504.780
Scrapers	120	0.742	4.173	7.143	0.005	0.543	0.500	519.167
Scrapers	175	0.688	3.781	7.384	0.005	0.397	0.365	513.436
Scrapers	250	0.684	2.840	8.109	0.005	0.367	0.338	502.255
Scrapers	500	0.452	3.606	5.757	0.005	0.232	0.214	506.350
Scrapers	750	0.340	2.482	4.484	0.005	0.168	0.154	506.638
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	1.306	4.921	4.761	0.007	0.343	0.343	568.299
Signal Boards	120	0.618	3.594	4.414	0.006	0.330	0.330	568.299
Signal Boards	175	0.430	3.047	3.708	0.006	0.183	0.183	568.299
Signal Boards	250	0.354	1.344	3.894	0.007	0.114	0.114	686.695
Skid Steer Loaders	25	0.599	3.957	4.268	0.005	0.241	0.221	565.228
Skid Steer Loaders	50	0.599	3.957	4.268	0.005	0.241	0.221	565.228
Skid Steer Loaders	120	0.273	3.328	3.534	0.005	0.197	0.182	506.297
Surfacing Equipment	50	1.045	4.763	5.273	0.006	0.406	0.374	570.815
Surfacing Equipment	120	0.522	3.550	5.051	0.005	0.349	0.321	505.087
Surfacing Equipment	175	0.458	3.006	5.458	0.005	0.265	0.244	504.558
Surfacing Equipment	250	0.307	1.429	5.048	0.005	0.148	0.137	510.706
Surfacing Equipment	500	0.217	1.425	3.468	0.005	0.111	0.102	502.471
Surfacing Equipment	750	0.162	1.000	2.880	0.005	0.093	0.085	506.967
Sweepers/Scrubbers	15	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	25	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	50	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	120	0.783	4.059	6.454	0.005	0.571	0.525	508.357
Sweepers/Scrubbers	175	0.746	3.839	7.787	0.005	0.419	0.385	507.292
Sweepers/Scrubbers	250	0.521	2.089	6.782	0.005	0.270	0.248	504.080
Tractors/Loaders/Backhoes	25	1.250	5.741	5.214	0.005	0.455	0.418	553.400

Tractors/Loaders/Backhoes	50	1.250	5.741	5.214	0.005	0.455	0.418	553.400
Tractors/Loaders/Backhoes	120	0.538	3.811	5.142	0.005	0.396	0.364	511.346
Tractors/Loaders/Backhoes	175	0.389	3.232	4.379	0.005	0.222	0.204	502.629
Tractors/Loaders/Backhoes	250	0.311	1.347	4.426	0.005	0.145	0.133	504.401
Tractors/Loaders/Backhoes	500	0.284	1.786	3.787	0.005	0.131	0.121	505.270
Tractors/Loaders/Backhoes	750	0.300	1.674	4.022	0.005	0.144	0.133	500.955
Trenchers	15	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	25	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	50	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	120	0.788	3.988	6.902	0.005	0.541	0.498	509.903
Trenchers	175	0.583	3.507	6.503	0.005	0.328	0.302	501.781
Trenchers	250	0.487	2.030	6.312	0.005	0.251	0.231	507.145
Trenchers	500	0.296	1.966	4.099	0.005	0.150	0.138	504.410
Trenchers	750	0.120	0.971	1.630	0.005	0.054	0.050	509.143
Welders	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Welders	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Welders	50	1.540	5.395	4.936	0.007	0.389	0.389	568.299
Welders	120	0.699	3.705	4.692	0.006	0.375	0.375	568.300
Welders	175	0.486	3.128	3.973	0.006	0.206	0.206	568.299
Welders	250	0.330	1.153	3.481	0.006	0.104	0.104	568.299
Welders	500	0.306	1.134	3.032	0.005	0.097	0.097	568.299
Water Trucks	175	0.473	3.459	4.647	0.005	0.258	0.237	503.552
Water Trucks	250	0.446	1.824	4.826	0.005	0.208	0.191	502.473
Water Trucks	500	0.351	1.885	4.048	0.005	0.153	0.141	509.860
Water Trucks	750	0.418	2.436	4.642	0.005	0.187	0.172	508.392
Water Trucks	1000	0.393	1.707	6.035	0.005	0.175	0.161	505.722

2017

g/hp/hr	g/hp/hr
CH4	N2O
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.023	0.004
0.073	0.005
0.077	0.005
0.150	0.005
0.067	0.004
0.047	0.004
0.032	0.004
0.030	0.004
0.030	0.004
0.034	0.004
0.175	0.005
0.175	0.005
0.175	0.005
0.148	0.004
0.154	0.004
0.152	0.004
0.149	0.004
0.155	0.004
0.153	0.004

2017		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.209	3.169
Aerial Lifts	25	0.209	3.169
Aerial Lifts	50	0.209	3.169
Aerial Lifts	120	0.143	3.184
Aerial Lifts	500	0.246	0.997
Aerial Lifts	750	0.239	1.059
Air Compressors	15	0.786	3.599
Air Compressors	25	0.830	2.564
Air Compressors	50	1.481	5.604
Air Compressors	120	0.671	3.772
Air Compressors	175	0.477	3.207
Air Compressors	250	0.339	1.162
Air Compressors	500	0.321	1.123
Air Compressors	750	0.323	1.123
Air Compressors	1000	0.362	1.246
Bore/Drill Rigs	15	0.804	4.652
Bore/Drill Rigs	25	0.804	4.652
Bore/Drill Rigs	50	0.804	4.652
Bore/Drill Rigs	120	0.298	3.331
Bore/Drill Rigs	175	0.245	3.001
Bore/Drill Rigs	250	0.174	1.102
Bore/Drill Rigs	500	0.166	1.119
Bore/Drill Rigs	750	0.155	1.137
Bore/Drill Rigs	1000	0.121	0.971

0.059	0.005
0.071	0.005
0.061	0.005
0.119	0.005
0.055	0.004
0.039	0.004
0.168	0.005
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.167	0.005
0.154	0.004
0.153	0.004
0.153	0.004
0.154	0.004
0.153	0.004
0.154	0.004
0.143	0.005
0.065	0.004
0.046	0.004
0.032	0.004
0.030	0.004
0.030	0.004
0.035	0.004

Cement and Mortar Mixers	15	0.661	3.469
Cement and Mortar Mixers	25	0.767	2.466
Concrete/Industrial Saws	25	0.685	2.340
Concrete/Industrial Saws	50	1.175	4.894
Concrete/Industrial Saws	120	0.557	3.595
Concrete/Industrial Saws	175	0.395	3.073
Cranes	50	2.173	7.408
Cranes	120	1.097	4.710
Cranes	175	0.696	3.787
Cranes	250	0.561	2.385
Cranes	500	0.410	3.547
Cranes	750	0.287	1.633
Cranes	9999	0.152	0.974
Crawler Tractors	50	2.459	8.006
Crawler Tractors	120	0.849	4.176
Crawler Tractors	175	0.614	3.483
Crawler Tractors	250	0.430	1.742
Crawler Tractors	500	0.385	2.635
Crawler Tractors	750	0.324	1.522
Crawler Tractors	1000	0.486	2.100
Crushing/Proc. Equipment	50	1.402	5.623
Crushing/Proc. Equipment	120	0.647	3.791
Crushing/Proc. Equipment	175	0.468	3.236
Crushing/Proc. Equipment	250	0.340	1.160
Crushing/Proc. Equipment	500	0.324	1.118
Crushing/Proc. Equipment	750	0.323	1.114
Crushing/Proc. Equipment	9999	0.378	1.231

0.062	0.005
0.170	0.005
0.170	0.005
0.151	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.151	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.065	0.005
0.069	0.005
0.103	0.005
0.052	0.004
0.035	0.004
0.023	0.004
0.021	0.004
0.022	0.004
0.029	0.004
0.159	0.005
0.152	0.004
0.156	0.004
0.154	0.004
0.153	0.004
0.035	0.004
0.154	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.152	0.004

Dumpers/Tenders	25	0.687	2.340
Excavators	25	0.771	4.889
Excavators	50	0.771	4.889
Excavators	120	0.440	3.639
Excavators	175	0.334	3.151
Excavators	250	0.247	1.249
Excavators	500	0.200	1.199
Excavators	750	0.210	1.228
Forklifts	50	1.703	6.673
Forklifts	120	0.672	3.979
Forklifts	175	0.508	3.452
Forklifts	250	0.496	2.092
Forklifts	500	0.338	2.508
Generator Sets	15	0.699	3.599
Generator Sets	25	0.757	2.564
Generator Sets	50	1.017	4.292
Generator Sets	120	0.520	3.442
Generator Sets	175	0.356	2.931
Generator Sets	250	0.245	1.063
Generator Sets	500	0.224	1.048
Generator Sets	750	0.230	1.048
Generator Sets	9999	0.301	1.161
Graders	50	3.007	8.978
Graders	120	1.164	4.810
Graders	175	0.757	3.845
Graders	250	0.396	1.449
Graders	500	0.334	1.707
Graders	750	0.372	1.323
Off-Highway Tractors	120	0.586	3.901
Off-Highway Tractors	175	0.356	3.259
Off-Highway Tractors	250	0.328	1.403
Off-Highway Tractors	750	0.248	1.145
Off-Highway Tractors	1000	0.118	0.985
Off-Highway Trucks	175	0.441	3.436
Off-Highway Trucks	250	0.417	1.753

0.154	0.004	Off-Highway Trucks	500	0.325	1.748
0.153	0.004	Off-Highway Trucks	750	0.394	2.356
0.153	0.004	Off-Highway Trucks	1000	0.362	1.546
0.171	0.005	Other Construction Equipment	15	1.244	5.655
0.171	0.005	Other Construction Equipment	25	1.244	5.655
0.171	0.005	Other Construction Equipment	50	1.244	5.655
0.152	0.004	Other Construction Equipment	120	0.676	3.885
0.152	0.004	Other Construction Equipment	175	0.500	3.338
0.154	0.004	Other Construction Equipment	500	0.290	2.121
0.170	0.005	Other General Industrial Equipment	15	1.349	6.179
0.170	0.005	Other General Industrial Equipment	25	1.349	6.179
0.170	0.005	Other General Industrial Equipment	50	1.349	6.179
0.152	0.004	Other General Industrial Equipment	120	0.660	3.998
0.153	0.004	Other General Industrial Equipment	175	0.437	3.399
0.153	0.004	Other General Industrial Equipment	250	0.411	1.780
0.153	0.004	Other General Industrial Equipment	500	0.334	2.365

0.153	0.004	Other General Industrial Equipment	750	0.219	1.480
0.153	0.004	Other General Industrial Equipment	1000	0.251	1.057
0.169	0.005	Other Material Handling Equipment	50	1.615	6.635
0.153	0.004	Other Material Handling Equipment	120	0.488	3.758
0.153	0.004	Other Material Handling Equipment	175	0.427	3.351
0.153	0.004	Other Material Handling Equipment	250	0.359	1.512
0.152	0.004	Other Material Handling Equipment	500	0.325	1.863
0.153	0.004	Other Material Handling Equipment	9999	0.169	1.010
0.171	0.005	Pavers	25	1.731	6.199
0.171	0.005	Pavers	50	1.731	6.199
0.152	0.004	Pavers	120	0.625	3.759
0.153	0.004	Pavers	175	0.389	3.063
0.153	0.004	Pavers	250	0.208	1.037
0.151	0.004	Pavers	500	0.168	0.979
0.168	0.005	Paving Equipment	25	0.926	4.804
0.168	0.005	Paving Equipment	50	0.926	4.804
0.153	0.004	Paving Equipment	120	0.563	3.741
0.152	0.004	Paving Equipment	175	0.343	3.073
0.153	0.004	Paving Equipment	250	0.288	1.333
0.059	0.005	Plate Compactors	15	0.661	3.469
0.065	0.005	Pressure Washers	15	0.699	3.599
0.069	0.005	Pressure Washers	25	0.757	2.564
0.078	0.005	Pressure Washers	50	0.760	3.632
0.045	0.004	Pressure Washers	120	0.444	3.283
0.034	0.004	Pressure Washers	175	0.346	2.910

0.009	0.004
0.073	0.005
0.077	0.005
0.111	0.005
0.055	0.004
0.037	0.004
0.025	0.004
0.022	0.004
0.023	0.004
0.030	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.155	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.151	0.004
0.153	0.004
0.154	0.004
0.155	0.004
0.153	0.004
0.057	0.004
0.170	0.005
0.170	0.005
0.151	0.004
0.152	0.004

Pressure Washers	250	0.102	0.986
Pumps	15	0.786	3.599
Pumps	25	0.830	2.564
Pumps	50	1.104	4.514
Pumps	120	0.546	3.495
Pumps	175	0.376	2.975
Pumps	250	0.260	1.080
Pumps	500	0.239	1.062
Pumps	750	0.244	1.062
Pumps	9999	0.313	1.177
Rollers	15	1.198	5.147
Rollers	25	1.198	5.147
Rollers	50	1.198	5.147
Rollers	120	0.580	3.713
Rollers	175	0.314	2.981
Rollers	250	0.274	1.408
Rollers	500	0.297	2.685
Rough Terrain Forklifts	50	1.108	4.833
Rough Terrain Forklifts	120	0.271	3.318
Rough Terrain Forklifts	175	0.194	2.866
Rough Terrain Forklifts	250	0.148	1.024
Rough Terrain Forklifts	500	0.182	0.966
Rubber Tired Dozers	175	0.903	4.149
Rubber Tired Dozers	250	0.707	2.655
Rubber Tired Dozers	500	0.662	5.526
Rubber Tired Dozers	750	0.526	2.767
Rubber Tired Dozers	1000	0.602	2.560
Rubber Tired Loaders	25	1.957	7.660
Rubber Tired Loaders	50	1.957	7.660
Rubber Tired Loaders	120	0.757	4.171
Rubber Tired Loaders	175	0.522	3.518

0.152	0.004
0.151	0.004
0.148	0.004
0.152	0.004
0.157	0.004
0.155	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.059	0.005
0.117	0.005
0.055	0.004
0.038	0.004
0.031	0.004
0.171	0.005
0.171	0.005
0.153	0.004
0.172	0.005
0.152	0.004
0.152	0.004
0.154	0.004
0.152	0.004
0.153	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.152	0.004
0.167	0.005

Rubber Tired Loaders	250	0.373	1.417
Rubber Tired Loaders	500	0.369	2.060
Rubber Tired Loaders	750	0.367	1.700
Rubber Tired Loaders	1000	0.415	1.456
Scrapers	120	0.754	4.207
Scrapers	175	0.629	3.705
Scrapers	250	0.627	2.647
Scrapers	500	0.425	3.337
Scrapers	750	0.325	2.295
Signal Boards	15	0.661	3.469
Signal Boards	50	1.158	4.785
Signal Boards	120	0.553	3.566
Signal Boards	175	0.388	3.044
Signal Boards	250	0.330	1.323
Skid Steer Loaders	25	0.568	3.919
Skid Steer Loaders	50	0.568	3.919
Skid Steer Loaders	120	0.255	3.319
Surfacing Equipment	50	0.928	4.603
Surfacing Equipment	120	0.508	3.556
Surfacing Equipment	175	0.455	3.003
Surfacing Equipment	250	0.274	1.343
Surfacing Equipment	500	0.204	1.396
Surfacing Equipment	750	0.160	1.003
Sweepers/Scrubbers	15	1.712	6.719
Sweepers/Scrubbers	25	1.712	6.719
Sweepers/Scrubbers	50	1.712	6.719
Sweepers/Scrubbers	120	0.721	4.010
Sweepers/Scrubbers	175	0.711	3.784
Sweepers/Scrubbers	250	0.513	2.090
Tractors/Loaders/Backhoes	25	1.194	5.689

0.167	0.005
0.154	0.004
0.152	0.004
0.152	0.004
0.152	0.004
0.151	0.004
0.171	0.005
0.171	0.005
0.171	0.005
0.154	0.004
0.151	0.004
0.153	0.004
0.152	0.004
0.154	0.004
0.073	0.005
0.077	0.005
0.138	0.005
0.063	0.004
0.043	0.004
0.029	0.004
0.027	0.004
0.152	0.004
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004

Tractors/Loaders/Backhoes	50	1.194	5.689
Tractors/Loaders/Backhoes	120	0.501	3.782
Tractors/Loaders/Backhoes	175	0.354	3.200
Tractors/Loaders/Backhoes	250	0.291	1.304
Tractors/Loaders/Backhoes	500	0.272	1.739
Tractors/Loaders/Backhoes	750	0.296	1.646
Trenchers	15	1.149	5.197
Trenchers	25	1.149	5.197
Trenchers	50	1.149	5.197
Trenchers	120	0.762	3.968
Trenchers	175	0.536	3.434
Trenchers	250	0.486	2.037
Trenchers	500	0.265	1.966
Trenchers	750	0.114	0.972
Welders	15	0.786	3.599
Welders	25	0.830	2.564
Welders	50	1.372	5.239
Welders	120	0.630	3.675
Welders	175	0.442	3.124
Welders	250	0.310	1.133
Welders	500	0.290	1.102
Water Trucks	175	0.441	3.436
Water Trucks	250	0.417	1.753
Water Trucks	500	0.325	1.748
Water Trucks	750	0.394	2.356
Water Trucks	1000	0.362	1.546

2018

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2018
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
2.364	0.005	0.083	0.077	498.343	0.153	0.004	Aerial Lifts
4.658	0.005	0.105	0.096	498.280	0.153	0.004	Aerial Lifts
2.680	0.005	0.079	0.079	568.299	0.021	0.004	Aerial Lifts
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Air Compressors
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Air Compressors
4.871	0.007	0.371	0.371	568.299	0.133	0.005	Air Compressors
4.412	0.006	0.350	0.350	568.299	0.060	0.004	Air Compressors
3.627	0.006	0.194	0.194	568.299	0.043	0.004	Air Compressors
3.163	0.006	0.098	0.098	568.299	0.030	0.004	Air Compressors
2.755	0.005	0.092	0.092	568.299	0.029	0.004	Air Compressors
2.845	0.005	0.094	0.094	568.299	0.029	0.004	Air Compressors
4.583	0.005	0.121	0.121	568.299	0.032	0.004	Air Compressors
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
3.685	0.005	0.211	0.194	485.322	0.149	0.004	Bore/Drill Rigs
2.982	0.005	0.131	0.121	503.770	0.154	0.004	Bore/Drill Rigs
2.522	0.005	0.073	0.067	494.138	0.151	0.004	Bore/Drill Rigs
2.367	0.005	0.072	0.067	489.461	0.150	0.004	Bore/Drill Rigs
2.157	0.005	0.072	0.066	505.125	0.155	0.004	Bore/Drill Rigs
3.021	0.005	0.060	0.055	498.123	0.153	0.004	Bore/Drill Rigs

4.145	0.008	0.165	0.165	568.299	0.059	0.005	Cement and Mortar Mixers
4.567	0.007	0.216	0.216	568.299	0.069	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
4.652	0.007	0.313	0.313	568.299	0.106	0.005	Concrete/Industrial Saws
4.086	0.006	0.294	0.294	568.299	0.050	0.004	Concrete/Industrial Saws
3.316	0.006	0.165	0.165	568.299	0.035	0.004	Concrete/Industrial Saws
6.145	0.005	0.620	0.570	546.782	0.168	0.005	Cranes
9.154	0.005	0.678	0.624	495.753	0.152	0.004	Cranes
7.360	0.005	0.397	0.366	501.093	0.154	0.004	Cranes
6.655	0.005	0.297	0.273	499.372	0.153	0.004	Cranes
5.232	0.005	0.212	0.195	498.439	0.153	0.004	Cranes
4.158	0.005	0.147	0.135	497.187	0.152	0.004	Cranes
2.322	0.005	0.058	0.053	498.280	0.153	0.004	Cranes
6.208	0.005	0.712	0.655	544.676	0.167	0.005	Crawler Tractors
7.141	0.005	0.604	0.555	503.279	0.154	0.004	Crawler Tractors
6.552	0.005	0.364	0.335	498.125	0.153	0.004	Crawler Tractors
5.760	0.005	0.220	0.202	499.832	0.153	0.004	Crawler Tractors
5.029	0.005	0.195	0.179	502.422	0.154	0.004	Crawler Tractors
4.361	0.005	0.160	0.147	499.105	0.153	0.004	Crawler Tractors
7.532	0.005	0.223	0.206	501.878	0.154	0.004	Crawler Tractors
4.827	0.007	0.354	0.354	568.299	0.126	0.005	Crushing/Proc. Equipment
4.244	0.006	0.330	0.330	568.299	0.058	0.004	Crushing/Proc. Equipment
3.450	0.006	0.185	0.185	568.299	0.042	0.004	Crushing/Proc. Equipment
2.987	0.006	0.094	0.094	568.299	0.030	0.004	Crushing/Proc. Equipment
2.602	0.005	0.088	0.088	568.299	0.029	0.004	Crushing/Proc. Equipment
2.664	0.005	0.088	0.088	568.299	0.029	0.004	Crushing/Proc. Equipment
4.423	0.005	0.117	0.117	568.299	0.034	0.004	Crushing/Proc. Equipment

4.362	0.007	0.171	0.171	568.299	0.062	0.005	Dumpers/Tenders
4.678	0.005	0.332	0.305	554.910	0.170	0.005	Excavators
4.678	0.005	0.332	0.305	554.910	0.170	0.005	Excavators
4.380	0.005	0.310	0.286	493.409	0.151	0.004	Excavators
3.700	0.005	0.182	0.168	498.522	0.153	0.004	Excavators
3.319	0.005	0.105	0.097	498.436	0.153	0.004	Excavators
2.507	0.005	0.081	0.075	496.810	0.152	0.004	Excavators
2.719	0.005	0.090	0.083	494.550	0.152	0.004	Excavators
5.450	0.005	0.536	0.493	554.677	0.170	0.005	Forklifts
5.818	0.005	0.480	0.442	497.725	0.153	0.004	Forklifts
5.362	0.005	0.294	0.270	498.334	0.153	0.004	Forklifts
5.751	0.005	0.252	0.232	499.621	0.153	0.004	Forklifts
3.780	0.005	0.161	0.148	499.927	0.153	0.004	Forklifts
4.847	0.008	0.250	0.250	568.299	0.063	0.005	Generator Sets
4.729	0.007	0.233	0.233	568.299	0.068	0.005	Generator Sets
4.522	0.007	0.285	0.285	568.299	0.091	0.005	Generator Sets
4.072	0.006	0.274	0.274	568.299	0.046	0.004	Generator Sets
3.347	0.006	0.151	0.151	568.299	0.032	0.004	Generator Sets
2.910	0.006	0.081	0.081	568.299	0.022	0.004	Generator Sets
2.579	0.005	0.076	0.076	568.299	0.020	0.004	Generator Sets
2.660	0.005	0.077	0.077	568.299	0.020	0.004	Generator Sets
4.293	0.005	0.104	0.104	568.299	0.027	0.004	Generator Sets
6.423	0.005	0.843	0.776	520.075	0.159	0.005	Graders
9.191	0.005	0.759	0.698	495.919	0.152	0.004	Graders
7.663	0.005	0.430	0.396	506.748	0.155	0.004	Graders
5.525	0.005	0.180	0.166	503.802	0.154	0.004	Graders
3.557	0.005	0.139	0.128	498.600	0.153	0.004	Graders
2.835	0.005	0.100	0.100	568.299	0.033	0.004	Graders
5.317	0.005	0.423	0.389	501.245	0.154	0.004	Off-Highway Tractors
4.026	0.005	0.205	0.189	499.245	0.153	0.004	Off-Highway Tractors
4.382	0.005	0.151	0.139	496.498	0.152	0.004	Off-Highway Tractors
3.324	0.005	0.112	0.103	497.618	0.153	0.004	Off-Highway Tractors
2.340	0.005	0.059	0.054	498.280	0.153	0.004	Off-Highway Tractors
4.236	0.005	0.233	0.215	495.924	0.152	0.004	Off-Highway Trucks
4.368	0.005	0.189	0.174	494.794	0.152	0.004	Off-Highway Trucks

3.668	0.005	0.136	0.125	501.437	0.154	0.004	Off-Highway Trucks
4.257	0.005	0.170	0.157	500.199	0.153	0.004	Off-Highway Trucks
5.653	0.005	0.159	0.146	497.115	0.152	0.004	Off-Highway Trucks
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
6.070	0.005	0.475	0.437	497.383	0.152	0.004	Other Construction Equipment
5.494	0.005	0.290	0.267	495.931	0.152	0.004	Other Construction Equipment
3.777	0.005	0.138	0.127	501.130	0.154	0.004	Other Construction Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.721	0.005	0.471	0.433	496.111	0.152	0.004	Other General Industrial Equipment
4.534	0.005	0.250	0.230	498.064	0.153	0.004	Other General Industrial Equipment
5.022	0.005	0.199	0.183	499.513	0.153	0.004	Other General Industrial Equipment
3.949	0.005	0.152	0.140	499.203	0.153	0.004	Other General Industrial Equipment

2.592	0.005	0.086	0.079	499.767	0.153	0.004	Other General Industrial Equipment
4.787	0.005	0.115	0.105	498.280	0.153	0.004	Other General Industrial Equipment
5.574	0.005	0.546	0.502	552.804	0.169	0.005	Other Material Handling Equipment
4.561	0.005	0.341	0.314	499.899	0.153	0.004	Other Material Handling Equipment
4.488	0.005	0.238	0.219	498.454	0.153	0.004	Other Material Handling Equipment
4.705	0.005	0.163	0.150	497.676	0.153	0.004	Other Material Handling Equipment
3.971	0.005	0.154	0.141	496.425	0.152	0.004	Other Material Handling Equipment
3.520	0.005	0.072	0.067	498.280	0.153	0.004	Other Material Handling Equipment
5.437	0.005	0.540	0.497	556.453	0.171	0.005	Pavers
5.437	0.005	0.540	0.497	556.453	0.171	0.005	Pavers
5.692	0.005	0.437	0.402	495.925	0.152	0.004	Pavers
4.353	0.005	0.214	0.197	498.967	0.153	0.004	Pavers
3.809	0.005	0.100	0.092	499.562	0.153	0.004	Pavers
2.487	0.005	0.087	0.081	491.784	0.151	0.004	Pavers
4.728	0.005	0.359	0.331	548.648	0.168	0.005	Paving Equipment
4.728	0.005	0.359	0.331	548.648	0.168	0.005	Paving Equipment
5.207	0.005	0.391	0.359	500.165	0.153	0.004	Paving Equipment
3.896	0.005	0.195	0.179	497.148	0.152	0.004	Paving Equipment
4.121	0.005	0.142	0.130	498.732	0.153	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.847	0.008	0.250	0.250	568.299	0.063	0.005	Pressure Washers
4.729	0.007	0.233	0.233	568.299	0.068	0.005	Pressure Washers
4.355	0.007	0.240	0.240	568.299	0.068	0.005	Pressure Washers
3.888	0.006	0.233	0.233	568.300	0.040	0.004	Pressure Washers
3.349	0.006	0.149	0.149	568.299	0.031	0.004	Pressure Washers

0.317	0.006	0.009	0.009	568.299	0.009	0.004	Pressure Washers
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Pumps
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Pumps
4.578	0.007	0.301	0.301	568.299	0.099	0.005	Pumps
4.134	0.006	0.287	0.287	568.299	0.049	0.004	Pumps
3.400	0.006	0.159	0.159	568.299	0.033	0.004	Pumps
2.958	0.006	0.084	0.084	568.299	0.023	0.004	Pumps
2.613	0.005	0.079	0.079	568.299	0.021	0.004	Pumps
2.695	0.005	0.080	0.080	568.299	0.022	0.004	Pumps
4.343	0.005	0.106	0.106	568.299	0.028	0.004	Pumps
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.411	0.005	0.392	0.361	500.153	0.153	0.004	Rollers
3.874	0.005	0.180	0.166	497.909	0.153	0.004	Rollers
3.921	0.005	0.129	0.119	499.702	0.153	0.004	Rollers
3.840	0.005	0.150	0.138	505.832	0.155	0.004	Rollers
4.903	0.005	0.382	0.352	554.623	0.170	0.005	Rough Terrain Forklifts
3.418	0.005	0.182	0.167	499.168	0.153	0.004	Rough Terrain Forklifts
2.902	0.005	0.112	0.103	497.777	0.153	0.004	Rough Terrain Forklifts
2.474	0.005	0.059	0.054	499.001	0.153	0.004	Rough Terrain Forklifts
3.568	0.005	0.079	0.073	493.336	0.151	0.004	Rough Terrain Forklifts
9.129	0.005	0.525	0.483	499.410	0.153	0.004	Rubber Tired Dozers
7.671	0.005	0.376	0.345	501.548	0.154	0.004	Rubber Tired Dozers
7.333	0.005	0.341	0.313	505.849	0.155	0.004	Rubber Tired Dozers
7.172	0.005	0.260	0.239	499.367	0.153	0.004	Rubber Tired Dozers
6.013	0.005	0.195	0.195	568.299	0.054	0.004	Rubber Tired Dozers
5.954	0.005	0.633	0.582	553.583	0.170	0.005	Rubber Tired Loaders
5.954	0.005	0.633	0.582	553.583	0.170	0.005	Rubber Tired Loaders
6.236	0.005	0.530	0.487	491.853	0.151	0.004	Rubber Tired Loaders
5.195	0.005	0.290	0.266	497.353	0.152	0.004	Rubber Tired Loaders

4.755	0.005	0.162	0.149	495.950	0.152	0.004	Rubber Tired Loaders
4.253	0.005	0.160	0.148	492.276	0.151	0.004	Rubber Tired Loaders
4.050	0.005	0.160	0.147	484.366	0.148	0.004	Rubber Tired Loaders
6.553	0.005	0.192	0.177	496.897	0.152	0.004	Rubber Tired Loaders
7.179	0.005	0.551	0.507	511.112	0.157	0.004	Scrapers
6.671	0.005	0.359	0.331	505.331	0.155	0.004	Scrapers
7.399	0.005	0.333	0.306	494.523	0.152	0.004	Scrapers
5.340	0.005	0.214	0.197	498.457	0.153	0.004	Scrapers
4.216	0.005	0.156	0.143	498.693	0.153	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
4.590	0.007	0.306	0.306	568.299	0.104	0.005	Signal Boards
4.059	0.006	0.290	0.290	568.299	0.049	0.004	Signal Boards
3.305	0.006	0.161	0.161	568.299	0.035	0.004	Signal Boards
3.452	0.007	0.101	0.101	686.695	0.029	0.004	Signal Boards
4.113	0.005	0.218	0.200	556.714	0.171	0.005	Skid Steer Loaders
4.113	0.005	0.218	0.200	556.714	0.171	0.005	Skid Steer Loaders
3.286	0.005	0.177	0.163	498.326	0.153	0.004	Skid Steer Loaders
5.064	0.006	0.365	0.336	564.477	0.173	0.005	Surfacing Equipment
4.942	0.005	0.337	0.310	498.360	0.153	0.004	Surfacing Equipment
5.393	0.005	0.264	0.243	496.274	0.152	0.004	Surfacing Equipment
4.468	0.005	0.129	0.119	501.847	0.154	0.004	Surfacing Equipment
3.106	0.005	0.103	0.094	496.885	0.152	0.004	Surfacing Equipment
2.770	0.005	0.090	0.083	499.712	0.153	0.004	Surfacing Equipment
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
6.020	0.005	0.520	0.479	500.456	0.153	0.004	Sweepers/Scrubbers
7.424	0.005	0.395	0.363	499.407	0.153	0.004	Sweepers/Scrubbers
6.509	0.005	0.264	0.243	496.244	0.152	0.004	Sweepers/Scrubbers
5.110	0.005	0.433	0.399	544.929	0.167	0.005	Tractors/Loaders/Backhoes

5.110	0.005	0.433	0.399	544.929	0.167	0.005	Tractors/Loaders/Backhoes
4.809	0.005	0.362	0.333	502.795	0.154	0.004	Tractors/Loaders/Backhoes
3.879	0.005	0.197	0.182	493.912	0.151	0.004	Tractors/Loaders/Backhoes
4.041	0.005	0.132	0.121	496.845	0.152	0.004	Tractors/Loaders/Backhoes
3.490	0.005	0.122	0.112	497.113	0.152	0.004	Tractors/Loaders/Backhoes
3.862	0.005	0.139	0.128	492.953	0.151	0.004	Tractors/Loaders/Backhoes
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
6.679	0.005	0.523	0.481	501.992	0.154	0.004	Trenchers
5.927	0.005	0.300	0.276	493.764	0.151	0.004	Trenchers
6.194	0.005	0.250	0.230	499.228	0.153	0.004	Trenchers
3.442	0.005	0.129	0.119	497.020	0.152	0.004	Trenchers
1.430	0.005	0.046	0.042	501.183	0.154	0.004	Trenchers
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Welders
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Welders
4.768	0.007	0.350	0.350	568.299	0.123	0.005	Welders
4.328	0.006	0.332	0.332	568.299	0.056	0.004	Welders
3.562	0.006	0.183	0.183	568.299	0.039	0.004	Welders
3.105	0.006	0.094	0.094	568.299	0.028	0.004	Welders
2.713	0.005	0.088	0.088	568.299	0.026	0.004	Welders
4.236	0.005	0.233	0.215	495.924	0.152	0.004	Water Trucks
4.368	0.005	0.189	0.174	494.794	0.152	0.004	Water Trucks
3.668	0.005	0.136	0.125	501.437	0.154	0.004	Water Trucks
4.257	0.005	0.170	0.157	500.199	0.153	0.004	Water Trucks
5.653	0.005	0.159	0.146	497.115	0.152	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
25	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
50	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
120	0.122	3.167	2.064	0.005	0.057	0.053	490.474	0.153	0.004
500	0.062	0.937	0.634	0.005	0.009	0.008	490.412	0.153	0.004
750	0.225	1.037	2.385	0.005	0.071	0.071	568.299	0.020	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.299	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.300	0.072	0.005
50	1.300	5.439	4.707	0.007	0.329	0.329	568.299	0.117	0.005
120	0.603	3.744	4.050	0.006	0.304	0.304	568.300	0.054	0.004
175	0.435	3.205	3.228	0.006	0.170	0.170	568.299	0.039	0.004
250	0.321	1.146	2.797	0.006	0.087	0.087	568.300	0.029	0.004
500	0.307	1.101	2.465	0.005	0.083	0.083	568.299	0.027	0.004
750	0.309	1.101	2.533	0.005	0.084	0.084	568.299	0.027	0.004
1000	0.343	1.210	4.325	0.005	0.111	0.111	568.299	0.030	0.004
15	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
25	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
50	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
120	0.269	3.323	3.400	0.005	0.184	0.170	479.672	0.149	0.004
175	0.203	2.961	2.357	0.005	0.103	0.095	495.073	0.154	0.004
250	0.155	1.073	2.153	0.005	0.061	0.056	484.561	0.151	0.004
500	0.135	1.032	1.746	0.005	0.052	0.048	485.689	0.151	0.004
750	0.126	1.006	1.679	0.005	0.055	0.050	489.730	0.153	0.004
1000	0.125	0.978	3.032	0.005	0.060	0.056	490.243	0.153	0.004

15	0.661	3.469	4.142	0.008	0.163	0.163	568.299	0.059	0.005
25	0.749	2.440	4.504	0.007	0.205	0.205	568.299	0.067	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	1.032	4.766	4.492	0.007	0.277	0.277	568.299	0.093	0.005
120	0.498	3.571	3.754	0.006	0.256	0.256	568.299	0.044	0.004
175	0.359	3.072	2.945	0.006	0.145	0.145	568.299	0.032	0.004
50	2.072	7.247	6.004	0.005	0.624	0.574	538.122	0.168	0.005
120	0.932	4.452	7.931	0.005	0.583	0.536	488.117	0.152	0.004
175	0.621	3.666	6.557	0.005	0.351	0.323	493.045	0.154	0.004
250	0.483	2.134	5.773	0.005	0.250	0.230	491.407	0.153	0.004
500	0.370	3.187	4.634	0.005	0.187	0.172	490.891	0.153	0.004
750	0.271	1.613	3.769	0.005	0.137	0.126	489.054	0.152	0.004
9999	0.162	0.983	2.335	0.005	0.059	0.054	490.412	0.153	0.004
50	2.446	8.009	6.163	0.005	0.704	0.648	536.141	0.167	0.005
120	0.798	4.123	6.723	0.005	0.566	0.521	494.922	0.154	0.004
175	0.555	3.421	5.859	0.005	0.326	0.299	490.000	0.153	0.004
250	0.398	1.654	5.290	0.005	0.200	0.184	491.606	0.153	0.004
500	0.344	2.382	4.373	0.005	0.169	0.156	493.510	0.154	0.004
750	0.296	1.445	3.834	0.005	0.142	0.130	491.266	0.153	0.004
1000	0.489	2.105	7.564	0.005	0.225	0.207	494.105	0.154	0.004
50	1.225	5.461	4.657	0.007	0.310	0.310	568.299	0.110	0.005
120	0.580	3.763	3.881	0.006	0.284	0.284	568.299	0.052	0.004
175	0.427	3.234	3.049	0.006	0.161	0.161	568.299	0.038	0.004
250	0.322	1.146	2.622	0.006	0.083	0.083	568.299	0.029	0.004
500	0.309	1.099	2.312	0.005	0.079	0.079	568.299	0.027	0.004
750	0.308	1.097	2.358	0.005	0.079	0.079	568.299	0.027	0.004
9999	0.361	1.198	4.168	0.005	0.107	0.107	568.299	0.032	0.004

25	0.686	2.339	4.350	0.007	0.169	0.169	568.299	0.061	0.005
25	0.687	4.700	4.395	0.005	0.284	0.261	545.347	0.170	0.005
50	0.687	4.700	4.395	0.005	0.284	0.261	545.347	0.170	0.005
120	0.368	3.562	3.764	0.005	0.251	0.230	486.056	0.151	0.004
175	0.273	3.093	2.924	0.005	0.142	0.130	490.673	0.153	0.004
250	0.202	1.152	2.594	0.005	0.079	0.073	490.257	0.153	0.004
500	0.175	1.140	2.050	0.005	0.066	0.061	489.103	0.152	0.004
750	0.189	1.224	2.266	0.005	0.076	0.070	487.653	0.152	0.004
50	1.393	6.103	5.052	0.005	0.447	0.411	545.919	0.170	0.005
120	0.567	3.858	5.015	0.005	0.400	0.368	489.866	0.153	0.004
175	0.427	3.336	4.430	0.005	0.241	0.222	490.466	0.153	0.004
250	0.425	1.835	4.938	0.005	0.207	0.191	491.733	0.153	0.004
500	0.282	1.878	3.019	0.005	0.125	0.115	492.034	0.153	0.004
15	0.679	3.580	4.728	0.008	0.237	0.237	568.299	0.061	0.005
25	0.744	2.531	4.661	0.007	0.224	0.224	568.299	0.067	0.005
50	0.895	4.182	4.366	0.007	0.253	0.253	568.299	0.080	0.005
120	0.461	3.418	3.752	0.006	0.239	0.239	568.299	0.041	0.004
175	0.319	2.930	2.989	0.006	0.133	0.133	568.299	0.028	0.004
250	0.226	1.048	2.582	0.006	0.072	0.072	568.299	0.020	0.004
500	0.211	1.028	2.310	0.005	0.069	0.069	568.299	0.019	0.004
750	0.215	1.028	2.370	0.005	0.070	0.070	568.299	0.019	0.004
9999	0.280	1.128	4.058	0.005	0.095	0.095	568.299	0.025	0.004
50	2.809	8.626	6.180	0.005	0.790	0.726	511.910	0.159	0.005
120	1.075	4.697	8.520	0.005	0.697	0.641	487.698	0.152	0.004
175	0.661	3.710	6.605	0.005	0.371	0.342	497.377	0.155	0.004
250	0.384	1.416	5.271	0.005	0.171	0.158	495.431	0.154	0.004
500	0.324	1.564	3.345	0.005	0.130	0.119	490.576	0.153	0.004
750	0.353	1.286	2.543	0.005	0.090	0.090	568.299	0.031	0.004
120	0.522	3.832	4.787	0.005	0.373	0.343	492.871	0.153	0.004
175	0.315	3.219	3.498	0.005	0.176	0.162	491.313	0.153	0.004
250	0.272	1.295	3.454	0.005	0.119	0.109	488.677	0.152	0.004
750	0.196	1.119	2.166	0.005	0.081	0.074	490.182	0.153	0.004
1000	0.129	0.998	2.359	0.005	0.060	0.055	490.412	0.153	0.004
175	0.383	3.383	3.543	0.005	0.192	0.177	488.044	0.152	0.004
250	0.341	1.543	3.451	0.005	0.141	0.130	487.635	0.152	0.004

500	0.287	1.560	3.090	0.005	0.113	0.104	493.506	0.154	0.004
750	0.348	2.176	3.691	0.005	0.143	0.132	492.114	0.153	0.004
1000	0.297	1.357	4.858	0.005	0.127	0.116	487.790	0.152	0.004
15	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
25	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
50	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
120	0.598	3.799	5.441	0.005	0.417	0.383	490.018	0.153	0.004
175	0.436	3.263	4.755	0.005	0.250	0.230	487.986	0.152	0.004
500	0.251	1.813	3.167	0.005	0.115	0.105	493.360	0.154	0.004
15	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
25	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
50	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
120	0.557	3.876	4.955	0.005	0.392	0.360	488.278	0.152	0.004
175	0.318	3.237	3.237	0.005	0.172	0.158	490.200	0.153	0.004
250	0.303	1.455	3.648	0.005	0.135	0.124	491.626	0.153	0.004
500	0.254	1.583	2.907	0.005	0.104	0.095	491.321	0.153	0.004

750	0.217	1.483	2.419	0.005	0.083	0.076	491.876	0.153	0.004
1000	0.257	1.066	4.810	0.005	0.116	0.107	490.412	0.153	0.004
50	1.289	6.061	5.182	0.005	0.457	0.420	544.075	0.169	0.005
120	0.407	3.675	3.944	0.005	0.271	0.249	492.006	0.153	0.004
175	0.327	3.218	3.332	0.005	0.173	0.159	490.583	0.153	0.004
250	0.316	1.388	4.092	0.005	0.135	0.124	489.817	0.153	0.004
500	0.296	1.633	3.524	0.005	0.134	0.123	488.587	0.152	0.004
9999	0.180	1.023	3.551	0.005	0.074	0.068	490.412	0.153	0.004
25	1.539	5.849	5.121	0.005	0.478	0.440	547.079	0.170	0.005
50	1.539	5.849	5.121	0.005	0.478	0.440	547.079	0.170	0.005
120	0.536	3.660	5.019	0.005	0.375	0.345	488.181	0.152	0.004
175	0.339	3.039	3.747	0.005	0.183	0.168	491.322	0.153	0.004
250	0.198	1.034	3.474	0.005	0.092	0.085	491.543	0.153	0.004
500	0.164	0.981	2.320	0.005	0.083	0.076	484.277	0.151	0.004
25	0.737	4.416	4.312	0.005	0.286	0.263	540.612	0.168	0.005
50	0.737	4.416	4.312	0.005	0.286	0.263	540.612	0.168	0.005
120	0.449	3.607	4.270	0.005	0.302	0.278	492.118	0.153	0.004
175	0.284	3.026	3.172	0.005	0.155	0.143	489.202	0.152	0.004
250	0.258	1.281	3.587	0.005	0.123	0.113	490.683	0.153	0.004
15	0.661	3.470	4.142	0.008	0.161	0.161	568.300	0.059	0.005
15	0.679	3.580	4.728	0.008	0.237	0.237	568.299	0.061	0.005
25	0.744	2.531	4.661	0.007	0.224	0.224	568.299	0.067	0.005
50	0.661	3.542	4.202	0.007	0.212	0.212	568.299	0.059	0.005
120	0.388	3.260	3.584	0.006	0.203	0.203	568.299	0.035	0.004
175	0.309	2.908	2.989	0.006	0.132	0.132	568.299	0.027	0.004

250	0.099	0.986	0.277	0.006	0.009	0.009	568.299	0.008	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.299	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.299	0.072	0.005
50	0.973	4.397	4.422	0.007	0.267	0.267	568.299	0.087	0.005
120	0.485	3.471	3.808	0.006	0.252	0.252	568.299	0.043	0.004
175	0.338	2.974	3.035	0.006	0.140	0.140	568.299	0.030	0.004
250	0.242	1.065	2.624	0.006	0.075	0.075	568.299	0.021	0.004
500	0.226	1.041	2.340	0.005	0.071	0.071	568.299	0.020	0.004
750	0.230	1.041	2.401	0.005	0.072	0.072	568.299	0.020	0.004
9999	0.293	1.144	4.105	0.005	0.098	0.098	568.299	0.026	0.004
15	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
25	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
50	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
120	0.481	3.610	4.650	0.005	0.320	0.294	492.212	0.153	0.004
175	0.265	2.949	3.181	0.005	0.147	0.136	490.181	0.153	0.004
250	0.211	1.243	2.995	0.005	0.094	0.086	491.664	0.153	0.004
500	0.245	2.231	3.098	0.005	0.119	0.110	497.996	0.155	0.004
50	1.070	4.768	4.735	0.005	0.359	0.330	545.869	0.170	0.005
120	0.222	3.270	2.845	0.005	0.136	0.125	491.211	0.153	0.004
175	0.164	2.842	2.342	0.005	0.088	0.081	489.987	0.153	0.004
250	0.152	1.029	2.487	0.005	0.060	0.055	491.100	0.153	0.004
500	0.145	0.958	2.701	0.005	0.060	0.055	485.954	0.151	0.004
175	0.802	3.990	8.021	0.005	0.461	0.424	491.492	0.153	0.004
250	0.669	2.512	7.208	0.005	0.350	0.322	493.634	0.154	0.004
500	0.598	4.982	6.502	0.005	0.300	0.276	498.186	0.155	0.004
750	0.506	2.759	6.727	0.005	0.248	0.228	491.473	0.153	0.004
1000	0.574	2.413	5.764	0.005	0.183	0.183	568.299	0.051	0.004
25	1.765	7.299	5.679	0.005	0.576	0.530	545.053	0.170	0.005
50	1.765	7.299	5.679	0.005	0.576	0.530	545.053	0.170	0.005
120	0.655	4.047	5.470	0.005	0.452	0.416	484.093	0.151	0.004
175	0.448	3.423	4.368	0.005	0.242	0.223	489.511	0.152	0.004

250	0.334	1.346	4.131	0.005	0.140	0.129	487.902	0.152	0.004
500	0.334	1.868	3.726	0.005	0.140	0.128	484.571	0.151	0.004
750	0.331	1.555	3.544	0.005	0.140	0.129	476.566	0.148	0.004
1000	0.336	1.213	5.673	0.005	0.154	0.142	488.404	0.152	0.004
120	0.740	4.204	7.036	0.005	0.543	0.499	502.829	0.157	0.004
175	0.539	3.568	5.641	0.005	0.303	0.279	497.340	0.155	0.004
250	0.557	2.407	6.563	0.005	0.290	0.267	486.991	0.152	0.004
500	0.369	2.828	4.568	0.005	0.180	0.166	490.773	0.153	0.004
750	0.294	1.965	3.746	0.005	0.135	0.124	490.578	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	1.018	4.657	4.427	0.007	0.270	0.270	568.299	0.091	0.005
120	0.492	3.541	3.723	0.006	0.252	0.252	568.299	0.044	0.004
175	0.351	3.043	2.930	0.006	0.141	0.141	568.299	0.031	0.004
250	0.309	1.306	3.040	0.007	0.090	0.090	686.695	0.027	0.004
25	0.487	3.787	3.890	0.005	0.178	0.164	547.558	0.171	0.005
50	0.487	3.787	3.890	0.005	0.178	0.164	547.558	0.171	0.005
120	0.216	3.282	2.860	0.005	0.140	0.129	490.094	0.153	0.004
50	0.779	4.353	4.820	0.006	0.320	0.294	555.736	0.173	0.005
120	0.414	3.489	4.284	0.005	0.269	0.247	491.317	0.153	0.004
175	0.375	2.976	4.475	0.005	0.215	0.198	488.441	0.152	0.004
250	0.241	1.234	3.989	0.005	0.113	0.104	494.139	0.154	0.004
500	0.157	1.226	2.204	0.005	0.076	0.070	487.872	0.152	0.004
750	0.143	0.993	2.269	0.005	0.078	0.072	488.860	0.152	0.004
15	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
25	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
50	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
120	0.600	3.882	5.136	0.005	0.428	0.394	492.554	0.153	0.004
175	0.589	3.588	6.071	0.005	0.320	0.294	491.521	0.153	0.004
250	0.350	1.605	4.302	0.005	0.169	0.156	488.409	0.152	0.004
25	0.992	5.310	4.764	0.005	0.363	0.334	536.112	0.167	0.005

50	0.992	5.310	4.764	0.005	0.363	0.334	536.112	0.167	0.005
120	0.420	3.692	4.154	0.005	0.294	0.271	494.124	0.154	0.004
175	0.297	3.137	3.168	0.005	0.160	0.147	485.775	0.151	0.004
250	0.259	1.242	3.460	0.005	0.112	0.103	489.456	0.152	0.004
500	0.222	1.445	2.669	0.005	0.092	0.085	486.294	0.151	0.004
750	0.271	1.601	3.402	0.005	0.124	0.114	485.010	0.151	0.004
15	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
25	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
50	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
120	0.658	3.855	5.915	0.005	0.450	0.414	493.715	0.154	0.004
175	0.470	3.331	5.127	0.005	0.261	0.240	485.925	0.151	0.004
250	0.419	1.849	5.296	0.005	0.212	0.195	491.565	0.153	0.004
500	0.256	1.974	3.211	0.005	0.121	0.112	489.628	0.152	0.004
750	0.094	0.966	1.025	0.005	0.029	0.026	494.643	0.154	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.300	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.299	0.072	0.005
50	1.210	5.092	4.607	0.007	0.311	0.311	568.299	0.109	0.005
120	0.564	3.648	3.980	0.006	0.290	0.290	568.299	0.050	0.004
175	0.402	3.123	3.176	0.006	0.162	0.162	568.299	0.036	0.004
250	0.292	1.118	2.751	0.006	0.084	0.084	568.299	0.026	0.004
500	0.277	1.080	2.430	0.005	0.080	0.080	568.299	0.025	0.004
175	0.383	3.383	3.543	0.005	0.192	0.177	488.044	0.152	0.004
250	0.341	1.543	3.451	0.005	0.141	0.130	487.635	0.152	0.004
500	0.287	1.560	3.090	0.005	0.113	0.104	493.506	0.154	0.004
750	0.348	2.176	3.691	0.005	0.143	0.132	492.114	0.153	0.004
1000	0.297	1.357	4.858	0.005	0.127	0.116	487.790	0.152	0.004

2019

2019		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10
Aerial Lifts	15	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	25	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	50	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	120	0.118	3.173	1.977	0.005	0.049
Aerial Lifts	500	0.066	0.941	0.636	0.005	0.009
Aerial Lifts	750	0.212	1.023	2.117	0.005	0.064
Air Compressors	15	0.748	3.562	4.647	0.008	0.241
Air Compressors	25	0.787	2.501	4.596	0.007	0.222
Air Compressors	50	1.129	5.283	4.546	0.007	0.287
Air Compressors	120	0.538	3.718	3.706	0.006	0.260
Air Compressors	175	0.401	3.204	2.874	0.006	0.150
Air Compressors	250	0.304	1.132	2.469	0.006	0.078
Air Compressors	500	0.293	1.086	2.193	0.005	0.075
Air Compressors	750	0.294	1.086	2.247	0.005	0.076
Air Compressors	1000	0.324	1.182	4.073	0.005	0.102
Bore/Drill Rigs	15	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	25	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	50	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	120	0.267	3.332	3.321	0.005	0.180
Bore/Drill Rigs	175	0.181	2.956	2.018	0.005	0.088
Bore/Drill Rigs	250	0.143	1.061	1.894	0.005	0.054
Bore/Drill Rigs	500	0.129	1.034	1.551	0.005	0.048
Bore/Drill Rigs	750	0.117	0.971	1.449	0.005	0.048
Bore/Drill Rigs	1000	0.129	0.983	3.041	0.005	0.061

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.162
Cement and Mortar Mixers	25	0.735	2.417	4.469	0.007	0.196
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
Concrete/Industrial Saws	50	0.899	4.645	4.338	0.007	0.242
Concrete/Industrial Saws	120	0.443	3.550	3.441	0.006	0.220
Concrete/Industrial Saws	175	0.330	3.072	2.618	0.006	0.128
Cranes	50	2.045	7.245	5.952	0.005	0.615
Cranes	120	0.803	4.265	6.958	0.005	0.501
Cranes	175	0.568	3.598	5.949	0.005	0.318
Cranes	250	0.427	1.941	5.084	0.005	0.216
Cranes	500	0.349	2.969	4.297	0.005	0.173
Cranes	750	0.252	1.446	3.428	0.005	0.124
Cranes	9999	0.172	0.991	2.349	0.005	0.060
Crawler Tractors	50	2.225	7.589	5.855	0.005	0.640
Crawler Tractors	120	0.757	4.088	6.393	0.005	0.535
Crawler Tractors	175	0.517	3.379	5.382	0.005	0.300
Crawler Tractors	250	0.380	1.604	4.972	0.005	0.188
Crawler Tractors	500	0.319	2.219	3.934	0.005	0.153
Crawler Tractors	750	0.266	1.356	3.343	0.005	0.123
Crawler Tractors	1000	0.460	2.020	7.212	0.005	0.211
Crushing/Proc. Equipment	50	1.064	5.316	4.495	0.007	0.269
Crushing/Proc. Equipment	120	0.519	3.739	3.544	0.006	0.241
Crushing/Proc. Equipment	175	0.394	3.233	2.700	0.006	0.141
Crushing/Proc. Equipment	250	0.304	1.134	2.300	0.006	0.074
Crushing/Proc. Equipment	500	0.295	1.087	2.046	0.005	0.071
Crushing/Proc. Equipment	750	0.294	1.085	2.085	0.005	0.071
Crushing/Proc. Equipment	9999	0.345	1.173	3.927	0.005	0.098

Dumpers/Tenders	25	0.686	2.339	4.341	0.007	0.167
Excavators	25	0.637	4.597	4.199	0.005	0.250
Excavators	50	0.637	4.597	4.199	0.005	0.250
Excavators	120	0.325	3.524	3.369	0.005	0.211
Excavators	175	0.246	3.082	2.533	0.005	0.122
Excavators	250	0.186	1.127	2.242	0.005	0.068
Excavators	500	0.162	1.114	1.780	0.005	0.058
Excavators	750	0.176	1.173	1.987	0.005	0.067
Forklifts	50	1.244	5.880	4.862	0.005	0.401
Forklifts	120	0.510	3.804	4.550	0.005	0.353
Forklifts	175	0.382	3.288	3.865	0.005	0.210
Forklifts	250	0.374	1.677	4.250	0.005	0.175
Forklifts	500	0.268	1.814	2.751	0.005	0.112
Generator Sets	15	0.662	3.562	4.617	0.008	0.224
Generator Sets	25	0.731	2.501	4.596	0.007	0.214
Generator Sets	50	0.779	4.076	4.215	0.007	0.222
Generator Sets	120	0.405	3.396	3.446	0.006	0.206
Generator Sets	175	0.290	2.929	2.669	0.006	0.118
Generator Sets	250	0.211	1.036	2.285	0.006	0.064
Generator Sets	500	0.199	1.015	2.056	0.005	0.062
Generator Sets	750	0.202	1.015	2.104	0.005	0.062
Generator Sets	9999	0.261	1.103	3.829	0.005	0.087
Graders	50	2.616	8.279	5.945	0.005	0.737
Graders	120	1.032	4.642	8.159	0.005	0.665
Graders	175	0.609	3.656	6.014	0.005	0.337
Graders	250	0.360	1.359	4.866	0.005	0.156
Graders	500	0.323	1.528	3.218	0.005	0.124
Graders	750	0.335	1.255	2.276	0.005	0.080
Off-Highway Tractors	120	0.473	3.795	4.421	0.005	0.331
Off-Highway Tractors	175	0.294	3.219	3.208	0.005	0.159
Off-Highway Tractors	250	0.239	1.218	2.914	0.005	0.098
Off-Highway Tractors	750	0.205	1.129	2.177	0.005	0.082
Off-Highway Tractors	1000	0.140	1.010	2.378	0.005	0.062
Off-Highway Trucks	175	0.323	3.326	2.825	0.005	0.149
Off-Highway Trucks	250	0.307	1.461	2.985	0.005	0.119

Off-Highway Trucks	500	0.264	1.483	2.669	0.005	0.097
Off-Highway Trucks	750	0.327	2.041	3.320	0.005	0.129
Off-Highway Trucks	1000	0.295	1.356	4.765	0.005	0.124
Other Construction Equipment	15	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	25	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	50	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	120	0.550	3.754	5.048	0.005	0.379
Other Construction Equipment	175	0.412	3.256	4.433	0.005	0.234
Other Construction Equipment	500	0.234	1.667	2.855	0.005	0.103
Other General Industrial Equipment	15	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	25	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	50	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	120	0.500	3.821	4.497	0.005	0.343
Other General Industrial Equipment	175	0.302	3.241	2.999	0.005	0.157
Other General Industrial Equipment	250	0.259	1.299	3.020	0.005	0.106
Other General Industrial Equipment	500	0.239	1.561	2.575	0.005	0.092

Other General Industrial Equipment	750	0.199	1.474	2.115	0.005	0.076
Other General Industrial Equipment	1000	0.264	1.076	4.834	0.005	0.117
Other Material Handling Equipment	50	1.275	6.139	5.179	0.005	0.452
Other Material Handling Equipment	120	0.360	3.636	3.566	0.005	0.231
Other Material Handling Equipment	175	0.280	3.185	2.774	0.005	0.139
Other Material Handling Equipment	250	0.300	1.341	3.817	0.005	0.123
Other Material Handling Equipment	500	0.291	1.620	3.371	0.005	0.128
Other Material Handling Equipment	9999	0.190	1.036	3.583	0.005	0.076
Pavers	25	1.418	5.657	4.916	0.005	0.436
Pavers	50	1.418	5.657	4.916	0.005	0.436
Pavers	120	0.496	3.622	4.670	0.005	0.346
Pavers	175	0.299	3.013	3.245	0.005	0.159
Pavers	250	0.187	1.032	3.111	0.005	0.084
Pavers	500	0.167	0.986	2.270	0.005	0.081
Paving Equipment	25	0.705	4.408	4.238	0.005	0.270
Paving Equipment	50	0.705	4.408	4.238	0.005	0.270
Paving Equipment	120	0.425	3.598	4.042	0.005	0.281
Paving Equipment	175	0.254	3.011	2.692	0.005	0.134
Paving Equipment	250	0.241	1.244	3.251	0.005	0.112
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161
Pressure Washers	15	0.662	3.562	4.617	0.008	0.224
Pressure Washers	25	0.731	2.501	4.596	0.007	0.214
Pressure Washers	50	0.569	3.457	4.053	0.007	0.184
Pressure Washers	120	0.337	3.240	3.295	0.006	0.174
Pressure Washers	175	0.280	2.907	2.670	0.006	0.117

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
Pumps	15	0.748	3.562	4.647	0.008	0.241
Pumps	25	0.787	2.501	4.596	0.007	0.222
Pumps	50	0.849	4.284	4.269	0.007	0.235
Pumps	120	0.429	3.449	3.497	0.006	0.217
Pumps	175	0.309	2.974	2.711	0.006	0.124
Pumps	250	0.226	1.052	2.323	0.006	0.067
Pumps	500	0.214	1.027	2.084	0.005	0.064
Pumps	750	0.217	1.027	2.133	0.005	0.065
Pumps	9999	0.273	1.118	3.873	0.005	0.089
Rollers	15	0.972	4.778	4.645	0.005	0.349
Rollers	25	0.972	4.778	4.645	0.005	0.349
Rollers	50	0.972	4.778	4.645	0.005	0.349
Rollers	120	0.423	3.557	4.179	0.005	0.275
Rollers	175	0.231	2.933	2.699	0.005	0.124
Rollers	250	0.211	1.249	2.883	0.005	0.092
Rollers	500	0.234	2.101	2.908	0.005	0.111
Rough Terrain Forklifts	50	1.009	4.674	4.557	0.005	0.328
Rough Terrain Forklifts	120	0.202	3.258	2.622	0.005	0.117
Rough Terrain Forklifts	175	0.149	2.841	2.058	0.005	0.075
Rough Terrain Forklifts	250	0.109	0.974	1.639	0.005	0.036
Rough Terrain Forklifts	500	0.116	0.950	1.961	0.005	0.043
Rubber Tired Dozers	175	0.759	3.949	7.520	0.005	0.433
Rubber Tired Dozers	250	0.651	2.459	6.929	0.005	0.338
Rubber Tired Dozers	500	0.572	4.743	6.143	0.005	0.283
Rubber Tired Dozers	750	0.455	2.598	6.122	0.005	0.218
Rubber Tired Dozers	1000	0.547	2.281	5.528	0.005	0.171
Rubber Tired Loaders	25	1.602	6.978	5.432	0.005	0.518
Rubber Tired Loaders	50	1.602	6.978	5.432	0.005	0.518
Rubber Tired Loaders	120	0.595	3.979	5.006	0.005	0.402
Rubber Tired Loaders	175	0.405	3.381	3.859	0.005	0.213

Rubber Tired Loaders	250	0.309	1.302	3.745	0.005	0.126
Rubber Tired Loaders	500	0.306	1.725	3.288	0.005	0.123
Rubber Tired Loaders	750	0.293	1.452	3.019	0.005	0.118
Rubber Tired Loaders	1000	0.323	1.208	5.459	0.005	0.146
Scrapers	120	0.718	4.197	6.841	0.005	0.526
Scrapers	175	0.510	3.533	5.264	0.005	0.283
Scrapers	250	0.501	2.233	5.831	0.005	0.257
Scrapers	500	0.343	2.595	4.156	0.005	0.163
Scrapers	750	0.277	1.829	3.431	0.005	0.123
Signal Boards	15	0.661	3.470	4.142	0.008	0.161
Signal Boards	50	0.887	4.538	4.272	0.007	0.236
Signal Boards	120	0.437	3.519	3.410	0.006	0.216
Signal Boards	175	0.321	3.043	2.601	0.006	0.125
Signal Boards	250	0.291	1.292	2.676	0.007	0.080
Skid Steer Loaders	25	0.446	3.740	3.750	0.005	0.154
Skid Steer Loaders	50	0.446	3.740	3.750	0.005	0.154
Skid Steer Loaders	120	0.199	3.277	2.656	0.005	0.122
Surfacing Equipment	50	0.643	4.100	4.420	0.006	0.250
Surfacing Equipment	120	0.355	3.449	3.823	0.005	0.226
Surfacing Equipment	175	0.357	2.972	4.239	0.005	0.204
Surfacing Equipment	250	0.217	1.216	3.400	0.005	0.101
Surfacing Equipment	500	0.146	1.214	1.899	0.005	0.068
Surfacing Equipment	750	0.142	0.994	2.179	0.005	0.076
Sweepers/Scrubbers	15	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	25	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	50	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	120	0.550	3.846	4.773	0.005	0.387
Sweepers/Scrubbers	175	0.523	3.449	5.301	0.005	0.277
Sweepers/Scrubbers	250	0.235	1.230	2.866	0.005	0.099
Tractors/Loaders/Backhoes	25	0.920	5.203	4.609	0.005	0.330

Tractors/Loaders/Backhoes	50	0.920	5.203	4.609	0.005	0.330
Tractors/Loaders/Backhoes	120	0.368	3.638	3.693	0.005	0.247
Tractors/Loaders/Backhoes	175	0.270	3.122	2.784	0.005	0.140
Tractors/Loaders/Backhoes	250	0.245	1.220	3.147	0.005	0.102
Tractors/Loaders/Backhoes	500	0.206	1.389	2.345	0.005	0.082
Tractors/Loaders/Backhoes	750	0.262	1.603	3.120	0.005	0.117
Trenchers	15	0.955	4.892	4.785	0.005	0.377
Trenchers	25	0.955	4.892	4.785	0.005	0.377
Trenchers	50	0.955	4.892	4.785	0.005	0.377
Trenchers	120	0.631	3.837	5.695	0.005	0.431
Trenchers	175	0.460	3.342	4.960	0.005	0.255
Trenchers	250	0.405	1.810	5.047	0.005	0.203
Trenchers	500	0.254	1.987	3.128	0.005	0.118
Trenchers	750	0.078	0.956	0.707	0.005	0.015
Welders	15	0.748	3.562	4.647	0.008	0.241
Welders	25	0.787	2.501	4.596	0.007	0.222
Welders	50	1.055	4.950	4.449	0.007	0.273
Welders	120	0.503	3.623	3.648	0.006	0.250
Welders	175	0.370	3.122	2.832	0.006	0.143
Welders	250	0.276	1.104	2.432	0.006	0.075
Welders	500	0.264	1.065	2.163	0.005	0.072
Water Trucks	175	0.323	3.326	2.825	0.005	0.149
Water Trucks	250	0.307	1.461	2.985	0.005	0.119
Water Trucks	500	0.264	1.483	2.669	0.005	0.097
Water Trucks	750	0.327	2.041	3.320	0.005	0.129
Water Trucks	1000	0.295	1.356	4.765	0.005	0.124

2020

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.038	536.743	0.170	0.005
0.038	536.743	0.170	0.005
0.038	536.743	0.170	0.005
0.045	482.606	0.153	0.004
0.008	482.545	0.153	0.004
0.064	568.299	0.019	0.004
0.241	568.299	0.067	0.005
0.222	568.299	0.071	0.005
0.287	568.299	0.101	0.005
0.260	568.299	0.048	0.004
0.150	568.299	0.036	0.004
0.078	568.299	0.027	0.004
0.075	568.299	0.026	0.004
0.076	568.299	0.026	0.004
0.102	568.299	0.029	0.004
0.278	545.293	0.173	0.005
0.278	545.293	0.173	0.005
0.278	545.293	0.173	0.005
0.166	472.453	0.150	0.004
0.081	487.355	0.154	0.004
0.049	475.790	0.151	0.004
0.044	477.046	0.151	0.004
0.044	481.836	0.152	0.004
0.056	482.359	0.153	0.004

2020		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.168	3.099
Aerial Lifts	25	0.168	3.099
Aerial Lifts	50	0.168	3.099
Aerial Lifts	120	0.115	3.177
Aerial Lifts	500	0.069	0.946
Aerial Lifts	750	0.200	1.013
Air Compressors	15	0.731	3.546
Air Compressors	25	0.769	2.473
Air Compressors	50	1.001	5.164
Air Compressors	120	0.489	3.698
Air Compressors	175	0.374	3.203
Air Compressors	250	0.288	1.121
Air Compressors	500	0.279	1.076
Air Compressors	750	0.280	1.076
Air Compressors	1000	0.306	1.158
Bore/Drill Rigs	15	0.716	4.510
Bore/Drill Rigs	25	0.716	4.510
Bore/Drill Rigs	50	0.716	4.510
Bore/Drill Rigs	120	0.246	3.323
Bore/Drill Rigs	175	0.174	2.969
Bore/Drill Rigs	250	0.142	1.068
Bore/Drill Rigs	500	0.125	1.013
Bore/Drill Rigs	750	0.109	0.974
Bore/Drill Rigs	1000	0.133	0.988

0.162	568.299	0.059	0.005
0.196	568.299	0.066	0.005
0.161	568.299	0.061	0.005
0.242	568.299	0.081	0.005
0.220	568.300	0.040	0.004
0.128	568.299	0.029	0.004
0.566	529.463	0.168	0.005
0.460	480.325	0.152	0.004
0.292	485.182	0.154	0.004
0.198	483.462	0.153	0.004
0.159	483.142	0.153	0.004
0.114	481.119	0.152	0.004
0.055	482.545	0.153	0.004
0.589	525.977	0.166	0.005
0.492	486.991	0.154	0.004
0.276	481.622	0.152	0.004
0.173	483.449	0.153	0.004
0.141	485.865	0.154	0.004
0.113	483.388	0.153	0.004
0.194	486.255	0.154	0.004
0.269	568.299	0.096	0.005
0.241	568.299	0.046	0.004
0.141	568.299	0.035	0.004
0.074	568.299	0.027	0.004
0.071	568.299	0.026	0.004
0.071	568.299	0.026	0.004
0.098	568.299	0.031	0.004

Cement and Mortar Mixers	15	0.661	3.470
Cement and Mortar Mixers	25	0.723	2.397
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.798	4.552
Concrete/Industrial Saws	120	0.401	3.535
Concrete/Industrial Saws	175	0.306	3.072
Cranes	50	2.084	7.376
Cranes	120	0.732	4.171
Cranes	175	0.537	3.562
Cranes	250	0.384	1.790
Cranes	500	0.321	2.660
Cranes	750	0.242	1.444
Cranes	9999	0.182	0.999
Crawler Tractors	50	2.053	7.300
Crawler Tractors	120	0.715	4.044
Crawler Tractors	175	0.476	3.340
Crawler Tractors	250	0.360	1.555
Crawler Tractors	500	0.301	2.088
Crawler Tractors	750	0.256	1.310
Crawler Tractors	1000	0.463	2.028
Crushing/Proc. Equipment	50	0.947	5.211
Crushing/Proc. Equipment	120	0.473	3.722
Crushing/Proc. Equipment	175	0.367	3.234
Crushing/Proc. Equipment	250	0.289	1.125
Crushing/Proc. Equipment	500	0.281	1.078
Crushing/Proc. Equipment	750	0.281	1.077
Crushing/Proc. Equipment	9999	0.329	1.153

0.167	568.299	0.061	0.005
0.230	536.913	0.170	0.005
0.230	536.913	0.170	0.005
0.194	478.245	0.151	0.004
0.112	482.684	0.153	0.004
0.063	482.250	0.153	0.004
0.053	481.236	0.152	0.004
0.062	479.288	0.152	0.004
0.369	537.161	0.170	0.005
0.324	482.007	0.153	0.004
0.193	482.598	0.153	0.004
0.161	483.844	0.153	0.004
0.103	484.140	0.153	0.004
0.224	568.299	0.059	0.005
0.214	568.299	0.066	0.005
0.222	568.299	0.070	0.005
0.206	568.299	0.036	0.004
0.118	568.299	0.026	0.004
0.064	568.299	0.019	0.004
0.062	568.299	0.018	0.004
0.062	568.299	0.018	0.004
0.087	568.299	0.023	0.004
0.678	503.751	0.159	0.005
0.612	479.901	0.152	0.004
0.310	489.042	0.155	0.004
0.144	486.329	0.154	0.004
0.115	482.588	0.153	0.004
0.080	568.299	0.030	0.004
0.305	484.269	0.153	0.004
0.146	483.431	0.153	0.004
0.090	481.275	0.152	0.004
0.075	482.309	0.153	0.004
0.057	482.545	0.153	0.004
0.138	480.362	0.152	0.004
0.110	480.170	0.152	0.004

Dumpers/Tenders	25	0.685	2.339
Excavators	25	0.593	4.500
Excavators	50	0.593	4.500
Excavators	120	0.299	3.505
Excavators	175	0.231	3.086
Excavators	250	0.177	1.118
Excavators	500	0.153	1.102
Excavators	750	0.170	1.145
Forklifts	50	1.124	5.706
Forklifts	120	0.459	3.760
Forklifts	175	0.338	3.249
Forklifts	250	0.293	1.442
Forklifts	500	0.251	1.478
Generator Sets	15	0.646	3.546
Generator Sets	25	0.721	2.473
Generator Sets	50	0.691	3.995
Generator Sets	120	0.364	3.380
Generator Sets	175	0.267	2.930
Generator Sets	250	0.198	1.026
Generator Sets	500	0.188	1.005
Generator Sets	750	0.191	1.005
Generator Sets	9999	0.242	1.082
Graders	50	2.516	8.134
Graders	120	0.976	4.561
Graders	175	0.567	3.621
Graders	250	0.352	1.342
Graders	500	0.322	1.526
Graders	750	0.319	1.229
Off-Highway Tractors	120	0.448	3.788
Off-Highway Tractors	175	0.271	3.215
Off-Highway Tractors	250	0.221	1.181
Off-Highway Tractors	750	0.201	1.131
Off-Highway Tractors	1000	0.150	1.022
Off-Highway Trucks	175	0.310	3.339
Off-Highway Trucks	250	0.275	1.391

0.089	485.383	0.154	0.004
0.118	483.218	0.153	0.004
0.114	480.348	0.152	0.004
0.402	539.735	0.171	0.005
0.402	539.735	0.171	0.005
0.402	539.735	0.171	0.005
0.349	482.218	0.153	0.004
0.215	480.452	0.152	0.004
0.094	485.413	0.154	0.004
0.344	537.869	0.170	0.005
0.344	537.869	0.170	0.005
0.344	537.869	0.170	0.005
0.316	480.444	0.152	0.004
0.144	482.336	0.153	0.004
0.097	483.739	0.153	0.004
0.085	483.439	0.153	0.004

Off-Highway Trucks	500	0.246	1.414
Off-Highway Trucks	750	0.312	2.027
Off-Highway Trucks	1000	0.303	1.372
Other Construction Equipment	15	1.072	5.404
Other Construction Equipment	25	1.072	5.404
Other Construction Equipment	50	1.072	5.404
Other Construction Equipment	120	0.519	3.732
Other Construction Equipment	175	0.388	3.235
Other Construction Equipment	500	0.224	1.634
Other General Industrial Equipment	15	0.946	5.504
Other General Industrial Equipment	25	0.946	5.504
Other General Industrial Equipment	50	0.946	5.504
Other General Industrial Equipment	120	0.446	3.771
Other General Industrial Equipment	175	0.268	3.229
Other General Industrial Equipment	250	0.237	1.239
Other General Industrial Equipment	500	0.208	1.344

0.070	483.985	0.153	0.004
0.108	482.545	0.153	0.004
0.416	535.347	0.169	0.005
0.212	484.113	0.153	0.004
0.128	482.713	0.153	0.004
0.113	481.959	0.153	0.004
0.118	480.748	0.152	0.004
0.070	482.545	0.153	0.004
0.401	538.325	0.170	0.005
0.401	538.325	0.170	0.005
0.318	480.251	0.152	0.004
0.146	483.394	0.153	0.004
0.077	483.574	0.153	0.004
0.075	476.971	0.151	0.004
0.248	531.861	0.168	0.005
0.248	531.861	0.168	0.005
0.258	484.387	0.153	0.004
0.123	481.225	0.152	0.004
0.103	482.644	0.153	0.004
0.161	568.299	0.059	0.005
0.224	568.299	0.059	0.005
0.214	568.299	0.066	0.005
0.184	568.299	0.051	0.005
0.174	568.299	0.030	0.004
0.117	568.299	0.025	0.004

Other General Industrial Equipment	750	0.175	1.462
Other General Industrial Equipment	1000	0.271	1.085
Other Material Handling Equipment	50	1.245	6.167
Other Material Handling Equipment	120	0.307	3.589
Other Material Handling Equipment	175	0.252	3.171
Other Material Handling Equipment	250	0.291	1.319
Other Material Handling Equipment	500	0.283	1.523
Other Material Handling Equipment	9999	0.200	1.049
Pavers	25	1.318	5.523
Pavers	50	1.318	5.523
Pavers	120	0.470	3.604
Pavers	175	0.273	3.010
Pavers	250	0.176	1.028
Pavers	500	0.165	0.987
Paving Equipment	25	0.621	4.223
Paving Equipment	50	0.621	4.223
Paving Equipment	120	0.397	3.582
Paving Equipment	175	0.248	3.024
Paving Equipment	250	0.244	1.252
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.646	3.546
Pressure Washers	25	0.721	2.473
Pressure Washers	50	0.499	3.393
Pressure Washers	120	0.298	3.225
Pressure Washers	175	0.258	2.907

0.009	568.299	0.008	0.004
0.241	568.300	0.067	0.005
0.222	568.300	0.071	0.005
0.235	568.299	0.076	0.005
0.217	568.299	0.038	0.004
0.124	568.299	0.027	0.004
0.067	568.299	0.020	0.004
0.064	568.300	0.019	0.004
0.065	568.299	0.019	0.004
0.089	568.299	0.024	0.004
0.321	537.546	0.170	0.005
0.321	537.546	0.170	0.005
0.321	537.546	0.170	0.005
0.253	484.336	0.153	0.004
0.114	482.453	0.153	0.004
0.084	483.777	0.153	0.004
0.102	489.977	0.155	0.004
0.302	537.329	0.170	0.005
0.108	483.311	0.153	0.004
0.069	482.119	0.153	0.004
0.034	483.088	0.153	0.004
0.040	477.254	0.151	0.004
0.398	483.559	0.153	0.004
0.311	485.172	0.154	0.004
0.260	490.383	0.155	0.004
0.201	483.579	0.153	0.004
0.171	568.299	0.049	0.004
0.476	536.225	0.170	0.005
0.476	536.225	0.170	0.005
0.370	475.864	0.151	0.004
0.196	481.736	0.152	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.731	3.546
Pumps	25	0.769	2.473
Pumps	50	0.755	4.197
Pumps	120	0.386	3.432
Pumps	175	0.285	2.974
Pumps	250	0.212	1.042
Pumps	500	0.203	1.017
Pumps	750	0.205	1.017
Pumps	9999	0.255	1.096
Rollers	15	0.926	4.725
Rollers	25	0.926	4.725
Rollers	50	0.926	4.725
Rollers	120	0.388	3.531
Rollers	175	0.215	2.933
Rollers	250	0.209	1.253
Rollers	500	0.235	2.113
Rough Terrain Forklifts	50	0.999	4.686
Rough Terrain Forklifts	120	0.189	3.256
Rough Terrain Forklifts	175	0.143	2.845
Rough Terrain Forklifts	250	0.112	0.978
Rough Terrain Forklifts	500	0.089	0.942
Rubber Tired Dozers	175	0.726	3.893
Rubber Tired Dozers	250	0.620	2.371
Rubber Tired Dozers	500	0.535	4.411
Rubber Tired Dozers	750	0.457	2.601
Rubber Tired Dozers	1000	0.522	2.164
Rubber Tired Loaders	25	1.481	6.768
Rubber Tired Loaders	50	1.481	6.768
Rubber Tired Loaders	120	0.556	3.948
Rubber Tired Loaders	175	0.379	3.368

0.116	480.100	0.152	0.004
0.113	477.042	0.151	0.004
0.109	471.187	0.149	0.004
0.135	480.523	0.152	0.004
0.483	494.100	0.156	0.004
0.261	489.255	0.155	0.004
0.236	479.032	0.152	0.004
0.150	482.732	0.153	0.004
0.113	482.596	0.153	0.004
0.161	568.299	0.059	0.005
0.236	568.300	0.080	0.005
0.216	568.299	0.039	0.004
0.125	568.299	0.029	0.004
0.080	686.695	0.026	0.004
0.141	539.267	0.171	0.005
0.141	539.267	0.171	0.005
0.112	482.384	0.153	0.004
0.230	547.046	0.173	0.005
0.208	484.076	0.153	0.004
0.187	479.672	0.152	0.004
0.093	486.842	0.154	0.004
0.063	481.897	0.153	0.004
0.070	480.166	0.152	0.004
0.452	537.002	0.170	0.005
0.452	537.002	0.170	0.005
0.452	537.002	0.170	0.005
0.356	484.652	0.153	0.004
0.255	483.636	0.153	0.004
0.091	480.574	0.152	0.004
0.304	527.684	0.167	0.005

Rubber Tired Loaders	250	0.290	1.269
Rubber Tired Loaders	500	0.289	1.630
Rubber Tired Loaders	750	0.277	1.400
Rubber Tired Loaders	1000	0.312	1.204
Scrapers	120	0.701	4.198
Scrapers	175	0.478	3.501
Scrapers	250	0.446	2.065
Scrapers	500	0.320	2.401
Scrapers	750	0.262	1.725
Signal Boards	15	0.661	3.469
Signal Boards	50	0.788	4.448
Signal Boards	120	0.395	3.504
Signal Boards	175	0.298	3.043
Signal Boards	250	0.274	1.281
Skid Steer Loaders	25	0.439	3.764
Skid Steer Loaders	50	0.439	3.764
Skid Steer Loaders	120	0.188	3.277
Surfacing Equipment	50	0.536	3.934
Surfacing Equipment	120	0.330	3.439
Surfacing Equipment	175	0.308	2.931
Surfacing Equipment	250	0.212	1.218
Surfacing Equipment	500	0.146	1.219
Surfacing Equipment	750	0.142	0.996
Sweepers/Scrubbers	15	1.344	6.155
Sweepers/Scrubbers	25	1.344	6.155
Sweepers/Scrubbers	50	1.344	6.155
Sweepers/Scrubbers	120	0.520	3.828
Sweepers/Scrubbers	175	0.462	3.359
Sweepers/Scrubbers	250	0.207	1.137
Tractors/Loaders/Backhoes	25	0.830	5.035

0.304	527.684	0.167	0.005
0.227	485.855	0.154	0.004
0.129	477.915	0.151	0.004
0.094	481.421	0.152	0.004
0.075	479.083	0.152	0.004
0.107	478.922	0.152	0.004
0.347	539.104	0.171	0.005
0.347	539.104	0.171	0.005
0.347	539.104	0.171	0.005
0.396	485.364	0.154	0.004
0.234	478.129	0.151	0.004
0.187	484.117	0.153	0.004
0.109	482.165	0.153	0.004
0.014	484.542	0.153	0.004
0.241	568.299	0.067	0.005
0.222	568.299	0.071	0.005
0.273	568.299	0.095	0.005
0.250	568.299	0.045	0.004
0.143	568.300	0.033	0.004
0.075	568.299	0.024	0.004
0.072	568.300	0.023	0.004
0.138	480.362	0.152	0.004
0.110	480.170	0.152	0.004
0.089	485.383	0.154	0.004
0.118	483.218	0.153	0.004
0.114	480.348	0.152	0.004

Tractors/Loaders/Backhoes	50	0.830	5.035
Tractors/Loaders/Backhoes	120	0.331	3.601
Tractors/Loaders/Backhoes	175	0.246	3.105
Tractors/Loaders/Backhoes	250	0.225	1.196
Tractors/Loaders/Backhoes	500	0.194	1.358
Tractors/Loaders/Backhoes	750	0.268	1.610
Trenchers	15	0.905	4.833
Trenchers	25	0.905	4.833
Trenchers	50	0.905	4.833
Trenchers	120	0.610	3.833
Trenchers	175	0.421	3.330
Trenchers	250	0.392	1.774
Trenchers	500	0.233	1.859
Trenchers	750	0.070	0.950
Welders	15	0.731	3.546
Welders	25	0.769	2.473
Welders	50	0.937	4.840
Welders	120	0.455	3.605
Welders	175	0.344	3.122
Welders	250	0.261	1.093
Welders	500	0.252	1.055
Water Trucks	175	0.310	3.339
Water Trucks	250	0.275	1.391
Water Trucks	500	0.246	1.414
Water Trucks	750	0.312	2.027
Water Trucks	1000	0.303	1.372

2021

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2021
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
1.869	0.005	0.042	0.038	472.114	0.153	0.004	Aerial Lifts
0.638	0.005	0.009	0.008	472.055	0.153	0.004	Aerial Lifts
1.868	0.005	0.057	0.057	568.299	0.018	0.004	Aerial Lifts
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Air Compressors
4.538	0.007	0.212	0.212	568.300	0.069	0.005	Air Compressors
4.397	0.007	0.250	0.250	568.299	0.090	0.005	Air Compressors
3.400	0.006	0.224	0.224	568.299	0.044	0.004	Air Compressors
2.558	0.006	0.133	0.133	568.299	0.033	0.004	Air Compressors
2.172	0.006	0.069	0.069	568.299	0.026	0.004	Air Compressors
1.935	0.005	0.067	0.067	568.299	0.025	0.004	Air Compressors
1.982	0.005	0.067	0.067	568.299	0.025	0.004	Air Compressors
3.828	0.005	0.093	0.093	568.300	0.027	0.004	Air Compressors
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
3.066	0.005	0.159	0.146	463.583	0.150	0.004	Bore/Drill Rigs
1.871	0.005	0.082	0.076	477.722	0.155	0.004	Bore/Drill Rigs
1.807	0.005	0.052	0.048	466.834	0.151	0.004	Bore/Drill Rigs
1.409	0.005	0.045	0.041	466.822	0.151	0.004	Bore/Drill Rigs
1.231	0.005	0.041	0.038	473.668	0.153	0.004	Bore/Drill Rigs
3.050	0.005	0.061	0.056	471.849	0.153	0.004	Bore/Drill Rigs

4.142	0.008	0.161	0.161	568.299	0.059	0.005	Cement and Mortar Mixers
4.442	0.007	0.187	0.187	568.299	0.065	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
4.196	0.007	0.212	0.212	568.299	0.072	0.005	Concrete/Industrial Saws
3.163	0.006	0.190	0.190	568.299	0.036	0.004	Concrete/Industrial Saws
2.324	0.006	0.114	0.114	568.299	0.027	0.004	Concrete/Industrial Saws
5.985	0.005	0.624	0.574	517.926	0.168	0.005	Cranes
6.381	0.005	0.453	0.417	469.882	0.152	0.004	Cranes
5.570	0.005	0.298	0.274	474.594	0.154	0.004	Cranes
4.563	0.005	0.188	0.173	472.949	0.153	0.004	Cranes
3.862	0.005	0.155	0.142	472.558	0.153	0.004	Cranes
3.105	0.005	0.116	0.107	470.425	0.152	0.004	Cranes
2.361	0.005	0.060	0.056	472.055	0.153	0.004	Cranes
5.643	0.005	0.591	0.544	515.679	0.167	0.005	Crawler Tractors
6.009	0.005	0.501	0.460	476.328	0.154	0.004	Crawler Tractors
4.872	0.005	0.272	0.250	471.015	0.152	0.004	Crawler Tractors
4.632	0.005	0.175	0.161	472.941	0.153	0.004	Crawler Tractors
3.622	0.005	0.141	0.130	475.234	0.154	0.004	Crawler Tractors
3.137	0.005	0.115	0.106	473.312	0.153	0.004	Crawler Tractors
7.237	0.005	0.212	0.195	475.653	0.154	0.004	Crawler Tractors
4.347	0.007	0.233	0.233	568.299	0.085	0.005	Crushing/Proc. Equipment
3.249	0.006	0.206	0.206	568.299	0.042	0.004	Crushing/Proc. Equipment
2.392	0.006	0.124	0.124	568.299	0.033	0.004	Crushing/Proc. Equipment
2.014	0.006	0.065	0.065	568.299	0.026	0.004	Crushing/Proc. Equipment
1.799	0.005	0.063	0.063	568.299	0.025	0.004	Crushing/Proc. Equipment
1.835	0.005	0.063	0.063	568.299	0.025	0.004	Crushing/Proc. Equipment
3.699	0.005	0.089	0.089	568.299	0.029	0.004	Crushing/Proc. Equipment

4.336	0.007	0.165	0.165	568.299	0.061	0.005	Dumpers/Tenders
4.031	0.005	0.222	0.204	525.368	0.170	0.005	Excavators
4.031	0.005	0.222	0.204	525.368	0.170	0.005	Excavators
3.090	0.005	0.185	0.170	468.055	0.151	0.004	Excavators
2.278	0.005	0.110	0.102	472.289	0.153	0.004	Excavators
2.027	0.005	0.061	0.057	471.883	0.153	0.004	Excavators
1.572	0.005	0.052	0.048	470.296	0.152	0.004	Excavators
1.797	0.005	0.061	0.056	468.871	0.152	0.004	Excavators
4.686	0.005	0.360	0.331	525.483	0.170	0.005	Forklifts
4.133	0.005	0.308	0.283	471.529	0.153	0.004	Forklifts
3.320	0.005	0.180	0.165	472.106	0.153	0.004	Forklifts
3.241	0.005	0.126	0.116	473.326	0.153	0.004	Forklifts
2.440	0.005	0.097	0.089	473.615	0.153	0.004	Forklifts
4.516	0.008	0.212	0.212	568.299	0.058	0.005	Generator Sets
4.538	0.007	0.205	0.205	568.299	0.065	0.005	Generator Sets
4.075	0.007	0.194	0.194	568.299	0.062	0.005	Generator Sets
3.173	0.006	0.179	0.179	568.299	0.032	0.004	Generator Sets
2.380	0.006	0.105	0.105	568.299	0.024	0.004	Generator Sets
2.016	0.006	0.057	0.057	568.299	0.017	0.004	Generator Sets
1.816	0.005	0.055	0.055	568.299	0.017	0.004	Generator Sets
1.858	0.005	0.056	0.056	568.299	0.017	0.004	Generator Sets
3.608	0.005	0.079	0.079	568.300	0.021	0.004	Generator Sets
5.825	0.005	0.709	0.652	492.862	0.159	0.005	Graders
7.725	0.005	0.622	0.572	469.337	0.152	0.004	Graders
5.530	0.005	0.309	0.284	478.040	0.155	0.004	Graders
4.678	0.005	0.150	0.138	475.304	0.154	0.004	Graders
3.107	0.005	0.121	0.111	471.980	0.153	0.004	Graders
2.031	0.005	0.072	0.072	568.299	0.028	0.004	Graders
4.183	0.005	0.307	0.283	474.148	0.153	0.004	Off-Highway Tractors
2.890	0.005	0.140	0.129	472.917	0.153	0.004	Off-Highway Tractors
2.575	0.005	0.086	0.079	470.943	0.152	0.004	Off-Highway Tractors
2.047	0.005	0.076	0.070	471.815	0.153	0.004	Off-Highway Tractors
2.396	0.005	0.063	0.058	472.055	0.153	0.004	Off-Highway Tractors
2.628	0.005	0.137	0.126	470.097	0.152	0.004	Off-Highway Trucks
2.507	0.005	0.098	0.090	470.168	0.152	0.004	Off-Highway Trucks

2.347	0.005	0.086	0.079	474.579	0.154	0.004	Off-Highway Trucks
3.058	0.005	0.120	0.110	472.750	0.153	0.004	Off-Highway Trucks
4.794	0.005	0.125	0.115	469.889	0.152	0.004	Off-Highway Trucks
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
4.771	0.005	0.354	0.325	472.216	0.153	0.004	Other Construction Equipment
4.112	0.005	0.217	0.200	469.984	0.152	0.004	Other Construction Equipment
2.637	0.005	0.096	0.088	475.233	0.154	0.004	Other Construction Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.061	0.005	0.296	0.272	470.000	0.152	0.004	Other General Industrial Equipment
2.575	0.005	0.135	0.124	471.850	0.153	0.004	Other General Industrial Equipment
2.668	0.005	0.090	0.083	473.223	0.153	0.004	Other General Industrial Equipment
2.062	0.005	0.072	0.067	472.929	0.153	0.004	Other General Industrial Equipment

1.676	0.005	0.062	0.057	473.464	0.153	0.004	Other General Industrial Equipment
4.857	0.005	0.119	0.109	472.055	0.153	0.004	Other General Industrial Equipment
5.139	0.005	0.439	0.404	523.709	0.169	0.005	Other Material Handling Equipment
3.104	0.005	0.182	0.168	473.588	0.153	0.004	Other Material Handling Equipment
2.367	0.005	0.118	0.109	472.219	0.153	0.004	Other Material Handling Equipment
3.599	0.005	0.115	0.106	471.482	0.153	0.004	Other Material Handling Equipment
3.210	0.005	0.120	0.110	470.297	0.152	0.004	Other Material Handling Equipment
3.614	0.005	0.078	0.072	472.055	0.153	0.004	Other Material Handling Equipment
4.764	0.005	0.402	0.370	526.210	0.170	0.005	Pavers
4.764	0.005	0.402	0.370	526.210	0.170	0.005	Pavers
4.427	0.005	0.325	0.299	469.882	0.152	0.004	Pavers
2.918	0.005	0.142	0.131	472.775	0.153	0.004	Pavers
2.777	0.005	0.076	0.070	472.834	0.153	0.004	Pavers
2.134	0.005	0.077	0.071	466.206	0.151	0.004	Pavers
3.952	0.005	0.217	0.200	520.124	0.168	0.005	Paving Equipment
3.952	0.005	0.217	0.200	520.124	0.168	0.005	Paving Equipment
3.781	0.005	0.256	0.235	473.325	0.153	0.004	Paving Equipment
2.555	0.005	0.128	0.118	470.736	0.152	0.004	Paving Equipment
3.220	0.005	0.111	0.102	472.151	0.153	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.516	0.008	0.212	0.212	568.299	0.058	0.005	Pressure Washers
4.538	0.007	0.205	0.205	568.299	0.065	0.005	Pressure Washers
3.917	0.007	0.161	0.161	568.299	0.045	0.005	Pressure Washers
3.036	0.006	0.151	0.151	568.299	0.026	0.004	Pressure Washers
2.383	0.006	0.104	0.104	568.299	0.023	0.004	Pressure Washers

0.265	0.006	0.009	0.009	568.299	0.008	0.004	Pressure Washers
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Pumps
4.538	0.007	0.212	0.212	568.299	0.069	0.005	Pumps
4.128	0.007	0.206	0.206	568.299	0.068	0.005	Pumps
3.219	0.006	0.189	0.189	568.299	0.034	0.004	Pumps
2.418	0.006	0.111	0.111	568.299	0.025	0.004	Pumps
2.050	0.006	0.060	0.060	568.299	0.019	0.004	Pumps
1.841	0.005	0.057	0.057	568.300	0.018	0.004	Pumps
1.884	0.005	0.058	0.058	568.299	0.018	0.004	Pumps
3.649	0.005	0.081	0.081	568.300	0.023	0.004	Pumps
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
3.882	0.005	0.248	0.228	473.859	0.153	0.004	Rollers
2.452	0.005	0.113	0.104	471.918	0.153	0.004	Rollers
2.751	0.005	0.089	0.082	473.367	0.153	0.004	Rollers
2.828	0.005	0.109	0.101	479.325	0.155	0.004	Rollers
4.495	0.005	0.316	0.291	525.622	0.170	0.005	Rough Terrain Forklifts
2.452	0.005	0.103	0.094	472.984	0.153	0.004	Rough Terrain Forklifts
1.869	0.005	0.068	0.063	471.715	0.153	0.004	Rough Terrain Forklifts
1.609	0.005	0.037	0.034	472.567	0.153	0.004	Rough Terrain Forklifts
1.302	0.005	0.028	0.026	465.771	0.151	0.004	Rough Terrain Forklifts
7.185	0.005	0.411	0.378	473.012	0.153	0.004	Rubber Tired Dozers
6.503	0.005	0.319	0.293	474.793	0.154	0.004	Rubber Tired Dozers
5.641	0.005	0.259	0.238	479.757	0.155	0.004	Rubber Tired Dozers
6.123	0.005	0.218	0.201	473.056	0.153	0.004	Rubber Tired Dozers
5.306	0.005	0.160	0.160	568.299	0.047	0.004	Rubber Tired Dozers
5.254	0.005	0.474	0.436	524.697	0.170	0.005	Rubber Tired Loaders
5.254	0.005	0.474	0.436	524.697	0.170	0.005	Rubber Tired Loaders
4.686	0.005	0.367	0.338	465.674	0.151	0.004	Rubber Tired Loaders
3.517	0.005	0.194	0.178	471.214	0.152	0.004	Rubber Tired Loaders

3.421	0.005	0.114	0.105	469.513	0.152	0.004	Rubber Tired Loaders
3.017	0.005	0.112	0.103	466.783	0.151	0.004	Rubber Tired Loaders
2.767	0.005	0.108	0.099	462.193	0.150	0.004	Rubber Tired Loaders
5.253	0.005	0.139	0.127	469.935	0.152	0.004	Rubber Tired Loaders
6.677	0.005	0.510	0.469	483.745	0.157	0.004	Scrapers
4.869	0.005	0.262	0.241	478.608	0.155	0.004	Scrapers
5.089	0.005	0.223	0.205	468.988	0.152	0.004	Scrapers
3.783	0.005	0.148	0.136	472.175	0.153	0.004	Scrapers
3.126	0.005	0.113	0.104	471.778	0.153	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
4.132	0.007	0.206	0.206	568.299	0.071	0.005	Signal Boards
3.134	0.006	0.187	0.187	568.299	0.035	0.004	Signal Boards
2.309	0.006	0.110	0.110	568.299	0.026	0.004	Signal Boards
2.350	0.007	0.071	0.071	686.695	0.024	0.004	Signal Boards
3.691	0.005	0.145	0.133	527.758	0.171	0.005	Skid Steer Loaders
3.691	0.005	0.145	0.133	527.758	0.171	0.005	Skid Steer Loaders
2.505	0.005	0.108	0.100	471.908	0.153	0.004	Skid Steer Loaders
4.239	0.006	0.216	0.199	535.528	0.173	0.005	Surfacing Equipment
3.612	0.005	0.206	0.190	473.819	0.153	0.004	Surfacing Equipment
3.672	0.005	0.175	0.161	469.208	0.152	0.004	Surfacing Equipment
3.222	0.005	0.097	0.089	476.426	0.154	0.004	Surfacing Equipment
1.838	0.005	0.067	0.062	471.633	0.153	0.004	Surfacing Equipment
2.094	0.005	0.074	0.068	469.625	0.152	0.004	Surfacing Equipment
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
4.482	0.005	0.360	0.331	474.116	0.153	0.004	Sweepers/Scrubbers
4.608	0.005	0.237	0.218	473.122	0.153	0.004	Sweepers/Scrubbers
2.486	0.005	0.079	0.073	470.126	0.152	0.004	Sweepers/Scrubbers
4.398	0.005	0.288	0.265	515.874	0.167	0.005	Tractors/Loaders/Backhoes

4.398	0.005	0.288	0.265	515.874	0.167	0.005	Tractors/Loaders/Backhoes
3.326	0.005	0.210	0.194	475.154	0.154	0.004	Tractors/Loaders/Backhoes
2.415	0.005	0.122	0.112	467.513	0.151	0.004	Tractors/Loaders/Backhoes
2.738	0.005	0.090	0.083	470.500	0.152	0.004	Tractors/Loaders/Backhoes
2.080	0.005	0.073	0.067	468.245	0.151	0.004	Tractors/Loaders/Backhoes
3.119	0.005	0.117	0.108	468.660	0.152	0.004	Tractors/Loaders/Backhoes
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
5.520	0.005	0.413	0.380	475.127	0.154	0.004	Trenchers
4.460	0.005	0.228	0.210	467.735	0.151	0.004	Trenchers
4.809	0.005	0.195	0.179	473.595	0.153	0.004	Trenchers
2.775	0.005	0.105	0.097	470.637	0.152	0.004	Trenchers
0.560	0.005	0.009	0.008	472.656	0.153	0.004	Trenchers
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Welders
4.538	0.007	0.212	0.212	568.299	0.069	0.005	Welders
4.304	0.007	0.238	0.238	568.299	0.084	0.005	Welders
3.351	0.006	0.216	0.216	568.299	0.041	0.004	Welders
2.523	0.006	0.127	0.127	568.299	0.031	0.004	Welders
2.143	0.006	0.066	0.066	568.299	0.023	0.004	Welders
1.910	0.005	0.064	0.064	568.299	0.022	0.004	Welders
2.628	0.005	0.137	0.126	470.097	0.152	0.004	Water Trucks
2.507	0.005	0.098	0.090	470.168	0.152	0.004	Water Trucks
2.347	0.005	0.086	0.079	474.579	0.154	0.004	Water Trucks
3.058	0.005	0.120	0.110	472.750	0.153	0.004	Water Trucks
4.794	0.005	0.125	0.115	469.889	0.152	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
25	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
50	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
120	0.109	3.176	1.744	0.005	0.033	0.031	472.114	0.153	0.004
500	0.072	0.951	0.640	0.005	0.009	0.008	472.055	0.153	0.004
750	0.187	1.004	1.610	0.005	0.050	0.050	568.299	0.016	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.887	5.021	4.221	0.007	0.212	0.212	568.299	0.080	0.005
120	0.442	3.670	3.083	0.006	0.190	0.190	568.299	0.039	0.004
175	0.343	3.192	2.218	0.006	0.115	0.115	568.299	0.030	0.004
250	0.268	1.108	1.859	0.006	0.060	0.060	568.299	0.024	0.004
500	0.261	1.064	1.663	0.005	0.058	0.058	568.299	0.023	0.004
750	0.262	1.064	1.699	0.005	0.058	0.058	568.299	0.023	0.004
1000	0.284	1.134	3.565	0.005	0.082	0.082	568.300	0.025	0.004
15	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
25	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
50	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
120	0.217	3.306	2.737	0.005	0.131	0.121	464.973	0.150	0.004
175	0.154	2.961	1.598	0.005	0.070	0.064	477.048	0.154	0.004
250	0.133	1.064	1.551	0.005	0.047	0.043	467.992	0.151	0.004
500	0.117	1.015	1.221	0.005	0.041	0.038	469.816	0.152	0.004
750	0.098	0.972	0.955	0.005	0.033	0.031	474.079	0.153	0.004
1000	0.136	0.993	3.058	0.005	0.061	0.057	471.816	0.153	0.004

15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.712	2.381	4.419	0.007	0.180	0.180	568.299	0.064	0.005
25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.722	4.481	4.063	0.007	0.184	0.184	568.300	0.065	0.005
120	0.369	3.523	2.913	0.006	0.166	0.166	568.299	0.033	0.004
175	0.286	3.072	2.055	0.006	0.101	0.101	568.299	0.025	0.004
50	2.115	7.489	6.014	0.005	0.631	0.581	517.900	0.168	0.005
120	0.651	4.065	5.731	0.005	0.398	0.366	469.887	0.152	0.004
175	0.498	3.516	5.113	0.005	0.273	0.251	474.546	0.154	0.004
250	0.350	1.678	4.104	0.005	0.167	0.153	472.906	0.153	0.004
500	0.295	2.448	3.443	0.005	0.139	0.127	472.455	0.153	0.004
750	0.228	1.440	2.727	0.005	0.107	0.098	470.550	0.152	0.004
9999	0.192	1.008	2.374	0.005	0.061	0.057	472.055	0.153	0.004
50	2.064	7.349	5.615	0.005	0.591	0.543	516.108	0.167	0.005
120	0.673	4.005	5.657	0.005	0.466	0.429	476.437	0.154	0.004
175	0.436	3.310	4.395	0.005	0.245	0.225	471.421	0.153	0.004
250	0.343	1.515	4.334	0.005	0.163	0.150	472.925	0.153	0.004
500	0.283	2.024	3.276	0.005	0.129	0.119	474.484	0.154	0.004
750	0.239	1.270	2.825	0.005	0.104	0.096	473.094	0.153	0.004
1000	0.399	1.896	6.399	0.005	0.182	0.167	471.822	0.153	0.004
50	0.862	5.136	4.211	0.007	0.201	0.201	568.299	0.077	0.005
120	0.438	3.711	2.989	0.006	0.178	0.178	568.299	0.039	0.004
175	0.344	3.235	2.114	0.006	0.109	0.109	568.299	0.031	0.004
250	0.274	1.119	1.756	0.006	0.057	0.057	568.299	0.024	0.004
500	0.268	1.072	1.574	0.005	0.055	0.055	568.300	0.024	0.004
750	0.268	1.072	1.606	0.005	0.055	0.055	568.299	0.024	0.004
9999	0.314	1.136	3.487	0.005	0.080	0.080	568.299	0.028	0.004

25	0.685	2.339	4.333	0.007	0.163	0.163	568.299	0.061	0.005
25	0.562	4.461	3.919	0.005	0.202	0.186	525.377	0.170	0.005
50	0.562	4.461	3.919	0.005	0.202	0.186	525.377	0.170	0.005
120	0.275	3.492	2.849	0.005	0.161	0.148	467.791	0.151	0.004
175	0.216	3.090	2.034	0.005	0.099	0.091	472.359	0.153	0.004
250	0.163	1.103	1.706	0.005	0.052	0.048	471.793	0.153	0.004
500	0.143	1.088	1.332	0.005	0.045	0.041	469.616	0.152	0.004
750	0.165	1.150	1.619	0.005	0.056	0.052	469.547	0.152	0.004
50	1.002	5.535	4.520	0.005	0.318	0.292	525.483	0.170	0.005
120	0.412	3.720	3.756	0.005	0.267	0.245	471.529	0.153	0.004
175	0.308	3.231	2.921	0.005	0.158	0.145	472.106	0.153	0.004
250	0.249	1.337	2.582	0.005	0.099	0.091	473.326	0.153	0.004
500	0.254	1.485	2.303	0.005	0.094	0.086	473.615	0.153	0.004
15	0.634	3.531	4.441	0.008	0.201	0.201	568.299	0.057	0.005
25	0.712	2.446	4.497	0.007	0.196	0.196	568.299	0.064	0.005
50	0.613	3.905	3.916	0.007	0.165	0.165	568.299	0.055	0.005
120	0.326	3.361	2.888	0.006	0.153	0.153	568.299	0.029	0.004
175	0.243	2.925	2.068	0.006	0.091	0.091	568.299	0.021	0.004
250	0.183	1.016	1.730	0.006	0.049	0.049	568.299	0.016	0.004
500	0.175	0.996	1.562	0.005	0.048	0.048	568.299	0.015	0.004
750	0.177	0.996	1.596	0.005	0.048	0.048	568.299	0.016	0.004
9999	0.220	1.060	3.372	0.005	0.070	0.070	568.300	0.019	0.004
50	2.235	7.626	5.485	0.005	0.631	0.581	492.935	0.159	0.005
120	0.901	4.452	7.125	0.005	0.570	0.524	469.070	0.152	0.004
175	0.505	3.559	4.839	0.005	0.270	0.248	478.529	0.155	0.004
250	0.335	1.307	4.381	0.005	0.139	0.128	474.539	0.154	0.004
500	0.322	1.460	3.013	0.005	0.117	0.108	471.898	0.153	0.004
750	0.303	1.207	1.808	0.005	0.064	0.064	568.299	0.027	0.004
120	0.395	3.743	3.773	0.005	0.261	0.240	474.516	0.154	0.004
175	0.259	3.220	2.660	0.005	0.129	0.118	472.924	0.153	0.004
250	0.200	1.162	2.113	0.005	0.072	0.067	471.003	0.152	0.004
750	0.181	1.122	1.715	0.005	0.063	0.058	471.806	0.153	0.004
1000	0.160	1.033	2.414	0.005	0.064	0.059	472.055	0.153	0.004
175	0.278	3.324	2.246	0.005	0.113	0.104	470.290	0.152	0.004
250	0.249	1.348	2.109	0.005	0.082	0.076	470.193	0.152	0.004

500	0.225	1.338	1.954	0.005	0.072	0.066	474.542	0.154	0.004
750	0.293	1.935	2.668	0.005	0.106	0.098	472.991	0.153	0.004
1000	0.256	1.252	4.158	0.005	0.099	0.091	471.055	0.152	0.004
15	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
25	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
50	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
120	0.482	3.703	4.456	0.005	0.323	0.298	472.275	0.153	0.004
175	0.330	3.183	3.438	0.005	0.180	0.165	469.764	0.152	0.004
500	0.215	1.599	2.428	0.005	0.090	0.083	475.212	0.154	0.004
15	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
25	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
50	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
120	0.404	3.740	3.718	0.005	0.256	0.235	470.000	0.152	0.004
175	0.254	3.234	2.347	0.005	0.121	0.111	471.850	0.153	0.004
250	0.204	1.171	2.094	0.005	0.070	0.064	473.223	0.153	0.004
500	0.195	1.330	1.796	0.005	0.064	0.059	472.929	0.153	0.004

750	0.166	1.463	1.387	0.005	0.054	0.050	473.464	0.153	0.004
1000	0.276	1.093	4.876	0.005	0.120	0.110	472.055	0.153	0.004
50	1.108	5.960	4.966	0.005	0.396	0.364	523.709	0.169	0.005
120	0.294	3.602	2.956	0.005	0.166	0.152	473.588	0.153	0.004
175	0.249	3.196	2.246	0.005	0.114	0.105	472.219	0.153	0.004
250	0.269	1.309	3.082	0.005	0.102	0.094	471.482	0.153	0.004
500	0.254	1.442	2.602	0.005	0.101	0.093	470.297	0.152	0.004
9999	0.073	0.972	2.318	0.005	0.020	0.018	472.055	0.153	0.004
25	1.208	5.302	4.602	0.005	0.370	0.340	526.515	0.170	0.005
50	1.208	5.302	4.602	0.005	0.370	0.340	526.515	0.170	0.005
120	0.420	3.563	4.026	0.005	0.285	0.263	469.774	0.152	0.004
175	0.256	3.016	2.695	0.005	0.130	0.120	472.555	0.153	0.004
250	0.166	1.024	2.484	0.005	0.070	0.064	472.477	0.153	0.004
500	0.164	0.988	2.053	0.005	0.074	0.068	465.591	0.151	0.004
25	0.587	4.211	3.882	0.005	0.200	0.184	520.397	0.168	0.005
50	0.587	4.211	3.882	0.005	0.200	0.184	520.397	0.168	0.005
120	0.355	3.554	3.451	0.005	0.219	0.202	473.221	0.153	0.004
175	0.229	3.032	2.315	0.005	0.114	0.105	470.650	0.152	0.004
250	0.211	1.209	2.582	0.005	0.092	0.085	472.151	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
15	0.634	3.531	4.441	0.008	0.201	0.201	568.299	0.057	0.005
25	0.712	2.446	4.497	0.007	0.196	0.196	568.299	0.064	0.005
50	0.439	3.329	3.765	0.007	0.136	0.136	568.299	0.039	0.005
120	0.264	3.210	2.766	0.006	0.129	0.129	568.299	0.023	0.004
175	0.238	2.907	2.118	0.006	0.093	0.093	568.299	0.021	0.004

250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.671	4.099	3.966	0.007	0.175	0.175	568.299	0.060	0.005
120	0.347	3.412	2.928	0.006	0.162	0.162	568.300	0.031	0.004
175	0.260	2.968	2.101	0.006	0.096	0.096	568.299	0.023	0.004
250	0.197	1.031	1.759	0.006	0.052	0.052	568.299	0.017	0.004
500	0.189	1.007	1.584	0.005	0.050	0.050	568.299	0.017	0.004
750	0.191	1.007	1.618	0.005	0.050	0.050	568.299	0.017	0.004
9999	0.233	1.074	3.409	0.005	0.072	0.072	568.300	0.021	0.004
15	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
25	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
50	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
120	0.353	3.507	3.589	0.005	0.219	0.202	473.901	0.153	0.004
175	0.193	2.926	2.117	0.005	0.097	0.090	471.980	0.153	0.004
250	0.197	1.228	2.493	0.005	0.081	0.075	473.470	0.153	0.004
500	0.221	1.950	2.589	0.005	0.100	0.092	479.329	0.155	0.004
50	0.969	4.657	4.411	0.005	0.304	0.280	525.384	0.170	0.005
120	0.175	3.252	2.285	0.005	0.089	0.082	473.110	0.153	0.004
175	0.130	2.845	1.617	0.005	0.060	0.055	471.758	0.153	0.004
250	0.115	0.984	1.612	0.005	0.037	0.034	472.547	0.153	0.004
500	0.092	0.946	1.302	0.005	0.028	0.026	465.744	0.151	0.004
175	0.691	3.848	6.790	0.005	0.386	0.356	472.975	0.153	0.004
250	0.601	2.317	6.296	0.005	0.306	0.281	474.798	0.154	0.004
500	0.492	4.041	5.081	0.005	0.232	0.214	478.987	0.155	0.004
750	0.458	2.604	6.123	0.005	0.218	0.201	473.046	0.153	0.004
1000	0.497	2.057	5.095	0.005	0.150	0.150	568.299	0.044	0.004
25	1.326	6.449	4.974	0.005	0.409	0.377	524.551	0.170	0.005
50	1.326	6.449	4.974	0.005	0.409	0.377	524.551	0.170	0.005
120	0.498	3.892	4.215	0.005	0.316	0.291	466.421	0.151	0.004
175	0.346	3.354	3.119	0.005	0.171	0.157	471.080	0.152	0.004

250	0.266	1.240	2.998	0.005	0.100	0.092	469.564	0.152	0.004
500	0.264	1.529	2.610	0.005	0.097	0.090	467.928	0.151	0.004
750	0.271	1.397	2.641	0.005	0.102	0.094	462.055	0.149	0.004
1000	0.294	1.206	4.975	0.005	0.128	0.118	471.258	0.152	0.004
120	0.704	4.218	6.659	0.005	0.512	0.471	483.713	0.156	0.004
175	0.432	3.456	4.341	0.005	0.232	0.213	478.654	0.155	0.004
250	0.391	1.884	4.367	0.005	0.189	0.174	469.126	0.152	0.004
500	0.299	2.255	3.445	0.005	0.134	0.123	472.464	0.153	0.004
750	0.250	1.658	2.887	0.005	0.105	0.097	471.786	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	0.714	4.380	4.002	0.007	0.179	0.179	568.299	0.064	0.005
120	0.363	3.493	2.889	0.006	0.162	0.162	568.299	0.032	0.004
175	0.278	3.043	2.043	0.006	0.098	0.098	568.299	0.025	0.004
250	0.260	1.273	2.053	0.007	0.063	0.063	686.695	0.023	0.004
25	0.409	3.732	3.573	0.005	0.126	0.116	527.450	0.171	0.005
50	0.409	3.732	3.573	0.005	0.126	0.116	527.450	0.171	0.005
120	0.178	3.277	2.366	0.005	0.096	0.089	471.977	0.153	0.004
50	0.507	3.932	4.189	0.006	0.204	0.188	535.784	0.173	0.005
120	0.312	3.436	3.461	0.005	0.191	0.175	474.091	0.153	0.004
175	0.258	2.919	3.099	0.005	0.145	0.134	469.169	0.152	0.004
250	0.207	1.219	2.994	0.005	0.092	0.085	476.802	0.154	0.004
500	0.141	1.202	1.753	0.005	0.064	0.058	471.748	0.153	0.004
750	0.125	0.992	1.597	0.005	0.062	0.057	470.409	0.152	0.004
15	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
25	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
50	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
120	0.440	3.757	3.962	0.005	0.291	0.268	474.116	0.153	0.004
175	0.385	3.247	3.707	0.005	0.187	0.172	473.122	0.153	0.004
250	0.164	1.108	1.758	0.005	0.055	0.051	470.126	0.152	0.004
25	0.756	4.902	4.226	0.005	0.255	0.234	515.121	0.167	0.005

50	0.756	4.902	4.226	0.005	0.255	0.234	515.121	0.167	0.005
120	0.296	3.571	2.995	0.005	0.177	0.163	475.362	0.154	0.004
175	0.221	3.091	2.062	0.005	0.104	0.096	467.529	0.151	0.004
250	0.209	1.186	2.369	0.005	0.080	0.074	470.572	0.152	0.004
500	0.179	1.341	1.776	0.005	0.064	0.059	469.303	0.152	0.004
750	0.247	1.433	2.754	0.005	0.104	0.096	466.456	0.151	0.004
15	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
25	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
50	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
120	0.556	3.789	5.106	0.005	0.371	0.341	475.287	0.154	0.004
175	0.407	3.304	4.272	0.005	0.219	0.201	467.734	0.151	0.004
250	0.356	1.668	4.360	0.005	0.172	0.158	473.854	0.153	0.004
500	0.221	1.865	2.491	0.005	0.100	0.092	470.701	0.152	0.004
750	0.066	0.947	0.475	0.005	0.009	0.008	472.529	0.153	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.829	4.708	4.133	0.007	0.203	0.203	568.299	0.074	0.005
120	0.411	3.579	3.042	0.006	0.184	0.184	568.299	0.037	0.004
175	0.315	3.112	2.189	0.006	0.110	0.110	568.299	0.028	0.004
250	0.243	1.081	1.836	0.006	0.057	0.057	568.299	0.021	0.004
500	0.236	1.044	1.642	0.005	0.055	0.055	568.299	0.021	0.004
175	0.278	3.324	2.246	0.005	0.113	0.104	470.290	0.152	0.004
250	0.249	1.348	2.109	0.005	0.082	0.076	470.193	0.152	0.004
500	0.225	1.338	1.954	0.005	0.072	0.066	474.542	0.154	0.004
750	0.293	1.935	2.668	0.005	0.106	0.098	472.991	0.153	0.004
1000	0.256	1.252	4.158	0.005	0.099	0.091	471.055	0.152	0.004

2022

2022		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5
Aerial Lifts	15	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	25	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	50	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	120	0.105	3.176	1.627	0.005	0.030	0.028
Aerial Lifts	500	0.075	0.956	0.642	0.005	0.009	0.008
Aerial Lifts	750	0.177	0.998	1.424	0.005	0.044	0.044
Air Compressors	15	0.707	3.519	4.408	0.008	0.203	0.203
Air Compressors	25	0.739	2.426	4.470	0.007	0.193	0.193
Air Compressors	50	0.814	4.959	4.093	0.007	0.183	0.183
Air Compressors	120	0.413	3.662	2.844	0.006	0.165	0.165
Air Compressors	175	0.322	3.194	1.959	0.006	0.101	0.101
Air Compressors	250	0.255	1.102	1.617	0.006	0.052	0.052
Air Compressors	500	0.249	1.059	1.472	0.005	0.051	0.051
Air Compressors	750	0.250	1.059	1.502	0.005	0.051	0.051
Air Compressors	1000	0.269	1.117	3.378	0.005	0.075	0.075
Bore/Drill Rigs	15	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	25	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	50	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	120	0.191	3.260	2.425	0.005	0.107	0.099
Bore/Drill Rigs	175	0.137	2.954	1.288	0.005	0.057	0.052
Bore/Drill Rigs	250	0.115	1.047	1.163	0.005	0.037	0.034
Bore/Drill Rigs	500	0.108	1.002	1.035	0.005	0.035	0.032
Bore/Drill Rigs	750	0.091	0.975	0.773	0.005	0.028	0.026
Bore/Drill Rigs	1000	0.057	0.945	2.278	0.005	0.018	0.017

Cement and Mortar Mixers	15	0.661	3.470	4.142	0.008	0.161	0.161
Cement and Mortar Mixers	25	0.704	2.367	4.399	0.007	0.175	0.175
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161
Concrete/Industrial Saws	50	0.660	4.422	3.936	0.007	0.158	0.158
Concrete/Industrial Saws	120	0.343	3.514	2.686	0.006	0.144	0.144
Concrete/Industrial Saws	175	0.267	3.072	1.806	0.006	0.089	0.089
Cranes	50	2.028	7.368	5.899	0.005	0.603	0.555
Cranes	120	0.578	3.972	5.149	0.005	0.346	0.318
Cranes	175	0.457	3.475	4.617	0.005	0.246	0.227
Cranes	250	0.316	1.602	3.541	0.005	0.147	0.135
Cranes	500	0.261	2.212	2.894	0.005	0.117	0.108
Cranes	750	0.200	1.283	2.251	0.005	0.089	0.082
Cranes	9999	0.201	1.015	2.386	0.005	0.062	0.057
Crawler Tractors	50	1.899	7.041	5.380	0.005	0.539	0.496
Crawler Tractors	120	0.600	3.925	5.101	0.005	0.408	0.375
Crawler Tractors	175	0.389	3.264	3.827	0.005	0.214	0.197
Crawler Tractors	250	0.306	1.440	3.737	0.005	0.141	0.130
Crawler Tractors	500	0.254	1.916	2.744	0.005	0.111	0.102
Crawler Tractors	750	0.198	1.186	2.126	0.005	0.079	0.073
Crawler Tractors	1000	0.357	1.732	5.923	0.005	0.162	0.149
Crushing/Proc. Equipment	50	0.795	5.081	4.083	0.007	0.172	0.172
Crushing/Proc. Equipment	120	0.410	3.704	2.758	0.006	0.154	0.154
Crushing/Proc. Equipment	175	0.323	3.237	1.861	0.006	0.095	0.095
Crushing/Proc. Equipment	250	0.260	1.114	1.521	0.006	0.050	0.050
Crushing/Proc. Equipment	500	0.255	1.067	1.389	0.005	0.048	0.048
Crushing/Proc. Equipment	750	0.256	1.067	1.416	0.005	0.048	0.048
Crushing/Proc. Equipment	9999	0.300	1.121	3.310	0.005	0.073	0.073

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.162	0.162
Excavators	25	0.478	4.273	3.700	0.005	0.160	0.147
Excavators	50	0.478	4.273	3.700	0.005	0.160	0.147
Excavators	120	0.252	3.473	2.606	0.005	0.138	0.127
Excavators	175	0.191	3.074	1.678	0.005	0.081	0.075
Excavators	250	0.148	1.092	1.386	0.005	0.044	0.040
Excavators	500	0.128	1.061	1.040	0.005	0.035	0.032
Excavators	750	0.150	1.144	1.287	0.005	0.047	0.043
Forklifts	50	0.859	5.304	4.312	0.005	0.270	0.248
Forklifts	120	0.362	3.675	3.360	0.005	0.223	0.205
Forklifts	175	0.273	3.197	2.480	0.005	0.132	0.122
Forklifts	250	0.236	1.317	2.319	0.005	0.090	0.083
Forklifts	500	0.232	1.219	1.991	0.005	0.077	0.071
Generator Sets	15	0.626	3.519	4.390	0.008	0.193	0.193
Generator Sets	25	0.706	2.426	4.470	0.007	0.188	0.188
Generator Sets	50	0.560	3.858	3.796	0.007	0.143	0.143
Generator Sets	120	0.301	3.353	2.671	0.006	0.134	0.134
Generator Sets	175	0.226	2.926	1.830	0.006	0.081	0.081
Generator Sets	250	0.173	1.010	1.508	0.006	0.043	0.043
Generator Sets	500	0.166	0.990	1.384	0.005	0.042	0.042
Generator Sets	750	0.168	0.990	1.412	0.005	0.043	0.043
Generator Sets	9999	0.206	1.045	3.202	0.005	0.063	0.063
Graders	50	2.106	7.428	5.332	0.005	0.595	0.547
Graders	120	0.796	4.330	6.360	0.005	0.493	0.453
Graders	175	0.440	3.493	4.125	0.005	0.229	0.211
Graders	250	0.307	1.273	3.888	0.005	0.124	0.114
Graders	500	0.311	1.390	2.802	0.005	0.108	0.100
Graders	750	0.289	1.187	1.606	0.005	0.057	0.057
Off-Highway Tractors	120	0.348	3.710	3.400	0.005	0.219	0.202
Off-Highway Tractors	175	0.231	3.186	2.239	0.005	0.107	0.099
Off-Highway Tractors	250	0.180	1.143	1.732	0.005	0.060	0.055
Off-Highway Tractors	750	0.171	1.121	1.433	0.005	0.055	0.050
Off-Highway Tractors	1000	0.170	1.044	2.432	0.005	0.066	0.060
Off-Highway Trucks	175	0.241	3.284	1.811	0.005	0.088	0.081
Off-Highway Trucks	250	0.215	1.279	1.618	0.005	0.064	0.059

Off-Highway Trucks	500	0.196	1.247	1.490	0.005	0.054	0.050
Off-Highway Trucks	750	0.263	1.746	2.268	0.005	0.088	0.081
Off-Highway Trucks	1000	0.234	1.214	3.842	0.005	0.086	0.079
Other Construction Equipment	15	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	25	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	50	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	120	0.440	3.666	4.098	0.005	0.288	0.265
Other Construction Equipment	175	0.295	3.155	2.994	0.005	0.156	0.144
Other Construction Equipment	500	0.188	1.438	1.975	0.005	0.074	0.068
Other General Industrial Equipment	15	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	25	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	50	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	120	0.339	3.668	3.200	0.005	0.199	0.183
Other General Industrial Equipment	175	0.244	3.233	2.150	0.005	0.111	0.102
Other General Industrial Equipment	250	0.187	1.138	1.759	0.005	0.057	0.052
Other General Industrial Equipment	500	0.175	1.171	1.433	0.005	0.050	0.046

Other General Industrial Equipment	750	0.149	1.457	1.062	0.005	0.046	0.042
Other General Industrial Equipment	1000	0.187	1.039	3.942	0.005	0.079	0.073
Other Material Handling Equipment	50	1.103	5.984	4.920	0.005	0.385	0.354
Other Material Handling Equipment	120	0.247	3.557	2.567	0.005	0.121	0.111
Other Material Handling Equipment	175	0.226	3.176	1.894	0.005	0.103	0.095
Other Material Handling Equipment	250	0.229	1.239	2.425	0.005	0.083	0.076
Other Material Handling Equipment	500	0.226	1.346	2.063	0.005	0.083	0.077
Other Material Handling Equipment	9999	0.076	0.978	2.328	0.005	0.020	0.018
Pavers	25	1.092	5.114	4.421	0.005	0.330	0.303
Pavers	50	1.092	5.114	4.421	0.005	0.330	0.303
Pavers	120	0.373	3.525	3.659	0.005	0.248	0.228
Pavers	175	0.215	2.995	2.180	0.005	0.104	0.095
Pavers	250	0.140	1.012	1.900	0.005	0.055	0.050
Pavers	500	0.150	0.982	1.810	0.005	0.063	0.058
Paving Equipment	25	0.572	4.244	3.836	0.005	0.188	0.173
Paving Equipment	50	0.572	4.244	3.836	0.005	0.188	0.173
Paving Equipment	120	0.296	3.501	3.000	0.005	0.171	0.157
Paving Equipment	175	0.213	3.038	2.073	0.005	0.101	0.093
Paving Equipment	250	0.196	1.204	2.228	0.005	0.083	0.076
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161
Pressure Washers	15	0.626	3.519	4.390	0.008	0.193	0.193
Pressure Washers	25	0.706	2.426	4.470	0.007	0.188	0.188
Pressure Washers	50	0.398	3.291	3.649	0.007	0.117	0.117
Pressure Washers	120	0.241	3.202	2.560	0.006	0.112	0.112
Pressure Washers	175	0.221	2.907	1.871	0.006	0.082	0.082

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009
Pumps	15	0.707	3.519	4.408	0.008	0.203	0.203
Pumps	25	0.739	2.426	4.470	0.007	0.193	0.193
Pumps	50	0.614	4.048	3.846	0.007	0.152	0.152
Pumps	120	0.321	3.404	2.708	0.006	0.142	0.142
Pumps	175	0.242	2.969	1.860	0.006	0.085	0.085
Pumps	250	0.186	1.025	1.534	0.006	0.045	0.045
Pumps	500	0.180	1.001	1.404	0.005	0.044	0.044
Pumps	750	0.181	1.001	1.432	0.005	0.044	0.044
Pumps	9999	0.219	1.058	3.236	0.005	0.065	0.065
Rollers	15	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	25	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	50	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	120	0.310	3.470	3.219	0.005	0.186	0.171
Rollers	175	0.164	2.913	1.714	0.005	0.079	0.072
Rollers	250	0.187	1.228	2.212	0.005	0.077	0.071
Rollers	500	0.218	1.955	2.463	0.005	0.097	0.089
Rough Terrain Forklifts	50	0.789	4.304	4.041	0.005	0.238	0.219
Rough Terrain Forklifts	120	0.159	3.244	2.098	0.005	0.073	0.067
Rough Terrain Forklifts	175	0.120	2.844	1.405	0.005	0.051	0.047
Rough Terrain Forklifts	250	0.119	0.989	1.617	0.005	0.037	0.034
Rough Terrain Forklifts	500	0.068	0.937	0.558	0.005	0.009	0.008
Rubber Tired Dozers	175	0.600	3.752	5.808	0.005	0.326	0.300
Rubber Tired Dozers	250	0.480	2.056	5.046	0.005	0.240	0.220
Rubber Tired Dozers	500	0.475	3.895	4.808	0.005	0.220	0.202
Rubber Tired Dozers	750	0.460	2.607	6.122	0.005	0.218	0.201
Rubber Tired Dozers	1000	0.475	1.961	4.896	0.005	0.140	0.140
Rubber Tired Loaders	25	1.179	6.204	4.748	0.005	0.354	0.326
Rubber Tired Loaders	50	1.179	6.204	4.748	0.005	0.354	0.326
Rubber Tired Loaders	120	0.440	3.839	3.768	0.005	0.267	0.245
Rubber Tired Loaders	175	0.295	3.302	2.518	0.005	0.136	0.125

Rubber Tired Loaders	250	0.226	1.188	2.347	0.005	0.079	0.072
Rubber Tired Loaders	500	0.237	1.441	2.175	0.005	0.081	0.075
Rubber Tired Loaders	750	0.233	1.315	2.097	0.005	0.080	0.074
Rubber Tired Loaders	1000	0.193	1.162	3.617	0.005	0.075	0.069
Scrapers	120	0.681	4.205	6.455	0.005	0.494	0.454
Scrapers	175	0.390	3.417	3.833	0.005	0.204	0.187
Scrapers	250	0.341	1.743	3.669	0.005	0.160	0.147
Scrapers	500	0.264	2.052	2.879	0.005	0.112	0.103
Scrapers	750	0.224	1.508	2.475	0.005	0.090	0.083
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161
Signal Boards	50	0.655	4.325	3.880	0.007	0.154	0.154
Signal Boards	120	0.337	3.484	2.668	0.006	0.141	0.141
Signal Boards	175	0.260	3.044	1.801	0.006	0.086	0.086
Signal Boards	250	0.247	1.266	1.782	0.007	0.055	0.055
Skid Steer Loaders	25	0.365	3.656	3.433	0.005	0.103	0.095
Skid Steer Loaders	50	0.365	3.656	3.433	0.005	0.103	0.095
Skid Steer Loaders	120	0.164	3.270	2.189	0.005	0.081	0.075
Surfacing Equipment	50	0.428	3.772	3.911	0.006	0.154	0.142
Surfacing Equipment	120	0.293	3.409	3.250	0.005	0.175	0.161
Surfacing Equipment	175	0.239	2.910	2.701	0.005	0.130	0.120
Surfacing Equipment	250	0.196	1.217	2.667	0.005	0.085	0.078
Surfacing Equipment	500	0.132	1.160	1.557	0.005	0.057	0.053
Surfacing Equipment	750	0.115	0.988	1.355	0.005	0.052	0.048
Sweepers/Scrubbers	15	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	25	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	50	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	120	0.372	3.692	3.472	0.005	0.232	0.214
Sweepers/Scrubbers	175	0.321	3.222	3.002	0.005	0.145	0.133
Sweepers/Scrubbers	250	0.152	1.101	1.605	0.005	0.050	0.046
Tractors/Loaders/Backhoes	25	0.688	4.760	4.030	0.005	0.218	0.200

Tractors/Loaders/Backhoes	50	0.688	4.760	4.030	0.005	0.218	0.200
Tractors/Loaders/Backhoes	120	0.260	3.536	2.647	0.005	0.142	0.131
Tractors/Loaders/Backhoes	175	0.200	3.079	1.753	0.005	0.089	0.082
Tractors/Loaders/Backhoes	250	0.187	1.162	1.943	0.005	0.067	0.062
Tractors/Loaders/Backhoes	500	0.160	1.280	1.437	0.005	0.053	0.049
Tractors/Loaders/Backhoes	750	0.232	1.353	2.453	0.005	0.094	0.087
Trenchers	15	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	25	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	50	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	120	0.529	3.778	4.913	0.005	0.348	0.320
Trenchers	175	0.396	3.313	4.103	0.005	0.212	0.195
Trenchers	250	0.335	1.663	3.853	0.005	0.161	0.148
Trenchers	500	0.212	1.872	2.212	0.005	0.094	0.086
Trenchers	750	0.057	0.945	0.301	0.005	0.009	0.008
Welders	15	0.707	3.519	4.408	0.008	0.203	0.203
Welders	25	0.739	2.426	4.470	0.007	0.193	0.193
Welders	50	0.758	4.645	4.007	0.007	0.175	0.175
Welders	120	0.382	3.570	2.808	0.006	0.160	0.160
Welders	175	0.295	3.113	1.935	0.006	0.097	0.097
Welders	250	0.231	1.074	1.598	0.006	0.050	0.050
Welders	500	0.225	1.038	1.454	0.005	0.049	0.049
Water Trucks	175	0.241	3.284	1.811	0.005	0.088	0.081
Water Trucks	250	0.215	1.279	1.618	0.005	0.064	0.059
Water Trucks	500	0.196	1.247	1.490	0.005	0.054	0.050
Water Trucks	750	0.263	1.746	2.268	0.005	0.088	0.081
Water Trucks	1000	0.234	1.214	3.842	0.005	0.086	0.079

2023

g/hp/hr	g/hp/hr	g/hp/hr
CO2	CH4	N2O
525.074	0.170	0.005
525.074	0.170	0.005
525.074	0.170	0.005
472.114	0.153	0.004
472.055	0.153	0.004
568.299	0.016	0.004
568.299	0.063	0.005
568.299	0.066	0.005
568.299	0.073	0.005
568.299	0.037	0.004
568.299	0.029	0.004
568.300	0.023	0.004
568.299	0.022	0.004
568.299	0.022	0.004
568.300	0.024	0.004
529.870	0.171	0.005
529.870	0.171	0.005
529.870	0.171	0.005
462.267	0.150	0.004
477.372	0.154	0.004
468.760	0.152	0.004
467.192	0.151	0.004
477.141	0.154	0.004
472.921	0.153	0.004

2023		g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX
Aerial Lifts	15	0.163	3.122	2.897
Aerial Lifts	25	0.163	3.122	2.897
Aerial Lifts	50	0.163	3.122	2.897
Aerial Lifts	120	0.101	3.170	1.548
Aerial Lifts	500	0.079	0.961	0.645
Aerial Lifts	750	0.169	0.995	1.265
Air Compressors	15	0.698	3.508	4.359
Air Compressors	25	0.728	2.407	4.447
Air Compressors	50	0.753	4.913	3.975
Air Compressors	120	0.387	3.657	2.631
Air Compressors	175	0.303	3.197	1.748
Air Compressors	250	0.243	1.099	1.420
Air Compressors	500	0.238	1.055	1.305
Air Compressors	750	0.239	1.055	1.331
Air Compressors	1000	0.256	1.102	3.221
Bore/Drill Rigs	15	0.606	4.311	4.208
Bore/Drill Rigs	25	0.606	4.311	4.208
Bore/Drill Rigs	50	0.606	4.311	4.208
Bore/Drill Rigs	120	0.187	3.258	2.357
Bore/Drill Rigs	175	0.125	2.969	1.078
Bore/Drill Rigs	250	0.110	1.043	1.047
Bore/Drill Rigs	500	0.101	0.989	0.898
Bore/Drill Rigs	750	0.091	0.982	0.717
Bore/Drill Rigs	1000	0.053	0.936	2.262

568.299	0.059	0.005
568.299	0.063	0.005
568.299	0.061	0.005
568.300	0.059	0.005
568.299	0.031	0.004
568.300	0.024	0.004
517.872	0.168	0.005
469.993	0.152	0.004
474.589	0.154	0.004
472.983	0.153	0.004
472.181	0.153	0.004
470.476	0.152	0.004
472.055	0.153	0.004
516.148	0.167	0.005
476.022	0.154	0.004
471.567	0.153	0.004
472.098	0.153	0.004
474.412	0.153	0.004
472.876	0.153	0.004
470.701	0.152	0.004
568.299	0.071	0.005
568.299	0.037	0.004
568.299	0.029	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.027	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142
Cement and Mortar Mixers	25	0.697	2.356	4.382
Concrete/Industrial Saws	25	0.685	2.340	4.332
Concrete/Industrial Saws	50	0.606	4.372	3.815
Concrete/Industrial Saws	120	0.320	3.507	2.478
Concrete/Industrial Saws	175	0.250	3.072	1.599
Cranes	50	2.047	7.453	5.923
Cranes	120	0.552	3.944	4.875
Cranes	175	0.423	3.443	4.222
Cranes	250	0.297	1.553	3.229
Cranes	500	0.236	2.010	2.511
Cranes	750	0.195	1.282	2.073
Cranes	9999	0.211	1.023	2.399
Crawler Tractors	50	1.873	7.027	5.325
Crawler Tractors	120	0.558	3.889	4.762
Crawler Tractors	175	0.347	3.235	3.330
Crawler Tractors	250	0.276	1.395	3.187
Crawler Tractors	500	0.241	1.852	2.476
Crawler Tractors	750	0.184	1.159	1.867
Crawler Tractors	1000	0.268	1.610	4.770
Crushing/Proc. Equipment	50	0.739	5.039	3.962
Crushing/Proc. Equipment	120	0.385	3.700	2.552
Crushing/Proc. Equipment	175	0.304	3.240	1.654
Crushing/Proc. Equipment	250	0.248	1.111	1.330
Crushing/Proc. Equipment	500	0.244	1.064	1.227
Crushing/Proc. Equipment	750	0.244	1.065	1.251
Crushing/Proc. Equipment	9999	0.287	1.107	3.160

568.299	0.061	0.005
525.447	0.170	0.005
525.447	0.170	0.005
467.626	0.151	0.004
472.192	0.153	0.004
472.041	0.153	0.004
469.711	0.152	0.004
469.289	0.152	0.004
525.483	0.170	0.005
471.529	0.153	0.004
472.106	0.153	0.004
473.326	0.153	0.004
473.615	0.153	0.004
568.299	0.056	0.005
568.299	0.063	0.005
568.299	0.050	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.018	0.004
493.025	0.160	0.005
469.630	0.152	0.004
478.566	0.155	0.004
474.239	0.153	0.004
471.928	0.153	0.004
568.299	0.026	0.004
475.234	0.154	0.004
472.811	0.153	0.004
471.131	0.152	0.004
471.939	0.153	0.004
472.055	0.153	0.004
470.181	0.152	0.004
469.615	0.152	0.004

Dumpers/Tenders	25	0.685	2.339	4.332
Excavators	25	0.450	4.234	3.594
Excavators	50	0.450	4.234	3.594
Excavators	120	0.230	3.454	2.381
Excavators	175	0.178	3.076	1.462
Excavators	250	0.142	1.090	1.209
Excavators	500	0.122	1.051	0.893
Excavators	750	0.144	1.132	1.159
Forklifts	50	0.766	5.166	4.152
Forklifts	120	0.327	3.647	3.057
Forklifts	175	0.244	3.180	2.112
Forklifts	250	0.204	1.235	1.807
Forklifts	500	0.220	1.216	1.788
Generator Sets	15	0.618	3.508	4.345
Generator Sets	25	0.701	2.407	4.447
Generator Sets	50	0.514	3.819	3.685
Generator Sets	120	0.279	3.347	2.477
Generator Sets	175	0.211	2.927	1.635
Generator Sets	250	0.164	1.006	1.328
Generator Sets	500	0.158	0.986	1.228
Generator Sets	750	0.160	0.986	1.253
Generator Sets	9999	0.194	1.031	3.058
Graders	50	1.947	7.191	5.148
Graders	120	0.719	4.228	5.740
Graders	175	0.390	3.450	3.548
Graders	250	0.284	1.252	3.441
Graders	500	0.309	1.385	2.705
Graders	750	0.276	1.170	1.425
Off-Highway Tractors	120	0.316	3.687	3.095
Off-Highway Tractors	175	0.201	3.143	1.785
Off-Highway Tractors	250	0.171	1.138	1.491
Off-Highway Tractors	750	0.168	1.124	1.289
Off-Highway Tractors	1000	0.180	1.055	2.449
Off-Highway Trucks	175	0.236	3.304	1.683
Off-Highway Trucks	250	0.207	1.273	1.456

474.714	0.154	0.004
473.977	0.153	0.004
472.344	0.153	0.004
529.183	0.171	0.005
529.183	0.171	0.005
529.183	0.171	0.005
472.318	0.153	0.004
469.613	0.152	0.004
475.998	0.154	0.004
526.176	0.170	0.005
526.176	0.170	0.005
526.176	0.170	0.005
470.000	0.152	0.004
471.850	0.153	0.004
473.223	0.153	0.004
472.929	0.153	0.004

Off-Highway Trucks	500	0.187	1.221	1.324
Off-Highway Trucks	750	0.263	1.719	2.182
Off-Highway Trucks	1000	0.214	1.194	3.544
Other Construction Equipment	15	0.866	5.074	4.594
Other Construction Equipment	25	0.866	5.074	4.594
Other Construction Equipment	50	0.866	5.074	4.594
Other Construction Equipment	120	0.406	3.632	3.790
Other Construction Equipment	175	0.274	3.142	2.698
Other Construction Equipment	500	0.180	1.396	1.812
Other General Industrial Equipment	15	0.603	4.883	3.993
Other General Industrial Equipment	25	0.603	4.883	3.993
Other General Industrial Equipment	50	0.603	4.883	3.993
Other General Industrial Equipment	120	0.308	3.647	2.924
Other General Industrial Equipment	175	0.201	3.175	1.609
Other General Industrial Equipment	250	0.181	1.140	1.530
Other General Industrial Equipment	500	0.164	1.121	1.256

473.464	0.153	0.004
472.055	0.153	0.004
523.709	0.169	0.005
473.588	0.153	0.004
472.219	0.153	0.004
471.482	0.153	0.004
470.297	0.152	0.004
472.055	0.153	0.004
526.896	0.170	0.005
526.896	0.170	0.005
470.185	0.152	0.004
472.760	0.153	0.004
472.372	0.153	0.004
466.004	0.151	0.004
520.659	0.168	0.005
520.659	0.168	0.005
473.448	0.153	0.004
470.665	0.152	0.004
472.169	0.153	0.004
568.299	0.059	0.005
568.299	0.056	0.005
568.299	0.063	0.005
568.300	0.035	0.005
568.299	0.021	0.004
568.299	0.019	0.004

Other General Industrial Equipment	750	0.111	1.105	0.626
Other General Industrial Equipment	1000	0.193	1.049	3.956
Other Material Handling Equipment	50	1.011	5.757	4.684
Other Material Handling Equipment	120	0.225	3.515	2.298
Other Material Handling Equipment	175	0.217	3.171	1.769
Other Material Handling Equipment	250	0.207	1.209	2.004
Other Material Handling Equipment	500	0.218	1.344	1.870
Other Material Handling Equipment	9999	0.054	0.939	2.268
Pavers	25	1.007	5.007	4.285
Pavers	50	1.007	5.007	4.285
Pavers	120	0.349	3.507	3.427
Pavers	175	0.199	2.994	1.955
Pavers	250	0.130	1.010	1.611
Pavers	500	0.152	0.987	1.771
Paving Equipment	25	0.541	4.241	3.774
Paving Equipment	50	0.541	4.241	3.774
Paving Equipment	120	0.278	3.503	2.837
Paving Equipment	175	0.204	3.051	1.913
Paving Equipment	250	0.175	1.165	1.885
Plate Compactors	15	0.661	3.469	4.142
Pressure Washers	15	0.618	3.508	4.345
Pressure Washers	25	0.701	2.407	4.447
Pressure Washers	50	0.363	3.260	3.541
Pressure Washers	120	0.222	3.196	2.377
Pressure Washers	175	0.205	2.907	1.665

568.299	0.008	0.004
568.299	0.063	0.005
568.299	0.066	0.005
568.299	0.055	0.005
568.299	0.029	0.004
568.299	0.021	0.004
568.299	0.016	0.004
568.300	0.016	0.004
568.300	0.016	0.004
568.299	0.019	0.004
525.691	0.170	0.005
525.691	0.170	0.005
525.691	0.170	0.005
473.929	0.153	0.004
471.948	0.153	0.004
473.514	0.153	0.004
478.982	0.155	0.004
525.015	0.170	0.005
473.089	0.153	0.004
471.677	0.153	0.004
472.541	0.153	0.004
466.560	0.151	0.004
473.912	0.153	0.004
474.617	0.154	0.004
479.311	0.155	0.004
473.035	0.153	0.004
568.299	0.042	0.004
524.791	0.170	0.005
524.791	0.170	0.005
466.494	0.151	0.004
470.927	0.152	0.004

Pressure Washers	250	0.098	0.986	0.265
Pumps	15	0.698	3.508	4.359
Pumps	25	0.728	2.407	4.447
Pumps	50	0.565	4.007	3.734
Pumps	120	0.299	3.398	2.511
Pumps	175	0.227	2.971	1.662
Pumps	250	0.177	1.021	1.351
Pumps	500	0.171	0.998	1.246
Pumps	750	0.173	0.998	1.271
Pumps	9999	0.207	1.043	3.090
Rollers	15	0.661	4.252	3.921
Rollers	25	0.661	4.252	3.921
Rollers	50	0.661	4.252	3.921
Rollers	120	0.287	3.455	3.003
Rollers	175	0.150	2.909	1.483
Rollers	250	0.188	1.234	2.173
Rollers	500	0.211	1.956	2.290
Rough Terrain Forklifts	50	0.690	4.125	3.853
Rough Terrain Forklifts	120	0.150	3.242	1.984
Rough Terrain Forklifts	175	0.111	2.843	1.218
Rough Terrain Forklifts	250	0.116	0.990	1.474
Rough Terrain Forklifts	500	0.069	0.938	0.558
Rubber Tired Dozers	175	0.588	3.766	5.656
Rubber Tired Dozers	250	0.393	1.783	4.090
Rubber Tired Dozers	500	0.447	3.686	4.408
Rubber Tired Dozers	750	0.423	2.591	5.334
Rubber Tired Dozers	1000	0.453	1.874	4.709
Rubber Tired Loaders	25	1.049	5.972	4.521
Rubber Tired Loaders	50	1.049	5.972	4.521
Rubber Tired Loaders	120	0.412	3.827	3.512
Rubber Tired Loaders	175	0.269	3.292	2.196

469.904	0.152	0.004
468.129	0.151	0.004
463.819	0.150	0.004
472.858	0.153	0.004
483.448	0.156	0.004
478.741	0.155	0.004
469.269	0.152	0.004
473.230	0.153	0.004
471.279	0.152	0.004
568.300	0.059	0.005
568.299	0.059	0.005
568.299	0.030	0.004
568.299	0.023	0.004
686.695	0.022	0.004
527.273	0.171	0.005
527.273	0.171	0.005
472.432	0.153	0.004
535.836	0.173	0.005
473.636	0.153	0.004
469.126	0.152	0.004
476.951	0.154	0.004
470.525	0.152	0.004
470.400	0.152	0.004
525.328	0.170	0.005
525.328	0.170	0.005
525.328	0.170	0.005
474.116	0.153	0.004
473.122	0.153	0.004
470.126	0.152	0.004
514.461	0.166	0.005

Rubber Tired Loaders	250	0.210	1.171	2.060
Rubber Tired Loaders	500	0.217	1.384	1.866
Rubber Tired Loaders	750	0.227	1.323	1.927
Rubber Tired Loaders	1000	0.193	1.174	3.528
Scrapers	120	0.630	4.144	6.026
Scrapers	175	0.361	3.395	3.479
Scrapers	250	0.317	1.678	3.284
Scrapers	500	0.253	1.975	2.666
Scrapers	750	0.222	1.513	2.386
Signal Boards	15	0.661	3.469	4.142
Signal Boards	50	0.603	4.282	3.767
Signal Boards	120	0.315	3.478	2.472
Signal Boards	175	0.244	3.045	1.602
Signal Boards	250	0.235	1.263	1.562
Skid Steer Loaders	25	0.353	3.654	3.371
Skid Steer Loaders	50	0.353	3.654	3.371
Skid Steer Loaders	120	0.153	3.266	2.039
Surfacing Equipment	50	0.437	3.832	3.924
Surfacing Equipment	120	0.270	3.396	3.058
Surfacing Equipment	175	0.224	2.914	2.455
Surfacing Equipment	250	0.192	1.219	2.502
Surfacing Equipment	500	0.132	1.163	1.476
Surfacing Equipment	750	0.100	0.985	1.081
Sweepers/Scrubbers	15	0.759	4.971	4.127
Sweepers/Scrubbers	25	0.759	4.971	4.127
Sweepers/Scrubbers	50	0.759	4.971	4.127
Sweepers/Scrubbers	120	0.351	3.695	3.285
Sweepers/Scrubbers	175	0.292	3.223	2.609
Sweepers/Scrubbers	250	0.159	1.114	1.610
Tractors/Loaders/Backhoes	25	0.621	4.629	3.857

514.461	0.166	0.005
475.898	0.154	0.004
467.800	0.151	0.004
470.124	0.152	0.004
469.256	0.152	0.004
466.633	0.151	0.004
527.026	0.171	0.005
527.026	0.171	0.005
527.026	0.171	0.005
475.326	0.154	0.004
467.734	0.151	0.004
473.851	0.153	0.004
470.585	0.152	0.004
474.289	0.153	0.004
568.300	0.063	0.005
568.299	0.066	0.005
568.299	0.068	0.005
568.299	0.034	0.004
568.300	0.026	0.004
568.299	0.020	0.004
568.300	0.020	0.004
470.181	0.152	0.004
469.615	0.152	0.004
474.714	0.154	0.004
473.977	0.153	0.004
472.344	0.153	0.004

Tractors/Loaders/Backhoes	50	0.621	4.629	3.857
Tractors/Loaders/Backhoes	120	0.239	3.525	2.426
Tractors/Loaders/Backhoes	175	0.184	3.078	1.521
Tractors/Loaders/Backhoes	250	0.169	1.148	1.588
Tractors/Loaders/Backhoes	500	0.152	1.279	1.247
Tractors/Loaders/Backhoes	750	0.234	1.361	2.419
Trenchers	15	0.642	4.302	3.959
Trenchers	25	0.642	4.302	3.959
Trenchers	50	0.642	4.302	3.959
Trenchers	120	0.504	3.768	4.700
Trenchers	175	0.359	3.291	3.657
Trenchers	250	0.328	1.639	3.737
Trenchers	500	0.199	1.723	2.005
Trenchers	750	0.060	0.951	0.303
Welders	15	0.698	3.508	4.359
Welders	25	0.728	2.407	4.447
Welders	50	0.697	4.596	3.891
Welders	120	0.357	3.564	2.599
Welders	175	0.277	3.115	1.726
Welders	250	0.000	1.071	1.404
Welders	500	0.215	1.034	1.289
Water Trucks	175	0.236	3.304	1.683
Water Trucks	250	0.207	1.273	1.456
Water Trucks	500	0.187	1.221	1.324
Water Trucks	750	0.263	1.719	2.182
Water Trucks	1000	0.214	1.194	3.544

2024

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
SOX	PM10	PM2.5	CO2	CH4	N2O
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.027	0.025	472.114	0.153	0.004
0.005	0.009	0.009	472.055	0.153	0.004
0.005	0.038	0.038	568.299	0.015	0.004
0.008	0.194	0.194	568.299	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.156	0.156	568.299	0.067	0.005
0.006	0.143	0.143	568.299	0.034	0.004
0.006	0.089	0.089	568.299	0.027	0.004
0.006	0.045	0.045	568.299	0.021	0.004
0.005	0.044	0.044	568.299	0.021	0.004
0.005	0.044	0.044	568.299	0.021	0.004
0.005	0.068	0.068	568.299	0.023	0.004
0.006	0.226	0.208	531.986	0.172	0.005
0.006	0.226	0.208	531.986	0.172	0.005
0.006	0.226	0.208	531.986	0.172	0.005
0.005	0.102	0.093	461.214	0.149	0.004
0.005	0.048	0.044	479.647	0.155	0.004
0.005	0.034	0.031	469.706	0.152	0.004
0.005	0.030	0.028	464.041	0.150	0.004
0.005	0.026	0.024	479.220	0.155	0.004
0.005	0.018	0.016	472.020	0.153	0.004

2024	
Equipment	**MaxHP**
Aerial Lifts	15
Aerial Lifts	25
Aerial Lifts	50
Aerial Lifts	120
Aerial Lifts	500
Aerial Lifts	750
Air Compressors	15
Air Compressors	25
Air Compressors	50
Air Compressors	120
Air Compressors	175
Air Compressors	250
Air Compressors	500
Air Compressors	750
Air Compressors	1000
Bore/Drill Rigs	15
Bore/Drill Rigs	25
Bore/Drill Rigs	50
Bore/Drill Rigs	120
Bore/Drill Rigs	175
Bore/Drill Rigs	250
Bore/Drill Rigs	500
Bore/Drill Rigs	750
Bore/Drill Rigs	1000

0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.172	0.172	568.299	0.062	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.134	0.134	568.299	0.054	0.005
0.006	0.123	0.123	568.300	0.028	0.004
0.006	0.077	0.077	568.299	0.022	0.004
0.005	0.608	0.559	517.872	0.168	0.005
0.005	0.323	0.297	469.889	0.152	0.004
0.005	0.224	0.206	474.595	0.154	0.004
0.005	0.135	0.124	472.974	0.153	0.004
0.005	0.102	0.093	472.294	0.153	0.004
0.005	0.084	0.077	470.251	0.152	0.004
0.005	0.063	0.058	472.055	0.153	0.004
0.005	0.526	0.484	516.159	0.167	0.005
0.005	0.373	0.343	476.158	0.154	0.004
0.005	0.185	0.170	471.781	0.153	0.004
0.005	0.124	0.114	471.624	0.153	0.004
0.005	0.102	0.094	474.613	0.154	0.004
0.005	0.069	0.064	472.530	0.153	0.004
0.005	0.118	0.109	473.666	0.153	0.004
0.007	0.146	0.146	568.299	0.066	0.005
0.006	0.132	0.132	568.299	0.034	0.004
0.006	0.083	0.083	568.299	0.027	0.004
0.006	0.043	0.043	568.299	0.022	0.004
0.005	0.042	0.042	568.299	0.022	0.004
0.005	0.042	0.042	568.300	0.022	0.004
0.005	0.066	0.066	568.299	0.025	0.004

Cement and Mortar Mixers	15
Cement and Mortar Mixers	25
Concrete/Industrial Saws	25
Concrete/Industrial Saws	50
Concrete/Industrial Saws	120
Concrete/Industrial Saws	175
Cranes	50
Cranes	120
Cranes	175
Cranes	250
Cranes	500
Cranes	750
Cranes	9999
Crawler Tractors	50
Crawler Tractors	120
Crawler Tractors	175
Crawler Tractors	250
Crawler Tractors	500
Crawler Tractors	750
Crawler Tractors	1000
Crushing/Proc. Equipment	50
Crushing/Proc. Equipment	120
Crushing/Proc. Equipment	175
Crushing/Proc. Equipment	250
Crushing/Proc. Equipment	500
Crushing/Proc. Equipment	750
Crushing/Proc. Equipment	9999

0.007	0.162	0.162	568.299	0.061	0.005
0.005	0.139	0.128	525.429	0.170	0.005
0.005	0.139	0.128	525.429	0.170	0.005
0.005	0.116	0.107	467.157	0.151	0.004
0.005	0.072	0.066	472.277	0.153	0.004
0.005	0.039	0.036	472.213	0.153	0.004
0.005	0.030	0.028	469.889	0.152	0.004
0.005	0.043	0.040	468.683	0.152	0.004
0.005	0.232	0.213	525.483	0.170	0.005
0.005	0.189	0.174	471.529	0.153	0.004
0.005	0.111	0.102	472.106	0.153	0.004
0.005	0.069	0.063	473.326	0.153	0.004
0.005	0.069	0.063	473.615	0.153	0.004
0.008	0.186	0.186	568.299	0.055	0.005
0.007	0.182	0.182	568.299	0.063	0.005
0.007	0.124	0.124	568.299	0.046	0.005
0.006	0.117	0.117	568.299	0.025	0.004
0.006	0.071	0.071	568.299	0.019	0.004
0.006	0.038	0.038	568.299	0.014	0.004
0.005	0.037	0.037	568.299	0.014	0.004
0.005	0.037	0.037	568.299	0.014	0.004
0.005	0.058	0.058	568.299	0.017	0.004
0.005	0.549	0.505	494.020	0.160	0.005
0.005	0.436	0.401	469.286	0.152	0.004
0.005	0.195	0.180	478.463	0.155	0.004
0.005	0.112	0.103	473.926	0.153	0.004
0.005	0.105	0.097	471.031	0.152	0.004
0.005	0.051	0.051	568.300	0.024	0.004
0.005	0.187	0.172	476.087	0.154	0.004
0.005	0.085	0.079	472.996	0.153	0.004
0.005	0.053	0.049	470.845	0.152	0.004
0.005	0.051	0.047	471.932	0.153	0.004
0.005	0.067	0.062	472.055	0.153	0.004
0.005	0.081	0.074	470.292	0.152	0.004
0.005	0.059	0.054	469.446	0.152	0.004

Dumpers/Tenders	25
Excavators	25
Excavators	50
Excavators	120
Excavators	175
Excavators	250
Excavators	500
Excavators	750
Forklifts	50
Forklifts	120
Forklifts	175
Forklifts	250
Forklifts	500
Generator Sets	15
Generator Sets	25
Generator Sets	50
Generator Sets	120
Generator Sets	175
Generator Sets	250
Generator Sets	500
Generator Sets	750
Generator Sets	9999
Graders	50
Graders	120
Graders	175
Graders	250
Graders	500
Graders	750
Off-Highway Tractors	120
Off-Highway Tractors	175
Off-Highway Tractors	250
Off-Highway Tractors	750
Off-Highway Tractors	1000
Off-Highway Trucks	175
Off-Highway Trucks	250

0.005	0.048	0.044	475.049	0.154	0.004	Off-Highway Trucks	500
0.005	0.084	0.078	473.767	0.153	0.004	Off-Highway Trucks	750
0.005	0.074	0.068	472.857	0.153	0.004	Off-Highway Trucks	1000
0.006	0.322	0.296	529.339	0.171	0.005	Other Construction Equipment	15
0.006	0.322	0.296	529.339	0.171	0.005	Other Construction Equipment	25
0.006	0.322	0.296	529.339	0.171	0.005	Other Construction Equipment	50
0.005	0.259	0.238	471.990	0.153	0.004	Other Construction Equipment	120
0.005	0.141	0.129	469.558	0.152	0.004	Other Construction Equipment	175
0.005	0.069	0.063	476.185	0.154	0.004	Other Construction Equipment	500
0.005	0.194	0.179	526.176	0.170	0.005	Other General Industrial Equipment	15
0.005	0.194	0.179	526.176	0.170	0.005	Other General Industrial Equipment	25
0.005	0.194	0.179	526.176	0.170	0.005	Other General Industrial Equipment	50
0.005	0.169	0.155	470.000	0.152	0.004	Other General Industrial Equipment	120
0.005	0.080	0.074	471.850	0.153	0.004	Other General Industrial Equipment	175
0.005	0.051	0.047	473.223	0.153	0.004	Other General Industrial Equipment	250
0.005	0.043	0.040	472.929	0.153	0.004	Other General Industrial Equipment	500

0.005	0.023	0.021	473.464	0.153	0.004	Other General Industrial Equipment	750
0.005	0.080	0.073	472.055	0.153	0.004	Other General Industrial Equipment	1000
0.005	0.340	0.313	523.709	0.169	0.005	Other Material Handling Equipment	50
0.005	0.104	0.095	473.588	0.153	0.004	Other Material Handling Equipment	120
0.005	0.096	0.088	472.219	0.153	0.004	Other Material Handling Equipment	175
0.005	0.069	0.064	471.482	0.153	0.004	Other Material Handling Equipment	250
0.005	0.078	0.072	470.297	0.152	0.004	Other Material Handling Equipment	500
0.005	0.018	0.017	472.055	0.153	0.004	Other Material Handling Equipment	9999
0.005	0.299	0.275	526.860	0.170	0.005	Pavers	25
0.005	0.299	0.275	526.860	0.170	0.005	Pavers	50
0.005	0.226	0.208	470.084	0.152	0.004	Pavers	120
0.005	0.092	0.085	472.718	0.153	0.004	Pavers	175
0.005	0.047	0.043	472.605	0.153	0.004	Pavers	250
0.005	0.062	0.057	466.004	0.151	0.004	Pavers	500
0.005	0.173	0.159	521.114	0.169	0.005	Paving Equipment	25
0.005	0.173	0.159	521.114	0.169	0.005	Paving Equipment	50
0.005	0.153	0.140	473.427	0.153	0.004	Paving Equipment	120
0.005	0.093	0.086	470.663	0.152	0.004	Paving Equipment	175
0.005	0.070	0.065	472.169	0.153	0.004	Paving Equipment	250
0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors	15
0.008	0.186	0.186	568.299	0.055	0.005	Pressure Washers	15
0.007	0.182	0.182	568.299	0.063	0.005	Pressure Washers	25
0.007	0.101	0.101	568.299	0.032	0.005	Pressure Washers	50
0.006	0.097	0.097	568.299	0.020	0.004	Pressure Washers	120
0.006	0.072	0.072	568.299	0.018	0.004	Pressure Washers	175

0.006	0.009	0.009	568.299	0.008	0.004
0.008	0.194	0.194	568.299	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.131	0.131	568.299	0.051	0.005
0.006	0.123	0.123	568.299	0.026	0.004
0.006	0.075	0.075	568.299	0.020	0.004
0.006	0.040	0.040	568.299	0.015	0.004
0.005	0.038	0.038	568.300	0.015	0.004
0.005	0.039	0.039	568.299	0.015	0.004
0.005	0.059	0.059	568.299	0.018	0.004
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.165	0.152	473.936	0.153	0.004
0.005	0.068	0.062	471.935	0.153	0.004
0.005	0.076	0.070	473.516	0.153	0.004
0.005	0.093	0.085	478.303	0.155	0.004
0.005	0.204	0.187	524.802	0.170	0.005
0.005	0.064	0.059	473.158	0.153	0.004
0.005	0.044	0.040	471.622	0.153	0.004
0.005	0.034	0.032	472.778	0.153	0.004
0.005	0.009	0.008	466.554	0.151	0.004
0.005	0.316	0.291	473.901	0.153	0.004
0.005	0.184	0.169	474.597	0.154	0.004
0.005	0.202	0.185	479.468	0.155	0.004
0.005	0.196	0.180	473.023	0.153	0.004
0.005	0.131	0.131	568.299	0.040	0.004
0.005	0.304	0.279	524.304	0.170	0.005
0.005	0.304	0.279	524.304	0.170	0.005
0.005	0.239	0.219	466.558	0.151	0.004
0.005	0.118	0.108	470.660	0.152	0.004

Pressure Washers	250
Pumps	15
Pumps	25
Pumps	50
Pumps	120
Pumps	175
Pumps	250
Pumps	500
Pumps	750
Pumps	9999
Rollers	15
Rollers	25
Rollers	50
Rollers	120
Rollers	175
Rollers	250
Rollers	500
Rough Terrain Forklifts	50
Rough Terrain Forklifts	120
Rough Terrain Forklifts	175
Rough Terrain Forklifts	250
Rough Terrain Forklifts	500
Rubber Tired Dozers	175
Rubber Tired Dozers	250
Rubber Tired Dozers	500
Rubber Tired Dozers	750
Rubber Tired Dozers	1000
Rubber Tired Loaders	25
Rubber Tired Loaders	50
Rubber Tired Loaders	120
Rubber Tired Loaders	175

0.005	0.069	0.064	469.824	0.152	0.004
0.005	0.069	0.064	468.466	0.152	0.004
0.005	0.075	0.069	464.555	0.150	0.004
0.005	0.071	0.065	472.303	0.153	0.004
0.005	0.458	0.421	483.030	0.156	0.004
0.005	0.184	0.169	478.681	0.155	0.004
0.005	0.144	0.133	469.560	0.152	0.004
0.005	0.105	0.096	473.177	0.153	0.004
0.005	0.087	0.080	471.295	0.152	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.132	0.132	568.299	0.054	0.005
0.006	0.122	0.122	568.299	0.028	0.004
0.006	0.075	0.075	568.299	0.022	0.004
0.007	0.048	0.048	686.695	0.021	0.004
0.005	0.093	0.086	527.423	0.171	0.005
0.005	0.093	0.086	527.423	0.171	0.005
0.005	0.069	0.063	472.656	0.153	0.004
0.006	0.156	0.143	535.930	0.173	0.005
0.005	0.157	0.144	474.470	0.154	0.004
0.005	0.119	0.110	470.014	0.152	0.004
0.005	0.082	0.075	476.961	0.154	0.004
0.005	0.056	0.051	470.375	0.152	0.004
0.005	0.040	0.037	472.447	0.153	0.004
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.210	0.193	474.116	0.153	0.004
0.005	0.126	0.116	473.122	0.153	0.004
0.005	0.050	0.046	470.126	0.152	0.004
0.005	0.185	0.170	513.796	0.166	0.005

Rubber Tired Loaders	250
Rubber Tired Loaders	500
Rubber Tired Loaders	750
Rubber Tired Loaders	1000
Scrapers	120
Scrapers	175
Scrapers	250
Scrapers	500
Scrapers	750
Signal Boards	15
Signal Boards	50
Signal Boards	120
Signal Boards	175
Signal Boards	250
Skid Steer Loaders	25
Skid Steer Loaders	50
Skid Steer Loaders	120
Surfacing Equipment	50
Surfacing Equipment	120
Surfacing Equipment	175
Surfacing Equipment	250
Surfacing Equipment	500
Surfacing Equipment	750
Sweepers/Scrubbers	15
Sweepers/Scrubbers	25
Sweepers/Scrubbers	50
Sweepers/Scrubbers	120
Sweepers/Scrubbers	175
Sweepers/Scrubbers	250
Tractors/Loaders/Backhoes	25

0.005	0.185	0.170	513.796	0.166	0.005
0.005	0.120	0.110	476.431	0.154	0.004
0.005	0.077	0.070	468.821	0.152	0.004
0.005	0.058	0.053	469.752	0.152	0.004
0.005	0.047	0.043	469.465	0.152	0.004
0.005	0.095	0.087	466.676	0.151	0.004
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.326	0.300	475.690	0.154	0.004
0.005	0.186	0.171	467.733	0.151	0.004
0.005	0.155	0.143	473.849	0.153	0.004
0.005	0.085	0.078	471.613	0.153	0.004
0.005	0.009	0.008	474.471	0.154	0.004
0.008	0.194	0.194	568.300	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.151	0.151	568.299	0.062	0.005
0.006	0.139	0.139	568.299	0.032	0.004
0.006	0.085	0.085	568.299	0.025	0.004
0.006	0.044	0.044	568.299	0.019	0.004
0.005	0.042	0.042	568.299	0.019	0.004
0.005	0.081	0.074	470.292	0.152	0.004
0.005	0.059	0.054	469.446	0.152	0.004
0.005	0.048	0.044	475.049	0.154	0.004
0.005	0.084	0.078	473.767	0.153	0.004
0.005	0.074	0.068	472.857	0.153	0.004

Tractors/Loaders/Backhoes	50
Tractors/Loaders/Backhoes	120
Tractors/Loaders/Backhoes	175
Tractors/Loaders/Backhoes	250
Tractors/Loaders/Backhoes	500
Tractors/Loaders/Backhoes	750
Trenchers	15
Trenchers	25
Trenchers	50
Trenchers	120
Trenchers	175
Trenchers	250
Trenchers	500
Trenchers	750
Welders	15
Welders	25
Welders	50
Welders	120
Welders	175
Welders	250
Welders	500
Water Trucks	175
Water Trucks	250
Water Trucks	500
Water Trucks	750
Water Trucks	1000

2025

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.101	3.173	1.528	0.005	0.027	0.024	472.114	0.153	0.004
0.082	0.966	0.647	0.005	0.009	0.009	472.055	0.153	0.004
0.161	0.991	1.115	0.005	0.033	0.033	568.299	0.014	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.300	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.300	0.064	0.005
0.702	4.880	3.864	0.007	0.135	0.135	568.299	0.063	0.005
0.365	3.655	2.461	0.006	0.123	0.123	568.299	0.032	0.004
0.286	3.202	1.561	0.006	0.077	0.077	568.299	0.025	0.004
0.232	1.096	1.247	0.006	0.039	0.039	568.299	0.020	0.004
0.228	1.053	1.148	0.005	0.038	0.038	568.299	0.020	0.004
0.228	1.053	1.171	0.005	0.038	0.038	568.299	0.020	0.004
0.243	1.090	3.082	0.005	0.061	0.061	568.299	0.021	0.004
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.177	3.251	2.216	0.005	0.090	0.083	461.208	0.149	0.004
0.125	2.978	1.029	0.005	0.046	0.043	478.944	0.155	0.004
0.108	1.046	0.975	0.005	0.032	0.030	470.712	0.152	0.004
0.103	0.994	0.861	0.005	0.029	0.027	464.480	0.150	0.004
0.089	0.985	0.671	0.005	0.026	0.024	480.225	0.155	0.004
0.057	0.943	2.273	0.005	0.018	0.017	471.926	0.153	0.004

0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.693	2.349	4.369	0.007	0.170	0.170	568.299	0.062	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.561	4.330	3.701	0.007	0.115	0.115	568.300	0.050	0.005
0.300	3.500	2.315	0.006	0.106	0.106	568.299	0.027	0.004
0.235	3.072	1.418	0.006	0.067	0.067	568.299	0.021	0.004
1.937	7.269	5.788	0.005	0.577	0.531	517.872	0.168	0.005
0.524	3.906	4.619	0.005	0.301	0.277	469.903	0.152	0.004
0.381	3.389	3.703	0.005	0.196	0.181	474.636	0.154	0.004
0.281	1.502	2.966	0.005	0.123	0.114	472.964	0.153	0.004
0.231	1.933	2.383	0.005	0.096	0.089	472.066	0.153	0.004
0.191	1.283	1.900	0.005	0.080	0.073	470.331	0.152	0.004
0.220	1.031	2.411	0.005	0.064	0.059	472.055	0.153	0.004
1.756	6.685	4.975	0.005	0.466	0.429	515.466	0.167	0.005
0.513	3.852	4.409	0.005	0.335	0.309	476.234	0.154	0.004
0.326	3.227	3.041	0.005	0.170	0.157	471.829	0.153	0.004
0.264	1.370	2.953	0.005	0.115	0.106	471.860	0.153	0.004
0.228	1.780	2.244	0.005	0.093	0.085	474.025	0.153	0.004
0.181	1.159	1.767	0.005	0.066	0.061	472.283	0.153	0.004
0.263	1.588	4.689	0.005	0.115	0.106	474.645	0.154	0.004
0.694	5.008	3.850	0.007	0.125	0.125	568.299	0.062	0.005
0.364	3.697	2.389	0.006	0.112	0.112	568.299	0.032	0.004
0.287	3.243	1.472	0.006	0.071	0.071	568.299	0.025	0.004
0.236	1.109	1.165	0.006	0.036	0.036	568.299	0.021	0.004
0.232	1.062	1.077	0.005	0.035	0.035	568.299	0.021	0.004
0.233	1.063	1.098	0.005	0.036	0.036	568.299	0.021	0.004
0.274	1.096	3.029	0.005	0.059	0.059	568.299	0.024	0.004

0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.417	4.205	3.508	0.005	0.120	0.110	525.979	0.170	0.005
0.417	4.205	3.508	0.005	0.120	0.110	525.979	0.170	0.005
0.217	3.453	2.248	0.005	0.102	0.094	467.384	0.151	0.004
0.170	3.083	1.325	0.005	0.065	0.060	472.428	0.153	0.004
0.139	1.090	1.108	0.005	0.036	0.033	472.442	0.153	0.004
0.121	1.054	0.831	0.005	0.029	0.026	469.711	0.152	0.004
0.142	1.134	1.105	0.005	0.041	0.037	468.652	0.152	0.004
0.692	5.089	4.039	0.005	0.203	0.187	525.483	0.170	0.005
0.300	3.629	2.814	0.005	0.163	0.150	471.529	0.153	0.004
0.224	3.174	1.861	0.005	0.096	0.088	472.106	0.153	0.004
0.196	1.218	1.625	0.005	0.061	0.057	473.326	0.153	0.004
0.218	1.219	1.723	0.005	0.065	0.060	473.615	0.153	0.004
0.612	3.499	4.305	0.008	0.181	0.181	568.299	0.055	0.005
0.697	2.390	4.426	0.007	0.178	0.178	568.299	0.062	0.005
0.475	3.787	3.582	0.007	0.107	0.107	568.299	0.042	0.005
0.260	3.342	2.321	0.006	0.101	0.101	568.299	0.023	0.004
0.197	2.929	1.462	0.006	0.062	0.062	568.299	0.017	0.004
0.155	1.003	1.169	0.006	0.033	0.033	568.299	0.014	0.004
0.151	0.983	1.082	0.005	0.032	0.032	568.300	0.013	0.004
0.152	0.983	1.104	0.005	0.032	0.032	568.299	0.013	0.004
0.183	1.018	2.929	0.005	0.052	0.052	568.300	0.016	0.004
1.850	7.051	5.028	0.005	0.520	0.479	493.791	0.160	0.005
0.683	4.200	5.434	0.005	0.408	0.375	469.821	0.152	0.004
0.364	3.432	3.202	0.005	0.177	0.163	478.497	0.155	0.004
0.262	1.225	3.073	0.005	0.100	0.092	473.669	0.153	0.004
0.293	1.356	2.432	0.005	0.095	0.088	470.266	0.152	0.004
0.264	1.155	1.265	0.005	0.046	0.046	568.300	0.023	0.004
0.302	3.691	2.949	0.005	0.171	0.157	476.371	0.154	0.004
0.183	3.133	1.496	0.005	0.072	0.066	473.097	0.153	0.004
0.169	1.135	1.377	0.005	0.049	0.045	470.689	0.152	0.004
0.169	1.130	1.235	0.005	0.048	0.044	471.925	0.153	0.004
0.189	1.066	2.466	0.005	0.068	0.063	472.055	0.153	0.004
0.224	3.325	1.494	0.005	0.070	0.064	470.264	0.152	0.004
0.202	1.259	1.355	0.005	0.054	0.050	469.113	0.152	0.004

0.185	1.206	1.235	0.005	0.045	0.041	475.220	0.154	0.004
0.259	1.650	2.085	0.005	0.079	0.073	473.839	0.153	0.004
0.209	1.200	3.439	0.005	0.069	0.064	473.097	0.153	0.004
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.382	3.620	3.582	0.005	0.237	0.218	472.125	0.153	0.004
0.261	3.150	2.520	0.005	0.130	0.120	469.545	0.152	0.004
0.175	1.382	1.677	0.005	0.064	0.059	476.484	0.154	0.004
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.287	3.639	2.708	0.005	0.146	0.134	470.000	0.152	0.004
0.191	3.185	1.448	0.005	0.073	0.067	471.850	0.153	0.004
0.173	1.141	1.319	0.005	0.046	0.042	473.223	0.153	0.004
0.158	1.110	1.153	0.005	0.040	0.036	472.929	0.153	0.004

0.115	1.112	0.628	0.005	0.023	0.021	473.464	0.153	0.004
0.198	1.058	3.971	0.005	0.080	0.074	472.055	0.153	0.004
0.943	5.669	4.579	0.005	0.314	0.289	523.709	0.169	0.005
0.220	3.510	2.222	0.005	0.096	0.089	473.588	0.153	0.004
0.208	3.181	1.639	0.005	0.088	0.081	472.219	0.153	0.004
0.210	1.218	1.986	0.005	0.068	0.063	471.482	0.153	0.004
0.212	1.262	1.756	0.005	0.072	0.066	470.297	0.152	0.004
0.058	0.946	2.278	0.005	0.018	0.017	472.055	0.153	0.004
0.950	4.956	4.203	0.005	0.279	0.257	526.857	0.170	0.005
0.950	4.956	4.203	0.005	0.279	0.257	526.857	0.170	0.005
0.337	3.508	3.277	0.005	0.213	0.196	470.226	0.152	0.004
0.191	3.004	1.809	0.005	0.085	0.078	472.661	0.153	0.004
0.119	1.009	1.343	0.005	0.041	0.038	473.236	0.153	0.004
0.143	0.986	1.548	0.005	0.054	0.049	467.171	0.151	0.004
0.523	4.275	3.743	0.005	0.164	0.151	521.058	0.169	0.005
0.523	4.275	3.743	0.005	0.164	0.151	521.058	0.169	0.005
0.262	3.503	2.673	0.005	0.135	0.125	473.175	0.153	0.004
0.197	3.066	1.785	0.005	0.086	0.079	470.661	0.152	0.004
0.138	1.114	1.296	0.005	0.048	0.044	472.212	0.153	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.612	3.499	4.305	0.008	0.181	0.181	568.299	0.055	0.005
0.697	2.390	4.426	0.007	0.178	0.178	568.299	0.062	0.005
0.333	3.233	3.441	0.007	0.087	0.087	568.299	0.030	0.005
0.204	3.191	2.229	0.006	0.084	0.084	568.299	0.018	0.004
0.191	2.907	1.482	0.006	0.062	0.062	568.299	0.017	0.004

0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.299	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.299	0.064	0.005
0.523	3.974	3.630	0.007	0.114	0.114	568.299	0.047	0.005
0.279	3.393	2.352	0.006	0.107	0.107	568.299	0.025	0.004
0.213	2.973	1.486	0.006	0.065	0.065	568.299	0.019	0.004
0.168	1.018	1.189	0.006	0.034	0.034	568.300	0.015	0.004
0.164	0.994	1.098	0.005	0.033	0.033	568.299	0.014	0.004
0.164	0.994	1.120	0.005	0.034	0.034	568.299	0.014	0.004
0.196	1.031	2.960	0.005	0.054	0.054	568.299	0.017	0.004
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.272	3.451	2.843	0.005	0.151	0.138	474.007	0.153	0.004
0.141	2.914	1.324	0.005	0.061	0.056	472.012	0.153	0.004
0.179	1.214	1.977	0.005	0.070	0.064	473.512	0.153	0.004
0.210	1.961	2.216	0.005	0.090	0.083	477.900	0.155	0.004
0.570	3.918	3.653	0.005	0.166	0.152	524.924	0.170	0.005
0.145	3.245	1.914	0.005	0.058	0.054	473.063	0.153	0.004
0.103	2.834	1.044	0.005	0.039	0.036	471.535	0.153	0.004
0.119	0.995	1.480	0.005	0.035	0.032	472.853	0.153	0.004
0.066	0.937	0.476	0.005	0.009	0.008	466.548	0.151	0.004
0.532	3.696	5.014	0.005	0.279	0.257	473.515	0.153	0.004
0.399	1.797	4.090	0.005	0.184	0.170	474.585	0.154	0.004
0.417	3.457	4.030	0.005	0.182	0.168	479.394	0.155	0.004
0.425	2.596	5.334	0.005	0.196	0.180	473.011	0.153	0.004
0.433	1.796	4.532	0.005	0.123	0.123	568.299	0.039	0.004
1.009	5.987	4.468	0.005	0.286	0.263	524.230	0.170	0.005
1.009	5.987	4.468	0.005	0.286	0.263	524.230	0.170	0.005
0.397	3.832	3.339	0.005	0.221	0.203	466.808	0.151	0.004
0.246	3.288	1.884	0.005	0.101	0.092	470.357	0.152	0.004

0.197	1.161	1.806	0.005	0.060	0.056	469.788	0.152	0.004
0.209	1.352	1.702	0.005	0.063	0.058	468.513	0.152	0.004
0.226	1.333	1.881	0.005	0.072	0.066	464.866	0.150	0.004
0.201	1.191	3.544	0.005	0.071	0.066	472.345	0.153	0.004
0.575	4.095	5.632	0.005	0.414	0.381	482.701	0.156	0.004
0.336	3.372	3.156	0.005	0.167	0.153	478.809	0.155	0.004
0.301	1.627	3.014	0.005	0.133	0.123	469.352	0.152	0.004
0.245	1.921	2.477	0.005	0.098	0.090	472.846	0.153	0.004
0.213	1.461	2.187	0.005	0.081	0.074	471.429	0.153	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.559	4.247	3.662	0.007	0.114	0.114	568.299	0.050	0.005
0.296	3.474	2.315	0.006	0.105	0.105	568.299	0.026	0.004
0.229	3.047	1.427	0.006	0.065	0.065	568.299	0.020	0.004
0.224	1.259	1.370	0.007	0.041	0.041	686.695	0.020	0.004
0.350	3.671	3.346	0.005	0.089	0.082	527.801	0.171	0.005
0.350	3.671	3.346	0.005	0.089	0.082	527.801	0.171	0.005
0.147	3.264	1.948	0.005	0.063	0.058	472.847	0.153	0.004
0.333	3.662	3.721	0.006	0.116	0.107	536.030	0.173	0.005
0.251	3.389	2.883	0.005	0.142	0.131	475.381	0.154	0.004
0.228	2.930	2.464	0.005	0.120	0.111	470.077	0.152	0.004
0.176	1.183	2.236	0.005	0.071	0.065	477.096	0.154	0.004
0.134	1.168	1.478	0.005	0.056	0.051	470.252	0.152	0.004
0.094	0.985	0.947	0.005	0.035	0.032	472.983	0.153	0.004
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.332	3.693	3.098	0.005	0.189	0.173	474.116	0.153	0.004
0.266	3.234	2.253	0.005	0.107	0.099	473.122	0.153	0.004
0.164	1.127	1.614	0.005	0.051	0.047	470.126	0.152	0.004
0.590	4.609	3.768	0.005	0.166	0.153	513.852	0.166	0.005

0.590	4.609	3.768	0.005	0.166	0.153	513.852	0.166	0.005
0.227	3.532	2.288	0.005	0.105	0.097	476.731	0.154	0.004
0.176	3.089	1.376	0.005	0.069	0.063	469.403	0.152	0.004
0.168	1.151	1.491	0.005	0.055	0.050	469.914	0.152	0.004
0.150	1.277	1.163	0.005	0.044	0.041	470.084	0.152	0.004
0.221	1.311	2.215	0.005	0.085	0.079	466.638	0.151	0.004
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.494	3.769	4.593	0.005	0.318	0.292	475.632	0.154	0.004
0.364	3.311	3.667	0.005	0.187	0.172	467.733	0.151	0.004
0.312	1.598	3.483	0.005	0.146	0.134	473.846	0.153	0.004
0.192	1.668	1.859	0.005	0.080	0.074	469.994	0.152	0.004
0.064	0.958	0.304	0.005	0.009	0.008	474.478	0.154	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.299	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.299	0.064	0.005
0.646	4.557	3.782	0.007	0.130	0.130	568.299	0.058	0.005
0.336	3.560	2.430	0.006	0.120	0.120	568.299	0.030	0.004
0.261	3.118	1.541	0.006	0.074	0.074	568.299	0.023	0.004
0.210	1.068	1.234	0.006	0.038	0.038	568.299	0.018	0.004
0.206	1.032	1.135	0.005	0.037	0.037	568.299	0.018	0.004
0.224	3.325	1.494	0.005	0.070	0.064	470.264	0.152	0.004
0.202	1.259	1.355	0.005	0.054	0.050	469.113	0.152	0.004
0.185	1.206	1.235	0.005	0.045	0.041	475.220	0.154	0.004
0.259	1.650	2.085	0.005	0.079	0.073	473.839	0.153	0.004
0.209	1.200	3.439	0.005	0.069	0.064	473.097	0.153	0.004

2025		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026	0.024	472.114
Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009	0.009	472.055
Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028	0.028	568.299
Air Compressors	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300
Air Compressors	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Air Compressors	50	0.659	4.851	3.755	0.007	0.116	0.116	568.299
Air Compressors	120	0.345	3.653	2.313	0.006	0.104	0.104	568.299
Air Compressors	175	0.269	3.205	1.383	0.006	0.065	0.065	568.299
Air Compressors	250	0.220	1.094	1.086	0.006	0.033	0.033	568.299
Air Compressors	500	0.217	1.051	1.001	0.005	0.032	0.032	568.299
Air Compressors	750	0.217	1.051	1.021	0.005	0.032	0.032	568.299
Air Compressors	1000	0.231	1.079	2.954	0.005	0.055	0.055	568.299
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067	0.062	459.829
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039	0.036	478.266
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031	0.029	470.654
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028	0.026	467.289
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023	0.021	481.250
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019	0.017	471.917

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168	0.168	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099	0.099	568.299
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089	0.089	568.300
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056	0.056	568.300
Cranes	50	1.811	7.072	5.636	0.005	0.543	0.499	517.872
Cranes	120	0.463	3.831	4.135	0.005	0.260	0.240	469.533
Cranes	175	0.334	3.335	3.160	0.005	0.166	0.153	474.748
Cranes	250	0.265	1.470	2.681	0.005	0.114	0.105	472.980
Cranes	500	0.218	1.834	2.154	0.005	0.088	0.081	471.967
Cranes	750	0.172	1.274	1.638	0.005	0.068	0.062	470.276
Cranes	9999	0.229	1.038	2.422	0.005	0.065	0.060	472.055
Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456	0.420	516.128
Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285	0.262	476.134
Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150	0.138	471.592
Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096	0.088	471.622
Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081	0.074	474.007
Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057	0.052	472.408
Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112	0.103	475.490
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107	0.107	568.299
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095	0.095	568.299
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060	0.060	568.299
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031	0.031	568.299
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030	0.030	568.299
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030	0.030	568.299
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053	0.053	568.299

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	25	0.403	4.219	3.453	0.005	0.107	0.099	525.777
Excavators	50	0.403	4.219	3.453	0.005	0.107	0.099	525.777
Excavators	120	0.201	3.439	2.082	0.005	0.085	0.078	466.738
Excavators	175	0.158	3.078	1.154	0.005	0.057	0.052	472.496
Excavators	250	0.131	1.081	0.962	0.005	0.032	0.029	472.560
Excavators	500	0.115	1.051	0.726	0.005	0.026	0.024	470.292
Excavators	750	0.139	1.135	1.026	0.005	0.038	0.035	468.558
Forklifts	50	0.636	5.029	3.932	0.005	0.178	0.164	525.483
Forklifts	120	0.277	3.611	2.607	0.005	0.140	0.128	471.529
Forklifts	175	0.209	3.170	1.653	0.005	0.084	0.078	472.106
Forklifts	250	0.191	1.214	1.466	0.005	0.056	0.052	473.326
Forklifts	500	0.215	1.222	1.658	0.005	0.062	0.057	473.615
Generator Sets	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299
Generator Sets	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299
Generator Sets	50	0.440	3.758	3.481	0.007	0.093	0.093	568.300
Generator Sets	120	0.243	3.338	2.185	0.006	0.087	0.087	568.299
Generator Sets	175	0.184	2.930	1.297	0.006	0.053	0.053	568.299
Generator Sets	250	0.147	1.000	1.020	0.006	0.028	0.028	568.299
Generator Sets	500	0.144	0.981	0.945	0.005	0.027	0.027	568.300
Generator Sets	750	0.145	0.981	0.964	0.005	0.027	0.027	568.299
Generator Sets	9999	0.173	1.008	2.812	0.005	0.047	0.047	568.299
Graders	50	1.864	7.125	5.043	0.005	0.522	0.480	493.532
Graders	120	0.638	4.149	5.074	0.005	0.371	0.342	468.316
Graders	175	0.329	3.418	2.774	0.005	0.152	0.140	478.508
Graders	250	0.230	1.179	2.556	0.005	0.082	0.076	473.470
Graders	500	0.280	1.315	2.265	0.005	0.088	0.081	470.753
Graders	750	0.253	1.141	1.125	0.005	0.041	0.041	568.300
Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144	0.132	476.921
Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065	0.060	473.302
Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040	0.037	470.861
Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045	0.041	471.917
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070	0.064	472.055
Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004
Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126

Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970
Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314
Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369
Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203	0.187	472.748
Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112	0.103	469.843
Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059	0.055	476.296
Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118	0.109	470.000
Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070	0.065	471.850
Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036	0.033	473.223
Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035	0.033	472.929

Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023	0.021	473.464
Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081	0.074	472.055
Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239	0.219	523.709
Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081	0.074	473.588
Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072	0.067	472.219
Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060	0.055	471.482
Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067	0.061	470.297
Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019	0.017	472.055
Pavers	25	0.918	4.945	4.131	0.005	0.265	0.243	526.853
Pavers	50	0.918	4.945	4.131	0.005	0.265	0.243	526.853
Pavers	120	0.314	3.493	3.068	0.005	0.191	0.175	469.899
Pavers	175	0.181	3.007	1.644	0.005	0.077	0.071	472.485
Pavers	250	0.107	1.004	1.035	0.005	0.034	0.031	473.483
Pavers	500	0.115	0.969	1.134	0.005	0.039	0.036	465.882
Paving Equipment	25	0.476	4.203	3.627	0.005	0.142	0.130	520.998
Paving Equipment	50	0.476	4.203	3.627	0.005	0.142	0.130	520.998
Paving Equipment	120	0.242	3.483	2.496	0.005	0.118	0.108	473.424
Paving Equipment	175	0.175	3.038	1.509	0.005	0.075	0.069	470.484
Paving Equipment	250	0.133	1.117	1.110	0.005	0.043	0.040	472.234
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299
Pressure Washers	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299
Pressure Washers	50	0.306	3.210	3.344	0.007	0.075	0.075	568.299
Pressure Washers	120	0.189	3.186	2.100	0.006	0.072	0.072	568.299
Pressure Washers	175	0.178	2.907	1.310	0.006	0.053	0.053	568.299

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299
Pumps	15	0.683	3.491	4.278	0.008	0.183	0.183	568.299
Pumps	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Pumps	50	0.485	3.943	3.528	0.007	0.099	0.099	568.299
Pumps	120	0.261	3.389	2.213	0.006	0.092	0.092	568.299
Pumps	175	0.199	2.974	1.318	0.006	0.056	0.056	568.300
Pumps	250	0.159	1.016	1.038	0.006	0.029	0.029	568.299
Pumps	500	0.156	0.992	0.958	0.005	0.028	0.028	568.300
Pumps	750	0.157	0.992	0.977	0.005	0.029	0.029	568.300
Pumps	9999	0.186	1.020	2.840	0.005	0.049	0.049	568.299
Rollers	15	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	25	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	50	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	120	0.255	3.444	2.691	0.005	0.135	0.125	473.851
Rollers	175	0.127	2.909	1.101	0.005	0.049	0.046	471.970
Rollers	250	0.173	1.215	1.783	0.005	0.066	0.060	473.681
Rollers	500	0.212	1.968	2.200	0.005	0.091	0.083	477.573
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128	0.118	525.027
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051	0.047	473.037
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030	0.028	471.475
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035	0.033	472.927
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009	0.008	466.541
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231	0.212	474.103
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167	0.153	474.573
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151	0.139	479.092
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196	0.181	472.998
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115	0.115	568.299
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259	0.238	523.908
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259	0.238	523.908
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179	0.165	466.898
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084	0.077	470.459

Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048	0.045	469.871
Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053	0.048	469.143
Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064	0.059	465.052
Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052	0.048	472.456
Scrapers	120	0.566	4.094	5.503	0.005	0.405	0.372	482.363
Scrapers	175	0.290	3.321	2.631	0.005	0.137	0.126	478.948
Scrapers	250	0.291	1.602	2.803	0.005	0.125	0.115	469.446
Scrapers	500	0.216	1.732	2.051	0.005	0.081	0.074	472.539
Scrapers	750	0.184	1.338	1.713	0.005	0.064	0.059	472.115
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	0.522	4.217	3.561	0.007	0.098	0.098	568.299
Signal Boards	120	0.278	3.470	2.179	0.006	0.089	0.089	568.299
Signal Boards	175	0.215	3.049	1.262	0.006	0.055	0.055	568.299
Signal Boards	250	0.213	1.257	1.192	0.007	0.035	0.035	686.695
Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084	0.077	527.861
Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084	0.077	527.861
Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057	0.052	472.630
Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082	0.075	536.140
Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124	0.114	476.766
Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094	0.087	471.040
Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055	0.051	477.110
Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051	0.047	470.283
Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027	0.025	470.551
Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160	0.147	474.116
Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072	0.066	473.122
Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051	0.047	470.126
Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145	0.133	513.803

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145	0.133	513.803
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086	0.079	477.188
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059	0.054	469.329
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047	0.044	470.598
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039	0.036	470.910
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067	0.062	466.452
Trenchers	15	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	25	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	50	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	120	0.457	3.734	4.279	0.005	0.285	0.262	475.901
Trenchers	175	0.358	3.309	3.549	0.005	0.179	0.165	467.732
Trenchers	250	0.307	1.601	3.315	0.005	0.144	0.133	473.917
Trenchers	500	0.191	1.676	1.826	0.005	0.079	0.072	470.439
Trenchers	750	0.067	0.962	0.305	0.005	0.009	0.009	474.486
Welders	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300
Welders	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Welders	50	0.602	4.524	3.676	0.007	0.112	0.112	568.299
Welders	120	0.316	3.557	2.283	0.006	0.102	0.102	568.299
Welders	175	0.245	3.121	1.365	0.006	0.063	0.063	568.299
Welders	250	0.199	1.065	1.075	0.006	0.032	0.032	568.299
Welders	500	0.196	1.029	0.990	0.005	0.031	0.031	568.299
Water Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004
Water Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126
Water Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970
Water Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369

2026

g/hp/hr	g/hp/hr
CH4	N2O
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.013	0.004
0.061	0.005
0.064	0.005
0.059	0.005
0.031	0.004
0.024	0.004
0.019	0.004
0.019	0.004
0.019	0.004
0.020	0.004
0.172	0.005
0.172	0.005
0.172	0.005
0.149	0.004
0.155	0.004
0.152	0.004
0.151	0.004
0.156	0.004
0.153	0.004

2026		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.154	3.088	2.879	0.005
Aerial Lifts	25	0.154	3.088	2.879	0.005
Aerial Lifts	50	0.154	3.088	2.879	0.005
Aerial Lifts	120	0.099	3.167	1.511	0.005
Aerial Lifts	500	0.085	0.970	0.649	0.005
Aerial Lifts	750	0.153	0.989	0.974	0.005
Air Compressors	15	0.683	3.491	4.278	0.008
Air Compressors	25	0.709	2.376	4.407	0.007
Air Compressors	50	0.659	4.851	3.755	0.007
Air Compressors	120	0.345	3.653	2.313	0.006
Air Compressors	175	0.269	3.205	1.383	0.006
Air Compressors	250	0.220	1.094	1.086	0.006
Air Compressors	500	0.217	1.051	1.001	0.005
Air Compressors	750	0.217	1.051	1.021	0.005
Air Compressors	1000	0.231	1.079	2.954	0.005
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005

0.059	0.005
0.062	0.005
0.061	0.005
0.047	0.005
0.025	0.004
0.019	0.004
0.168	0.005
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.167	0.005
0.154	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.154	0.004
0.059	0.005
0.031	0.004
0.024	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.023	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006
Cranes	50	1.811	7.072	5.636	0.005
Cranes	120	0.463	3.831	4.135	0.005
Cranes	175	0.334	3.335	3.160	0.005
Cranes	250	0.265	1.470	2.681	0.005
Cranes	500	0.218	1.834	2.154	0.005
Cranes	750	0.172	1.274	1.638	0.005
Cranes	9999	0.229	1.038	2.422	0.005
Crawler Tractors	50	1.744	6.686	4.936	0.005
Crawler Tractors	120	0.454	3.788	3.961	0.005
Crawler Tractors	175	0.298	3.209	2.688	0.005
Crawler Tractors	250	0.232	1.308	2.462	0.005
Crawler Tractors	500	0.208	1.717	1.920	0.005
Crawler Tractors	750	0.167	1.122	1.545	0.005
Crawler Tractors	1000	0.260	1.593	4.598	0.005
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005

					0.061	0.005
					0.170	0.005
					0.170	0.005
					0.151	0.004
					0.153	0.004
					0.153	0.004
					0.152	0.004
					0.152	0.004
					0.170	0.005
					0.153	0.004
					0.153	0.004
					0.153	0.004
					0.153	0.004
					0.054	0.005
					0.062	0.005
					0.039	0.005
					0.021	0.004
					0.016	0.004
					0.013	0.004
					0.013	0.004
					0.013	0.004
					0.015	0.004
					0.160	0.005
					0.152	0.004
					0.155	0.004
					0.153	0.004
					0.152	0.004
					0.022	0.004
					0.154	0.004
					0.153	0.004
					0.152	0.004
					0.153	0.004
					0.153	0.004
					0.152	0.004
					0.152	0.004

Dumpers/Tenders	25	0.685	2.339	4.332	0.007
Excavators	25	0.403	4.219	3.453	0.005
Excavators	50	0.403	4.219	3.453	0.005
Excavators	120	0.201	3.439	2.082	0.005
Excavators	175	0.158	3.078	1.154	0.005
Excavators	250	0.131	1.081	0.962	0.005
Excavators	500	0.115	1.051	0.726	0.005
Excavators	750	0.139	1.135	1.026	0.005
Forklifts	50	0.636	5.029	3.932	0.005
Forklifts	120	0.277	3.611	2.607	0.005
Forklifts	175	0.209	3.170	1.653	0.005
Forklifts	250	0.191	1.214	1.466	0.005
Forklifts	500	0.215	1.222	1.658	0.005
Generator Sets	15	0.607	3.491	4.269	0.008
Generator Sets	25	0.694	2.376	4.407	0.007
Generator Sets	50	0.440	3.758	3.481	0.007
Generator Sets	120	0.243	3.338	2.185	0.006
Generator Sets	175	0.184	2.930	1.297	0.006
Generator Sets	250	0.147	1.000	1.020	0.006
Generator Sets	500	0.144	0.981	0.945	0.005
Generator Sets	750	0.145	0.981	0.964	0.005
Generator Sets	9999	0.173	1.008	2.812	0.005
Graders	50	1.864	7.125	5.043	0.005
Graders	120	0.638	4.149	5.074	0.005
Graders	175	0.329	3.418	2.774	0.005
Graders	250	0.230	1.179	2.556	0.005
Graders	500	0.280	1.315	2.265	0.005
Graders	750	0.253	1.141	1.125	0.005
Off-Highway Tractors	120	0.276	3.669	2.707	0.005
Off-Highway Tractors	175	0.175	3.142	1.349	0.005
Off-Highway Tractors	250	0.155	1.130	1.116	0.005
Off-Highway Tractors	750	0.167	1.135	1.118	0.005
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005
Off-Highway Trucks	175	0.214	3.328	1.335	0.005
Off-Highway Trucks	250	0.185	1.213	1.129	0.005

0.154	0.004
0.154	0.004
0.153	0.004
0.171	0.005
0.171	0.005
0.171	0.005
0.153	0.004
0.152	0.004
0.154	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.152	0.004
0.153	0.004
0.153	0.004
0.153	0.004

Off-Highway Trucks	500	0.177	1.182	1.064	0.005
Off-Highway Trucks	750	0.235	1.578	1.751	0.005
Off-Highway Trucks	1000	0.187	1.146	3.135	0.005
Other Construction Equipment	15	0.757	4.874	4.306	0.006
Other Construction Equipment	25	0.757	4.874	4.306	0.006
Other Construction Equipment	50	0.757	4.874	4.306	0.006
Other Construction Equipment	120	0.341	3.584	3.252	0.005
Other Construction Equipment	175	0.235	3.136	2.167	0.005
Other Construction Equipment	500	0.168	1.358	1.552	0.005
Other General Industrial Equipment	15	0.492	4.680	3.717	0.005
Other General Industrial Equipment	25	0.492	4.680	3.717	0.005
Other General Industrial Equipment	50	0.492	4.680	3.717	0.005
Other General Industrial Equipment	120	0.258	3.612	2.439	0.005
Other General Industrial Equipment	175	0.189	3.204	1.364	0.005
Other General Industrial Equipment	250	0.155	1.132	1.028	0.005
Other General Industrial Equipment	500	0.152	1.109	1.053	0.005

		Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.153	0.004
		Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.153	0.004
		Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.169	0.005
		Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.153	0.004
		Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.153	0.004
		Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.153	0.004
		Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.152	0.004
		Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.153	0.004
		Pavers	25	0.918	4.945	4.131	0.005	0.170	0.005
		Pavers	50	0.918	4.945	4.131	0.005	0.170	0.005
		Pavers	120	0.314	3.493	3.068	0.005	0.152	0.004
		Pavers	175	0.181	3.007	1.644	0.005	0.153	0.004
		Pavers	250	0.107	1.004	1.035	0.005	0.153	0.004
		Pavers	500	0.115	0.969	1.134	0.005	0.151	0.004
		Paving Equipment	25	0.476	4.203	3.627	0.005	0.169	0.005
		Paving Equipment	50	0.476	4.203	3.627	0.005	0.169	0.005
		Paving Equipment	120	0.242	3.483	2.496	0.005	0.153	0.004
		Paving Equipment	175	0.175	3.038	1.509	0.005	0.152	0.004
		Paving Equipment	250	0.133	1.117	1.110	0.005	0.153	0.004
		Plate Compactors	15	0.661	3.469	4.142	0.008	0.059	0.005
		Pressure Washers	15	0.607	3.491	4.269	0.008	0.054	0.005
		Pressure Washers	25	0.694	2.376	4.407	0.007	0.062	0.005
		Pressure Washers	50	0.306	3.210	3.344	0.007	0.027	0.005
		Pressure Washers	120	0.189	3.186	2.100	0.006	0.017	0.004
		Pressure Washers	175	0.178	2.907	1.310	0.006	0.016	0.004

0.008	0.004
0.061	0.005
0.064	0.005
0.043	0.005
0.023	0.004
0.018	0.004
0.014	0.004
0.014	0.004
0.014	0.004
0.016	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.155	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.151	0.004
0.153	0.004
0.154	0.004
0.155	0.004
0.153	0.004
0.037	0.004
0.169	0.005
0.169	0.005
0.151	0.004
0.152	0.004

Pressure Washers	250	0.098	0.986	0.265	0.006
Pumps	15	0.683	3.491	4.278	0.008
Pumps	25	0.709	2.376	4.407	0.007
Pumps	50	0.485	3.943	3.528	0.007
Pumps	120	0.261	3.389	2.213	0.006
Pumps	175	0.199	2.974	1.318	0.006
Pumps	250	0.159	1.016	1.038	0.006
Pumps	500	0.156	0.992	0.958	0.005
Pumps	750	0.157	0.992	0.977	0.005
Pumps	9999	0.186	1.020	2.840	0.005
Rollers	15	0.569	4.125	3.689	0.005
Rollers	25	0.569	4.125	3.689	0.005
Rollers	50	0.569	4.125	3.689	0.005
Rollers	120	0.255	3.444	2.691	0.005
Rollers	175	0.127	2.909	1.101	0.005
Rollers	250	0.173	1.215	1.783	0.005
Rollers	500	0.212	1.968	2.200	0.005
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005

		Rubber Tired Loaders	250	0.177	1.142	1.442	0.005
0.152	0.004						
		Rubber Tired Loaders	500	0.193	1.276	1.433	0.005
0.152	0.004						
		Rubber Tired Loaders	750	0.212	1.333	1.654	0.005
0.150	0.004						
		Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005
0.153	0.004						
0.156	0.004	Scrapers	120	0.566	4.094	5.503	0.005
0.155	0.004	Scrapers	175	0.290	3.321	2.631	0.005
0.152	0.004	Scrapers	250	0.291	1.602	2.803	0.005
0.153	0.004	Scrapers	500	0.216	1.732	2.051	0.005
0.153	0.004	Scrapers	750	0.184	1.338	1.713	0.005
		Signal Boards	15	0.661	3.469	4.142	0.008
0.059	0.005						
		Signal Boards	50	0.522	4.217	3.561	0.007
0.047	0.005						
		Signal Boards	120	0.278	3.470	2.179	0.006
0.025	0.004						
		Signal Boards	175	0.215	3.049	1.262	0.006
0.019	0.004						
		Signal Boards	250	0.213	1.257	1.192	0.007
0.019	0.004						
		Skid Steer Loaders	25	0.341	3.660	3.309	0.006
0.171	0.005						
		Skid Steer Loaders	50	0.341	3.660	3.309	0.006
0.171	0.005						
		Skid Steer Loaders	120	0.140	3.252	1.867	0.005
0.153	0.004						
		Surfacing Equipment	50	0.235	3.537	3.576	0.006
0.173	0.005						
		Surfacing Equipment	120	0.232	3.385	2.659	0.005
0.154	0.004						
		Surfacing Equipment	175	0.187	2.926	1.999	0.005
0.152	0.004						
		Surfacing Equipment	250	0.148	1.143	1.747	0.005
0.154	0.004						
		Surfacing Equipment	500	0.128	1.169	1.327	0.005
0.152	0.004						
		Surfacing Equipment	750	0.085	0.978	0.768	0.005
0.152	0.004						
		Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005
0.170	0.005						
		Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005
0.170	0.005						
		Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005
0.170	0.005						
		Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005
0.153	0.004						
		Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005
0.153	0.004						
		Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005
0.152	0.004						
		Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005
0.166	0.005						

0.166	0.005
0.154	0.004
0.152	0.004
0.152	0.004
0.152	0.004
0.151	0.004
0.171	0.005
0.171	0.005
0.171	0.005
0.154	0.004
0.151	0.004
0.153	0.004
0.152	0.004
0.154	0.004
0.061	0.005
0.064	0.005
0.054	0.005
0.028	0.004
0.022	0.004
0.018	0.004
0.017	0.004
0.152	0.004
0.152	0.004
0.154	0.004
0.154	0.004
0.153	0.004

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005
Trenchers	15	0.542	4.120	3.657	0.005
Trenchers	25	0.542	4.120	3.657	0.005
Trenchers	50	0.542	4.120	3.657	0.005
Trenchers	120	0.457	3.734	4.279	0.005
Trenchers	175	0.358	3.309	3.549	0.005
Trenchers	250	0.307	1.601	3.315	0.005
Trenchers	500	0.191	1.676	1.826	0.005
Trenchers	750	0.067	0.962	0.305	0.005
Welders	15	0.683	3.491	4.278	0.008
Welders	25	0.709	2.376	4.407	0.007
Welders	50	0.602	4.524	3.676	0.007
Welders	120	0.316	3.557	2.283	0.006
Welders	175	0.245	3.121	1.365	0.006
Welders	250	0.199	1.065	1.075	0.006
Welders	500	0.196	1.029	0.990	0.005
Water Trucks	175	0.214	3.328	1.335	0.005
Water Trucks	250	0.185	1.213	1.129	0.005
Water Trucks	500	0.177	1.182	1.064	0.005
Water Trucks	750	0.235	1.578	1.751	0.005
Water Trucks	1000	0.187	1.146	3.135	0.005

2027

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.021	0.019	525.074	0.170	0.005
0.021	0.019	525.074	0.170	0.005
0.021	0.019	525.074	0.170	0.005
0.026	0.024	472.114	0.153	0.004
0.009	0.009	472.055	0.153	0.004
0.028	0.028	568.299	0.013	0.004
0.183	0.183	568.300	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.116	0.116	568.299	0.059	0.005
0.104	0.104	568.299	0.031	0.004
0.065	0.065	568.299	0.024	0.004
0.033	0.033	568.299	0.019	0.004
0.032	0.032	568.299	0.019	0.004
0.032	0.032	568.299	0.019	0.004
0.055	0.055	568.299	0.020	0.004
0.193	0.178	532.821	0.172	0.005
0.193	0.178	532.821	0.172	0.005
0.193	0.178	532.821	0.172	0.005
0.067	0.062	459.829	0.149	0.004
0.039	0.036	478.266	0.155	0.004
0.031	0.029	470.654	0.152	0.004
0.028	0.026	467.289	0.151	0.004
0.023	0.021	481.250	0.156	0.004
0.019	0.017	471.917	0.153	0.004

2027		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.154
Aerial Lifts	25	0.154
Aerial Lifts	50	0.154
Aerial Lifts	120	0.099
Aerial Lifts	500	0.085
Aerial Lifts	750	0.153
Air Compressors	15	0.683
Air Compressors	25	0.709
Air Compressors	50	0.659
Air Compressors	120	0.345
Air Compressors	175	0.269
Air Compressors	250	0.220
Air Compressors	500	0.217
Air Compressors	750	0.217
Air Compressors	1000	0.231
Bore/Drill Rigs	15	0.591
Bore/Drill Rigs	25	0.591
Bore/Drill Rigs	50	0.591
Bore/Drill Rigs	120	0.155
Bore/Drill Rigs	175	0.114
Bore/Drill Rigs	250	0.107
Bore/Drill Rigs	500	0.102
Bore/Drill Rigs	750	0.085
Bore/Drill Rigs	1000	0.062

0.161	0.161	568.299	0.059	0.005
0.168	0.168	568.299	0.062	0.005
0.161	0.161	568.299	0.061	0.005
0.099	0.099	568.299	0.047	0.005
0.089	0.089	568.300	0.025	0.004
0.056	0.056	568.300	0.019	0.004
0.543	0.499	517.872	0.168	0.005
0.260	0.240	469.533	0.152	0.004
0.166	0.153	474.748	0.154	0.004
0.114	0.105	472.980	0.153	0.004
0.088	0.081	471.967	0.153	0.004
0.068	0.062	470.276	0.152	0.004
0.065	0.060	472.055	0.153	0.004
0.456	0.420	516.128	0.167	0.005
0.285	0.262	476.134	0.154	0.004
0.150	0.138	471.592	0.153	0.004
0.096	0.088	471.622	0.153	0.004
0.081	0.074	474.007	0.153	0.004
0.057	0.052	472.408	0.153	0.004
0.112	0.103	475.490	0.154	0.004
0.107	0.107	568.299	0.059	0.005
0.095	0.095	568.299	0.031	0.004
0.060	0.060	568.299	0.024	0.004
0.031	0.031	568.299	0.020	0.004
0.030	0.030	568.299	0.020	0.004
0.030	0.030	568.299	0.020	0.004
0.053	0.053	568.299	0.023	0.004

Cement and Mortar Mixers	15	0.661
Cement and Mortar Mixers	25	0.689
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	0.525
Concrete/Industrial Saws	120	0.283
Concrete/Industrial Saws	175	0.220
Cranes	50	1.811
Cranes	120	0.463
Cranes	175	0.334
Cranes	250	0.265
Cranes	500	0.218
Cranes	750	0.172
Cranes	9999	0.229
Crawler Tractors	50	1.744
Crawler Tractors	120	0.454
Crawler Tractors	175	0.298
Crawler Tractors	250	0.232
Crawler Tractors	500	0.208
Crawler Tractors	750	0.167
Crawler Tractors	1000	0.260
Crushing/Proc. Equipment	50	0.656
Crushing/Proc. Equipment	120	0.345
Crushing/Proc. Equipment	175	0.270
Crushing/Proc. Equipment	250	0.224
Crushing/Proc. Equipment	500	0.221
Crushing/Proc. Equipment	750	0.222
Crushing/Proc. Equipment	9999	0.261

0.161	0.161	568.299	0.061	0.005
0.107	0.099	525.777	0.170	0.005
0.107	0.099	525.777	0.170	0.005
0.085	0.078	466.738	0.151	0.004
0.057	0.052	472.496	0.153	0.004
0.032	0.029	472.560	0.153	0.004
0.026	0.024	470.292	0.152	0.004
0.038	0.035	468.558	0.152	0.004
0.178	0.164	525.483	0.170	0.005
0.140	0.128	471.529	0.153	0.004
0.084	0.078	472.106	0.153	0.004
0.056	0.052	473.326	0.153	0.004
0.062	0.057	473.615	0.153	0.004
0.178	0.178	568.299	0.054	0.005
0.175	0.175	568.299	0.062	0.005
0.093	0.093	568.300	0.039	0.005
0.087	0.087	568.299	0.021	0.004
0.053	0.053	568.299	0.016	0.004
0.028	0.028	568.299	0.013	0.004
0.027	0.027	568.300	0.013	0.004
0.027	0.027	568.299	0.013	0.004
0.047	0.047	568.299	0.015	0.004
0.522	0.480	493.532	0.160	0.005
0.371	0.342	468.316	0.152	0.004
0.152	0.140	478.508	0.155	0.004
0.082	0.076	473.470	0.153	0.004
0.088	0.081	470.753	0.152	0.004
0.041	0.041	568.300	0.022	0.004
0.144	0.132	476.921	0.154	0.004
0.065	0.060	473.302	0.153	0.004
0.040	0.037	470.861	0.152	0.004
0.045	0.041	471.917	0.153	0.004
0.070	0.064	472.055	0.153	0.004
0.065	0.060	470.004	0.152	0.004
0.043	0.040	469.126	0.152	0.004

Dumpers/Tenders	25	0.685
Excavators	25	0.403
Excavators	50	0.403
Excavators	120	0.201
Excavators	175	0.158
Excavators	250	0.131
Excavators	500	0.115
Excavators	750	0.139
Forklifts	50	0.636
Forklifts	120	0.277
Forklifts	175	0.209
Forklifts	250	0.191
Forklifts	500	0.215
Generator Sets	15	0.607
Generator Sets	25	0.694
Generator Sets	50	0.440
Generator Sets	120	0.243
Generator Sets	175	0.184
Generator Sets	250	0.147
Generator Sets	500	0.144
Generator Sets	750	0.145
Generator Sets	9999	0.173
Graders	50	1.864
Graders	120	0.638
Graders	175	0.329
Graders	250	0.230
Graders	500	0.280
Graders	750	0.253
Off-Highway Tractors	120	0.276
Off-Highway Tractors	175	0.175
Off-Highway Tractors	250	0.155
Off-Highway Tractors	750	0.167
Off-Highway Tractors	1000	0.198
Off-Highway Trucks	175	0.214
Off-Highway Trucks	250	0.185

0.038	0.035	474.970	0.154	0.004
0.066	0.061	476.314	0.154	0.004
0.057	0.052	473.369	0.153	0.004
0.268	0.246	528.954	0.171	0.005
0.268	0.246	528.954	0.171	0.005
0.268	0.246	528.954	0.171	0.005
0.203	0.187	472.748	0.153	0.004
0.112	0.103	469.843	0.152	0.004
0.059	0.055	476.296	0.154	0.004
0.136	0.125	526.176	0.170	0.005
0.136	0.125	526.176	0.170	0.005
0.136	0.125	526.176	0.170	0.005
0.118	0.109	470.000	0.152	0.004
0.070	0.065	471.850	0.153	0.004
0.036	0.033	473.223	0.153	0.004
0.035	0.033	472.929	0.153	0.004

Off-Highway Trucks	500	0.177
Off-Highway Trucks	750	0.235
Off-Highway Trucks	1000	0.187
Other Construction Equipment	15	0.757
Other Construction Equipment	25	0.757
Other Construction Equipment	50	0.757
Other Construction Equipment	120	0.341
Other Construction Equipment	175	0.235
Other Construction Equipment	500	0.168
Other General Industrial Equipment	15	0.492
Other General Industrial Equipment	25	0.492
Other General Industrial Equipment	50	0.492
Other General Industrial Equipment	120	0.258
Other General Industrial Equipment	175	0.189
Other General Industrial Equipment	250	0.155
Other General Industrial Equipment	500	0.152

0.023	0.021	473.464	0.153	0.004
0.081	0.074	472.055	0.153	0.004
0.239	0.219	523.709	0.169	0.005
0.081	0.074	473.588	0.153	0.004
0.072	0.067	472.219	0.153	0.004
0.060	0.055	471.482	0.153	0.004
0.067	0.061	470.297	0.152	0.004
0.019	0.017	472.055	0.153	0.004
0.265	0.243	526.853	0.170	0.005
0.265	0.243	526.853	0.170	0.005
0.191	0.175	469.899	0.152	0.004
0.077	0.071	472.485	0.153	0.004
0.034	0.031	473.483	0.153	0.004
0.039	0.036	465.882	0.151	0.004
0.142	0.130	520.998	0.169	0.005
0.142	0.130	520.998	0.169	0.005
0.118	0.108	473.424	0.153	0.004
0.075	0.069	470.484	0.152	0.004
0.043	0.040	472.234	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.178	0.178	568.299	0.054	0.005
0.175	0.175	568.299	0.062	0.005
0.075	0.075	568.299	0.027	0.005
0.072	0.072	568.299	0.017	0.004
0.053	0.053	568.299	0.016	0.004

Other General Industrial Equipment	750	0.117
Other General Industrial Equipment	1000	0.203
Other Material Handling Equipment	50	0.744
Other Material Handling Equipment	120	0.203
Other Material Handling Equipment	175	0.189
Other Material Handling Equipment	250	0.200
Other Material Handling Equipment	500	0.204
Other Material Handling Equipment	9999	0.065
Pavers	25	0.918
Pavers	50	0.918
Pavers	120	0.314
Pavers	175	0.181
Pavers	250	0.107
Pavers	500	0.115
Paving Equipment	25	0.476
Paving Equipment	50	0.476
Paving Equipment	120	0.242
Paving Equipment	175	0.175
Paving Equipment	250	0.133
Plate Compactors	15	0.661
Pressure Washers	15	0.607
Pressure Washers	25	0.694
Pressure Washers	50	0.306
Pressure Washers	120	0.189
Pressure Washers	175	0.178

0.009	0.009	568.299	0.008	0.004
0.183	0.183	568.299	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.099	0.099	568.299	0.043	0.005
0.092	0.092	568.299	0.023	0.004
0.056	0.056	568.300	0.018	0.004
0.029	0.029	568.299	0.014	0.004
0.028	0.028	568.300	0.014	0.004
0.029	0.029	568.300	0.014	0.004
0.049	0.049	568.299	0.016	0.004
0.167	0.154	526.141	0.170	0.005
0.167	0.154	526.141	0.170	0.005
0.167	0.154	526.141	0.170	0.005
0.135	0.125	473.851	0.153	0.004
0.049	0.046	471.970	0.153	0.004
0.066	0.060	473.681	0.153	0.004
0.091	0.083	477.573	0.155	0.004
0.128	0.118	525.027	0.170	0.005
0.051	0.047	473.037	0.153	0.004
0.030	0.028	471.475	0.153	0.004
0.035	0.033	472.927	0.153	0.004
0.009	0.008	466.541	0.151	0.004
0.231	0.212	474.103	0.153	0.004
0.167	0.153	474.573	0.154	0.004
0.151	0.139	479.092	0.155	0.004
0.196	0.181	472.998	0.153	0.004
0.115	0.115	568.299	0.037	0.004
0.259	0.238	523.908	0.169	0.005
0.259	0.238	523.908	0.169	0.005
0.179	0.165	466.898	0.151	0.004
0.084	0.077	470.459	0.152	0.004

Pressure Washers	250	0.098
Pumps	15	0.683
Pumps	25	0.709
Pumps	50	0.485
Pumps	120	0.261
Pumps	175	0.199
Pumps	250	0.159
Pumps	500	0.156
Pumps	750	0.157
Pumps	9999	0.186
Rollers	15	0.569
Rollers	25	0.569
Rollers	50	0.569
Rollers	120	0.255
Rollers	175	0.127
Rollers	250	0.173
Rollers	500	0.212
Rough Terrain Forklifts	50	0.456
Rough Terrain Forklifts	120	0.137
Rough Terrain Forklifts	175	0.087
Rough Terrain Forklifts	250	0.123
Rough Terrain Forklifts	500	0.069
Rubber Tired Dozers	175	0.461
Rubber Tired Dozers	250	0.372
Rubber Tired Dozers	500	0.367
Rubber Tired Dozers	750	0.428
Rubber Tired Dozers	1000	0.414
Rubber Tired Loaders	25	0.960
Rubber Tired Loaders	50	0.960
Rubber Tired Loaders	120	0.352
Rubber Tired Loaders	175	0.224

0.048	0.045	469.871	0.152	0.004
0.053	0.048	469.143	0.152	0.004
0.064	0.059	465.052	0.150	0.004
0.052	0.048	472.456	0.153	0.004
0.405	0.372	482.363	0.156	0.004
0.137	0.126	478.948	0.155	0.004
0.125	0.115	469.446	0.152	0.004
0.081	0.074	472.539	0.153	0.004
0.064	0.059	472.115	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.098	0.098	568.299	0.047	0.005
0.089	0.089	568.299	0.025	0.004
0.055	0.055	568.299	0.019	0.004
0.035	0.035	686.695	0.019	0.004
0.084	0.077	527.861	0.171	0.005
0.084	0.077	527.861	0.171	0.005
0.057	0.052	472.630	0.153	0.004
0.082	0.075	536.140	0.173	0.005
0.124	0.114	476.766	0.154	0.004
0.094	0.087	471.040	0.152	0.004
0.055	0.051	477.110	0.154	0.004
0.051	0.047	470.283	0.152	0.004
0.027	0.025	470.551	0.152	0.004
0.191	0.176	525.328	0.170	0.005
0.191	0.176	525.328	0.170	0.005
0.191	0.176	525.328	0.170	0.005
0.160	0.147	474.116	0.153	0.004
0.072	0.066	473.122	0.153	0.004
0.051	0.047	470.126	0.152	0.004
0.145	0.133	513.803	0.166	0.005

Rubber Tired Loaders	250	0.177
Rubber Tired Loaders	500	0.193
Rubber Tired Loaders	750	0.212
Rubber Tired Loaders	1000	0.166
Scrapers	120	0.566
Scrapers	175	0.290
Scrapers	250	0.291
Scrapers	500	0.216
Scrapers	750	0.184
Signal Boards	15	0.661
Signal Boards	50	0.522
Signal Boards	120	0.278
Signal Boards	175	0.215
Signal Boards	250	0.213
Skid Steer Loaders	25	0.341
Skid Steer Loaders	50	0.341
Skid Steer Loaders	120	0.140
Surfacing Equipment	50	0.235
Surfacing Equipment	120	0.232
Surfacing Equipment	175	0.187
Surfacing Equipment	250	0.148
Surfacing Equipment	500	0.128
Surfacing Equipment	750	0.085
Sweepers/Scrubbers	15	0.622
Sweepers/Scrubbers	25	0.622
Sweepers/Scrubbers	50	0.622
Sweepers/Scrubbers	120	0.303
Sweepers/Scrubbers	175	0.213
Sweepers/Scrubbers	250	0.170
Tractors/Loaders/Backhoes	25	0.550

0.145	0.133	513.803	0.166	0.005
0.086	0.079	477.188	0.154	0.004
0.059	0.054	469.329	0.152	0.004
0.047	0.044	470.598	0.152	0.004
0.039	0.036	470.910	0.152	0.004
0.067	0.062	466.452	0.151	0.004
0.163	0.150	527.160	0.171	0.005
0.163	0.150	527.160	0.171	0.005
0.163	0.150	527.160	0.171	0.005
0.285	0.262	475.901	0.154	0.004
0.179	0.165	467.732	0.151	0.004
0.144	0.133	473.917	0.153	0.004
0.079	0.072	470.439	0.152	0.004
0.009	0.009	474.486	0.154	0.004
0.183	0.183	568.300	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.112	0.112	568.299	0.054	0.005
0.102	0.102	568.299	0.028	0.004
0.063	0.063	568.299	0.022	0.004
0.032	0.032	568.299	0.018	0.004
0.031	0.031	568.299	0.017	0.004
0.065	0.060	470.004	0.152	0.004
0.043	0.040	469.126	0.152	0.004
0.038	0.035	474.970	0.154	0.004
0.066	0.061	476.314	0.154	0.004
0.057	0.052	473.369	0.153	0.004

Tractors/Loaders/Backhoes	50	0.550
Tractors/Loaders/Backhoes	120	0.209
Tractors/Loaders/Backhoes	175	0.162
Tractors/Loaders/Backhoes	250	0.154
Tractors/Loaders/Backhoes	500	0.144
Tractors/Loaders/Backhoes	750	0.187
Trenchers	15	0.542
Trenchers	25	0.542
Trenchers	50	0.542
Trenchers	120	0.457
Trenchers	175	0.358
Trenchers	250	0.307
Trenchers	500	0.191
Trenchers	750	0.067
Welders	15	0.683
Welders	25	0.709
Welders	50	0.602
Welders	120	0.316
Welders	175	0.245
Welders	250	0.199
Welders	500	0.196
Water Trucks	175	0.214
Water Trucks	250	0.185
Water Trucks	500	0.177
Water Trucks	750	0.235
Water Trucks	1000	0.187

2028

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.167	1.511	0.005	0.026	0.024	472.114	0.153	0.004
0.970	0.649	0.005	0.009	0.009	472.055	0.153	0.004
0.989	0.974	0.005	0.028	0.028	568.299	0.013	0.004
3.491	4.278	0.008	0.183	0.183	568.300	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
4.851	3.755	0.007	0.116	0.116	568.299	0.059	0.005
3.653	2.313	0.006	0.104	0.104	568.299	0.031	0.004
3.205	1.383	0.006	0.065	0.065	568.299	0.024	0.004
1.094	1.086	0.006	0.033	0.033	568.299	0.019	0.004
1.051	1.001	0.005	0.032	0.032	568.299	0.019	0.004
1.051	1.021	0.005	0.032	0.032	568.299	0.019	0.004
1.079	2.954	0.005	0.055	0.055	568.299	0.020	0.004
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
3.218	1.964	0.005	0.067	0.062	459.829	0.149	0.004
2.974	0.888	0.005	0.039	0.036	478.266	0.155	0.004
1.045	0.957	0.005	0.031	0.029	470.654	0.152	0.004
0.997	0.823	0.005	0.028	0.026	467.289	0.151	0.004
0.983	0.596	0.005	0.023	0.021	481.250	0.156	0.004
0.953	2.289	0.005	0.019	0.017	471.917	0.153	0.004

3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.344	4.357	0.007	0.168	0.168	568.299	0.062	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.297	3.592	0.007	0.099	0.099	568.299	0.047	0.005
3.495	2.176	0.006	0.089	0.089	568.300	0.025	0.004
3.073	1.249	0.006	0.056	0.056	568.300	0.019	0.004
7.072	5.636	0.005	0.543	0.499	517.872	0.168	0.005
3.831	4.135	0.005	0.260	0.240	469.533	0.152	0.004
3.335	3.160	0.005	0.166	0.153	474.748	0.154	0.004
1.470	2.681	0.005	0.114	0.105	472.980	0.153	0.004
1.834	2.154	0.005	0.088	0.081	471.967	0.153	0.004
1.274	1.638	0.005	0.068	0.062	470.276	0.152	0.004
1.038	2.422	0.005	0.065	0.060	472.055	0.153	0.004
6.686	4.936	0.005	0.456	0.420	516.128	0.167	0.005
3.788	3.961	0.005	0.285	0.262	476.134	0.154	0.004
3.209	2.688	0.005	0.150	0.138	471.592	0.153	0.004
1.308	2.462	0.005	0.096	0.088	471.622	0.153	0.004
1.717	1.920	0.005	0.081	0.074	474.007	0.153	0.004
1.122	1.545	0.005	0.057	0.052	472.408	0.153	0.004
1.593	4.598	0.005	0.112	0.103	475.490	0.154	0.004
4.982	3.742	0.007	0.107	0.107	568.299	0.059	0.005
3.694	2.248	0.006	0.095	0.095	568.299	0.031	0.004
3.246	1.301	0.006	0.060	0.060	568.299	0.024	0.004
1.108	1.012	0.006	0.031	0.031	568.299	0.020	0.004
1.061	0.937	0.005	0.030	0.030	568.299	0.020	0.004
1.061	0.955	0.005	0.030	0.030	568.299	0.020	0.004
1.087	2.910	0.005	0.053	0.053	568.299	0.023	0.004

2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.219	3.453	0.005	0.107	0.099	525.777	0.170	0.005
4.219	3.453	0.005	0.107	0.099	525.777	0.170	0.005
3.439	2.082	0.005	0.085	0.078	466.738	0.151	0.004
3.078	1.154	0.005	0.057	0.052	472.496	0.153	0.004
1.081	0.962	0.005	0.032	0.029	472.560	0.153	0.004
1.051	0.726	0.005	0.026	0.024	470.292	0.152	0.004
1.135	1.026	0.005	0.038	0.035	468.558	0.152	0.004
5.029	3.932	0.005	0.178	0.164	525.483	0.170	0.005
3.611	2.607	0.005	0.140	0.128	471.529	0.153	0.004
3.170	1.653	0.005	0.084	0.078	472.106	0.153	0.004
1.214	1.466	0.005	0.056	0.052	473.326	0.153	0.004
1.222	1.658	0.005	0.062	0.057	473.615	0.153	0.004
3.491	4.269	0.008	0.178	0.178	568.299	0.054	0.005
2.376	4.407	0.007	0.175	0.175	568.299	0.062	0.005
3.758	3.481	0.007	0.093	0.093	568.300	0.039	0.005
3.338	2.185	0.006	0.087	0.087	568.299	0.021	0.004
2.930	1.297	0.006	0.053	0.053	568.299	0.016	0.004
1.000	1.020	0.006	0.028	0.028	568.299	0.013	0.004
0.981	0.945	0.005	0.027	0.027	568.300	0.013	0.004
0.981	0.964	0.005	0.027	0.027	568.299	0.013	0.004
1.008	2.812	0.005	0.047	0.047	568.299	0.015	0.004
7.125	5.043	0.005	0.522	0.480	493.532	0.160	0.005
4.149	5.074	0.005	0.371	0.342	468.316	0.152	0.004
3.418	2.774	0.005	0.152	0.140	478.508	0.155	0.004
1.179	2.556	0.005	0.082	0.076	473.470	0.153	0.004
1.315	2.265	0.005	0.088	0.081	470.753	0.152	0.004
1.141	1.125	0.005	0.041	0.041	568.300	0.022	0.004
3.669	2.707	0.005	0.144	0.132	476.921	0.154	0.004
3.142	1.349	0.005	0.065	0.060	473.302	0.153	0.004
1.130	1.116	0.005	0.040	0.037	470.861	0.152	0.004
1.135	1.118	0.005	0.045	0.041	471.917	0.153	0.004
1.077	2.482	0.005	0.070	0.064	472.055	0.153	0.004
3.328	1.335	0.005	0.065	0.060	470.004	0.152	0.004
1.213	1.129	0.005	0.043	0.040	469.126	0.152	0.004

1.182	1.064	0.005	0.038	0.035	474.970	0.154	0.004
1.578	1.751	0.005	0.066	0.061	476.314	0.154	0.004
1.146	3.135	0.005	0.057	0.052	473.369	0.153	0.004
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
3.584	3.252	0.005	0.203	0.187	472.748	0.153	0.004
3.136	2.167	0.005	0.112	0.103	469.843	0.152	0.004
1.358	1.552	0.005	0.059	0.055	476.296	0.154	0.004
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
3.612	2.439	0.005	0.118	0.109	470.000	0.152	0.004
3.204	1.364	0.005	0.070	0.065	471.850	0.153	0.004
1.132	1.028	0.005	0.036	0.033	473.223	0.153	0.004
1.109	1.053	0.005	0.035	0.033	472.929	0.153	0.004

1.115	0.629	0.005	0.023	0.021	473.464	0.153	0.004
1.067	3.985	0.005	0.081	0.074	472.055	0.153	0.004
5.248	4.233	0.005	0.239	0.219	523.709	0.169	0.005
3.497	2.055	0.005	0.081	0.074	473.588	0.153	0.004
3.168	1.396	0.005	0.072	0.067	472.219	0.153	0.004
1.197	1.774	0.005	0.060	0.055	471.482	0.153	0.004
1.260	1.601	0.005	0.067	0.061	470.297	0.152	0.004
0.959	2.298	0.005	0.019	0.017	472.055	0.153	0.004
4.945	4.131	0.005	0.265	0.243	526.853	0.170	0.005
4.945	4.131	0.005	0.265	0.243	526.853	0.170	0.005
3.493	3.068	0.005	0.191	0.175	469.899	0.152	0.004
3.007	1.644	0.005	0.077	0.071	472.485	0.153	0.004
1.004	1.035	0.005	0.034	0.031	473.483	0.153	0.004
0.969	1.134	0.005	0.039	0.036	465.882	0.151	0.004
4.203	3.627	0.005	0.142	0.130	520.998	0.169	0.005
4.203	3.627	0.005	0.142	0.130	520.998	0.169	0.005
3.483	2.496	0.005	0.118	0.108	473.424	0.153	0.004
3.038	1.509	0.005	0.075	0.069	470.484	0.152	0.004
1.117	1.110	0.005	0.043	0.040	472.234	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.491	4.269	0.008	0.178	0.178	568.299	0.054	0.005
2.376	4.407	0.007	0.175	0.175	568.299	0.062	0.005
3.210	3.344	0.007	0.075	0.075	568.299	0.027	0.005
3.186	2.100	0.006	0.072	0.072	568.299	0.017	0.004
2.907	1.310	0.006	0.053	0.053	568.299	0.016	0.004

0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
3.491	4.278	0.008	0.183	0.183	568.299	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
3.943	3.528	0.007	0.099	0.099	568.299	0.043	0.005
3.389	2.213	0.006	0.092	0.092	568.299	0.023	0.004
2.974	1.318	0.006	0.056	0.056	568.300	0.018	0.004
1.016	1.038	0.006	0.029	0.029	568.299	0.014	0.004
0.992	0.958	0.005	0.028	0.028	568.300	0.014	0.004
0.992	0.977	0.005	0.029	0.029	568.300	0.014	0.004
1.020	2.840	0.005	0.049	0.049	568.299	0.016	0.004
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
3.444	2.691	0.005	0.135	0.125	473.851	0.153	0.004
2.909	1.101	0.005	0.049	0.046	471.970	0.153	0.004
1.215	1.783	0.005	0.066	0.060	473.681	0.153	0.004
1.968	2.200	0.005	0.091	0.083	477.573	0.155	0.004
3.740	3.477	0.005	0.128	0.118	525.027	0.170	0.005
3.240	1.821	0.005	0.051	0.047	473.037	0.153	0.004
2.821	0.786	0.005	0.030	0.028	471.475	0.153	0.004
1.001	1.489	0.005	0.035	0.033	472.927	0.153	0.004
0.942	0.477	0.005	0.009	0.008	466.541	0.151	0.004
3.612	4.229	0.005	0.231	0.212	474.103	0.153	0.004
1.720	3.805	0.005	0.167	0.153	474.573	0.154	0.004
2.959	3.370	0.005	0.151	0.139	479.092	0.155	0.004
2.601	5.333	0.005	0.196	0.181	472.998	0.153	0.004
1.725	4.365	0.005	0.115	0.115	568.299	0.037	0.004
5.941	4.348	0.005	0.259	0.238	523.908	0.169	0.005
5.941	4.348	0.005	0.259	0.238	523.908	0.169	0.005
3.791	2.970	0.005	0.179	0.165	466.898	0.151	0.004
3.281	1.590	0.005	0.084	0.077	470.459	0.152	0.004

1.142	1.442	0.005	0.048	0.045	469.871	0.152	0.004
1.276	1.433	0.005	0.053	0.048	469.143	0.152	0.004
1.333	1.654	0.005	0.064	0.059	465.052	0.150	0.004
1.122	3.089	0.005	0.052	0.048	472.456	0.153	0.004
4.094	5.503	0.005	0.405	0.372	482.363	0.156	0.004
3.321	2.631	0.005	0.137	0.126	478.948	0.155	0.004
1.602	2.803	0.005	0.125	0.115	469.446	0.152	0.004
1.732	2.051	0.005	0.081	0.074	472.539	0.153	0.004
1.338	1.713	0.005	0.064	0.059	472.115	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.217	3.561	0.007	0.098	0.098	568.299	0.047	0.005
3.470	2.179	0.006	0.089	0.089	568.299	0.025	0.004
3.049	1.262	0.006	0.055	0.055	568.299	0.019	0.004
1.257	1.192	0.007	0.035	0.035	686.695	0.019	0.004
3.660	3.309	0.006	0.084	0.077	527.861	0.171	0.005
3.660	3.309	0.006	0.084	0.077	527.861	0.171	0.005
3.252	1.867	0.005	0.057	0.052	472.630	0.153	0.004
3.537	3.576	0.006	0.082	0.075	536.140	0.173	0.005
3.385	2.659	0.005	0.124	0.114	476.766	0.154	0.004
2.926	1.999	0.005	0.094	0.087	471.040	0.152	0.004
1.143	1.747	0.005	0.055	0.051	477.110	0.154	0.004
1.169	1.327	0.005	0.051	0.047	470.283	0.152	0.004
0.978	0.768	0.005	0.027	0.025	470.551	0.152	0.004
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
3.664	2.817	0.005	0.160	0.147	474.116	0.153	0.004
3.201	1.638	0.005	0.072	0.066	473.122	0.153	0.004
1.140	1.616	0.005	0.051	0.047	470.126	0.152	0.004
4.560	3.662	0.005	0.145	0.133	513.803	0.166	0.005

4.560	3.662	0.005	0.145	0.133	513.803	0.166	0.005
3.522	2.109	0.005	0.086	0.079	477.188	0.154	0.004
3.083	1.180	0.005	0.059	0.054	469.329	0.152	0.004
1.146	1.235	0.005	0.047	0.044	470.598	0.152	0.004
1.234	1.046	0.005	0.039	0.036	470.910	0.152	0.004
1.261	1.649	0.005	0.067	0.062	466.452	0.151	0.004
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
3.734	4.279	0.005	0.285	0.262	475.901	0.154	0.004
3.309	3.549	0.005	0.179	0.165	467.732	0.151	0.004
1.601	3.315	0.005	0.144	0.133	473.917	0.153	0.004
1.676	1.826	0.005	0.079	0.072	470.439	0.152	0.004
0.962	0.305	0.005	0.009	0.009	474.486	0.154	0.004
3.491	4.278	0.008	0.183	0.183	568.300	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
4.524	3.676	0.007	0.112	0.112	568.299	0.054	0.005
3.557	2.283	0.006	0.102	0.102	568.299	0.028	0.004
3.121	1.365	0.006	0.063	0.063	568.299	0.022	0.004
1.065	1.075	0.006	0.032	0.032	568.299	0.018	0.004
1.029	0.990	0.005	0.031	0.031	568.299	0.017	0.004
3.328	1.335	0.005	0.065	0.060	470.004	0.152	0.004
1.213	1.129	0.005	0.043	0.040	469.126	0.152	0.004
1.182	1.064	0.005	0.038	0.035	474.970	0.154	0.004
1.578	1.751	0.005	0.066	0.061	476.314	0.154	0.004
1.146	3.135	0.005	0.057	0.052	473.369	0.153	0.004

2028		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4
Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026	0.024	472.114	0.153
Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009	0.009	472.055	0.153
Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028	0.028	568.299	0.013
Air Compressors	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300	0.061
Air Compressors	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Air Compressors	50	0.659	4.851	3.755	0.007	0.116	0.116	568.299	0.059
Air Compressors	120	0.345	3.653	2.313	0.006	0.104	0.104	568.299	0.031
Air Compressors	175	0.269	3.205	1.383	0.006	0.065	0.065	568.299	0.024
Air Compressors	250	0.220	1.094	1.086	0.006	0.033	0.033	568.299	0.019
Air Compressors	500	0.217	1.051	1.001	0.005	0.032	0.032	568.299	0.019
Air Compressors	750	0.217	1.051	1.021	0.005	0.032	0.032	568.299	0.019
Air Compressors	1000	0.231	1.079	2.954	0.005	0.055	0.055	568.299	0.020
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067	0.062	459.829	0.149
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039	0.036	478.266	0.155
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031	0.029	470.654	0.152
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028	0.026	467.289	0.151
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023	0.021	481.250	0.156
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019	0.017	471.917	0.153

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168	0.168	568.299	0.062
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099	0.099	568.299	0.047
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089	0.089	568.300	0.025
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056	0.056	568.300	0.019
Cranes	50	1.811	7.072	5.636	0.005	0.543	0.499	517.872	0.168
Cranes	120	0.463	3.831	4.135	0.005	0.260	0.240	469.533	0.152
Cranes	175	0.334	3.335	3.160	0.005	0.166	0.153	474.748	0.154
Cranes	250	0.265	1.470	2.681	0.005	0.114	0.105	472.980	0.153
Cranes	500	0.218	1.834	2.154	0.005	0.088	0.081	471.967	0.153
Cranes	750	0.172	1.274	1.638	0.005	0.068	0.062	470.276	0.152
Cranes	9999	0.229	1.038	2.422	0.005	0.065	0.060	472.055	0.153
Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456	0.420	516.128	0.167
Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285	0.262	476.134	0.154
Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150	0.138	471.592	0.153
Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096	0.088	471.622	0.153
Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081	0.074	474.007	0.153
Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057	0.052	472.408	0.153
Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112	0.103	475.490	0.154
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107	0.107	568.299	0.059
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095	0.095	568.299	0.031
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060	0.060	568.299	0.024
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031	0.031	568.299	0.020
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030	0.030	568.299	0.020
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030	0.030	568.299	0.020
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053	0.053	568.299	0.023

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	25	0.403	4.219	3.453	0.005	0.107	0.099	525.777	0.170
Excavators	50	0.403	4.219	3.453	0.005	0.107	0.099	525.777	0.170
Excavators	120	0.201	3.439	2.082	0.005	0.085	0.078	466.738	0.151
Excavators	175	0.158	3.078	1.154	0.005	0.057	0.052	472.496	0.153
Excavators	250	0.131	1.081	0.962	0.005	0.032	0.029	472.560	0.153
Excavators	500	0.115	1.051	0.726	0.005	0.026	0.024	470.292	0.152
Excavators	750	0.139	1.135	1.026	0.005	0.038	0.035	468.558	0.152
Forklifts	50	0.636	5.029	3.932	0.005	0.178	0.164	525.483	0.170
Forklifts	120	0.277	3.611	2.607	0.005	0.140	0.128	471.529	0.153
Forklifts	175	0.209	3.170	1.653	0.005	0.084	0.078	472.106	0.153
Forklifts	250	0.191	1.214	1.466	0.005	0.056	0.052	473.326	0.153
Forklifts	500	0.215	1.222	1.658	0.005	0.062	0.057	473.615	0.153
Generator Sets	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299	0.054
Generator Sets	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299	0.062
Generator Sets	50	0.440	3.758	3.481	0.007	0.093	0.093	568.300	0.039
Generator Sets	120	0.243	3.338	2.185	0.006	0.087	0.087	568.299	0.021
Generator Sets	175	0.184	2.930	1.297	0.006	0.053	0.053	568.299	0.016
Generator Sets	250	0.147	1.000	1.020	0.006	0.028	0.028	568.299	0.013
Generator Sets	500	0.144	0.981	0.945	0.005	0.027	0.027	568.300	0.013
Generator Sets	750	0.145	0.981	0.964	0.005	0.027	0.027	568.299	0.013
Generator Sets	9999	0.173	1.008	2.812	0.005	0.047	0.047	568.299	0.015
Graders	50	1.864	7.125	5.043	0.005	0.522	0.480	493.532	0.160
Graders	120	0.638	4.149	5.074	0.005	0.371	0.342	468.316	0.152
Graders	175	0.329	3.418	2.774	0.005	0.152	0.140	478.508	0.155
Graders	250	0.230	1.179	2.556	0.005	0.082	0.076	473.470	0.153
Graders	500	0.280	1.315	2.265	0.005	0.088	0.081	470.753	0.152
Graders	750	0.253	1.141	1.125	0.005	0.041	0.041	568.300	0.022
Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144	0.132	476.921	0.154
Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065	0.060	473.302	0.153
Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040	0.037	470.861	0.152
Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045	0.041	471.917	0.153
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070	0.064	472.055	0.153
Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004	0.152
Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126	0.152

Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970	0.154
Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314	0.154
Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369	0.153
Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203	0.187	472.748	0.153
Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112	0.103	469.843	0.152
Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059	0.055	476.296	0.154
Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118	0.109	470.000	0.152
Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070	0.065	471.850	0.153
Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036	0.033	473.223	0.153
Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035	0.033	472.929	0.153

Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023	0.021	473.464	0.153
Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081	0.074	472.055	0.153
Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239	0.219	523.709	0.169
Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081	0.074	473.588	0.153
Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072	0.067	472.219	0.153
Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060	0.055	471.482	0.153
Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067	0.061	470.297	0.152
Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019	0.017	472.055	0.153
Pavers	25	0.918	4.945	4.131	0.005	0.265	0.243	526.853	0.170
Pavers	50	0.918	4.945	4.131	0.005	0.265	0.243	526.853	0.170
Pavers	120	0.314	3.493	3.068	0.005	0.191	0.175	469.899	0.152
Pavers	175	0.181	3.007	1.644	0.005	0.077	0.071	472.485	0.153
Pavers	250	0.107	1.004	1.035	0.005	0.034	0.031	473.483	0.153
Pavers	500	0.115	0.969	1.134	0.005	0.039	0.036	465.882	0.151
Paving Equipment	25	0.476	4.203	3.627	0.005	0.142	0.130	520.998	0.169
Paving Equipment	50	0.476	4.203	3.627	0.005	0.142	0.130	520.998	0.169
Paving Equipment	120	0.242	3.483	2.496	0.005	0.118	0.108	473.424	0.153
Paving Equipment	175	0.175	3.038	1.509	0.005	0.075	0.069	470.484	0.152
Paving Equipment	250	0.133	1.117	1.110	0.005	0.043	0.040	472.234	0.153
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Pressure Washers	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299	0.054
Pressure Washers	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299	0.062
Pressure Washers	50	0.306	3.210	3.344	0.007	0.075	0.075	568.299	0.027
Pressure Washers	120	0.189	3.186	2.100	0.006	0.072	0.072	568.299	0.017
Pressure Washers	175	0.178	2.907	1.310	0.006	0.053	0.053	568.299	0.016

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008
Pumps	15	0.683	3.491	4.278	0.008	0.183	0.183	568.299	0.061
Pumps	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Pumps	50	0.485	3.943	3.528	0.007	0.099	0.099	568.299	0.043
Pumps	120	0.261	3.389	2.213	0.006	0.092	0.092	568.299	0.023
Pumps	175	0.199	2.974	1.318	0.006	0.056	0.056	568.300	0.018
Pumps	250	0.159	1.016	1.038	0.006	0.029	0.029	568.299	0.014
Pumps	500	0.156	0.992	0.958	0.005	0.028	0.028	568.300	0.014
Pumps	750	0.157	0.992	0.977	0.005	0.029	0.029	568.300	0.014
Pumps	9999	0.186	1.020	2.840	0.005	0.049	0.049	568.299	0.016
Rollers	15	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	25	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	50	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	120	0.255	3.444	2.691	0.005	0.135	0.125	473.851	0.153
Rollers	175	0.127	2.909	1.101	0.005	0.049	0.046	471.970	0.153
Rollers	250	0.173	1.215	1.783	0.005	0.066	0.060	473.681	0.153
Rollers	500	0.212	1.968	2.200	0.005	0.091	0.083	477.573	0.155
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128	0.118	525.027	0.170
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051	0.047	473.037	0.153
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030	0.028	471.475	0.153
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035	0.033	472.927	0.153
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009	0.008	466.541	0.151
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231	0.212	474.103	0.153
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167	0.153	474.573	0.154
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151	0.139	479.092	0.155
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196	0.181	472.998	0.153
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115	0.115	568.299	0.037
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259	0.238	523.908	0.169
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259	0.238	523.908	0.169
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179	0.165	466.898	0.151
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084	0.077	470.459	0.152

Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048	0.045	469.871	0.152
Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053	0.048	469.143	0.152
Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064	0.059	465.052	0.150
Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052	0.048	472.456	0.153
Scrapers	120	0.566	4.094	5.503	0.005	0.405	0.372	482.363	0.156
Scrapers	175	0.290	3.321	2.631	0.005	0.137	0.126	478.948	0.155
Scrapers	250	0.291	1.602	2.803	0.005	0.125	0.115	469.446	0.152
Scrapers	500	0.216	1.732	2.051	0.005	0.081	0.074	472.539	0.153
Scrapers	750	0.184	1.338	1.713	0.005	0.064	0.059	472.115	0.153
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Signal Boards	50	0.522	4.217	3.561	0.007	0.098	0.098	568.299	0.047
Signal Boards	120	0.278	3.470	2.179	0.006	0.089	0.089	568.299	0.025
Signal Boards	175	0.215	3.049	1.262	0.006	0.055	0.055	568.299	0.019
Signal Boards	250	0.213	1.257	1.192	0.007	0.035	0.035	686.695	0.019
Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084	0.077	527.861	0.171
Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084	0.077	527.861	0.171
Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057	0.052	472.630	0.153
Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082	0.075	536.140	0.173
Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124	0.114	476.766	0.154
Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094	0.087	471.040	0.152
Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055	0.051	477.110	0.154
Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051	0.047	470.283	0.152
Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027	0.025	470.551	0.152
Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160	0.147	474.116	0.153
Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072	0.066	473.122	0.153
Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051	0.047	470.126	0.152
Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145	0.133	513.803	0.166

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145	0.133	513.803	0.166
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086	0.079	477.188	0.154
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059	0.054	469.329	0.152
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047	0.044	470.598	0.152
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039	0.036	470.910	0.152
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067	0.062	466.452	0.151
Trenchers	15	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	25	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	50	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	120	0.457	3.734	4.279	0.005	0.285	0.262	475.901	0.154
Trenchers	175	0.358	3.309	3.549	0.005	0.179	0.165	467.732	0.151
Trenchers	250	0.307	1.601	3.315	0.005	0.144	0.133	473.917	0.153
Trenchers	500	0.191	1.676	1.826	0.005	0.079	0.072	470.439	0.152
Trenchers	750	0.067	0.962	0.305	0.005	0.009	0.009	474.486	0.154
Welders	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300	0.061
Welders	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Welders	50	0.602	4.524	3.676	0.007	0.112	0.112	568.299	0.054
Welders	120	0.316	3.557	2.283	0.006	0.102	0.102	568.299	0.028
Welders	175	0.245	3.121	1.365	0.006	0.063	0.063	568.299	0.022
Welders	250	0.199	1.065	1.075	0.006	0.032	0.032	568.299	0.018
Welders	500	0.196	1.029	0.990	0.005	0.031	0.031	568.299	0.017
Water Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004	0.152
Water Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126	0.152
Water Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970	0.154
Water Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314	0.154
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369	0.153

2029

g/hp/hr	2029		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
N2O	**Equipment**	**MaxHP**	ROG	CO	NOX	SOX	PM10
0.005	Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021
0.005	Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021
0.005	Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021
0.004	Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026
0.004	Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009
0.004	Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028
0.005	Air Compressors	15	0.683	3.491	4.278	0.008	0.183
0.005	Air Compressors	25	0.709	2.376	4.407	0.007	0.177
0.005	Air Compressors	50	0.659	4.851	3.755	0.007	0.116
0.004	Air Compressors	120	0.345	3.653	2.313	0.006	0.104
0.004	Air Compressors	175	0.269	3.205	1.383	0.006	0.065
0.004	Air Compressors	250	0.220	1.094	1.086	0.006	0.033
0.004	Air Compressors	500	0.217	1.051	1.001	0.005	0.032
0.004	Air Compressors	750	0.217	1.051	1.021	0.005	0.032
0.004	Air Compressors	1000	0.231	1.079	2.954	0.005	0.055
0.005	Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193
0.005	Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193
0.005	Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193
0.004	Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067
0.004	Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039
0.004	Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031
0.004	Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028
0.004	Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023
0.004	Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019

0.005	Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161
0.005	Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168
0.005	Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099
0.004	Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089
0.004	Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056
0.005	Cranes	50	1.811	7.072	5.636	0.005	0.543
0.004	Cranes	120	0.463	3.831	4.135	0.005	0.260
0.004	Cranes	175	0.334	3.335	3.160	0.005	0.166
0.004	Cranes	250	0.265	1.470	2.681	0.005	0.114
0.004	Cranes	500	0.218	1.834	2.154	0.005	0.088
0.004	Cranes	750	0.172	1.274	1.638	0.005	0.068
0.004	Cranes	9999	0.229	1.038	2.422	0.005	0.065
0.005	Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456
0.004	Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285
0.004	Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150
0.004	Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096
0.004	Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081
0.004	Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057
0.004	Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112
0.005	Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107
0.004	Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095
0.004	Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060
0.004	Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031
0.004	Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030
0.004	Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030
0.004	Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053

0.005	Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	25	0.403	4.219	3.453	0.005	0.107
0.005	Excavators	50	0.403	4.219	3.453	0.005	0.107
0.004	Excavators	120	0.201	3.439	2.082	0.005	0.085
0.004	Excavators	175	0.158	3.078	1.154	0.005	0.057
0.004	Excavators	250	0.131	1.081	0.962	0.005	0.032
0.004	Excavators	500	0.115	1.051	0.726	0.005	0.026
0.004	Excavators	750	0.139	1.135	1.026	0.005	0.038
0.005	Forklifts	50	0.636	5.029	3.932	0.005	0.178
0.004	Forklifts	120	0.277	3.611	2.607	0.005	0.140
0.004	Forklifts	175	0.209	3.170	1.653	0.005	0.084
0.004	Forklifts	250	0.191	1.214	1.466	0.005	0.056
0.004	Forklifts	500	0.215	1.222	1.658	0.005	0.062
0.005	Generator Sets	15	0.607	3.491	4.269	0.008	0.178
0.005	Generator Sets	25	0.694	2.376	4.407	0.007	0.175
0.005	Generator Sets	50	0.440	3.758	3.481	0.007	0.093
0.004	Generator Sets	120	0.243	3.338	2.185	0.006	0.087
0.004	Generator Sets	175	0.184	2.930	1.297	0.006	0.053
0.004	Generator Sets	250	0.147	1.000	1.020	0.006	0.028
0.004	Generator Sets	500	0.144	0.981	0.945	0.005	0.027
0.004	Generator Sets	750	0.145	0.981	0.964	0.005	0.027
0.004	Generator Sets	9999	0.173	1.008	2.812	0.005	0.047
0.005	Graders	50	1.864	7.125	5.043	0.005	0.522
0.004	Graders	120	0.638	4.149	5.074	0.005	0.371
0.004	Graders	175	0.329	3.418	2.774	0.005	0.152
0.004	Graders	250	0.230	1.179	2.556	0.005	0.082
0.004	Graders	500	0.280	1.315	2.265	0.005	0.088
0.004	Graders	750	0.253	1.141	1.125	0.005	0.041
0.004	Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144
0.004	Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065
0.004	Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040
0.004	Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045
0.004	Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070
0.004	Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065
0.004	Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043

0.004	Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038
0.004	Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066
0.004	Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057
0.005	Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268
0.005	Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268
0.005	Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268
0.004	Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203
0.004	Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112
0.004	Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059
0.005	Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136
0.005	Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136
0.005	Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136
0.004	Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118
0.004	Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070
0.004	Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036
0.004	Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035

0.004	Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023
0.004	Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081
0.005	Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239
0.004	Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081
0.004	Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072
0.004	Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060
0.004	Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067
0.004	Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019
0.005	Pavers	25	0.918	4.945	4.131	0.005	0.265
0.005	Pavers	50	0.918	4.945	4.131	0.005	0.265
0.004	Pavers	120	0.314	3.493	3.068	0.005	0.191
0.004	Pavers	175	0.181	3.007	1.644	0.005	0.077
0.004	Pavers	250	0.107	1.004	1.035	0.005	0.034
0.004	Pavers	500	0.115	0.969	1.134	0.005	0.039
0.005	Paving Equipment	25	0.476	4.203	3.627	0.005	0.142
0.005	Paving Equipment	50	0.476	4.203	3.627	0.005	0.142
0.004	Paving Equipment	120	0.242	3.483	2.496	0.005	0.118
0.004	Paving Equipment	175	0.175	3.038	1.509	0.005	0.075
0.004	Paving Equipment	250	0.133	1.117	1.110	0.005	0.043
0.005	Plate Compactors	15	0.661	3.469	4.142	0.008	0.161
0.005	Pressure Washers	15	0.607	3.491	4.269	0.008	0.178
0.005	Pressure Washers	25	0.694	2.376	4.407	0.007	0.175
0.005	Pressure Washers	50	0.306	3.210	3.344	0.007	0.075
0.004	Pressure Washers	120	0.189	3.186	2.100	0.006	0.072
0.004	Pressure Washers	175	0.178	2.907	1.310	0.006	0.053

0.004	Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
0.005	Pumps	15	0.683	3.491	4.278	0.008	0.183
0.005	Pumps	25	0.709	2.376	4.407	0.007	0.177
0.005	Pumps	50	0.485	3.943	3.528	0.007	0.099
0.004	Pumps	120	0.261	3.389	2.213	0.006	0.092
0.004	Pumps	175	0.199	2.974	1.318	0.006	0.056
0.004	Pumps	250	0.159	1.016	1.038	0.006	0.029
0.004	Pumps	500	0.156	0.992	0.958	0.005	0.028
0.004	Pumps	750	0.157	0.992	0.977	0.005	0.029
0.004	Pumps	9999	0.186	1.020	2.840	0.005	0.049
0.005	Rollers	15	0.569	4.125	3.689	0.005	0.167
0.005	Rollers	25	0.569	4.125	3.689	0.005	0.167
0.005	Rollers	50	0.569	4.125	3.689	0.005	0.167
0.004	Rollers	120	0.255	3.444	2.691	0.005	0.135
0.004	Rollers	175	0.127	2.909	1.101	0.005	0.049
0.004	Rollers	250	0.173	1.215	1.783	0.005	0.066
0.004	Rollers	500	0.212	1.968	2.200	0.005	0.091
0.005	Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128
0.004	Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051
0.004	Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030
0.004	Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035
0.004	Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009
0.004	Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231
0.004	Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167
0.004	Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151
0.004	Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196
0.004	Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115
0.005	Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259
0.005	Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259
0.004	Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179
0.004	Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084

0.004	Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048
0.004	Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053
0.004	Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064
0.004	Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052
0.004	Scrapers	120	0.566	4.094	5.503	0.005	0.405
0.004	Scrapers	175	0.290	3.321	2.631	0.005	0.137
0.004	Scrapers	250	0.291	1.602	2.803	0.005	0.125
0.004	Scrapers	500	0.216	1.732	2.051	0.005	0.081
0.004	Scrapers	750	0.184	1.338	1.713	0.005	0.064
0.005	Signal Boards	15	0.661	3.469	4.142	0.008	0.161
0.005	Signal Boards	50	0.522	4.217	3.561	0.007	0.098
0.004	Signal Boards	120	0.278	3.470	2.179	0.006	0.089
0.004	Signal Boards	175	0.215	3.049	1.262	0.006	0.055
0.004	Signal Boards	250	0.213	1.257	1.192	0.007	0.035
0.005	Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084
0.005	Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084
0.004	Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057
0.005	Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082
0.004	Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124
0.004	Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094
0.004	Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055
0.004	Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051
0.004	Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027
0.005	Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191
0.005	Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191
0.005	Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191
0.004	Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160
0.004	Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072
0.004	Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051
0.005	Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067
Trenchers	15	0.542	4.120	3.657	0.005	0.163
Trenchers	25	0.542	4.120	3.657	0.005	0.163
Trenchers	50	0.542	4.120	3.657	0.005	0.163
Trenchers	120	0.457	3.734	4.279	0.005	0.285
Trenchers	175	0.358	3.309	3.549	0.005	0.179
Trenchers	250	0.307	1.601	3.315	0.005	0.144
Trenchers	500	0.191	1.676	1.826	0.005	0.079
Trenchers	750	0.067	0.962	0.305	0.005	0.009
Welders	15	0.683	3.491	4.278	0.008	0.183
Welders	25	0.709	2.376	4.407	0.007	0.177
Welders	50	0.602	4.524	3.676	0.007	0.112
Welders	120	0.316	3.557	2.283	0.006	0.102
Welders	175	0.245	3.121	1.365	0.006	0.063
Welders	250	0.199	1.065	1.075	0.006	0.032
Welders	500	0.196	1.029	0.990	0.005	0.031
Water Trucks	175	0.214	3.328	1.335	0.005	0.065
Water Trucks	250	0.185	1.213	1.129	0.005	0.043
Water Trucks	500	0.177	1.182	1.064	0.005	0.038
Water Trucks	750	0.235	1.578	1.751	0.005	0.066
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057

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2030

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.019	525.074	0.170	0.005
0.019	525.074	0.170	0.005
0.019	525.074	0.170	0.005
0.024	472.114	0.153	0.004
0.009	472.055	0.153	0.004
0.028	568.299	0.013	0.004
0.183	568.300	0.061	0.005
0.177	568.299	0.064	0.005
0.116	568.299	0.059	0.005
0.104	568.299	0.031	0.004
0.065	568.299	0.024	0.004
0.033	568.299	0.019	0.004
0.032	568.299	0.019	0.004
0.032	568.299	0.019	0.004
0.055	568.299	0.020	0.004
0.178	532.821	0.172	0.005
0.178	532.821	0.172	0.005
0.178	532.821	0.172	0.005
0.062	459.829	0.149	0.004
0.036	478.266	0.155	0.004
0.029	470.654	0.152	0.004
0.026	467.289	0.151	0.004
0.021	481.250	0.156	0.004
0.017	471.917	0.153	0.004

2030		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.661	3.469
Aerial Lifts	25	0.685	2.339
Aerial Lifts	50	0.339	3.764
Aerial Lifts	120	0.188	3.352
Aerial Lifts	500	0.126	0.986
Aerial Lifts	750	0.126	0.986
Air Compressors	15	0.663	3.470
Air Compressors	25	0.687	2.340
Air Compressors	50	0.506	4.712
Air Compressors	120	0.264	3.630
Air Compressors	175	0.193	3.205
Air Compressors	250	0.179	1.092
Air Compressors	500	0.178	1.048
Air Compressors	750	0.178	1.048
Air Compressors	1000	0.182	1.049
Bore/Drill Rigs	15	0.661	3.469
Bore/Drill Rigs	25	0.685	2.339
Bore/Drill Rigs	50	0.348	4.029
Bore/Drill Rigs	120	0.183	3.434
Bore/Drill Rigs	175	0.127	3.038
Bore/Drill Rigs	250	0.127	1.035
Bore/Drill Rigs	500	0.127	1.006
Bore/Drill Rigs	750	0.127	1.006
Bore/Drill Rigs	1000	0.127	1.006

0.161	568.299	0.059	0.005
0.168	568.299	0.062	0.005
0.161	568.299	0.061	0.005
0.099	568.299	0.047	0.005
0.089	568.300	0.025	0.004
0.056	568.300	0.019	0.004
0.499	517.872	0.168	0.005
0.240	469.533	0.152	0.004
0.153	474.748	0.154	0.004
0.105	472.980	0.153	0.004
0.081	471.967	0.153	0.004
0.062	470.276	0.152	0.004
0.060	472.055	0.153	0.004
0.420	516.128	0.167	0.005
0.262	476.134	0.154	0.004
0.138	471.592	0.153	0.004
0.088	471.622	0.153	0.004
0.074	474.007	0.153	0.004
0.052	472.408	0.153	0.004
0.103	475.490	0.154	0.004
0.107	568.299	0.059	0.005
0.095	568.299	0.031	0.004
0.060	568.299	0.024	0.004
0.031	568.299	0.020	0.004
0.030	568.299	0.020	0.004
0.030	568.299	0.020	0.004
0.053	568.299	0.023	0.004

Cement and Mortar Mixers	15	0.661	3.469
Cement and Mortar Mixers	25	0.685	2.339
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.409	4.199
Concrete/Industrial Saws	120	0.221	3.480
Concrete/Industrial Saws	175	0.163	3.074
Cranes	50	0.684	5.366
Cranes	120	0.343	3.812
Cranes	175	0.253	3.356
Cranes	250	0.224	1.147
Cranes	500	0.222	1.090
Cranes	750	0.222	1.090
Cranes	9999	0.245	1.108
Crawler Tractors	50	0.833	5.605
Crawler Tractors	120	0.405	3.871
Crawler Tractors	175	0.296	3.397
Crawler Tractors	250	0.262	1.207
Crawler Tractors	500	0.257	1.200
Crawler Tractors	750	0.257	1.200
Crawler Tractors	1000	0.265	1.225
Crushing/Proc. Equipment	50	0.525	4.857
Crushing/Proc. Equipment	120	0.272	3.673
Crushing/Proc. Equipment	175	0.197	3.244
Crushing/Proc. Equipment	250	0.185	1.105
Crushing/Proc. Equipment	500	0.184	1.058
Crushing/Proc. Equipment	750	0.184	1.058
Crushing/Proc. Equipment	9999	0.196	1.059

0.161	568.299	0.061	0.005
0.099	525.777	0.170	0.005
0.099	525.777	0.170	0.005
0.078	466.738	0.151	0.004
0.052	472.496	0.153	0.004
0.029	472.560	0.153	0.004
0.024	470.292	0.152	0.004
0.035	468.558	0.152	0.004
0.164	525.483	0.170	0.005
0.128	471.529	0.153	0.004
0.078	472.106	0.153	0.004
0.052	473.326	0.153	0.004
0.057	473.615	0.153	0.004
0.178	568.299	0.054	0.005
0.175	568.299	0.062	0.005
0.093	568.300	0.039	0.005
0.087	568.299	0.021	0.004
0.053	568.299	0.016	0.004
0.028	568.299	0.013	0.004
0.027	568.300	0.013	0.004
0.027	568.299	0.013	0.004
0.047	568.299	0.015	0.004
0.480	493.532	0.160	0.005
0.342	468.316	0.152	0.004
0.140	478.508	0.155	0.004
0.076	473.470	0.153	0.004
0.081	470.753	0.152	0.004
0.041	568.300	0.022	0.004
0.132	476.921	0.154	0.004
0.060	473.302	0.153	0.004
0.037	470.861	0.152	0.004
0.041	471.917	0.153	0.004
0.064	472.055	0.153	0.004
0.060	470.004	0.152	0.004
0.040	469.126	0.152	0.004

Dumpers/Tenders	25	0.685	2.340
Excavators	25	0.685	2.339
Excavators	50	0.602	5.309
Excavators	120	0.301	3.806
Excavators	175	0.213	3.362
Excavators	250	0.203	1.145
Excavators	500	0.202	1.088
Excavators	750	0.202	1.088
Forklifts	50	0.565	5.272
Forklifts	120	0.283	3.799
Forklifts	175	0.199	3.360
Forklifts	250	0.195	1.144
Forklifts	500	0.195	1.088
Generator Sets	15	0.592	3.470
Generator Sets	25	0.686	2.340
Generator Sets	50	0.315	3.640
Generator Sets	120	0.178	3.316
Generator Sets	175	0.130	2.929
Generator Sets	250	0.120	0.998
Generator Sets	500	0.119	0.978
Generator Sets	750	0.119	0.978
Generator Sets	9999	0.128	0.979
Graders	50	0.648	5.239
Graders	120	0.323	3.775
Graders	175	0.237	3.326
Graders	250	0.216	1.148
Graders	500	0.214	1.097
Graders	750	0.214	1.097
Off-Highway Tractors	120	0.518	3.944
Off-Highway Tractors	175	0.373	3.435
Off-Highway Tractors	250	0.315	1.286
Off-Highway Tractors	750	0.304	1.351
Off-Highway Tractors	1000	0.318	1.409
Off-Highway Trucks	175	0.229	3.425
Off-Highway Trucks	250	0.217	1.166

0.035	474.970	0.154	0.004
0.061	476.314	0.154	0.004
0.052	473.369	0.153	0.004
0.246	528.954	0.171	0.005
0.246	528.954	0.171	0.005
0.246	528.954	0.171	0.005
0.187	472.748	0.153	0.004
0.103	469.843	0.152	0.004
0.055	476.296	0.154	0.004
0.125	526.176	0.170	0.005
0.125	526.176	0.170	0.005
0.125	526.176	0.170	0.005
0.109	470.000	0.152	0.004
0.065	471.850	0.153	0.004
0.033	473.223	0.153	0.004
0.033	472.929	0.153	0.004

Off-Highway Trucks	500	0.216	1.104
Off-Highway Trucks	750	0.217	1.104
Off-Highway Trucks	1000	0.220	1.107
Other Construction Equipment	15	0.661	3.469
Other Construction Equipment	25	0.685	2.339
Other Construction Equipment	50	0.429	4.390
Other Construction Equipment	120	0.225	3.538
Other Construction Equipment	175	0.161	3.127
Other Construction Equipment	500	0.154	1.028
Other General Industrial Equipment	15	0.589	3.469
Other General Industrial Equipment	25	0.685	2.339
Other General Industrial Equipment	50	0.609	5.299
Other General Industrial Equipment	120	0.309	3.802
Other General Industrial Equipment	175	0.223	3.357
Other General Industrial Equipment	250	0.209	1.143
Other General Industrial Equipment	500	0.208	1.087

0.021	473.464	0.153	0.004
0.074	472.055	0.153	0.004
0.219	523.709	0.169	0.005
0.074	473.588	0.153	0.004
0.067	472.219	0.153	0.004
0.055	471.482	0.153	0.004
0.061	470.297	0.152	0.004
0.017	472.055	0.153	0.004
0.243	526.853	0.170	0.005
0.243	526.853	0.170	0.005
0.175	469.899	0.152	0.004
0.071	472.485	0.153	0.004
0.031	473.483	0.153	0.004
0.036	465.882	0.151	0.004
0.130	520.998	0.169	0.005
0.130	520.998	0.169	0.005
0.108	473.424	0.153	0.004
0.069	470.484	0.152	0.004
0.040	472.234	0.153	0.004
0.161	568.299	0.059	0.005
0.178	568.299	0.054	0.005
0.175	568.299	0.062	0.005
0.075	568.299	0.027	0.005
0.072	568.299	0.017	0.004
0.053	568.299	0.016	0.004

Other General Industrial Equipment	750	0.208	1.087
Other General Industrial Equipment	1000	0.212	1.088
Other Material Handling Equipment	50	0.598	5.237
Other Material Handling Equipment	120	0.304	3.784
Other Material Handling Equipment	175	0.220	3.341
Other Material Handling Equipment	250	0.206	1.138
Other Material Handling Equipment	500	0.205	1.083
Other Material Handling Equipment	9999	0.218	1.084
Pavers	25	0.685	2.339
Pavers	50	0.845	5.396
Pavers	120	0.408	3.800
Pavers	175	0.300	3.326
Pavers	250	0.259	1.192
Pavers	500	0.253	1.181
Paving Equipment	25	0.685	2.339
Paving Equipment	50	0.802	5.309
Paving Equipment	120	0.390	3.774
Paving Equipment	175	0.290	3.306
Paving Equipment	250	0.250	1.171
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.592	3.470
Pressure Washers	25	0.686	2.340
Pressure Washers	50	0.215	3.124
Pressure Washers	120	0.134	3.167
Pressure Washers	175	0.126	2.907

0.009	568.299	0.008	0.004
0.183	568.299	0.061	0.005
0.177	568.299	0.064	0.005
0.099	568.299	0.043	0.005
0.092	568.299	0.023	0.004
0.056	568.300	0.018	0.004
0.029	568.299	0.014	0.004
0.028	568.300	0.014	0.004
0.029	568.300	0.014	0.004
0.049	568.299	0.016	0.004
0.154	526.141	0.170	0.005
0.154	526.141	0.170	0.005
0.154	526.141	0.170	0.005
0.125	473.851	0.153	0.004
0.046	471.970	0.153	0.004
0.060	473.681	0.153	0.004
0.083	477.573	0.155	0.004
0.118	525.027	0.170	0.005
0.047	473.037	0.153	0.004
0.028	471.475	0.153	0.004
0.033	472.927	0.153	0.004
0.008	466.541	0.151	0.004
0.212	474.103	0.153	0.004
0.153	474.573	0.154	0.004
0.139	479.092	0.155	0.004
0.181	472.998	0.153	0.004
0.115	568.299	0.037	0.004
0.238	523.908	0.169	0.005
0.238	523.908	0.169	0.005
0.165	466.898	0.151	0.004
0.077	470.459	0.152	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.663	3.470
Pumps	25	0.687	2.340
Pumps	50	0.348	3.814
Pumps	120	0.193	3.367
Pumps	175	0.142	2.973
Pumps	250	0.130	1.013
Pumps	500	0.129	0.989
Pumps	750	0.129	0.989
Pumps	9999	0.139	0.990
Rollers	15	0.661	3.469
Rollers	25	0.685	2.339
Rollers	50	0.587	4.784
Rollers	120	0.299	3.639
Rollers	175	0.223	3.203
Rollers	250	0.195	1.099
Rollers	500	0.193	1.056
Rough Terrain Forklifts	50	0.548	5.031
Rough Terrain Forklifts	120	0.279	3.725
Rough Terrain Forklifts	175	0.200	3.291
Rough Terrain Forklifts	250	0.191	1.121
Rough Terrain Forklifts	500	0.190	1.070
Rubber Tired Dozers	175	0.398	3.496
Rubber Tired Dozers	250	0.335	1.322
Rubber Tired Dozers	500	0.322	1.401
Rubber Tired Dozers	750	0.323	1.401
Rubber Tired Dozers	1000	0.338	1.465
Rubber Tired Loaders	25	0.685	2.339
Rubber Tired Loaders	50	0.634	5.181
Rubber Tired Loaders	120	0.317	3.759
Rubber Tired Loaders	175	0.232	3.312

0.045	469.871	0.152	0.004
0.048	469.143	0.152	0.004
0.059	465.052	0.150	0.004
0.048	472.456	0.153	0.004
0.372	482.363	0.156	0.004
0.126	478.948	0.155	0.004
0.115	469.446	0.152	0.004
0.074	472.539	0.153	0.004
0.059	472.115	0.153	0.004
0.161	568.299	0.059	0.005
0.098	568.299	0.047	0.005
0.089	568.299	0.025	0.004
0.055	568.299	0.019	0.004
0.035	686.695	0.019	0.004
0.077	527.861	0.171	0.005
0.077	527.861	0.171	0.005
0.052	472.630	0.153	0.004
0.075	536.140	0.173	0.005
0.114	476.766	0.154	0.004
0.087	471.040	0.152	0.004
0.051	477.110	0.154	0.004
0.047	470.283	0.152	0.004
0.025	470.551	0.152	0.004
0.176	525.328	0.170	0.005
0.176	525.328	0.170	0.005
0.176	525.328	0.170	0.005
0.147	474.116	0.153	0.004
0.066	473.122	0.153	0.004
0.047	470.126	0.152	0.004
0.133	513.803	0.166	0.005

Rubber Tired Loaders	250	0.210	1.138
Rubber Tired Loaders	500	0.208	1.085
Rubber Tired Loaders	750	0.208	1.085
Rubber Tired Loaders	1000	0.214	1.099
Scrapers	120	0.410	3.866
Scrapers	175	0.301	3.389
Scrapers	250	0.264	1.206
Scrapers	500	0.259	1.184
Scrapers	750	0.259	1.184
Signal Boards	15	0.661	3.470
Signal Boards	50	0.393	4.099
Signal Boards	120	0.213	3.451
Signal Boards	175	0.157	3.048
Signal Boards	250	0.176	1.255
Skid Steer Loaders	25	0.685	2.340
Skid Steer Loaders	50	0.411	4.386
Skid Steer Loaders	120	0.214	3.538
Surfacing Equipment	50	0.518	4.295
Surfacing Equipment	120	0.264	3.492
Surfacing Equipment	175	0.197	3.071
Surfacing Equipment	250	0.172	1.064
Surfacing Equipment	500	0.169	1.032
Surfacing Equipment	750	0.169	1.032
Sweepers/Scrubbers	15	0.589	3.470
Sweepers/Scrubbers	25	0.685	2.340
Sweepers/Scrubbers	50	0.509	4.947
Sweepers/Scrubbers	120	0.261	3.703
Sweepers/Scrubbers	175	0.187	3.275
Sweepers/Scrubbers	250	0.182	1.116
Tractors/Loaders/Backhoes	25	0.685	2.339

0.133	513.803	0.166	0.005
0.079	477.188	0.154	0.004
0.054	469.329	0.152	0.004
0.044	470.598	0.152	0.004
0.036	470.910	0.152	0.004
0.062	466.452	0.151	0.004
0.150	527.160	0.171	0.005
0.150	527.160	0.171	0.005
0.150	527.160	0.171	0.005
0.262	475.901	0.154	0.004
0.165	467.732	0.151	0.004
0.133	473.917	0.153	0.004
0.072	470.439	0.152	0.004
0.009	474.486	0.154	0.004
0.183	568.300	0.061	0.005
0.177	568.299	0.064	0.005
0.112	568.299	0.054	0.005
0.102	568.299	0.028	0.004
0.063	568.299	0.022	0.004
0.032	568.299	0.018	0.004
0.031	568.299	0.017	0.004
0.060	470.004	0.152	0.004
0.040	469.126	0.152	0.004
0.035	474.970	0.154	0.004
0.061	476.314	0.154	0.004
0.052	473.369	0.153	0.004

Tractors/Loaders/Backhoes	50	0.539	4.966
Tractors/Loaders/Backhoes	120	0.272	3.705
Tractors/Loaders/Backhoes	175	0.193	3.273
Tractors/Loaders/Backhoes	250	0.183	1.115
Tractors/Loaders/Backhoes	500	0.182	1.066
Tractors/Loaders/Backhoes	750	0.182	1.066
Trenchers	15	0.661	3.469
Trenchers	25	0.685	2.339
Trenchers	50	0.851	5.208
Trenchers	120	0.409	3.743
Trenchers	175	0.300	3.273
Trenchers	250	0.256	1.188
Trenchers	500	0.249	1.209
Trenchers	750	0.249	1.209
Welders	15	0.663	3.470
Welders	25	0.687	2.340
Welders	50	0.449	4.387
Welders	120	0.239	3.535
Welders	175	0.176	3.121
Welders	250	0.162	1.063
Welders	500	0.161	1.027
Water Trucks	175	0.229	3.425
Water Trucks	250	0.217	1.166
Water Trucks	500	0.216	1.104
Water Trucks	750	0.217	1.104
Water Trucks	1000	0.220	1.107

2031

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2031
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Aerial Lifts
4.332	0.007	0.162	0.162	568.299	0.061	0.005	Aerial Lifts
3.135	0.007	0.040	0.040	568.300	0.030	0.005	Aerial Lifts
1.657	0.006	0.036	0.036	568.299	0.017	0.004	Aerial Lifts
0.479	0.005	0.016	0.016	568.299	0.011	0.004	Aerial Lifts
0.485	0.005	0.016	0.016	568.299	0.011	0.004	Aerial Lifts
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Air Compressors
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Air Compressors
3.340	0.007	0.046	0.046	568.299	0.045	0.005	Air Compressors
1.729	0.006	0.041	0.041	568.299	0.023	0.004	Air Compressors
0.633	0.006	0.027	0.027	568.299	0.017	0.004	Air Compressors
0.529	0.006	0.018	0.018	568.299	0.016	0.004	Air Compressors
0.499	0.005	0.017	0.017	568.299	0.016	0.004	Air Compressors
0.505	0.005	0.017	0.017	568.300	0.016	0.004	Air Compressors
2.600	0.005	0.033	0.033	568.299	0.016	0.004	Air Compressors
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Bore/Drill Rigs
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Bore/Drill Rigs
3.020	0.007	0.013	0.013	568.299	0.031	0.005	Bore/Drill Rigs
1.415	0.006	0.012	0.012	568.299	0.016	0.004	Bore/Drill Rigs
0.279	0.006	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.006	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.005	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.005	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
2.372	0.005	0.021	0.021	568.299	0.011	0.004	Bore/Drill Rigs

4.142	0.008	0.161	0.161	568.299	0.059	0.005	Cement and Mortar Mixers
4.333	0.007	0.162	0.162	568.299	0.061	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
3.222	0.007	0.041	0.041	568.299	0.036	0.005	Concrete/Industrial Saws
1.667	0.006	0.036	0.036	568.299	0.019	0.004	Concrete/Industrial Saws
0.590	0.006	0.025	0.025	568.299	0.014	0.004	Concrete/Industrial Saws
3.598	0.007	0.075	0.075	568.299	0.061	0.005	Cranes
1.987	0.006	0.067	0.067	568.299	0.030	0.004	Cranes
0.916	0.006	0.042	0.042	568.299	0.022	0.004	Cranes
0.748	0.006	0.024	0.024	568.299	0.020	0.004	Cranes
0.697	0.005	0.023	0.023	568.299	0.020	0.004	Cranes
0.709	0.005	0.024	0.024	568.300	0.020	0.004	Cranes
2.800	0.005	0.043	0.043	568.299	0.022	0.004	Cranes
3.808	0.007	0.116	0.116	568.299	0.075	0.005	Crawler Tractors
2.341	0.006	0.105	0.105	568.299	0.036	0.004	Crawler Tractors
1.266	0.006	0.065	0.065	568.299	0.026	0.004	Crawler Tractors
1.104	0.006	0.040	0.040	568.299	0.023	0.004	Crawler Tractors
1.016	0.005	0.038	0.038	568.299	0.023	0.004	Crawler Tractors
1.033	0.005	0.038	0.038	568.299	0.023	0.004	Crawler Tractors
3.094	0.005	0.056	0.056	568.300	0.023	0.004	Crawler Tractors
3.351	0.007	0.043	0.043	568.299	0.047	0.005	Crushing/Proc. Equipment
1.708	0.006	0.038	0.038	568.299	0.024	0.004	Crushing/Proc. Equipment
0.600	0.006	0.025	0.025	568.299	0.017	0.004	Crushing/Proc. Equipment
0.502	0.006	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
0.476	0.005	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
0.478	0.005	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
2.590	0.005	0.032	0.032	568.299	0.017	0.004	Crushing/Proc. Equipment

4.332	0.007	0.161	0.161	568.299	0.061	0.005	Dumpers/Tenders
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Excavators
3.393	0.007	0.038	0.038	568.299	0.054	0.005	Excavators
1.676	0.006	0.034	0.034	568.299	0.027	0.004	Excavators
0.525	0.006	0.023	0.023	568.299	0.019	0.004	Excavators
0.452	0.006	0.016	0.016	568.299	0.018	0.004	Excavators
0.433	0.005	0.016	0.016	568.299	0.018	0.004	Excavators
0.437	0.005	0.016	0.016	568.299	0.018	0.004	Excavators
3.330	0.007	0.023	0.023	568.299	0.051	0.005	Forklifts
1.555	0.006	0.021	0.021	568.299	0.025	0.004	Forklifts
0.391	0.006	0.015	0.015	568.299	0.018	0.004	Forklifts
0.341	0.006	0.012	0.012	568.299	0.017	0.004	Forklifts
0.341	0.005	0.012	0.012	568.299	0.017	0.004	Forklifts
4.164	0.008	0.166	0.166	568.299	0.053	0.005	Generator Sets
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Generator Sets
3.107	0.007	0.038	0.038	568.299	0.028	0.005	Generator Sets
1.645	0.006	0.034	0.034	568.299	0.016	0.004	Generator Sets
0.601	0.006	0.023	0.023	568.299	0.011	0.004	Generator Sets
0.504	0.006	0.016	0.016	568.299	0.010	0.004	Generator Sets
0.476	0.005	0.015	0.015	568.299	0.010	0.004	Generator Sets
0.482	0.005	0.015	0.015	568.299	0.010	0.004	Generator Sets
2.483	0.005	0.029	0.029	568.299	0.011	0.004	Generator Sets
3.530	0.007	0.065	0.065	568.299	0.058	0.005	Graders
1.903	0.006	0.058	0.058	568.299	0.029	0.004	Graders
0.815	0.006	0.038	0.038	568.300	0.021	0.004	Graders
0.684	0.006	0.024	0.024	568.299	0.019	0.004	Graders
0.647	0.005	0.023	0.023	568.299	0.019	0.004	Graders
0.654	0.005	0.023	0.023	568.299	0.019	0.004	Graders
2.959	0.006	0.175	0.175	568.299	0.046	0.004	Off-Highway Tractors
1.916	0.006	0.104	0.104	568.299	0.033	0.004	Off-Highway Tractors
1.715	0.006	0.064	0.064	568.299	0.028	0.004	Off-Highway Tractors
1.590	0.005	0.060	0.060	568.299	0.027	0.004	Off-Highway Tractors
3.569	0.005	0.078	0.078	568.300	0.028	0.004	Off-Highway Tractors
0.563	0.006	0.025	0.025	568.299	0.020	0.004	Off-Highway Trucks
0.481	0.006	0.017	0.017	568.300	0.019	0.004	Off-Highway Trucks

0.458	0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks
0.463	0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks
2.651	0.005	0.033	0.033	568.300	0.019	0.004	Off-Highway Trucks
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Other Construction Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Other Construction Equipment
3.190	0.007	0.030	0.030	568.299	0.038	0.005	Other Construction Equipment
1.576	0.006	0.027	0.027	568.300	0.020	0.004	Other Construction Equipment
0.459	0.006	0.019	0.019	568.299	0.014	0.004	Other Construction Equipment
0.391	0.005	0.014	0.014	568.300	0.013	0.004	Other Construction Equipment
4.142	0.008	0.161	0.161	568.299	0.053	0.005	Other General Industrial Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Other General Industrial Equipment
3.460	0.007	0.048	0.048	568.299	0.054	0.005	Other General Industrial Equipment
1.766	0.006	0.043	0.043	568.299	0.027	0.004	Other General Industrial Equipment
0.641	0.006	0.028	0.028	568.299	0.020	0.004	Other General Industrial Equipment
0.536	0.006	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment
0.506	0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment

0.512	0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment
2.660	0.005	0.035	0.035	568.299	0.019	0.004	Other General Industrial Equipment
3.447	0.007	0.048	0.048	568.299	0.053	0.005	Other Material Handling Equipment
1.762	0.006	0.043	0.043	568.299	0.027	0.004	Other Material Handling Equipment
0.640	0.006	0.028	0.028	568.299	0.019	0.004	Other Material Handling Equipment
0.535	0.006	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment
0.505	0.005	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment
2.653	0.005	0.035	0.035	568.299	0.019	0.004	Other Material Handling Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Pavers
3.841	0.007	0.134	0.134	568.299	0.076	0.005	Pavers
2.468	0.006	0.121	0.121	568.300	0.036	0.004	Pavers
1.425	0.006	0.074	0.074	568.299	0.027	0.004	Pavers
1.246	0.006	0.045	0.045	568.299	0.023	0.004	Pavers
1.141	0.005	0.043	0.043	568.299	0.022	0.004	Pavers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Paving Equipment
3.809	0.007	0.126	0.126	568.299	0.072	0.005	Paving Equipment
2.393	0.006	0.114	0.114	568.300	0.035	0.004	Paving Equipment
1.363	0.006	0.070	0.070	568.299	0.026	0.004	Paving Equipment
1.176	0.006	0.042	0.042	568.299	0.022	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.164	0.008	0.166	0.166	568.300	0.053	0.005	Pressure Washers
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Pressure Washers
2.989	0.007	0.030	0.030	568.299	0.019	0.005	Pressure Washers
1.594	0.006	0.028	0.028	568.300	0.012	0.004	Pressure Washers
0.619	0.006	0.024	0.024	568.299	0.011	0.004	Pressure Washers

0.265	0.006	0.009	0.009	568.299	0.008	0.004	Pressure Washers
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Pumps
4.347	0.007	0.165	0.165	568.300	0.061	0.005	Pumps
3.146	0.007	0.040	0.040	568.299	0.031	0.005	Pumps
1.662	0.006	0.036	0.036	568.299	0.017	0.004	Pumps
0.610	0.006	0.024	0.024	568.299	0.012	0.004	Pumps
0.511	0.006	0.016	0.016	568.299	0.011	0.004	Pumps
0.482	0.005	0.016	0.016	568.299	0.011	0.004	Pumps
0.488	0.005	0.016	0.016	568.299	0.011	0.004	Pumps
2.504	0.005	0.030	0.030	568.299	0.012	0.004	Pumps
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Rollers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Rollers
3.480	0.007	0.073	0.073	568.299	0.053	0.005	Rollers
1.950	0.006	0.066	0.066	568.299	0.027	0.004	Rollers
0.907	0.006	0.042	0.042	568.299	0.020	0.004	Rollers
0.745	0.006	0.024	0.024	568.299	0.017	0.004	Rollers
0.697	0.005	0.023	0.023	568.299	0.017	0.004	Rollers
3.359	0.007	0.039	0.039	568.299	0.049	0.005	Rough Terrain Forklifts
1.671	0.006	0.034	0.034	568.299	0.025	0.004	Rough Terrain Forklifts
0.537	0.006	0.023	0.023	568.299	0.018	0.004	Rough Terrain Forklifts
0.463	0.006	0.016	0.016	568.299	0.017	0.004	Rough Terrain Forklifts
0.443	0.005	0.016	0.016	568.300	0.017	0.004	Rough Terrain Forklifts
2.034	0.006	0.111	0.111	568.299	0.035	0.004	Rubber Tired Dozers
1.828	0.006	0.069	0.069	568.299	0.030	0.004	Rubber Tired Dozers
1.658	0.005	0.064	0.064	568.299	0.029	0.004	Rubber Tired Dozers
1.694	0.005	0.064	0.064	568.299	0.029	0.004	Rubber Tired Dozers
3.676	0.005	0.082	0.082	568.299	0.030	0.004	Rubber Tired Dozers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Rubber Tired Loaders
3.500	0.007	0.062	0.062	568.300	0.057	0.005	Rubber Tired Loaders
1.875	0.006	0.056	0.056	568.299	0.028	0.004	Rubber Tired Loaders
0.787	0.006	0.036	0.036	568.299	0.020	0.004	Rubber Tired Loaders

0.655	0.006	0.022	0.022	568.299	0.018	0.004	Rubber Tired Loaders
0.619	0.005	0.021	0.021	568.299	0.018	0.004	Rubber Tired Loaders
0.627	0.005	0.022	0.022	568.299	0.018	0.004	Rubber Tired Loaders
2.722	0.005	0.039	0.039	568.299	0.019	0.004	Rubber Tired Loaders
2.384	0.006	0.111	0.111	568.299	0.037	0.004	Scrapers
1.320	0.006	0.068	0.068	568.299	0.027	0.004	Scrapers
1.149	0.006	0.042	0.042	568.299	0.023	0.004	Scrapers
1.057	0.005	0.040	0.040	568.299	0.023	0.004	Scrapers
1.075	0.005	0.040	0.040	568.299	0.023	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
3.193	0.007	0.040	0.040	568.299	0.035	0.005	Signal Boards
1.657	0.006	0.035	0.035	568.300	0.019	0.004	Signal Boards
0.586	0.006	0.024	0.024	568.299	0.014	0.004	Signal Boards
0.594	0.007	0.019	0.019	686.695	0.015	0.004	Signal Boards
4.332	0.007	0.162	0.162	568.299	0.061	0.005	Skid Steer Loaders
3.128	0.007	0.018	0.018	568.299	0.037	0.005	Skid Steer Loaders
1.477	0.006	0.017	0.017	568.299	0.019	0.004	Skid Steer Loaders
3.400	0.007	0.075	0.075	568.299	0.046	0.005	Surfacing Equipment
1.959	0.006	0.068	0.068	568.299	0.023	0.004	Surfacing Equipment
0.939	0.006	0.043	0.043	568.299	0.017	0.004	Surfacing Equipment
0.789	0.006	0.026	0.026	568.299	0.015	0.004	Surfacing Equipment
0.738	0.005	0.025	0.025	568.299	0.015	0.004	Surfacing Equipment
0.749	0.005	0.025	0.025	568.299	0.015	0.004	Surfacing Equipment
4.142	0.008	0.161	0.161	568.299	0.053	0.005	Sweepers/Scrubbers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Sweepers/Scrubbers
3.294	0.007	0.026	0.026	568.299	0.046	0.005	Sweepers/Scrubbers
1.569	0.006	0.023	0.023	568.299	0.023	0.004	Sweepers/Scrubbers
0.431	0.006	0.017	0.017	568.299	0.016	0.004	Sweepers/Scrubbers
0.370	0.006	0.013	0.013	568.299	0.016	0.004	Sweepers/Scrubbers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Tractors/Loaders/Backhoes

3.299	0.007	0.033	0.033	568.299	0.048	0.005	Tractors/Loaders/Backhoes
1.624	0.006	0.030	0.030	568.299	0.024	0.004	Tractors/Loaders/Backhoes
0.485	0.006	0.020	0.020	568.299	0.017	0.004	Tractors/Loaders/Backhoes
0.418	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
0.403	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
0.407	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Trenchers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Trenchers
3.835	0.007	0.144	0.144	568.299	0.076	0.005	Trenchers
2.559	0.006	0.132	0.132	568.299	0.036	0.004	Trenchers
1.529	0.006	0.080	0.080	568.300	0.027	0.004	Trenchers
1.348	0.006	0.049	0.049	568.300	0.023	0.004	Trenchers
1.231	0.005	0.046	0.046	568.299	0.022	0.004	Trenchers
1.254	0.005	0.047	0.047	568.299	0.022	0.004	Trenchers
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Welders
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Welders
3.273	0.007	0.045	0.045	568.299	0.040	0.005	Welders
1.707	0.006	0.040	0.040	568.299	0.021	0.004	Welders
0.628	0.006	0.027	0.027	568.299	0.015	0.004	Welders
0.525	0.006	0.017	0.017	568.299	0.014	0.004	Welders
0.495	0.005	0.017	0.017	568.299	0.014	0.004	Welders
0.563	0.006	0.025	0.025	568.299	0.020	0.004	Water Trucks
0.481	0.006	0.017	0.017	568.300	0.019	0.004	Water Trucks
0.458	0.005	0.017	0.017	568.299	0.019	0.004	Water Trucks
0.463	0.005	0.017	0.017	568.299	0.019	0.004	Water Trucks
2.651	0.005	0.033	0.033	568.300	0.019	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
50	0.339	3.764	3.135	0.007	0.040	0.040	568.300	0.030	0.005
120	0.188	3.352	1.657	0.006	0.036	0.036	568.299	0.017	0.004
500	0.126	0.986	0.479	0.005	0.016	0.016	568.299	0.011	0.004
750	0.126	0.986	0.485	0.005	0.016	0.016	568.299	0.011	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.506	4.712	3.340	0.007	0.046	0.046	568.299	0.045	0.005
120	0.264	3.630	1.729	0.006	0.041	0.041	568.299	0.023	0.004
175	0.193	3.205	0.633	0.006	0.027	0.027	568.299	0.017	0.004
250	0.179	1.092	0.529	0.006	0.018	0.018	568.299	0.016	0.004
500	0.178	1.048	0.499	0.005	0.017	0.017	568.299	0.016	0.004
750	0.178	1.048	0.505	0.005	0.017	0.017	568.300	0.016	0.004
1000	0.182	1.049	2.600	0.005	0.033	0.033	568.299	0.016	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.348	4.029	3.020	0.007	0.013	0.013	568.299	0.031	0.005
120	0.183	3.434	1.415	0.006	0.012	0.012	568.299	0.016	0.004
175	0.127	3.038	0.279	0.006	0.010	0.010	568.299	0.011	0.004
250	0.127	1.035	0.274	0.006	0.010	0.010	568.299	0.011	0.004
500	0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
750	0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
1000	0.127	1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.333	0.007	0.162	0.162	568.299	0.061	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.409	4.199	3.222	0.007	0.041	0.041	568.299	0.036	0.005
120	0.221	3.480	1.667	0.006	0.036	0.036	568.299	0.019	0.004
175	0.163	3.074	0.590	0.006	0.025	0.025	568.299	0.014	0.004
50	0.684	5.366	3.598	0.007	0.075	0.075	568.299	0.061	0.005
120	0.343	3.812	1.987	0.006	0.067	0.067	568.299	0.030	0.004
175	0.253	3.356	0.916	0.006	0.042	0.042	568.299	0.022	0.004
250	0.224	1.147	0.748	0.006	0.024	0.024	568.299	0.020	0.004
500	0.222	1.090	0.697	0.005	0.023	0.023	568.299	0.020	0.004
750	0.222	1.090	0.709	0.005	0.024	0.024	568.300	0.020	0.004
9999	0.245	1.108	2.800	0.005	0.043	0.043	568.299	0.022	0.004
50	0.833	5.605	3.808	0.007	0.116	0.116	568.299	0.075	0.005
120	0.405	3.871	2.341	0.006	0.105	0.105	568.299	0.036	0.004
175	0.296	3.397	1.266	0.006	0.065	0.065	568.299	0.026	0.004
250	0.262	1.207	1.104	0.006	0.040	0.040	568.299	0.023	0.004
500	0.257	1.200	1.016	0.005	0.038	0.038	568.299	0.023	0.004
750	0.257	1.200	1.033	0.005	0.038	0.038	568.299	0.023	0.004
1000	0.265	1.225	3.094	0.005	0.056	0.056	568.300	0.023	0.004
50	0.525	4.857	3.351	0.007	0.043	0.043	568.299	0.047	0.005
120	0.272	3.673	1.708	0.006	0.038	0.038	568.299	0.024	0.004
175	0.197	3.244	0.600	0.006	0.025	0.025	568.299	0.017	0.004
250	0.185	1.105	0.502	0.006	0.017	0.017	568.299	0.016	0.004
500	0.184	1.058	0.476	0.005	0.017	0.017	568.299	0.016	0.004
750	0.184	1.058	0.478	0.005	0.017	0.017	568.299	0.016	0.004
9999	0.196	1.059	2.590	0.005	0.032	0.032	568.299	0.017	0.004

25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.602	5.309	3.393	0.007	0.038	0.038	568.299	0.054	0.005
120	0.301	3.806	1.676	0.006	0.034	0.034	568.299	0.027	0.004
175	0.213	3.362	0.525	0.006	0.023	0.023	568.299	0.019	0.004
250	0.203	1.145	0.452	0.006	0.016	0.016	568.299	0.018	0.004
500	0.202	1.088	0.433	0.005	0.016	0.016	568.299	0.018	0.004
750	0.202	1.088	0.437	0.005	0.016	0.016	568.299	0.018	0.004
50	0.565	5.272	3.330	0.007	0.023	0.023	568.299	0.051	0.005
120	0.283	3.799	1.555	0.006	0.021	0.021	568.299	0.025	0.004
175	0.199	3.360	0.391	0.006	0.015	0.015	568.299	0.018	0.004
250	0.195	1.144	0.341	0.006	0.012	0.012	568.299	0.017	0.004
500	0.195	1.088	0.341	0.005	0.012	0.012	568.299	0.017	0.004
15	0.592	3.470	4.164	0.008	0.166	0.166	568.299	0.053	0.005
25	0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.315	3.640	3.107	0.007	0.038	0.038	568.299	0.028	0.005
120	0.178	3.316	1.645	0.006	0.034	0.034	568.299	0.016	0.004
175	0.130	2.929	0.601	0.006	0.023	0.023	568.299	0.011	0.004
250	0.120	0.998	0.504	0.006	0.016	0.016	568.299	0.010	0.004
500	0.119	0.978	0.476	0.005	0.015	0.015	568.299	0.010	0.004
750	0.119	0.978	0.482	0.005	0.015	0.015	568.299	0.010	0.004
9999	0.128	0.979	2.483	0.005	0.029	0.029	568.299	0.011	0.004
50	0.648	5.239	3.530	0.007	0.065	0.065	568.299	0.058	0.005
120	0.323	3.775	1.903	0.006	0.058	0.058	568.299	0.029	0.004
175	0.237	3.326	0.815	0.006	0.038	0.038	568.300	0.021	0.004
250	0.216	1.148	0.684	0.006	0.024	0.024	568.299	0.019	0.004
500	0.214	1.097	0.647	0.005	0.023	0.023	568.299	0.019	0.004
750	0.214	1.097	0.654	0.005	0.023	0.023	568.299	0.019	0.004
120	0.518	3.944	2.959	0.006	0.175	0.175	568.299	0.046	0.004
175	0.373	3.435	1.916	0.006	0.104	0.104	568.299	0.033	0.004
250	0.315	1.286	1.715	0.006	0.064	0.064	568.299	0.028	0.004
750	0.304	1.351	1.590	0.005	0.060	0.060	568.299	0.027	0.004
1000	0.318	1.409	3.569	0.005	0.078	0.078	568.300	0.028	0.004
175	0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
250	0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004

500	0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
750	0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
1000	0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.429	4.390	3.190	0.007	0.030	0.030	568.299	0.038	0.005
120	0.225	3.538	1.576	0.006	0.027	0.027	568.300	0.020	0.004
175	0.161	3.127	0.459	0.006	0.019	0.019	568.299	0.014	0.004
500	0.154	1.028	0.391	0.005	0.014	0.014	568.300	0.013	0.004
15	0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.609	5.299	3.460	0.007	0.048	0.048	568.299	0.054	0.005
120	0.309	3.802	1.766	0.006	0.043	0.043	568.299	0.027	0.004
175	0.223	3.357	0.641	0.006	0.028	0.028	568.299	0.020	0.004
250	0.209	1.143	0.536	0.006	0.018	0.018	568.299	0.018	0.004
500	0.208	1.087	0.506	0.005	0.018	0.018	568.299	0.018	0.004

750	0.208	1.087	0.512	0.005	0.018	0.018	568.299	0.018	0.004
1000	0.212	1.088	2.660	0.005	0.035	0.035	568.299	0.019	0.004
50	0.598	5.237	3.447	0.007	0.048	0.048	568.299	0.053	0.005
120	0.304	3.784	1.762	0.006	0.043	0.043	568.299	0.027	0.004
175	0.220	3.341	0.640	0.006	0.028	0.028	568.299	0.019	0.004
250	0.206	1.138	0.535	0.006	0.018	0.018	568.299	0.018	0.004
500	0.205	1.083	0.505	0.005	0.018	0.018	568.299	0.018	0.004
9999	0.218	1.084	2.653	0.005	0.035	0.035	568.299	0.019	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.845	5.396	3.841	0.007	0.134	0.134	568.299	0.076	0.005
120	0.408	3.800	2.468	0.006	0.121	0.121	568.300	0.036	0.004
175	0.300	3.326	1.425	0.006	0.074	0.074	568.299	0.027	0.004
250	0.259	1.192	1.246	0.006	0.045	0.045	568.299	0.023	0.004
500	0.253	1.181	1.141	0.005	0.043	0.043	568.299	0.022	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.802	5.309	3.809	0.007	0.126	0.126	568.299	0.072	0.005
120	0.390	3.774	2.393	0.006	0.114	0.114	568.300	0.035	0.004
175	0.290	3.306	1.363	0.006	0.070	0.070	568.299	0.026	0.004
250	0.250	1.171	1.176	0.006	0.042	0.042	568.299	0.022	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
15	0.592	3.470	4.164	0.008	0.166	0.166	568.300	0.053	0.005
25	0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.215	3.124	2.989	0.007	0.030	0.030	568.299	0.019	0.005
120	0.134	3.167	1.594	0.006	0.028	0.028	568.300	0.012	0.004
175	0.126	2.907	0.619	0.006	0.024	0.024	568.299	0.011	0.004

250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.300	0.061	0.005
50	0.348	3.814	3.146	0.007	0.040	0.040	568.299	0.031	0.005
120	0.193	3.367	1.662	0.006	0.036	0.036	568.299	0.017	0.004
175	0.142	2.973	0.610	0.006	0.024	0.024	568.299	0.012	0.004
250	0.130	1.013	0.511	0.006	0.016	0.016	568.299	0.011	0.004
500	0.129	0.989	0.482	0.005	0.016	0.016	568.299	0.011	0.004
750	0.129	0.989	0.488	0.005	0.016	0.016	568.299	0.011	0.004
9999	0.139	0.990	2.504	0.005	0.030	0.030	568.299	0.012	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.587	4.784	3.480	0.007	0.073	0.073	568.299	0.053	0.005
120	0.299	3.639	1.950	0.006	0.066	0.066	568.299	0.027	0.004
175	0.223	3.203	0.907	0.006	0.042	0.042	568.299	0.020	0.004
250	0.195	1.099	0.745	0.006	0.024	0.024	568.299	0.017	0.004
500	0.193	1.056	0.697	0.005	0.023	0.023	568.299	0.017	0.004
50	0.548	5.031	3.359	0.007	0.039	0.039	568.299	0.049	0.005
120	0.279	3.725	1.671	0.006	0.034	0.034	568.299	0.025	0.004
175	0.200	3.291	0.537	0.006	0.023	0.023	568.299	0.018	0.004
250	0.191	1.121	0.463	0.006	0.016	0.016	568.299	0.017	0.004
500	0.190	1.070	0.443	0.005	0.016	0.016	568.300	0.017	0.004
175	0.398	3.496	2.034	0.006	0.111	0.111	568.299	0.035	0.004
250	0.335	1.322	1.828	0.006	0.069	0.069	568.299	0.030	0.004
500	0.322	1.401	1.658	0.005	0.064	0.064	568.299	0.029	0.004
750	0.323	1.401	1.694	0.005	0.064	0.064	568.299	0.029	0.004
1000	0.338	1.465	3.676	0.005	0.082	0.082	568.299	0.030	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.634	5.181	3.500	0.007	0.062	0.062	568.300	0.057	0.005
120	0.317	3.759	1.875	0.006	0.056	0.056	568.299	0.028	0.004
175	0.232	3.312	0.787	0.006	0.036	0.036	568.299	0.020	0.004

250	0.210	1.138	0.655	0.006	0.022	0.022	568.299	0.018	0.004
500	0.208	1.085	0.619	0.005	0.021	0.021	568.299	0.018	0.004
750	0.208	1.085	0.627	0.005	0.022	0.022	568.299	0.018	0.004
1000	0.214	1.099	2.722	0.005	0.039	0.039	568.299	0.019	0.004
120	0.410	3.866	2.384	0.006	0.111	0.111	568.299	0.037	0.004
175	0.301	3.389	1.320	0.006	0.068	0.068	568.299	0.027	0.004
250	0.264	1.206	1.149	0.006	0.042	0.042	568.299	0.023	0.004
500	0.259	1.184	1.057	0.005	0.040	0.040	568.299	0.023	0.004
750	0.259	1.184	1.075	0.005	0.040	0.040	568.299	0.023	0.004
15	0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	0.393	4.099	3.193	0.007	0.040	0.040	568.299	0.035	0.005
120	0.213	3.451	1.657	0.006	0.035	0.035	568.300	0.019	0.004
175	0.157	3.048	0.586	0.006	0.024	0.024	568.299	0.014	0.004
250	0.176	1.255	0.594	0.007	0.019	0.019	686.695	0.015	0.004
25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
50	0.411	4.386	3.128	0.007	0.018	0.018	568.299	0.037	0.005
120	0.214	3.538	1.477	0.006	0.017	0.017	568.299	0.019	0.004
50	0.518	4.295	3.400	0.007	0.075	0.075	568.299	0.046	0.005
120	0.264	3.492	1.959	0.006	0.068	0.068	568.299	0.023	0.004
175	0.197	3.071	0.939	0.006	0.043	0.043	568.299	0.017	0.004
250	0.172	1.064	0.789	0.006	0.026	0.026	568.299	0.015	0.004
500	0.169	1.032	0.738	0.005	0.025	0.025	568.299	0.015	0.004
750	0.169	1.032	0.749	0.005	0.025	0.025	568.299	0.015	0.004
15	0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.509	4.947	3.294	0.007	0.026	0.026	568.299	0.046	0.005
120	0.261	3.703	1.569	0.006	0.023	0.023	568.299	0.023	0.004
175	0.187	3.275	0.431	0.006	0.017	0.017	568.299	0.016	0.004
250	0.182	1.116	0.370	0.006	0.013	0.013	568.299	0.016	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

50	0.539	4.966	3.299	0.007	0.033	0.033	568.299	0.048	0.005
120	0.272	3.705	1.624	0.006	0.030	0.030	568.299	0.024	0.004
175	0.193	3.273	0.485	0.006	0.020	0.020	568.299	0.017	0.004
250	0.183	1.115	0.418	0.006	0.014	0.014	568.299	0.016	0.004
500	0.182	1.066	0.403	0.006	0.014	0.014	568.299	0.016	0.004
750	0.182	1.066	0.407	0.006	0.014	0.014	568.299	0.016	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.851	5.208	3.835	0.007	0.144	0.144	568.299	0.076	0.005
120	0.409	3.743	2.559	0.006	0.132	0.132	568.299	0.036	0.004
175	0.300	3.273	1.529	0.006	0.080	0.080	568.300	0.027	0.004
250	0.256	1.188	1.348	0.006	0.049	0.049	568.300	0.023	0.004
500	0.249	1.209	1.231	0.005	0.046	0.046	568.299	0.022	0.004
750	0.249	1.209	1.254	0.005	0.047	0.047	568.299	0.022	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.449	4.387	3.273	0.007	0.045	0.045	568.299	0.040	0.005
120	0.239	3.535	1.707	0.006	0.040	0.040	568.299	0.021	0.004
175	0.176	3.121	0.628	0.006	0.027	0.027	568.299	0.015	0.004
250	0.162	1.063	0.525	0.006	0.017	0.017	568.299	0.014	0.004
500	0.161	1.027	0.495	0.005	0.017	0.017	568.299	0.014	0.004
175	0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
250	0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004
500	0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
750	0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
1000	0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004

2032

2032		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.162	0.162
Aerial Lifts	50	0.339	3.764	3.135	0.007	0.040	0.040
Aerial Lifts	120	0.188	3.352	1.657	0.006	0.036	0.036
Aerial Lifts	500	0.126	0.986	0.479	0.005	0.016	0.016
Aerial Lifts	750	0.126	0.986	0.485	0.005	0.016	0.016
Air Compressors	15	0.663	3.470	4.164	0.008	0.166	0.166
Air Compressors	25	0.687	2.340	4.347	0.007	0.165	0.165
Air Compressors	50	0.506	4.712	3.340	0.007	0.046	0.046
Air Compressors	120	0.264	3.630	1.729	0.006	0.041	0.041
Air Compressors	175	0.193	3.205	0.633	0.006	0.027	0.027
Air Compressors	250	0.179	1.092	0.529	0.006	0.018	0.018
Air Compressors	500	0.178	1.048	0.499	0.005	0.017	0.017
Air Compressors	750	0.178	1.048	0.505	0.005	0.017	0.017
Air Compressors	1000	0.182	1.049	2.600	0.005	0.033	0.033
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161
Bore/Drill Rigs	50	0.348	4.029	3.020	0.007	0.013	0.013
Bore/Drill Rigs	120	0.183	3.434	1.415	0.006	0.012	0.012
Bore/Drill Rigs	175	0.127	3.038	0.279	0.006	0.010	0.010
Bore/Drill Rigs	250	0.127	1.035	0.274	0.006	0.010	0.010
Bore/Drill Rigs	500	0.127	1.006	0.274	0.005	0.010	0.010
Bore/Drill Rigs	750	0.127	1.006	0.274	0.005	0.010	0.010
Bore/Drill Rigs	1000	0.127	1.006	2.372	0.005	0.021	0.021

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161
Cement and Mortar Mixers	25	0.685	2.339	4.333	0.007	0.162	0.162
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161
Concrete/Industrial Saws	50	0.409	4.199	3.222	0.007	0.041	0.041
Concrete/Industrial Saws	120	0.221	3.480	1.667	0.006	0.036	0.036
Concrete/Industrial Saws	175	0.163	3.074	0.590	0.006	0.025	0.025
Cranes	50	0.684	5.366	3.598	0.007	0.075	0.075
Cranes	120	0.343	3.812	1.987	0.006	0.067	0.067
Cranes	175	0.253	3.356	0.916	0.006	0.042	0.042
Cranes	250	0.224	1.147	0.748	0.006	0.024	0.024
Cranes	500	0.222	1.090	0.697	0.005	0.023	0.023
Cranes	750	0.222	1.090	0.709	0.005	0.024	0.024
Cranes	9999	0.245	1.108	2.800	0.005	0.043	0.043
Crawler Tractors	50	0.833	5.605	3.808	0.007	0.116	0.116
Crawler Tractors	120	0.405	3.871	2.341	0.006	0.105	0.105
Crawler Tractors	175	0.296	3.397	1.266	0.006	0.065	0.065
Crawler Tractors	250	0.262	1.207	1.104	0.006	0.040	0.040
Crawler Tractors	500	0.257	1.200	1.016	0.005	0.038	0.038
Crawler Tractors	750	0.257	1.200	1.033	0.005	0.038	0.038
Crawler Tractors	1000	0.265	1.225	3.094	0.005	0.056	0.056
Crushing/Proc. Equipment	50	0.525	4.857	3.351	0.007	0.043	0.043
Crushing/Proc. Equipment	120	0.272	3.673	1.708	0.006	0.038	0.038
Crushing/Proc. Equipment	175	0.197	3.244	0.600	0.006	0.025	0.025
Crushing/Proc. Equipment	250	0.185	1.105	0.502	0.006	0.017	0.017
Crushing/Proc. Equipment	500	0.184	1.058	0.476	0.005	0.017	0.017
Crushing/Proc. Equipment	750	0.184	1.058	0.478	0.005	0.017	0.017
Crushing/Proc. Equipment	9999	0.196	1.059	2.590	0.005	0.032	0.032

Dumpers/Tenders	25	0.685	2.340	4.332	0.007	0.161	0.161
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161
Excavators	50	0.602	5.309	3.393	0.007	0.038	0.038
Excavators	120	0.301	3.806	1.676	0.006	0.034	0.034
Excavators	175	0.213	3.362	0.525	0.006	0.023	0.023
Excavators	250	0.203	1.145	0.452	0.006	0.016	0.016
Excavators	500	0.202	1.088	0.433	0.005	0.016	0.016
Excavators	750	0.202	1.088	0.437	0.005	0.016	0.016
Forklifts	50	0.565	5.272	3.330	0.007	0.023	0.023
Forklifts	120	0.283	3.799	1.555	0.006	0.021	0.021
Forklifts	175	0.199	3.360	0.391	0.006	0.015	0.015
Forklifts	250	0.195	1.144	0.341	0.006	0.012	0.012
Forklifts	500	0.195	1.088	0.341	0.005	0.012	0.012
Generator Sets	15	0.592	3.470	4.164	0.008	0.166	0.166
Generator Sets	25	0.686	2.340	4.347	0.007	0.165	0.165
Generator Sets	50	0.315	3.640	3.107	0.007	0.038	0.038
Generator Sets	120	0.178	3.316	1.645	0.006	0.034	0.034
Generator Sets	175	0.130	2.929	0.601	0.006	0.023	0.023
Generator Sets	250	0.120	0.998	0.504	0.006	0.016	0.016
Generator Sets	500	0.119	0.978	0.476	0.005	0.015	0.015
Generator Sets	750	0.119	0.978	0.482	0.005	0.015	0.015
Generator Sets	9999	0.128	0.979	2.483	0.005	0.029	0.029
Graders	50	0.648	5.239	3.530	0.007	0.065	0.065
Graders	120	0.323	3.775	1.903	0.006	0.058	0.058
Graders	175	0.237	3.326	0.815	0.006	0.038	0.038
Graders	250	0.216	1.148	0.684	0.006	0.024	0.024
Graders	500	0.214	1.097	0.647	0.005	0.023	0.023
Graders	750	0.214	1.097	0.654	0.005	0.023	0.023
Off-Highway Tractors	120	0.518	3.944	2.959	0.006	0.175	0.175
Off-Highway Tractors	175	0.373	3.435	1.916	0.006	0.104	0.104
Off-Highway Tractors	250	0.315	1.286	1.715	0.006	0.064	0.064
Off-Highway Tractors	750	0.304	1.351	1.590	0.005	0.060	0.060
Off-Highway Tractors	1000	0.318	1.409	3.569	0.005	0.078	0.078
Off-Highway Trucks	175	0.229	3.425	0.563	0.006	0.025	0.025
Off-Highway Trucks	250	0.217	1.166	0.481	0.006	0.017	0.017

Off-Highway Trucks	500	0.216	1.104	0.458	0.005	0.017	0.017
Off-Highway Trucks	750	0.217	1.104	0.463	0.005	0.017	0.017
Off-Highway Trucks	1000	0.220	1.107	2.651	0.005	0.033	0.033
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Other Construction Equipment	50	0.429	4.390	3.190	0.007	0.030	0.030
Other Construction Equipment	120	0.225	3.538	1.576	0.006	0.027	0.027
Other Construction Equipment	175	0.161	3.127	0.459	0.006	0.019	0.019
Other Construction Equipment	500	0.154	1.028	0.391	0.005	0.014	0.014
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Other General Industrial Equipment	50	0.609	5.299	3.460	0.007	0.048	0.048
Other General Industrial Equipment	120	0.309	3.802	1.766	0.006	0.043	0.043
Other General Industrial Equipment	175	0.223	3.357	0.641	0.006	0.028	0.028
Other General Industrial Equipment	250	0.209	1.143	0.536	0.006	0.018	0.018
Other General Industrial Equipment	500	0.208	1.087	0.506	0.005	0.018	0.018

Other General Industrial Equipment	750	0.208	1.087	0.512	0.005	0.018	0.018
Other General Industrial Equipment	1000	0.212	1.088	2.660	0.005	0.035	0.035
Other Material Handling Equipment	50	0.598	5.237	3.447	0.007	0.048	0.048
Other Material Handling Equipment	120	0.304	3.784	1.762	0.006	0.043	0.043
Other Material Handling Equipment	175	0.220	3.341	0.640	0.006	0.028	0.028
Other Material Handling Equipment	250	0.206	1.138	0.535	0.006	0.018	0.018
Other Material Handling Equipment	500	0.205	1.083	0.505	0.005	0.018	0.018
Other Material Handling Equipment	9999	0.218	1.084	2.653	0.005	0.035	0.035
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161
Pavers	50	0.845	5.396	3.841	0.007	0.134	0.134
Pavers	120	0.408	3.800	2.468	0.006	0.121	0.121
Pavers	175	0.300	3.326	1.425	0.006	0.074	0.074
Pavers	250	0.259	1.192	1.246	0.006	0.045	0.045
Pavers	500	0.253	1.181	1.141	0.005	0.043	0.043
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Paving Equipment	50	0.802	5.309	3.809	0.007	0.126	0.126
Paving Equipment	120	0.390	3.774	2.393	0.006	0.114	0.114
Paving Equipment	175	0.290	3.306	1.363	0.006	0.070	0.070
Paving Equipment	250	0.250	1.171	1.176	0.006	0.042	0.042
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161
Pressure Washers	15	0.592	3.470	4.164	0.008	0.166	0.166
Pressure Washers	25	0.686	2.340	4.347	0.007	0.165	0.165
Pressure Washers	50	0.215	3.124	2.989	0.007	0.030	0.030
Pressure Washers	120	0.134	3.167	1.594	0.006	0.028	0.028
Pressure Washers	175	0.126	2.907	0.619	0.006	0.024	0.024

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009
Pumps	15	0.663	3.470	4.164	0.008	0.166	0.166
Pumps	25	0.687	2.340	4.347	0.007	0.165	0.165
Pumps	50	0.348	3.814	3.146	0.007	0.040	0.040
Pumps	120	0.193	3.367	1.662	0.006	0.036	0.036
Pumps	175	0.142	2.973	0.610	0.006	0.024	0.024
Pumps	250	0.130	1.013	0.511	0.006	0.016	0.016
Pumps	500	0.129	0.989	0.482	0.005	0.016	0.016
Pumps	750	0.129	0.989	0.488	0.005	0.016	0.016
Pumps	9999	0.139	0.990	2.504	0.005	0.030	0.030
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161
Rollers	25	0.685	2.339	4.332	0.007	0.161	0.161
Rollers	50	0.587	4.784	3.480	0.007	0.073	0.073
Rollers	120	0.299	3.639	1.950	0.006	0.066	0.066
Rollers	175	0.223	3.203	0.907	0.006	0.042	0.042
Rollers	250	0.195	1.099	0.745	0.006	0.024	0.024
Rollers	500	0.193	1.056	0.697	0.005	0.023	0.023
Rough Terrain Forklifts	50	0.548	5.031	3.359	0.007	0.039	0.039
Rough Terrain Forklifts	120	0.279	3.725	1.671	0.006	0.034	0.034
Rough Terrain Forklifts	175	0.200	3.291	0.537	0.006	0.023	0.023
Rough Terrain Forklifts	250	0.191	1.121	0.463	0.006	0.016	0.016
Rough Terrain Forklifts	500	0.190	1.070	0.443	0.005	0.016	0.016
Rubber Tired Dozers	175	0.398	3.496	2.034	0.006	0.111	0.111
Rubber Tired Dozers	250	0.335	1.322	1.828	0.006	0.069	0.069
Rubber Tired Dozers	500	0.322	1.401	1.658	0.005	0.064	0.064
Rubber Tired Dozers	750	0.323	1.401	1.694	0.005	0.064	0.064
Rubber Tired Dozers	1000	0.338	1.465	3.676	0.005	0.082	0.082
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161
Rubber Tired Loaders	50	0.634	5.181	3.500	0.007	0.062	0.062
Rubber Tired Loaders	120	0.317	3.759	1.875	0.006	0.056	0.056
Rubber Tired Loaders	175	0.232	3.312	0.787	0.006	0.036	0.036

Rubber Tired Loaders	250	0.210	1.138	0.655	0.006	0.022	0.022
Rubber Tired Loaders	500	0.208	1.085	0.619	0.005	0.021	0.021
Rubber Tired Loaders	750	0.208	1.085	0.627	0.005	0.022	0.022
Rubber Tired Loaders	1000	0.214	1.099	2.722	0.005	0.039	0.039
Scrapers	120	0.410	3.866	2.384	0.006	0.111	0.111
Scrapers	175	0.301	3.389	1.320	0.006	0.068	0.068
Scrapers	250	0.264	1.206	1.149	0.006	0.042	0.042
Scrapers	500	0.259	1.184	1.057	0.005	0.040	0.040
Scrapers	750	0.259	1.184	1.075	0.005	0.040	0.040
Signal Boards	15	0.661	3.470	4.142	0.008	0.161	0.161
Signal Boards	50	0.393	4.099	3.193	0.007	0.040	0.040
Signal Boards	120	0.213	3.451	1.657	0.006	0.035	0.035
Signal Boards	175	0.157	3.048	0.586	0.006	0.024	0.024
Signal Boards	250	0.176	1.255	0.594	0.007	0.019	0.019
Skid Steer Loaders	25	0.685	2.340	4.332	0.007	0.162	0.162
Skid Steer Loaders	50	0.411	4.386	3.128	0.007	0.018	0.018
Skid Steer Loaders	120	0.214	3.538	1.477	0.006	0.017	0.017
Surfacing Equipment	50	0.518	4.295	3.400	0.007	0.075	0.075
Surfacing Equipment	120	0.264	3.492	1.959	0.006	0.068	0.068
Surfacing Equipment	175	0.197	3.071	0.939	0.006	0.043	0.043
Surfacing Equipment	250	0.172	1.064	0.789	0.006	0.026	0.026
Surfacing Equipment	500	0.169	1.032	0.738	0.005	0.025	0.025
Surfacing Equipment	750	0.169	1.032	0.749	0.005	0.025	0.025
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161
Sweepers/Scrubbers	50	0.509	4.947	3.294	0.007	0.026	0.026
Sweepers/Scrubbers	120	0.261	3.703	1.569	0.006	0.023	0.023
Sweepers/Scrubbers	175	0.187	3.275	0.431	0.006	0.017	0.017
Sweepers/Scrubbers	250	0.182	1.116	0.370	0.006	0.013	0.013
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161

Tractors/Loaders/Backhoes	50	0.539	4.966	3.299	0.007	0.033	0.033
Tractors/Loaders/Backhoes	120	0.272	3.705	1.624	0.006	0.030	0.030
Tractors/Loaders/Backhoes	175	0.193	3.273	0.485	0.006	0.020	0.020
Tractors/Loaders/Backhoes	250	0.183	1.115	0.418	0.006	0.014	0.014
Tractors/Loaders/Backhoes	500	0.182	1.066	0.403	0.006	0.014	0.014
Tractors/Loaders/Backhoes	750	0.182	1.066	0.407	0.006	0.014	0.014
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161
Trenchers	50	0.851	5.208	3.835	0.007	0.144	0.144
Trenchers	120	0.409	3.743	2.559	0.006	0.132	0.132
Trenchers	175	0.300	3.273	1.529	0.006	0.080	0.080
Trenchers	250	0.256	1.188	1.348	0.006	0.049	0.049
Trenchers	500	0.249	1.209	1.231	0.005	0.046	0.046
Trenchers	750	0.249	1.209	1.254	0.005	0.047	0.047
Welders	15	0.663	3.470	4.164	0.008	0.166	0.166
Welders	25	0.687	2.340	4.347	0.007	0.165	0.165
Welders	50	0.449	4.387	3.273	0.007	0.045	0.045
Welders	120	0.239	3.535	1.707	0.006	0.040	0.040
Welders	175	0.176	3.121	0.628	0.006	0.027	0.027
Welders	250	0.162	1.063	0.525	0.006	0.017	0.017
Welders	500	0.161	1.027	0.495	0.005	0.017	0.017
Water Trucks	175	0.229	3.425	0.563	0.006	0.025	0.025
Water Trucks	250	0.217	1.166	0.481	0.006	0.017	0.017
Water Trucks	500	0.216	1.104	0.458	0.005	0.017	0.017
Water Trucks	750	0.217	1.104	0.463	0.005	0.017	0.017
Water Trucks	1000	0.220	1.107	2.651	0.005	0.033	0.033

2033

g/hp/hr	g/hp/hr	g/hp/hr
CO2	CH4	N2O
568.299	0.059	0.005
568.299	0.061	0.005
568.300	0.030	0.005
568.299	0.017	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.045	0.005
568.299	0.023	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.300	0.016	0.004
568.299	0.016	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.031	0.005
568.299	0.016	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004

2033		g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX
Aerial Lifts	15	0.661	3.469	4.142
Aerial Lifts	25	0.685	2.339	4.332
Aerial Lifts	50	0.339	3.764	3.135
Aerial Lifts	120	0.188	3.352	1.657
Aerial Lifts	500	0.126	0.986	0.479
Aerial Lifts	750	0.126	0.986	0.485
Air Compressors	15	0.663	3.470	4.164
Air Compressors	25	0.687	2.340	4.347
Air Compressors	50	0.506	4.712	3.340
Air Compressors	120	0.264	3.630	1.729
Air Compressors	175	0.193	3.205	0.633
Air Compressors	250	0.179	1.092	0.529
Air Compressors	500	0.178	1.048	0.499
Air Compressors	750	0.178	1.048	0.505
Air Compressors	1000	0.182	1.049	2.600
Bore/Drill Rigs	15	0.661	3.469	4.142
Bore/Drill Rigs	25	0.685	2.339	4.332
Bore/Drill Rigs	50	0.348	4.029	3.020
Bore/Drill Rigs	120	0.183	3.434	1.415
Bore/Drill Rigs	175	0.127	3.038	0.279
Bore/Drill Rigs	250	0.127	1.035	0.274
Bore/Drill Rigs	500	0.127	1.006	0.274
Bore/Drill Rigs	750	0.127	1.006	0.274
Bore/Drill Rigs	1000	0.127	1.006	2.372

568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.061	0.005
568.299	0.036	0.005
568.299	0.019	0.004
568.299	0.014	0.004
568.299	0.061	0.005
568.299	0.030	0.004
568.299	0.022	0.004
568.299	0.020	0.004
568.299	0.020	0.004
568.300	0.020	0.004
568.299	0.022	0.004
568.299	0.075	0.005
568.299	0.036	0.004
568.299	0.026	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.300	0.023	0.004
568.299	0.047	0.005
568.299	0.024	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.017	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142
Cement and Mortar Mixers	25	0.685	2.339	4.333
Concrete/Industrial Saws	25	0.685	2.339	4.332
Concrete/Industrial Saws	50	0.409	4.199	3.222
Concrete/Industrial Saws	120	0.221	3.480	1.667
Concrete/Industrial Saws	175	0.163	3.074	0.590
Cranes	50	0.684	5.366	3.598
Cranes	120	0.343	3.812	1.987
Cranes	175	0.253	3.356	0.916
Cranes	250	0.224	1.147	0.748
Cranes	500	0.222	1.090	0.697
Cranes	750	0.222	1.090	0.709
Cranes	9999	0.245	1.108	2.800
Crawler Tractors	50	0.833	5.605	3.808
Crawler Tractors	120	0.405	3.871	2.341
Crawler Tractors	175	0.296	3.397	1.266
Crawler Tractors	250	0.262	1.207	1.104
Crawler Tractors	500	0.257	1.200	1.016
Crawler Tractors	750	0.257	1.200	1.033
Crawler Tractors	1000	0.265	1.225	3.094
Crushing/Proc. Equipment	50	0.525	4.857	3.351
Crushing/Proc. Equipment	120	0.272	3.673	1.708
Crushing/Proc. Equipment	175	0.197	3.244	0.600
Crushing/Proc. Equipment	250	0.185	1.105	0.502
Crushing/Proc. Equipment	500	0.184	1.058	0.476
Crushing/Proc. Equipment	750	0.184	1.058	0.478
Crushing/Proc. Equipment	9999	0.196	1.059	2.590

568.299	0.061	0.005
568.299	0.061	0.005
568.299	0.054	0.005
568.299	0.027	0.004
568.299	0.019	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.051	0.005
568.299	0.025	0.004
568.299	0.018	0.004
568.299	0.017	0.004
568.299	0.017	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.028	0.005
568.299	0.016	0.004
568.299	0.011	0.004
568.299	0.010	0.004
568.299	0.010	0.004
568.299	0.010	0.004
568.299	0.011	0.004
568.299	0.058	0.005
568.299	0.029	0.004
568.300	0.021	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.299	0.046	0.004
568.299	0.033	0.004
568.299	0.028	0.004
568.299	0.027	0.004
568.300	0.028	0.004
568.299	0.020	0.004
568.300	0.019	0.004

Dumpers/Tenders	25	0.685	2.340	4.332
Excavators	25	0.685	2.339	4.332
Excavators	50	0.602	5.309	3.393
Excavators	120	0.301	3.806	1.676
Excavators	175	0.213	3.362	0.525
Excavators	250	0.203	1.145	0.452
Excavators	500	0.202	1.088	0.433
Excavators	750	0.202	1.088	0.437
Forklifts	50	0.565	5.272	3.330
Forklifts	120	0.283	3.799	1.555
Forklifts	175	0.199	3.360	0.391
Forklifts	250	0.195	1.144	0.341
Forklifts	500	0.195	1.088	0.341
Generator Sets	15	0.592	3.470	4.164
Generator Sets	25	0.686	2.340	4.347
Generator Sets	50	0.315	3.640	3.107
Generator Sets	120	0.178	3.316	1.645
Generator Sets	175	0.130	2.929	0.601
Generator Sets	250	0.120	0.998	0.504
Generator Sets	500	0.119	0.978	0.476
Generator Sets	750	0.119	0.978	0.482
Generator Sets	9999	0.128	0.979	2.483
Graders	50	0.648	5.239	3.530
Graders	120	0.323	3.775	1.903
Graders	175	0.237	3.326	0.815
Graders	250	0.216	1.148	0.684
Graders	500	0.214	1.097	0.647
Graders	750	0.214	1.097	0.654
Off-Highway Tractors	120	0.518	3.944	2.959
Off-Highway Tractors	175	0.373	3.435	1.916
Off-Highway Tractors	250	0.315	1.286	1.715
Off-Highway Tractors	750	0.304	1.351	1.590
Off-Highway Tractors	1000	0.318	1.409	3.569
Off-Highway Trucks	175	0.229	3.425	0.563
Off-Highway Trucks	250	0.217	1.166	0.481

568.299	0.019	0.004
568.299	0.019	0.004
568.300	0.019	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.038	0.005
568.300	0.020	0.004
568.299	0.014	0.004
568.300	0.013	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.054	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.018	0.004
568.299	0.018	0.004

Off-Highway Trucks	500	0.216	1.104	0.458
Off-Highway Trucks	750	0.217	1.104	0.463
Off-Highway Trucks	1000	0.220	1.107	2.651
Other Construction Equipment	15	0.661	3.469	4.142
Other Construction Equipment	25	0.685	2.339	4.332
Other Construction Equipment	50	0.429	4.390	3.190
Other Construction Equipment	120	0.225	3.538	1.576
Other Construction Equipment	175	0.161	3.127	0.459
Other Construction Equipment	500	0.154	1.028	0.391
Other General Industrial Equipment	15	0.589	3.469	4.142
Other General Industrial Equipment	25	0.685	2.339	4.332
Other General Industrial Equipment	50	0.609	5.299	3.460
Other General Industrial Equipment	120	0.309	3.802	1.766
Other General Industrial Equipment	175	0.223	3.357	0.641
Other General Industrial Equipment	250	0.209	1.143	0.536
Other General Industrial Equipment	500	0.208	1.087	0.506

568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.053	0.005
568.299	0.027	0.004
568.299	0.019	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.061	0.005
568.299	0.076	0.005
568.300	0.036	0.004
568.299	0.027	0.004
568.299	0.023	0.004
568.299	0.022	0.004
568.299	0.061	0.005
568.299	0.072	0.005
568.300	0.035	0.004
568.299	0.026	0.004
568.299	0.022	0.004
568.299	0.059	0.005
568.300	0.053	0.005
568.299	0.061	0.005
568.299	0.019	0.005
568.300	0.012	0.004
568.299	0.011	0.004

Other General Industrial Equipment	750	0.208	1.087	0.512
Other General Industrial Equipment	1000	0.212	1.088	2.660
Other Material Handling Equipment	50	0.598	5.237	3.447
Other Material Handling Equipment	120	0.304	3.784	1.762
Other Material Handling Equipment	175	0.220	3.341	0.640
Other Material Handling Equipment	250	0.206	1.138	0.535
Other Material Handling Equipment	500	0.205	1.083	0.505
Other Material Handling Equipment	9999	0.218	1.084	2.653
Pavers	25	0.685	2.339	4.332
Pavers	50	0.845	5.396	3.841
Pavers	120	0.408	3.800	2.468
Pavers	175	0.300	3.326	1.425
Pavers	250	0.259	1.192	1.246
Pavers	500	0.253	1.181	1.141
Paving Equipment	25	0.685	2.339	4.332
Paving Equipment	50	0.802	5.309	3.809
Paving Equipment	120	0.390	3.774	2.393
Paving Equipment	175	0.290	3.306	1.363
Paving Equipment	250	0.250	1.171	1.176
Plate Compactors	15	0.661	3.469	4.142
Pressure Washers	15	0.592	3.470	4.164
Pressure Washers	25	0.686	2.340	4.347
Pressure Washers	50	0.215	3.124	2.989
Pressure Washers	120	0.134	3.167	1.594
Pressure Washers	175	0.126	2.907	0.619

568.299	0.008	0.004
568.299	0.059	0.005
568.300	0.061	0.005
568.299	0.031	0.005
568.299	0.017	0.004
568.299	0.012	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.012	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.053	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.017	0.004
568.299	0.017	0.004
568.299	0.049	0.005
568.299	0.025	0.004
568.299	0.018	0.004
568.299	0.017	0.004
568.300	0.017	0.004
568.299	0.035	0.004
568.299	0.030	0.004
568.299	0.029	0.004
568.299	0.029	0.004
568.299	0.030	0.004
568.299	0.061	0.005
568.300	0.057	0.005
568.299	0.028	0.004
568.299	0.020	0.004

Pressure Washers	250	0.098	0.986	0.265
Pumps	15	0.663	3.470	4.164
Pumps	25	0.687	2.340	4.347
Pumps	50	0.348	3.814	3.146
Pumps	120	0.193	3.367	1.662
Pumps	175	0.142	2.973	0.610
Pumps	250	0.130	1.013	0.511
Pumps	500	0.129	0.989	0.482
Pumps	750	0.129	0.989	0.488
Pumps	9999	0.139	0.990	2.504
Rollers	15	0.661	3.469	4.142
Rollers	25	0.685	2.339	4.332
Rollers	50	0.587	4.784	3.480
Rollers	120	0.299	3.639	1.950
Rollers	175	0.223	3.203	0.907
Rollers	250	0.195	1.099	0.745
Rollers	500	0.193	1.056	0.697
Rough Terrain Forklifts	50	0.548	5.031	3.359
Rough Terrain Forklifts	120	0.279	3.725	1.671
Rough Terrain Forklifts	175	0.200	3.291	0.537
Rough Terrain Forklifts	250	0.191	1.121	0.463
Rough Terrain Forklifts	500	0.190	1.070	0.443
Rubber Tired Dozers	175	0.398	3.496	2.034
Rubber Tired Dozers	250	0.335	1.322	1.828
Rubber Tired Dozers	500	0.322	1.401	1.658
Rubber Tired Dozers	750	0.323	1.401	1.694
Rubber Tired Dozers	1000	0.338	1.465	3.676
Rubber Tired Loaders	25	0.685	2.339	4.332
Rubber Tired Loaders	50	0.634	5.181	3.500
Rubber Tired Loaders	120	0.317	3.759	1.875
Rubber Tired Loaders	175	0.232	3.312	0.787

568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.037	0.004
568.299	0.027	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.059	0.005
568.299	0.035	0.005
568.300	0.019	0.004
568.299	0.014	0.004
686.695	0.015	0.004
568.299	0.061	0.005
568.299	0.037	0.005
568.299	0.019	0.004
568.299	0.046	0.005
568.299	0.023	0.004
568.299	0.017	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.046	0.005
568.299	0.023	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.061	0.005

Rubber Tired Loaders	250	0.210	1.138	0.655
Rubber Tired Loaders	500	0.208	1.085	0.619
Rubber Tired Loaders	750	0.208	1.085	0.627
Rubber Tired Loaders	1000	0.214	1.099	2.722
Scrapers	120	0.410	3.866	2.384
Scrapers	175	0.301	3.389	1.320
Scrapers	250	0.264	1.206	1.149
Scrapers	500	0.259	1.184	1.057
Scrapers	750	0.259	1.184	1.075
Signal Boards	15	0.661	3.470	4.142
Signal Boards	50	0.393	4.099	3.193
Signal Boards	120	0.213	3.451	1.657
Signal Boards	175	0.157	3.048	0.586
Signal Boards	250	0.176	1.255	0.594
Skid Steer Loaders	25	0.685	2.340	4.332
Skid Steer Loaders	50	0.411	4.386	3.128
Skid Steer Loaders	120	0.214	3.538	1.477
Surfacing Equipment	50	0.518	4.295	3.400
Surfacing Equipment	120	0.264	3.492	1.959
Surfacing Equipment	175	0.197	3.071	0.939
Surfacing Equipment	250	0.172	1.064	0.789
Surfacing Equipment	500	0.169	1.032	0.738
Surfacing Equipment	750	0.169	1.032	0.749
Sweepers/Scrubbers	15	0.589	3.470	4.142
Sweepers/Scrubbers	25	0.685	2.340	4.332
Sweepers/Scrubbers	50	0.509	4.947	3.294
Sweepers/Scrubbers	120	0.261	3.703	1.569
Sweepers/Scrubbers	175	0.187	3.275	0.431
Sweepers/Scrubbers	250	0.182	1.116	0.370
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332

568.299	0.048	0.005
568.299	0.024	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.076	0.005
568.299	0.036	0.004
568.300	0.027	0.004
568.300	0.023	0.004
568.299	0.022	0.004
568.299	0.022	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.040	0.005
568.299	0.021	0.004
568.299	0.015	0.004
568.299	0.014	0.004
568.299	0.014	0.004
568.299	0.020	0.004
568.300	0.019	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.300	0.019	0.004

Tractors/Loaders/Backhoes	50	0.539	4.966	3.299
Tractors/Loaders/Backhoes	120	0.272	3.705	1.624
Tractors/Loaders/Backhoes	175	0.193	3.273	0.485
Tractors/Loaders/Backhoes	250	0.183	1.115	0.418
Tractors/Loaders/Backhoes	500	0.182	1.066	0.403
Tractors/Loaders/Backhoes	750	0.182	1.066	0.407
Trenchers	15	0.661	3.469	4.142
Trenchers	25	0.685	2.339	4.332
Trenchers	50	0.851	5.208	3.835
Trenchers	120	0.409	3.743	2.559
Trenchers	175	0.300	3.273	1.529
Trenchers	250	0.256	1.188	1.348
Trenchers	500	0.249	1.209	1.231
Trenchers	750	0.249	1.209	1.254
Welders	15	0.663	3.470	4.164
Welders	25	0.687	2.340	4.347
Welders	50	0.449	4.387	3.273
Welders	120	0.239	3.535	1.707
Welders	175	0.176	3.121	0.628
Welders	250	0.162	1.063	0.525
Welders	500	0.161	1.027	0.495
Water Trucks	175	0.229	3.425	0.563
Water Trucks	250	0.217	1.166	0.481
Water Trucks	500	0.216	1.104	0.458
Water Trucks	750	0.217	1.104	0.463
Water Trucks	1000	0.220	1.107	2.651

2034

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
SOX	PM10	PM2.5	CO2	CH4	N2O
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.040	0.040	568.300	0.030	0.005
0.006	0.036	0.036	568.299	0.017	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.046	0.046	568.299	0.045	0.005
0.006	0.041	0.041	568.299	0.023	0.004
0.006	0.027	0.027	568.299	0.017	0.004
0.006	0.018	0.018	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.300	0.016	0.004
0.005	0.033	0.033	568.299	0.016	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.013	0.013	568.299	0.031	0.005
0.006	0.012	0.012	568.299	0.016	0.004
0.006	0.010	0.010	568.299	0.011	0.004
0.006	0.010	0.010	568.299	0.011	0.004
0.005	0.010	0.010	568.299	0.011	0.004
0.005	0.010	0.010	568.299	0.011	0.004
0.005	0.021	0.021	568.299	0.011	0.004

2034	
Equipment	**MaxHP**
Aerial Lifts	15
Aerial Lifts	25
Aerial Lifts	50
Aerial Lifts	120
Aerial Lifts	500
Aerial Lifts	750
Air Compressors	15
Air Compressors	25
Air Compressors	50
Air Compressors	120
Air Compressors	175
Air Compressors	250
Air Compressors	500
Air Compressors	750
Air Compressors	1000
Bore/Drill Rigs	15
Bore/Drill Rigs	25
Bore/Drill Rigs	50
Bore/Drill Rigs	120
Bore/Drill Rigs	175
Bore/Drill Rigs	250
Bore/Drill Rigs	500
Bore/Drill Rigs	750
Bore/Drill Rigs	1000

0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.041	0.041	568.299	0.036	0.005
0.006	0.036	0.036	568.299	0.019	0.004
0.006	0.025	0.025	568.299	0.014	0.004
0.007	0.075	0.075	568.299	0.061	0.005
0.006	0.067	0.067	568.299	0.030	0.004
0.006	0.042	0.042	568.299	0.022	0.004
0.006	0.024	0.024	568.299	0.020	0.004
0.005	0.023	0.023	568.299	0.020	0.004
0.005	0.024	0.024	568.300	0.020	0.004
0.005	0.043	0.043	568.299	0.022	0.004
0.007	0.116	0.116	568.299	0.075	0.005
0.006	0.105	0.105	568.299	0.036	0.004
0.006	0.065	0.065	568.299	0.026	0.004
0.006	0.040	0.040	568.299	0.023	0.004
0.005	0.038	0.038	568.299	0.023	0.004
0.005	0.038	0.038	568.299	0.023	0.004
0.005	0.056	0.056	568.300	0.023	0.004
0.007	0.043	0.043	568.299	0.047	0.005
0.006	0.038	0.038	568.299	0.024	0.004
0.006	0.025	0.025	568.299	0.017	0.004
0.006	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.032	0.032	568.299	0.017	0.004

Cement and Mortar Mixers	15
Cement and Mortar Mixers	25
Concrete/Industrial Saws	25
Concrete/Industrial Saws	50
Concrete/Industrial Saws	120
Concrete/Industrial Saws	175
Cranes	50
Cranes	120
Cranes	175
Cranes	250
Cranes	500
Cranes	750
Cranes	9999
Crawler Tractors	50
Crawler Tractors	120
Crawler Tractors	175
Crawler Tractors	250
Crawler Tractors	500
Crawler Tractors	750
Crawler Tractors	1000
Crushing/Proc. Equipment	50
Crushing/Proc. Equipment	120
Crushing/Proc. Equipment	175
Crushing/Proc. Equipment	250
Crushing/Proc. Equipment	500
Crushing/Proc. Equipment	750
Crushing/Proc. Equipment	9999

0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.038	0.038	568.299	0.054	0.005
0.006	0.034	0.034	568.299	0.027	0.004
0.006	0.023	0.023	568.299	0.019	0.004
0.006	0.016	0.016	568.299	0.018	0.004
0.005	0.016	0.016	568.299	0.018	0.004
0.005	0.016	0.016	568.299	0.018	0.004
0.007	0.023	0.023	568.299	0.051	0.005
0.006	0.021	0.021	568.299	0.025	0.004
0.006	0.015	0.015	568.299	0.018	0.004
0.006	0.012	0.012	568.299	0.017	0.004
0.005	0.012	0.012	568.299	0.017	0.004
0.008	0.166	0.166	568.299	0.053	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.038	0.038	568.299	0.028	0.005
0.006	0.034	0.034	568.299	0.016	0.004
0.006	0.023	0.023	568.299	0.011	0.004
0.006	0.016	0.016	568.299	0.010	0.004
0.005	0.015	0.015	568.299	0.010	0.004
0.005	0.015	0.015	568.299	0.010	0.004
0.005	0.029	0.029	568.299	0.011	0.004
0.007	0.065	0.065	568.299	0.058	0.005
0.006	0.058	0.058	568.299	0.029	0.004
0.006	0.038	0.038	568.300	0.021	0.004
0.006	0.024	0.024	568.299	0.019	0.004
0.005	0.023	0.023	568.299	0.019	0.004
0.005	0.023	0.023	568.299	0.019	0.004
0.006	0.175	0.175	568.299	0.046	0.004
0.006	0.104	0.104	568.299	0.033	0.004
0.006	0.064	0.064	568.299	0.028	0.004
0.005	0.060	0.060	568.299	0.027	0.004
0.005	0.078	0.078	568.300	0.028	0.004
0.006	0.025	0.025	568.299	0.020	0.004
0.006	0.017	0.017	568.300	0.019	0.004

Dumpers/Tenders	25
Excavators	25
Excavators	50
Excavators	120
Excavators	175
Excavators	250
Excavators	500
Excavators	750
Forklifts	50
Forklifts	120
Forklifts	175
Forklifts	250
Forklifts	500
Generator Sets	15
Generator Sets	25
Generator Sets	50
Generator Sets	120
Generator Sets	175
Generator Sets	250
Generator Sets	500
Generator Sets	750
Generator Sets	9999
Graders	50
Graders	120
Graders	175
Graders	250
Graders	500
Graders	750
Off-Highway Tractors	120
Off-Highway Tractors	175
Off-Highway Tractors	250
Off-Highway Tractors	750
Off-Highway Tractors	1000
Off-Highway Trucks	175
Off-Highway Trucks	250

0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks	500
0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks	750
0.005	0.033	0.033	568.300	0.019	0.004	Off-Highway Trucks	1000
0.008	0.161	0.161	568.299	0.059	0.005	Other Construction Equipment	15
0.007	0.161	0.161	568.299	0.061	0.005	Other Construction Equipment	25
0.007	0.030	0.030	568.299	0.038	0.005	Other Construction Equipment	50
0.006	0.027	0.027	568.300	0.020	0.004	Other Construction Equipment	120
0.006	0.019	0.019	568.299	0.014	0.004	Other Construction Equipment	175
0.005	0.014	0.014	568.300	0.013	0.004	Other Construction Equipment	500
0.008	0.161	0.161	568.299	0.053	0.005	Other General Industrial Equipment	15
0.007	0.161	0.161	568.299	0.061	0.005	Other General Industrial Equipment	25
0.007	0.048	0.048	568.299	0.054	0.005	Other General Industrial Equipment	50
0.006	0.043	0.043	568.299	0.027	0.004	Other General Industrial Equipment	120
0.006	0.028	0.028	568.299	0.020	0.004	Other General Industrial Equipment	175
0.006	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment	250
0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment	500

0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment	750
0.005	0.035	0.035	568.299	0.019	0.004	Other General Industrial Equipment	1000
0.007	0.048	0.048	568.299	0.053	0.005	Other Material Handling Equipment	50
0.006	0.043	0.043	568.299	0.027	0.004	Other Material Handling Equipment	120
0.006	0.028	0.028	568.299	0.019	0.004	Other Material Handling Equipment	175
0.006	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment	250
0.005	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment	500
0.005	0.035	0.035	568.299	0.019	0.004	Other Material Handling Equipment	9999
0.007	0.161	0.161	568.299	0.061	0.005	Pavers	25
0.007	0.134	0.134	568.299	0.076	0.005	Pavers	50
0.006	0.121	0.121	568.300	0.036	0.004	Pavers	120
0.006	0.074	0.074	568.299	0.027	0.004	Pavers	175
0.006	0.045	0.045	568.299	0.023	0.004	Pavers	250
0.005	0.043	0.043	568.299	0.022	0.004	Pavers	500
0.007	0.161	0.161	568.299	0.061	0.005	Paving Equipment	25
0.007	0.126	0.126	568.299	0.072	0.005	Paving Equipment	50
0.006	0.114	0.114	568.300	0.035	0.004	Paving Equipment	120
0.006	0.070	0.070	568.299	0.026	0.004	Paving Equipment	175
0.006	0.042	0.042	568.299	0.022	0.004	Paving Equipment	250
0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors	15
0.008	0.166	0.166	568.300	0.053	0.005	Pressure Washers	15
0.007	0.165	0.165	568.299	0.061	0.005	Pressure Washers	25
0.007	0.030	0.030	568.299	0.019	0.005	Pressure Washers	50
0.006	0.028	0.028	568.300	0.012	0.004	Pressure Washers	120
0.006	0.024	0.024	568.299	0.011	0.004	Pressure Washers	175

0.006	0.009	0.009	568.299	0.008	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.300	0.061	0.005
0.007	0.040	0.040	568.299	0.031	0.005
0.006	0.036	0.036	568.299	0.017	0.004
0.006	0.024	0.024	568.299	0.012	0.004
0.006	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.030	0.030	568.299	0.012	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.073	0.073	568.299	0.053	0.005
0.006	0.066	0.066	568.299	0.027	0.004
0.006	0.042	0.042	568.299	0.020	0.004
0.006	0.024	0.024	568.299	0.017	0.004
0.005	0.023	0.023	568.299	0.017	0.004
0.007	0.039	0.039	568.299	0.049	0.005
0.006	0.034	0.034	568.299	0.025	0.004
0.006	0.023	0.023	568.299	0.018	0.004
0.006	0.016	0.016	568.299	0.017	0.004
0.005	0.016	0.016	568.300	0.017	0.004
0.006	0.111	0.111	568.299	0.035	0.004
0.006	0.069	0.069	568.299	0.030	0.004
0.005	0.064	0.064	568.299	0.029	0.004
0.005	0.064	0.064	568.299	0.029	0.004
0.005	0.082	0.082	568.299	0.030	0.004
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.062	0.062	568.300	0.057	0.005
0.006	0.056	0.056	568.299	0.028	0.004
0.006	0.036	0.036	568.299	0.020	0.004

Pressure Washers	250
Pumps	15
Pumps	25
Pumps	50
Pumps	120
Pumps	175
Pumps	250
Pumps	500
Pumps	750
Pumps	9999
Rollers	15
Rollers	25
Rollers	50
Rollers	120
Rollers	175
Rollers	250
Rollers	500
Rough Terrain Forklifts	50
Rough Terrain Forklifts	120
Rough Terrain Forklifts	175
Rough Terrain Forklifts	250
Rough Terrain Forklifts	500
Rubber Tired Dozers	175
Rubber Tired Dozers	250
Rubber Tired Dozers	500
Rubber Tired Dozers	750
Rubber Tired Dozers	1000
Rubber Tired Loaders	25
Rubber Tired Loaders	50
Rubber Tired Loaders	120
Rubber Tired Loaders	175

0.006	0.022	0.022	568.299	0.018	0.004
0.005	0.021	0.021	568.299	0.018	0.004
0.005	0.022	0.022	568.299	0.018	0.004
0.005	0.039	0.039	568.299	0.019	0.004
0.006	0.111	0.111	568.299	0.037	0.004
0.006	0.068	0.068	568.299	0.027	0.004
0.006	0.042	0.042	568.299	0.023	0.004
0.005	0.040	0.040	568.299	0.023	0.004
0.005	0.040	0.040	568.299	0.023	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.040	0.040	568.299	0.035	0.005
0.006	0.035	0.035	568.300	0.019	0.004
0.006	0.024	0.024	568.299	0.014	0.004
0.007	0.019	0.019	686.695	0.015	0.004
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.018	0.018	568.299	0.037	0.005
0.006	0.017	0.017	568.299	0.019	0.004
0.007	0.075	0.075	568.299	0.046	0.005
0.006	0.068	0.068	568.299	0.023	0.004
0.006	0.043	0.043	568.299	0.017	0.004
0.006	0.026	0.026	568.299	0.015	0.004
0.005	0.025	0.025	568.299	0.015	0.004
0.005	0.025	0.025	568.299	0.015	0.004
0.008	0.161	0.161	568.299	0.053	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.026	0.026	568.299	0.046	0.005
0.006	0.023	0.023	568.299	0.023	0.004
0.006	0.017	0.017	568.299	0.016	0.004
0.006	0.013	0.013	568.299	0.016	0.004
0.007	0.161	0.161	568.299	0.061	0.005

Rubber Tired Loaders	250
Rubber Tired Loaders	500
Rubber Tired Loaders	750
Rubber Tired Loaders	1000
Scrapers	120
Scrapers	175
Scrapers	250
Scrapers	500
Scrapers	750
Signal Boards	15
Signal Boards	50
Signal Boards	120
Signal Boards	175
Signal Boards	250
Skid Steer Loaders	25
Skid Steer Loaders	50
Skid Steer Loaders	120
Surfacing Equipment	50
Surfacing Equipment	120
Surfacing Equipment	175
Surfacing Equipment	250
Surfacing Equipment	500
Surfacing Equipment	750
Sweepers/Scrubbers	15
Sweepers/Scrubbers	25
Sweepers/Scrubbers	50
Sweepers/Scrubbers	120
Sweepers/Scrubbers	175
Sweepers/Scrubbers	250
Tractors/Loaders/Backhoes	25

0.007	0.033	0.033	568.299	0.048	0.005
0.006	0.030	0.030	568.299	0.024	0.004
0.006	0.020	0.020	568.299	0.017	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.144	0.144	568.299	0.076	0.005
0.006	0.132	0.132	568.299	0.036	0.004
0.006	0.080	0.080	568.300	0.027	0.004
0.006	0.049	0.049	568.300	0.023	0.004
0.005	0.046	0.046	568.299	0.022	0.004
0.005	0.047	0.047	568.299	0.022	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.045	0.045	568.299	0.040	0.005
0.006	0.040	0.040	568.299	0.021	0.004
0.006	0.027	0.027	568.299	0.015	0.004
0.006	0.017	0.017	568.299	0.014	0.004
0.005	0.017	0.017	568.299	0.014	0.004
0.006	0.025	0.025	568.299	0.020	0.004
0.006	0.017	0.017	568.300	0.019	0.004
0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.033	0.033	568.300	0.019	0.004

Tractors/Loaders/Backhoes	50
Tractors/Loaders/Backhoes	120
Tractors/Loaders/Backhoes	175
Tractors/Loaders/Backhoes	250
Tractors/Loaders/Backhoes	500
Tractors/Loaders/Backhoes	750
Trenchers	15
Trenchers	25
Trenchers	50
Trenchers	120
Trenchers	175
Trenchers	250
Trenchers	500
Trenchers	750
Welders	15
Welders	25
Welders	50
Welders	120
Welders	175
Welders	250
Welders	500
Water Trucks	175
Water Trucks	250
Water Trucks	500
Water Trucks	750
Water Trucks	1000

2035

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
0.339	3.764	3.135	0.007	0.040	0.040	568.300	0.030	0.005
0.188	3.352	1.657	0.006	0.036	0.036	568.299	0.017	0.004
0.126	0.986	0.479	0.005	0.016	0.016	568.299	0.011	0.004
0.126	0.986	0.485	0.005	0.016	0.016	568.299	0.011	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.506	4.712	3.340	0.007	0.046	0.046	568.299	0.045	0.005
0.264	3.630	1.729	0.006	0.041	0.041	568.299	0.023	0.004
0.193	3.205	0.633	0.006	0.027	0.027	568.299	0.017	0.004
0.179	1.092	0.529	0.006	0.018	0.018	568.299	0.016	0.004
0.178	1.048	0.499	0.005	0.017	0.017	568.299	0.016	0.004
0.178	1.048	0.505	0.005	0.017	0.017	568.300	0.016	0.004
0.182	1.049	2.600	0.005	0.033	0.033	568.299	0.016	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.348	4.029	3.020	0.007	0.013	0.013	568.299	0.031	0.005
0.183	3.434	1.415	0.006	0.012	0.012	568.299	0.016	0.004
0.127	3.038	0.279	0.006	0.010	0.010	568.299	0.011	0.004
0.127	1.035	0.274	0.006	0.010	0.010	568.299	0.011	0.004
0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
0.127	1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.333	0.007	0.162	0.162	568.299	0.061	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.409	4.199	3.222	0.007	0.041	0.041	568.299	0.036	0.005
0.221	3.480	1.667	0.006	0.036	0.036	568.299	0.019	0.004
0.163	3.074	0.590	0.006	0.025	0.025	568.299	0.014	0.004
0.684	5.366	3.598	0.007	0.075	0.075	568.299	0.061	0.005
0.343	3.812	1.987	0.006	0.067	0.067	568.299	0.030	0.004
0.253	3.356	0.916	0.006	0.042	0.042	568.299	0.022	0.004
0.224	1.147	0.748	0.006	0.024	0.024	568.299	0.020	0.004
0.222	1.090	0.697	0.005	0.023	0.023	568.299	0.020	0.004
0.222	1.090	0.709	0.005	0.024	0.024	568.300	0.020	0.004
0.245	1.108	2.800	0.005	0.043	0.043	568.299	0.022	0.004
0.833	5.605	3.808	0.007	0.116	0.116	568.299	0.075	0.005
0.405	3.871	2.341	0.006	0.105	0.105	568.299	0.036	0.004
0.296	3.397	1.266	0.006	0.065	0.065	568.299	0.026	0.004
0.262	1.207	1.104	0.006	0.040	0.040	568.299	0.023	0.004
0.257	1.200	1.016	0.005	0.038	0.038	568.299	0.023	0.004
0.257	1.200	1.033	0.005	0.038	0.038	568.299	0.023	0.004
0.265	1.225	3.094	0.005	0.056	0.056	568.300	0.023	0.004
0.525	4.857	3.351	0.007	0.043	0.043	568.299	0.047	0.005
0.272	3.673	1.708	0.006	0.038	0.038	568.299	0.024	0.004
0.197	3.244	0.600	0.006	0.025	0.025	568.299	0.017	0.004
0.185	1.105	0.502	0.006	0.017	0.017	568.299	0.016	0.004
0.184	1.058	0.476	0.005	0.017	0.017	568.299	0.016	0.004
0.184	1.058	0.478	0.005	0.017	0.017	568.299	0.016	0.004
0.196	1.059	2.590	0.005	0.032	0.032	568.299	0.017	0.004

0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.602	5.309	3.393	0.007	0.038	0.038	568.299	0.054	0.005
0.301	3.806	1.676	0.006	0.034	0.034	568.299	0.027	0.004
0.213	3.362	0.525	0.006	0.023	0.023	568.299	0.019	0.004
0.203	1.145	0.452	0.006	0.016	0.016	568.299	0.018	0.004
0.202	1.088	0.433	0.005	0.016	0.016	568.299	0.018	0.004
0.202	1.088	0.437	0.005	0.016	0.016	568.299	0.018	0.004
0.565	5.272	3.330	0.007	0.023	0.023	568.299	0.051	0.005
0.283	3.799	1.555	0.006	0.021	0.021	568.299	0.025	0.004
0.199	3.360	0.391	0.006	0.015	0.015	568.299	0.018	0.004
0.195	1.144	0.341	0.006	0.012	0.012	568.299	0.017	0.004
0.195	1.088	0.341	0.005	0.012	0.012	568.299	0.017	0.004
0.592	3.470	4.164	0.008	0.166	0.166	568.299	0.053	0.005
0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.315	3.640	3.107	0.007	0.038	0.038	568.299	0.028	0.005
0.178	3.316	1.645	0.006	0.034	0.034	568.299	0.016	0.004
0.130	2.929	0.601	0.006	0.023	0.023	568.299	0.011	0.004
0.120	0.998	0.504	0.006	0.016	0.016	568.299	0.010	0.004
0.119	0.978	0.476	0.005	0.015	0.015	568.299	0.010	0.004
0.119	0.978	0.482	0.005	0.015	0.015	568.299	0.010	0.004
0.128	0.979	2.483	0.005	0.029	0.029	568.299	0.011	0.004
0.648	5.239	3.530	0.007	0.065	0.065	568.299	0.058	0.005
0.323	3.775	1.903	0.006	0.058	0.058	568.299	0.029	0.004
0.237	3.326	0.815	0.006	0.038	0.038	568.300	0.021	0.004
0.216	1.148	0.684	0.006	0.024	0.024	568.299	0.019	0.004
0.214	1.097	0.647	0.005	0.023	0.023	568.299	0.019	0.004
0.214	1.097	0.654	0.005	0.023	0.023	568.299	0.019	0.004
0.518	3.944	2.959	0.006	0.175	0.175	568.299	0.046	0.004
0.373	3.435	1.916	0.006	0.104	0.104	568.299	0.033	0.004
0.315	1.286	1.715	0.006	0.064	0.064	568.299	0.028	0.004
0.304	1.351	1.590	0.005	0.060	0.060	568.299	0.027	0.004
0.318	1.409	3.569	0.005	0.078	0.078	568.300	0.028	0.004
0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004

0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.429	4.390	3.190	0.007	0.030	0.030	568.299	0.038	0.005
0.225	3.538	1.576	0.006	0.027	0.027	568.300	0.020	0.004
0.161	3.127	0.459	0.006	0.019	0.019	568.299	0.014	0.004
0.154	1.028	0.391	0.005	0.014	0.014	568.300	0.013	0.004
0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.609	5.299	3.460	0.007	0.048	0.048	568.299	0.054	0.005
0.309	3.802	1.766	0.006	0.043	0.043	568.299	0.027	0.004
0.223	3.357	0.641	0.006	0.028	0.028	568.299	0.020	0.004
0.209	1.143	0.536	0.006	0.018	0.018	568.299	0.018	0.004
0.208	1.087	0.506	0.005	0.018	0.018	568.299	0.018	0.004

0.208	1.087	0.512	0.005	0.018	0.018	568.299	0.018	0.004
0.212	1.088	2.660	0.005	0.035	0.035	568.299	0.019	0.004
0.598	5.237	3.447	0.007	0.048	0.048	568.299	0.053	0.005
0.304	3.784	1.762	0.006	0.043	0.043	568.299	0.027	0.004
0.220	3.341	0.640	0.006	0.028	0.028	568.299	0.019	0.004
0.206	1.138	0.535	0.006	0.018	0.018	568.299	0.018	0.004
0.205	1.083	0.505	0.005	0.018	0.018	568.299	0.018	0.004
0.218	1.084	2.653	0.005	0.035	0.035	568.299	0.019	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.845	5.396	3.841	0.007	0.134	0.134	568.299	0.076	0.005
0.408	3.800	2.468	0.006	0.121	0.121	568.300	0.036	0.004
0.300	3.326	1.425	0.006	0.074	0.074	568.299	0.027	0.004
0.259	1.192	1.246	0.006	0.045	0.045	568.299	0.023	0.004
0.253	1.181	1.141	0.005	0.043	0.043	568.299	0.022	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.802	5.309	3.809	0.007	0.126	0.126	568.299	0.072	0.005
0.390	3.774	2.393	0.006	0.114	0.114	568.300	0.035	0.004
0.290	3.306	1.363	0.006	0.070	0.070	568.299	0.026	0.004
0.250	1.171	1.176	0.006	0.042	0.042	568.299	0.022	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.592	3.470	4.164	0.008	0.166	0.166	568.300	0.053	0.005
0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.215	3.124	2.989	0.007	0.030	0.030	568.299	0.019	0.005
0.134	3.167	1.594	0.006	0.028	0.028	568.300	0.012	0.004
0.126	2.907	0.619	0.006	0.024	0.024	568.299	0.011	0.004

0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.300	0.061	0.005
0.348	3.814	3.146	0.007	0.040	0.040	568.299	0.031	0.005
0.193	3.367	1.662	0.006	0.036	0.036	568.299	0.017	0.004
0.142	2.973	0.610	0.006	0.024	0.024	568.299	0.012	0.004
0.130	1.013	0.511	0.006	0.016	0.016	568.299	0.011	0.004
0.129	0.989	0.482	0.005	0.016	0.016	568.299	0.011	0.004
0.129	0.989	0.488	0.005	0.016	0.016	568.299	0.011	0.004
0.139	0.990	2.504	0.005	0.030	0.030	568.299	0.012	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.587	4.784	3.480	0.007	0.073	0.073	568.299	0.053	0.005
0.299	3.639	1.950	0.006	0.066	0.066	568.299	0.027	0.004
0.223	3.203	0.907	0.006	0.042	0.042	568.299	0.020	0.004
0.195	1.099	0.745	0.006	0.024	0.024	568.299	0.017	0.004
0.193	1.056	0.697	0.005	0.023	0.023	568.299	0.017	0.004
0.548	5.031	3.359	0.007	0.039	0.039	568.299	0.049	0.005
0.279	3.725	1.671	0.006	0.034	0.034	568.299	0.025	0.004
0.200	3.291	0.537	0.006	0.023	0.023	568.299	0.018	0.004
0.191	1.121	0.463	0.006	0.016	0.016	568.299	0.017	0.004
0.190	1.070	0.443	0.005	0.016	0.016	568.300	0.017	0.004
0.398	3.496	2.034	0.006	0.111	0.111	568.299	0.035	0.004
0.335	1.322	1.828	0.006	0.069	0.069	568.299	0.030	0.004
0.322	1.401	1.658	0.005	0.064	0.064	568.299	0.029	0.004
0.323	1.401	1.694	0.005	0.064	0.064	568.299	0.029	0.004
0.338	1.465	3.676	0.005	0.082	0.082	568.299	0.030	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.634	5.181	3.500	0.007	0.062	0.062	568.300	0.057	0.005
0.317	3.759	1.875	0.006	0.056	0.056	568.299	0.028	0.004
0.232	3.312	0.787	0.006	0.036	0.036	568.299	0.020	0.004

0.210	1.138	0.655	0.006	0.022	0.022	568.299	0.018	0.004
0.208	1.085	0.619	0.005	0.021	0.021	568.299	0.018	0.004
0.208	1.085	0.627	0.005	0.022	0.022	568.299	0.018	0.004
0.214	1.099	2.722	0.005	0.039	0.039	568.299	0.019	0.004
0.410	3.866	2.384	0.006	0.111	0.111	568.299	0.037	0.004
0.301	3.389	1.320	0.006	0.068	0.068	568.299	0.027	0.004
0.264	1.206	1.149	0.006	0.042	0.042	568.299	0.023	0.004
0.259	1.184	1.057	0.005	0.040	0.040	568.299	0.023	0.004
0.259	1.184	1.075	0.005	0.040	0.040	568.299	0.023	0.004
0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.393	4.099	3.193	0.007	0.040	0.040	568.299	0.035	0.005
0.213	3.451	1.657	0.006	0.035	0.035	568.300	0.019	0.004
0.157	3.048	0.586	0.006	0.024	0.024	568.299	0.014	0.004
0.176	1.255	0.594	0.007	0.019	0.019	686.695	0.015	0.004
0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
0.411	4.386	3.128	0.007	0.018	0.018	568.299	0.037	0.005
0.214	3.538	1.477	0.006	0.017	0.017	568.299	0.019	0.004
0.518	4.295	3.400	0.007	0.075	0.075	568.299	0.046	0.005
0.264	3.492	1.959	0.006	0.068	0.068	568.299	0.023	0.004
0.197	3.071	0.939	0.006	0.043	0.043	568.299	0.017	0.004
0.172	1.064	0.789	0.006	0.026	0.026	568.299	0.015	0.004
0.169	1.032	0.738	0.005	0.025	0.025	568.299	0.015	0.004
0.169	1.032	0.749	0.005	0.025	0.025	568.299	0.015	0.004
0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.509	4.947	3.294	0.007	0.026	0.026	568.299	0.046	0.005
0.261	3.703	1.569	0.006	0.023	0.023	568.299	0.023	0.004
0.187	3.275	0.431	0.006	0.017	0.017	568.299	0.016	0.004
0.182	1.116	0.370	0.006	0.013	0.013	568.299	0.016	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

0.539	4.966	3.299	0.007	0.033	0.033	568.299	0.048	0.005
0.272	3.705	1.624	0.006	0.030	0.030	568.299	0.024	0.004
0.193	3.273	0.485	0.006	0.020	0.020	568.299	0.017	0.004
0.183	1.115	0.418	0.006	0.014	0.014	568.299	0.016	0.004
0.182	1.066	0.403	0.006	0.014	0.014	568.299	0.016	0.004
0.182	1.066	0.407	0.006	0.014	0.014	568.299	0.016	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.851	5.208	3.835	0.007	0.144	0.144	568.299	0.076	0.005
0.409	3.743	2.559	0.006	0.132	0.132	568.299	0.036	0.004
0.300	3.273	1.529	0.006	0.080	0.080	568.300	0.027	0.004
0.256	1.188	1.348	0.006	0.049	0.049	568.300	0.023	0.004
0.249	1.209	1.231	0.005	0.046	0.046	568.299	0.022	0.004
0.249	1.209	1.254	0.005	0.047	0.047	568.299	0.022	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.449	4.387	3.273	0.007	0.045	0.045	568.299	0.040	0.005
0.239	3.535	1.707	0.006	0.040	0.040	568.299	0.021	0.004
0.176	3.121	0.628	0.006	0.027	0.027	568.299	0.015	0.004
0.162	1.063	0.525	0.006	0.017	0.017	568.299	0.014	0.004
0.161	1.027	0.495	0.005	0.017	0.017	568.299	0.014	0.004
0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004
0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004

2035		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019	0.019	568.299
Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017	0.017	568.299
Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011	0.011	568.299
Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011	0.011	568.299
Air Compressors	15	0.661	3.469	4.143	0.008	0.162	0.162	568.300
Air Compressors	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299
Air Compressors	50	0.463	4.674	3.215	0.007	0.023	0.023	568.299
Air Compressors	120	0.238	3.623	1.530	0.006	0.020	0.020	568.299
Air Compressors	175	0.170	3.205	0.391	0.006	0.015	0.015	568.300
Air Compressors	250	0.166	1.091	0.347	0.006	0.012	0.012	568.299
Air Compressors	500	0.166	1.048	0.343	0.005	0.012	0.012	568.299
Air Compressors	750	0.166	1.048	0.344	0.005	0.012	0.012	568.299
Air Compressors	1000	0.167	1.048	2.473	0.005	0.026	0.026	568.299
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013	0.013	568.299
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012	0.012	568.300
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010	0.010	568.299
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010	0.010	568.299
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010	0.010	568.299
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010	0.010	568.299
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021	0.021	568.299

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021	0.021	568.300
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018	0.018	568.299
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014	0.014	568.299
Cranes	50	0.600	5.292	3.401	0.007	0.039	0.039	568.299
Cranes	120	0.300	3.801	1.676	0.006	0.036	0.036	568.300
Cranes	175	0.212	3.357	0.519	0.006	0.024	0.024	568.299
Cranes	250	0.203	1.143	0.463	0.006	0.016	0.016	568.299
Cranes	500	0.202	1.087	0.441	0.005	0.016	0.016	568.299
Cranes	750	0.202	1.087	0.446	0.005	0.016	0.016	568.299
Cranes	9999	0.209	1.089	2.618	0.005	0.031	0.031	568.299
Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066	0.066	568.299
Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060	0.060	568.299
Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038	0.038	568.299
Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026	0.026	568.299
Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025	0.025	568.299
Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025	0.025	568.299
Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041	0.041	568.299
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023	0.023	568.299
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020	0.020	568.299
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015	0.015	568.299
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012	0.012	568.300
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012	0.012	568.299
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012	0.012	568.299
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026	0.026	568.299

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	50	0.572	5.287	3.323	0.007	0.024	0.024	568.299
Excavators	120	0.284	3.802	1.551	0.006	0.021	0.021	568.299
Excavators	175	0.197	3.363	0.365	0.006	0.015	0.015	568.299
Excavators	250	0.195	1.145	0.342	0.006	0.013	0.013	568.300
Excavators	500	0.195	1.089	0.337	0.005	0.013	0.013	568.299
Excavators	750	0.195	1.088	0.338	0.005	0.013	0.013	568.299
Forklifts	50	0.558	5.234	3.268	0.007	0.017	0.017	568.299
Forklifts	120	0.275	3.787	1.495	0.006	0.016	0.016	568.299
Forklifts	175	0.189	3.350	0.299	0.006	0.012	0.012	568.300
Forklifts	250	0.188	1.141	0.290	0.006	0.011	0.011	568.300
Forklifts	500	0.188	1.085	0.290	0.005	0.011	0.011	568.299
Generator Sets	15	0.589	3.470	4.143	0.008	0.162	0.162	568.299
Generator Sets	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Generator Sets	50	0.276	3.607	2.991	0.007	0.018	0.018	568.299
Generator Sets	120	0.156	3.310	1.458	0.006	0.016	0.016	568.299
Generator Sets	175	0.113	2.929	0.373	0.006	0.013	0.013	568.299
Generator Sets	250	0.110	0.998	0.331	0.006	0.011	0.011	568.299
Generator Sets	500	0.110	0.978	0.328	0.005	0.011	0.011	568.299
Generator Sets	750	0.110	0.978	0.328	0.005	0.011	0.011	568.299
Generator Sets	9999	0.114	0.978	2.362	0.005	0.022	0.022	568.299
Graders	50	0.593	5.189	3.356	0.007	0.037	0.037	568.299
Graders	120	0.293	3.767	1.661	0.006	0.034	0.034	568.299
Graders	175	0.206	3.326	0.506	0.006	0.022	0.022	568.300
Graders	250	0.196	1.137	0.452	0.006	0.016	0.016	568.299
Graders	500	0.195	1.083	0.434	0.005	0.016	0.016	568.299
Graders	750	0.195	1.083	0.438	0.005	0.016	0.016	568.299
Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107	0.107	568.299
Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065	0.065	568.299
Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042	0.042	568.299
Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040	0.040	568.299
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056	0.056	568.299
Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299
Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299

Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018	0.018	568.299
Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017	0.017	568.299
Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013	0.013	568.299
Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011	0.011	568.299
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161	568.299
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025	0.025	568.299
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022	0.022	568.300
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016	0.016	568.300
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013	0.013	568.299
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013	0.013	568.299

Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013	0.013	568.299
Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028	0.028	568.299
Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025	0.025	568.299
Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022	0.022	568.299
Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016	0.016	568.299
Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013	0.013	568.299
Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013	0.013	568.299
Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027	0.027	568.299
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Pavers	50	0.694	5.260	3.555	0.007	0.076	0.076	568.299
Pavers	120	0.338	3.774	1.986	0.006	0.069	0.069	568.299
Pavers	175	0.244	3.319	0.889	0.006	0.043	0.043	568.299
Pavers	250	0.221	1.157	0.772	0.006	0.027	0.027	568.300
Pavers	500	0.218	1.111	0.722	0.005	0.026	0.026	568.299
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Paving Equipment	50	0.664	5.181	3.511	0.007	0.070	0.070	568.300
Paving Equipment	120	0.326	3.753	1.928	0.006	0.064	0.064	568.299
Paving Equipment	175	0.235	3.303	0.832	0.006	0.040	0.040	568.299
Paving Equipment	250	0.212	1.140	0.714	0.006	0.024	0.024	568.299
Plate Compactors	15	0.661	3.470	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.589	3.470	4.143	0.008	0.162	0.162	568.300
Pressure Washers	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Pressure Washers	50	0.188	3.101	2.882	0.007	0.015	0.015	568.299
Pressure Washers	120	0.116	3.161	1.421	0.006	0.014	0.014	568.299
Pressure Washers	175	0.109	2.907	0.382	0.006	0.013	0.013	568.299

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299
Pumps	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299
Pumps	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Pumps	50	0.306	3.778	3.028	0.007	0.019	0.019	568.299
Pumps	120	0.170	3.360	1.470	0.006	0.017	0.017	568.299
Pumps	175	0.123	2.973	0.377	0.006	0.014	0.014	568.299
Pumps	250	0.119	1.012	0.335	0.006	0.011	0.011	568.299
Pumps	500	0.119	0.989	0.331	0.005	0.011	0.011	568.299
Pumps	750	0.119	0.989	0.331	0.005	0.011	0.011	568.299
Pumps	9999	0.124	0.989	2.380	0.005	0.023	0.023	568.299
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Rollers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300
Rollers	50	0.507	4.711	3.280	0.007	0.038	0.038	568.299
Rollers	120	0.258	3.629	1.650	0.006	0.035	0.035	568.299
Rollers	175	0.184	3.204	0.523	0.006	0.023	0.023	568.299
Rollers	250	0.173	1.091	0.465	0.006	0.016	0.016	568.299
Rollers	500	0.172	1.048	0.442	0.005	0.016	0.016	568.300
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022	0.022	568.299
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020	0.020	568.299
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015	0.015	568.299
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012	0.012	568.299
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012	0.012	568.300
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071	0.071	568.299
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046	0.046	568.299
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043	0.043	568.300
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043	0.043	568.299
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060	0.060	568.299
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035	0.035	568.299
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033	0.033	568.299
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022	0.022	568.299

Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015	0.015	568.299
Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015	0.015	568.299
Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015	0.015	568.299
Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030	0.030	568.299
Scrapers	120	0.348	3.842	1.943	0.006	0.064	0.064	568.299
Scrapers	175	0.250	3.382	0.824	0.006	0.040	0.040	568.299
Scrapers	250	0.229	1.175	0.717	0.006	0.026	0.026	568.299
Scrapers	500	0.226	1.123	0.674	0.005	0.025	0.025	568.300
Scrapers	750	0.226	1.123	0.682	0.005	0.025	0.025	568.299
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	0.356	4.067	3.082	0.007	0.020	0.020	568.299
Signal Boards	120	0.192	3.445	1.482	0.006	0.018	0.018	568.299
Signal Boards	175	0.138	3.048	0.372	0.006	0.014	0.014	568.299
Signal Boards	250	0.162	1.254	0.401	0.007	0.014	0.014	686.695
Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015	0.015	568.299
Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014	0.014	568.299
Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041	0.041	568.299
Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038	0.038	568.299
Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025	0.025	568.299
Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016	0.016	568.299
Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016	0.016	568.299
Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016	0.016	568.300
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161	568.299
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300
Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017	0.017	568.299
Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016	0.016	568.299
Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012	0.012	568.299
Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011	0.011	568.299
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022	0.022	568.299
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020	0.020	568.299
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015	0.015	568.299
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012	0.012	568.299
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012	0.012	568.299
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012	0.012	568.299
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Trenchers	50	0.681	5.055	3.548	0.007	0.084	0.084	568.299
Trenchers	120	0.332	3.713	2.049	0.006	0.076	0.076	568.300
Trenchers	175	0.241	3.264	0.966	0.006	0.048	0.048	568.299
Trenchers	250	0.216	1.149	0.847	0.006	0.031	0.031	568.299
Trenchers	500	0.213	1.126	0.790	0.005	0.029	0.029	568.299
Trenchers	750	0.213	1.126	0.801	0.005	0.029	0.029	568.300
Welders	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299
Welders	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299
Welders	50	0.406	4.349	3.147	0.007	0.022	0.022	568.299
Welders	120	0.214	3.528	1.509	0.006	0.019	0.019	568.299
Welders	175	0.153	3.121	0.387	0.006	0.015	0.015	568.299
Welders	250	0.149	1.063	0.343	0.006	0.012	0.012	568.299
Welders	500	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Water Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299
Water Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299
Water Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Water Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Water Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299

2036

g/hp/hr	g/hp/hr
CH4	N2O
0.059	0.005
0.061	0.005
0.026	0.005
0.014	0.004
0.010	0.004
0.010	0.004
0.059	0.005
0.061	0.005
0.041	0.005
0.021	0.004
0.015	0.004
0.014	0.004
0.014	0.004
0.014	0.004
0.015	0.004
0.059	0.005
0.061	0.005
0.031	0.005
0.016	0.004
0.011	0.004
0.011	0.004
0.011	0.004
0.011	0.004
0.011	0.004

2036		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.661	3.469	4.142	0.008
Aerial Lifts	25	0.685	2.339	4.332	0.007
Aerial Lifts	50	0.297	3.726	3.017	0.007
Aerial Lifts	120	0.166	3.345	1.466	0.006
Aerial Lifts	500	0.116	0.986	0.330	0.005
Aerial Lifts	750	0.116	0.986	0.330	0.005
Air Compressors	15	0.661	3.469	4.143	0.008
Air Compressors	25	0.685	2.339	4.332	0.007
Air Compressors	50	0.463	4.674	3.215	0.007
Air Compressors	120	0.238	3.623	1.530	0.006
Air Compressors	175	0.170	3.205	0.391	0.006
Air Compressors	250	0.166	1.091	0.347	0.006
Air Compressors	500	0.166	1.048	0.343	0.005
Air Compressors	750	0.166	1.048	0.344	0.005
Air Compressors	1000	0.167	1.048	2.473	0.005
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005

0.059	0.005
0.061	0.005
0.061	0.005
0.033	0.005
0.018	0.004
0.012	0.004
0.054	0.005
0.027	0.004
0.019	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.063	0.005
0.031	0.004
0.022	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.044	0.005
0.022	0.004
0.015	0.004
0.015	0.004
0.015	0.004
0.015	0.004
0.016	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006
Cranes	50	0.600	5.292	3.401	0.007
Cranes	120	0.300	3.801	1.676	0.006
Cranes	175	0.212	3.357	0.519	0.006
Cranes	250	0.203	1.143	0.463	0.006
Cranes	500	0.202	1.087	0.441	0.005
Cranes	750	0.202	1.087	0.446	0.005
Cranes	9999	0.209	1.089	2.618	0.005
Crawler Tractors	50	0.708	5.493	3.558	0.007
Crawler Tractors	120	0.345	3.850	1.922	0.006
Crawler Tractors	175	0.247	3.391	0.794	0.006
Crawler Tractors	250	0.229	1.182	0.695	0.006
Crawler Tractors	500	0.227	1.145	0.657	0.005
Crawler Tractors	750	0.227	1.145	0.664	0.005
Crawler Tractors	1000	0.231	1.159	2.792	0.005
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005

0.061	0.005
0.061	0.005
0.051	0.005
0.025	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.050	0.005
0.024	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.053	0.005
0.061	0.005
0.024	0.005
0.014	0.004
0.010	0.004
0.009	0.004
0.009	0.004
0.009	0.004
0.010	0.004
0.053	0.005
0.026	0.004
0.018	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.037	0.004
0.027	0.004
0.024	0.004
0.023	0.004
0.024	0.004
0.019	0.004
0.018	0.004

Dumpers/Tenders	25	0.685	2.339	4.332	0.007
Excavators	25	0.685	2.339	4.332	0.007
Excavators	50	0.572	5.287	3.323	0.007
Excavators	120	0.284	3.802	1.551	0.006
Excavators	175	0.197	3.363	0.365	0.006
Excavators	250	0.195	1.145	0.342	0.006
Excavators	500	0.195	1.089	0.337	0.005
Excavators	750	0.195	1.088	0.338	0.005
Forklifts	50	0.558	5.234	3.268	0.007
Forklifts	120	0.275	3.787	1.495	0.006
Forklifts	175	0.189	3.350	0.299	0.006
Forklifts	250	0.188	1.141	0.290	0.006
Forklifts	500	0.188	1.085	0.290	0.005
Generator Sets	15	0.589	3.470	4.143	0.008
Generator Sets	25	0.685	2.340	4.332	0.007
Generator Sets	50	0.276	3.607	2.991	0.007
Generator Sets	120	0.156	3.310	1.458	0.006
Generator Sets	175	0.113	2.929	0.373	0.006
Generator Sets	250	0.110	0.998	0.331	0.006
Generator Sets	500	0.110	0.978	0.328	0.005
Generator Sets	750	0.110	0.978	0.328	0.005
Generator Sets	9999	0.114	0.978	2.362	0.005
Graders	50	0.593	5.189	3.356	0.007
Graders	120	0.293	3.767	1.661	0.006
Graders	175	0.206	3.326	0.506	0.006
Graders	250	0.196	1.137	0.452	0.006
Graders	500	0.195	1.083	0.434	0.005
Graders	750	0.195	1.083	0.438	0.005
Off-Highway Tractors	120	0.418	3.902	2.350	0.006
Off-Highway Tractors	175	0.301	3.421	1.252	0.006
Off-Highway Tractors	250	0.268	1.232	1.115	0.006
Off-Highway Tractors	750	0.262	1.238	1.045	0.005
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005
Off-Highway Trucks	175	0.211	3.425	0.380	0.006
Off-Highway Trucks	250	0.208	1.167	0.353	0.006

0.018	0.004
0.018	0.004
0.018	0.004
0.059	0.005
0.061	0.005
0.037	0.005
0.019	0.004
0.013	0.004
0.013	0.004
0.053	0.005
0.061	0.005
0.050	0.005
0.025	0.004
0.018	0.004
0.017	0.004
0.017	0.004

Off-Highway Trucks	500	0.208	1.105	0.348	0.005
Off-Highway Trucks	750	0.208	1.105	0.348	0.005
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005
Other Construction Equipment	15	0.661	3.469	4.142	0.008
Other Construction Equipment	25	0.685	2.339	4.332	0.007
Other Construction Equipment	50	0.410	4.377	3.124	0.007
Other Construction Equipment	120	0.213	3.536	1.474	0.006
Other Construction Equipment	175	0.150	3.128	0.334	0.006
Other Construction Equipment	500	0.147	1.029	0.311	0.005
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005

0.017	0.004	Other General Industrial Equipment	750	0.195	1.087	0.351	0.005
0.017	0.004	Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005
0.049	0.005	Other Material Handling Equipment	50	0.552	5.189	3.321	0.007
0.025	0.004	Other Material Handling Equipment	120	0.277	3.774	1.563	0.006
0.017	0.004	Other Material Handling Equipment	175	0.196	3.338	0.398	0.006
0.017	0.004	Other Material Handling Equipment	250	0.192	1.137	0.354	0.006
0.017	0.004	Other Material Handling Equipment	500	0.192	1.082	0.350	0.005
0.017	0.004	Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005
0.061	0.005	Pavers	25	0.685	2.339	4.332	0.007
0.062	0.005	Pavers	50	0.694	5.260	3.555	0.007
0.030	0.004	Pavers	120	0.338	3.774	1.986	0.006
0.022	0.004	Pavers	175	0.244	3.319	0.889	0.006
0.019	0.004	Pavers	250	0.221	1.157	0.772	0.006
0.019	0.004	Pavers	500	0.218	1.111	0.722	0.005
0.061	0.005	Paving Equipment	25	0.685	2.339	4.332	0.007
0.059	0.005	Paving Equipment	50	0.664	5.181	3.511	0.007
0.029	0.004	Paving Equipment	120	0.326	3.753	1.928	0.006
0.021	0.004	Paving Equipment	175	0.235	3.303	0.832	0.006
0.019	0.004	Paving Equipment	250	0.212	1.140	0.714	0.006
0.059	0.005	Plate Compactors	15	0.661	3.470	4.142	0.008
0.053	0.005	Pressure Washers	15	0.589	3.470	4.143	0.008
0.061	0.005	Pressure Washers	25	0.685	2.340	4.332	0.007
0.016	0.005	Pressure Washers	50	0.188	3.101	2.882	0.007
0.010	0.004	Pressure Washers	120	0.116	3.161	1.421	0.006
0.009	0.004	Pressure Washers	175	0.109	2.907	0.382	0.006

0.008	0.004
0.059	0.005
0.061	0.005
0.027	0.005
0.015	0.004
0.011	0.004
0.010	0.004
0.010	0.004
0.010	0.004
0.011	0.004
0.059	0.005
0.061	0.005
0.045	0.005
0.023	0.004
0.016	0.004
0.015	0.004
0.015	0.004
0.047	0.005
0.023	0.004
0.016	0.004
0.016	0.004
0.016	0.004
0.029	0.004
0.025	0.004
0.025	0.004
0.025	0.004
0.025	0.004
0.061	0.005
0.051	0.005
0.025	0.004
0.018	0.004

Pressure Washers	250	0.098	0.986	0.265	0.006
Pumps	15	0.661	3.469	4.143	0.008
Pumps	25	0.685	2.340	4.332	0.007
Pumps	50	0.306	3.778	3.028	0.007
Pumps	120	0.170	3.360	1.470	0.006
Pumps	175	0.123	2.973	0.377	0.006
Pumps	250	0.119	1.012	0.335	0.006
Pumps	500	0.119	0.989	0.331	0.005
Pumps	750	0.119	0.989	0.331	0.005
Pumps	9999	0.124	0.989	2.380	0.005
Rollers	15	0.661	3.469	4.142	0.008
Rollers	25	0.685	2.340	4.332	0.007
Rollers	50	0.507	4.711	3.280	0.007
Rollers	120	0.258	3.629	1.650	0.006
Rollers	175	0.184	3.204	0.523	0.006
Rollers	250	0.173	1.091	0.465	0.006
Rollers	500	0.172	1.048	0.442	0.005
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006

		Rubber Tired Loaders	250	0.191	1.129	0.434	0.006
		Rubber Tired Loaders	500	0.191	1.076	0.416	0.005
		Rubber Tired Loaders	750	0.191	1.076	0.421	0.005
		Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005
		Scrapers	120	0.348	3.842	1.943	0.006
		Scrapers	175	0.250	3.382	0.824	0.006
		Scrapers	250	0.229	1.175	0.717	0.006
		Scrapers	500	0.226	1.123	0.674	0.005
		Scrapers	750	0.226	1.123	0.682	0.005
		Signal Boards	15	0.661	3.469	4.142	0.008
		Signal Boards	50	0.356	4.067	3.082	0.007
		Signal Boards	120	0.192	3.445	1.482	0.006
		Signal Boards	175	0.138	3.048	0.372	0.006
		Signal Boards	250	0.162	1.254	0.401	0.007
		Skid Steer Loaders	25	0.685	2.339	4.332	0.007
		Skid Steer Loaders	50	0.411	4.390	3.097	0.007
		Skid Steer Loaders	120	0.211	3.540	1.442	0.006
		Surfacing Equipment	50	0.439	4.221	3.193	0.007
		Surfacing Equipment	120	0.226	3.482	1.659	0.006
		Surfacing Equipment	175	0.162	3.072	0.567	0.006
		Surfacing Equipment	250	0.149	1.050	0.497	0.006
		Surfacing Equipment	500	0.148	1.018	0.471	0.005
		Surfacing Equipment	750	0.148	1.018	0.477	0.005
		Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008
		Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007
		Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007
		Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006
		Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006
		Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006
		Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007

0.046	0.005
0.023	0.004
0.016	0.004
0.016	0.004
0.015	0.004
0.015	0.004
0.059	0.005
0.061	0.005
0.061	0.005
0.030	0.004
0.021	0.004
0.019	0.004
0.019	0.004
0.019	0.004
0.059	0.005
0.061	0.005
0.036	0.005
0.019	0.004
0.013	0.004
0.013	0.004
0.000	0.004
0.019	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.018	0.004

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006
Trenchers	15	0.661	3.469	4.142	0.008
Trenchers	25	0.685	2.339	4.332	0.007
Trenchers	50	0.681	5.055	3.548	0.007
Trenchers	120	0.332	3.713	2.049	0.006
Trenchers	175	0.241	3.264	0.966	0.006
Trenchers	250	0.216	1.149	0.847	0.006
Trenchers	500	0.213	1.126	0.790	0.005
Trenchers	750	0.213	1.126	0.801	0.005
Welders	15	0.661	3.469	4.143	0.008
Welders	25	0.685	2.339	4.332	0.007
Welders	50	0.406	4.349	3.147	0.007
Welders	120	0.214	3.528	1.509	0.006
Welders	175	0.153	3.121	0.387	0.006
Welders	250	0.149	1.063	0.343	0.006
Welders	500	0.149	1.027	0.339	0.005
Water Trucks	175	0.211	3.425	0.380	0.006
Water Trucks	250	0.208	1.167	0.353	0.006
Water Trucks	500	0.208	1.105	0.348	0.005
Water Trucks	750	0.208	1.105	0.348	0.005
Water Trucks	1000	0.209	1.105	2.565	0.005

2037

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.019	0.019	568.299	0.026	0.005
0.017	0.017	568.299	0.014	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.162	0.162	568.300	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.023	0.023	568.299	0.041	0.005
0.020	0.020	568.299	0.021	0.004
0.015	0.015	568.300	0.015	0.004
0.012	0.012	568.299	0.014	0.004
0.012	0.012	568.299	0.014	0.004
0.012	0.012	568.299	0.014	0.004
0.026	0.026	568.299	0.015	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.013	0.013	568.299	0.031	0.005
0.012	0.012	568.300	0.016	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.021	0.021	568.299	0.011	0.004

2037		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.661
Aerial Lifts	25	0.685
Aerial Lifts	50	0.297
Aerial Lifts	120	0.166
Aerial Lifts	500	0.116
Aerial Lifts	750	0.116
Air Compressors	15	0.661
Air Compressors	25	0.685
Air Compressors	50	0.463
Air Compressors	120	0.238
Air Compressors	175	0.170
Air Compressors	250	0.166
Air Compressors	500	0.166
Air Compressors	750	0.166
Air Compressors	1000	0.167
Bore/Drill Rigs	15	0.661
Bore/Drill Rigs	25	0.685
Bore/Drill Rigs	50	0.348
Bore/Drill Rigs	120	0.183
Bore/Drill Rigs	175	0.126
Bore/Drill Rigs	250	0.126
Bore/Drill Rigs	500	0.126
Bore/Drill Rigs	750	0.126
Bore/Drill Rigs	1000	0.126

0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.161	0.161	568.299	0.061	0.005
0.021	0.021	568.300	0.033	0.005
0.018	0.018	568.299	0.018	0.004
0.014	0.014	568.299	0.012	0.004
0.039	0.039	568.299	0.054	0.005
0.036	0.036	568.300	0.027	0.004
0.024	0.024	568.299	0.019	0.004
0.016	0.016	568.299	0.018	0.004
0.016	0.016	568.299	0.018	0.004
0.016	0.016	568.299	0.018	0.004
0.031	0.031	568.299	0.018	0.004
0.066	0.066	568.299	0.063	0.005
0.060	0.060	568.299	0.031	0.004
0.038	0.038	568.299	0.022	0.004
0.026	0.026	568.299	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.041	0.041	568.299	0.020	0.004
0.023	0.023	568.299	0.044	0.005
0.020	0.020	568.299	0.022	0.004
0.015	0.015	568.299	0.015	0.004
0.012	0.012	568.300	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.026	0.026	568.299	0.016	0.004

Cement and Mortar Mixers	15	0.661
Cement and Mortar Mixers	25	0.685
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	0.375
Concrete/Industrial Saws	120	0.200
Concrete/Industrial Saws	175	0.143
Cranes	50	0.600
Cranes	120	0.300
Cranes	175	0.212
Cranes	250	0.203
Cranes	500	0.202
Cranes	750	0.202
Cranes	9999	0.209
Crawler Tractors	50	0.708
Crawler Tractors	120	0.345
Crawler Tractors	175	0.247
Crawler Tractors	250	0.229
Crawler Tractors	500	0.227
Crawler Tractors	750	0.227
Crawler Tractors	1000	0.231
Crushing/Proc. Equipment	50	0.487
Crushing/Proc. Equipment	120	0.249
Crushing/Proc. Equipment	175	0.176
Crushing/Proc. Equipment	250	0.172
Crushing/Proc. Equipment	500	0.172
Crushing/Proc. Equipment	750	0.172
Crushing/Proc. Equipment	9999	0.177

0.161	0.161	568.299	0.061	0.005
0.161	0.161	568.299	0.061	0.005
0.024	0.024	568.299	0.051	0.005
0.021	0.021	568.299	0.025	0.004
0.015	0.015	568.299	0.017	0.004
0.013	0.013	568.300	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.017	0.017	568.299	0.050	0.005
0.016	0.016	568.299	0.024	0.004
0.012	0.012	568.300	0.017	0.004
0.011	0.011	568.300	0.017	0.004
0.011	0.011	568.299	0.017	0.004
0.162	0.162	568.299	0.053	0.005
0.162	0.162	568.299	0.061	0.005
0.018	0.018	568.299	0.024	0.005
0.016	0.016	568.299	0.014	0.004
0.013	0.013	568.299	0.010	0.004
0.011	0.011	568.299	0.009	0.004
0.011	0.011	568.299	0.009	0.004
0.011	0.011	568.299	0.009	0.004
0.022	0.022	568.299	0.010	0.004
0.037	0.037	568.299	0.053	0.005
0.034	0.034	568.299	0.026	0.004
0.022	0.022	568.300	0.018	0.004
0.016	0.016	568.299	0.017	0.004
0.016	0.016	568.299	0.017	0.004
0.016	0.016	568.299	0.017	0.004
0.107	0.107	568.299	0.037	0.004
0.065	0.065	568.299	0.027	0.004
0.042	0.042	568.299	0.024	0.004
0.040	0.040	568.299	0.023	0.004
0.056	0.056	568.299	0.024	0.004
0.016	0.016	568.299	0.019	0.004
0.013	0.013	568.299	0.018	0.004

Dumpers/Tenders	25	0.685
Excavators	25	0.685
Excavators	50	0.572
Excavators	120	0.284
Excavators	175	0.197
Excavators	250	0.195
Excavators	500	0.195
Excavators	750	0.195
Forklifts	50	0.558
Forklifts	120	0.275
Forklifts	175	0.189
Forklifts	250	0.188
Forklifts	500	0.188
Generator Sets	15	0.589
Generator Sets	25	0.685
Generator Sets	50	0.276
Generator Sets	120	0.156
Generator Sets	175	0.113
Generator Sets	250	0.110
Generator Sets	500	0.110
Generator Sets	750	0.110
Generator Sets	9999	0.114
Graders	50	0.593
Graders	120	0.293
Graders	175	0.206
Graders	250	0.196
Graders	500	0.195
Graders	750	0.195
Off-Highway Tractors	120	0.418
Off-Highway Tractors	175	0.301
Off-Highway Tractors	250	0.268
Off-Highway Tractors	750	0.262
Off-Highway Tractors	1000	0.269
Off-Highway Trucks	175	0.211
Off-Highway Trucks	250	0.208

0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.028	0.028	568.299	0.018	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.018	0.018	568.299	0.037	0.005
0.017	0.017	568.299	0.019	0.004
0.013	0.013	568.299	0.013	0.004
0.011	0.011	568.299	0.013	0.004
0.161	0.161	568.299	0.053	0.005
0.161	0.161	568.299	0.061	0.005
0.025	0.025	568.299	0.050	0.005
0.022	0.022	568.300	0.025	0.004
0.016	0.016	568.300	0.018	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004

Off-Highway Trucks	500	0.208
Off-Highway Trucks	750	0.208
Off-Highway Trucks	1000	0.209
Other Construction Equipment	15	0.661
Other Construction Equipment	25	0.685
Other Construction Equipment	50	0.410
Other Construction Equipment	120	0.213
Other Construction Equipment	175	0.150
Other Construction Equipment	500	0.147
Other General Industrial Equipment	15	0.589
Other General Industrial Equipment	25	0.685
Other General Industrial Equipment	50	0.564
Other General Industrial Equipment	120	0.282
Other General Industrial Equipment	175	0.199
Other General Industrial Equipment	250	0.195
Other General Industrial Equipment	500	0.195

0.013	0.013	568.299	0.017	0.004
0.028	0.028	568.299	0.017	0.004
0.025	0.025	568.299	0.049	0.005
0.022	0.022	568.299	0.025	0.004
0.016	0.016	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.027	0.027	568.299	0.017	0.004
0.161	0.161	568.299	0.061	0.005
0.076	0.076	568.299	0.062	0.005
0.069	0.069	568.299	0.030	0.004
0.043	0.043	568.299	0.022	0.004
0.027	0.027	568.300	0.019	0.004
0.026	0.026	568.299	0.019	0.004
0.161	0.161	568.299	0.061	0.005
0.070	0.070	568.300	0.059	0.005
0.064	0.064	568.299	0.029	0.004
0.040	0.040	568.299	0.021	0.004
0.024	0.024	568.299	0.019	0.004
0.161	0.161	568.299	0.059	0.005
0.162	0.162	568.300	0.053	0.005
0.162	0.162	568.299	0.061	0.005
0.015	0.015	568.299	0.016	0.005
0.014	0.014	568.299	0.010	0.004
0.013	0.013	568.299	0.009	0.004

Other General Industrial Equipment	750	0.195
Other General Industrial Equipment	1000	0.196
Other Material Handling Equipment	50	0.552
Other Material Handling Equipment	120	0.277
Other Material Handling Equipment	175	0.196
Other Material Handling Equipment	250	0.192
Other Material Handling Equipment	500	0.192
Other Material Handling Equipment	9999	0.197
Pavers	25	0.685
Pavers	50	0.694
Pavers	120	0.338
Pavers	175	0.244
Pavers	250	0.221
Pavers	500	0.218
Paving Equipment	25	0.685
Paving Equipment	50	0.664
Paving Equipment	120	0.326
Paving Equipment	175	0.235
Paving Equipment	250	0.212
Plate Compactors	15	0.661
Pressure Washers	15	0.589
Pressure Washers	25	0.685
Pressure Washers	50	0.188
Pressure Washers	120	0.116
Pressure Washers	175	0.109

0.009	0.009	568.299	0.008	0.004
0.162	0.162	568.299	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.019	0.019	568.299	0.027	0.005
0.017	0.017	568.299	0.015	0.004
0.014	0.014	568.299	0.011	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.023	0.023	568.299	0.011	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.300	0.061	0.005
0.038	0.038	568.299	0.045	0.005
0.035	0.035	568.299	0.023	0.004
0.023	0.023	568.299	0.016	0.004
0.016	0.016	568.299	0.015	0.004
0.016	0.016	568.300	0.015	0.004
0.022	0.022	568.299	0.047	0.005
0.020	0.020	568.299	0.023	0.004
0.015	0.015	568.299	0.016	0.004
0.012	0.012	568.299	0.016	0.004
0.012	0.012	568.300	0.016	0.004
0.071	0.071	568.299	0.029	0.004
0.046	0.046	568.299	0.025	0.004
0.043	0.043	568.300	0.025	0.004
0.043	0.043	568.299	0.025	0.004
0.060	0.060	568.299	0.025	0.004
0.161	0.161	568.299	0.061	0.005
0.035	0.035	568.299	0.051	0.005
0.033	0.033	568.299	0.025	0.004
0.022	0.022	568.299	0.018	0.004

Pressure Washers	250	0.098
Pumps	15	0.661
Pumps	25	0.685
Pumps	50	0.306
Pumps	120	0.170
Pumps	175	0.123
Pumps	250	0.119
Pumps	500	0.119
Pumps	750	0.119
Pumps	9999	0.124
Rollers	15	0.661
Rollers	25	0.685
Rollers	50	0.507
Rollers	120	0.258
Rollers	175	0.184
Rollers	250	0.173
Rollers	500	0.172
Rough Terrain Forklifts	50	0.521
Rough Terrain Forklifts	120	0.262
Rough Terrain Forklifts	175	0.184
Rough Terrain Forklifts	250	0.181
Rough Terrain Forklifts	500	0.181
Rubber Tired Dozers	175	0.322
Rubber Tired Dozers	250	0.286
Rubber Tired Dozers	500	0.279
Rubber Tired Dozers	750	0.279
Rubber Tired Dozers	1000	0.287
Rubber Tired Loaders	25	0.685
Rubber Tired Loaders	50	0.575
Rubber Tired Loaders	120	0.286
Rubber Tired Loaders	175	0.200

0.015	0.015	568.299	0.017	0.004
0.015	0.015	568.299	0.017	0.004
0.015	0.015	568.299	0.017	0.004
0.030	0.030	568.299	0.017	0.004
0.064	0.064	568.299	0.031	0.004
0.040	0.040	568.299	0.022	0.004
0.026	0.026	568.299	0.020	0.004
0.025	0.025	568.300	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.161	0.161	568.299	0.059	0.005
0.020	0.020	568.299	0.032	0.005
0.018	0.018	568.299	0.017	0.004
0.014	0.014	568.299	0.012	0.004
0.014	0.014	686.695	0.014	0.004
0.161	0.161	568.299	0.061	0.005
0.015	0.015	568.299	0.037	0.005
0.014	0.014	568.299	0.019	0.004
0.041	0.041	568.299	0.039	0.005
0.038	0.038	568.299	0.020	0.004
0.025	0.025	568.299	0.014	0.004
0.016	0.016	568.299	0.013	0.004
0.016	0.016	568.299	0.013	0.004
0.016	0.016	568.300	0.013	0.004
0.161	0.161	568.299	0.053	0.005
0.161	0.161	568.300	0.061	0.005
0.017	0.017	568.299	0.045	0.005
0.016	0.016	568.299	0.022	0.004
0.012	0.012	568.299	0.015	0.004
0.011	0.011	568.299	0.015	0.004
0.161	0.161	568.299	0.061	0.005

Rubber Tired Loaders	250	0.191
Rubber Tired Loaders	500	0.191
Rubber Tired Loaders	750	0.191
Rubber Tired Loaders	1000	0.193
Scrapers	120	0.348
Scrapers	175	0.250
Scrapers	250	0.229
Scrapers	500	0.226
Scrapers	750	0.226
Signal Boards	15	0.661
Signal Boards	50	0.356
Signal Boards	120	0.192
Signal Boards	175	0.138
Signal Boards	250	0.162
Skid Steer Loaders	25	0.685
Skid Steer Loaders	50	0.411
Skid Steer Loaders	120	0.211
Surfacing Equipment	50	0.439
Surfacing Equipment	120	0.226
Surfacing Equipment	175	0.162
Surfacing Equipment	250	0.149
Surfacing Equipment	500	0.148
Surfacing Equipment	750	0.148
Sweepers/Scrubbers	15	0.589
Sweepers/Scrubbers	25	0.685
Sweepers/Scrubbers	50	0.505
Sweepers/Scrubbers	120	0.253
Sweepers/Scrubbers	175	0.175
Sweepers/Scrubbers	250	0.173
Tractors/Loaders/Backhoes	25	0.685

0.022	0.022	568.299	0.046	0.005
0.020	0.020	568.299	0.023	0.004
0.015	0.015	568.299	0.016	0.004
0.012	0.012	568.299	0.016	0.004
0.012	0.012	568.299	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.084	0.084	568.299	0.061	0.005
0.076	0.076	568.300	0.030	0.004
0.048	0.048	568.299	0.021	0.004
0.031	0.031	568.299	0.019	0.004
0.029	0.029	568.299	0.019	0.004
0.029	0.029	568.300	0.019	0.004
0.162	0.162	568.299	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.022	0.022	568.299	0.036	0.005
0.019	0.019	568.299	0.019	0.004
0.015	0.015	568.299	0.013	0.004
0.012	0.012	568.299	0.013	0.004
0.012	0.012	568.299	0.013	0.004
0.016	0.016	568.299	0.019	0.004
0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.028	0.028	568.299	0.018	0.004

Tractors/Loaders/Backhoes	50	0.515
Tractors/Loaders/Backhoes	120	0.258
Tractors/Loaders/Backhoes	175	0.179
Tractors/Loaders/Backhoes	250	0.177
Tractors/Loaders/Backhoes	500	0.177
Tractors/Loaders/Backhoes	750	0.177
Trenchers	15	0.661
Trenchers	25	0.685
Trenchers	50	0.681
Trenchers	120	0.332
Trenchers	175	0.241
Trenchers	250	0.216
Trenchers	500	0.213
Trenchers	750	0.213
Welders	15	0.661
Welders	25	0.685
Welders	50	0.406
Welders	120	0.214
Welders	175	0.153
Welders	250	0.149
Welders	500	0.149
Water Trucks	175	0.211
Water Trucks	250	0.208
Water Trucks	500	0.208
Water Trucks	750	0.208
Water Trucks	1000	0.209

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g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.726	3.017	0.007	0.019	0.019	568.299	0.026	0.005
3.345	1.466	0.006	0.017	0.017	568.299	0.014	0.004
0.986	0.330	0.005	0.011	0.011	568.299	0.010	0.004
0.986	0.330	0.005	0.011	0.011	568.299	0.010	0.004
3.469	4.143	0.008	0.162	0.162	568.300	0.059	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
4.674	3.215	0.007	0.023	0.023	568.299	0.041	0.005
3.623	1.530	0.006	0.020	0.020	568.299	0.021	0.004
3.205	0.391	0.006	0.015	0.015	568.300	0.015	0.004
1.091	0.347	0.006	0.012	0.012	568.299	0.014	0.004
1.048	0.343	0.005	0.012	0.012	568.299	0.014	0.004
1.048	0.344	0.005	0.012	0.012	568.299	0.014	0.004
1.048	2.473	0.005	0.026	0.026	568.299	0.015	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.030	3.019	0.007	0.013	0.013	568.299	0.031	0.005
3.434	1.411	0.006	0.012	0.012	568.300	0.016	0.004
3.039	0.272	0.006	0.010	0.010	568.299	0.011	0.004
1.035	0.272	0.006	0.010	0.010	568.299	0.011	0.004
1.006	0.272	0.005	0.010	0.010	568.299	0.011	0.004
1.006	0.272	0.005	0.010	0.010	568.299	0.011	0.004
1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.174	3.107	0.007	0.021	0.021	568.300	0.033	0.005
3.476	1.491	0.006	0.018	0.018	568.299	0.018	0.004
3.075	0.374	0.006	0.014	0.014	568.299	0.012	0.004
5.292	3.401	0.007	0.039	0.039	568.299	0.054	0.005
3.801	1.676	0.006	0.036	0.036	568.300	0.027	0.004
3.357	0.519	0.006	0.024	0.024	568.299	0.019	0.004
1.143	0.463	0.006	0.016	0.016	568.299	0.018	0.004
1.087	0.441	0.005	0.016	0.016	568.299	0.018	0.004
1.087	0.446	0.005	0.016	0.016	568.299	0.018	0.004
1.089	2.618	0.005	0.031	0.031	568.299	0.018	0.004
5.493	3.558	0.007	0.066	0.066	568.299	0.063	0.005
3.850	1.922	0.006	0.060	0.060	568.299	0.031	0.004
3.391	0.794	0.006	0.038	0.038	568.299	0.022	0.004
1.182	0.695	0.006	0.026	0.026	568.299	0.020	0.004
1.145	0.657	0.005	0.025	0.025	568.299	0.020	0.004
1.145	0.664	0.005	0.025	0.025	568.299	0.020	0.004
1.159	2.792	0.005	0.041	0.041	568.299	0.020	0.004
4.819	3.237	0.007	0.023	0.023	568.299	0.044	0.005
3.665	1.531	0.006	0.020	0.020	568.299	0.022	0.004
3.242	0.382	0.006	0.015	0.015	568.299	0.015	0.004
1.104	0.342	0.006	0.012	0.012	568.300	0.015	0.004
1.058	0.338	0.005	0.012	0.012	568.299	0.015	0.004
1.058	0.338	0.005	0.012	0.012	568.299	0.015	0.004
1.058	2.482	0.005	0.026	0.026	568.299	0.016	0.004

2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.287	3.323	0.007	0.024	0.024	568.299	0.051	0.005
3.802	1.551	0.006	0.021	0.021	568.299	0.025	0.004
3.363	0.365	0.006	0.015	0.015	568.299	0.017	0.004
1.145	0.342	0.006	0.013	0.013	568.300	0.017	0.004
1.089	0.337	0.005	0.013	0.013	568.299	0.017	0.004
1.088	0.338	0.005	0.013	0.013	568.299	0.017	0.004
5.234	3.268	0.007	0.017	0.017	568.299	0.050	0.005
3.787	1.495	0.006	0.016	0.016	568.299	0.024	0.004
3.350	0.299	0.006	0.012	0.012	568.300	0.017	0.004
1.141	0.290	0.006	0.011	0.011	568.300	0.017	0.004
1.085	0.290	0.005	0.011	0.011	568.299	0.017	0.004
3.470	4.143	0.008	0.162	0.162	568.299	0.053	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.607	2.991	0.007	0.018	0.018	568.299	0.024	0.005
3.310	1.458	0.006	0.016	0.016	568.299	0.014	0.004
2.929	0.373	0.006	0.013	0.013	568.299	0.010	0.004
0.998	0.331	0.006	0.011	0.011	568.299	0.009	0.004
0.978	0.328	0.005	0.011	0.011	568.299	0.009	0.004
0.978	0.328	0.005	0.011	0.011	568.299	0.009	0.004
0.978	2.362	0.005	0.022	0.022	568.299	0.010	0.004
5.189	3.356	0.007	0.037	0.037	568.299	0.053	0.005
3.767	1.661	0.006	0.034	0.034	568.299	0.026	0.004
3.326	0.506	0.006	0.022	0.022	568.300	0.018	0.004
1.137	0.452	0.006	0.016	0.016	568.299	0.017	0.004
1.083	0.434	0.005	0.016	0.016	568.299	0.017	0.004
1.083	0.438	0.005	0.016	0.016	568.299	0.017	0.004
3.902	2.350	0.006	0.107	0.107	568.299	0.037	0.004
3.421	1.252	0.006	0.065	0.065	568.299	0.027	0.004
1.232	1.115	0.006	0.042	0.042	568.299	0.024	0.004
1.238	1.045	0.005	0.040	0.040	568.299	0.023	0.004
1.268	3.116	0.005	0.056	0.056	568.299	0.024	0.004
3.425	0.380	0.006	0.016	0.016	568.299	0.019	0.004
1.167	0.353	0.006	0.013	0.013	568.299	0.018	0.004

1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	2.565	0.005	0.028	0.028	568.299	0.018	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.377	3.124	0.007	0.018	0.018	568.299	0.037	0.005
3.536	1.474	0.006	0.017	0.017	568.299	0.019	0.004
3.128	0.334	0.006	0.013	0.013	568.299	0.013	0.004
1.029	0.311	0.005	0.011	0.011	568.299	0.013	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.255	3.334	0.007	0.025	0.025	568.299	0.050	0.005
3.794	1.567	0.006	0.022	0.022	568.300	0.025	0.004
3.355	0.399	0.006	0.016	0.016	568.300	0.018	0.004
1.143	0.355	0.006	0.013	0.013	568.299	0.017	0.004
1.087	0.351	0.005	0.013	0.013	568.299	0.017	0.004

1.087	0.351	0.005	0.013	0.013	568.299	0.017	0.004
1.087	2.532	0.005	0.028	0.028	568.299	0.017	0.004
5.189	3.321	0.007	0.025	0.025	568.299	0.049	0.005
3.774	1.563	0.006	0.022	0.022	568.299	0.025	0.004
3.338	0.398	0.006	0.016	0.016	568.299	0.017	0.004
1.137	0.354	0.006	0.013	0.013	568.299	0.017	0.004
1.082	0.350	0.005	0.013	0.013	568.299	0.017	0.004
1.082	2.525	0.005	0.027	0.027	568.299	0.017	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.260	3.555	0.007	0.076	0.076	568.299	0.062	0.005
3.774	1.986	0.006	0.069	0.069	568.299	0.030	0.004
3.319	0.889	0.006	0.043	0.043	568.299	0.022	0.004
1.157	0.772	0.006	0.027	0.027	568.300	0.019	0.004
1.111	0.722	0.005	0.026	0.026	568.299	0.019	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.181	3.511	0.007	0.070	0.070	568.300	0.059	0.005
3.753	1.928	0.006	0.064	0.064	568.299	0.029	0.004
3.303	0.832	0.006	0.040	0.040	568.299	0.021	0.004
1.140	0.714	0.006	0.024	0.024	568.299	0.019	0.004
3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.470	4.143	0.008	0.162	0.162	568.300	0.053	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.101	2.882	0.007	0.015	0.015	568.299	0.016	0.005
3.161	1.421	0.006	0.014	0.014	568.299	0.010	0.004
2.907	0.382	0.006	0.013	0.013	568.299	0.009	0.004

0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
3.469	4.143	0.008	0.162	0.162	568.299	0.059	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.778	3.028	0.007	0.019	0.019	568.299	0.027	0.005
3.360	1.470	0.006	0.017	0.017	568.299	0.015	0.004
2.973	0.377	0.006	0.014	0.014	568.299	0.011	0.004
1.012	0.335	0.006	0.011	0.011	568.299	0.010	0.004
0.989	0.331	0.005	0.011	0.011	568.299	0.010	0.004
0.989	0.331	0.005	0.011	0.011	568.299	0.010	0.004
0.989	2.380	0.005	0.023	0.023	568.299	0.011	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.340	4.332	0.007	0.161	0.161	568.300	0.061	0.005
4.711	3.280	0.007	0.038	0.038	568.299	0.045	0.005
3.629	1.650	0.006	0.035	0.035	568.299	0.023	0.004
3.204	0.523	0.006	0.023	0.023	568.299	0.016	0.004
1.091	0.465	0.006	0.016	0.016	568.299	0.015	0.004
1.048	0.442	0.005	0.016	0.016	568.300	0.015	0.004
5.011	3.267	0.007	0.022	0.022	568.299	0.047	0.005
3.722	1.530	0.006	0.020	0.020	568.299	0.023	0.004
3.292	0.364	0.006	0.015	0.015	568.299	0.016	0.004
1.121	0.334	0.006	0.012	0.012	568.299	0.016	0.004
1.071	0.331	0.005	0.012	0.012	568.300	0.016	0.004
3.481	1.345	0.006	0.071	0.071	568.299	0.029	0.004
1.262	1.203	0.006	0.046	0.046	568.299	0.025	0.004
1.279	1.107	0.005	0.043	0.043	568.300	0.025	0.004
1.279	1.126	0.005	0.043	0.043	568.299	0.025	0.004
1.312	3.204	0.005	0.060	0.060	568.299	0.025	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.126	3.337	0.007	0.035	0.035	568.299	0.051	0.005
3.751	1.639	0.006	0.033	0.033	568.299	0.025	0.004
3.312	0.481	0.006	0.022	0.022	568.299	0.018	0.004

1.129	0.434	0.006	0.015	0.015	568.299	0.017	0.004
1.076	0.416	0.005	0.015	0.015	568.299	0.017	0.004
1.076	0.421	0.005	0.015	0.015	568.299	0.017	0.004
1.082	2.584	0.005	0.030	0.030	568.299	0.017	0.004
3.842	1.943	0.006	0.064	0.064	568.299	0.031	0.004
3.382	0.824	0.006	0.040	0.040	568.299	0.022	0.004
1.175	0.717	0.006	0.026	0.026	568.299	0.020	0.004
1.123	0.674	0.005	0.025	0.025	568.300	0.020	0.004
1.123	0.682	0.005	0.025	0.025	568.299	0.020	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.067	3.082	0.007	0.020	0.020	568.299	0.032	0.005
3.445	1.482	0.006	0.018	0.018	568.299	0.017	0.004
3.048	0.372	0.006	0.014	0.014	568.299	0.012	0.004
1.254	0.401	0.007	0.014	0.014	686.695	0.014	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.390	3.097	0.007	0.015	0.015	568.299	0.037	0.005
3.540	1.442	0.006	0.014	0.014	568.299	0.019	0.004
4.221	3.193	0.007	0.041	0.041	568.299	0.039	0.005
3.482	1.659	0.006	0.038	0.038	568.299	0.020	0.004
3.072	0.567	0.006	0.025	0.025	568.299	0.014	0.004
1.050	0.497	0.006	0.016	0.016	568.299	0.013	0.004
1.018	0.471	0.005	0.016	0.016	568.299	0.013	0.004
1.018	0.477	0.005	0.016	0.016	568.300	0.013	0.004
3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
2.340	4.332	0.007	0.161	0.161	568.300	0.061	0.005
4.929	3.214	0.007	0.017	0.017	568.299	0.045	0.005
3.698	1.486	0.006	0.016	0.016	568.299	0.022	0.004
3.271	0.313	0.006	0.012	0.012	568.299	0.015	0.004
1.114	0.294	0.006	0.011	0.011	568.299	0.015	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

4.949	3.244	0.007	0.022	0.022	568.299	0.046	0.005
3.703	1.521	0.006	0.020	0.020	568.299	0.023	0.004
3.275	0.348	0.006	0.015	0.015	568.299	0.016	0.004
1.115	0.331	0.006	0.012	0.012	568.299	0.016	0.004
1.066	0.326	0.006	0.012	0.012	568.299	0.015	0.004
1.066	0.327	0.006	0.012	0.012	568.299	0.015	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.055	3.548	0.007	0.084	0.084	568.299	0.061	0.005
3.713	2.049	0.006	0.076	0.076	568.300	0.030	0.004
3.264	0.966	0.006	0.048	0.048	568.299	0.021	0.004
1.149	0.847	0.006	0.031	0.031	568.299	0.019	0.004
1.126	0.790	0.005	0.029	0.029	568.299	0.019	0.004
1.126	0.801	0.005	0.029	0.029	568.300	0.019	0.004
3.469	4.143	0.008	0.162	0.162	568.299	0.059	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
4.349	3.147	0.007	0.022	0.022	568.299	0.036	0.005
3.528	1.509	0.006	0.019	0.019	568.299	0.019	0.004
3.121	0.387	0.006	0.015	0.015	568.299	0.013	0.004
1.063	0.343	0.006	0.012	0.012	568.299	0.013	0.004
1.027	0.339	0.005	0.012	0.012	568.299	0.013	0.004
3.425	0.380	0.006	0.016	0.016	568.299	0.019	0.004
1.167	0.353	0.006	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	2.565	0.005	0.028	0.028	568.299	0.018	0.004

2038		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019	0.019	568.299	0.026
Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017	0.017	568.299	0.014
Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011	0.011	568.299	0.010
Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011	0.011	568.299	0.010
Air Compressors	15	0.661	3.469	4.143	0.008	0.162	0.162	568.300	0.059
Air Compressors	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061
Air Compressors	50	0.463	4.674	3.215	0.007	0.023	0.023	568.299	0.041
Air Compressors	120	0.238	3.623	1.530	0.006	0.020	0.020	568.299	0.021
Air Compressors	175	0.170	3.205	0.391	0.006	0.015	0.015	568.300	0.015
Air Compressors	250	0.166	1.091	0.347	0.006	0.012	0.012	568.299	0.014
Air Compressors	500	0.166	1.048	0.343	0.005	0.012	0.012	568.299	0.014
Air Compressors	750	0.166	1.048	0.344	0.005	0.012	0.012	568.299	0.014
Air Compressors	1000	0.167	1.048	2.473	0.005	0.026	0.026	568.299	0.015
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013	0.013	568.299	0.031
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012	0.012	568.300	0.016
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010	0.010	568.299	0.011
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010	0.010	568.299	0.011
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010	0.010	568.299	0.011
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010	0.010	568.299	0.011
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021	0.021	568.299	0.011

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021	0.021	568.300	0.033
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018	0.018	568.299	0.018
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014	0.014	568.299	0.012
Cranes	50	0.600	5.292	3.401	0.007	0.039	0.039	568.299	0.054
Cranes	120	0.300	3.801	1.676	0.006	0.036	0.036	568.300	0.027
Cranes	175	0.212	3.357	0.519	0.006	0.024	0.024	568.299	0.019
Cranes	250	0.203	1.143	0.463	0.006	0.016	0.016	568.299	0.018
Cranes	500	0.202	1.087	0.441	0.005	0.016	0.016	568.299	0.018
Cranes	750	0.202	1.087	0.446	0.005	0.016	0.016	568.299	0.018
Cranes	9999	0.209	1.089	2.618	0.005	0.031	0.031	568.299	0.018
Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066	0.066	568.299	0.063
Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060	0.060	568.299	0.031
Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038	0.038	568.299	0.022
Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026	0.026	568.299	0.020
Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025	0.025	568.299	0.020
Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025	0.025	568.299	0.020
Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041	0.041	568.299	0.020
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023	0.023	568.299	0.044
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020	0.020	568.299	0.022
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015	0.015	568.299	0.015
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012	0.012	568.300	0.015
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012	0.012	568.299	0.015
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012	0.012	568.299	0.015
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026	0.026	568.299	0.016

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	50	0.572	5.287	3.323	0.007	0.024	0.024	568.299	0.051
Excavators	120	0.284	3.802	1.551	0.006	0.021	0.021	568.299	0.025
Excavators	175	0.197	3.363	0.365	0.006	0.015	0.015	568.299	0.017
Excavators	250	0.195	1.145	0.342	0.006	0.013	0.013	568.300	0.017
Excavators	500	0.195	1.089	0.337	0.005	0.013	0.013	568.299	0.017
Excavators	750	0.195	1.088	0.338	0.005	0.013	0.013	568.299	0.017
Forklifts	50	0.558	5.234	3.268	0.007	0.017	0.017	568.299	0.050
Forklifts	120	0.275	3.787	1.495	0.006	0.016	0.016	568.299	0.024
Forklifts	175	0.189	3.350	0.299	0.006	0.012	0.012	568.300	0.017
Forklifts	250	0.188	1.141	0.290	0.006	0.011	0.011	568.300	0.017
Forklifts	500	0.188	1.085	0.290	0.005	0.011	0.011	568.299	0.017
Generator Sets	15	0.589	3.470	4.143	0.008	0.162	0.162	568.299	0.053
Generator Sets	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Generator Sets	50	0.276	3.607	2.991	0.007	0.018	0.018	568.299	0.024
Generator Sets	120	0.156	3.310	1.458	0.006	0.016	0.016	568.299	0.014
Generator Sets	175	0.113	2.929	0.373	0.006	0.013	0.013	568.299	0.010
Generator Sets	250	0.110	0.998	0.331	0.006	0.011	0.011	568.299	0.009
Generator Sets	500	0.110	0.978	0.328	0.005	0.011	0.011	568.299	0.009
Generator Sets	750	0.110	0.978	0.328	0.005	0.011	0.011	568.299	0.009
Generator Sets	9999	0.114	0.978	2.362	0.005	0.022	0.022	568.299	0.010
Graders	50	0.593	5.189	3.356	0.007	0.037	0.037	568.299	0.053
Graders	120	0.293	3.767	1.661	0.006	0.034	0.034	568.299	0.026
Graders	175	0.206	3.326	0.506	0.006	0.022	0.022	568.300	0.018
Graders	250	0.196	1.137	0.452	0.006	0.016	0.016	568.299	0.017
Graders	500	0.195	1.083	0.434	0.005	0.016	0.016	568.299	0.017
Graders	750	0.195	1.083	0.438	0.005	0.016	0.016	568.299	0.017
Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107	0.107	568.299	0.037
Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065	0.065	568.299	0.027
Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042	0.042	568.299	0.024
Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040	0.040	568.299	0.023
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056	0.056	568.299	0.024
Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299	0.019
Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299	0.018

Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299	0.018
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018	0.018	568.299	0.037
Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017	0.017	568.299	0.019
Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013	0.013	568.299	0.013
Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011	0.011	568.299	0.013
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025	0.025	568.299	0.050
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022	0.022	568.300	0.025
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016	0.016	568.300	0.018
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013	0.013	568.299	0.017
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013	0.013	568.299	0.017

Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013	0.013	568.299	0.017
Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028	0.028	568.299	0.017
Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025	0.025	568.299	0.049
Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022	0.022	568.299	0.025
Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016	0.016	568.299	0.017
Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013	0.013	568.299	0.017
Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013	0.013	568.299	0.017
Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027	0.027	568.299	0.017
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Pavers	50	0.694	5.260	3.555	0.007	0.076	0.076	568.299	0.062
Pavers	120	0.338	3.774	1.986	0.006	0.069	0.069	568.299	0.030
Pavers	175	0.244	3.319	0.889	0.006	0.043	0.043	568.299	0.022
Pavers	250	0.221	1.157	0.772	0.006	0.027	0.027	568.300	0.019
Pavers	500	0.218	1.111	0.722	0.005	0.026	0.026	568.299	0.019
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Paving Equipment	50	0.664	5.181	3.511	0.007	0.070	0.070	568.300	0.059
Paving Equipment	120	0.326	3.753	1.928	0.006	0.064	0.064	568.299	0.029
Paving Equipment	175	0.235	3.303	0.832	0.006	0.040	0.040	568.299	0.021
Paving Equipment	250	0.212	1.140	0.714	0.006	0.024	0.024	568.299	0.019
Plate Compactors	15	0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059
Pressure Washers	15	0.589	3.470	4.143	0.008	0.162	0.162	568.300	0.053
Pressure Washers	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Pressure Washers	50	0.188	3.101	2.882	0.007	0.015	0.015	568.299	0.016
Pressure Washers	120	0.116	3.161	1.421	0.006	0.014	0.014	568.299	0.010
Pressure Washers	175	0.109	2.907	0.382	0.006	0.013	0.013	568.299	0.009

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008
Pumps	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299	0.059
Pumps	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Pumps	50	0.306	3.778	3.028	0.007	0.019	0.019	568.299	0.027
Pumps	120	0.170	3.360	1.470	0.006	0.017	0.017	568.299	0.015
Pumps	175	0.123	2.973	0.377	0.006	0.014	0.014	568.299	0.011
Pumps	250	0.119	1.012	0.335	0.006	0.011	0.011	568.299	0.010
Pumps	500	0.119	0.989	0.331	0.005	0.011	0.011	568.299	0.010
Pumps	750	0.119	0.989	0.331	0.005	0.011	0.011	568.299	0.010
Pumps	9999	0.124	0.989	2.380	0.005	0.023	0.023	568.299	0.011
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Rollers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300	0.061
Rollers	50	0.507	4.711	3.280	0.007	0.038	0.038	568.299	0.045
Rollers	120	0.258	3.629	1.650	0.006	0.035	0.035	568.299	0.023
Rollers	175	0.184	3.204	0.523	0.006	0.023	0.023	568.299	0.016
Rollers	250	0.173	1.091	0.465	0.006	0.016	0.016	568.299	0.015
Rollers	500	0.172	1.048	0.442	0.005	0.016	0.016	568.300	0.015
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022	0.022	568.299	0.047
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020	0.020	568.299	0.023
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015	0.015	568.299	0.016
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012	0.012	568.299	0.016
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012	0.012	568.300	0.016
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071	0.071	568.299	0.029
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046	0.046	568.299	0.025
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043	0.043	568.300	0.025
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043	0.043	568.299	0.025
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060	0.060	568.299	0.025
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035	0.035	568.299	0.051
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033	0.033	568.299	0.025
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022	0.022	568.299	0.018

Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015	0.015	568.299	0.017
Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015	0.015	568.299	0.017
Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015	0.015	568.299	0.017
Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030	0.030	568.299	0.017
Scrapers	120	0.348	3.842	1.943	0.006	0.064	0.064	568.299	0.031
Scrapers	175	0.250	3.382	0.824	0.006	0.040	0.040	568.299	0.022
Scrapers	250	0.229	1.175	0.717	0.006	0.026	0.026	568.299	0.020
Scrapers	500	0.226	1.123	0.674	0.005	0.025	0.025	568.300	0.020
Scrapers	750	0.226	1.123	0.682	0.005	0.025	0.025	568.299	0.020
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Signal Boards	50	0.356	4.067	3.082	0.007	0.020	0.020	568.299	0.032
Signal Boards	120	0.192	3.445	1.482	0.006	0.018	0.018	568.299	0.017
Signal Boards	175	0.138	3.048	0.372	0.006	0.014	0.014	568.299	0.012
Signal Boards	250	0.162	1.254	0.401	0.007	0.014	0.014	686.695	0.014
Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015	0.015	568.299	0.037
Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014	0.014	568.299	0.019
Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041	0.041	568.299	0.039
Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038	0.038	568.299	0.020
Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025	0.025	568.299	0.014
Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016	0.016	568.299	0.013
Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016	0.016	568.299	0.013
Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016	0.016	568.300	0.013
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300	0.061
Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017	0.017	568.299	0.045
Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016	0.016	568.299	0.022
Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012	0.012	568.299	0.015
Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011	0.011	568.299	0.015
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022	0.022	568.299	0.046
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020	0.020	568.299	0.023
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015	0.015	568.299	0.016
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012	0.012	568.299	0.016
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012	0.012	568.299	0.015
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012	0.012	568.299	0.015
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Trenchers	50	0.681	5.055	3.548	0.007	0.084	0.084	568.299	0.061
Trenchers	120	0.332	3.713	2.049	0.006	0.076	0.076	568.300	0.030
Trenchers	175	0.241	3.264	0.966	0.006	0.048	0.048	568.299	0.021
Trenchers	250	0.216	1.149	0.847	0.006	0.031	0.031	568.299	0.019
Trenchers	500	0.213	1.126	0.790	0.005	0.029	0.029	568.299	0.019
Trenchers	750	0.213	1.126	0.801	0.005	0.029	0.029	568.300	0.019
Welders	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299	0.059
Welders	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061
Welders	50	0.406	4.349	3.147	0.007	0.022	0.022	568.299	0.036
Welders	120	0.214	3.528	1.509	0.006	0.019	0.019	568.299	0.019
Welders	175	0.153	3.121	0.387	0.006	0.015	0.015	568.299	0.013
Welders	250	0.149	1.063	0.343	0.006	0.012	0.012	568.299	0.013
Welders	500	0.149	1.027	0.339	0.005	0.012	0.012	568.299	0.013
Water Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299	0.019
Water Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299	0.018
Water Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Water Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Water Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299	0.018

2039

g/hp/hr	2039		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
N2O	**Equipment**	**MaxHP**	ROG	CO	NOX	SOX	PM10
0.005	Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161
0.005	Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161
0.005	Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019
0.004	Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017
0.004	Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011
0.004	Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011
0.005	Air Compressors	15	0.661	3.469	4.143	0.008	0.162
0.005	Air Compressors	25	0.685	2.339	4.332	0.007	0.162
0.005	Air Compressors	50	0.463	4.674	3.215	0.007	0.023
0.004	Air Compressors	120	0.238	3.623	1.530	0.006	0.020
0.004	Air Compressors	175	0.170	3.205	0.391	0.006	0.015
0.004	Air Compressors	250	0.166	1.091	0.347	0.006	0.012
0.004	Air Compressors	500	0.166	1.048	0.343	0.005	0.012
0.004	Air Compressors	750	0.166	1.048	0.344	0.005	0.012
0.004	Air Compressors	1000	0.167	1.048	2.473	0.005	0.026
0.005	Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161
0.005	Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161
0.005	Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013
0.004	Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012
0.004	Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010
0.004	Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010
0.004	Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010
0.004	Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010
0.004	Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021

0.005	Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161
0.005	Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021
0.004	Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018
0.004	Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014
0.005	Cranes	50	0.600	5.292	3.401	0.007	0.039
0.004	Cranes	120	0.300	3.801	1.676	0.006	0.036
0.004	Cranes	175	0.212	3.357	0.519	0.006	0.024
0.004	Cranes	250	0.203	1.143	0.463	0.006	0.016
0.004	Cranes	500	0.202	1.087	0.441	0.005	0.016
0.004	Cranes	750	0.202	1.087	0.446	0.005	0.016
0.004	Cranes	9999	0.209	1.089	2.618	0.005	0.031
0.005	Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066
0.004	Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060
0.004	Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038
0.004	Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026
0.004	Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025
0.004	Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025
0.004	Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041
0.005	Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023
0.004	Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020
0.004	Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015
0.004	Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012
0.004	Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012
0.004	Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012
0.004	Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026

0.005	Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	50	0.572	5.287	3.323	0.007	0.024
0.004	Excavators	120	0.284	3.802	1.551	0.006	0.021
0.004	Excavators	175	0.197	3.363	0.365	0.006	0.015
0.004	Excavators	250	0.195	1.145	0.342	0.006	0.013
0.004	Excavators	500	0.195	1.089	0.337	0.005	0.013
0.004	Excavators	750	0.195	1.088	0.338	0.005	0.013
0.005	Forklifts	50	0.558	5.234	3.268	0.007	0.017
0.004	Forklifts	120	0.275	3.787	1.495	0.006	0.016
0.004	Forklifts	175	0.189	3.350	0.299	0.006	0.012
0.004	Forklifts	250	0.188	1.141	0.290	0.006	0.011
0.004	Forklifts	500	0.188	1.085	0.290	0.005	0.011
0.005	Generator Sets	15	0.589	3.470	4.143	0.008	0.162
0.005	Generator Sets	25	0.685	2.340	4.332	0.007	0.162
0.005	Generator Sets	50	0.276	3.607	2.991	0.007	0.018
0.004	Generator Sets	120	0.156	3.310	1.458	0.006	0.016
0.004	Generator Sets	175	0.113	2.929	0.373	0.006	0.013
0.004	Generator Sets	250	0.110	0.998	0.331	0.006	0.011
0.004	Generator Sets	500	0.110	0.978	0.328	0.005	0.011
0.004	Generator Sets	750	0.110	0.978	0.328	0.005	0.011
0.004	Generator Sets	9999	0.114	0.978	2.362	0.005	0.022
0.005	Graders	50	0.593	5.189	3.356	0.007	0.037
0.004	Graders	120	0.293	3.767	1.661	0.006	0.034
0.004	Graders	175	0.206	3.326	0.506	0.006	0.022
0.004	Graders	250	0.196	1.137	0.452	0.006	0.016
0.004	Graders	500	0.195	1.083	0.434	0.005	0.016
0.004	Graders	750	0.195	1.083	0.438	0.005	0.016
0.004	Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107
0.004	Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065
0.004	Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042
0.004	Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040
0.004	Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056
0.004	Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016
0.004	Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013

0.004	Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013
0.004	Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013
0.004	Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028
0.005	Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161
0.005	Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018
0.004	Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017
0.004	Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013
0.004	Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011
0.005	Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161
0.005	Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025
0.004	Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022
0.004	Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016
0.004	Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013
0.004	Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013

0.004	Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013
0.004	Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028
0.005	Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025
0.004	Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022
0.004	Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016
0.004	Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013
0.004	Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013
0.004	Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027
0.005	Pavers	25	0.685	2.339	4.332	0.007	0.161
0.005	Pavers	50	0.694	5.260	3.555	0.007	0.076
0.004	Pavers	120	0.338	3.774	1.986	0.006	0.069
0.004	Pavers	175	0.244	3.319	0.889	0.006	0.043
0.004	Pavers	250	0.221	1.157	0.772	0.006	0.027
0.004	Pavers	500	0.218	1.111	0.722	0.005	0.026
0.005	Paving Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Paving Equipment	50	0.664	5.181	3.511	0.007	0.070
0.004	Paving Equipment	120	0.326	3.753	1.928	0.006	0.064
0.004	Paving Equipment	175	0.235	3.303	0.832	0.006	0.040
0.004	Paving Equipment	250	0.212	1.140	0.714	0.006	0.024
0.005	Plate Compactors	15	0.661	3.470	4.142	0.008	0.161
0.005	Pressure Washers	15	0.589	3.470	4.143	0.008	0.162
0.005	Pressure Washers	25	0.685	2.340	4.332	0.007	0.162
0.005	Pressure Washers	50	0.188	3.101	2.882	0.007	0.015
0.004	Pressure Washers	120	0.116	3.161	1.421	0.006	0.014
0.004	Pressure Washers	175	0.109	2.907	0.382	0.006	0.013

0.004	Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
0.005	Pumps	15	0.661	3.469	4.143	0.008	0.162
0.005	Pumps	25	0.685	2.340	4.332	0.007	0.162
0.005	Pumps	50	0.306	3.778	3.028	0.007	0.019
0.004	Pumps	120	0.170	3.360	1.470	0.006	0.017
0.004	Pumps	175	0.123	2.973	0.377	0.006	0.014
0.004	Pumps	250	0.119	1.012	0.335	0.006	0.011
0.004	Pumps	500	0.119	0.989	0.331	0.005	0.011
0.004	Pumps	750	0.119	0.989	0.331	0.005	0.011
0.004	Pumps	9999	0.124	0.989	2.380	0.005	0.023
0.005	Rollers	15	0.661	3.469	4.142	0.008	0.161
0.005	Rollers	25	0.685	2.340	4.332	0.007	0.161
0.005	Rollers	50	0.507	4.711	3.280	0.007	0.038
0.004	Rollers	120	0.258	3.629	1.650	0.006	0.035
0.004	Rollers	175	0.184	3.204	0.523	0.006	0.023
0.004	Rollers	250	0.173	1.091	0.465	0.006	0.016
0.004	Rollers	500	0.172	1.048	0.442	0.005	0.016
0.005	Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022
0.004	Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020
0.004	Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015
0.004	Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012
0.004	Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012
0.004	Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071
0.004	Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046
0.004	Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043
0.004	Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043
0.004	Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060
0.005	Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161
0.005	Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035
0.004	Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033
0.004	Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022

0.004	Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015
0.004	Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015
0.004	Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015
0.004	Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030
0.004	Scrapers	120	0.348	3.842	1.943	0.006	0.064
0.004	Scrapers	175	0.250	3.382	0.824	0.006	0.040
0.004	Scrapers	250	0.229	1.175	0.717	0.006	0.026
0.004	Scrapers	500	0.226	1.123	0.674	0.005	0.025
0.004	Scrapers	750	0.226	1.123	0.682	0.005	0.025
0.005	Signal Boards	15	0.661	3.469	4.142	0.008	0.161
0.005	Signal Boards	50	0.356	4.067	3.082	0.007	0.020
0.004	Signal Boards	120	0.192	3.445	1.482	0.006	0.018
0.004	Signal Boards	175	0.138	3.048	0.372	0.006	0.014
0.004	Signal Boards	250	0.162	1.254	0.401	0.007	0.014
0.005	Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161
0.005	Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015
0.004	Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014
0.005	Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041
0.004	Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038
0.004	Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025
0.004	Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016
0.004	Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016
0.004	Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016
0.005	Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161
0.005	Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161
0.005	Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017
0.004	Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016
0.004	Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012
0.004	Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011
0.005	Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161

0.005	Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022
0.004	Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020
0.004	Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015
0.004	Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012
0.004	Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012
0.004	Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012
0.005	Trenchers	15	0.661	3.469	4.142	0.008	0.161
0.005	Trenchers	25	0.685	2.339	4.332	0.007	0.161
0.005	Trenchers	50	0.681	5.055	3.548	0.007	0.084
0.004	Trenchers	120	0.332	3.713	2.049	0.006	0.076
0.004	Trenchers	175	0.241	3.264	0.966	0.006	0.048
0.004	Trenchers	250	0.216	1.149	0.847	0.006	0.031
0.004	Trenchers	500	0.213	1.126	0.790	0.005	0.029
0.004	Trenchers	750	0.213	1.126	0.801	0.005	0.029
0.005	Welders	15	0.661	3.469	4.143	0.008	0.162
0.005	Welders	25	0.685	2.339	4.332	0.007	0.162
0.005	Welders	50	0.406	4.349	3.147	0.007	0.022
0.004	Welders	120	0.214	3.528	1.509	0.006	0.019
0.004	Welders	175	0.153	3.121	0.387	0.006	0.015
0.004	Welders	250	0.149	1.063	0.343	0.006	0.012
0.004	Welders	500	0.149	1.027	0.339	0.005	0.012
0.004	Water Trucks	175	0.211	3.425	0.380	0.006	0.016
0.004	Water Trucks	250	0.208	1.167	0.353	0.006	0.013
0.004	Water Trucks	500	0.208	1.105	0.348	0.005	0.013
0.004	Water Trucks	750	0.208	1.105	0.348	0.005	0.013
0.004	Water Trucks	1000	0.209	1.105	2.565	0.005	0.028

2040

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.019	568.299	0.026	0.005
0.017	568.299	0.014	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.162	568.300	0.059	0.005
0.162	568.299	0.061	0.005
0.023	568.299	0.041	0.005
0.020	568.299	0.021	0.004
0.015	568.300	0.015	0.004
0.012	568.299	0.014	0.004
0.012	568.299	0.014	0.004
0.012	568.299	0.014	0.004
0.026	568.299	0.015	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.013	568.299	0.031	0.005
0.012	568.300	0.016	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.021	568.299	0.011	0.004

2040		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.661	3.469
Aerial Lifts	25	0.685	2.339
Aerial Lifts	50	0.295	3.723
Aerial Lifts	120	0.161	3.344
Aerial Lifts	500	0.112	0.986
Aerial Lifts	750	0.112	0.986
Air Compressors	15	0.661	3.469
Air Compressors	25	0.685	2.339
Air Compressors	50	0.458	4.659
Air Compressors	120	0.232	3.619
Air Compressors	175	0.161	3.201
Air Compressors	250	0.160	1.090
Air Compressors	500	0.160	1.047
Air Compressors	750	0.160	1.047
Air Compressors	1000	0.160	1.047
Bore/Drill Rigs	15	0.661	3.469
Bore/Drill Rigs	25	0.685	2.339
Bore/Drill Rigs	50	0.348	4.032
Bore/Drill Rigs	120	0.183	3.435
Bore/Drill Rigs	175	0.127	3.039
Bore/Drill Rigs	250	0.127	1.035
Bore/Drill Rigs	500	0.127	1.006
Bore/Drill Rigs	750	0.127	1.006
Bore/Drill Rigs	1000	0.127	1.006

0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.161	568.299	0.061	0.005
0.021	568.300	0.033	0.005
0.018	568.299	0.018	0.004
0.014	568.299	0.012	0.004
0.039	568.299	0.054	0.005
0.036	568.300	0.027	0.004
0.024	568.299	0.019	0.004
0.016	568.299	0.018	0.004
0.016	568.299	0.018	0.004
0.016	568.299	0.018	0.004
0.031	568.299	0.018	0.004
0.066	568.299	0.063	0.005
0.060	568.299	0.031	0.004
0.038	568.299	0.022	0.004
0.026	568.299	0.020	0.004
0.025	568.299	0.020	0.004
0.025	568.299	0.020	0.004
0.041	568.299	0.020	0.004
0.023	568.299	0.044	0.005
0.020	568.299	0.022	0.004
0.015	568.299	0.015	0.004
0.012	568.300	0.015	0.004
0.012	568.299	0.015	0.004
0.012	568.299	0.015	0.004
0.026	568.299	0.016	0.004

Cement and Mortar Mixers	15	0.661	3.470
Cement and Mortar Mixers	25	0.685	2.339
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.373	4.175
Concrete/Industrial Saws	120	0.195	3.477
Concrete/Industrial Saws	175	0.136	3.076
Cranes	50	0.567	5.268
Cranes	120	0.282	3.797
Cranes	175	0.197	3.358
Cranes	250	0.195	1.144
Cranes	500	0.195	1.087
Cranes	750	0.195	1.087
Cranes	9999	0.198	1.087
Crawler Tractors	50	0.653	5.443
Crawler Tractors	120	0.316	3.839
Crawler Tractors	175	0.221	3.388
Crawler Tractors	250	0.211	1.167
Crawler Tractors	500	0.210	1.113
Crawler Tractors	750	0.210	1.113
Crawler Tractors	1000	0.213	1.122
Crushing/Proc. Equipment	50	0.488	4.833
Crushing/Proc. Equipment	120	0.245	3.670
Crushing/Proc. Equipment	175	0.170	3.246
Crushing/Proc. Equipment	250	0.168	1.106
Crushing/Proc. Equipment	500	0.168	1.059
Crushing/Proc. Equipment	750	0.169	1.059
Crushing/Proc. Equipment	9999	0.170	1.059

0.161	568.299	0.061	0.005
0.161	568.299	0.061	0.005
0.024	568.299	0.051	0.005
0.021	568.299	0.025	0.004
0.015	568.299	0.017	0.004
0.013	568.300	0.017	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.017	568.299	0.050	0.005
0.016	568.299	0.024	0.004
0.012	568.300	0.017	0.004
0.011	568.300	0.017	0.004
0.011	568.299	0.017	0.004
0.162	568.299	0.053	0.005
0.162	568.299	0.061	0.005
0.018	568.299	0.024	0.005
0.016	568.299	0.014	0.004
0.013	568.299	0.010	0.004
0.011	568.299	0.009	0.004
0.011	568.299	0.009	0.004
0.011	568.299	0.009	0.004
0.022	568.299	0.010	0.004
0.037	568.299	0.053	0.005
0.034	568.299	0.026	0.004
0.022	568.300	0.018	0.004
0.016	568.299	0.017	0.004
0.016	568.299	0.017	0.004
0.016	568.299	0.017	0.004
0.107	568.299	0.037	0.004
0.065	568.299	0.027	0.004
0.042	568.299	0.024	0.004
0.040	568.299	0.023	0.004
0.056	568.299	0.024	0.004
0.016	568.299	0.019	0.004
0.013	568.299	0.018	0.004

Dumpers/Tenders	25	0.685	2.339
Excavators	25	0.685	2.339
Excavators	50	0.567	5.283
Excavators	120	0.279	3.802
Excavators	175	0.193	3.363
Excavators	250	0.192	1.145
Excavators	500	0.192	1.089
Excavators	750	0.192	1.089
Forklifts	50	0.562	5.256
Forklifts	120	0.276	3.794
Forklifts	175	0.189	3.356
Forklifts	250	0.189	1.143
Forklifts	500	0.189	1.087
Generator Sets	15	0.589	3.469
Generator Sets	25	0.685	2.339
Generator Sets	50	0.273	3.601
Generator Sets	120	0.152	3.308
Generator Sets	175	0.107	2.928
Generator Sets	250	0.106	0.997
Generator Sets	500	0.106	0.978
Generator Sets	750	0.106	0.978
Generator Sets	9999	0.107	0.978
Graders	50	0.563	5.161
Graders	120	0.278	3.764
Graders	175	0.193	3.326
Graders	250	0.188	1.133
Graders	500	0.188	1.079
Graders	750	0.188	1.079
Off-Highway Tractors	120	0.362	3.878
Off-Highway Tractors	175	0.257	3.412
Off-Highway Tractors	250	0.237	1.198
Off-Highway Tractors	750	0.234	1.164
Off-Highway Tractors	1000	0.238	1.183
Off-Highway Trucks	175	0.205	3.426
Off-Highway Trucks	250	0.204	1.167

0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.028	568.299	0.018	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.018	568.299	0.037	0.005
0.017	568.299	0.019	0.004
0.013	568.299	0.013	0.004
0.011	568.299	0.013	0.004
0.161	568.299	0.053	0.005
0.161	568.299	0.061	0.005
0.025	568.299	0.050	0.005
0.022	568.300	0.025	0.004
0.016	568.300	0.018	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004

Off-Highway Trucks	500	0.204	1.105
Off-Highway Trucks	750	0.204	1.105
Off-Highway Trucks	1000	0.205	1.105
Other Construction Equipment	15	0.661	3.470
Other Construction Equipment	25	0.685	2.339
Other Construction Equipment	50	0.409	4.377
Other Construction Equipment	120	0.210	3.536
Other Construction Equipment	175	0.145	3.128
Other Construction Equipment	500	0.145	1.029
Other General Industrial Equipment	15	0.589	3.470
Other General Industrial Equipment	25	0.685	2.339
Other General Industrial Equipment	50	0.562	5.257
Other General Industrial Equipment	120	0.277	3.794
Other General Industrial Equipment	175	0.191	3.356
Other General Industrial Equipment	250	0.190	1.143
Other General Industrial Equipment	500	0.190	1.087

0.013	568.299	0.017	0.004
0.028	568.299	0.017	0.004
0.025	568.299	0.049	0.005
0.022	568.299	0.025	0.004
0.016	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.027	568.299	0.017	0.004
0.161	568.299	0.061	0.005
0.076	568.299	0.062	0.005
0.069	568.299	0.030	0.004
0.043	568.299	0.022	0.004
0.027	568.300	0.019	0.004
0.026	568.299	0.019	0.004
0.161	568.299	0.061	0.005
0.070	568.300	0.059	0.005
0.064	568.299	0.029	0.004
0.040	568.299	0.021	0.004
0.024	568.299	0.019	0.004
0.161	568.299	0.059	0.005
0.162	568.300	0.053	0.005
0.162	568.299	0.061	0.005
0.015	568.299	0.016	0.005
0.014	568.299	0.010	0.004
0.013	568.299	0.009	0.004

Other General Industrial Equipment	750	0.190	1.087
Other General Industrial Equipment	1000	0.191	1.087
Other Material Handling Equipment	50	0.551	5.191
Other Material Handling Equipment	120	0.272	3.775
Other Material Handling Equipment	175	0.188	3.339
Other Material Handling Equipment	250	0.187	1.137
Other Material Handling Equipment	500	0.187	1.082
Other Material Handling Equipment	9999	0.189	1.082
Pavers	25	0.685	2.339
Pavers	50	0.618	5.189
Pavers	120	0.302	3.763
Pavers	175	0.213	3.319
Pavers	250	0.200	1.138
Pavers	500	0.198	1.085
Paving Equipment	25	0.685	2.339
Paving Equipment	50	0.589	5.111
Paving Equipment	120	0.291	3.744
Paving Equipment	175	0.205	3.304
Paving Equipment	250	0.193	1.127
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.589	3.469
Pressure Washers	25	0.685	2.339
Pressure Washers	50	0.186	3.098
Pressure Washers	120	0.113	3.160
Pressure Washers	175	0.103	2.907

0.009	568.299	0.008	0.004
0.162	568.299	0.059	0.005
0.162	568.299	0.061	0.005
0.019	568.299	0.027	0.005
0.017	568.299	0.015	0.004
0.014	568.299	0.011	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.023	568.299	0.011	0.004
0.161	568.299	0.059	0.005
0.161	568.300	0.061	0.005
0.038	568.299	0.045	0.005
0.035	568.299	0.023	0.004
0.023	568.299	0.016	0.004
0.016	568.299	0.015	0.004
0.016	568.300	0.015	0.004
0.022	568.299	0.047	0.005
0.020	568.299	0.023	0.004
0.015	568.299	0.016	0.004
0.012	568.299	0.016	0.004
0.012	568.300	0.016	0.004
0.071	568.299	0.029	0.004
0.046	568.299	0.025	0.004
0.043	568.300	0.025	0.004
0.043	568.299	0.025	0.004
0.060	568.299	0.025	0.004
0.161	568.299	0.061	0.005
0.035	568.299	0.051	0.005
0.033	568.299	0.025	0.004
0.022	568.299	0.018	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.661	3.469
Pumps	25	0.685	2.339
Pumps	50	0.303	3.770
Pumps	120	0.165	3.358
Pumps	175	0.116	2.971
Pumps	250	0.114	1.012
Pumps	500	0.114	0.989
Pumps	750	0.114	0.989
Pumps	9999	0.116	0.989
Rollers	15	0.661	3.469
Rollers	25	0.685	2.339
Rollers	50	0.469	4.682
Rollers	120	0.240	3.625
Rollers	175	0.168	3.205
Rollers	250	0.165	1.092
Rollers	500	0.165	1.048
Rough Terrain Forklifts	50	0.519	5.010
Rough Terrain Forklifts	120	0.258	3.722
Rough Terrain Forklifts	175	0.178	3.292
Rough Terrain Forklifts	250	0.177	1.121
Rough Terrain Forklifts	500	0.177	1.071
Rubber Tired Dozers	175	0.275	3.470
Rubber Tired Dozers	250	0.253	1.225
Rubber Tired Dozers	500	0.249	1.198
Rubber Tired Dozers	750	0.250	1.198
Rubber Tired Dozers	1000	0.254	1.218
Rubber Tired Loaders	25	0.685	2.339
Rubber Tired Loaders	50	0.545	5.102
Rubber Tired Loaders	120	0.271	3.748
Rubber Tired Loaders	175	0.188	3.314

0.015	568.299	0.017	0.004
0.015	568.299	0.017	0.004
0.015	568.299	0.017	0.004
0.030	568.299	0.017	0.004
0.064	568.299	0.031	0.004
0.040	568.299	0.022	0.004
0.026	568.299	0.020	0.004
0.025	568.300	0.020	0.004
0.025	568.299	0.020	0.004
0.161	568.299	0.059	0.005
0.020	568.299	0.032	0.005
0.018	568.299	0.017	0.004
0.014	568.299	0.012	0.004
0.014	686.695	0.014	0.004
0.161	568.299	0.061	0.005
0.015	568.299	0.037	0.005
0.014	568.299	0.019	0.004
0.041	568.299	0.039	0.005
0.038	568.299	0.020	0.004
0.025	568.299	0.014	0.004
0.016	568.299	0.013	0.004
0.016	568.299	0.013	0.004
0.016	568.300	0.013	0.004
0.161	568.299	0.053	0.005
0.161	568.300	0.061	0.005
0.017	568.299	0.045	0.005
0.016	568.299	0.022	0.004
0.012	568.299	0.015	0.004
0.011	568.299	0.015	0.004
0.161	568.299	0.061	0.005

Rubber Tired Loaders	250	0.185	1.128
Rubber Tired Loaders	500	0.185	1.076
Rubber Tired Loaders	750	0.185	1.076
Rubber Tired Loaders	1000	0.186	1.076
Scrapers	120	0.316	3.833
Scrapers	175	0.221	3.381
Scrapers	250	0.210	1.159
Scrapers	500	0.209	1.100
Scrapers	750	0.209	1.100
Signal Boards	15	0.661	3.469
Signal Boards	50	0.356	4.074
Signal Boards	120	0.188	3.447
Signal Boards	175	0.131	3.050
Signal Boards	250	0.157	1.255
Skid Steer Loaders	25	0.685	2.339
Skid Steer Loaders	50	0.411	4.392
Skid Steer Loaders	120	0.211	3.540
Surfacing Equipment	50	0.395	4.183
Surfacing Equipment	120	0.206	3.477
Surfacing Equipment	175	0.146	3.073
Surfacing Equipment	250	0.140	1.047
Surfacing Equipment	500	0.140	1.015
Surfacing Equipment	750	0.140	1.015
Sweepers/Scrubbers	15	0.589	3.470
Sweepers/Scrubbers	25	0.685	2.340
Sweepers/Scrubbers	50	0.504	4.925
Sweepers/Scrubbers	120	0.251	3.697
Sweepers/Scrubbers	175	0.172	3.270
Sweepers/Scrubbers	250	0.172	1.114
Tractors/Loaders/Backhoes	25	0.685	2.339

0.022	568.299	0.046	0.005
0.020	568.299	0.023	0.004
0.015	568.299	0.016	0.004
0.012	568.299	0.016	0.004
0.012	568.299	0.015	0.004
0.012	568.299	0.015	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.084	568.299	0.061	0.005
0.076	568.300	0.030	0.004
0.048	568.299	0.021	0.004
0.031	568.299	0.019	0.004
0.029	568.299	0.019	0.004
0.029	568.300	0.019	0.004
0.162	568.299	0.059	0.005
0.162	568.299	0.061	0.005
0.022	568.299	0.036	0.005
0.019	568.299	0.019	0.004
0.015	568.299	0.013	0.004
0.012	568.299	0.013	0.004
0.012	568.299	0.013	0.004
0.016	568.299	0.019	0.004
0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.028	568.299	0.018	0.004

Tractors/Loaders/Backhoes	50	0.508	4.946
Tractors/Loaders/Backhoes	120	0.254	3.703
Tractors/Loaders/Backhoes	175	0.175	3.276
Tractors/Loaders/Backhoes	250	0.174	1.116
Tractors/Loaders/Backhoes	500	0.174	1.066
Tractors/Loaders/Backhoes	750	0.174	1.066
Trenchers	15	0.661	3.469
Trenchers	25	0.685	2.339
Trenchers	50	0.598	4.980
Trenchers	120	0.293	3.699
Trenchers	175	0.207	3.260
Trenchers	250	0.193	1.126
Trenchers	500	0.191	1.081
Trenchers	750	0.191	1.081
Welders	15	0.661	3.469
Welders	25	0.685	2.339
Welders	50	0.402	4.336
Welders	120	0.208	3.524
Welders	175	0.145	3.118
Welders	250	0.143	1.062
Welders	500	0.143	1.026
Water Trucks	175	0.205	3.426
Water Trucks	250	0.204	1.167
Water Trucks	500	0.204	1.105
Water Trucks	750	0.204	1.105
Water Trucks	1000	0.205	1.105

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.966	0.007	0.013	0.013	568.299	0.026	0.005
1.407	0.006	0.012	0.012	568.299	0.014	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.300	0.061	0.005
3.159	0.007	0.016	0.016	568.300	0.041	0.005
1.468	0.006	0.015	0.015	568.299	0.020	0.004
0.307	0.006	0.012	0.012	568.299	0.014	0.004
0.291	0.006	0.010	0.010	568.299	0.014	0.004
0.291	0.005	0.010	0.010	568.300	0.014	0.004
0.291	0.005	0.010	0.010	568.299	0.014	0.004
2.439	0.005	0.023	0.023	568.299	0.014	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.019	0.007	0.013	0.013	568.300	0.031	0.005
1.411	0.006	0.012	0.012	568.299	0.016	0.004
0.272	0.006	0.010	0.010	568.299	0.011	0.004
0.272	0.006	0.010	0.010	568.300	0.011	0.004
0.272	0.005	0.010	0.010	568.299	0.011	0.004
0.272	0.005	0.010	0.010	568.299	0.011	0.004
2.372	0.005	0.021	0.021	568.299	0.011	0.004

4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.058	0.007	0.014	0.014	568.299	0.033	0.005
1.434	0.006	0.013	0.013	568.299	0.017	0.004
0.297	0.006	0.011	0.011	568.300	0.012	0.004
3.324	0.007	0.024	0.024	568.299	0.051	0.005
1.552	0.006	0.021	0.021	568.299	0.025	0.004
0.371	0.006	0.016	0.016	568.299	0.017	0.004
0.344	0.006	0.013	0.013	568.299	0.017	0.004
0.340	0.005	0.013	0.013	568.299	0.017	0.004
0.341	0.005	0.013	0.013	568.299	0.017	0.004
2.534	0.005	0.027	0.027	568.299	0.017	0.004
3.420	0.007	0.042	0.042	568.299	0.058	0.005
1.709	0.006	0.039	0.039	568.299	0.028	0.004
0.539	0.006	0.025	0.025	568.299	0.020	0.004
0.491	0.006	0.018	0.018	568.299	0.019	0.004
0.470	0.005	0.018	0.018	568.299	0.018	0.004
0.475	0.005	0.018	0.018	568.299	0.019	0.004
2.652	0.005	0.032	0.032	568.299	0.019	0.004
3.194	0.007	0.017	0.017	568.299	0.044	0.005
1.477	0.006	0.015	0.015	568.299	0.022	0.004
0.306	0.006	0.012	0.012	568.299	0.015	0.004
0.292	0.006	0.011	0.011	568.299	0.015	0.004
0.292	0.005	0.011	0.011	568.299	0.015	0.004
0.292	0.005	0.011	0.011	568.299	0.015	0.004
2.457	0.005	0.024	0.024	568.299	0.015	0.004

4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.332	0.007	0.161	0.161	568.300	0.061	0.005
3.290	0.007	0.019	0.019	568.299	0.051	0.005
1.507	0.006	0.017	0.017	568.299	0.025	0.004
0.311	0.006	0.013	0.013	568.299	0.017	0.004
0.300	0.006	0.011	0.011	568.299	0.017	0.004
0.300	0.005	0.011	0.011	568.299	0.017	0.004
0.300	0.005	0.011	0.011	568.299	0.017	0.004
3.272	0.007	0.017	0.017	568.299	0.050	0.005
1.491	0.006	0.016	0.016	568.299	0.024	0.004
0.288	0.006	0.012	0.012	568.299	0.017	0.004
0.288	0.006	0.011	0.011	568.299	0.017	0.004
0.288	0.005	0.011	0.011	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.941	0.007	0.012	0.012	568.300	0.024	0.005
1.399	0.006	0.012	0.012	568.299	0.013	0.004
0.293	0.006	0.010	0.010	568.299	0.009	0.004
0.277	0.006	0.009	0.009	568.299	0.009	0.004
0.277	0.005	0.009	0.009	568.299	0.009	0.004
0.277	0.005	0.009	0.009	568.300	0.009	0.004
2.330	0.005	0.020	0.020	568.299	0.009	0.004
3.298	0.007	0.026	0.026	568.300	0.050	0.005
1.560	0.006	0.024	0.024	568.299	0.025	0.004
0.380	0.006	0.017	0.017	568.299	0.017	0.004
0.360	0.006	0.013	0.013	568.299	0.017	0.004
0.351	0.005	0.013	0.013	568.299	0.017	0.004
0.353	0.005	0.013	0.013	568.299	0.017	0.004
1.976	0.006	0.067	0.067	568.299	0.032	0.004
0.836	0.006	0.041	0.041	568.299	0.023	0.004
0.747	0.006	0.028	0.028	568.299	0.021	0.004
0.710	0.005	0.027	0.027	568.299	0.021	0.004
2.844	0.005	0.042	0.042	568.299	0.021	0.004
0.318	0.006	0.013	0.013	568.299	0.018	0.004
0.305	0.006	0.012	0.012	568.300	0.018	0.004

0.305	0.005	0.012	0.012	568.299	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
2.532	0.005	0.026	0.026	568.299	0.018	0.004
4.142	0.008	0.161	0.161	568.300	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.096	0.007	0.015	0.015	568.300	0.036	0.005
1.441	0.006	0.014	0.014	568.299	0.018	0.004
0.290	0.006	0.011	0.011	568.299	0.013	0.004
0.282	0.005	0.010	0.010	568.299	0.013	0.004
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.283	0.007	0.019	0.019	568.299	0.050	0.005
1.506	0.006	0.017	0.017	568.299	0.025	0.004
0.315	0.006	0.012	0.012	568.299	0.017	0.004
0.299	0.006	0.011	0.011	568.299	0.017	0.004
0.299	0.005	0.011	0.011	568.299	0.017	0.004

0.299	0.005	0.011	0.011	568.299	0.017	0.004
2.500	0.005	0.025	0.025	568.299	0.017	0.004
3.269	0.007	0.018	0.018	568.299	0.049	0.005
1.502	0.006	0.017	0.017	568.300	0.024	0.004
0.314	0.006	0.012	0.012	568.299	0.017	0.004
0.298	0.006	0.011	0.011	568.299	0.016	0.004
0.298	0.005	0.011	0.011	568.299	0.016	0.004
2.493	0.005	0.025	0.025	568.300	0.017	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.393	0.007	0.047	0.047	568.299	0.055	0.005
1.731	0.006	0.043	0.043	568.299	0.027	0.004
0.583	0.006	0.027	0.027	568.299	0.019	0.004
0.525	0.006	0.018	0.018	568.299	0.018	0.004
0.498	0.005	0.018	0.018	568.299	0.017	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.361	0.007	0.042	0.042	568.300	0.053	0.005
1.687	0.006	0.039	0.039	568.299	0.026	0.004
0.536	0.006	0.025	0.025	568.299	0.018	0.004
0.485	0.006	0.017	0.017	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.836	0.007	0.010	0.010	568.299	0.016	0.005
1.365	0.006	0.010	0.010	568.299	0.010	0.004
0.293	0.006	0.010	0.010	568.299	0.009	0.004

0.265	0.006	0.009	0.009	568.299	0.008	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.976	0.007	0.013	0.013	568.299	0.027	0.005
1.410	0.006	0.012	0.012	568.299	0.014	0.004
0.295	0.006	0.010	0.010	568.299	0.010	0.004
0.279	0.006	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
2.347	0.005	0.020	0.020	568.299	0.010	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.207	0.007	0.024	0.024	568.299	0.042	0.005
1.525	0.006	0.021	0.021	568.299	0.021	0.004
0.373	0.006	0.015	0.015	568.299	0.015	0.004
0.348	0.006	0.012	0.012	568.299	0.014	0.004
0.341	0.005	0.012	0.012	568.299	0.014	0.004
3.228	0.007	0.017	0.017	568.300	0.046	0.005
1.485	0.006	0.016	0.016	568.299	0.023	0.004
0.303	0.006	0.012	0.012	568.300	0.016	0.004
0.292	0.006	0.011	0.011	568.299	0.016	0.004
0.292	0.005	0.011	0.011	568.299	0.016	0.004
0.903	0.006	0.045	0.045	568.299	0.024	0.004
0.810	0.006	0.031	0.031	568.299	0.022	0.004
0.758	0.005	0.029	0.029	568.299	0.022	0.004
0.767	0.005	0.029	0.029	568.300	0.022	0.004
2.910	0.005	0.045	0.045	568.300	0.023	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.283	0.007	0.024	0.024	568.300	0.049	0.005
1.543	0.006	0.022	0.022	568.300	0.024	0.004
0.365	0.006	0.016	0.016	568.299	0.017	0.004

0.346	0.006	0.013	0.013	568.299	0.016	0.004
0.338	0.005	0.013	0.013	568.300	0.016	0.004
0.340	0.005	0.013	0.013	568.299	0.016	0.004
2.522	0.005	0.026	0.026	568.299	0.016	0.004
1.715	0.006	0.040	0.040	568.299	0.028	0.004
0.549	0.006	0.026	0.026	568.299	0.020	0.004
0.498	0.006	0.018	0.018	568.300	0.018	0.004
0.475	0.005	0.017	0.017	568.299	0.018	0.004
0.480	0.005	0.017	0.017	568.299	0.018	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.037	0.007	0.014	0.014	568.299	0.032	0.005
1.428	0.006	0.013	0.013	568.299	0.016	0.004
0.296	0.006	0.011	0.011	568.299	0.011	0.004
0.341	0.007	0.012	0.012	686.695	0.014	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.093	0.007	0.014	0.014	568.299	0.037	0.005
1.435	0.006	0.013	0.013	568.300	0.019	0.004
3.114	0.007	0.025	0.025	568.299	0.035	0.005
1.521	0.006	0.024	0.024	568.299	0.018	0.004
0.397	0.006	0.017	0.017	568.299	0.013	0.004
0.370	0.006	0.013	0.013	568.299	0.012	0.004
0.358	0.005	0.012	0.012	568.299	0.012	0.004
0.361	0.005	0.013	0.013	568.299	0.012	0.004
4.142	0.008	0.161	0.161	568.300	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.203	0.007	0.016	0.016	568.300	0.045	0.005
1.469	0.006	0.015	0.015	568.299	0.022	0.004
0.284	0.006	0.011	0.011	568.299	0.015	0.004
0.284	0.006	0.011	0.011	568.299	0.015	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005

3.220	0.007	0.018	0.018	568.299	0.045	0.005
1.485	0.006	0.016	0.016	568.299	0.022	0.004
0.305	0.006	0.012	0.012	568.299	0.015	0.004
0.297	0.006	0.011	0.011	568.300	0.015	0.004
0.297	0.006	0.011	0.011	568.299	0.015	0.004
0.297	0.006	0.011	0.011	568.299	0.015	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.374	0.007	0.052	0.052	568.299	0.054	0.005
1.767	0.006	0.047	0.047	568.299	0.026	0.004
0.639	0.006	0.030	0.030	568.300	0.018	0.004
0.573	0.006	0.020	0.020	568.300	0.017	0.004
0.542	0.005	0.020	0.020	568.300	0.017	0.004
0.549	0.005	0.020	0.020	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.093	0.007	0.015	0.015	568.300	0.036	0.005
1.447	0.006	0.014	0.014	568.299	0.018	0.004
0.303	0.006	0.011	0.011	568.299	0.013	0.004
0.287	0.006	0.010	0.010	568.300	0.012	0.004
0.287	0.005	0.010	0.010	568.299	0.012	0.004
0.318	0.006	0.013	0.013	568.299	0.018	0.004
0.305	0.006	0.012	0.012	568.300	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
2.532	0.005	0.026	0.026	568.299	0.018	0.004

Basic Conversions	Factor	Value	Units	Source
	1 pound equals	453.592	grams	
	1 MT equals	1.102	tons	
	Total # of days in a week	7	days	
	1 kg equals	1,000	grams	
	1 Year equals	365	days	
	1 ton equals	2,000	pounds	
	Global Warming Potential of CH4	25	N/A	http://www.arb.ca.gov/cc/inventory/backgro
	Global Warming Potential of N2O	298	N/A	http://www.arb.ca.gov/cc/inventory/backgro

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SMAQMD Roadway Construction Emissions Model Outputs:

Delta Mendota Canal Bridge

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Corral Hollow

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.16	9.94	12.69	7.75	0.55	7.20	1.99	0.50	1.50	0.02	1,966.32	0.58	0.02	1,987.06
Grading/Excavation	9.95	72.49	113.96	11.92	4.72	7.20	5.78	4.29	1.50	0.16	15,337.79	4.69	0.16	15,501.89
Drainage/Utilities/Sub-Grade	6.86	52.92	75.67	10.43	3.23	7.20	4.47	2.98	1.50	0.11	10,356.81	2.74	0.10	10,456.03
Paving	1.25	13.24	12.20	0.71	0.71	0.00	0.63	0.63	0.00	0.02	2,130.06	0.57	0.04	2,157.01
Maximum (pounds/day)	9.95	72.49	113.96	11.92	4.72	7.20	5.78	4.29	1.50	0.16	15,337.79	4.69	0.16	15,501.89
Total (tons/construction project)	0.22	1.67	2.48	0.31	0.10	0.20	0.14	0.10	0.04	0.00	339.11	0.10	0.00	342.63

Notes:

Project Start Year ->	2020
Project Length (months) ->	3
Total Project Area (acres) ->	0
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	200	0
Grading/Excavation	0	0	0	0	1,120	0
Drainage/Utilities/Sub-Grade	0	0	0	0	720	0
Paving	0	4	0	30	320	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Corral Hollow

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.03	0.04	0.03	0.00	0.02	0.01	0.00	0.00	0.00	6.49	0.00	0.00	5.95
Grading/Excavation	0.13	0.96	1.50	0.16	0.06	0.10	0.08	0.06	0.02	0.00	202.46	0.06	0.00	185.63
Drainage/Utilities/Sub-Grade	0.08	0.61	0.87	0.12	0.04	0.08	0.05	0.03	0.02	0.00	119.62	0.03	0.00	109.56
Paving	0.01	0.07	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.54	0.00	0.00	9.69
Maximum (tons/phase)	0.13	0.96	1.50	0.16	0.06	0.10	0.08	0.06	0.02	0.00	202.46	0.06	0.00	185.63
Total (tons/construction project)	0.22	1.67	2.48	0.31	0.10	0.20	0.14	0.10	0.04	0.00	339.11	0.10	0.00	310.83

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model **Version 9.0.0**

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Corral Hollow	
Construction Start Year	2020	Enter a Year between 2014 and 2040 (inclusive)
Project Type	3	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	3.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.03	miles
Total Project Area	0.36	acres
Maximum Area Disturbed/Day	0.36	acres
Water Trucks Used?	2	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	0.00	0.00
Asphalt	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	4.00	0.00

Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		0.30		1/1/2020
Grading/Excavation		1.20		1/11/2020
Drainage/Utilities/Sub-Grade		1.05		2/17/2020
Paving		0.45		3/20/2020
Totals (Months)	3			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
User Input					
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grading/Excavation (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Draining/Utilities/Sub-Grade (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Paving (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
User Input					
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		1	30.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grading/Excavation (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Draining/Utilities/Sub-Grade (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Paving (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.03	0.09	0.51	0.02	0.01	0.00	125.14	0.00	0.02	131.04
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.65
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.65

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values		
User Input				
Miles/ one-way trip		20	Calculated Daily Trips	Calculated Daily VMT
One-way trips/day		2		
No. of employees: Grubbing/Land Clearing		5	10	200.00
No. of employees: Grading/Excavation		28	56	1,120.00
No. of employees: Drainage/Utilities/Sub-Grade		18	36	720.00
No. of employees: Paving		8	16	320.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67
Grading/Excavation (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67
Paving (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67
Grubbing/Land Clearing (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34
Grading/Excavation (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34
Draining/Utilities/Sub-Grade (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34
Paving (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.04	0.61	0.06	0.02	0.01	0.00	156.38	0.00	0.00	157.89
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.52
Pounds per day - Grading/Excavation	0.21	3.39	0.32	0.12	0.05	0.01	875.71	0.02	0.03	884.18
Tons per const. Period - Grading/Excavation	0.00	0.04	0.00	0.00	0.00	0.00	11.56	0.00	0.00	11.67
Pounds per day - Drainage/Utilities/Sub-Grade	0.14	2.18	0.21	0.07	0.03	0.01	562.96	0.02	0.02	568.40
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.03	0.00	0.00	0.00	0.00	6.50	0.00	0.00	6.57
Pounds per day - Paving	0.06	0.97	0.09	0.03	0.01	0.00	250.20	0.01	0.01	252.62
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	1.24	0.00	0.00	1.25
Total tons per construction project	0.00	0.08	0.01	0.00	0.00	0.00	19.82	0.00	0.00	20.01

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT
User Input								
Grubbing/Land Clearing - Exhaust		0		5	0		8.00	0.00
Grading/Excavation - Exhaust		0		5	0		8.00	0.00
Drainage/Utilities/Subgrade		0		5	0		8.00	0.00
Paving		0		5	0		8.00	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grading/Excavation (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Draining/Utilities/Sub-Grade (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Paving (grams/mile)	0.53	1.30	7.55	0.24	0.17	0.02	1,892.05	0.02	0.30	1,981.28
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.36	7.20	0.02	1.50	0.00
Fugitive Dust - Grading/Excavation		0.36	7.20	0.10	1.50	0.02
Fugitive Dust - Drainage/Utilities/Subgrade		0.36	7.20	0.08	1.50	0.02

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Crawler Tractors	0.58	2.50	7.45	0.28	0.26	0.01	760.39	0.25
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Excavators	0.49	6.54	4.83	0.23	0.21	0.01	1,000.24	0.32
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Signal Boards	0.06	0.30	0.36	0.01	0.01	0.00	49.31	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing		pounds per day	1.13	9.34	12.63	0.53	0.49	0.02	1,809.94	0.57
	Grubbing/Land Clearing		tons per phase	0.00	0.03	0.04	0.00	0.00	0.00	5.97	0.00

Grading/Excavation	Default Number of Vehicles	Override of	Mitigation Option Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Cranes	0.45	2.12	5.39	0.22	0.20	0.01	558.79	0.18
	2		Model Default Tier	Crawler Tractors	1.16	5.00	14.90	0.56	0.52	0.02	1,520.78	0.49
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4		Model Default Tier	Excavators	0.98	13.07	9.65	0.47	0.43	0.02	2,000.48	0.65
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Graders	0.95	3.63	12.65	0.40	0.37	0.01	1,285.44	0.42
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Model Default Tier	Rollers	0.62	5.68	6.24	0.40	0.37	0.01	762.20	0.25
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Model Default Tier	Rubber Tired Loaders	1.12	4.91	13.23	0.44	0.40	0.02	1,815.48	0.59
	4		Model Default Tier	Scrapers	3.97	29.83	47.01	1.83	1.69	0.06	5,868.07	1.90
	1		Model Default Tier	Signal Boards	0.06	0.30	0.36	0.01	0.01	0.00	49.31	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Tractors/Loaders/Backhoes	0.42	4.56	4.21	0.27	0.24	0.01	601.54	0.19
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day		9.74	69.10	113.64	4.61	4.24	0.15	14,462.08	4.67
	Grading/Excavation	tons per phase		0.13	0.91	1.50	0.06	0.06	0.00	190.90	0.06

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Air Compressors	0.32	2.44	2.25	0.15	0.15	0.00	375.26	0.03
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Generator Sets	0.40	3.71	3.48	0.20	0.20	0.01	623.04	0.04
	2		Model Default Tier	Graders	0.95	3.63	12.65	0.40	0.37	0.01	1,285.44	0.42
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Plate Compactors	0.04	0.21	0.25	0.01	0.01	0.00	34.48	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pumps	0.42	3.76	3.53	0.21	0.21	0.01	623.04	0.04
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Rough Terrain Forklifts	0.13	2.30	1.73	0.07	0.07	0.00	333.68	0.11
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4		Model Default Tier	Scrapers	3.97	29.83	47.01	1.83	1.69	0.06	5,868.07	1.90
	1		Model Default Tier	Signal Boards	0.06	0.30	0.36	0.01	0.01	0.00	49.31	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Tractors/Loaders/Backhoes	0.42	4.56	4.21	0.27	0.24	0.01	601.54	0.19
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade		pounds per day	6.72	50.74	75.46	3.15	2.95	0.10	9,793.85	2.73
	Drainage/Utilities/Sub-Grade		tons per phase	0.08	0.59	0.87	0.04	0.03	0.00	113.12	0.03

Paving	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pavers	0.26	2.90	2.81	0.14	0.13	0.00	455.27	0.15
	1		Model Default Tier	Paving Equipment	0.21	2.53	2.14	0.11	0.10	0.00	394.53	0.13
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Rollers	0.21	1.89	2.08	0.13	0.12	0.00	254.07	0.08
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Signal Boards	0.06	0.30	0.36	0.01	0.01	0.00	49.31	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Tractors/Loaders/Backhoes	0.42	4.56	4.21	0.27	0.24	0.01	601.54	0.19
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving		pounds per day	1.15	12.19	11.60	0.66	0.61	0.02	1,754.72	0.56
	Paving		tons per phase	0.01	0.06	0.06	0.00	0.00	0.00	8.69	0.00
Total Emissions all Phases (tons per construction period) =>				0.22	1.59	2.47	0.10	0.09	0.00	318.68	0.10

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	768.59
0.00	0.00
0.01	1,011.02
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	49.56
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	1,829.17
0.00	6.04

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	564.81
0.01	1,537.17
0.00	0.00
0.02	2,022.04
0.00	0.00
0.00	0.00
0.01	1,299.27
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	770.41
0.00	0.00
0.00	0.00
0.02	1,835.08
0.05	5,931.34
0.00	49.56
0.00	0.00
0.00	0.00
0.00	0.00
0.01	608.01
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.13	14,617.71
0.00	192.95

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	376.83
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	625.31
0.01	1,299.27
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	34.65
0.00	0.00
0.00	625.36
0.00	0.00
0.00	337.28
0.00	0.00
0.00	0.00
0.05	5,931.34
0.00	49.56
0.00	0.00
0.00	0.00
0.00	0.00
0.01	608.01
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.09	9,887.63
0.00	114.20

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	460.18
0.00	398.78
0.00	0.00
0.00	0.00
0.00	0.00
0.00	256.80
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	49.56
0.00	0.00
0.00	0.00
0.00	0.00
0.01	608.01
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	1,773.35
0.00	8.78
0.00	321.97

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

Grubbing/Land Clearing

Equipment Type	Number of Vehicles	Tier	HP

Grading/Excavation

Equipment Type	Number of Vehicles	Tier	HP

Drainage/Utilities/Subgrade

Equipment Type	Number of Vehicles	Tier	HP

Paving

Equipment Type	Number of Vehicles	Tier	HP

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

Load Factor (%)	Hours Per Day	ROG	CO	NOx	PM10	PM2.5	Emission Fa SOx

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

ctor (g/bhp-hr)

CO2	CH4	N2O	Emission Factor Data Source

Year	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0704	-	-	-	-	2.5553	-	-	-	-	0.2855
2015	0.0597	-	-	-	-	2.2699	-	-	-	-	0.2490
2016	0.0491	-	-	-	-	1.9702	-	-	-	-	0.2095
2017	0.0405	-	-	-	-	1.7329	-	-	-	-	0.1791
2018	0.0335	-	-	-	-	1.5296	-	-	-	-	0.1530
2019	0.0279	-	-	-	-	1.3662	-	-	-	-	0.1307
2020	0.0236	0.0236	0.0236	0.0236	0.0236	1.2220	1.2220	1.2220	1.2220	1.2220	0.1123
2021	0.0204	-	-	-	-	1.1018	-	-	-	-	0.0968
2022	0.0178	-	-	-	-	1.0001	-	-	-	-	0.0838
2023	0.0154	-	-	-	-	0.9126	-	-	-	-	0.0726
2024	0.0134	-	-	-	-	0.8386	-	-	-	-	0.0632
2025	0.0117	-	-	-	-	0.7754	-	-	-	-	0.0554
2026	0.0103	-	-	-	-	0.7225	-	-	-	-	0.0491
2027	0.0091	-	-	-	-	0.6774	-	-	-	-	0.0437
2028	0.0081	-	-	-	-	0.6398	-	-	-	-	0.0393
2029	0.0072	-	-	-	-	0.6075	-	-	-	-	0.0355
2030	0.0065	-	-	-	-	0.5801	-	-	-	-	0.0324
2031	0.0059	-	-	-	-	0.5565	-	-	-	-	0.0297
2032	0.0053	-	-	-	-	0.5366	-	-	-	-	0.0275
2033	0.0048	-	-	-	-	0.5196	-	-	-	-	0.0257
2034	0.0044	-	-	-	-	0.5049	-	-	-	-	0.0242
2035	0.0041	-	-	-	-	0.4922	-	-	-	-	0.0229
2036	0.0037	-	-	-	-	0.4811	-	-	-	-	0.0219
2037	0.0035	-	-	-	-	0.4719	-	-	-	-	0.0211
2038	0.0033	-	-	-	-	0.4637	-	-	-	-	0.0203
2039	0.0030	-	-	-	-	0.4566	-	-	-	-	0.0197
2040	0.0029	-	-	-	-	0.4506	-	-	-	-	0.0191
2041	0.0027					0.4452					0.0187
2042	0.0026					0.4404					0.0183
2043	0.0025					0.4367					0.0180
2044	0.0024					0.4339					0.0178
2045	0.0023					0.4317					0.0177
2046	0.0023					0.4300					0.0176
2047	0.0023					0.4286					0.0175
2048	0.0023					0.4274					0.0174
2049	0.0022					0.4268					0.0174
2050	0.0022					0.4264					0.0174
Total		0.0236	0.0236	0.0236	0.0236		1.2220	1.2220	1.2220	1.2220	

Heavy-Heavy Duty Diesel Truck

Water Truck Commute Emissions (EMFAC2017 - web 1.0.2, T7 Single Unit Construction Truck)

Year	ROG	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	1.8521	-	-	-	-	4.0026	-	-	-	-	15.4709
2015	1.5946	-	-	-	-	3.4621	-	-	-	-	13.7491
2016	1.2921	-	-	-	-	2.8379	-	-	-	-	11.7429
2017	1.0636	-	-	-	-	2.3588	-	-	-	-	10.5229
2018	0.9069	-	-	-	-	2.0416	-	-	-	-	9.6970
2019	0.7863	-	-	-	-	1.7985	-	-	-	-	9.0623
2020	0.5270	0.5270	0.5270	0.5270	0.5270	1.2976	1.2976	1.2976	1.2976	1.2976	7.5546
2021	0.4260	-	-	-	-	1.1373	-	-	-	-	6.4922
2022	0.1785	-	-	-	-	0.6644	-	-	-	-	4.7102
2023	0.0441	-	-	-	-	0.4262	-	-	-	-	3.5373
2024	0.0423	-	-	-	-	0.4266	-	-	-	-	3.4943
2025	0.0406	-	-	-	-	0.4273	-	-	-	-	3.4600
2026	0.0391	-	-	-	-	0.4279	-	-	-	-	3.4290
2027	0.0378	-	-	-	-	0.4281	-	-	-	-	3.4003
2028	0.0367	-	-	-	-	0.4288	-	-	-	-	3.3809
2029	0.0359	-	-	-	-	0.4297	-	-	-	-	3.3699
2030	0.0351	-	-	-	-	0.4306	-	-	-	-	3.3633
2031	0.0345	-	-	-	-	0.4315	-	-	-	-	3.3580
2032	0.0339	-	-	-	-	0.4322	-	-	-	-	3.3517
2033	0.0334	-	-	-	-	0.4325	-	-	-	-	3.3446
2034	0.0330	-	-	-	-	0.4325	-	-	-	-	3.3345
2035	0.0326	-	-	-	-	0.4321	-	-	-	-	3.3228
2036	0.0323	-	-	-	-	0.4320	-	-	-	-	3.3141
2037	0.0321	-	-	-	-	0.4317	-	-	-	-	3.3050
2038	0.0319	-	-	-	-	0.4314	-	-	-	-	3.2967
2039	0.0317	-	-	-	-	0.4312	-	-	-	-	3.2899
2040	0.0315	-	-	-	-	0.4308	-	-	-	-	3.2821
2041	0.0314					0.4305					3.2754
2042	0.0313					0.4302					3.2703
2043	0.0312					0.4300					3.2653
2044	0.0311					0.4298					3.2610
2045	0.0310					0.4296					3.2578
2046	0.0309					0.4295					3.2551
2047	0.0309					0.4294					3.2533
2048	0.0309					0.4293					3.2519
2049	0.0309					0.4292					3.2510

2050	0.0308					0.4292					3.2504
Total		0.5270	0.5270	0.5270	0.5270		1.2976	1.2976	1.2976	1.2976	

Year	ROG	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted - Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0055	-	-	-	-	0.5214	-	-	-	-	0.0236
2015	0.0055	-	-	-	-	0.5173	-	-	-	-	0.0237
2016	0.0055	-	-	-	-	0.5163	-	-	-	-	0.0238
2017	0.0056	-	-	-	-	0.5153	-	-	-	-	0.0239
2018	0.0056	-	-	-	-	0.5147	-	-	-	-	0.0239
2019	0.0055	-	-	-	-	0.5170	-	-	-	-	0.0236
2020	0.0054	0.0054	0.0054	0.0054	0.0054	0.5158	0.5158	0.5158	0.5158	0.5158	0.0232
2021	0.0052	-	-	-	-	0.5136	-	-	-	-	0.0226
2022	0.0051	-	-	-	-	0.5106	-	-	-	-	0.0220
2023	0.0049	-	-	-	-	0.5066	-	-	-	-	0.0213
2024	0.0047	-	-	-	-	0.5012	-	-	-	-	0.0205
2025	0.0044	-	-	-	-	0.4942	-	-	-	-	0.0199
2026	0.0042	-	-	-	-	0.4875	-	-	-	-	0.0193
2027	0.0040	-	-	-	-	0.4813	-	-	-	-	0.0188
2028	0.0038	-	-	-	-	0.4755	-	-	-	-	0.0184
2029	0.0036	-	-	-	-	0.4701	-	-	-	-	0.0181
2030	0.0035	-	-	-	-	0.4650	-	-	-	-	0.0178
2031	0.0033	-	-	-	-	0.4603	-	-	-	-	0.0175
2032	0.0032	-	-	-	-	0.4560	-	-	-	-	0.0174
2033	0.0030	-	-	-	-	0.4521	-	-	-	-	0.0172
2034	0.0029	-	-	-	-	0.4485	-	-	-	-	0.0171
2035	0.0028	-	-	-	-	0.4452	-	-	-	-	0.0171
2036	0.0027	-	-	-	-	0.4423	-	-	-	-	0.0170
2037	0.0026	-	-	-	-	0.4397	-	-	-	-	0.0170
2038	0.0026	-	-	-	-	0.4375	-	-	-	-	0.0171
2039	0.0025	-	-	-	-	0.4355	-	-	-	-	0.0171
2040	0.0024	-	-	-	-	0.4338	-	-	-	-	0.0171
2041	0.0024					0.4323					0.0171
2042	0.0024					0.4310					0.0172
2043	0.0023					0.4300					0.0172
2044	0.0023					0.4291					0.0173
2045	0.0023					0.4283					0.0173
2046	0.0023					0.4277					0.0173
2047	0.0023					0.4272					0.0174
2048	0.0022					0.4268					0.0174
2049	0.0022					0.4265					0.0174
2050	0.0022					0.4262					0.0174
Total		0.0054	0.0054	0.0054	0.0054		0.5158	0.5158	0.5158	0.5158	

Heavy-Heavy Duty Diesel Truck

Water Truck Commute Emissions (EMFAC2017 - web 1.0.2, T7 Single Unit Construction Truck)

Year	ROG	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	CO	Weighted-Grubbing	Weighted - Grading	Weighted - Drainage	Weighted - Paving	NOx
2014	0.0583	-	-	-	-	0.4129	-	-	-	-	2.9101
2015	0.0529	-	-	-	-	0.4082	-	-	-	-	2.8491
2016	0.0508	-	-	-	-	0.4094	-	-	-	-	2.8549
2017	0.0476	-	-	-	-	0.4102	-	-	-	-	2.8769
2018	0.0457	-	-	-	-	0.4130	-	-	-	-	2.9175
2019	0.0444	-	-	-	-	0.4157	-	-	-	-	2.9546
2020	0.0425	0.0425	0.0425	0.0425	0.0425	0.4199	0.4199	0.4199	0.4199	0.4199	3.0272
2021	0.0418	-	-	-	-	0.4228	-	-	-	-	3.0635
2022	0.0402	-	-	-	-	0.4233	-	-	-	-	3.0792
2023	0.0291	-	-	-	-	0.4046	-	-	-	-	2.9826
2024	0.0294	-	-	-	-	0.4082	-	-	-	-	3.0228
2025	0.0296	-	-	-	-	0.4118	-	-	-	-	3.0634
2026	0.0298	-	-	-	-	0.4149	-	-	-	-	3.0980
2027	0.0300	-	-	-	-	0.4172	-	-	-	-	3.1232
2028	0.0302	-	-	-	-	0.4197	-	-	-	-	3.1503
2029	0.0303	-	-	-	-	0.4221	-	-	-	-	3.1777
2030	0.0305	-	-	-	-	0.4243	-	-	-	-	3.2028
2031	0.0306	-	-	-	-	0.4263	-	-	-	-	3.2255
2032	0.0307	-	-	-	-	0.4279	-	-	-	-	3.2430
2033	0.0308	-	-	-	-	0.4291	-	-	-	-	3.2559
2034	0.0309	-	-	-	-	0.4297	-	-	-	-	3.2619
2035	0.0309	-	-	-	-	0.4299	-	-	-	-	3.2635
2036	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2652
2037	0.0309	-	-	-	-	0.4302	-	-	-	-	3.2648
2038	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2639
2039	0.0309	-	-	-	-	0.4301	-	-	-	-	3.2635
2040	0.0309	-	-	-	-	0.4300	-	-	-	-	3.2612
2041	0.0309					0.4298					3.2588
2042	0.0309					0.4297					3.2571
2043	0.0308					0.4295					3.2551
2044	0.0308					0.4294					3.2535
2045	0.0308					0.4294					3.2526
2046	0.0308					0.4293					3.2514
2047	0.0308					0.4292					3.2507
2048	0.0308					0.4292					3.2500
2049	0.0308					0.4291					3.2496

2050	0.0308					0.4291					3.2496
Total		0.0425	0.0425	0.0425	0.0425		0.4199	0.4199	0.4199	0.4199	

	B	C	D	E	F	G	H	I	J	K	L	M
5	Emissions (g/bhp-hr)		ROG	ROG	ROG	ROG		CO	CO	CO	CO	
6	Aerial Lifts		Weighted -	Weighted -	Weighted -	Weighted -		Weighted -	Weighted -	Weighted -	Weighted	
7		ROG	Grubbing	Grading	Drainage	Paving	CO	Grubbing	Grading	Drainage	- Paving	NOx
8	2014	0.2023	-	-	-	-	3.2195	-	-	-	-	3.3728
9	2015	0.1906	-	-	-	-	3.2178	-	-	-	-	3.1134
10	2016	0.1655	-	-	-	-	3.2010	-	-	-	-	2.7222
11	2017	0.1427	-	-	-	-	3.1843	-	-	-	-	2.3637
12	2018	0.1219	-	-	-	-	3.1669	-	-	-	-	2.0636
13	2019	0.1182	-	-	-	-	3.1725	-	-	-	-	1.9766
14	2020	0.1149	0.1149	0.1149	0.1149	0.1149	3.1768	3.1768	3.1768	3.1768	3.1768	1.8686
15	2021	0.1088	-	-	-	-	3.1762	-	-	-	-	1.7437
16	2022	0.1047	-	-	-	-	3.1760	-	-	-	-	1.6266
17	2023	0.1005	-	-	-	-	3.1703	-	-	-	-	1.5481
18	2024	0.1005	-	-	-	-	3.1726	-	-	-	-	1.5279
19	2025	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
20	2026	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
21	2027	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
22	2028	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
23	2029	0.0988	-	-	-	-	3.1674	-	-	-	-	1.5108
24	2030	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
25	2031	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
26	2032	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
27	2033	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
28	2034	0.1880	-	-	-	-	3.3520	-	-	-	-	1.6570
29	2035	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
30	2036	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
31	2037	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
32	2038	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
33	2039	0.1660	-	-	-	-	3.3450	-	-	-	-	1.4660
34	2040	0.1610	-	-	-	-	3.3440	-	-	-	-	1.4070
35	Aerial Lifts Total		0.1149	0.1149	0.1149	0.1149		3.1768	3.1768	3.1768	3.1768	

	N	O	P	Q	R	S	T	U	V
5	NOx	NOx	NOx	NOx		PM10	PM10	PM10	PM10
6	Weighted	Weighted	Weighted	Weighted -		Weighted -	Weighted -	Weighted -	Weighted -
7	- Grubbing	- Grading	- Drainage	Paving	PM10	Grubbing	Grading	Drainage	Paving
8	-	-	-	-	0.1608	-	-	-	-
9	-	-	-	-	0.1431	-	-	-	-
10	-	-	-	-	0.1119	-	-	-	-
11	-	-	-	-	0.0834	-	-	-	-
12	-	-	-	-	0.0571	-	-	-	-
13	-	-	-	-	0.0485	-	-	-	-
14	1.8686	1.8686	1.8686	1.8686	0.0416	0.0416	0.0416	0.0416	0.0416
15	-	-	-	-	0.0333	-	-	-	-
16	-	-	-	-	0.0302	-	-	-	-
17	-	-	-	-	0.0267	-	-	-	-
18	-	-	-	-	0.0265	-	-	-	-
19	-	-	-	-	0.0259	-	-	-	-
20	-	-	-	-	0.0259	-	-	-	-
21	-	-	-	-	0.0259	-	-	-	-
22	-	-	-	-	0.0259	-	-	-	-
23	-	-	-	-	0.0259	-	-	-	-
24	-	-	-	-	0.0360	-	-	-	-
25	-	-	-	-	0.0360	-	-	-	-
26	-	-	-	-	0.0360	-	-	-	-
27	-	-	-	-	0.0360	-	-	-	-
28	-	-	-	-	0.0360	-	-	-	-
29	-	-	-	-	0.0170	-	-	-	-
30	-	-	-	-	0.0170	-	-	-	-
31	-	-	-	-	0.0170	-	-	-	-
32	-	-	-	-	0.0170	-	-	-	-
33	-	-	-	-	0.0170	-	-	-	-
34	-	-	-	-	0.0120	-	-	-	-
35	1.8686	1.8686	1.8686	1.8686		0.0416	0.0416	0.0416	0.0416

Off-road Equipment Tier 4 Emission Factors

HP Bin		Emission Factor (g/bhp-hr)					
Low HP	High HP	ROG	CO	NOx	PM10	PM2.5	92
0	11	0.30	6.00	5.32	0.30	0.28	95
11	25	0.30	4.90	5.32	0.30	0.28	1.07
25	50	0.19	4.10	3.33	0.02	0.02	
50	75	0.19	3.70	3.33	0.02	0.02	
75	100	0.15	3.70	0.30	0.02	0.01	
100	175	0.15	3.70	0.30	0.02	0.01	
175	300	0.15	2.60	0.30	0.02	0.01	
300	600	0.15	2.60	0.30	0.02	0.01	
600	750	0.15	2.60	0.30	0.02	0.01	
750	1200	0.15	2.60	2.60	0.03	0.03	
1200	9999	0.15	2.60	2.60	0.03	0.03	

Note:
1. Tier 4 Emission Factors are converted from EPA Non-road Diesel Engine Standards. Available at ww
2. Assume PM2.5 is 92% of PM10.

% of PM2.5 in PM10 (from CEIDARS)
% of NOx in NMHC+NOx (from http://www.arb.ca.gov/msprog/moyer/guidelines/2005_Carl_Moyer_Guidelir
VOC/NMHC

/w.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls

nes_Part4.pdf)

Default Horsepower and Load Factor

OFFROAD Equipment Type	Horsepower	Load Factor
Aerial Lifts	63	0.31
Air Compressors	78	0.48
Bore/Drill Rigs	221	0.5
Cement and Mortar Mixers	9	0.56
Concrete/Industrial Saws	81	0.73
Cranes	231	0.29
Crawler Tractors	212	0.43
Crushing/Proc. Equipment	85	0.78
Excavators	158	0.38
Forklifts	89	0.2
Generator Sets	84	0.74
Graders	187	0.41
Off-Highway Tractors	124	0.44
Off-Highway Trucks	402	0.38
Other Construction Equipment	172	0.42
Other General Industrial Equipment	88	0.34
Other Material Handling Equipment	168	0.4
Pavers	130	0.42
Paving Equipment	132	0.36
Plate Compactors	8	0.43
Pressure Washers	13	0.3
Pumps	84	0.74
Rollers	80	0.38
Rough Terrain Forklifts	100	0.4
Rubber Tired Dozers	247	0.4
Rubber Tired Loaders	203	0.36
Scrapers	367	0.48
Signal Boards	6	0.82
Skid Steer Loaders	65	0.37
Surfacing Equipment	263	0.3
Sweepers/Scrubbers	64	0.46
Tractors/Loaders/Backhoes	97	0.37
Trenchers	78	0.5
Welders	46	0.45

Default Horsepower and Load Factor from CalEEMod2016 Appendix D: Table 3.3

Sacramento Valley Air Basin Fleet Average Emission Factors (Diesel)

2014

2014		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.261	3.233	4.096	0.005
Aerial Lifts	25	0.261	3.233	4.096	0.005
Aerial Lifts	50	0.261	3.233	4.096	0.005
Aerial Lifts	120	0.202	3.220	3.373	0.005
Aerial Lifts	500	0.236	0.983	4.602	0.005
Aerial Lifts	750	0.299	1.178	3.761	0.005
Air Compressors	15	0.891	3.723	5.445	0.008
Air Compressors	25	0.960	2.780	5.000	0.007
Air Compressors	50	2.076	6.181	5.421	0.007
Air Compressors	120	0.901	3.880	5.608	0.006
Air Compressors	175	0.621	3.227	4.973	0.006
Air Compressors	250	0.405	1.237	4.399	0.006
Air Compressors	500	0.373	1.249	3.855	0.005
Air Compressors	750	0.378	1.249	3.991	0.005
Air Compressors	1000	0.445	1.493	5.512	0.005
Bore/Drill Rigs	15	0.834	4.691	5.332	0.006
Bore/Drill Rigs	25	0.834	4.691	5.332	0.006
Bore/Drill Rigs	50	0.834	4.691	5.332	0.006
Bore/Drill Rigs	120	0.319	3.327	4.195	0.005
Bore/Drill Rigs	175	0.308	3.040	4.066	0.005
Bore/Drill Rigs	250	0.217	1.174	3.525	0.005
Bore/Drill Rigs	500	0.202	1.239	3.186	0.005
Bore/Drill Rigs	750	0.157	1.087	2.373	0.005
Bore/Drill Rigs	1000	0.105	0.951	2.984	0.005

Cement and Mortar Mixers	15	0.666	3.469	4.191	0.008
Cement and Mortar Mixers	25	0.837	2.570	4.793	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	1.626	5.313	5.172	0.007
Concrete/Industrial Saws	120	0.749	3.675	5.160	0.006
Concrete/Industrial Saws	175	0.517	3.080	4.531	0.006
Cranes	50	2.115	7.126	6.093	0.005
Cranes	120	1.245	4.923	10.302	0.005
Cranes	175	0.793	3.932	8.471	0.005
Cranes	250	0.661	2.726	7.860	0.005
Cranes	500	0.483	4.177	6.264	0.005
Cranes	750	0.280	1.635	4.327	0.005
Cranes	9999	0.120	0.948	2.281	0.005
Crawler Tractors	50	2.521	8.047	6.396	0.005
Crawler Tractors	120	0.884	4.168	7.524	0.005
Crawler Tractors	175	0.629	3.459	6.875	0.005
Crawler Tractors	250	0.454	1.838	6.238	0.005
Crawler Tractors	500	0.412	2.911	5.616	0.005
Crawler Tractors	750	0.347	1.675	4.895	0.005
Crawler Tractors	1000	0.475	2.080	7.426	0.005
Crushing/Proc. Equipment	50	2.012	6.212	5.399	0.007
Crushing/Proc. Equipment	120	0.877	3.898	5.468	0.006
Crushing/Proc. Equipment	175	0.612	3.256	4.823	0.006
Crushing/Proc. Equipment	250	0.405	1.228	4.239	0.006
Crushing/Proc. Equipment	500	0.377	1.230	3.702	0.005
Crushing/Proc. Equipment	750	0.378	1.218	3.844	0.005
Crushing/Proc. Equipment	9999	0.456	1.460	5.391	0.005

Dumpers/Tenders	25	0.705	2.364	4.433	0.007
Excavators	25	0.825	4.844	4.965	0.005
Excavators	50	0.825	4.844	4.965	0.005
Excavators	120	0.513	3.663	5.131	0.005
Excavators	175	0.390	3.154	4.657	0.005
Excavators	250	0.294	1.346	4.374	0.005
Excavators	500	0.233	1.327	3.353	0.005
Excavators	750	0.239	1.347	3.541	0.005
Forklifts	50	2.114	7.321	6.006	0.005
Forklifts	120	0.795	4.079	6.848	0.005
Forklifts	175	0.578	3.521	6.352	0.005
Forklifts	250	0.615	2.501	7.276	0.005
Forklifts	500	0.541	4.252	6.353	0.005
Generator Sets	15	0.783	3.723	5.369	0.008
Generator Sets	25	0.821	2.780	5.000	0.007
Generator Sets	50	1.427	4.683	5.048	0.007
Generator Sets	120	0.721	3.532	5.147	0.006
Generator Sets	175	0.486	2.945	4.565	0.006
Generator Sets	250	0.311	1.130	4.025	0.006
Generator Sets	500	0.279	1.157	3.603	0.005
Generator Sets	750	0.289	1.157	3.724	0.005
Generator Sets	9999	0.389	1.377	5.150	0.005
Graders	50	3.094	9.065	6.550	0.005
Graders	120	1.269	4.920	9.986	0.005
Graders	175	0.847	3.951	8.702	0.005
Graders	250	0.390	1.462	5.740	0.005
Graders	500	0.314	1.791	3.714	0.005
Graders	750	0.437	1.483	3.876	0.005
Off-Highway Tractors	120	0.698	3.972	6.281	0.005
Off-Highway Tractors	175	0.424	3.265	5.025	0.005
Off-Highway Tractors	250	0.405	1.628	5.661	0.005
Off-Highway Tractors	750	0.267	1.334	4.007	0.005
Off-Highway Tractors	1000	0.085	0.947	2.279	0.005
Off-Highway Trucks	175	0.513	3.473	5.219	0.005
Off-Highway Trucks	250	0.483	1.932	5.441	0.005

Off-Highway Trucks	500	0.393	2.075	4.686	0.005
Off-Highway Trucks	750	0.485	2.953	5.578	0.005
Off-Highway Trucks	1000	0.415	1.779	6.365	0.005
Other Construction Equipment	15	1.301	5.602	5.565	0.005
Other Construction Equipment	25	1.301	5.602	5.565	0.005
Other Construction Equipment	50	1.301	5.602	5.565	0.005
Other Construction Equipment	120	0.729	3.906	6.633	0.005
Other Construction Equipment	175	0.567	3.385	6.372	0.005
Other Construction Equipment	500	0.330	2.476	4.561	0.005
Other General Industrial Equipment	15	1.521	6.288	5.584	0.005
Other General Industrial Equipment	25	1.521	6.288	5.584	0.005
Other General Industrial Equipment	50	1.521	6.288	5.584	0.005
Other General Industrial Equipment	120	0.789	4.090	6.723	0.005
Other General Industrial Equipment	175	0.523	3.469	5.792	0.005
Other General Industrial Equipment	250	0.488	2.054	6.153	0.005
Other General Industrial Equipment	500	0.355	2.499	4.565	0.005

Other General Industrial Equipment	750	0.256	1.489	3.622	0.005
Other General Industrial Equipment	1000	0.346	1.080	6.379	0.005
Other Material Handling Equipment	50	1.695	6.590	5.751	0.005
Other Material Handling Equipment	120	0.558	3.779	5.372	0.005
Other Material Handling Equipment	175	0.528	3.431	5.798	0.005
Other Material Handling Equipment	250	0.475	1.936	6.173	0.005
Other Material Handling Equipment	500	0.331	1.927	4.357	0.005
Other Material Handling Equipment	9999	0.141	0.978	3.436	0.005
Pavers	25	1.898	6.381	5.717	0.005
Pavers	50	1.898	6.381	5.717	0.005
Pavers	120	0.683	3.773	6.199	0.005
Pavers	175	0.502	3.115	5.736	0.005
Pavers	250	0.208	1.023	4.140	0.005
Pavers	500	0.180	1.005	3.047	0.005
Paving Equipment	25	1.053	4.952	5.184	0.005
Paving Equipment	50	1.053	4.952	5.184	0.005
Paving Equipment	120	0.677	3.837	6.370	0.005
Paving Equipment	175	0.415	3.097	5.216	0.005
Paving Equipment	250	0.310	1.370	4.782	0.005
Plate Compactors	15	0.661	3.469	4.142	0.008
Pressure Washers	15	0.783	3.723	5.369	0.008
Pressure Washers	25	0.821	2.780	5.000	0.007
Pressure Washers	50	1.096	3.951	4.873	0.007
Pressure Washers	120	0.634	3.367	4.912	0.006
Pressure Washers	175	0.469	2.923	4.513	0.006

Pressure Washers	250	0.137	0.986	1.047	0.006
Pumps	15	0.891	3.723	5.445	0.008
Pumps	25	0.960	2.780	5.000	0.007
Pumps	50	1.538	4.929	5.107	0.007
Pumps	120	0.751	3.587	5.226	0.006
Pumps	175	0.508	2.989	4.635	0.006
Pumps	250	0.326	1.149	4.090	0.006
Pumps	500	0.294	1.181	3.648	0.005
Pumps	750	0.303	1.181	3.770	0.005
Pumps	9999	0.399	1.406	5.210	0.005
Rollers	15	1.308	5.243	5.393	0.005
Rollers	25	1.308	5.243	5.393	0.005
Rollers	50	1.308	5.243	5.393	0.005
Rollers	120	0.695	3.809	6.390	0.005
Rollers	175	0.368	2.998	4.724	0.005
Rollers	250	0.381	1.760	5.403	0.005
Rollers	500	0.378	3.318	5.183	0.005
Rough Terrain Forklifts	50	1.182	4.887	5.226	0.005
Rough Terrain Forklifts	120	0.351	3.367	4.467	0.005
Rough Terrain Forklifts	175	0.221	2.852	3.594	0.005
Rough Terrain Forklifts	250	0.186	1.212	2.984	0.005
Rough Terrain Forklifts	500	0.170	0.954	3.500	0.005
Rubber Tired Dozers	175	0.961	4.226	9.834	0.005
Rubber Tired Dozers	250	0.721	2.712	7.972	0.005
Rubber Tired Dozers	500	0.707	6.165	8.058	0.005
Rubber Tired Dozers	750	0.513	2.756	7.147	0.005
Rubber Tired Dozers	1000	0.691	3.096	6.849	0.005
Rubber Tired Loaders	25	2.115	7.770	6.103	0.005
Rubber Tired Loaders	50	2.115	7.770	6.103	0.005
Rubber Tired Loaders	120	0.868	4.268	7.129	0.005
Rubber Tired Loaders	175	0.605	3.585	6.272	0.005

Rubber Tired Loaders	250	0.407	1.486	5.495	0.005
Rubber Tired Loaders	500	0.421	2.407	5.194	0.005
Rubber Tired Loaders	750	0.406	1.946	4.810	0.005
Rubber Tired Loaders	1000	0.414	1.457	6.692	0.005
Scrapers	120	0.719	4.100	7.065	0.005
Scrapers	175	0.718	3.807	7.907	0.005
Scrapers	250	0.742	3.061	8.815	0.005
Scrapers	500	0.479	3.898	6.233	0.005
Scrapers	750	0.369	2.846	5.012	0.005
Signal Boards	15	0.661	3.469	4.142	0.008
Signal Boards	50	1.625	5.231	5.139	0.007
Signal Boards	120	0.759	3.658	5.186	0.006
Signal Boards	175	0.520	3.058	4.582	0.006
Signal Boards	250	0.408	1.402	4.857	0.007
Skid Steer Loaders	25	0.664	4.016	4.541	0.005
Skid Steer Loaders	50	0.664	4.016	4.541	0.005
Skid Steer Loaders	120	0.304	3.338	4.013	0.005
Surfacing Equipment	50	1.141	4.877	5.425	0.006
Surfacing Equipment	120	0.559	3.580	5.520	0.005
Surfacing Equipment	175	0.472	3.012	5.711	0.005
Surfacing Equipment	250	0.306	1.434	5.102	0.005
Surfacing Equipment	500	0.237	1.501	3.895	0.005
Surfacing Equipment	750	0.174	1.020	3.284	0.005
Sweepers/Scrubbers	15	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	25	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	50	1.767	6.592	5.752	0.005
Sweepers/Scrubbers	120	0.833	4.071	6.934	0.005
Sweepers/Scrubbers	175	0.875	4.042	9.108	0.005
Sweepers/Scrubbers	250	0.505	2.066	6.704	0.005
Tractors/Loaders/Backhoes	25	1.336	5.772	5.369	0.005

Tractors/Loaders/Backhoes	50	1.336	5.772	5.369	0.005
Tractors/Loaders/Backhoes	120	0.582	3.827	5.581	0.005
Tractors/Loaders/Backhoes	175	0.423	3.239	4.938	0.005
Tractors/Loaders/Backhoes	250	0.327	1.376	4.922	0.005
Tractors/Loaders/Backhoes	500	0.312	1.878	4.488	0.005
Tractors/Loaders/Backhoes	750	0.305	1.833	4.243	0.005
Trenchers	15	1.268	5.293	5.455	0.005
Trenchers	25	1.268	5.293	5.455	0.005
Trenchers	50	1.268	5.293	5.455	0.005
Trenchers	120	0.818	3.999	7.217	0.005
Trenchers	175	0.693	3.668	7.699	0.005
Trenchers	250	0.497	2.070	6.484	0.005
Trenchers	500	0.306	2.035	4.370	0.005
Trenchers	750	0.118	0.964	1.825	0.005
Welders	15	0.891	3.723	5.445	0.008
Welders	25	0.960	2.780	5.000	0.007
Welders	50	1.900	5.749	5.308	0.007
Welders	120	0.849	3.774	5.481	0.006
Welders	175	0.581	3.141	4.862	0.006
Welders	250	0.376	1.207	4.297	0.006
Welders	500	0.343	1.227	3.788	0.005
Water Trucks	175	0.513	3.473	5.219	0.005
Water Trucks	250	0.483	1.932	5.441	0.005
Water Trucks	500	0.393	2.075	4.686	0.005
Water Trucks	750	0.485	2.953	5.578	0.005
Water Trucks	1000	0.415	1.779	6.365	0.005

2015

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.158	0.145	574.665	0.170	0.005
0.158	0.145	574.665	0.170	0.005
0.158	0.145	574.665	0.170	0.005
0.161	0.148	516.703	0.153	0.004
0.101	0.093	516.638	0.153	0.004
0.109	0.109	568.299	0.027	0.004
0.341	0.341	568.300	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.505	0.505	568.299	0.187	0.005
0.495	0.495	568.299	0.081	0.004
0.272	0.272	568.299	0.056	0.004
0.134	0.134	568.299	0.036	0.004
0.125	0.125	568.299	0.033	0.004
0.128	0.128	568.299	0.034	0.004
0.157	0.157	568.300	0.040	0.004
0.382	0.351	591.442	0.175	0.005
0.382	0.351	591.442	0.175	0.005
0.382	0.351	591.442	0.175	0.005
0.249	0.229	501.365	0.148	0.004
0.186	0.171	524.052	0.155	0.004
0.105	0.097	512.336	0.151	0.004
0.101	0.093	506.154	0.150	0.004
0.081	0.074	525.240	0.155	0.004
0.058	0.054	516.600	0.153	0.004

2015		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.248
Aerial Lifts	25	0.248
Aerial Lifts	50	0.248
Aerial Lifts	120	0.191
Aerial Lifts	500	0.239
Aerial Lifts	750	0.278
Air Compressors	15	0.840
Air Compressors	25	0.894
Air Compressors	50	1.868
Air Compressors	120	0.821
Air Compressors	175	0.571
Air Compressors	250	0.381
Air Compressors	500	0.354
Air Compressors	750	0.358
Air Compressors	1000	0.409
Bore/Drill Rigs	15	0.847
Bore/Drill Rigs	25	0.847
Bore/Drill Rigs	50	0.847
Bore/Drill Rigs	120	0.318
Bore/Drill Rigs	175	0.302
Bore/Drill Rigs	250	0.213
Bore/Drill Rigs	500	0.199
Bore/Drill Rigs	750	0.162
Bore/Drill Rigs	1000	0.109

0.177	0.177	568.299	0.060	0.005
0.253	0.253	568.299	0.075	0.005
0.164	0.164	568.299	0.061	0.005
0.424	0.424	568.299	0.146	0.005
0.412	0.412	568.299	0.067	0.004
0.228	0.228	568.299	0.046	0.004
0.607	0.559	567.006	0.168	0.005
0.765	0.704	514.029	0.152	0.004
0.457	0.421	519.511	0.154	0.004
0.360	0.331	517.683	0.153	0.004
0.260	0.239	516.578	0.153	0.004
0.151	0.139	515.607	0.152	0.004
0.054	0.050	516.638	0.153	0.004
0.743	0.684	564.564	0.167	0.005
0.629	0.578	522.119	0.154	0.004
0.374	0.344	516.404	0.153	0.004
0.241	0.222	518.036	0.153	0.004
0.217	0.200	520.515	0.154	0.004
0.179	0.164	517.861	0.153	0.004
0.218	0.201	520.005	0.154	0.004
0.494	0.494	568.299	0.181	0.005
0.481	0.481	568.299	0.079	0.004
0.265	0.265	568.299	0.055	0.004
0.130	0.130	568.299	0.036	0.004
0.121	0.121	568.299	0.034	0.004
0.123	0.123	568.299	0.034	0.004
0.155	0.155	568.299	0.041	0.004

Cement and Mortar Mixers	15	0.663
Cement and Mortar Mixers	25	0.811
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	1.470
Concrete/Industrial Saws	120	0.683
Concrete/Industrial Saws	175	0.475
Cranes	50	2.087
Cranes	120	1.214
Cranes	175	0.782
Cranes	250	0.642
Cranes	500	0.475
Cranes	750	0.286
Cranes	9999	0.131
Crawler Tractors	50	2.513
Crawler Tractors	120	0.885
Crawler Tractors	175	0.632
Crawler Tractors	250	0.451
Crawler Tractors	500	0.408
Crawler Tractors	750	0.351
Crawler Tractors	1000	0.479
Crushing/Proc. Equipment	50	1.796
Crushing/Proc. Equipment	120	0.797
Crushing/Proc. Equipment	175	0.562
Crushing/Proc. Equipment	250	0.382
Crushing/Proc. Equipment	500	0.358
Crushing/Proc. Equipment	750	0.358
Crushing/Proc. Equipment	9999	0.422

0.200	0.200	568.300	0.063	0.005
0.380	0.350	575.267	0.170	0.005
0.380	0.350	575.267	0.170	0.005
0.382	0.352	511.306	0.151	0.004
0.229	0.211	516.907	0.153	0.004
0.139	0.128	517.323	0.153	0.004
0.108	0.099	515.215	0.152	0.004
0.114	0.105	511.945	0.151	0.004
0.656	0.604	575.112	0.170	0.005
0.574	0.528	516.062	0.153	0.004
0.345	0.318	516.694	0.153	0.004
0.330	0.304	518.028	0.153	0.004
0.289	0.266	518.345	0.153	0.004
0.298	0.298	568.299	0.070	0.005
0.272	0.272	568.299	0.074	0.005
0.389	0.389	568.299	0.128	0.005
0.385	0.385	568.299	0.065	0.004
0.212	0.212	568.299	0.043	0.004
0.111	0.111	568.300	0.028	0.004
0.104	0.104	568.299	0.025	0.004
0.106	0.106	568.299	0.026	0.004
0.138	0.138	568.299	0.035	0.004
0.867	0.798	539.122	0.159	0.005
0.832	0.765	515.382	0.152	0.004
0.488	0.449	527.834	0.156	0.004
0.185	0.171	522.330	0.154	0.004
0.143	0.131	517.377	0.153	0.004
0.138	0.138	568.299	0.039	0.004
0.513	0.472	520.824	0.154	0.004
0.258	0.237	518.164	0.153	0.004
0.203	0.187	514.370	0.152	0.004
0.133	0.122	516.904	0.153	0.004
0.054	0.050	516.638	0.153	0.004
0.292	0.269	514.057	0.152	0.004
0.236	0.217	512.833	0.152	0.004

Dumpers/Tenders	25	0.696
Excavators	25	0.833
Excavators	50	0.833
Excavators	120	0.507
Excavators	175	0.384
Excavators	250	0.289
Excavators	500	0.232
Excavators	750	0.242
Forklifts	50	2.073
Forklifts	120	0.768
Forklifts	175	0.566
Forklifts	250	0.565
Forklifts	500	0.454
Generator Sets	15	0.747
Generator Sets	25	0.793
Generator Sets	50	1.281
Generator Sets	120	0.651
Generator Sets	175	0.440
Generator Sets	250	0.287
Generator Sets	500	0.258
Generator Sets	750	0.267
Generator Sets	9999	0.351
Graders	50	3.119
Graders	120	1.239
Graders	175	0.844
Graders	250	0.396
Graders	500	0.326
Graders	750	0.414
Off-Highway Tractors	120	0.674
Off-Highway Tractors	175	0.402
Off-Highway Tractors	250	0.400
Off-Highway Tractors	750	0.262
Off-Highway Tractors	1000	0.096
Off-Highway Trucks	175	0.508
Off-Highway Trucks	250	0.473

0.180	0.165	521.057	0.154	0.004
0.231	0.212	521.230	0.154	0.004
0.187	0.172	516.939	0.153	0.004
0.502	0.462	578.959	0.171	0.005
0.502	0.462	578.959	0.171	0.005
0.502	0.462	578.959	0.171	0.005
0.518	0.476	515.285	0.152	0.004
0.333	0.307	514.552	0.152	0.004
0.168	0.155	520.944	0.154	0.004
0.544	0.500	575.871	0.170	0.005
0.544	0.500	575.871	0.170	0.005
0.544	0.500	575.871	0.170	0.005
0.574	0.528	514.389	0.152	0.004
0.312	0.287	516.414	0.153	0.004
0.255	0.234	517.916	0.153	0.004
0.172	0.159	517.595	0.153	0.004

Off-Highway Trucks	500	0.385
Off-Highway Trucks	750	0.452
Off-Highway Trucks	1000	0.411
Other Construction Equipment	15	1.309
Other Construction Equipment	25	1.309
Other Construction Equipment	50	1.309
Other Construction Equipment	120	0.723
Other Construction Equipment	175	0.557
Other Construction Equipment	500	0.324
Other General Industrial Equipment	15	1.495
Other General Industrial Equipment	25	1.495
Other General Industrial Equipment	50	1.495
Other General Industrial Equipment	120	0.761
Other General Industrial Equipment	175	0.495
Other General Industrial Equipment	250	0.452
Other General Industrial Equipment	500	0.353

0.115	0.106	518.180	0.153	0.004
0.167	0.153	516.638	0.153	0.004
0.575	0.529	573.170	0.169	0.005
0.412	0.379	518.316	0.153	0.004
0.313	0.288	516.818	0.153	0.004
0.242	0.223	516.011	0.153	0.004
0.169	0.155	514.714	0.152	0.004
0.067	0.061	516.638	0.153	0.004
0.595	0.547	577.016	0.171	0.005
0.595	0.547	577.016	0.171	0.005
0.483	0.444	514.377	0.152	0.004
0.287	0.264	516.745	0.153	0.004
0.105	0.097	518.723	0.153	0.004
0.101	0.093	512.191	0.151	0.004
0.437	0.402	569.482	0.168	0.005
0.437	0.402	569.482	0.168	0.005
0.486	0.447	518.076	0.153	0.004
0.249	0.229	515.034	0.152	0.004
0.158	0.146	516.900	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.298	0.298	568.299	0.070	0.005
0.272	0.272	568.299	0.074	0.005
0.332	0.332	568.299	0.098	0.005
0.332	0.332	568.299	0.057	0.004
0.206	0.206	568.299	0.042	0.004

Other General Industrial Equipment	750	0.251
Other General Industrial Equipment	1000	0.355
Other Material Handling Equipment	50	1.733
Other Material Handling Equipment	120	0.528
Other Material Handling Equipment	175	0.525
Other Material Handling Equipment	250	0.423
Other Material Handling Equipment	500	0.333
Other Material Handling Equipment	9999	0.148
Pavers	25	1.853
Pavers	50	1.853
Pavers	120	0.680
Pavers	175	0.489
Pavers	250	0.214
Pavers	500	0.176
Paving Equipment	25	0.981
Paving Equipment	50	0.981
Paving Equipment	120	0.661
Paving Equipment	175	0.411
Paving Equipment	250	0.315
Plate Compactors	15	0.661
Pressure Washers	15	0.747
Pressure Washers	25	0.793
Pressure Washers	50	0.976
Pressure Washers	120	0.567
Pressure Washers	175	0.427

0.014	0.014	568.299	0.012	0.004
0.341	0.341	568.299	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.409	0.409	568.299	0.138	0.005
0.403	0.403	568.299	0.067	0.004
0.222	0.222	568.299	0.045	0.004
0.115	0.115	568.299	0.029	0.004
0.108	0.108	568.299	0.026	0.004
0.110	0.110	568.299	0.027	0.004
0.141	0.141	568.299	0.036	0.004
0.484	0.445	575.795	0.170	0.005
0.484	0.445	575.795	0.170	0.005
0.484	0.445	575.795	0.170	0.005
0.476	0.438	518.787	0.153	0.004
0.219	0.202	516.591	0.153	0.004
0.191	0.176	517.811	0.153	0.004
0.202	0.185	522.052	0.154	0.004
0.436	0.401	575.353	0.170	0.005
0.261	0.240	517.260	0.153	0.004
0.140	0.128	516.091	0.153	0.004
0.087	0.080	517.766	0.153	0.004
0.076	0.070	511.657	0.151	0.004
0.563	0.518	518.335	0.153	0.004
0.393	0.361	520.011	0.154	0.004
0.376	0.346	524.676	0.155	0.004
0.258	0.237	517.790	0.153	0.004
0.236	0.236	568.300	0.062	0.004
0.676	0.622	573.522	0.170	0.005
0.676	0.622	573.522	0.170	0.005
0.619	0.569	510.010	0.151	0.004
0.350	0.322	515.769	0.152	0.004

Pressure Washers	250	0.121
Pumps	15	0.840
Pumps	25	0.894
Pumps	50	1.384
Pumps	120	0.679
Pumps	175	0.461
Pumps	250	0.302
Pumps	500	0.273
Pumps	750	0.281
Pumps	9999	0.363
Rollers	15	1.311
Rollers	25	1.311
Rollers	50	1.311
Rollers	120	0.683
Rollers	175	0.364
Rollers	250	0.347
Rollers	500	0.371
Rough Terrain Forklifts	50	1.189
Rough Terrain Forklifts	120	0.338
Rough Terrain Forklifts	175	0.217
Rough Terrain Forklifts	250	0.140
Rough Terrain Forklifts	500	0.174
Rubber Tired Dozers	175	0.965
Rubber Tired Dozers	250	0.728
Rubber Tired Dozers	500	0.708
Rubber Tired Dozers	750	0.518
Rubber Tired Dozers	1000	0.661
Rubber Tired Loaders	25	2.108
Rubber Tired Loaders	50	2.108
Rubber Tired Loaders	120	0.856
Rubber Tired Loaders	175	0.595

0.187	0.172	514.217	0.152	0.004
0.196	0.180	512.510	0.152	0.004
0.190	0.175	499.695	0.148	0.004
0.195	0.179	515.307	0.152	0.004
0.526	0.484	529.945	0.157	0.004
0.419	0.385	524.171	0.155	0.004
0.403	0.371	512.853	0.152	0.004
0.251	0.231	517.361	0.153	0.004
0.190	0.174	517.394	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.422	0.422	568.299	0.146	0.005
0.414	0.414	568.299	0.068	0.004
0.228	0.228	568.299	0.046	0.004
0.141	0.141	686.695	0.036	0.004
0.286	0.263	577.076	0.171	0.005
0.286	0.263	577.076	0.171	0.005
0.235	0.216	517.062	0.153	0.004
0.434	0.400	582.725	0.172	0.005
0.391	0.360	516.338	0.153	0.004
0.273	0.251	515.820	0.152	0.004
0.149	0.137	521.452	0.154	0.004
0.126	0.116	513.616	0.152	0.004
0.103	0.095	516.321	0.153	0.004
0.603	0.555	574.943	0.170	0.005
0.603	0.555	574.943	0.170	0.005
0.603	0.555	574.943	0.170	0.005
0.610	0.562	518.893	0.153	0.004
0.503	0.463	517.806	0.153	0.004
0.265	0.244	514.527	0.152	0.004
0.488	0.449	564.042	0.167	0.005

Rubber Tired Loaders	250	0.406
Rubber Tired Loaders	500	0.415
Rubber Tired Loaders	750	0.395
Rubber Tired Loaders	1000	0.420
Scrapers	120	0.731
Scrapers	175	0.714
Scrapers	250	0.730
Scrapers	500	0.472
Scrapers	750	0.360
Signal Boards	15	0.661
Signal Boards	50	1.461
Signal Boards	120	0.687
Signal Boards	175	0.474
Signal Boards	250	0.380
Skid Steer Loaders	25	0.639
Skid Steer Loaders	50	0.639
Skid Steer Loaders	120	0.294
Surfacing Equipment	50	1.028
Surfacing Equipment	120	0.548
Surfacing Equipment	175	0.477
Surfacing Equipment	250	0.310
Surfacing Equipment	500	0.241
Surfacing Equipment	750	0.178
Sweepers/Scrubbers	15	1.808
Sweepers/Scrubbers	25	1.808
Sweepers/Scrubbers	50	1.808
Sweepers/Scrubbers	120	0.833
Sweepers/Scrubbers	175	0.839
Sweepers/Scrubbers	250	0.513
Tractors/Loaders/Backhoes	25	1.307

0.488	0.449	564.042	0.167	0.005
0.438	0.403	523.017	0.155	0.004
0.248	0.229	513.890	0.152	0.004
0.159	0.146	515.175	0.152	0.004
0.152	0.140	517.124	0.153	0.004
0.154	0.141	511.337	0.151	0.004
0.501	0.461	577.728	0.171	0.005
0.501	0.461	577.728	0.171	0.005
0.501	0.461	577.728	0.171	0.005
0.563	0.518	520.766	0.154	0.004
0.395	0.364	512.148	0.151	0.004
0.258	0.237	517.719	0.153	0.004
0.161	0.148	513.744	0.152	0.004
0.061	0.056	519.658	0.154	0.004
0.341	0.341	568.300	0.080	0.005
0.291	0.291	568.299	0.086	0.005
0.473	0.473	568.300	0.171	0.005
0.464	0.464	568.299	0.076	0.004
0.255	0.255	568.299	0.052	0.004
0.128	0.128	568.299	0.034	0.004
0.119	0.119	568.299	0.031	0.004
0.292	0.269	514.057	0.152	0.004
0.236	0.217	512.833	0.152	0.004
0.180	0.165	521.057	0.154	0.004
0.231	0.212	521.230	0.154	0.004
0.187	0.172	516.939	0.153	0.004

Tractors/Loaders/Backhoes	50	1.307
Tractors/Loaders/Backhoes	120	0.569
Tractors/Loaders/Backhoes	175	0.421
Tractors/Loaders/Backhoes	250	0.326
Tractors/Loaders/Backhoes	500	0.312
Tractors/Loaders/Backhoes	750	0.308
Trenchers	15	1.259
Trenchers	25	1.259
Trenchers	50	1.259
Trenchers	120	0.817
Trenchers	175	0.697
Trenchers	250	0.502
Trenchers	500	0.311
Trenchers	750	0.114
Welders	15	0.840
Welders	25	0.894
Welders	50	1.715
Welders	120	0.772
Welders	175	0.532
Welders	250	0.352
Welders	500	0.324
Water Trucks	175	0.508
Water Trucks	250	0.473
Water Trucks	500	0.385
Water Trucks	750	0.452
Water Trucks	1000	0.411

2016

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.233	3.933	0.005	0.136	0.125	568.831	0.170	0.005
3.218	3.113	0.005	0.143	0.132	511.457	0.153	0.004
0.988	4.621	0.005	0.102	0.094	511.392	0.153	0.004
1.130	3.380	0.005	0.098	0.098	568.299	0.025	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
5.968	5.223	0.007	0.459	0.459	568.299	0.168	0.005
3.840	5.190	0.006	0.446	0.446	568.299	0.074	0.004
3.218	4.504	0.006	0.245	0.245	568.299	0.051	0.004
1.207	3.967	0.006	0.121	0.121	568.299	0.034	0.004
1.198	3.455	0.005	0.113	0.113	568.300	0.032	0.004
1.198	3.586	0.005	0.116	0.116	568.299	0.032	0.004
1.370	5.157	0.005	0.142	0.142	568.299	0.036	0.004
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
4.735	5.303	0.006	0.379	0.349	585.171	0.175	0.005
3.335	4.028	0.005	0.239	0.220	496.949	0.148	0.004
3.035	3.904	0.005	0.176	0.162	517.207	0.154	0.004
1.178	3.325	0.005	0.100	0.092	506.505	0.151	0.004
1.256	3.003	0.005	0.096	0.088	499.902	0.149	0.004
1.105	2.376	0.005	0.081	0.074	520.473	0.155	0.004
0.956	2.994	0.005	0.059	0.054	511.253	0.153	0.004

3.469	4.168	0.008	0.171	0.171	568.300	0.059	0.005
2.531	4.712	0.007	0.240	0.240	568.299	0.073	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
5.165	4.989	0.007	0.386	0.386	568.299	0.132	0.005
3.647	4.789	0.006	0.372	0.372	568.300	0.061	0.004
3.077	4.112	0.006	0.207	0.207	568.299	0.042	0.004
7.125	6.075	0.005	0.601	0.553	561.224	0.168	0.005
4.884	10.060	0.005	0.747	0.687	508.837	0.152	0.004
3.918	8.325	0.005	0.450	0.414	514.260	0.154	0.004
2.653	7.622	0.005	0.348	0.320	512.448	0.153	0.004
4.110	6.124	0.005	0.253	0.233	511.197	0.153	0.004
1.643	4.312	0.005	0.152	0.140	510.334	0.152	0.004
0.957	2.295	0.005	0.055	0.051	511.392	0.153	0.004
8.076	6.377	0.005	0.741	0.682	558.888	0.167	0.005
4.189	7.494	0.005	0.630	0.580	516.843	0.154	0.004
3.479	6.849	0.005	0.376	0.346	511.306	0.153	0.004
1.816	6.143	0.005	0.237	0.218	512.897	0.153	0.004
2.845	5.483	0.005	0.212	0.195	515.373	0.154	0.004
1.664	4.883	0.005	0.179	0.165	512.540	0.153	0.004
2.088	7.463	0.005	0.220	0.202	514.830	0.154	0.004
5.996	5.195	0.007	0.446	0.446	568.299	0.162	0.005
3.859	5.040	0.006	0.430	0.430	568.299	0.071	0.004
3.247	4.343	0.006	0.237	0.237	568.299	0.050	0.004
1.201	3.801	0.006	0.117	0.117	568.299	0.034	0.004
1.184	3.304	0.005	0.109	0.109	568.299	0.032	0.004
1.176	3.422	0.005	0.111	0.111	568.299	0.032	0.004
1.343	5.019	0.005	0.140	0.140	568.299	0.038	0.004

2.350	4.402	0.007	0.187	0.187	568.299	0.062	0.005
4.925	4.918	0.005	0.375	0.345	569.512	0.170	0.005
4.925	4.918	0.005	0.375	0.345	569.512	0.170	0.005
3.679	5.019	0.005	0.374	0.344	506.173	0.151	0.004
3.168	4.481	0.005	0.221	0.204	511.687	0.153	0.004
1.331	4.182	0.005	0.133	0.122	512.056	0.153	0.004
1.317	3.214	0.005	0.104	0.096	509.868	0.152	0.004
1.354	3.473	0.005	0.113	0.104	506.682	0.151	0.004
7.300	5.931	0.005	0.643	0.591	569.274	0.170	0.005
4.063	6.601	0.005	0.555	0.510	510.823	0.153	0.004
3.520	6.135	0.005	0.335	0.308	511.448	0.153	0.004
2.325	6.697	0.005	0.298	0.274	512.769	0.153	0.004
3.300	5.332	0.005	0.237	0.218	513.083	0.153	0.004
3.658	5.141	0.008	0.280	0.280	568.299	0.067	0.005
2.666	4.890	0.007	0.256	0.256	568.299	0.071	0.005
4.538	4.858	0.007	0.353	0.353	568.299	0.115	0.005
3.499	4.769	0.006	0.347	0.347	568.299	0.058	0.004
2.938	4.138	0.006	0.191	0.191	568.299	0.039	0.004
1.104	3.633	0.006	0.100	0.100	568.300	0.025	0.004
1.114	3.231	0.005	0.094	0.094	568.299	0.023	0.004
1.114	3.347	0.005	0.096	0.096	568.299	0.024	0.004
1.269	4.822	0.005	0.124	0.124	568.299	0.031	0.004
9.144	6.570	0.005	0.874	0.804	533.681	0.159	0.005
4.884	9.738	0.005	0.813	0.748	509.597	0.152	0.004
3.958	8.637	0.005	0.486	0.447	522.218	0.156	0.004
1.466	5.728	0.005	0.186	0.171	517.128	0.154	0.004
1.791	3.721	0.005	0.144	0.133	512.098	0.153	0.004
1.420	3.501	0.005	0.124	0.124	568.299	0.037	0.004
3.965	6.067	0.005	0.494	0.455	515.320	0.154	0.004
3.264	4.724	0.005	0.239	0.220	512.608	0.153	0.004
1.605	5.528	0.005	0.199	0.183	509.190	0.152	0.004
1.172	3.874	0.005	0.126	0.116	511.081	0.153	0.004
0.960	2.300	0.005	0.056	0.051	511.392	0.153	0.004
3.489	5.104	0.005	0.284	0.262	508.701	0.152	0.004
1.900	5.242	0.005	0.227	0.209	507.809	0.152	0.004

2.037	4.528	0.005	0.173	0.159	515.842	0.154	0.004
2.620	5.124	0.005	0.209	0.192	514.644	0.154	0.004
1.772	6.280	0.005	0.185	0.170	511.137	0.153	0.004
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
5.681	5.564	0.005	0.503	0.463	573.020	0.171	0.005
3.916	6.536	0.005	0.512	0.471	510.171	0.152	0.004
3.382	6.231	0.005	0.326	0.300	509.307	0.152	0.004
2.407	4.415	0.005	0.163	0.150	515.195	0.154	0.004
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
6.325	5.524	0.005	0.532	0.490	570.024	0.170	0.005
4.081	6.502	0.005	0.553	0.509	509.166	0.152	0.004
3.454	5.397	0.005	0.294	0.270	511.171	0.153	0.004
1.926	5.643	0.005	0.230	0.211	512.658	0.153	0.004
2.436	4.425	0.005	0.167	0.154	512.340	0.153	0.004

1.491	3.365	0.005	0.109	0.100	512.919	0.153	0.004
1.094	6.448	0.005	0.171	0.158	511.392	0.153	0.004
6.756	5.799	0.005	0.586	0.539	567.351	0.169	0.005
3.758	4.983	0.005	0.383	0.352	513.054	0.153	0.004
3.433	5.645	0.005	0.306	0.282	511.571	0.153	0.004
1.742	5.532	0.005	0.207	0.191	510.772	0.153	0.004
1.918	4.272	0.005	0.166	0.152	509.489	0.152	0.004
0.984	3.458	0.005	0.068	0.063	511.392	0.153	0.004
6.340	5.637	0.005	0.579	0.533	571.086	0.171	0.005
6.340	5.637	0.005	0.579	0.533	571.086	0.171	0.005
3.788	6.141	0.005	0.479	0.441	509.377	0.152	0.004
3.115	5.537	0.005	0.277	0.255	511.646	0.153	0.004
1.031	4.161	0.005	0.107	0.098	513.468	0.153	0.004
0.978	2.917	0.005	0.097	0.089	506.097	0.151	0.004
4.869	5.028	0.005	0.407	0.374	563.553	0.168	0.005
4.869	5.028	0.005	0.407	0.374	563.553	0.168	0.005
3.833	6.145	0.005	0.471	0.433	513.167	0.153	0.004
3.104	4.966	0.005	0.242	0.223	509.894	0.152	0.004
1.379	4.772	0.005	0.159	0.146	511.654	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.657	5.141	0.008	0.280	0.280	568.299	0.067	0.005
2.666	4.890	0.007	0.256	0.256	568.299	0.071	0.005
3.833	4.685	0.007	0.300	0.300	568.299	0.088	0.005
3.336	4.551	0.006	0.297	0.297	568.299	0.051	0.004
2.917	4.115	0.006	0.187	0.187	568.299	0.038	0.004

0.986	0.690	0.006	0.010	0.010	568.299	0.010	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
4.775	4.916	0.007	0.371	0.371	568.300	0.124	0.005
3.554	4.842	0.006	0.364	0.364	568.300	0.061	0.004
2.983	4.202	0.006	0.200	0.200	568.299	0.041	0.004
1.122	3.693	0.006	0.104	0.104	568.299	0.027	0.004
1.134	3.272	0.005	0.097	0.097	568.299	0.024	0.004
1.134	3.389	0.005	0.099	0.099	568.299	0.025	0.004
1.293	4.878	0.005	0.127	0.127	568.299	0.032	0.004
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
5.290	5.365	0.005	0.481	0.443	569.921	0.170	0.005
3.809	6.272	0.005	0.467	0.430	513.505	0.153	0.004
3.006	4.630	0.005	0.216	0.198	511.394	0.153	0.004
1.650	4.932	0.005	0.171	0.157	512.823	0.153	0.004
3.245	5.031	0.005	0.195	0.179	517.285	0.154	0.004
4.933	5.190	0.005	0.431	0.397	569.488	0.170	0.005
3.366	4.280	0.005	0.247	0.228	512.086	0.153	0.004
2.859	3.420	0.005	0.133	0.122	510.854	0.153	0.004
1.012	2.463	0.005	0.058	0.054	512.164	0.153	0.004
0.958	3.521	0.005	0.077	0.071	506.435	0.151	0.004
4.238	9.844	0.005	0.564	0.519	513.055	0.153	0.004
2.720	7.984	0.005	0.394	0.362	514.736	0.154	0.004
6.102	7.997	0.005	0.373	0.343	519.147	0.155	0.004
2.761	7.158	0.005	0.259	0.238	512.525	0.153	0.004
2.901	6.556	0.005	0.222	0.222	568.299	0.059	0.004
7.834	6.112	0.005	0.675	0.621	567.672	0.170	0.005
7.834	6.112	0.005	0.675	0.621	567.672	0.170	0.005
4.274	7.012	0.005	0.606	0.558	505.023	0.151	0.004
3.588	6.097	0.005	0.341	0.313	510.468	0.152	0.004

1.480	5.369	0.005	0.183	0.169	508.913	0.152	0.004
2.332	5.020	0.005	0.190	0.174	506.372	0.151	0.004
1.789	4.556	0.005	0.179	0.165	495.310	0.148	0.004
1.462	6.713	0.005	0.197	0.181	510.045	0.152	0.004
4.137	7.105	0.005	0.535	0.492	524.560	0.157	0.004
3.809	7.765	0.005	0.415	0.382	518.829	0.155	0.004
3.008	8.663	0.005	0.395	0.364	507.570	0.152	0.004
3.788	6.086	0.005	0.246	0.226	511.947	0.153	0.004
2.685	4.839	0.005	0.182	0.167	512.084	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
5.068	4.943	0.007	0.382	0.382	568.299	0.131	0.005
3.624	4.791	0.006	0.371	0.371	568.299	0.062	0.004
3.052	4.136	0.006	0.205	0.205	568.299	0.042	0.004
1.371	4.365	0.007	0.127	0.127	686.695	0.034	0.004
4.004	4.436	0.005	0.267	0.246	571.420	0.171	0.005
4.004	4.436	0.005	0.267	0.246	571.420	0.171	0.005
3.338	3.811	0.005	0.220	0.203	511.595	0.153	0.004
4.692	5.255	0.006	0.402	0.370	576.771	0.172	0.005
3.575	5.374	0.005	0.378	0.348	510.142	0.152	0.004
3.027	5.733	0.005	0.276	0.254	510.548	0.152	0.004
1.442	5.112	0.005	0.151	0.139	516.058	0.154	0.004
1.513	3.900	0.005	0.127	0.116	508.399	0.152	0.004
1.024	3.287	0.005	0.104	0.096	511.116	0.153	0.004
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
6.754	5.772	0.005	0.611	0.562	569.106	0.170	0.005
4.097	6.886	0.005	0.610	0.561	513.625	0.153	0.004
3.982	8.697	0.005	0.479	0.441	512.549	0.153	0.004
2.078	6.745	0.005	0.268	0.246	509.304	0.152	0.004
5.791	5.320	0.005	0.477	0.439	558.709	0.167	0.005

5.791	5.320	0.005	0.477	0.439	558.709	0.167	0.005
3.832	5.422	0.005	0.424	0.390	517.365	0.155	0.004
3.256	4.836	0.005	0.244	0.225	508.682	0.152	0.004
1.374	4.783	0.005	0.155	0.143	509.627	0.152	0.004
1.884	4.348	0.005	0.149	0.137	511.869	0.153	0.004
1.823	4.185	0.005	0.152	0.140	506.147	0.151	0.004
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
5.323	5.406	0.005	0.493	0.454	571.667	0.171	0.005
4.014	7.179	0.005	0.562	0.517	515.396	0.154	0.004
3.684	7.674	0.005	0.396	0.364	506.943	0.151	0.004
2.080	6.510	0.005	0.260	0.239	512.433	0.153	0.004
2.051	4.383	0.005	0.163	0.150	508.330	0.152	0.004
0.965	1.623	0.005	0.053	0.049	514.400	0.154	0.004
3.658	5.196	0.008	0.311	0.311	568.299	0.075	0.005
2.666	4.890	0.007	0.270	0.270	568.299	0.080	0.005
5.562	5.113	0.007	0.430	0.430	568.300	0.154	0.005
3.738	5.077	0.006	0.419	0.419	568.299	0.069	0.004
3.133	4.408	0.006	0.230	0.230	568.299	0.048	0.004
1.178	3.880	0.006	0.116	0.116	568.299	0.031	0.004
1.176	3.398	0.005	0.108	0.108	568.299	0.029	0.004
3.489	5.104	0.005	0.284	0.262	508.701	0.152	0.004
1.900	5.242	0.005	0.227	0.209	507.809	0.152	0.004
2.037	4.528	0.005	0.173	0.159	515.842	0.154	0.004
2.620	5.124	0.005	0.209	0.192	514.644	0.154	0.004
1.772	6.280	0.005	0.185	0.170	511.137	0.153	0.004

2016		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	25	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	50	0.228	3.197	3.676	0.005	0.105	0.096	562.996
Aerial Lifts	120	0.166	3.201	2.722	0.005	0.112	0.103	506.211
Aerial Lifts	500	0.243	0.992	4.639	0.005	0.103	0.095	506.147
Aerial Lifts	750	0.257	1.089	3.015	0.005	0.088	0.088	568.299
Air Compressors	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Air Compressors	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Air Compressors	50	1.670	5.779	5.042	0.007	0.415	0.415	568.299
Air Compressors	120	0.744	3.804	4.790	0.006	0.397	0.397	568.299
Air Compressors	175	0.522	3.211	4.052	0.006	0.219	0.219	568.299
Air Compressors	250	0.359	1.182	3.553	0.006	0.109	0.109	568.299
Air Compressors	500	0.337	1.155	3.080	0.005	0.102	0.102	568.299
Air Compressors	750	0.340	1.155	3.201	0.005	0.104	0.104	568.299
Air Compressors	1000	0.383	1.295	4.854	0.005	0.131	0.131	568.299
Bore/Drill Rigs	15	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	25	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	50	0.869	4.797	5.298	0.006	0.383	0.352	579.326
Bore/Drill Rigs	120	0.307	3.326	3.821	0.005	0.221	0.204	491.655
Bore/Drill Rigs	175	0.286	3.023	3.616	0.005	0.162	0.149	511.433
Bore/Drill Rigs	250	0.193	1.133	2.902	0.005	0.085	0.078	502.128
Bore/Drill Rigs	500	0.171	1.133	2.510	0.005	0.077	0.071	494.761
Bore/Drill Rigs	750	0.153	1.120	2.166	0.005	0.072	0.066	514.883
Bore/Drill Rigs	1000	0.115	0.964	3.008	0.005	0.059	0.055	506.000

Cement and Mortar Mixers	15	0.662	3.469	4.153	0.008	0.167	0.167	568.300
Cement and Mortar Mixers	25	0.788	2.496	4.636	0.007	0.227	0.227	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	1.322	5.029	4.818	0.007	0.350	0.350	568.300
Concrete/Industrial Saws	120	0.620	3.620	4.432	0.006	0.333	0.333	568.300
Concrete/Industrial Saws	175	0.435	3.074	3.708	0.006	0.186	0.186	568.299
Cranes	50	2.130	7.268	6.110	0.005	0.610	0.561	555.441
Cranes	120	1.154	4.797	9.608	0.005	0.710	0.653	503.599
Cranes	175	0.744	3.862	7.887	0.005	0.427	0.393	508.952
Cranes	250	0.623	2.582	7.381	0.005	0.335	0.308	507.155
Cranes	500	0.443	3.834	5.649	0.005	0.233	0.215	506.088
Cranes	750	0.292	1.650	4.314	0.005	0.153	0.141	505.070
Cranes	9999	0.142	0.966	2.309	0.005	0.057	0.052	506.147
Crawler Tractors	50	2.519	8.104	6.317	0.005	0.733	0.674	553.214
Crawler Tractors	120	0.869	4.185	7.346	0.005	0.619	0.570	511.268
Crawler Tractors	175	0.624	3.482	6.721	0.005	0.371	0.341	506.034
Crawler Tractors	250	0.449	1.803	6.047	0.005	0.233	0.215	507.355
Crawler Tractors	500	0.398	2.744	5.279	0.005	0.205	0.188	510.339
Crawler Tractors	750	0.346	1.621	4.724	0.005	0.174	0.160	507.253
Crawler Tractors	1000	0.483	2.094	7.499	0.005	0.222	0.204	509.667
Crushing/Proc. Equipment	50	1.593	5.801	5.006	0.007	0.399	0.399	568.299
Crushing/Proc. Equipment	120	0.720	3.823	4.631	0.006	0.379	0.379	568.299
Crushing/Proc. Equipment	175	0.513	3.241	3.883	0.006	0.210	0.210	568.299
Crushing/Proc. Equipment	250	0.360	1.178	3.381	0.006	0.105	0.105	568.299
Crushing/Proc. Equipment	500	0.340	1.146	2.928	0.005	0.098	0.098	568.299
Crushing/Proc. Equipment	750	0.339	1.140	3.021	0.005	0.099	0.099	568.299
Crushing/Proc. Equipment	9999	0.397	1.274	4.700	0.005	0.127	0.127	568.299

Dumpers/Tenders	25	0.690	2.342	4.378	0.007	0.175	0.175	568.299
Excavators	25	0.815	4.942	4.824	0.005	0.359	0.330	563.803
Excavators	50	0.815	4.942	4.824	0.005	0.359	0.330	563.803
Excavators	120	0.476	3.661	4.708	0.005	0.344	0.317	500.966
Excavators	175	0.358	3.158	4.081	0.005	0.201	0.185	506.495
Excavators	250	0.262	1.277	3.667	0.005	0.116	0.107	506.544
Excavators	500	0.213	1.233	2.815	0.005	0.091	0.083	504.290
Excavators	750	0.242	1.349	3.358	0.005	0.110	0.101	501.660
Forklifts	50	1.864	6.935	5.662	0.005	0.583	0.537	563.435
Forklifts	120	0.723	4.023	6.222	0.005	0.520	0.479	505.583
Forklifts	175	0.530	3.473	5.675	0.005	0.310	0.285	506.203
Forklifts	250	0.539	2.226	6.353	0.005	0.280	0.258	507.510
Forklifts	500	0.353	2.572	4.042	0.005	0.174	0.160	507.821
Generator Sets	15	0.720	3.622	4.978	0.008	0.264	0.264	568.299
Generator Sets	25	0.773	2.604	4.803	0.007	0.244	0.244	568.299
Generator Sets	50	1.146	4.410	4.685	0.007	0.318	0.318	568.299
Generator Sets	120	0.583	3.469	4.410	0.006	0.309	0.309	568.299
Generator Sets	175	0.396	2.934	3.731	0.006	0.170	0.170	568.299
Generator Sets	250	0.265	1.081	3.259	0.006	0.090	0.090	568.299
Generator Sets	500	0.239	1.077	2.882	0.005	0.084	0.084	568.299
Generator Sets	750	0.247	1.077	2.989	0.005	0.086	0.086	568.300
Generator Sets	9999	0.324	1.204	4.542	0.005	0.113	0.113	568.299
Graders	50	3.085	9.106	6.520	0.005	0.864	0.795	528.244
Graders	120	1.193	4.829	9.415	0.005	0.780	0.718	503.161
Graders	175	0.810	3.916	8.250	0.005	0.464	0.426	516.131
Graders	250	0.398	1.459	5.663	0.005	0.184	0.169	511.696
Graders	500	0.334	1.774	3.686	0.005	0.144	0.133	506.506
Graders	750	0.393	1.367	3.154	0.005	0.112	0.112	568.299
Off-Highway Tractors	120	0.625	3.925	5.647	0.005	0.454	0.418	509.447
Off-Highway Tractors	175	0.391	3.278	4.511	0.005	0.229	0.211	507.629
Off-Highway Tractors	250	0.359	1.472	4.930	0.005	0.171	0.157	504.123
Off-Highway Tractors	750	0.252	1.143	3.573	0.005	0.117	0.108	505.762
Off-Highway Tractors	1000	0.107	0.973	2.320	0.005	0.057	0.053	506.147
Off-Highway Trucks	175	0.473	3.459	4.647	0.005	0.258	0.237	503.552
Off-Highway Trucks	250	0.446	1.824	4.826	0.005	0.208	0.191	502.473

Off-Highway Trucks	500	0.351	1.885	4.048	0.005	0.153	0.141	509.860
Off-Highway Trucks	750	0.418	2.436	4.642	0.005	0.187	0.172	508.392
Off-Highway Trucks	1000	0.393	1.707	6.035	0.005	0.175	0.161	505.722
Other Construction Equipment	15	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	25	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	50	1.281	5.677	5.499	0.005	0.492	0.453	566.978
Other Construction Equipment	120	0.703	3.909	6.325	0.005	0.496	0.456	505.349
Other Construction Equipment	175	0.524	3.357	5.818	0.005	0.306	0.282	503.964
Other Construction Equipment	500	0.308	2.285	4.090	0.005	0.151	0.139	509.706
Other General Industrial Equipment	15	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	25	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	50	1.421	6.259	5.407	0.005	0.507	0.466	564.178
Other General Industrial Equipment	120	0.716	4.045	6.144	0.005	0.518	0.476	503.944
Other General Industrial Equipment	175	0.470	3.437	5.055	0.005	0.276	0.254	505.928
Other General Industrial Equipment	250	0.437	1.867	5.407	0.005	0.217	0.200	507.400
Other General Industrial Equipment	500	0.342	2.367	4.150	0.005	0.159	0.146	507.085

Other General Industrial Equipment	750	0.243	1.491	3.102	0.005	0.100	0.092	507.658
Other General Industrial Equipment	1000	0.242	1.045	4.746	0.005	0.112	0.103	506.147
Other Material Handling Equipment	50	1.765	6.892	5.802	0.005	0.593	0.546	561.532
Other Material Handling Equipment	120	0.514	3.766	4.798	0.005	0.367	0.338	507.792
Other Material Handling Equipment	175	0.489	3.418	5.212	0.005	0.280	0.257	506.324
Other Material Handling Equipment	250	0.398	1.643	5.196	0.005	0.189	0.174	505.534
Other Material Handling Equipment	500	0.323	1.871	4.053	0.005	0.156	0.143	504.263
Other Material Handling Equipment	9999	0.159	0.997	3.489	0.005	0.070	0.065	506.147
Pavers	25	1.827	6.340	5.579	0.005	0.569	0.523	565.234
Pavers	50	1.827	6.340	5.579	0.005	0.569	0.523	565.234
Pavers	120	0.650	3.769	5.886	0.005	0.457	0.420	503.780
Pavers	175	0.433	3.080	4.874	0.005	0.242	0.223	506.540
Pavers	250	0.214	1.036	4.024	0.005	0.104	0.096	508.070
Pavers	500	0.180	0.983	2.885	0.005	0.096	0.089	500.936
Paving Equipment	25	0.991	4.937	4.985	0.005	0.404	0.371	557.706
Paving Equipment	50	0.991	4.937	4.985	0.005	0.404	0.371	557.706
Paving Equipment	120	0.623	3.796	5.733	0.005	0.438	0.403	507.910
Paving Equipment	175	0.372	3.081	4.322	0.005	0.215	0.197	504.820
Paving Equipment	250	0.297	1.331	4.428	0.005	0.148	0.136	506.197
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.720	3.622	4.978	0.008	0.264	0.264	568.299
Pressure Washers	25	0.773	2.604	4.803	0.007	0.244	0.244	568.299
Pressure Washers	50	0.865	3.729	4.515	0.007	0.269	0.269	568.299
Pressure Washers	120	0.504	3.308	4.209	0.006	0.264	0.264	568.299
Pressure Washers	175	0.386	2.913	3.726	0.006	0.168	0.168	568.299

Pressure Washers	250	0.107	0.986	0.399	0.006	0.009	0.009	568.299
Pumps	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Pumps	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Pumps	50	1.240	4.640	4.742	0.007	0.335	0.335	568.299
Pumps	120	0.610	3.523	4.478	0.006	0.325	0.325	568.299
Pumps	175	0.417	2.978	3.789	0.006	0.179	0.179	568.299
Pumps	250	0.280	1.099	3.313	0.006	0.094	0.094	568.299
Pumps	500	0.254	1.093	2.919	0.005	0.088	0.088	568.299
Pumps	750	0.262	1.093	3.028	0.005	0.089	0.089	568.299
Pumps	9999	0.335	1.223	4.596	0.005	0.116	0.116	568.300
Rollers	15	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	25	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	50	1.259	5.231	5.236	0.005	0.459	0.423	563.972
Rollers	120	0.628	3.755	5.806	0.005	0.428	0.393	508.199
Rollers	175	0.338	2.993	4.239	0.005	0.197	0.181	505.904
Rollers	250	0.308	1.507	4.395	0.005	0.150	0.138	507.694
Rollers	500	0.334	2.956	4.456	0.005	0.173	0.159	513.415
Rough Terrain Forklifts	50	1.159	4.918	5.099	0.005	0.415	0.382	563.360
Rough Terrain Forklifts	120	0.302	3.342	3.840	0.005	0.213	0.196	507.066
Rough Terrain Forklifts	175	0.209	2.865	3.209	0.005	0.124	0.115	505.596
Rough Terrain Forklifts	250	0.144	1.018	2.468	0.005	0.059	0.054	506.896
Rough Terrain Forklifts	500	0.178	0.962	3.542	0.005	0.078	0.072	501.213
Rubber Tired Dozers	175	0.968	4.249	9.853	0.005	0.566	0.521	507.774
Rubber Tired Dozers	250	0.736	2.729	7.995	0.005	0.395	0.364	509.462
Rubber Tired Dozers	500	0.688	5.828	7.710	0.005	0.359	0.330	513.311
Rubber Tired Dozers	750	0.523	2.765	7.168	0.005	0.260	0.239	507.260
Rubber Tired Dozers	1000	0.631	2.723	6.277	0.005	0.208	0.208	568.300
Rubber Tired Loaders	25	2.055	7.791	6.053	0.005	0.660	0.607	561.903
Rubber Tired Loaders	50	2.055	7.791	6.053	0.005	0.660	0.607	561.903
Rubber Tired Loaders	120	0.803	4.212	6.583	0.005	0.565	0.520	499.594
Rubber Tired Loaders	175	0.565	3.562	5.726	0.005	0.319	0.294	505.131

Rubber Tired Loaders	250	0.393	1.452	5.115	0.005	0.175	0.161	503.654
Rubber Tired Loaders	500	0.391	2.155	4.627	0.005	0.174	0.160	500.431
Rubber Tired Loaders	750	0.373	1.703	4.172	0.005	0.164	0.151	491.918
Rubber Tired Loaders	1000	0.425	1.464	6.724	0.005	0.198	0.182	504.780
Scrapers	120	0.742	4.173	7.143	0.005	0.543	0.500	519.167
Scrapers	175	0.688	3.781	7.384	0.005	0.397	0.365	513.436
Scrapers	250	0.684	2.840	8.109	0.005	0.367	0.338	502.255
Scrapers	500	0.452	3.606	5.757	0.005	0.232	0.214	506.350
Scrapers	750	0.340	2.482	4.484	0.005	0.168	0.154	506.638
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	1.306	4.921	4.761	0.007	0.343	0.343	568.299
Signal Boards	120	0.618	3.594	4.414	0.006	0.330	0.330	568.299
Signal Boards	175	0.430	3.047	3.708	0.006	0.183	0.183	568.299
Signal Boards	250	0.354	1.344	3.894	0.007	0.114	0.114	686.695
Skid Steer Loaders	25	0.599	3.957	4.268	0.005	0.241	0.221	565.228
Skid Steer Loaders	50	0.599	3.957	4.268	0.005	0.241	0.221	565.228
Skid Steer Loaders	120	0.273	3.328	3.534	0.005	0.197	0.182	506.297
Surfacing Equipment	50	1.045	4.763	5.273	0.006	0.406	0.374	570.815
Surfacing Equipment	120	0.522	3.550	5.051	0.005	0.349	0.321	505.087
Surfacing Equipment	175	0.458	3.006	5.458	0.005	0.265	0.244	504.558
Surfacing Equipment	250	0.307	1.429	5.048	0.005	0.148	0.137	510.706
Surfacing Equipment	500	0.217	1.425	3.468	0.005	0.111	0.102	502.471
Surfacing Equipment	750	0.162	1.000	2.880	0.005	0.093	0.085	506.967
Sweepers/Scrubbers	15	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	25	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	50	1.781	6.785	5.726	0.005	0.603	0.555	563.269
Sweepers/Scrubbers	120	0.783	4.059	6.454	0.005	0.571	0.525	508.357
Sweepers/Scrubbers	175	0.746	3.839	7.787	0.005	0.419	0.385	507.292
Sweepers/Scrubbers	250	0.521	2.089	6.782	0.005	0.270	0.248	504.080
Tractors/Loaders/Backhoes	25	1.250	5.741	5.214	0.005	0.455	0.418	553.400

Tractors/Loaders/Backhoes	50	1.250	5.741	5.214	0.005	0.455	0.418	553.400
Tractors/Loaders/Backhoes	120	0.538	3.811	5.142	0.005	0.396	0.364	511.346
Tractors/Loaders/Backhoes	175	0.389	3.232	4.379	0.005	0.222	0.204	502.629
Tractors/Loaders/Backhoes	250	0.311	1.347	4.426	0.005	0.145	0.133	504.401
Tractors/Loaders/Backhoes	500	0.284	1.786	3.787	0.005	0.131	0.121	505.270
Tractors/Loaders/Backhoes	750	0.300	1.674	4.022	0.005	0.144	0.133	500.955
Trenchers	15	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	25	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	50	1.219	5.285	5.298	0.005	0.475	0.437	565.994
Trenchers	120	0.788	3.988	6.902	0.005	0.541	0.498	509.903
Trenchers	175	0.583	3.507	6.503	0.005	0.328	0.302	501.781
Trenchers	250	0.487	2.030	6.312	0.005	0.251	0.231	507.145
Trenchers	500	0.296	1.966	4.099	0.005	0.150	0.138	504.410
Trenchers	750	0.120	0.971	1.630	0.005	0.054	0.050	509.143
Welders	15	0.809	3.622	5.023	0.008	0.289	0.289	568.299
Welders	25	0.855	2.604	4.803	0.007	0.255	0.255	568.299
Welders	50	1.540	5.395	4.936	0.007	0.389	0.389	568.299
Welders	120	0.699	3.705	4.692	0.006	0.375	0.375	568.300
Welders	175	0.486	3.128	3.973	0.006	0.206	0.206	568.299
Welders	250	0.330	1.153	3.481	0.006	0.104	0.104	568.299
Welders	500	0.306	1.134	3.032	0.005	0.097	0.097	568.299
Water Trucks	175	0.473	3.459	4.647	0.005	0.258	0.237	503.552
Water Trucks	250	0.446	1.824	4.826	0.005	0.208	0.191	502.473
Water Trucks	500	0.351	1.885	4.048	0.005	0.153	0.141	509.860
Water Trucks	750	0.418	2.436	4.642	0.005	0.187	0.172	508.392
Water Trucks	1000	0.393	1.707	6.035	0.005	0.175	0.161	505.722

2017

g/hp/hr	g/hp/hr
CH4	N2O
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.023	0.004
0.073	0.005
0.077	0.005
0.150	0.005
0.067	0.004
0.047	0.004
0.032	0.004
0.030	0.004
0.030	0.004
0.034	0.004
0.175	0.005
0.175	0.005
0.175	0.005
0.148	0.004
0.154	0.004
0.152	0.004
0.149	0.004
0.155	0.004
0.153	0.004

2017		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.209	3.169
Aerial Lifts	25	0.209	3.169
Aerial Lifts	50	0.209	3.169
Aerial Lifts	120	0.143	3.184
Aerial Lifts	500	0.246	0.997
Aerial Lifts	750	0.239	1.059
Air Compressors	15	0.786	3.599
Air Compressors	25	0.830	2.564
Air Compressors	50	1.481	5.604
Air Compressors	120	0.671	3.772
Air Compressors	175	0.477	3.207
Air Compressors	250	0.339	1.162
Air Compressors	500	0.321	1.123
Air Compressors	750	0.323	1.123
Air Compressors	1000	0.362	1.246
Bore/Drill Rigs	15	0.804	4.652
Bore/Drill Rigs	25	0.804	4.652
Bore/Drill Rigs	50	0.804	4.652
Bore/Drill Rigs	120	0.298	3.331
Bore/Drill Rigs	175	0.245	3.001
Bore/Drill Rigs	250	0.174	1.102
Bore/Drill Rigs	500	0.166	1.119
Bore/Drill Rigs	750	0.155	1.137
Bore/Drill Rigs	1000	0.121	0.971

0.059	0.005
0.071	0.005
0.061	0.005
0.119	0.005
0.055	0.004
0.039	0.004
0.168	0.005
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.167	0.005
0.154	0.004
0.153	0.004
0.153	0.004
0.154	0.004
0.153	0.004
0.154	0.004
0.143	0.005
0.065	0.004
0.046	0.004
0.032	0.004
0.030	0.004
0.030	0.004
0.035	0.004

Cement and Mortar Mixers	15	0.661	3.469
Cement and Mortar Mixers	25	0.767	2.466
Concrete/Industrial Saws	25	0.685	2.340
Concrete/Industrial Saws	50	1.175	4.894
Concrete/Industrial Saws	120	0.557	3.595
Concrete/Industrial Saws	175	0.395	3.073
Cranes	50	2.173	7.408
Cranes	120	1.097	4.710
Cranes	175	0.696	3.787
Cranes	250	0.561	2.385
Cranes	500	0.410	3.547
Cranes	750	0.287	1.633
Cranes	9999	0.152	0.974
Crawler Tractors	50	2.459	8.006
Crawler Tractors	120	0.849	4.176
Crawler Tractors	175	0.614	3.483
Crawler Tractors	250	0.430	1.742
Crawler Tractors	500	0.385	2.635
Crawler Tractors	750	0.324	1.522
Crawler Tractors	1000	0.486	2.100
Crushing/Proc. Equipment	50	1.402	5.623
Crushing/Proc. Equipment	120	0.647	3.791
Crushing/Proc. Equipment	175	0.468	3.236
Crushing/Proc. Equipment	250	0.340	1.160
Crushing/Proc. Equipment	500	0.324	1.118
Crushing/Proc. Equipment	750	0.323	1.114
Crushing/Proc. Equipment	9999	0.378	1.231

0.062	0.005
0.170	0.005
0.170	0.005
0.151	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.151	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.065	0.005
0.069	0.005
0.103	0.005
0.052	0.004
0.035	0.004
0.023	0.004
0.021	0.004
0.022	0.004
0.029	0.004
0.159	0.005
0.152	0.004
0.156	0.004
0.154	0.004
0.153	0.004
0.035	0.004
0.154	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.152	0.004

Dumpers/Tenders	25	0.687	2.340
Excavators	25	0.771	4.889
Excavators	50	0.771	4.889
Excavators	120	0.440	3.639
Excavators	175	0.334	3.151
Excavators	250	0.247	1.249
Excavators	500	0.200	1.199
Excavators	750	0.210	1.228
Forklifts	50	1.703	6.673
Forklifts	120	0.672	3.979
Forklifts	175	0.508	3.452
Forklifts	250	0.496	2.092
Forklifts	500	0.338	2.508
Generator Sets	15	0.699	3.599
Generator Sets	25	0.757	2.564
Generator Sets	50	1.017	4.292
Generator Sets	120	0.520	3.442
Generator Sets	175	0.356	2.931
Generator Sets	250	0.245	1.063
Generator Sets	500	0.224	1.048
Generator Sets	750	0.230	1.048
Generator Sets	9999	0.301	1.161
Graders	50	3.007	8.978
Graders	120	1.164	4.810
Graders	175	0.757	3.845
Graders	250	0.396	1.449
Graders	500	0.334	1.707
Graders	750	0.372	1.323
Off-Highway Tractors	120	0.586	3.901
Off-Highway Tractors	175	0.356	3.259
Off-Highway Tractors	250	0.328	1.403
Off-Highway Tractors	750	0.248	1.145
Off-Highway Tractors	1000	0.118	0.985
Off-Highway Trucks	175	0.441	3.436
Off-Highway Trucks	250	0.417	1.753

0.154	0.004	Off-Highway Trucks	500	0.325	1.748
0.153	0.004	Off-Highway Trucks	750	0.394	2.356
0.153	0.004	Off-Highway Trucks	1000	0.362	1.546
0.171	0.005	Other Construction Equipment	15	1.244	5.655
0.171	0.005	Other Construction Equipment	25	1.244	5.655
0.171	0.005	Other Construction Equipment	50	1.244	5.655
0.152	0.004	Other Construction Equipment	120	0.676	3.885
0.152	0.004	Other Construction Equipment	175	0.500	3.338
0.154	0.004	Other Construction Equipment	500	0.290	2.121
0.170	0.005	Other General Industrial Equipment	15	1.349	6.179
0.170	0.005	Other General Industrial Equipment	25	1.349	6.179
0.170	0.005	Other General Industrial Equipment	50	1.349	6.179
0.152	0.004	Other General Industrial Equipment	120	0.660	3.998
0.153	0.004	Other General Industrial Equipment	175	0.437	3.399
0.153	0.004	Other General Industrial Equipment	250	0.411	1.780
0.153	0.004	Other General Industrial Equipment	500	0.334	2.365

0.153	0.004	Other General Industrial Equipment	750	0.219	1.480
0.153	0.004	Other General Industrial Equipment	1000	0.251	1.057
0.169	0.005	Other Material Handling Equipment	50	1.615	6.635
0.153	0.004	Other Material Handling Equipment	120	0.488	3.758
0.153	0.004	Other Material Handling Equipment	175	0.427	3.351
0.153	0.004	Other Material Handling Equipment	250	0.359	1.512
0.152	0.004	Other Material Handling Equipment	500	0.325	1.863
0.153	0.004	Other Material Handling Equipment	9999	0.169	1.010
0.171	0.005	Pavers	25	1.731	6.199
0.171	0.005	Pavers	50	1.731	6.199
0.152	0.004	Pavers	120	0.625	3.759
0.153	0.004	Pavers	175	0.389	3.063
0.153	0.004	Pavers	250	0.208	1.037
0.151	0.004	Pavers	500	0.168	0.979
0.168	0.005	Paving Equipment	25	0.926	4.804
0.168	0.005	Paving Equipment	50	0.926	4.804
0.153	0.004	Paving Equipment	120	0.563	3.741
0.152	0.004	Paving Equipment	175	0.343	3.073
0.153	0.004	Paving Equipment	250	0.288	1.333
0.059	0.005	Plate Compactors	15	0.661	3.469
0.065	0.005	Pressure Washers	15	0.699	3.599
0.069	0.005	Pressure Washers	25	0.757	2.564
0.078	0.005	Pressure Washers	50	0.760	3.632
0.045	0.004	Pressure Washers	120	0.444	3.283
0.034	0.004	Pressure Washers	175	0.346	2.910

0.009	0.004
0.073	0.005
0.077	0.005
0.111	0.005
0.055	0.004
0.037	0.004
0.025	0.004
0.022	0.004
0.023	0.004
0.030	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.155	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.151	0.004
0.153	0.004
0.154	0.004
0.155	0.004
0.153	0.004
0.057	0.004
0.170	0.005
0.170	0.005
0.151	0.004
0.152	0.004

Pressure Washers	250	0.102	0.986
Pumps	15	0.786	3.599
Pumps	25	0.830	2.564
Pumps	50	1.104	4.514
Pumps	120	0.546	3.495
Pumps	175	0.376	2.975
Pumps	250	0.260	1.080
Pumps	500	0.239	1.062
Pumps	750	0.244	1.062
Pumps	9999	0.313	1.177
Rollers	15	1.198	5.147
Rollers	25	1.198	5.147
Rollers	50	1.198	5.147
Rollers	120	0.580	3.713
Rollers	175	0.314	2.981
Rollers	250	0.274	1.408
Rollers	500	0.297	2.685
Rough Terrain Forklifts	50	1.108	4.833
Rough Terrain Forklifts	120	0.271	3.318
Rough Terrain Forklifts	175	0.194	2.866
Rough Terrain Forklifts	250	0.148	1.024
Rough Terrain Forklifts	500	0.182	0.966
Rubber Tired Dozers	175	0.903	4.149
Rubber Tired Dozers	250	0.707	2.655
Rubber Tired Dozers	500	0.662	5.526
Rubber Tired Dozers	750	0.526	2.767
Rubber Tired Dozers	1000	0.602	2.560
Rubber Tired Loaders	25	1.957	7.660
Rubber Tired Loaders	50	1.957	7.660
Rubber Tired Loaders	120	0.757	4.171
Rubber Tired Loaders	175	0.522	3.518

0.152	0.004
0.151	0.004
0.148	0.004
0.152	0.004
0.157	0.004
0.155	0.004
0.152	0.004
0.153	0.004
0.153	0.004
0.059	0.005
0.117	0.005
0.055	0.004
0.038	0.004
0.031	0.004
0.171	0.005
0.171	0.005
0.153	0.004
0.172	0.005
0.152	0.004
0.152	0.004
0.154	0.004
0.152	0.004
0.153	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.152	0.004
0.167	0.005

Rubber Tired Loaders	250	0.373	1.417
Rubber Tired Loaders	500	0.369	2.060
Rubber Tired Loaders	750	0.367	1.700
Rubber Tired Loaders	1000	0.415	1.456
Scrapers	120	0.754	4.207
Scrapers	175	0.629	3.705
Scrapers	250	0.627	2.647
Scrapers	500	0.425	3.337
Scrapers	750	0.325	2.295
Signal Boards	15	0.661	3.469
Signal Boards	50	1.158	4.785
Signal Boards	120	0.553	3.566
Signal Boards	175	0.388	3.044
Signal Boards	250	0.330	1.323
Skid Steer Loaders	25	0.568	3.919
Skid Steer Loaders	50	0.568	3.919
Skid Steer Loaders	120	0.255	3.319
Surfacing Equipment	50	0.928	4.603
Surfacing Equipment	120	0.508	3.556
Surfacing Equipment	175	0.455	3.003
Surfacing Equipment	250	0.274	1.343
Surfacing Equipment	500	0.204	1.396
Surfacing Equipment	750	0.160	1.003
Sweepers/Scrubbers	15	1.712	6.719
Sweepers/Scrubbers	25	1.712	6.719
Sweepers/Scrubbers	50	1.712	6.719
Sweepers/Scrubbers	120	0.721	4.010
Sweepers/Scrubbers	175	0.711	3.784
Sweepers/Scrubbers	250	0.513	2.090
Tractors/Loaders/Backhoes	25	1.194	5.689

0.167	0.005
0.154	0.004
0.152	0.004
0.152	0.004
0.152	0.004
0.151	0.004
0.171	0.005
0.171	0.005
0.171	0.005
0.154	0.004
0.151	0.004
0.153	0.004
0.152	0.004
0.154	0.004
0.073	0.005
0.077	0.005
0.138	0.005
0.063	0.004
0.043	0.004
0.029	0.004
0.027	0.004
0.152	0.004
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004

Tractors/Loaders/Backhoes	50	1.194	5.689
Tractors/Loaders/Backhoes	120	0.501	3.782
Tractors/Loaders/Backhoes	175	0.354	3.200
Tractors/Loaders/Backhoes	250	0.291	1.304
Tractors/Loaders/Backhoes	500	0.272	1.739
Tractors/Loaders/Backhoes	750	0.296	1.646
Trenchers	15	1.149	5.197
Trenchers	25	1.149	5.197
Trenchers	50	1.149	5.197
Trenchers	120	0.762	3.968
Trenchers	175	0.536	3.434
Trenchers	250	0.486	2.037
Trenchers	500	0.265	1.966
Trenchers	750	0.114	0.972
Welders	15	0.786	3.599
Welders	25	0.830	2.564
Welders	50	1.372	5.239
Welders	120	0.630	3.675
Welders	175	0.442	3.124
Welders	250	0.310	1.133
Welders	500	0.290	1.102
Water Trucks	175	0.441	3.436
Water Trucks	250	0.417	1.753
Water Trucks	500	0.325	1.748
Water Trucks	750	0.394	2.356
Water Trucks	1000	0.362	1.546

2018

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2018
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
3.470	0.005	0.079	0.073	554.245	0.170	0.005	Aerial Lifts
2.364	0.005	0.083	0.077	498.343	0.153	0.004	Aerial Lifts
4.658	0.005	0.105	0.096	498.280	0.153	0.004	Aerial Lifts
2.680	0.005	0.079	0.079	568.299	0.021	0.004	Aerial Lifts
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Air Compressors
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Air Compressors
4.871	0.007	0.371	0.371	568.299	0.133	0.005	Air Compressors
4.412	0.006	0.350	0.350	568.299	0.060	0.004	Air Compressors
3.627	0.006	0.194	0.194	568.299	0.043	0.004	Air Compressors
3.163	0.006	0.098	0.098	568.299	0.030	0.004	Air Compressors
2.755	0.005	0.092	0.092	568.299	0.029	0.004	Air Compressors
2.845	0.005	0.094	0.094	568.299	0.029	0.004	Air Compressors
4.583	0.005	0.121	0.121	568.299	0.032	0.004	Air Compressors
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
5.063	0.006	0.351	0.323	563.917	0.173	0.005	Bore/Drill Rigs
3.685	0.005	0.211	0.194	485.322	0.149	0.004	Bore/Drill Rigs
2.982	0.005	0.131	0.121	503.770	0.154	0.004	Bore/Drill Rigs
2.522	0.005	0.073	0.067	494.138	0.151	0.004	Bore/Drill Rigs
2.367	0.005	0.072	0.067	489.461	0.150	0.004	Bore/Drill Rigs
2.157	0.005	0.072	0.066	505.125	0.155	0.004	Bore/Drill Rigs
3.021	0.005	0.060	0.055	498.123	0.153	0.004	Bore/Drill Rigs

4.145	0.008	0.165	0.165	568.299	0.059	0.005	Cement and Mortar Mixers
4.567	0.007	0.216	0.216	568.299	0.069	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
4.652	0.007	0.313	0.313	568.299	0.106	0.005	Concrete/Industrial Saws
4.086	0.006	0.294	0.294	568.299	0.050	0.004	Concrete/Industrial Saws
3.316	0.006	0.165	0.165	568.299	0.035	0.004	Concrete/Industrial Saws
6.145	0.005	0.620	0.570	546.782	0.168	0.005	Cranes
9.154	0.005	0.678	0.624	495.753	0.152	0.004	Cranes
7.360	0.005	0.397	0.366	501.093	0.154	0.004	Cranes
6.655	0.005	0.297	0.273	499.372	0.153	0.004	Cranes
5.232	0.005	0.212	0.195	498.439	0.153	0.004	Cranes
4.158	0.005	0.147	0.135	497.187	0.152	0.004	Cranes
2.322	0.005	0.058	0.053	498.280	0.153	0.004	Cranes
6.208	0.005	0.712	0.655	544.676	0.167	0.005	Crawler Tractors
7.141	0.005	0.604	0.555	503.279	0.154	0.004	Crawler Tractors
6.552	0.005	0.364	0.335	498.125	0.153	0.004	Crawler Tractors
5.760	0.005	0.220	0.202	499.832	0.153	0.004	Crawler Tractors
5.029	0.005	0.195	0.179	502.422	0.154	0.004	Crawler Tractors
4.361	0.005	0.160	0.147	499.105	0.153	0.004	Crawler Tractors
7.532	0.005	0.223	0.206	501.878	0.154	0.004	Crawler Tractors
4.827	0.007	0.354	0.354	568.299	0.126	0.005	Crushing/Proc. Equipment
4.244	0.006	0.330	0.330	568.299	0.058	0.004	Crushing/Proc. Equipment
3.450	0.006	0.185	0.185	568.299	0.042	0.004	Crushing/Proc. Equipment
2.987	0.006	0.094	0.094	568.299	0.030	0.004	Crushing/Proc. Equipment
2.602	0.005	0.088	0.088	568.299	0.029	0.004	Crushing/Proc. Equipment
2.664	0.005	0.088	0.088	568.299	0.029	0.004	Crushing/Proc. Equipment
4.423	0.005	0.117	0.117	568.299	0.034	0.004	Crushing/Proc. Equipment

4.362	0.007	0.171	0.171	568.299	0.062	0.005	Dumpers/Tenders
4.678	0.005	0.332	0.305	554.910	0.170	0.005	Excavators
4.678	0.005	0.332	0.305	554.910	0.170	0.005	Excavators
4.380	0.005	0.310	0.286	493.409	0.151	0.004	Excavators
3.700	0.005	0.182	0.168	498.522	0.153	0.004	Excavators
3.319	0.005	0.105	0.097	498.436	0.153	0.004	Excavators
2.507	0.005	0.081	0.075	496.810	0.152	0.004	Excavators
2.719	0.005	0.090	0.083	494.550	0.152	0.004	Excavators
5.450	0.005	0.536	0.493	554.677	0.170	0.005	Forklifts
5.818	0.005	0.480	0.442	497.725	0.153	0.004	Forklifts
5.362	0.005	0.294	0.270	498.334	0.153	0.004	Forklifts
5.751	0.005	0.252	0.232	499.621	0.153	0.004	Forklifts
3.780	0.005	0.161	0.148	499.927	0.153	0.004	Forklifts
4.847	0.008	0.250	0.250	568.299	0.063	0.005	Generator Sets
4.729	0.007	0.233	0.233	568.299	0.068	0.005	Generator Sets
4.522	0.007	0.285	0.285	568.299	0.091	0.005	Generator Sets
4.072	0.006	0.274	0.274	568.299	0.046	0.004	Generator Sets
3.347	0.006	0.151	0.151	568.299	0.032	0.004	Generator Sets
2.910	0.006	0.081	0.081	568.299	0.022	0.004	Generator Sets
2.579	0.005	0.076	0.076	568.299	0.020	0.004	Generator Sets
2.660	0.005	0.077	0.077	568.299	0.020	0.004	Generator Sets
4.293	0.005	0.104	0.104	568.299	0.027	0.004	Generator Sets
6.423	0.005	0.843	0.776	520.075	0.159	0.005	Graders
9.191	0.005	0.759	0.698	495.919	0.152	0.004	Graders
7.663	0.005	0.430	0.396	506.748	0.155	0.004	Graders
5.525	0.005	0.180	0.166	503.802	0.154	0.004	Graders
3.557	0.005	0.139	0.128	498.600	0.153	0.004	Graders
2.835	0.005	0.100	0.100	568.299	0.033	0.004	Graders
5.317	0.005	0.423	0.389	501.245	0.154	0.004	Off-Highway Tractors
4.026	0.005	0.205	0.189	499.245	0.153	0.004	Off-Highway Tractors
4.382	0.005	0.151	0.139	496.498	0.152	0.004	Off-Highway Tractors
3.324	0.005	0.112	0.103	497.618	0.153	0.004	Off-Highway Tractors
2.340	0.005	0.059	0.054	498.280	0.153	0.004	Off-Highway Tractors
4.236	0.005	0.233	0.215	495.924	0.152	0.004	Off-Highway Trucks
4.368	0.005	0.189	0.174	494.794	0.152	0.004	Off-Highway Trucks

3.668	0.005	0.136	0.125	501.437	0.154	0.004	Off-Highway Trucks
4.257	0.005	0.170	0.157	500.199	0.153	0.004	Off-Highway Trucks
5.653	0.005	0.159	0.146	497.115	0.152	0.004	Off-Highway Trucks
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
5.421	0.005	0.477	0.439	558.001	0.171	0.005	Other Construction Equipment
6.070	0.005	0.475	0.437	497.383	0.152	0.004	Other Construction Equipment
5.494	0.005	0.290	0.267	495.931	0.152	0.004	Other Construction Equipment
3.777	0.005	0.138	0.127	501.130	0.154	0.004	Other Construction Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.277	0.005	0.479	0.441	555.408	0.170	0.005	Other General Industrial Equipment
5.721	0.005	0.471	0.433	496.111	0.152	0.004	Other General Industrial Equipment
4.534	0.005	0.250	0.230	498.064	0.153	0.004	Other General Industrial Equipment
5.022	0.005	0.199	0.183	499.513	0.153	0.004	Other General Industrial Equipment
3.949	0.005	0.152	0.140	499.203	0.153	0.004	Other General Industrial Equipment

2.592	0.005	0.086	0.079	499.767	0.153	0.004	Other General Industrial Equipment
4.787	0.005	0.115	0.105	498.280	0.153	0.004	Other General Industrial Equipment
5.574	0.005	0.546	0.502	552.804	0.169	0.005	Other Material Handling Equipment
4.561	0.005	0.341	0.314	499.899	0.153	0.004	Other Material Handling Equipment
4.488	0.005	0.238	0.219	498.454	0.153	0.004	Other Material Handling Equipment
4.705	0.005	0.163	0.150	497.676	0.153	0.004	Other Material Handling Equipment
3.971	0.005	0.154	0.141	496.425	0.152	0.004	Other Material Handling Equipment
3.520	0.005	0.072	0.067	498.280	0.153	0.004	Other Material Handling Equipment
5.437	0.005	0.540	0.497	556.453	0.171	0.005	Pavers
5.437	0.005	0.540	0.497	556.453	0.171	0.005	Pavers
5.692	0.005	0.437	0.402	495.925	0.152	0.004	Pavers
4.353	0.005	0.214	0.197	498.967	0.153	0.004	Pavers
3.809	0.005	0.100	0.092	499.562	0.153	0.004	Pavers
2.487	0.005	0.087	0.081	491.784	0.151	0.004	Pavers
4.728	0.005	0.359	0.331	548.648	0.168	0.005	Paving Equipment
4.728	0.005	0.359	0.331	548.648	0.168	0.005	Paving Equipment
5.207	0.005	0.391	0.359	500.165	0.153	0.004	Paving Equipment
3.896	0.005	0.195	0.179	497.148	0.152	0.004	Paving Equipment
4.121	0.005	0.142	0.130	498.732	0.153	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.847	0.008	0.250	0.250	568.299	0.063	0.005	Pressure Washers
4.729	0.007	0.233	0.233	568.299	0.068	0.005	Pressure Washers
4.355	0.007	0.240	0.240	568.299	0.068	0.005	Pressure Washers
3.888	0.006	0.233	0.233	568.300	0.040	0.004	Pressure Washers
3.349	0.006	0.149	0.149	568.299	0.031	0.004	Pressure Washers

0.317	0.006	0.009	0.009	568.299	0.009	0.004	Pressure Washers
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Pumps
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Pumps
4.578	0.007	0.301	0.301	568.299	0.099	0.005	Pumps
4.134	0.006	0.287	0.287	568.299	0.049	0.004	Pumps
3.400	0.006	0.159	0.159	568.299	0.033	0.004	Pumps
2.958	0.006	0.084	0.084	568.299	0.023	0.004	Pumps
2.613	0.005	0.079	0.079	568.299	0.021	0.004	Pumps
2.695	0.005	0.080	0.080	568.299	0.022	0.004	Pumps
4.343	0.005	0.106	0.106	568.299	0.028	0.004	Pumps
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.098	0.005	0.436	0.401	555.020	0.170	0.005	Rollers
5.411	0.005	0.392	0.361	500.153	0.153	0.004	Rollers
3.874	0.005	0.180	0.166	497.909	0.153	0.004	Rollers
3.921	0.005	0.129	0.119	499.702	0.153	0.004	Rollers
3.840	0.005	0.150	0.138	505.832	0.155	0.004	Rollers
4.903	0.005	0.382	0.352	554.623	0.170	0.005	Rough Terrain Forklifts
3.418	0.005	0.182	0.167	499.168	0.153	0.004	Rough Terrain Forklifts
2.902	0.005	0.112	0.103	497.777	0.153	0.004	Rough Terrain Forklifts
2.474	0.005	0.059	0.054	499.001	0.153	0.004	Rough Terrain Forklifts
3.568	0.005	0.079	0.073	493.336	0.151	0.004	Rough Terrain Forklifts
9.129	0.005	0.525	0.483	499.410	0.153	0.004	Rubber Tired Dozers
7.671	0.005	0.376	0.345	501.548	0.154	0.004	Rubber Tired Dozers
7.333	0.005	0.341	0.313	505.849	0.155	0.004	Rubber Tired Dozers
7.172	0.005	0.260	0.239	499.367	0.153	0.004	Rubber Tired Dozers
6.013	0.005	0.195	0.195	568.299	0.054	0.004	Rubber Tired Dozers
5.954	0.005	0.633	0.582	553.583	0.170	0.005	Rubber Tired Loaders
5.954	0.005	0.633	0.582	553.583	0.170	0.005	Rubber Tired Loaders
6.236	0.005	0.530	0.487	491.853	0.151	0.004	Rubber Tired Loaders
5.195	0.005	0.290	0.266	497.353	0.152	0.004	Rubber Tired Loaders

4.755	0.005	0.162	0.149	495.950	0.152	0.004	Rubber Tired Loaders
4.253	0.005	0.160	0.148	492.276	0.151	0.004	Rubber Tired Loaders
4.050	0.005	0.160	0.147	484.366	0.148	0.004	Rubber Tired Loaders
6.553	0.005	0.192	0.177	496.897	0.152	0.004	Rubber Tired Loaders
7.179	0.005	0.551	0.507	511.112	0.157	0.004	Scrapers
6.671	0.005	0.359	0.331	505.331	0.155	0.004	Scrapers
7.399	0.005	0.333	0.306	494.523	0.152	0.004	Scrapers
5.340	0.005	0.214	0.197	498.457	0.153	0.004	Scrapers
4.216	0.005	0.156	0.143	498.693	0.153	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
4.590	0.007	0.306	0.306	568.299	0.104	0.005	Signal Boards
4.059	0.006	0.290	0.290	568.299	0.049	0.004	Signal Boards
3.305	0.006	0.161	0.161	568.299	0.035	0.004	Signal Boards
3.452	0.007	0.101	0.101	686.695	0.029	0.004	Signal Boards
4.113	0.005	0.218	0.200	556.714	0.171	0.005	Skid Steer Loaders
4.113	0.005	0.218	0.200	556.714	0.171	0.005	Skid Steer Loaders
3.286	0.005	0.177	0.163	498.326	0.153	0.004	Skid Steer Loaders
5.064	0.006	0.365	0.336	564.477	0.173	0.005	Surfacing Equipment
4.942	0.005	0.337	0.310	498.360	0.153	0.004	Surfacing Equipment
5.393	0.005	0.264	0.243	496.274	0.152	0.004	Surfacing Equipment
4.468	0.005	0.129	0.119	501.847	0.154	0.004	Surfacing Equipment
3.106	0.005	0.103	0.094	496.885	0.152	0.004	Surfacing Equipment
2.770	0.005	0.090	0.083	499.712	0.153	0.004	Surfacing Equipment
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
5.626	0.005	0.582	0.535	554.513	0.170	0.005	Sweepers/Scrubbers
6.020	0.005	0.520	0.479	500.456	0.153	0.004	Sweepers/Scrubbers
7.424	0.005	0.395	0.363	499.407	0.153	0.004	Sweepers/Scrubbers
6.509	0.005	0.264	0.243	496.244	0.152	0.004	Sweepers/Scrubbers
5.110	0.005	0.433	0.399	544.929	0.167	0.005	Tractors/Loaders/Backhoes

5.110	0.005	0.433	0.399	544.929	0.167	0.005	Tractors/Loaders/Backhoes
4.809	0.005	0.362	0.333	502.795	0.154	0.004	Tractors/Loaders/Backhoes
3.879	0.005	0.197	0.182	493.912	0.151	0.004	Tractors/Loaders/Backhoes
4.041	0.005	0.132	0.121	496.845	0.152	0.004	Tractors/Loaders/Backhoes
3.490	0.005	0.122	0.112	497.113	0.152	0.004	Tractors/Loaders/Backhoes
3.862	0.005	0.139	0.128	492.953	0.151	0.004	Tractors/Loaders/Backhoes
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
5.166	0.005	0.449	0.413	557.460	0.171	0.005	Trenchers
6.679	0.005	0.523	0.481	501.992	0.154	0.004	Trenchers
5.927	0.005	0.300	0.276	493.764	0.151	0.004	Trenchers
6.194	0.005	0.250	0.230	499.228	0.153	0.004	Trenchers
3.442	0.005	0.129	0.119	497.020	0.152	0.004	Trenchers
1.430	0.005	0.046	0.042	501.183	0.154	0.004	Trenchers
4.887	0.008	0.272	0.272	568.299	0.070	0.005	Welders
4.729	0.007	0.243	0.243	568.299	0.074	0.005	Welders
4.768	0.007	0.350	0.350	568.299	0.123	0.005	Welders
4.328	0.006	0.332	0.332	568.299	0.056	0.004	Welders
3.562	0.006	0.183	0.183	568.299	0.039	0.004	Welders
3.105	0.006	0.094	0.094	568.299	0.028	0.004	Welders
2.713	0.005	0.088	0.088	568.299	0.026	0.004	Welders
4.236	0.005	0.233	0.215	495.924	0.152	0.004	Water Trucks
4.368	0.005	0.189	0.174	494.794	0.152	0.004	Water Trucks
3.668	0.005	0.136	0.125	501.437	0.154	0.004	Water Trucks
4.257	0.005	0.170	0.157	500.199	0.153	0.004	Water Trucks
5.653	0.005	0.159	0.146	497.115	0.152	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
25	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
50	0.182	3.116	3.210	0.005	0.054	0.050	545.494	0.170	0.005
120	0.122	3.167	2.064	0.005	0.057	0.053	490.474	0.153	0.004
500	0.062	0.937	0.634	0.005	0.009	0.008	490.412	0.153	0.004
750	0.225	1.037	2.385	0.005	0.071	0.071	568.299	0.020	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.299	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.300	0.072	0.005
50	1.300	5.439	4.707	0.007	0.329	0.329	568.299	0.117	0.005
120	0.603	3.744	4.050	0.006	0.304	0.304	568.300	0.054	0.004
175	0.435	3.205	3.228	0.006	0.170	0.170	568.299	0.039	0.004
250	0.321	1.146	2.797	0.006	0.087	0.087	568.300	0.029	0.004
500	0.307	1.101	2.465	0.005	0.083	0.083	568.299	0.027	0.004
750	0.309	1.101	2.533	0.005	0.084	0.084	568.299	0.027	0.004
1000	0.343	1.210	4.325	0.005	0.111	0.111	568.299	0.030	0.004
15	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
25	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
50	0.767	4.569	4.869	0.006	0.329	0.303	554.204	0.173	0.005
120	0.269	3.323	3.400	0.005	0.184	0.170	479.672	0.149	0.004
175	0.203	2.961	2.357	0.005	0.103	0.095	495.073	0.154	0.004
250	0.155	1.073	2.153	0.005	0.061	0.056	484.561	0.151	0.004
500	0.135	1.032	1.746	0.005	0.052	0.048	485.689	0.151	0.004
750	0.126	1.006	1.679	0.005	0.055	0.050	489.730	0.153	0.004
1000	0.125	0.978	3.032	0.005	0.060	0.056	490.243	0.153	0.004

15	0.661	3.469	4.142	0.008	0.163	0.163	568.299	0.059	0.005
25	0.749	2.440	4.504	0.007	0.205	0.205	568.299	0.067	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	1.032	4.766	4.492	0.007	0.277	0.277	568.299	0.093	0.005
120	0.498	3.571	3.754	0.006	0.256	0.256	568.299	0.044	0.004
175	0.359	3.072	2.945	0.006	0.145	0.145	568.299	0.032	0.004
50	2.072	7.247	6.004	0.005	0.624	0.574	538.122	0.168	0.005
120	0.932	4.452	7.931	0.005	0.583	0.536	488.117	0.152	0.004
175	0.621	3.666	6.557	0.005	0.351	0.323	493.045	0.154	0.004
250	0.483	2.134	5.773	0.005	0.250	0.230	491.407	0.153	0.004
500	0.370	3.187	4.634	0.005	0.187	0.172	490.891	0.153	0.004
750	0.271	1.613	3.769	0.005	0.137	0.126	489.054	0.152	0.004
9999	0.162	0.983	2.335	0.005	0.059	0.054	490.412	0.153	0.004
50	2.446	8.009	6.163	0.005	0.704	0.648	536.141	0.167	0.005
120	0.798	4.123	6.723	0.005	0.566	0.521	494.922	0.154	0.004
175	0.555	3.421	5.859	0.005	0.326	0.299	490.000	0.153	0.004
250	0.398	1.654	5.290	0.005	0.200	0.184	491.606	0.153	0.004
500	0.344	2.382	4.373	0.005	0.169	0.156	493.510	0.154	0.004
750	0.296	1.445	3.834	0.005	0.142	0.130	491.266	0.153	0.004
1000	0.489	2.105	7.564	0.005	0.225	0.207	494.105	0.154	0.004
50	1.225	5.461	4.657	0.007	0.310	0.310	568.299	0.110	0.005
120	0.580	3.763	3.881	0.006	0.284	0.284	568.299	0.052	0.004
175	0.427	3.234	3.049	0.006	0.161	0.161	568.299	0.038	0.004
250	0.322	1.146	2.622	0.006	0.083	0.083	568.299	0.029	0.004
500	0.309	1.099	2.312	0.005	0.079	0.079	568.299	0.027	0.004
750	0.308	1.097	2.358	0.005	0.079	0.079	568.299	0.027	0.004
9999	0.361	1.198	4.168	0.005	0.107	0.107	568.299	0.032	0.004

25	0.686	2.339	4.350	0.007	0.169	0.169	568.299	0.061	0.005
25	0.687	4.700	4.395	0.005	0.284	0.261	545.347	0.170	0.005
50	0.687	4.700	4.395	0.005	0.284	0.261	545.347	0.170	0.005
120	0.368	3.562	3.764	0.005	0.251	0.230	486.056	0.151	0.004
175	0.273	3.093	2.924	0.005	0.142	0.130	490.673	0.153	0.004
250	0.202	1.152	2.594	0.005	0.079	0.073	490.257	0.153	0.004
500	0.175	1.140	2.050	0.005	0.066	0.061	489.103	0.152	0.004
750	0.189	1.224	2.266	0.005	0.076	0.070	487.653	0.152	0.004
50	1.393	6.103	5.052	0.005	0.447	0.411	545.919	0.170	0.005
120	0.567	3.858	5.015	0.005	0.400	0.368	489.866	0.153	0.004
175	0.427	3.336	4.430	0.005	0.241	0.222	490.466	0.153	0.004
250	0.425	1.835	4.938	0.005	0.207	0.191	491.733	0.153	0.004
500	0.282	1.878	3.019	0.005	0.125	0.115	492.034	0.153	0.004
15	0.679	3.580	4.728	0.008	0.237	0.237	568.299	0.061	0.005
25	0.744	2.531	4.661	0.007	0.224	0.224	568.299	0.067	0.005
50	0.895	4.182	4.366	0.007	0.253	0.253	568.299	0.080	0.005
120	0.461	3.418	3.752	0.006	0.239	0.239	568.299	0.041	0.004
175	0.319	2.930	2.989	0.006	0.133	0.133	568.299	0.028	0.004
250	0.226	1.048	2.582	0.006	0.072	0.072	568.299	0.020	0.004
500	0.211	1.028	2.310	0.005	0.069	0.069	568.299	0.019	0.004
750	0.215	1.028	2.370	0.005	0.070	0.070	568.299	0.019	0.004
9999	0.280	1.128	4.058	0.005	0.095	0.095	568.299	0.025	0.004
50	2.809	8.626	6.180	0.005	0.790	0.726	511.910	0.159	0.005
120	1.075	4.697	8.520	0.005	0.697	0.641	487.698	0.152	0.004
175	0.661	3.710	6.605	0.005	0.371	0.342	497.377	0.155	0.004
250	0.384	1.416	5.271	0.005	0.171	0.158	495.431	0.154	0.004
500	0.324	1.564	3.345	0.005	0.130	0.119	490.576	0.153	0.004
750	0.353	1.286	2.543	0.005	0.090	0.090	568.299	0.031	0.004
120	0.522	3.832	4.787	0.005	0.373	0.343	492.871	0.153	0.004
175	0.315	3.219	3.498	0.005	0.176	0.162	491.313	0.153	0.004
250	0.272	1.295	3.454	0.005	0.119	0.109	488.677	0.152	0.004
750	0.196	1.119	2.166	0.005	0.081	0.074	490.182	0.153	0.004
1000	0.129	0.998	2.359	0.005	0.060	0.055	490.412	0.153	0.004
175	0.383	3.383	3.543	0.005	0.192	0.177	488.044	0.152	0.004
250	0.341	1.543	3.451	0.005	0.141	0.130	487.635	0.152	0.004

500	0.287	1.560	3.090	0.005	0.113	0.104	493.506	0.154	0.004
750	0.348	2.176	3.691	0.005	0.143	0.132	492.114	0.153	0.004
1000	0.297	1.357	4.858	0.005	0.127	0.116	487.790	0.152	0.004
15	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
25	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
50	1.169	5.541	5.272	0.005	0.449	0.413	548.939	0.171	0.005
120	0.598	3.799	5.441	0.005	0.417	0.383	490.018	0.153	0.004
175	0.436	3.263	4.755	0.005	0.250	0.230	487.986	0.152	0.004
500	0.251	1.813	3.167	0.005	0.115	0.105	493.360	0.154	0.004
15	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
25	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
50	1.154	5.827	4.979	0.005	0.414	0.381	546.639	0.170	0.005
120	0.557	3.876	4.955	0.005	0.392	0.360	488.278	0.152	0.004
175	0.318	3.237	3.237	0.005	0.172	0.158	490.200	0.153	0.004
250	0.303	1.455	3.648	0.005	0.135	0.124	491.626	0.153	0.004
500	0.254	1.583	2.907	0.005	0.104	0.095	491.321	0.153	0.004

750	0.217	1.483	2.419	0.005	0.083	0.076	491.876	0.153	0.004
1000	0.257	1.066	4.810	0.005	0.116	0.107	490.412	0.153	0.004
50	1.289	6.061	5.182	0.005	0.457	0.420	544.075	0.169	0.005
120	0.407	3.675	3.944	0.005	0.271	0.249	492.006	0.153	0.004
175	0.327	3.218	3.332	0.005	0.173	0.159	490.583	0.153	0.004
250	0.316	1.388	4.092	0.005	0.135	0.124	489.817	0.153	0.004
500	0.296	1.633	3.524	0.005	0.134	0.123	488.587	0.152	0.004
9999	0.180	1.023	3.551	0.005	0.074	0.068	490.412	0.153	0.004
25	1.539	5.849	5.121	0.005	0.478	0.440	547.079	0.170	0.005
50	1.539	5.849	5.121	0.005	0.478	0.440	547.079	0.170	0.005
120	0.536	3.660	5.019	0.005	0.375	0.345	488.181	0.152	0.004
175	0.339	3.039	3.747	0.005	0.183	0.168	491.322	0.153	0.004
250	0.198	1.034	3.474	0.005	0.092	0.085	491.543	0.153	0.004
500	0.164	0.981	2.320	0.005	0.083	0.076	484.277	0.151	0.004
25	0.737	4.416	4.312	0.005	0.286	0.263	540.612	0.168	0.005
50	0.737	4.416	4.312	0.005	0.286	0.263	540.612	0.168	0.005
120	0.449	3.607	4.270	0.005	0.302	0.278	492.118	0.153	0.004
175	0.284	3.026	3.172	0.005	0.155	0.143	489.202	0.152	0.004
250	0.258	1.281	3.587	0.005	0.123	0.113	490.683	0.153	0.004
15	0.661	3.470	4.142	0.008	0.161	0.161	568.300	0.059	0.005
15	0.679	3.580	4.728	0.008	0.237	0.237	568.299	0.061	0.005
25	0.744	2.531	4.661	0.007	0.224	0.224	568.299	0.067	0.005
50	0.661	3.542	4.202	0.007	0.212	0.212	568.299	0.059	0.005
120	0.388	3.260	3.584	0.006	0.203	0.203	568.299	0.035	0.004
175	0.309	2.908	2.989	0.006	0.132	0.132	568.299	0.027	0.004

250	0.099	0.986	0.277	0.006	0.009	0.009	568.299	0.008	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.299	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.299	0.072	0.005
50	0.973	4.397	4.422	0.007	0.267	0.267	568.299	0.087	0.005
120	0.485	3.471	3.808	0.006	0.252	0.252	568.299	0.043	0.004
175	0.338	2.974	3.035	0.006	0.140	0.140	568.299	0.030	0.004
250	0.242	1.065	2.624	0.006	0.075	0.075	568.299	0.021	0.004
500	0.226	1.041	2.340	0.005	0.071	0.071	568.299	0.020	0.004
750	0.230	1.041	2.401	0.005	0.072	0.072	568.299	0.020	0.004
9999	0.293	1.144	4.105	0.005	0.098	0.098	568.299	0.026	0.004
15	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
25	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
50	1.064	4.923	4.842	0.005	0.387	0.356	546.291	0.170	0.005
120	0.481	3.610	4.650	0.005	0.320	0.294	492.212	0.153	0.004
175	0.265	2.949	3.181	0.005	0.147	0.136	490.181	0.153	0.004
250	0.211	1.243	2.995	0.005	0.094	0.086	491.664	0.153	0.004
500	0.245	2.231	3.098	0.005	0.119	0.110	497.996	0.155	0.004
50	1.070	4.768	4.735	0.005	0.359	0.330	545.869	0.170	0.005
120	0.222	3.270	2.845	0.005	0.136	0.125	491.211	0.153	0.004
175	0.164	2.842	2.342	0.005	0.088	0.081	489.987	0.153	0.004
250	0.152	1.029	2.487	0.005	0.060	0.055	491.100	0.153	0.004
500	0.145	0.958	2.701	0.005	0.060	0.055	485.954	0.151	0.004
175	0.802	3.990	8.021	0.005	0.461	0.424	491.492	0.153	0.004
250	0.669	2.512	7.208	0.005	0.350	0.322	493.634	0.154	0.004
500	0.598	4.982	6.502	0.005	0.300	0.276	498.186	0.155	0.004
750	0.506	2.759	6.727	0.005	0.248	0.228	491.473	0.153	0.004
1000	0.574	2.413	5.764	0.005	0.183	0.183	568.299	0.051	0.004
25	1.765	7.299	5.679	0.005	0.576	0.530	545.053	0.170	0.005
50	1.765	7.299	5.679	0.005	0.576	0.530	545.053	0.170	0.005
120	0.655	4.047	5.470	0.005	0.452	0.416	484.093	0.151	0.004
175	0.448	3.423	4.368	0.005	0.242	0.223	489.511	0.152	0.004

250	0.334	1.346	4.131	0.005	0.140	0.129	487.902	0.152	0.004
500	0.334	1.868	3.726	0.005	0.140	0.128	484.571	0.151	0.004
750	0.331	1.555	3.544	0.005	0.140	0.129	476.566	0.148	0.004
1000	0.336	1.213	5.673	0.005	0.154	0.142	488.404	0.152	0.004
120	0.740	4.204	7.036	0.005	0.543	0.499	502.829	0.157	0.004
175	0.539	3.568	5.641	0.005	0.303	0.279	497.340	0.155	0.004
250	0.557	2.407	6.563	0.005	0.290	0.267	486.991	0.152	0.004
500	0.369	2.828	4.568	0.005	0.180	0.166	490.773	0.153	0.004
750	0.294	1.965	3.746	0.005	0.135	0.124	490.578	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	1.018	4.657	4.427	0.007	0.270	0.270	568.299	0.091	0.005
120	0.492	3.541	3.723	0.006	0.252	0.252	568.299	0.044	0.004
175	0.351	3.043	2.930	0.006	0.141	0.141	568.299	0.031	0.004
250	0.309	1.306	3.040	0.007	0.090	0.090	686.695	0.027	0.004
25	0.487	3.787	3.890	0.005	0.178	0.164	547.558	0.171	0.005
50	0.487	3.787	3.890	0.005	0.178	0.164	547.558	0.171	0.005
120	0.216	3.282	2.860	0.005	0.140	0.129	490.094	0.153	0.004
50	0.779	4.353	4.820	0.006	0.320	0.294	555.736	0.173	0.005
120	0.414	3.489	4.284	0.005	0.269	0.247	491.317	0.153	0.004
175	0.375	2.976	4.475	0.005	0.215	0.198	488.441	0.152	0.004
250	0.241	1.234	3.989	0.005	0.113	0.104	494.139	0.154	0.004
500	0.157	1.226	2.204	0.005	0.076	0.070	487.872	0.152	0.004
750	0.143	0.993	2.269	0.005	0.078	0.072	488.860	0.152	0.004
15	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
25	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
50	1.545	6.444	5.399	0.005	0.531	0.488	545.758	0.170	0.005
120	0.600	3.882	5.136	0.005	0.428	0.394	492.554	0.153	0.004
175	0.589	3.588	6.071	0.005	0.320	0.294	491.521	0.153	0.004
250	0.350	1.605	4.302	0.005	0.169	0.156	488.409	0.152	0.004
25	0.992	5.310	4.764	0.005	0.363	0.334	536.112	0.167	0.005

50	0.992	5.310	4.764	0.005	0.363	0.334	536.112	0.167	0.005
120	0.420	3.692	4.154	0.005	0.294	0.271	494.124	0.154	0.004
175	0.297	3.137	3.168	0.005	0.160	0.147	485.775	0.151	0.004
250	0.259	1.242	3.460	0.005	0.112	0.103	489.456	0.152	0.004
500	0.222	1.445	2.669	0.005	0.092	0.085	486.294	0.151	0.004
750	0.271	1.601	3.402	0.005	0.124	0.114	485.010	0.151	0.004
15	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
25	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
50	1.039	5.018	4.960	0.005	0.409	0.377	548.361	0.171	0.005
120	0.658	3.855	5.915	0.005	0.450	0.414	493.715	0.154	0.004
175	0.470	3.331	5.127	0.005	0.261	0.240	485.925	0.151	0.004
250	0.419	1.849	5.296	0.005	0.212	0.195	491.565	0.153	0.004
500	0.256	1.974	3.211	0.005	0.121	0.112	489.628	0.152	0.004
750	0.094	0.966	1.025	0.005	0.029	0.026	494.643	0.154	0.004
15	0.766	3.580	4.762	0.008	0.256	0.256	568.300	0.069	0.005
25	0.807	2.531	4.661	0.007	0.232	0.232	568.299	0.072	0.005
50	1.210	5.092	4.607	0.007	0.311	0.311	568.299	0.109	0.005
120	0.564	3.648	3.980	0.006	0.290	0.290	568.299	0.050	0.004
175	0.402	3.123	3.176	0.006	0.162	0.162	568.299	0.036	0.004
250	0.292	1.118	2.751	0.006	0.084	0.084	568.299	0.026	0.004
500	0.277	1.080	2.430	0.005	0.080	0.080	568.299	0.025	0.004
175	0.383	3.383	3.543	0.005	0.192	0.177	488.044	0.152	0.004
250	0.341	1.543	3.451	0.005	0.141	0.130	487.635	0.152	0.004
500	0.287	1.560	3.090	0.005	0.113	0.104	493.506	0.154	0.004
750	0.348	2.176	3.691	0.005	0.143	0.132	492.114	0.153	0.004
1000	0.297	1.357	4.858	0.005	0.127	0.116	487.790	0.152	0.004

2019

2019		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10
Aerial Lifts	15	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	25	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	50	0.172	3.115	3.079	0.005	0.042
Aerial Lifts	120	0.118	3.173	1.977	0.005	0.049
Aerial Lifts	500	0.066	0.941	0.636	0.005	0.009
Aerial Lifts	750	0.212	1.023	2.117	0.005	0.064
Air Compressors	15	0.748	3.562	4.647	0.008	0.241
Air Compressors	25	0.787	2.501	4.596	0.007	0.222
Air Compressors	50	1.129	5.283	4.546	0.007	0.287
Air Compressors	120	0.538	3.718	3.706	0.006	0.260
Air Compressors	175	0.401	3.204	2.874	0.006	0.150
Air Compressors	250	0.304	1.132	2.469	0.006	0.078
Air Compressors	500	0.293	1.086	2.193	0.005	0.075
Air Compressors	750	0.294	1.086	2.247	0.005	0.076
Air Compressors	1000	0.324	1.182	4.073	0.005	0.102
Bore/Drill Rigs	15	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	25	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	50	0.722	4.497	4.718	0.006	0.303
Bore/Drill Rigs	120	0.267	3.332	3.321	0.005	0.180
Bore/Drill Rigs	175	0.181	2.956	2.018	0.005	0.088
Bore/Drill Rigs	250	0.143	1.061	1.894	0.005	0.054
Bore/Drill Rigs	500	0.129	1.034	1.551	0.005	0.048
Bore/Drill Rigs	750	0.117	0.971	1.449	0.005	0.048
Bore/Drill Rigs	1000	0.129	0.983	3.041	0.005	0.061

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.162
Cement and Mortar Mixers	25	0.735	2.417	4.469	0.007	0.196
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
Concrete/Industrial Saws	50	0.899	4.645	4.338	0.007	0.242
Concrete/Industrial Saws	120	0.443	3.550	3.441	0.006	0.220
Concrete/Industrial Saws	175	0.330	3.072	2.618	0.006	0.128
Cranes	50	2.045	7.245	5.952	0.005	0.615
Cranes	120	0.803	4.265	6.958	0.005	0.501
Cranes	175	0.568	3.598	5.949	0.005	0.318
Cranes	250	0.427	1.941	5.084	0.005	0.216
Cranes	500	0.349	2.969	4.297	0.005	0.173
Cranes	750	0.252	1.446	3.428	0.005	0.124
Cranes	9999	0.172	0.991	2.349	0.005	0.060
Crawler Tractors	50	2.225	7.589	5.855	0.005	0.640
Crawler Tractors	120	0.757	4.088	6.393	0.005	0.535
Crawler Tractors	175	0.517	3.379	5.382	0.005	0.300
Crawler Tractors	250	0.380	1.604	4.972	0.005	0.188
Crawler Tractors	500	0.319	2.219	3.934	0.005	0.153
Crawler Tractors	750	0.266	1.356	3.343	0.005	0.123
Crawler Tractors	1000	0.460	2.020	7.212	0.005	0.211
Crushing/Proc. Equipment	50	1.064	5.316	4.495	0.007	0.269
Crushing/Proc. Equipment	120	0.519	3.739	3.544	0.006	0.241
Crushing/Proc. Equipment	175	0.394	3.233	2.700	0.006	0.141
Crushing/Proc. Equipment	250	0.304	1.134	2.300	0.006	0.074
Crushing/Proc. Equipment	500	0.295	1.087	2.046	0.005	0.071
Crushing/Proc. Equipment	750	0.294	1.085	2.085	0.005	0.071
Crushing/Proc. Equipment	9999	0.345	1.173	3.927	0.005	0.098

Dumpers/Tenders	25	0.686	2.339	4.341	0.007	0.167
Excavators	25	0.637	4.597	4.199	0.005	0.250
Excavators	50	0.637	4.597	4.199	0.005	0.250
Excavators	120	0.325	3.524	3.369	0.005	0.211
Excavators	175	0.246	3.082	2.533	0.005	0.122
Excavators	250	0.186	1.127	2.242	0.005	0.068
Excavators	500	0.162	1.114	1.780	0.005	0.058
Excavators	750	0.176	1.173	1.987	0.005	0.067
Forklifts	50	1.244	5.880	4.862	0.005	0.401
Forklifts	120	0.510	3.804	4.550	0.005	0.353
Forklifts	175	0.382	3.288	3.865	0.005	0.210
Forklifts	250	0.374	1.677	4.250	0.005	0.175
Forklifts	500	0.268	1.814	2.751	0.005	0.112
Generator Sets	15	0.662	3.562	4.617	0.008	0.224
Generator Sets	25	0.731	2.501	4.596	0.007	0.214
Generator Sets	50	0.779	4.076	4.215	0.007	0.222
Generator Sets	120	0.405	3.396	3.446	0.006	0.206
Generator Sets	175	0.290	2.929	2.669	0.006	0.118
Generator Sets	250	0.211	1.036	2.285	0.006	0.064
Generator Sets	500	0.199	1.015	2.056	0.005	0.062
Generator Sets	750	0.202	1.015	2.104	0.005	0.062
Generator Sets	9999	0.261	1.103	3.829	0.005	0.087
Graders	50	2.616	8.279	5.945	0.005	0.737
Graders	120	1.032	4.642	8.159	0.005	0.665
Graders	175	0.609	3.656	6.014	0.005	0.337
Graders	250	0.360	1.359	4.866	0.005	0.156
Graders	500	0.323	1.528	3.218	0.005	0.124
Graders	750	0.335	1.255	2.276	0.005	0.080
Off-Highway Tractors	120	0.473	3.795	4.421	0.005	0.331
Off-Highway Tractors	175	0.294	3.219	3.208	0.005	0.159
Off-Highway Tractors	250	0.239	1.218	2.914	0.005	0.098
Off-Highway Tractors	750	0.205	1.129	2.177	0.005	0.082
Off-Highway Tractors	1000	0.140	1.010	2.378	0.005	0.062
Off-Highway Trucks	175	0.323	3.326	2.825	0.005	0.149
Off-Highway Trucks	250	0.307	1.461	2.985	0.005	0.119

Off-Highway Trucks	500	0.264	1.483	2.669	0.005	0.097
Off-Highway Trucks	750	0.327	2.041	3.320	0.005	0.129
Off-Highway Trucks	1000	0.295	1.356	4.765	0.005	0.124
Other Construction Equipment	15	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	25	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	50	1.152	5.541	5.203	0.005	0.437
Other Construction Equipment	120	0.550	3.754	5.048	0.005	0.379
Other Construction Equipment	175	0.412	3.256	4.433	0.005	0.234
Other Construction Equipment	500	0.234	1.667	2.855	0.005	0.103
Other General Industrial Equipment	15	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	25	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	50	1.042	5.662	4.807	0.005	0.374
Other General Industrial Equipment	120	0.500	3.821	4.497	0.005	0.343
Other General Industrial Equipment	175	0.302	3.241	2.999	0.005	0.157
Other General Industrial Equipment	250	0.259	1.299	3.020	0.005	0.106
Other General Industrial Equipment	500	0.239	1.561	2.575	0.005	0.092

Other General Industrial Equipment	750	0.199	1.474	2.115	0.005	0.076
Other General Industrial Equipment	1000	0.264	1.076	4.834	0.005	0.117
Other Material Handling Equipment	50	1.275	6.139	5.179	0.005	0.452
Other Material Handling Equipment	120	0.360	3.636	3.566	0.005	0.231
Other Material Handling Equipment	175	0.280	3.185	2.774	0.005	0.139
Other Material Handling Equipment	250	0.300	1.341	3.817	0.005	0.123
Other Material Handling Equipment	500	0.291	1.620	3.371	0.005	0.128
Other Material Handling Equipment	9999	0.190	1.036	3.583	0.005	0.076
Pavers	25	1.418	5.657	4.916	0.005	0.436
Pavers	50	1.418	5.657	4.916	0.005	0.436
Pavers	120	0.496	3.622	4.670	0.005	0.346
Pavers	175	0.299	3.013	3.245	0.005	0.159
Pavers	250	0.187	1.032	3.111	0.005	0.084
Pavers	500	0.167	0.986	2.270	0.005	0.081
Paving Equipment	25	0.705	4.408	4.238	0.005	0.270
Paving Equipment	50	0.705	4.408	4.238	0.005	0.270
Paving Equipment	120	0.425	3.598	4.042	0.005	0.281
Paving Equipment	175	0.254	3.011	2.692	0.005	0.134
Paving Equipment	250	0.241	1.244	3.251	0.005	0.112
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161
Pressure Washers	15	0.662	3.562	4.617	0.008	0.224
Pressure Washers	25	0.731	2.501	4.596	0.007	0.214
Pressure Washers	50	0.569	3.457	4.053	0.007	0.184
Pressure Washers	120	0.337	3.240	3.295	0.006	0.174
Pressure Washers	175	0.280	2.907	2.670	0.006	0.117

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
Pumps	15	0.748	3.562	4.647	0.008	0.241
Pumps	25	0.787	2.501	4.596	0.007	0.222
Pumps	50	0.849	4.284	4.269	0.007	0.235
Pumps	120	0.429	3.449	3.497	0.006	0.217
Pumps	175	0.309	2.974	2.711	0.006	0.124
Pumps	250	0.226	1.052	2.323	0.006	0.067
Pumps	500	0.214	1.027	2.084	0.005	0.064
Pumps	750	0.217	1.027	2.133	0.005	0.065
Pumps	9999	0.273	1.118	3.873	0.005	0.089
Rollers	15	0.972	4.778	4.645	0.005	0.349
Rollers	25	0.972	4.778	4.645	0.005	0.349
Rollers	50	0.972	4.778	4.645	0.005	0.349
Rollers	120	0.423	3.557	4.179	0.005	0.275
Rollers	175	0.231	2.933	2.699	0.005	0.124
Rollers	250	0.211	1.249	2.883	0.005	0.092
Rollers	500	0.234	2.101	2.908	0.005	0.111
Rough Terrain Forklifts	50	1.009	4.674	4.557	0.005	0.328
Rough Terrain Forklifts	120	0.202	3.258	2.622	0.005	0.117
Rough Terrain Forklifts	175	0.149	2.841	2.058	0.005	0.075
Rough Terrain Forklifts	250	0.109	0.974	1.639	0.005	0.036
Rough Terrain Forklifts	500	0.116	0.950	1.961	0.005	0.043
Rubber Tired Dozers	175	0.759	3.949	7.520	0.005	0.433
Rubber Tired Dozers	250	0.651	2.459	6.929	0.005	0.338
Rubber Tired Dozers	500	0.572	4.743	6.143	0.005	0.283
Rubber Tired Dozers	750	0.455	2.598	6.122	0.005	0.218
Rubber Tired Dozers	1000	0.547	2.281	5.528	0.005	0.171
Rubber Tired Loaders	25	1.602	6.978	5.432	0.005	0.518
Rubber Tired Loaders	50	1.602	6.978	5.432	0.005	0.518
Rubber Tired Loaders	120	0.595	3.979	5.006	0.005	0.402
Rubber Tired Loaders	175	0.405	3.381	3.859	0.005	0.213

Rubber Tired Loaders	250	0.309	1.302	3.745	0.005	0.126
Rubber Tired Loaders	500	0.306	1.725	3.288	0.005	0.123
Rubber Tired Loaders	750	0.293	1.452	3.019	0.005	0.118
Rubber Tired Loaders	1000	0.323	1.208	5.459	0.005	0.146
Scrapers	120	0.718	4.197	6.841	0.005	0.526
Scrapers	175	0.510	3.533	5.264	0.005	0.283
Scrapers	250	0.501	2.233	5.831	0.005	0.257
Scrapers	500	0.343	2.595	4.156	0.005	0.163
Scrapers	750	0.277	1.829	3.431	0.005	0.123
Signal Boards	15	0.661	3.470	4.142	0.008	0.161
Signal Boards	50	0.887	4.538	4.272	0.007	0.236
Signal Boards	120	0.437	3.519	3.410	0.006	0.216
Signal Boards	175	0.321	3.043	2.601	0.006	0.125
Signal Boards	250	0.291	1.292	2.676	0.007	0.080
Skid Steer Loaders	25	0.446	3.740	3.750	0.005	0.154
Skid Steer Loaders	50	0.446	3.740	3.750	0.005	0.154
Skid Steer Loaders	120	0.199	3.277	2.656	0.005	0.122
Surfacing Equipment	50	0.643	4.100	4.420	0.006	0.250
Surfacing Equipment	120	0.355	3.449	3.823	0.005	0.226
Surfacing Equipment	175	0.357	2.972	4.239	0.005	0.204
Surfacing Equipment	250	0.217	1.216	3.400	0.005	0.101
Surfacing Equipment	500	0.146	1.214	1.899	0.005	0.068
Surfacing Equipment	750	0.142	0.994	2.179	0.005	0.076
Sweepers/Scrubbers	15	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	25	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	50	1.431	6.268	5.225	0.005	0.491
Sweepers/Scrubbers	120	0.550	3.846	4.773	0.005	0.387
Sweepers/Scrubbers	175	0.523	3.449	5.301	0.005	0.277
Sweepers/Scrubbers	250	0.235	1.230	2.866	0.005	0.099
Tractors/Loaders/Backhoes	25	0.920	5.203	4.609	0.005	0.330

Tractors/Loaders/Backhoes	50	0.920	5.203	4.609	0.005	0.330
Tractors/Loaders/Backhoes	120	0.368	3.638	3.693	0.005	0.247
Tractors/Loaders/Backhoes	175	0.270	3.122	2.784	0.005	0.140
Tractors/Loaders/Backhoes	250	0.245	1.220	3.147	0.005	0.102
Tractors/Loaders/Backhoes	500	0.206	1.389	2.345	0.005	0.082
Tractors/Loaders/Backhoes	750	0.262	1.603	3.120	0.005	0.117
Trenchers	15	0.955	4.892	4.785	0.005	0.377
Trenchers	25	0.955	4.892	4.785	0.005	0.377
Trenchers	50	0.955	4.892	4.785	0.005	0.377
Trenchers	120	0.631	3.837	5.695	0.005	0.431
Trenchers	175	0.460	3.342	4.960	0.005	0.255
Trenchers	250	0.405	1.810	5.047	0.005	0.203
Trenchers	500	0.254	1.987	3.128	0.005	0.118
Trenchers	750	0.078	0.956	0.707	0.005	0.015
Welders	15	0.748	3.562	4.647	0.008	0.241
Welders	25	0.787	2.501	4.596	0.007	0.222
Welders	50	1.055	4.950	4.449	0.007	0.273
Welders	120	0.503	3.623	3.648	0.006	0.250
Welders	175	0.370	3.122	2.832	0.006	0.143
Welders	250	0.276	1.104	2.432	0.006	0.075
Welders	500	0.264	1.065	2.163	0.005	0.072
Water Trucks	175	0.323	3.326	2.825	0.005	0.149
Water Trucks	250	0.307	1.461	2.985	0.005	0.119
Water Trucks	500	0.264	1.483	2.669	0.005	0.097
Water Trucks	750	0.327	2.041	3.320	0.005	0.129
Water Trucks	1000	0.295	1.356	4.765	0.005	0.124

2020

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.038	536.743	0.170	0.005
0.038	536.743	0.170	0.005
0.038	536.743	0.170	0.005
0.045	482.606	0.153	0.004
0.008	482.545	0.153	0.004
0.064	568.299	0.019	0.004
0.241	568.299	0.067	0.005
0.222	568.299	0.071	0.005
0.287	568.299	0.101	0.005
0.260	568.299	0.048	0.004
0.150	568.299	0.036	0.004
0.078	568.299	0.027	0.004
0.075	568.299	0.026	0.004
0.076	568.299	0.026	0.004
0.102	568.299	0.029	0.004
0.278	545.293	0.173	0.005
0.278	545.293	0.173	0.005
0.278	545.293	0.173	0.005
0.166	472.453	0.150	0.004
0.081	487.355	0.154	0.004
0.049	475.790	0.151	0.004
0.044	477.046	0.151	0.004
0.044	481.836	0.152	0.004
0.056	482.359	0.153	0.004

2020		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.168	3.099
Aerial Lifts	25	0.168	3.099
Aerial Lifts	50	0.168	3.099
Aerial Lifts	120	0.115	3.177
Aerial Lifts	500	0.069	0.946
Aerial Lifts	750	0.200	1.013
Air Compressors	15	0.731	3.546
Air Compressors	25	0.769	2.473
Air Compressors	50	1.001	5.164
Air Compressors	120	0.489	3.698
Air Compressors	175	0.374	3.203
Air Compressors	250	0.288	1.121
Air Compressors	500	0.279	1.076
Air Compressors	750	0.280	1.076
Air Compressors	1000	0.306	1.158
Bore/Drill Rigs	15	0.716	4.510
Bore/Drill Rigs	25	0.716	4.510
Bore/Drill Rigs	50	0.716	4.510
Bore/Drill Rigs	120	0.246	3.323
Bore/Drill Rigs	175	0.174	2.969
Bore/Drill Rigs	250	0.142	1.068
Bore/Drill Rigs	500	0.125	1.013
Bore/Drill Rigs	750	0.109	0.974
Bore/Drill Rigs	1000	0.133	0.988

0.162	568.299	0.059	0.005
0.196	568.299	0.066	0.005
0.161	568.299	0.061	0.005
0.242	568.299	0.081	0.005
0.220	568.300	0.040	0.004
0.128	568.299	0.029	0.004
0.566	529.463	0.168	0.005
0.460	480.325	0.152	0.004
0.292	485.182	0.154	0.004
0.198	483.462	0.153	0.004
0.159	483.142	0.153	0.004
0.114	481.119	0.152	0.004
0.055	482.545	0.153	0.004
0.589	525.977	0.166	0.005
0.492	486.991	0.154	0.004
0.276	481.622	0.152	0.004
0.173	483.449	0.153	0.004
0.141	485.865	0.154	0.004
0.113	483.388	0.153	0.004
0.194	486.255	0.154	0.004
0.269	568.299	0.096	0.005
0.241	568.299	0.046	0.004
0.141	568.299	0.035	0.004
0.074	568.299	0.027	0.004
0.071	568.299	0.026	0.004
0.071	568.299	0.026	0.004
0.098	568.299	0.031	0.004

Cement and Mortar Mixers	15	0.661	3.470
Cement and Mortar Mixers	25	0.723	2.397
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.798	4.552
Concrete/Industrial Saws	120	0.401	3.535
Concrete/Industrial Saws	175	0.306	3.072
Cranes	50	2.084	7.376
Cranes	120	0.732	4.171
Cranes	175	0.537	3.562
Cranes	250	0.384	1.790
Cranes	500	0.321	2.660
Cranes	750	0.242	1.444
Cranes	9999	0.182	0.999
Crawler Tractors	50	2.053	7.300
Crawler Tractors	120	0.715	4.044
Crawler Tractors	175	0.476	3.340
Crawler Tractors	250	0.360	1.555
Crawler Tractors	500	0.301	2.088
Crawler Tractors	750	0.256	1.310
Crawler Tractors	1000	0.463	2.028
Crushing/Proc. Equipment	50	0.947	5.211
Crushing/Proc. Equipment	120	0.473	3.722
Crushing/Proc. Equipment	175	0.367	3.234
Crushing/Proc. Equipment	250	0.289	1.125
Crushing/Proc. Equipment	500	0.281	1.078
Crushing/Proc. Equipment	750	0.281	1.077
Crushing/Proc. Equipment	9999	0.329	1.153

0.167	568.299	0.061	0.005
0.230	536.913	0.170	0.005
0.230	536.913	0.170	0.005
0.194	478.245	0.151	0.004
0.112	482.684	0.153	0.004
0.063	482.250	0.153	0.004
0.053	481.236	0.152	0.004
0.062	479.288	0.152	0.004
0.369	537.161	0.170	0.005
0.324	482.007	0.153	0.004
0.193	482.598	0.153	0.004
0.161	483.844	0.153	0.004
0.103	484.140	0.153	0.004
0.224	568.299	0.059	0.005
0.214	568.299	0.066	0.005
0.222	568.299	0.070	0.005
0.206	568.299	0.036	0.004
0.118	568.299	0.026	0.004
0.064	568.299	0.019	0.004
0.062	568.299	0.018	0.004
0.062	568.299	0.018	0.004
0.087	568.299	0.023	0.004
0.678	503.751	0.159	0.005
0.612	479.901	0.152	0.004
0.310	489.042	0.155	0.004
0.144	486.329	0.154	0.004
0.115	482.588	0.153	0.004
0.080	568.299	0.030	0.004
0.305	484.269	0.153	0.004
0.146	483.431	0.153	0.004
0.090	481.275	0.152	0.004
0.075	482.309	0.153	0.004
0.057	482.545	0.153	0.004
0.138	480.362	0.152	0.004
0.110	480.170	0.152	0.004

Dumpers/Tenders	25	0.685	2.339
Excavators	25	0.593	4.500
Excavators	50	0.593	4.500
Excavators	120	0.299	3.505
Excavators	175	0.231	3.086
Excavators	250	0.177	1.118
Excavators	500	0.153	1.102
Excavators	750	0.170	1.145
Forklifts	50	1.124	5.706
Forklifts	120	0.459	3.760
Forklifts	175	0.338	3.249
Forklifts	250	0.293	1.442
Forklifts	500	0.251	1.478
Generator Sets	15	0.646	3.546
Generator Sets	25	0.721	2.473
Generator Sets	50	0.691	3.995
Generator Sets	120	0.364	3.380
Generator Sets	175	0.267	2.930
Generator Sets	250	0.198	1.026
Generator Sets	500	0.188	1.005
Generator Sets	750	0.191	1.005
Generator Sets	9999	0.242	1.082
Graders	50	2.516	8.134
Graders	120	0.976	4.561
Graders	175	0.567	3.621
Graders	250	0.352	1.342
Graders	500	0.322	1.526
Graders	750	0.319	1.229
Off-Highway Tractors	120	0.448	3.788
Off-Highway Tractors	175	0.271	3.215
Off-Highway Tractors	250	0.221	1.181
Off-Highway Tractors	750	0.201	1.131
Off-Highway Tractors	1000	0.150	1.022
Off-Highway Trucks	175	0.310	3.339
Off-Highway Trucks	250	0.275	1.391

0.089	485.383	0.154	0.004
0.118	483.218	0.153	0.004
0.114	480.348	0.152	0.004
0.402	539.735	0.171	0.005
0.402	539.735	0.171	0.005
0.402	539.735	0.171	0.005
0.349	482.218	0.153	0.004
0.215	480.452	0.152	0.004
0.094	485.413	0.154	0.004
0.344	537.869	0.170	0.005
0.344	537.869	0.170	0.005
0.344	537.869	0.170	0.005
0.316	480.444	0.152	0.004
0.144	482.336	0.153	0.004
0.097	483.739	0.153	0.004
0.085	483.439	0.153	0.004

Off-Highway Trucks	500	0.246	1.414
Off-Highway Trucks	750	0.312	2.027
Off-Highway Trucks	1000	0.303	1.372
Other Construction Equipment	15	1.072	5.404
Other Construction Equipment	25	1.072	5.404
Other Construction Equipment	50	1.072	5.404
Other Construction Equipment	120	0.519	3.732
Other Construction Equipment	175	0.388	3.235
Other Construction Equipment	500	0.224	1.634
Other General Industrial Equipment	15	0.946	5.504
Other General Industrial Equipment	25	0.946	5.504
Other General Industrial Equipment	50	0.946	5.504
Other General Industrial Equipment	120	0.446	3.771
Other General Industrial Equipment	175	0.268	3.229
Other General Industrial Equipment	250	0.237	1.239
Other General Industrial Equipment	500	0.208	1.344

0.070	483.985	0.153	0.004
0.108	482.545	0.153	0.004
0.416	535.347	0.169	0.005
0.212	484.113	0.153	0.004
0.128	482.713	0.153	0.004
0.113	481.959	0.153	0.004
0.118	480.748	0.152	0.004
0.070	482.545	0.153	0.004
0.401	538.325	0.170	0.005
0.401	538.325	0.170	0.005
0.318	480.251	0.152	0.004
0.146	483.394	0.153	0.004
0.077	483.574	0.153	0.004
0.075	476.971	0.151	0.004
0.248	531.861	0.168	0.005
0.248	531.861	0.168	0.005
0.258	484.387	0.153	0.004
0.123	481.225	0.152	0.004
0.103	482.644	0.153	0.004
0.161	568.299	0.059	0.005
0.224	568.299	0.059	0.005
0.214	568.299	0.066	0.005
0.184	568.299	0.051	0.005
0.174	568.299	0.030	0.004
0.117	568.299	0.025	0.004

Other General Industrial Equipment	750	0.175	1.462
Other General Industrial Equipment	1000	0.271	1.085
Other Material Handling Equipment	50	1.245	6.167
Other Material Handling Equipment	120	0.307	3.589
Other Material Handling Equipment	175	0.252	3.171
Other Material Handling Equipment	250	0.291	1.319
Other Material Handling Equipment	500	0.283	1.523
Other Material Handling Equipment	9999	0.200	1.049
Pavers	25	1.318	5.523
Pavers	50	1.318	5.523
Pavers	120	0.470	3.604
Pavers	175	0.273	3.010
Pavers	250	0.176	1.028
Pavers	500	0.165	0.987
Paving Equipment	25	0.621	4.223
Paving Equipment	50	0.621	4.223
Paving Equipment	120	0.397	3.582
Paving Equipment	175	0.248	3.024
Paving Equipment	250	0.244	1.252
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.646	3.546
Pressure Washers	25	0.721	2.473
Pressure Washers	50	0.499	3.393
Pressure Washers	120	0.298	3.225
Pressure Washers	175	0.258	2.907

0.009	568.299	0.008	0.004
0.241	568.300	0.067	0.005
0.222	568.300	0.071	0.005
0.235	568.299	0.076	0.005
0.217	568.299	0.038	0.004
0.124	568.299	0.027	0.004
0.067	568.299	0.020	0.004
0.064	568.300	0.019	0.004
0.065	568.299	0.019	0.004
0.089	568.299	0.024	0.004
0.321	537.546	0.170	0.005
0.321	537.546	0.170	0.005
0.321	537.546	0.170	0.005
0.253	484.336	0.153	0.004
0.114	482.453	0.153	0.004
0.084	483.777	0.153	0.004
0.102	489.977	0.155	0.004
0.302	537.329	0.170	0.005
0.108	483.311	0.153	0.004
0.069	482.119	0.153	0.004
0.034	483.088	0.153	0.004
0.040	477.254	0.151	0.004
0.398	483.559	0.153	0.004
0.311	485.172	0.154	0.004
0.260	490.383	0.155	0.004
0.201	483.579	0.153	0.004
0.171	568.299	0.049	0.004
0.476	536.225	0.170	0.005
0.476	536.225	0.170	0.005
0.370	475.864	0.151	0.004
0.196	481.736	0.152	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.731	3.546
Pumps	25	0.769	2.473
Pumps	50	0.755	4.197
Pumps	120	0.386	3.432
Pumps	175	0.285	2.974
Pumps	250	0.212	1.042
Pumps	500	0.203	1.017
Pumps	750	0.205	1.017
Pumps	9999	0.255	1.096
Rollers	15	0.926	4.725
Rollers	25	0.926	4.725
Rollers	50	0.926	4.725
Rollers	120	0.388	3.531
Rollers	175	0.215	2.933
Rollers	250	0.209	1.253
Rollers	500	0.235	2.113
Rough Terrain Forklifts	50	0.999	4.686
Rough Terrain Forklifts	120	0.189	3.256
Rough Terrain Forklifts	175	0.143	2.845
Rough Terrain Forklifts	250	0.112	0.978
Rough Terrain Forklifts	500	0.089	0.942
Rubber Tired Dozers	175	0.726	3.893
Rubber Tired Dozers	250	0.620	2.371
Rubber Tired Dozers	500	0.535	4.411
Rubber Tired Dozers	750	0.457	2.601
Rubber Tired Dozers	1000	0.522	2.164
Rubber Tired Loaders	25	1.481	6.768
Rubber Tired Loaders	50	1.481	6.768
Rubber Tired Loaders	120	0.556	3.948
Rubber Tired Loaders	175	0.379	3.368

0.116	480.100	0.152	0.004
0.113	477.042	0.151	0.004
0.109	471.187	0.149	0.004
0.135	480.523	0.152	0.004
0.483	494.100	0.156	0.004
0.261	489.255	0.155	0.004
0.236	479.032	0.152	0.004
0.150	482.732	0.153	0.004
0.113	482.596	0.153	0.004
0.161	568.299	0.059	0.005
0.236	568.300	0.080	0.005
0.216	568.299	0.039	0.004
0.125	568.299	0.029	0.004
0.080	686.695	0.026	0.004
0.141	539.267	0.171	0.005
0.141	539.267	0.171	0.005
0.112	482.384	0.153	0.004
0.230	547.046	0.173	0.005
0.208	484.076	0.153	0.004
0.187	479.672	0.152	0.004
0.093	486.842	0.154	0.004
0.063	481.897	0.153	0.004
0.070	480.166	0.152	0.004
0.452	537.002	0.170	0.005
0.452	537.002	0.170	0.005
0.452	537.002	0.170	0.005
0.356	484.652	0.153	0.004
0.255	483.636	0.153	0.004
0.091	480.574	0.152	0.004
0.304	527.684	0.167	0.005

Rubber Tired Loaders	250	0.290	1.269
Rubber Tired Loaders	500	0.289	1.630
Rubber Tired Loaders	750	0.277	1.400
Rubber Tired Loaders	1000	0.312	1.204
Scrapers	120	0.701	4.198
Scrapers	175	0.478	3.501
Scrapers	250	0.446	2.065
Scrapers	500	0.320	2.401
Scrapers	750	0.262	1.725
Signal Boards	15	0.661	3.469
Signal Boards	50	0.788	4.448
Signal Boards	120	0.395	3.504
Signal Boards	175	0.298	3.043
Signal Boards	250	0.274	1.281
Skid Steer Loaders	25	0.439	3.764
Skid Steer Loaders	50	0.439	3.764
Skid Steer Loaders	120	0.188	3.277
Surfacing Equipment	50	0.536	3.934
Surfacing Equipment	120	0.330	3.439
Surfacing Equipment	175	0.308	2.931
Surfacing Equipment	250	0.212	1.218
Surfacing Equipment	500	0.146	1.219
Surfacing Equipment	750	0.142	0.996
Sweepers/Scrubbers	15	1.344	6.155
Sweepers/Scrubbers	25	1.344	6.155
Sweepers/Scrubbers	50	1.344	6.155
Sweepers/Scrubbers	120	0.520	3.828
Sweepers/Scrubbers	175	0.462	3.359
Sweepers/Scrubbers	250	0.207	1.137
Tractors/Loaders/Backhoes	25	0.830	5.035

0.304	527.684	0.167	0.005
0.227	485.855	0.154	0.004
0.129	477.915	0.151	0.004
0.094	481.421	0.152	0.004
0.075	479.083	0.152	0.004
0.107	478.922	0.152	0.004
0.347	539.104	0.171	0.005
0.347	539.104	0.171	0.005
0.347	539.104	0.171	0.005
0.396	485.364	0.154	0.004
0.234	478.129	0.151	0.004
0.187	484.117	0.153	0.004
0.109	482.165	0.153	0.004
0.014	484.542	0.153	0.004
0.241	568.299	0.067	0.005
0.222	568.299	0.071	0.005
0.273	568.299	0.095	0.005
0.250	568.299	0.045	0.004
0.143	568.300	0.033	0.004
0.075	568.299	0.024	0.004
0.072	568.300	0.023	0.004
0.138	480.362	0.152	0.004
0.110	480.170	0.152	0.004
0.089	485.383	0.154	0.004
0.118	483.218	0.153	0.004
0.114	480.348	0.152	0.004

Tractors/Loaders/Backhoes	50	0.830	5.035
Tractors/Loaders/Backhoes	120	0.331	3.601
Tractors/Loaders/Backhoes	175	0.246	3.105
Tractors/Loaders/Backhoes	250	0.225	1.196
Tractors/Loaders/Backhoes	500	0.194	1.358
Tractors/Loaders/Backhoes	750	0.268	1.610
Trenchers	15	0.905	4.833
Trenchers	25	0.905	4.833
Trenchers	50	0.905	4.833
Trenchers	120	0.610	3.833
Trenchers	175	0.421	3.330
Trenchers	250	0.392	1.774
Trenchers	500	0.233	1.859
Trenchers	750	0.070	0.950
Welders	15	0.731	3.546
Welders	25	0.769	2.473
Welders	50	0.937	4.840
Welders	120	0.455	3.605
Welders	175	0.344	3.122
Welders	250	0.261	1.093
Welders	500	0.252	1.055
Water Trucks	175	0.310	3.339
Water Trucks	250	0.275	1.391
Water Trucks	500	0.246	1.414
Water Trucks	750	0.312	2.027
Water Trucks	1000	0.303	1.372

2021

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2021
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
2.955	0.005	0.031	0.028	525.074	0.170	0.005	Aerial Lifts
1.869	0.005	0.042	0.038	472.114	0.153	0.004	Aerial Lifts
0.638	0.005	0.009	0.008	472.055	0.153	0.004	Aerial Lifts
1.868	0.005	0.057	0.057	568.299	0.018	0.004	Aerial Lifts
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Air Compressors
4.538	0.007	0.212	0.212	568.300	0.069	0.005	Air Compressors
4.397	0.007	0.250	0.250	568.299	0.090	0.005	Air Compressors
3.400	0.006	0.224	0.224	568.299	0.044	0.004	Air Compressors
2.558	0.006	0.133	0.133	568.299	0.033	0.004	Air Compressors
2.172	0.006	0.069	0.069	568.299	0.026	0.004	Air Compressors
1.935	0.005	0.067	0.067	568.299	0.025	0.004	Air Compressors
1.982	0.005	0.067	0.067	568.299	0.025	0.004	Air Compressors
3.828	0.005	0.093	0.093	568.300	0.027	0.004	Air Compressors
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
4.645	0.006	0.294	0.271	535.295	0.173	0.005	Bore/Drill Rigs
3.066	0.005	0.159	0.146	463.583	0.150	0.004	Bore/Drill Rigs
1.871	0.005	0.082	0.076	477.722	0.155	0.004	Bore/Drill Rigs
1.807	0.005	0.052	0.048	466.834	0.151	0.004	Bore/Drill Rigs
1.409	0.005	0.045	0.041	466.822	0.151	0.004	Bore/Drill Rigs
1.231	0.005	0.041	0.038	473.668	0.153	0.004	Bore/Drill Rigs
3.050	0.005	0.061	0.056	471.849	0.153	0.004	Bore/Drill Rigs

4.142	0.008	0.161	0.161	568.299	0.059	0.005	Cement and Mortar Mixers
4.442	0.007	0.187	0.187	568.299	0.065	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
4.196	0.007	0.212	0.212	568.299	0.072	0.005	Concrete/Industrial Saws
3.163	0.006	0.190	0.190	568.299	0.036	0.004	Concrete/Industrial Saws
2.324	0.006	0.114	0.114	568.299	0.027	0.004	Concrete/Industrial Saws
5.985	0.005	0.624	0.574	517.926	0.168	0.005	Cranes
6.381	0.005	0.453	0.417	469.882	0.152	0.004	Cranes
5.570	0.005	0.298	0.274	474.594	0.154	0.004	Cranes
4.563	0.005	0.188	0.173	472.949	0.153	0.004	Cranes
3.862	0.005	0.155	0.142	472.558	0.153	0.004	Cranes
3.105	0.005	0.116	0.107	470.425	0.152	0.004	Cranes
2.361	0.005	0.060	0.056	472.055	0.153	0.004	Cranes
5.643	0.005	0.591	0.544	515.679	0.167	0.005	Crawler Tractors
6.009	0.005	0.501	0.460	476.328	0.154	0.004	Crawler Tractors
4.872	0.005	0.272	0.250	471.015	0.152	0.004	Crawler Tractors
4.632	0.005	0.175	0.161	472.941	0.153	0.004	Crawler Tractors
3.622	0.005	0.141	0.130	475.234	0.154	0.004	Crawler Tractors
3.137	0.005	0.115	0.106	473.312	0.153	0.004	Crawler Tractors
7.237	0.005	0.212	0.195	475.653	0.154	0.004	Crawler Tractors
4.347	0.007	0.233	0.233	568.299	0.085	0.005	Crushing/Proc. Equipment
3.249	0.006	0.206	0.206	568.299	0.042	0.004	Crushing/Proc. Equipment
2.392	0.006	0.124	0.124	568.299	0.033	0.004	Crushing/Proc. Equipment
2.014	0.006	0.065	0.065	568.299	0.026	0.004	Crushing/Proc. Equipment
1.799	0.005	0.063	0.063	568.299	0.025	0.004	Crushing/Proc. Equipment
1.835	0.005	0.063	0.063	568.299	0.025	0.004	Crushing/Proc. Equipment
3.699	0.005	0.089	0.089	568.299	0.029	0.004	Crushing/Proc. Equipment

4.336	0.007	0.165	0.165	568.299	0.061	0.005	Dumpers/Tenders
4.031	0.005	0.222	0.204	525.368	0.170	0.005	Excavators
4.031	0.005	0.222	0.204	525.368	0.170	0.005	Excavators
3.090	0.005	0.185	0.170	468.055	0.151	0.004	Excavators
2.278	0.005	0.110	0.102	472.289	0.153	0.004	Excavators
2.027	0.005	0.061	0.057	471.883	0.153	0.004	Excavators
1.572	0.005	0.052	0.048	470.296	0.152	0.004	Excavators
1.797	0.005	0.061	0.056	468.871	0.152	0.004	Excavators
4.686	0.005	0.360	0.331	525.483	0.170	0.005	Forklifts
4.133	0.005	0.308	0.283	471.529	0.153	0.004	Forklifts
3.320	0.005	0.180	0.165	472.106	0.153	0.004	Forklifts
3.241	0.005	0.126	0.116	473.326	0.153	0.004	Forklifts
2.440	0.005	0.097	0.089	473.615	0.153	0.004	Forklifts
4.516	0.008	0.212	0.212	568.299	0.058	0.005	Generator Sets
4.538	0.007	0.205	0.205	568.299	0.065	0.005	Generator Sets
4.075	0.007	0.194	0.194	568.299	0.062	0.005	Generator Sets
3.173	0.006	0.179	0.179	568.299	0.032	0.004	Generator Sets
2.380	0.006	0.105	0.105	568.299	0.024	0.004	Generator Sets
2.016	0.006	0.057	0.057	568.299	0.017	0.004	Generator Sets
1.816	0.005	0.055	0.055	568.299	0.017	0.004	Generator Sets
1.858	0.005	0.056	0.056	568.299	0.017	0.004	Generator Sets
3.608	0.005	0.079	0.079	568.300	0.021	0.004	Generator Sets
5.825	0.005	0.709	0.652	492.862	0.159	0.005	Graders
7.725	0.005	0.622	0.572	469.337	0.152	0.004	Graders
5.530	0.005	0.309	0.284	478.040	0.155	0.004	Graders
4.678	0.005	0.150	0.138	475.304	0.154	0.004	Graders
3.107	0.005	0.121	0.111	471.980	0.153	0.004	Graders
2.031	0.005	0.072	0.072	568.299	0.028	0.004	Graders
4.183	0.005	0.307	0.283	474.148	0.153	0.004	Off-Highway Tractors
2.890	0.005	0.140	0.129	472.917	0.153	0.004	Off-Highway Tractors
2.575	0.005	0.086	0.079	470.943	0.152	0.004	Off-Highway Tractors
2.047	0.005	0.076	0.070	471.815	0.153	0.004	Off-Highway Tractors
2.396	0.005	0.063	0.058	472.055	0.153	0.004	Off-Highway Tractors
2.628	0.005	0.137	0.126	470.097	0.152	0.004	Off-Highway Trucks
2.507	0.005	0.098	0.090	470.168	0.152	0.004	Off-Highway Trucks

2.347	0.005	0.086	0.079	474.579	0.154	0.004	Off-Highway Trucks
3.058	0.005	0.120	0.110	472.750	0.153	0.004	Off-Highway Trucks
4.794	0.005	0.125	0.115	469.889	0.152	0.004	Off-Highway Trucks
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
5.036	0.005	0.405	0.373	527.966	0.171	0.005	Other Construction Equipment
4.771	0.005	0.354	0.325	472.216	0.153	0.004	Other Construction Equipment
4.112	0.005	0.217	0.200	469.984	0.152	0.004	Other Construction Equipment
2.637	0.005	0.096	0.088	475.233	0.154	0.004	Other Construction Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.622	0.005	0.334	0.307	526.176	0.170	0.005	Other General Industrial Equipment
4.061	0.005	0.296	0.272	470.000	0.152	0.004	Other General Industrial Equipment
2.575	0.005	0.135	0.124	471.850	0.153	0.004	Other General Industrial Equipment
2.668	0.005	0.090	0.083	473.223	0.153	0.004	Other General Industrial Equipment
2.062	0.005	0.072	0.067	472.929	0.153	0.004	Other General Industrial Equipment

1.676	0.005	0.062	0.057	473.464	0.153	0.004	Other General Industrial Equipment
4.857	0.005	0.119	0.109	472.055	0.153	0.004	Other General Industrial Equipment
5.139	0.005	0.439	0.404	523.709	0.169	0.005	Other Material Handling Equipment
3.104	0.005	0.182	0.168	473.588	0.153	0.004	Other Material Handling Equipment
2.367	0.005	0.118	0.109	472.219	0.153	0.004	Other Material Handling Equipment
3.599	0.005	0.115	0.106	471.482	0.153	0.004	Other Material Handling Equipment
3.210	0.005	0.120	0.110	470.297	0.152	0.004	Other Material Handling Equipment
3.614	0.005	0.078	0.072	472.055	0.153	0.004	Other Material Handling Equipment
4.764	0.005	0.402	0.370	526.210	0.170	0.005	Pavers
4.764	0.005	0.402	0.370	526.210	0.170	0.005	Pavers
4.427	0.005	0.325	0.299	469.882	0.152	0.004	Pavers
2.918	0.005	0.142	0.131	472.775	0.153	0.004	Pavers
2.777	0.005	0.076	0.070	472.834	0.153	0.004	Pavers
2.134	0.005	0.077	0.071	466.206	0.151	0.004	Pavers
3.952	0.005	0.217	0.200	520.124	0.168	0.005	Paving Equipment
3.952	0.005	0.217	0.200	520.124	0.168	0.005	Paving Equipment
3.781	0.005	0.256	0.235	473.325	0.153	0.004	Paving Equipment
2.555	0.005	0.128	0.118	470.736	0.152	0.004	Paving Equipment
3.220	0.005	0.111	0.102	472.151	0.153	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.516	0.008	0.212	0.212	568.299	0.058	0.005	Pressure Washers
4.538	0.007	0.205	0.205	568.299	0.065	0.005	Pressure Washers
3.917	0.007	0.161	0.161	568.299	0.045	0.005	Pressure Washers
3.036	0.006	0.151	0.151	568.299	0.026	0.004	Pressure Washers
2.383	0.006	0.104	0.104	568.299	0.023	0.004	Pressure Washers

0.265	0.006	0.009	0.009	568.299	0.008	0.004	Pressure Washers
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Pumps
4.538	0.007	0.212	0.212	568.299	0.069	0.005	Pumps
4.128	0.007	0.206	0.206	568.299	0.068	0.005	Pumps
3.219	0.006	0.189	0.189	568.299	0.034	0.004	Pumps
2.418	0.006	0.111	0.111	568.299	0.025	0.004	Pumps
2.050	0.006	0.060	0.060	568.299	0.019	0.004	Pumps
1.841	0.005	0.057	0.057	568.300	0.018	0.004	Pumps
1.884	0.005	0.058	0.058	568.299	0.018	0.004	Pumps
3.649	0.005	0.081	0.081	568.300	0.023	0.004	Pumps
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
4.534	0.005	0.329	0.303	525.880	0.170	0.005	Rollers
3.882	0.005	0.248	0.228	473.859	0.153	0.004	Rollers
2.452	0.005	0.113	0.104	471.918	0.153	0.004	Rollers
2.751	0.005	0.089	0.082	473.367	0.153	0.004	Rollers
2.828	0.005	0.109	0.101	479.325	0.155	0.004	Rollers
4.495	0.005	0.316	0.291	525.622	0.170	0.005	Rough Terrain Forklifts
2.452	0.005	0.103	0.094	472.984	0.153	0.004	Rough Terrain Forklifts
1.869	0.005	0.068	0.063	471.715	0.153	0.004	Rough Terrain Forklifts
1.609	0.005	0.037	0.034	472.567	0.153	0.004	Rough Terrain Forklifts
1.302	0.005	0.028	0.026	465.771	0.151	0.004	Rough Terrain Forklifts
7.185	0.005	0.411	0.378	473.012	0.153	0.004	Rubber Tired Dozers
6.503	0.005	0.319	0.293	474.793	0.154	0.004	Rubber Tired Dozers
5.641	0.005	0.259	0.238	479.757	0.155	0.004	Rubber Tired Dozers
6.123	0.005	0.218	0.201	473.056	0.153	0.004	Rubber Tired Dozers
5.306	0.005	0.160	0.160	568.299	0.047	0.004	Rubber Tired Dozers
5.254	0.005	0.474	0.436	524.697	0.170	0.005	Rubber Tired Loaders
5.254	0.005	0.474	0.436	524.697	0.170	0.005	Rubber Tired Loaders
4.686	0.005	0.367	0.338	465.674	0.151	0.004	Rubber Tired Loaders
3.517	0.005	0.194	0.178	471.214	0.152	0.004	Rubber Tired Loaders

3.421	0.005	0.114	0.105	469.513	0.152	0.004	Rubber Tired Loaders
3.017	0.005	0.112	0.103	466.783	0.151	0.004	Rubber Tired Loaders
2.767	0.005	0.108	0.099	462.193	0.150	0.004	Rubber Tired Loaders
5.253	0.005	0.139	0.127	469.935	0.152	0.004	Rubber Tired Loaders
6.677	0.005	0.510	0.469	483.745	0.157	0.004	Scrapers
4.869	0.005	0.262	0.241	478.608	0.155	0.004	Scrapers
5.089	0.005	0.223	0.205	468.988	0.152	0.004	Scrapers
3.783	0.005	0.148	0.136	472.175	0.153	0.004	Scrapers
3.126	0.005	0.113	0.104	471.778	0.153	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
4.132	0.007	0.206	0.206	568.299	0.071	0.005	Signal Boards
3.134	0.006	0.187	0.187	568.299	0.035	0.004	Signal Boards
2.309	0.006	0.110	0.110	568.299	0.026	0.004	Signal Boards
2.350	0.007	0.071	0.071	686.695	0.024	0.004	Signal Boards
3.691	0.005	0.145	0.133	527.758	0.171	0.005	Skid Steer Loaders
3.691	0.005	0.145	0.133	527.758	0.171	0.005	Skid Steer Loaders
2.505	0.005	0.108	0.100	471.908	0.153	0.004	Skid Steer Loaders
4.239	0.006	0.216	0.199	535.528	0.173	0.005	Surfacing Equipment
3.612	0.005	0.206	0.190	473.819	0.153	0.004	Surfacing Equipment
3.672	0.005	0.175	0.161	469.208	0.152	0.004	Surfacing Equipment
3.222	0.005	0.097	0.089	476.426	0.154	0.004	Surfacing Equipment
1.838	0.005	0.067	0.062	471.633	0.153	0.004	Surfacing Equipment
2.094	0.005	0.074	0.068	469.625	0.152	0.004	Surfacing Equipment
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
5.095	0.005	0.463	0.426	525.328	0.170	0.005	Sweepers/Scrubbers
4.482	0.005	0.360	0.331	474.116	0.153	0.004	Sweepers/Scrubbers
4.608	0.005	0.237	0.218	473.122	0.153	0.004	Sweepers/Scrubbers
2.486	0.005	0.079	0.073	470.126	0.152	0.004	Sweepers/Scrubbers
4.398	0.005	0.288	0.265	515.874	0.167	0.005	Tractors/Loaders/Backhoes

4.398	0.005	0.288	0.265	515.874	0.167	0.005	Tractors/Loaders/Backhoes
3.326	0.005	0.210	0.194	475.154	0.154	0.004	Tractors/Loaders/Backhoes
2.415	0.005	0.122	0.112	467.513	0.151	0.004	Tractors/Loaders/Backhoes
2.738	0.005	0.090	0.083	470.500	0.152	0.004	Tractors/Loaders/Backhoes
2.080	0.005	0.073	0.067	468.245	0.151	0.004	Tractors/Loaders/Backhoes
3.119	0.005	0.117	0.108	468.660	0.152	0.004	Tractors/Loaders/Backhoes
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
4.677	0.005	0.356	0.328	527.096	0.171	0.005	Trenchers
5.520	0.005	0.413	0.380	475.127	0.154	0.004	Trenchers
4.460	0.005	0.228	0.210	467.735	0.151	0.004	Trenchers
4.809	0.005	0.195	0.179	473.595	0.153	0.004	Trenchers
2.775	0.005	0.105	0.097	470.637	0.152	0.004	Trenchers
0.560	0.005	0.009	0.008	472.656	0.153	0.004	Trenchers
4.542	0.008	0.227	0.227	568.299	0.066	0.005	Welders
4.538	0.007	0.212	0.212	568.299	0.069	0.005	Welders
4.304	0.007	0.238	0.238	568.299	0.084	0.005	Welders
3.351	0.006	0.216	0.216	568.299	0.041	0.004	Welders
2.523	0.006	0.127	0.127	568.299	0.031	0.004	Welders
2.143	0.006	0.066	0.066	568.299	0.023	0.004	Welders
1.910	0.005	0.064	0.064	568.299	0.022	0.004	Welders
2.628	0.005	0.137	0.126	470.097	0.152	0.004	Water Trucks
2.507	0.005	0.098	0.090	470.168	0.152	0.004	Water Trucks
2.347	0.005	0.086	0.079	474.579	0.154	0.004	Water Trucks
3.058	0.005	0.120	0.110	472.750	0.153	0.004	Water Trucks
4.794	0.005	0.125	0.115	469.889	0.152	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
25	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
50	0.165	3.114	2.922	0.005	0.027	0.024	525.074	0.170	0.005
120	0.109	3.176	1.744	0.005	0.033	0.031	472.114	0.153	0.004
500	0.072	0.951	0.640	0.005	0.009	0.008	472.055	0.153	0.004
750	0.187	1.004	1.610	0.005	0.050	0.050	568.299	0.016	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.887	5.021	4.221	0.007	0.212	0.212	568.299	0.080	0.005
120	0.442	3.670	3.083	0.006	0.190	0.190	568.299	0.039	0.004
175	0.343	3.192	2.218	0.006	0.115	0.115	568.299	0.030	0.004
250	0.268	1.108	1.859	0.006	0.060	0.060	568.299	0.024	0.004
500	0.261	1.064	1.663	0.005	0.058	0.058	568.299	0.023	0.004
750	0.262	1.064	1.699	0.005	0.058	0.058	568.299	0.023	0.004
1000	0.284	1.134	3.565	0.005	0.082	0.082	568.300	0.025	0.004
15	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
25	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
50	0.711	4.548	4.634	0.006	0.291	0.268	535.378	0.173	0.005
120	0.217	3.306	2.737	0.005	0.131	0.121	464.973	0.150	0.004
175	0.154	2.961	1.598	0.005	0.070	0.064	477.048	0.154	0.004
250	0.133	1.064	1.551	0.005	0.047	0.043	467.992	0.151	0.004
500	0.117	1.015	1.221	0.005	0.041	0.038	469.816	0.152	0.004
750	0.098	0.972	0.955	0.005	0.033	0.031	474.079	0.153	0.004
1000	0.136	0.993	3.058	0.005	0.061	0.057	471.816	0.153	0.004

15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.712	2.381	4.419	0.007	0.180	0.180	568.299	0.064	0.005
25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.722	4.481	4.063	0.007	0.184	0.184	568.300	0.065	0.005
120	0.369	3.523	2.913	0.006	0.166	0.166	568.299	0.033	0.004
175	0.286	3.072	2.055	0.006	0.101	0.101	568.299	0.025	0.004
50	2.115	7.489	6.014	0.005	0.631	0.581	517.900	0.168	0.005
120	0.651	4.065	5.731	0.005	0.398	0.366	469.887	0.152	0.004
175	0.498	3.516	5.113	0.005	0.273	0.251	474.546	0.154	0.004
250	0.350	1.678	4.104	0.005	0.167	0.153	472.906	0.153	0.004
500	0.295	2.448	3.443	0.005	0.139	0.127	472.455	0.153	0.004
750	0.228	1.440	2.727	0.005	0.107	0.098	470.550	0.152	0.004
9999	0.192	1.008	2.374	0.005	0.061	0.057	472.055	0.153	0.004
50	2.064	7.349	5.615	0.005	0.591	0.543	516.108	0.167	0.005
120	0.673	4.005	5.657	0.005	0.466	0.429	476.437	0.154	0.004
175	0.436	3.310	4.395	0.005	0.245	0.225	471.421	0.153	0.004
250	0.343	1.515	4.334	0.005	0.163	0.150	472.925	0.153	0.004
500	0.283	2.024	3.276	0.005	0.129	0.119	474.484	0.154	0.004
750	0.239	1.270	2.825	0.005	0.104	0.096	473.094	0.153	0.004
1000	0.399	1.896	6.399	0.005	0.182	0.167	471.822	0.153	0.004
50	0.862	5.136	4.211	0.007	0.201	0.201	568.299	0.077	0.005
120	0.438	3.711	2.989	0.006	0.178	0.178	568.299	0.039	0.004
175	0.344	3.235	2.114	0.006	0.109	0.109	568.299	0.031	0.004
250	0.274	1.119	1.756	0.006	0.057	0.057	568.299	0.024	0.004
500	0.268	1.072	1.574	0.005	0.055	0.055	568.300	0.024	0.004
750	0.268	1.072	1.606	0.005	0.055	0.055	568.299	0.024	0.004
9999	0.314	1.136	3.487	0.005	0.080	0.080	568.299	0.028	0.004

25	0.685	2.339	4.333	0.007	0.163	0.163	568.299	0.061	0.005
25	0.562	4.461	3.919	0.005	0.202	0.186	525.377	0.170	0.005
50	0.562	4.461	3.919	0.005	0.202	0.186	525.377	0.170	0.005
120	0.275	3.492	2.849	0.005	0.161	0.148	467.791	0.151	0.004
175	0.216	3.090	2.034	0.005	0.099	0.091	472.359	0.153	0.004
250	0.163	1.103	1.706	0.005	0.052	0.048	471.793	0.153	0.004
500	0.143	1.088	1.332	0.005	0.045	0.041	469.616	0.152	0.004
750	0.165	1.150	1.619	0.005	0.056	0.052	469.547	0.152	0.004
50	1.002	5.535	4.520	0.005	0.318	0.292	525.483	0.170	0.005
120	0.412	3.720	3.756	0.005	0.267	0.245	471.529	0.153	0.004
175	0.308	3.231	2.921	0.005	0.158	0.145	472.106	0.153	0.004
250	0.249	1.337	2.582	0.005	0.099	0.091	473.326	0.153	0.004
500	0.254	1.485	2.303	0.005	0.094	0.086	473.615	0.153	0.004
15	0.634	3.531	4.441	0.008	0.201	0.201	568.299	0.057	0.005
25	0.712	2.446	4.497	0.007	0.196	0.196	568.299	0.064	0.005
50	0.613	3.905	3.916	0.007	0.165	0.165	568.299	0.055	0.005
120	0.326	3.361	2.888	0.006	0.153	0.153	568.299	0.029	0.004
175	0.243	2.925	2.068	0.006	0.091	0.091	568.299	0.021	0.004
250	0.183	1.016	1.730	0.006	0.049	0.049	568.299	0.016	0.004
500	0.175	0.996	1.562	0.005	0.048	0.048	568.299	0.015	0.004
750	0.177	0.996	1.596	0.005	0.048	0.048	568.299	0.016	0.004
9999	0.220	1.060	3.372	0.005	0.070	0.070	568.300	0.019	0.004
50	2.235	7.626	5.485	0.005	0.631	0.581	492.935	0.159	0.005
120	0.901	4.452	7.125	0.005	0.570	0.524	469.070	0.152	0.004
175	0.505	3.559	4.839	0.005	0.270	0.248	478.529	0.155	0.004
250	0.335	1.307	4.381	0.005	0.139	0.128	474.539	0.154	0.004
500	0.322	1.460	3.013	0.005	0.117	0.108	471.898	0.153	0.004
750	0.303	1.207	1.808	0.005	0.064	0.064	568.299	0.027	0.004
120	0.395	3.743	3.773	0.005	0.261	0.240	474.516	0.154	0.004
175	0.259	3.220	2.660	0.005	0.129	0.118	472.924	0.153	0.004
250	0.200	1.162	2.113	0.005	0.072	0.067	471.003	0.152	0.004
750	0.181	1.122	1.715	0.005	0.063	0.058	471.806	0.153	0.004
1000	0.160	1.033	2.414	0.005	0.064	0.059	472.055	0.153	0.004
175	0.278	3.324	2.246	0.005	0.113	0.104	470.290	0.152	0.004
250	0.249	1.348	2.109	0.005	0.082	0.076	470.193	0.152	0.004

500	0.225	1.338	1.954	0.005	0.072	0.066	474.542	0.154	0.004
750	0.293	1.935	2.668	0.005	0.106	0.098	472.991	0.153	0.004
1000	0.256	1.252	4.158	0.005	0.099	0.091	471.055	0.152	0.004
15	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
25	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
50	1.010	5.307	4.902	0.005	0.382	0.351	527.783	0.171	0.005
120	0.482	3.703	4.456	0.005	0.323	0.298	472.275	0.153	0.004
175	0.330	3.183	3.438	0.005	0.180	0.165	469.764	0.152	0.004
500	0.215	1.599	2.428	0.005	0.090	0.083	475.212	0.154	0.004
15	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
25	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
50	0.831	5.314	4.425	0.005	0.289	0.266	526.176	0.170	0.005
120	0.404	3.740	3.718	0.005	0.256	0.235	470.000	0.152	0.004
175	0.254	3.234	2.347	0.005	0.121	0.111	471.850	0.153	0.004
250	0.204	1.171	2.094	0.005	0.070	0.064	473.223	0.153	0.004
500	0.195	1.330	1.796	0.005	0.064	0.059	472.929	0.153	0.004

750	0.166	1.463	1.387	0.005	0.054	0.050	473.464	0.153	0.004
1000	0.276	1.093	4.876	0.005	0.120	0.110	472.055	0.153	0.004
50	1.108	5.960	4.966	0.005	0.396	0.364	523.709	0.169	0.005
120	0.294	3.602	2.956	0.005	0.166	0.152	473.588	0.153	0.004
175	0.249	3.196	2.246	0.005	0.114	0.105	472.219	0.153	0.004
250	0.269	1.309	3.082	0.005	0.102	0.094	471.482	0.153	0.004
500	0.254	1.442	2.602	0.005	0.101	0.093	470.297	0.152	0.004
9999	0.073	0.972	2.318	0.005	0.020	0.018	472.055	0.153	0.004
25	1.208	5.302	4.602	0.005	0.370	0.340	526.515	0.170	0.005
50	1.208	5.302	4.602	0.005	0.370	0.340	526.515	0.170	0.005
120	0.420	3.563	4.026	0.005	0.285	0.263	469.774	0.152	0.004
175	0.256	3.016	2.695	0.005	0.130	0.120	472.555	0.153	0.004
250	0.166	1.024	2.484	0.005	0.070	0.064	472.477	0.153	0.004
500	0.164	0.988	2.053	0.005	0.074	0.068	465.591	0.151	0.004
25	0.587	4.211	3.882	0.005	0.200	0.184	520.397	0.168	0.005
50	0.587	4.211	3.882	0.005	0.200	0.184	520.397	0.168	0.005
120	0.355	3.554	3.451	0.005	0.219	0.202	473.221	0.153	0.004
175	0.229	3.032	2.315	0.005	0.114	0.105	470.650	0.152	0.004
250	0.211	1.209	2.582	0.005	0.092	0.085	472.151	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
15	0.634	3.531	4.441	0.008	0.201	0.201	568.299	0.057	0.005
25	0.712	2.446	4.497	0.007	0.196	0.196	568.299	0.064	0.005
50	0.439	3.329	3.765	0.007	0.136	0.136	568.299	0.039	0.005
120	0.264	3.210	2.766	0.006	0.129	0.129	568.299	0.023	0.004
175	0.238	2.907	2.118	0.006	0.093	0.093	568.299	0.021	0.004

250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.671	4.099	3.966	0.007	0.175	0.175	568.299	0.060	0.005
120	0.347	3.412	2.928	0.006	0.162	0.162	568.300	0.031	0.004
175	0.260	2.968	2.101	0.006	0.096	0.096	568.299	0.023	0.004
250	0.197	1.031	1.759	0.006	0.052	0.052	568.299	0.017	0.004
500	0.189	1.007	1.584	0.005	0.050	0.050	568.299	0.017	0.004
750	0.191	1.007	1.618	0.005	0.050	0.050	568.299	0.017	0.004
9999	0.233	1.074	3.409	0.005	0.072	0.072	568.300	0.021	0.004
15	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
25	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
50	0.848	4.597	4.351	0.005	0.294	0.270	525.791	0.170	0.005
120	0.353	3.507	3.589	0.005	0.219	0.202	473.901	0.153	0.004
175	0.193	2.926	2.117	0.005	0.097	0.090	471.980	0.153	0.004
250	0.197	1.228	2.493	0.005	0.081	0.075	473.470	0.153	0.004
500	0.221	1.950	2.589	0.005	0.100	0.092	479.329	0.155	0.004
50	0.969	4.657	4.411	0.005	0.304	0.280	525.384	0.170	0.005
120	0.175	3.252	2.285	0.005	0.089	0.082	473.110	0.153	0.004
175	0.130	2.845	1.617	0.005	0.060	0.055	471.758	0.153	0.004
250	0.115	0.984	1.612	0.005	0.037	0.034	472.547	0.153	0.004
500	0.092	0.946	1.302	0.005	0.028	0.026	465.744	0.151	0.004
175	0.691	3.848	6.790	0.005	0.386	0.356	472.975	0.153	0.004
250	0.601	2.317	6.296	0.005	0.306	0.281	474.798	0.154	0.004
500	0.492	4.041	5.081	0.005	0.232	0.214	478.987	0.155	0.004
750	0.458	2.604	6.123	0.005	0.218	0.201	473.046	0.153	0.004
1000	0.497	2.057	5.095	0.005	0.150	0.150	568.299	0.044	0.004
25	1.326	6.449	4.974	0.005	0.409	0.377	524.551	0.170	0.005
50	1.326	6.449	4.974	0.005	0.409	0.377	524.551	0.170	0.005
120	0.498	3.892	4.215	0.005	0.316	0.291	466.421	0.151	0.004
175	0.346	3.354	3.119	0.005	0.171	0.157	471.080	0.152	0.004

250	0.266	1.240	2.998	0.005	0.100	0.092	469.564	0.152	0.004
500	0.264	1.529	2.610	0.005	0.097	0.090	467.928	0.151	0.004
750	0.271	1.397	2.641	0.005	0.102	0.094	462.055	0.149	0.004
1000	0.294	1.206	4.975	0.005	0.128	0.118	471.258	0.152	0.004
120	0.704	4.218	6.659	0.005	0.512	0.471	483.713	0.156	0.004
175	0.432	3.456	4.341	0.005	0.232	0.213	478.654	0.155	0.004
250	0.391	1.884	4.367	0.005	0.189	0.174	469.126	0.152	0.004
500	0.299	2.255	3.445	0.005	0.134	0.123	472.464	0.153	0.004
750	0.250	1.658	2.887	0.005	0.105	0.097	471.786	0.153	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	0.714	4.380	4.002	0.007	0.179	0.179	568.299	0.064	0.005
120	0.363	3.493	2.889	0.006	0.162	0.162	568.299	0.032	0.004
175	0.278	3.043	2.043	0.006	0.098	0.098	568.299	0.025	0.004
250	0.260	1.273	2.053	0.007	0.063	0.063	686.695	0.023	0.004
25	0.409	3.732	3.573	0.005	0.126	0.116	527.450	0.171	0.005
50	0.409	3.732	3.573	0.005	0.126	0.116	527.450	0.171	0.005
120	0.178	3.277	2.366	0.005	0.096	0.089	471.977	0.153	0.004
50	0.507	3.932	4.189	0.006	0.204	0.188	535.784	0.173	0.005
120	0.312	3.436	3.461	0.005	0.191	0.175	474.091	0.153	0.004
175	0.258	2.919	3.099	0.005	0.145	0.134	469.169	0.152	0.004
250	0.207	1.219	2.994	0.005	0.092	0.085	476.802	0.154	0.004
500	0.141	1.202	1.753	0.005	0.064	0.058	471.748	0.153	0.004
750	0.125	0.992	1.597	0.005	0.062	0.057	470.409	0.152	0.004
15	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
25	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
50	1.219	5.900	4.849	0.005	0.412	0.379	525.328	0.170	0.005
120	0.440	3.757	3.962	0.005	0.291	0.268	474.116	0.153	0.004
175	0.385	3.247	3.707	0.005	0.187	0.172	473.122	0.153	0.004
250	0.164	1.108	1.758	0.005	0.055	0.051	470.126	0.152	0.004
25	0.756	4.902	4.226	0.005	0.255	0.234	515.121	0.167	0.005

50	0.756	4.902	4.226	0.005	0.255	0.234	515.121	0.167	0.005
120	0.296	3.571	2.995	0.005	0.177	0.163	475.362	0.154	0.004
175	0.221	3.091	2.062	0.005	0.104	0.096	467.529	0.151	0.004
250	0.209	1.186	2.369	0.005	0.080	0.074	470.572	0.152	0.004
500	0.179	1.341	1.776	0.005	0.064	0.059	469.303	0.152	0.004
750	0.247	1.433	2.754	0.005	0.104	0.096	466.456	0.151	0.004
15	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
25	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
50	0.809	4.666	4.459	0.005	0.313	0.288	527.017	0.170	0.005
120	0.556	3.789	5.106	0.005	0.371	0.341	475.287	0.154	0.004
175	0.407	3.304	4.272	0.005	0.219	0.201	467.734	0.151	0.004
250	0.356	1.668	4.360	0.005	0.172	0.158	473.854	0.153	0.004
500	0.221	1.865	2.491	0.005	0.100	0.092	470.701	0.152	0.004
750	0.066	0.947	0.475	0.005	0.009	0.008	472.529	0.153	0.004
15	0.717	3.531	4.462	0.008	0.214	0.214	568.299	0.064	0.005
25	0.752	2.446	4.497	0.007	0.201	0.201	568.299	0.067	0.005
50	0.829	4.708	4.133	0.007	0.203	0.203	568.299	0.074	0.005
120	0.411	3.579	3.042	0.006	0.184	0.184	568.299	0.037	0.004
175	0.315	3.112	2.189	0.006	0.110	0.110	568.299	0.028	0.004
250	0.243	1.081	1.836	0.006	0.057	0.057	568.299	0.021	0.004
500	0.236	1.044	1.642	0.005	0.055	0.055	568.299	0.021	0.004
175	0.278	3.324	2.246	0.005	0.113	0.104	470.290	0.152	0.004
250	0.249	1.348	2.109	0.005	0.082	0.076	470.193	0.152	0.004
500	0.225	1.338	1.954	0.005	0.072	0.066	474.542	0.154	0.004
750	0.293	1.935	2.668	0.005	0.106	0.098	472.991	0.153	0.004
1000	0.256	1.252	4.158	0.005	0.099	0.091	471.055	0.152	0.004

2022

2022		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5
Aerial Lifts	15	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	25	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	50	0.162	3.112	2.907	0.005	0.024	0.022
Aerial Lifts	120	0.105	3.176	1.627	0.005	0.030	0.028
Aerial Lifts	500	0.075	0.956	0.642	0.005	0.009	0.008
Aerial Lifts	750	0.177	0.998	1.424	0.005	0.044	0.044
Air Compressors	15	0.707	3.519	4.408	0.008	0.203	0.203
Air Compressors	25	0.739	2.426	4.470	0.007	0.193	0.193
Air Compressors	50	0.814	4.959	4.093	0.007	0.183	0.183
Air Compressors	120	0.413	3.662	2.844	0.006	0.165	0.165
Air Compressors	175	0.322	3.194	1.959	0.006	0.101	0.101
Air Compressors	250	0.255	1.102	1.617	0.006	0.052	0.052
Air Compressors	500	0.249	1.059	1.472	0.005	0.051	0.051
Air Compressors	750	0.250	1.059	1.502	0.005	0.051	0.051
Air Compressors	1000	0.269	1.117	3.378	0.005	0.075	0.075
Bore/Drill Rigs	15	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	25	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	50	0.631	4.334	4.285	0.006	0.241	0.221
Bore/Drill Rigs	120	0.191	3.260	2.425	0.005	0.107	0.099
Bore/Drill Rigs	175	0.137	2.954	1.288	0.005	0.057	0.052
Bore/Drill Rigs	250	0.115	1.047	1.163	0.005	0.037	0.034
Bore/Drill Rigs	500	0.108	1.002	1.035	0.005	0.035	0.032
Bore/Drill Rigs	750	0.091	0.975	0.773	0.005	0.028	0.026
Bore/Drill Rigs	1000	0.057	0.945	2.278	0.005	0.018	0.017

Cement and Mortar Mixers	15	0.661	3.470	4.142	0.008	0.161	0.161
Cement and Mortar Mixers	25	0.704	2.367	4.399	0.007	0.175	0.175
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161
Concrete/Industrial Saws	50	0.660	4.422	3.936	0.007	0.158	0.158
Concrete/Industrial Saws	120	0.343	3.514	2.686	0.006	0.144	0.144
Concrete/Industrial Saws	175	0.267	3.072	1.806	0.006	0.089	0.089
Cranes	50	2.028	7.368	5.899	0.005	0.603	0.555
Cranes	120	0.578	3.972	5.149	0.005	0.346	0.318
Cranes	175	0.457	3.475	4.617	0.005	0.246	0.227
Cranes	250	0.316	1.602	3.541	0.005	0.147	0.135
Cranes	500	0.261	2.212	2.894	0.005	0.117	0.108
Cranes	750	0.200	1.283	2.251	0.005	0.089	0.082
Cranes	9999	0.201	1.015	2.386	0.005	0.062	0.057
Crawler Tractors	50	1.899	7.041	5.380	0.005	0.539	0.496
Crawler Tractors	120	0.600	3.925	5.101	0.005	0.408	0.375
Crawler Tractors	175	0.389	3.264	3.827	0.005	0.214	0.197
Crawler Tractors	250	0.306	1.440	3.737	0.005	0.141	0.130
Crawler Tractors	500	0.254	1.916	2.744	0.005	0.111	0.102
Crawler Tractors	750	0.198	1.186	2.126	0.005	0.079	0.073
Crawler Tractors	1000	0.357	1.732	5.923	0.005	0.162	0.149
Crushing/Proc. Equipment	50	0.795	5.081	4.083	0.007	0.172	0.172
Crushing/Proc. Equipment	120	0.410	3.704	2.758	0.006	0.154	0.154
Crushing/Proc. Equipment	175	0.323	3.237	1.861	0.006	0.095	0.095
Crushing/Proc. Equipment	250	0.260	1.114	1.521	0.006	0.050	0.050
Crushing/Proc. Equipment	500	0.255	1.067	1.389	0.005	0.048	0.048
Crushing/Proc. Equipment	750	0.256	1.067	1.416	0.005	0.048	0.048
Crushing/Proc. Equipment	9999	0.300	1.121	3.310	0.005	0.073	0.073

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.162	0.162
Excavators	25	0.478	4.273	3.700	0.005	0.160	0.147
Excavators	50	0.478	4.273	3.700	0.005	0.160	0.147
Excavators	120	0.252	3.473	2.606	0.005	0.138	0.127
Excavators	175	0.191	3.074	1.678	0.005	0.081	0.075
Excavators	250	0.148	1.092	1.386	0.005	0.044	0.040
Excavators	500	0.128	1.061	1.040	0.005	0.035	0.032
Excavators	750	0.150	1.144	1.287	0.005	0.047	0.043
Forklifts	50	0.859	5.304	4.312	0.005	0.270	0.248
Forklifts	120	0.362	3.675	3.360	0.005	0.223	0.205
Forklifts	175	0.273	3.197	2.480	0.005	0.132	0.122
Forklifts	250	0.236	1.317	2.319	0.005	0.090	0.083
Forklifts	500	0.232	1.219	1.991	0.005	0.077	0.071
Generator Sets	15	0.626	3.519	4.390	0.008	0.193	0.193
Generator Sets	25	0.706	2.426	4.470	0.007	0.188	0.188
Generator Sets	50	0.560	3.858	3.796	0.007	0.143	0.143
Generator Sets	120	0.301	3.353	2.671	0.006	0.134	0.134
Generator Sets	175	0.226	2.926	1.830	0.006	0.081	0.081
Generator Sets	250	0.173	1.010	1.508	0.006	0.043	0.043
Generator Sets	500	0.166	0.990	1.384	0.005	0.042	0.042
Generator Sets	750	0.168	0.990	1.412	0.005	0.043	0.043
Generator Sets	9999	0.206	1.045	3.202	0.005	0.063	0.063
Graders	50	2.106	7.428	5.332	0.005	0.595	0.547
Graders	120	0.796	4.330	6.360	0.005	0.493	0.453
Graders	175	0.440	3.493	4.125	0.005	0.229	0.211
Graders	250	0.307	1.273	3.888	0.005	0.124	0.114
Graders	500	0.311	1.390	2.802	0.005	0.108	0.100
Graders	750	0.289	1.187	1.606	0.005	0.057	0.057
Off-Highway Tractors	120	0.348	3.710	3.400	0.005	0.219	0.202
Off-Highway Tractors	175	0.231	3.186	2.239	0.005	0.107	0.099
Off-Highway Tractors	250	0.180	1.143	1.732	0.005	0.060	0.055
Off-Highway Tractors	750	0.171	1.121	1.433	0.005	0.055	0.050
Off-Highway Tractors	1000	0.170	1.044	2.432	0.005	0.066	0.060
Off-Highway Trucks	175	0.241	3.284	1.811	0.005	0.088	0.081
Off-Highway Trucks	250	0.215	1.279	1.618	0.005	0.064	0.059

Off-Highway Trucks	500	0.196	1.247	1.490	0.005	0.054	0.050
Off-Highway Trucks	750	0.263	1.746	2.268	0.005	0.088	0.081
Off-Highway Trucks	1000	0.234	1.214	3.842	0.005	0.086	0.079
Other Construction Equipment	15	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	25	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	50	0.920	5.167	4.741	0.005	0.348	0.320
Other Construction Equipment	120	0.440	3.666	4.098	0.005	0.288	0.265
Other Construction Equipment	175	0.295	3.155	2.994	0.005	0.156	0.144
Other Construction Equipment	500	0.188	1.438	1.975	0.005	0.074	0.068
Other General Industrial Equipment	15	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	25	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	50	0.702	5.076	4.197	0.005	0.238	0.219
Other General Industrial Equipment	120	0.339	3.668	3.200	0.005	0.199	0.183
Other General Industrial Equipment	175	0.244	3.233	2.150	0.005	0.111	0.102
Other General Industrial Equipment	250	0.187	1.138	1.759	0.005	0.057	0.052
Other General Industrial Equipment	500	0.175	1.171	1.433	0.005	0.050	0.046

Other General Industrial Equipment	750	0.149	1.457	1.062	0.005	0.046	0.042
Other General Industrial Equipment	1000	0.187	1.039	3.942	0.005	0.079	0.073
Other Material Handling Equipment	50	1.103	5.984	4.920	0.005	0.385	0.354
Other Material Handling Equipment	120	0.247	3.557	2.567	0.005	0.121	0.111
Other Material Handling Equipment	175	0.226	3.176	1.894	0.005	0.103	0.095
Other Material Handling Equipment	250	0.229	1.239	2.425	0.005	0.083	0.076
Other Material Handling Equipment	500	0.226	1.346	2.063	0.005	0.083	0.077
Other Material Handling Equipment	9999	0.076	0.978	2.328	0.005	0.020	0.018
Pavers	25	1.092	5.114	4.421	0.005	0.330	0.303
Pavers	50	1.092	5.114	4.421	0.005	0.330	0.303
Pavers	120	0.373	3.525	3.659	0.005	0.248	0.228
Pavers	175	0.215	2.995	2.180	0.005	0.104	0.095
Pavers	250	0.140	1.012	1.900	0.005	0.055	0.050
Pavers	500	0.150	0.982	1.810	0.005	0.063	0.058
Paving Equipment	25	0.572	4.244	3.836	0.005	0.188	0.173
Paving Equipment	50	0.572	4.244	3.836	0.005	0.188	0.173
Paving Equipment	120	0.296	3.501	3.000	0.005	0.171	0.157
Paving Equipment	175	0.213	3.038	2.073	0.005	0.101	0.093
Paving Equipment	250	0.196	1.204	2.228	0.005	0.083	0.076
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161
Pressure Washers	15	0.626	3.519	4.390	0.008	0.193	0.193
Pressure Washers	25	0.706	2.426	4.470	0.007	0.188	0.188
Pressure Washers	50	0.398	3.291	3.649	0.007	0.117	0.117
Pressure Washers	120	0.241	3.202	2.560	0.006	0.112	0.112
Pressure Washers	175	0.221	2.907	1.871	0.006	0.082	0.082

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009
Pumps	15	0.707	3.519	4.408	0.008	0.203	0.203
Pumps	25	0.739	2.426	4.470	0.007	0.193	0.193
Pumps	50	0.614	4.048	3.846	0.007	0.152	0.152
Pumps	120	0.321	3.404	2.708	0.006	0.142	0.142
Pumps	175	0.242	2.969	1.860	0.006	0.085	0.085
Pumps	250	0.186	1.025	1.534	0.006	0.045	0.045
Pumps	500	0.180	1.001	1.404	0.005	0.044	0.044
Pumps	750	0.181	1.001	1.432	0.005	0.044	0.044
Pumps	9999	0.219	1.058	3.236	0.005	0.065	0.065
Rollers	15	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	25	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	50	0.738	4.402	4.128	0.005	0.250	0.230
Rollers	120	0.310	3.470	3.219	0.005	0.186	0.171
Rollers	175	0.164	2.913	1.714	0.005	0.079	0.072
Rollers	250	0.187	1.228	2.212	0.005	0.077	0.071
Rollers	500	0.218	1.955	2.463	0.005	0.097	0.089
Rough Terrain Forklifts	50	0.789	4.304	4.041	0.005	0.238	0.219
Rough Terrain Forklifts	120	0.159	3.244	2.098	0.005	0.073	0.067
Rough Terrain Forklifts	175	0.120	2.844	1.405	0.005	0.051	0.047
Rough Terrain Forklifts	250	0.119	0.989	1.617	0.005	0.037	0.034
Rough Terrain Forklifts	500	0.068	0.937	0.558	0.005	0.009	0.008
Rubber Tired Dozers	175	0.600	3.752	5.808	0.005	0.326	0.300
Rubber Tired Dozers	250	0.480	2.056	5.046	0.005	0.240	0.220
Rubber Tired Dozers	500	0.475	3.895	4.808	0.005	0.220	0.202
Rubber Tired Dozers	750	0.460	2.607	6.122	0.005	0.218	0.201
Rubber Tired Dozers	1000	0.475	1.961	4.896	0.005	0.140	0.140
Rubber Tired Loaders	25	1.179	6.204	4.748	0.005	0.354	0.326
Rubber Tired Loaders	50	1.179	6.204	4.748	0.005	0.354	0.326
Rubber Tired Loaders	120	0.440	3.839	3.768	0.005	0.267	0.245
Rubber Tired Loaders	175	0.295	3.302	2.518	0.005	0.136	0.125

Rubber Tired Loaders	250	0.226	1.188	2.347	0.005	0.079	0.072
Rubber Tired Loaders	500	0.237	1.441	2.175	0.005	0.081	0.075
Rubber Tired Loaders	750	0.233	1.315	2.097	0.005	0.080	0.074
Rubber Tired Loaders	1000	0.193	1.162	3.617	0.005	0.075	0.069
Scrapers	120	0.681	4.205	6.455	0.005	0.494	0.454
Scrapers	175	0.390	3.417	3.833	0.005	0.204	0.187
Scrapers	250	0.341	1.743	3.669	0.005	0.160	0.147
Scrapers	500	0.264	2.052	2.879	0.005	0.112	0.103
Scrapers	750	0.224	1.508	2.475	0.005	0.090	0.083
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161
Signal Boards	50	0.655	4.325	3.880	0.007	0.154	0.154
Signal Boards	120	0.337	3.484	2.668	0.006	0.141	0.141
Signal Boards	175	0.260	3.044	1.801	0.006	0.086	0.086
Signal Boards	250	0.247	1.266	1.782	0.007	0.055	0.055
Skid Steer Loaders	25	0.365	3.656	3.433	0.005	0.103	0.095
Skid Steer Loaders	50	0.365	3.656	3.433	0.005	0.103	0.095
Skid Steer Loaders	120	0.164	3.270	2.189	0.005	0.081	0.075
Surfacing Equipment	50	0.428	3.772	3.911	0.006	0.154	0.142
Surfacing Equipment	120	0.293	3.409	3.250	0.005	0.175	0.161
Surfacing Equipment	175	0.239	2.910	2.701	0.005	0.130	0.120
Surfacing Equipment	250	0.196	1.217	2.667	0.005	0.085	0.078
Surfacing Equipment	500	0.132	1.160	1.557	0.005	0.057	0.053
Surfacing Equipment	750	0.115	0.988	1.355	0.005	0.052	0.048
Sweepers/Scrubbers	15	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	25	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	50	1.008	5.451	4.490	0.005	0.335	0.308
Sweepers/Scrubbers	120	0.372	3.692	3.472	0.005	0.232	0.214
Sweepers/Scrubbers	175	0.321	3.222	3.002	0.005	0.145	0.133
Sweepers/Scrubbers	250	0.152	1.101	1.605	0.005	0.050	0.046
Tractors/Loaders/Backhoes	25	0.688	4.760	4.030	0.005	0.218	0.200

Tractors/Loaders/Backhoes	50	0.688	4.760	4.030	0.005	0.218	0.200
Tractors/Loaders/Backhoes	120	0.260	3.536	2.647	0.005	0.142	0.131
Tractors/Loaders/Backhoes	175	0.200	3.079	1.753	0.005	0.089	0.082
Tractors/Loaders/Backhoes	250	0.187	1.162	1.943	0.005	0.067	0.062
Tractors/Loaders/Backhoes	500	0.160	1.280	1.437	0.005	0.053	0.049
Tractors/Loaders/Backhoes	750	0.232	1.353	2.453	0.005	0.094	0.087
Trenchers	15	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	25	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	50	0.722	4.518	4.269	0.005	0.275	0.253
Trenchers	120	0.529	3.778	4.913	0.005	0.348	0.320
Trenchers	175	0.396	3.313	4.103	0.005	0.212	0.195
Trenchers	250	0.335	1.663	3.853	0.005	0.161	0.148
Trenchers	500	0.212	1.872	2.212	0.005	0.094	0.086
Trenchers	750	0.057	0.945	0.301	0.005	0.009	0.008
Welders	15	0.707	3.519	4.408	0.008	0.203	0.203
Welders	25	0.739	2.426	4.470	0.007	0.193	0.193
Welders	50	0.758	4.645	4.007	0.007	0.175	0.175
Welders	120	0.382	3.570	2.808	0.006	0.160	0.160
Welders	175	0.295	3.113	1.935	0.006	0.097	0.097
Welders	250	0.231	1.074	1.598	0.006	0.050	0.050
Welders	500	0.225	1.038	1.454	0.005	0.049	0.049
Water Trucks	175	0.241	3.284	1.811	0.005	0.088	0.081
Water Trucks	250	0.215	1.279	1.618	0.005	0.064	0.059
Water Trucks	500	0.196	1.247	1.490	0.005	0.054	0.050
Water Trucks	750	0.263	1.746	2.268	0.005	0.088	0.081
Water Trucks	1000	0.234	1.214	3.842	0.005	0.086	0.079

2023

g/hp/hr	g/hp/hr	g/hp/hr
CO2	CH4	N2O
525.074	0.170	0.005
525.074	0.170	0.005
525.074	0.170	0.005
472.114	0.153	0.004
472.055	0.153	0.004
568.299	0.016	0.004
568.299	0.063	0.005
568.299	0.066	0.005
568.299	0.073	0.005
568.299	0.037	0.004
568.299	0.029	0.004
568.300	0.023	0.004
568.299	0.022	0.004
568.299	0.022	0.004
568.300	0.024	0.004
529.870	0.171	0.005
529.870	0.171	0.005
529.870	0.171	0.005
462.267	0.150	0.004
477.372	0.154	0.004
468.760	0.152	0.004
467.192	0.151	0.004
477.141	0.154	0.004
472.921	0.153	0.004

2023		g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX
Aerial Lifts	15	0.163	3.122	2.897
Aerial Lifts	25	0.163	3.122	2.897
Aerial Lifts	50	0.163	3.122	2.897
Aerial Lifts	120	0.101	3.170	1.548
Aerial Lifts	500	0.079	0.961	0.645
Aerial Lifts	750	0.169	0.995	1.265
Air Compressors	15	0.698	3.508	4.359
Air Compressors	25	0.728	2.407	4.447
Air Compressors	50	0.753	4.913	3.975
Air Compressors	120	0.387	3.657	2.631
Air Compressors	175	0.303	3.197	1.748
Air Compressors	250	0.243	1.099	1.420
Air Compressors	500	0.238	1.055	1.305
Air Compressors	750	0.239	1.055	1.331
Air Compressors	1000	0.256	1.102	3.221
Bore/Drill Rigs	15	0.606	4.311	4.208
Bore/Drill Rigs	25	0.606	4.311	4.208
Bore/Drill Rigs	50	0.606	4.311	4.208
Bore/Drill Rigs	120	0.187	3.258	2.357
Bore/Drill Rigs	175	0.125	2.969	1.078
Bore/Drill Rigs	250	0.110	1.043	1.047
Bore/Drill Rigs	500	0.101	0.989	0.898
Bore/Drill Rigs	750	0.091	0.982	0.717
Bore/Drill Rigs	1000	0.053	0.936	2.262

568.299	0.059	0.005
568.299	0.063	0.005
568.299	0.061	0.005
568.300	0.059	0.005
568.299	0.031	0.004
568.300	0.024	0.004
517.872	0.168	0.005
469.993	0.152	0.004
474.589	0.154	0.004
472.983	0.153	0.004
472.181	0.153	0.004
470.476	0.152	0.004
472.055	0.153	0.004
516.148	0.167	0.005
476.022	0.154	0.004
471.567	0.153	0.004
472.098	0.153	0.004
474.412	0.153	0.004
472.876	0.153	0.004
470.701	0.152	0.004
568.299	0.071	0.005
568.299	0.037	0.004
568.299	0.029	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.027	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142
Cement and Mortar Mixers	25	0.697	2.356	4.382
Concrete/Industrial Saws	25	0.685	2.340	4.332
Concrete/Industrial Saws	50	0.606	4.372	3.815
Concrete/Industrial Saws	120	0.320	3.507	2.478
Concrete/Industrial Saws	175	0.250	3.072	1.599
Cranes	50	2.047	7.453	5.923
Cranes	120	0.552	3.944	4.875
Cranes	175	0.423	3.443	4.222
Cranes	250	0.297	1.553	3.229
Cranes	500	0.236	2.010	2.511
Cranes	750	0.195	1.282	2.073
Cranes	9999	0.211	1.023	2.399
Crawler Tractors	50	1.873	7.027	5.325
Crawler Tractors	120	0.558	3.889	4.762
Crawler Tractors	175	0.347	3.235	3.330
Crawler Tractors	250	0.276	1.395	3.187
Crawler Tractors	500	0.241	1.852	2.476
Crawler Tractors	750	0.184	1.159	1.867
Crawler Tractors	1000	0.268	1.610	4.770
Crushing/Proc. Equipment	50	0.739	5.039	3.962
Crushing/Proc. Equipment	120	0.385	3.700	2.552
Crushing/Proc. Equipment	175	0.304	3.240	1.654
Crushing/Proc. Equipment	250	0.248	1.111	1.330
Crushing/Proc. Equipment	500	0.244	1.064	1.227
Crushing/Proc. Equipment	750	0.244	1.065	1.251
Crushing/Proc. Equipment	9999	0.287	1.107	3.160

568.299	0.061	0.005
525.447	0.170	0.005
525.447	0.170	0.005
467.626	0.151	0.004
472.192	0.153	0.004
472.041	0.153	0.004
469.711	0.152	0.004
469.289	0.152	0.004
525.483	0.170	0.005
471.529	0.153	0.004
472.106	0.153	0.004
473.326	0.153	0.004
473.615	0.153	0.004
568.299	0.056	0.005
568.299	0.063	0.005
568.299	0.050	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.018	0.004
493.025	0.160	0.005
469.630	0.152	0.004
478.566	0.155	0.004
474.239	0.153	0.004
471.928	0.153	0.004
568.299	0.026	0.004
475.234	0.154	0.004
472.811	0.153	0.004
471.131	0.152	0.004
471.939	0.153	0.004
472.055	0.153	0.004
470.181	0.152	0.004
469.615	0.152	0.004

Dumpers/Tenders	25	0.685	2.339	4.332
Excavators	25	0.450	4.234	3.594
Excavators	50	0.450	4.234	3.594
Excavators	120	0.230	3.454	2.381
Excavators	175	0.178	3.076	1.462
Excavators	250	0.142	1.090	1.209
Excavators	500	0.122	1.051	0.893
Excavators	750	0.144	1.132	1.159
Forklifts	50	0.766	5.166	4.152
Forklifts	120	0.327	3.647	3.057
Forklifts	175	0.244	3.180	2.112
Forklifts	250	0.204	1.235	1.807
Forklifts	500	0.220	1.216	1.788
Generator Sets	15	0.618	3.508	4.345
Generator Sets	25	0.701	2.407	4.447
Generator Sets	50	0.514	3.819	3.685
Generator Sets	120	0.279	3.347	2.477
Generator Sets	175	0.211	2.927	1.635
Generator Sets	250	0.164	1.006	1.328
Generator Sets	500	0.158	0.986	1.228
Generator Sets	750	0.160	0.986	1.253
Generator Sets	9999	0.194	1.031	3.058
Graders	50	1.947	7.191	5.148
Graders	120	0.719	4.228	5.740
Graders	175	0.390	3.450	3.548
Graders	250	0.284	1.252	3.441
Graders	500	0.309	1.385	2.705
Graders	750	0.276	1.170	1.425
Off-Highway Tractors	120	0.316	3.687	3.095
Off-Highway Tractors	175	0.201	3.143	1.785
Off-Highway Tractors	250	0.171	1.138	1.491
Off-Highway Tractors	750	0.168	1.124	1.289
Off-Highway Tractors	1000	0.180	1.055	2.449
Off-Highway Trucks	175	0.236	3.304	1.683
Off-Highway Trucks	250	0.207	1.273	1.456

474.714	0.154	0.004
473.977	0.153	0.004
472.344	0.153	0.004
529.183	0.171	0.005
529.183	0.171	0.005
529.183	0.171	0.005
472.318	0.153	0.004
469.613	0.152	0.004
475.998	0.154	0.004
526.176	0.170	0.005
526.176	0.170	0.005
526.176	0.170	0.005
470.000	0.152	0.004
471.850	0.153	0.004
473.223	0.153	0.004
472.929	0.153	0.004

Off-Highway Trucks	500	0.187	1.221	1.324
Off-Highway Trucks	750	0.263	1.719	2.182
Off-Highway Trucks	1000	0.214	1.194	3.544
Other Construction Equipment	15	0.866	5.074	4.594
Other Construction Equipment	25	0.866	5.074	4.594
Other Construction Equipment	50	0.866	5.074	4.594
Other Construction Equipment	120	0.406	3.632	3.790
Other Construction Equipment	175	0.274	3.142	2.698
Other Construction Equipment	500	0.180	1.396	1.812
Other General Industrial Equipment	15	0.603	4.883	3.993
Other General Industrial Equipment	25	0.603	4.883	3.993
Other General Industrial Equipment	50	0.603	4.883	3.993
Other General Industrial Equipment	120	0.308	3.647	2.924
Other General Industrial Equipment	175	0.201	3.175	1.609
Other General Industrial Equipment	250	0.181	1.140	1.530
Other General Industrial Equipment	500	0.164	1.121	1.256

473.464	0.153	0.004
472.055	0.153	0.004
523.709	0.169	0.005
473.588	0.153	0.004
472.219	0.153	0.004
471.482	0.153	0.004
470.297	0.152	0.004
472.055	0.153	0.004
526.896	0.170	0.005
526.896	0.170	0.005
470.185	0.152	0.004
472.760	0.153	0.004
472.372	0.153	0.004
466.004	0.151	0.004
520.659	0.168	0.005
520.659	0.168	0.005
473.448	0.153	0.004
470.665	0.152	0.004
472.169	0.153	0.004
568.299	0.059	0.005
568.299	0.056	0.005
568.299	0.063	0.005
568.300	0.035	0.005
568.299	0.021	0.004
568.299	0.019	0.004

Other General Industrial Equipment	750	0.111	1.105	0.626
Other General Industrial Equipment	1000	0.193	1.049	3.956
Other Material Handling Equipment	50	1.011	5.757	4.684
Other Material Handling Equipment	120	0.225	3.515	2.298
Other Material Handling Equipment	175	0.217	3.171	1.769
Other Material Handling Equipment	250	0.207	1.209	2.004
Other Material Handling Equipment	500	0.218	1.344	1.870
Other Material Handling Equipment	9999	0.054	0.939	2.268
Pavers	25	1.007	5.007	4.285
Pavers	50	1.007	5.007	4.285
Pavers	120	0.349	3.507	3.427
Pavers	175	0.199	2.994	1.955
Pavers	250	0.130	1.010	1.611
Pavers	500	0.152	0.987	1.771
Paving Equipment	25	0.541	4.241	3.774
Paving Equipment	50	0.541	4.241	3.774
Paving Equipment	120	0.278	3.503	2.837
Paving Equipment	175	0.204	3.051	1.913
Paving Equipment	250	0.175	1.165	1.885
Plate Compactors	15	0.661	3.469	4.142
Pressure Washers	15	0.618	3.508	4.345
Pressure Washers	25	0.701	2.407	4.447
Pressure Washers	50	0.363	3.260	3.541
Pressure Washers	120	0.222	3.196	2.377
Pressure Washers	175	0.205	2.907	1.665

568.299	0.008	0.004
568.299	0.063	0.005
568.299	0.066	0.005
568.299	0.055	0.005
568.299	0.029	0.004
568.299	0.021	0.004
568.299	0.016	0.004
568.300	0.016	0.004
568.300	0.016	0.004
568.299	0.019	0.004
525.691	0.170	0.005
525.691	0.170	0.005
525.691	0.170	0.005
473.929	0.153	0.004
471.948	0.153	0.004
473.514	0.153	0.004
478.982	0.155	0.004
525.015	0.170	0.005
473.089	0.153	0.004
471.677	0.153	0.004
472.541	0.153	0.004
466.560	0.151	0.004
473.912	0.153	0.004
474.617	0.154	0.004
479.311	0.155	0.004
473.035	0.153	0.004
568.299	0.042	0.004
524.791	0.170	0.005
524.791	0.170	0.005
466.494	0.151	0.004
470.927	0.152	0.004

Pressure Washers	250	0.098	0.986	0.265
Pumps	15	0.698	3.508	4.359
Pumps	25	0.728	2.407	4.447
Pumps	50	0.565	4.007	3.734
Pumps	120	0.299	3.398	2.511
Pumps	175	0.227	2.971	1.662
Pumps	250	0.177	1.021	1.351
Pumps	500	0.171	0.998	1.246
Pumps	750	0.173	0.998	1.271
Pumps	9999	0.207	1.043	3.090
Rollers	15	0.661	4.252	3.921
Rollers	25	0.661	4.252	3.921
Rollers	50	0.661	4.252	3.921
Rollers	120	0.287	3.455	3.003
Rollers	175	0.150	2.909	1.483
Rollers	250	0.188	1.234	2.173
Rollers	500	0.211	1.956	2.290
Rough Terrain Forklifts	50	0.690	4.125	3.853
Rough Terrain Forklifts	120	0.150	3.242	1.984
Rough Terrain Forklifts	175	0.111	2.843	1.218
Rough Terrain Forklifts	250	0.116	0.990	1.474
Rough Terrain Forklifts	500	0.069	0.938	0.558
Rubber Tired Dozers	175	0.588	3.766	5.656
Rubber Tired Dozers	250	0.393	1.783	4.090
Rubber Tired Dozers	500	0.447	3.686	4.408
Rubber Tired Dozers	750	0.423	2.591	5.334
Rubber Tired Dozers	1000	0.453	1.874	4.709
Rubber Tired Loaders	25	1.049	5.972	4.521
Rubber Tired Loaders	50	1.049	5.972	4.521
Rubber Tired Loaders	120	0.412	3.827	3.512
Rubber Tired Loaders	175	0.269	3.292	2.196

469.904	0.152	0.004
468.129	0.151	0.004
463.819	0.150	0.004
472.858	0.153	0.004
483.448	0.156	0.004
478.741	0.155	0.004
469.269	0.152	0.004
473.230	0.153	0.004
471.279	0.152	0.004
568.300	0.059	0.005
568.299	0.059	0.005
568.299	0.030	0.004
568.299	0.023	0.004
686.695	0.022	0.004
527.273	0.171	0.005
527.273	0.171	0.005
472.432	0.153	0.004
535.836	0.173	0.005
473.636	0.153	0.004
469.126	0.152	0.004
476.951	0.154	0.004
470.525	0.152	0.004
470.400	0.152	0.004
525.328	0.170	0.005
525.328	0.170	0.005
525.328	0.170	0.005
474.116	0.153	0.004
473.122	0.153	0.004
470.126	0.152	0.004
514.461	0.166	0.005

Rubber Tired Loaders	250	0.210	1.171	2.060
Rubber Tired Loaders	500	0.217	1.384	1.866
Rubber Tired Loaders	750	0.227	1.323	1.927
Rubber Tired Loaders	1000	0.193	1.174	3.528
Scrapers	120	0.630	4.144	6.026
Scrapers	175	0.361	3.395	3.479
Scrapers	250	0.317	1.678	3.284
Scrapers	500	0.253	1.975	2.666
Scrapers	750	0.222	1.513	2.386
Signal Boards	15	0.661	3.469	4.142
Signal Boards	50	0.603	4.282	3.767
Signal Boards	120	0.315	3.478	2.472
Signal Boards	175	0.244	3.045	1.602
Signal Boards	250	0.235	1.263	1.562
Skid Steer Loaders	25	0.353	3.654	3.371
Skid Steer Loaders	50	0.353	3.654	3.371
Skid Steer Loaders	120	0.153	3.266	2.039
Surfacing Equipment	50	0.437	3.832	3.924
Surfacing Equipment	120	0.270	3.396	3.058
Surfacing Equipment	175	0.224	2.914	2.455
Surfacing Equipment	250	0.192	1.219	2.502
Surfacing Equipment	500	0.132	1.163	1.476
Surfacing Equipment	750	0.100	0.985	1.081
Sweepers/Scrubbers	15	0.759	4.971	4.127
Sweepers/Scrubbers	25	0.759	4.971	4.127
Sweepers/Scrubbers	50	0.759	4.971	4.127
Sweepers/Scrubbers	120	0.351	3.695	3.285
Sweepers/Scrubbers	175	0.292	3.223	2.609
Sweepers/Scrubbers	250	0.159	1.114	1.610
Tractors/Loaders/Backhoes	25	0.621	4.629	3.857

514.461	0.166	0.005
475.898	0.154	0.004
467.800	0.151	0.004
470.124	0.152	0.004
469.256	0.152	0.004
466.633	0.151	0.004
527.026	0.171	0.005
527.026	0.171	0.005
527.026	0.171	0.005
475.326	0.154	0.004
467.734	0.151	0.004
473.851	0.153	0.004
470.585	0.152	0.004
474.289	0.153	0.004
568.300	0.063	0.005
568.299	0.066	0.005
568.299	0.068	0.005
568.299	0.034	0.004
568.300	0.026	0.004
568.299	0.020	0.004
568.300	0.020	0.004
470.181	0.152	0.004
469.615	0.152	0.004
474.714	0.154	0.004
473.977	0.153	0.004
472.344	0.153	0.004

Tractors/Loaders/Backhoes	50	0.621	4.629	3.857
Tractors/Loaders/Backhoes	120	0.239	3.525	2.426
Tractors/Loaders/Backhoes	175	0.184	3.078	1.521
Tractors/Loaders/Backhoes	250	0.169	1.148	1.588
Tractors/Loaders/Backhoes	500	0.152	1.279	1.247
Tractors/Loaders/Backhoes	750	0.234	1.361	2.419
Trenchers	15	0.642	4.302	3.959
Trenchers	25	0.642	4.302	3.959
Trenchers	50	0.642	4.302	3.959
Trenchers	120	0.504	3.768	4.700
Trenchers	175	0.359	3.291	3.657
Trenchers	250	0.328	1.639	3.737
Trenchers	500	0.199	1.723	2.005
Trenchers	750	0.060	0.951	0.303
Welders	15	0.698	3.508	4.359
Welders	25	0.728	2.407	4.447
Welders	50	0.697	4.596	3.891
Welders	120	0.357	3.564	2.599
Welders	175	0.277	3.115	1.726
Welders	250	0.000	1.071	1.404
Welders	500	0.215	1.034	1.289
Water Trucks	175	0.236	3.304	1.683
Water Trucks	250	0.207	1.273	1.456
Water Trucks	500	0.187	1.221	1.324
Water Trucks	750	0.263	1.719	2.182
Water Trucks	1000	0.214	1.194	3.544

2024

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
SOX	PM10	PM2.5	CO2	CH4	N2O
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.023	0.021	525.074	0.170	0.005
0.005	0.027	0.025	472.114	0.153	0.004
0.005	0.009	0.009	472.055	0.153	0.004
0.005	0.038	0.038	568.299	0.015	0.004
0.008	0.194	0.194	568.299	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.156	0.156	568.299	0.067	0.005
0.006	0.143	0.143	568.299	0.034	0.004
0.006	0.089	0.089	568.299	0.027	0.004
0.006	0.045	0.045	568.299	0.021	0.004
0.005	0.044	0.044	568.299	0.021	0.004
0.005	0.044	0.044	568.299	0.021	0.004
0.005	0.068	0.068	568.299	0.023	0.004
0.006	0.226	0.208	531.986	0.172	0.005
0.006	0.226	0.208	531.986	0.172	0.005
0.006	0.226	0.208	531.986	0.172	0.005
0.005	0.102	0.093	461.214	0.149	0.004
0.005	0.048	0.044	479.647	0.155	0.004
0.005	0.034	0.031	469.706	0.152	0.004
0.005	0.030	0.028	464.041	0.150	0.004
0.005	0.026	0.024	479.220	0.155	0.004
0.005	0.018	0.016	472.020	0.153	0.004

2024	
Equipment	**MaxHP**
Aerial Lifts	15
Aerial Lifts	25
Aerial Lifts	50
Aerial Lifts	120
Aerial Lifts	500
Aerial Lifts	750
Air Compressors	15
Air Compressors	25
Air Compressors	50
Air Compressors	120
Air Compressors	175
Air Compressors	250
Air Compressors	500
Air Compressors	750
Air Compressors	1000
Bore/Drill Rigs	15
Bore/Drill Rigs	25
Bore/Drill Rigs	50
Bore/Drill Rigs	120
Bore/Drill Rigs	175
Bore/Drill Rigs	250
Bore/Drill Rigs	500
Bore/Drill Rigs	750
Bore/Drill Rigs	1000

0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.172	0.172	568.299	0.062	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.134	0.134	568.299	0.054	0.005
0.006	0.123	0.123	568.300	0.028	0.004
0.006	0.077	0.077	568.299	0.022	0.004
0.005	0.608	0.559	517.872	0.168	0.005
0.005	0.323	0.297	469.889	0.152	0.004
0.005	0.224	0.206	474.595	0.154	0.004
0.005	0.135	0.124	472.974	0.153	0.004
0.005	0.102	0.093	472.294	0.153	0.004
0.005	0.084	0.077	470.251	0.152	0.004
0.005	0.063	0.058	472.055	0.153	0.004
0.005	0.526	0.484	516.159	0.167	0.005
0.005	0.373	0.343	476.158	0.154	0.004
0.005	0.185	0.170	471.781	0.153	0.004
0.005	0.124	0.114	471.624	0.153	0.004
0.005	0.102	0.094	474.613	0.154	0.004
0.005	0.069	0.064	472.530	0.153	0.004
0.005	0.118	0.109	473.666	0.153	0.004
0.007	0.146	0.146	568.299	0.066	0.005
0.006	0.132	0.132	568.299	0.034	0.004
0.006	0.083	0.083	568.299	0.027	0.004
0.006	0.043	0.043	568.299	0.022	0.004
0.005	0.042	0.042	568.299	0.022	0.004
0.005	0.042	0.042	568.300	0.022	0.004
0.005	0.066	0.066	568.299	0.025	0.004

Cement and Mortar Mixers	15
Cement and Mortar Mixers	25
Concrete/Industrial Saws	25
Concrete/Industrial Saws	50
Concrete/Industrial Saws	120
Concrete/Industrial Saws	175
Cranes	50
Cranes	120
Cranes	175
Cranes	250
Cranes	500
Cranes	750
Cranes	9999
Crawler Tractors	50
Crawler Tractors	120
Crawler Tractors	175
Crawler Tractors	250
Crawler Tractors	500
Crawler Tractors	750
Crawler Tractors	1000
Crushing/Proc. Equipment	50
Crushing/Proc. Equipment	120
Crushing/Proc. Equipment	175
Crushing/Proc. Equipment	250
Crushing/Proc. Equipment	500
Crushing/Proc. Equipment	750
Crushing/Proc. Equipment	9999

0.007	0.162	0.162	568.299	0.061	0.005
0.005	0.139	0.128	525.429	0.170	0.005
0.005	0.139	0.128	525.429	0.170	0.005
0.005	0.116	0.107	467.157	0.151	0.004
0.005	0.072	0.066	472.277	0.153	0.004
0.005	0.039	0.036	472.213	0.153	0.004
0.005	0.030	0.028	469.889	0.152	0.004
0.005	0.043	0.040	468.683	0.152	0.004
0.005	0.232	0.213	525.483	0.170	0.005
0.005	0.189	0.174	471.529	0.153	0.004
0.005	0.111	0.102	472.106	0.153	0.004
0.005	0.069	0.063	473.326	0.153	0.004
0.005	0.069	0.063	473.615	0.153	0.004
0.008	0.186	0.186	568.299	0.055	0.005
0.007	0.182	0.182	568.299	0.063	0.005
0.007	0.124	0.124	568.299	0.046	0.005
0.006	0.117	0.117	568.299	0.025	0.004
0.006	0.071	0.071	568.299	0.019	0.004
0.006	0.038	0.038	568.299	0.014	0.004
0.005	0.037	0.037	568.299	0.014	0.004
0.005	0.037	0.037	568.299	0.014	0.004
0.005	0.058	0.058	568.299	0.017	0.004
0.005	0.549	0.505	494.020	0.160	0.005
0.005	0.436	0.401	469.286	0.152	0.004
0.005	0.195	0.180	478.463	0.155	0.004
0.005	0.112	0.103	473.926	0.153	0.004
0.005	0.105	0.097	471.031	0.152	0.004
0.005	0.051	0.051	568.300	0.024	0.004
0.005	0.187	0.172	476.087	0.154	0.004
0.005	0.085	0.079	472.996	0.153	0.004
0.005	0.053	0.049	470.845	0.152	0.004
0.005	0.051	0.047	471.932	0.153	0.004
0.005	0.067	0.062	472.055	0.153	0.004
0.005	0.081	0.074	470.292	0.152	0.004
0.005	0.059	0.054	469.446	0.152	0.004

Dumpers/Tenders	25
Excavators	25
Excavators	50
Excavators	120
Excavators	175
Excavators	250
Excavators	500
Excavators	750
Forklifts	50
Forklifts	120
Forklifts	175
Forklifts	250
Forklifts	500
Generator Sets	15
Generator Sets	25
Generator Sets	50
Generator Sets	120
Generator Sets	175
Generator Sets	250
Generator Sets	500
Generator Sets	750
Generator Sets	9999
Graders	50
Graders	120
Graders	175
Graders	250
Graders	500
Graders	750
Off-Highway Tractors	120
Off-Highway Tractors	175
Off-Highway Tractors	250
Off-Highway Tractors	750
Off-Highway Tractors	1000
Off-Highway Trucks	175
Off-Highway Trucks	250

0.005	0.048	0.044	475.049	0.154	0.004	Off-Highway Trucks	500
0.005	0.084	0.078	473.767	0.153	0.004	Off-Highway Trucks	750
0.005	0.074	0.068	472.857	0.153	0.004	Off-Highway Trucks	1000
0.006	0.322	0.296	529.339	0.171	0.005	Other Construction Equipment	15
0.006	0.322	0.296	529.339	0.171	0.005	Other Construction Equipment	25
0.006	0.322	0.296	529.339	0.171	0.005	Other Construction Equipment	50
0.005	0.259	0.238	471.990	0.153	0.004	Other Construction Equipment	120
0.005	0.141	0.129	469.558	0.152	0.004	Other Construction Equipment	175
0.005	0.069	0.063	476.185	0.154	0.004	Other Construction Equipment	500
0.005	0.194	0.179	526.176	0.170	0.005	Other General Industrial Equipment	15
0.005	0.194	0.179	526.176	0.170	0.005	Other General Industrial Equipment	25
0.005	0.194	0.179	526.176	0.170	0.005	Other General Industrial Equipment	50
0.005	0.169	0.155	470.000	0.152	0.004	Other General Industrial Equipment	120
0.005	0.080	0.074	471.850	0.153	0.004	Other General Industrial Equipment	175
0.005	0.051	0.047	473.223	0.153	0.004	Other General Industrial Equipment	250
0.005	0.043	0.040	472.929	0.153	0.004	Other General Industrial Equipment	500

0.005	0.023	0.021	473.464	0.153	0.004	Other General Industrial Equipment	750
0.005	0.080	0.073	472.055	0.153	0.004	Other General Industrial Equipment	1000
0.005	0.340	0.313	523.709	0.169	0.005	Other Material Handling Equipment	50
0.005	0.104	0.095	473.588	0.153	0.004	Other Material Handling Equipment	120
0.005	0.096	0.088	472.219	0.153	0.004	Other Material Handling Equipment	175
0.005	0.069	0.064	471.482	0.153	0.004	Other Material Handling Equipment	250
0.005	0.078	0.072	470.297	0.152	0.004	Other Material Handling Equipment	500
0.005	0.018	0.017	472.055	0.153	0.004	Other Material Handling Equipment	9999
0.005	0.299	0.275	526.860	0.170	0.005	Pavers	25
0.005	0.299	0.275	526.860	0.170	0.005	Pavers	50
0.005	0.226	0.208	470.084	0.152	0.004	Pavers	120
0.005	0.092	0.085	472.718	0.153	0.004	Pavers	175
0.005	0.047	0.043	472.605	0.153	0.004	Pavers	250
0.005	0.062	0.057	466.004	0.151	0.004	Pavers	500
0.005	0.173	0.159	521.114	0.169	0.005	Paving Equipment	25
0.005	0.173	0.159	521.114	0.169	0.005	Paving Equipment	50
0.005	0.153	0.140	473.427	0.153	0.004	Paving Equipment	120
0.005	0.093	0.086	470.663	0.152	0.004	Paving Equipment	175
0.005	0.070	0.065	472.169	0.153	0.004	Paving Equipment	250
0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors	15
0.008	0.186	0.186	568.299	0.055	0.005	Pressure Washers	15
0.007	0.182	0.182	568.299	0.063	0.005	Pressure Washers	25
0.007	0.101	0.101	568.299	0.032	0.005	Pressure Washers	50
0.006	0.097	0.097	568.299	0.020	0.004	Pressure Washers	120
0.006	0.072	0.072	568.299	0.018	0.004	Pressure Washers	175

0.006	0.009	0.009	568.299	0.008	0.004
0.008	0.194	0.194	568.299	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.131	0.131	568.299	0.051	0.005
0.006	0.123	0.123	568.299	0.026	0.004
0.006	0.075	0.075	568.299	0.020	0.004
0.006	0.040	0.040	568.299	0.015	0.004
0.005	0.038	0.038	568.300	0.015	0.004
0.005	0.039	0.039	568.299	0.015	0.004
0.005	0.059	0.059	568.299	0.018	0.004
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.212	0.195	525.862	0.170	0.005
0.005	0.165	0.152	473.936	0.153	0.004
0.005	0.068	0.062	471.935	0.153	0.004
0.005	0.076	0.070	473.516	0.153	0.004
0.005	0.093	0.085	478.303	0.155	0.004
0.005	0.204	0.187	524.802	0.170	0.005
0.005	0.064	0.059	473.158	0.153	0.004
0.005	0.044	0.040	471.622	0.153	0.004
0.005	0.034	0.032	472.778	0.153	0.004
0.005	0.009	0.008	466.554	0.151	0.004
0.005	0.316	0.291	473.901	0.153	0.004
0.005	0.184	0.169	474.597	0.154	0.004
0.005	0.202	0.185	479.468	0.155	0.004
0.005	0.196	0.180	473.023	0.153	0.004
0.005	0.131	0.131	568.299	0.040	0.004
0.005	0.304	0.279	524.304	0.170	0.005
0.005	0.304	0.279	524.304	0.170	0.005
0.005	0.239	0.219	466.558	0.151	0.004
0.005	0.118	0.108	470.660	0.152	0.004

Pressure Washers	250
Pumps	15
Pumps	25
Pumps	50
Pumps	120
Pumps	175
Pumps	250
Pumps	500
Pumps	750
Pumps	9999
Rollers	15
Rollers	25
Rollers	50
Rollers	120
Rollers	175
Rollers	250
Rollers	500
Rough Terrain Forklifts	50
Rough Terrain Forklifts	120
Rough Terrain Forklifts	175
Rough Terrain Forklifts	250
Rough Terrain Forklifts	500
Rubber Tired Dozers	175
Rubber Tired Dozers	250
Rubber Tired Dozers	500
Rubber Tired Dozers	750
Rubber Tired Dozers	1000
Rubber Tired Loaders	25
Rubber Tired Loaders	50
Rubber Tired Loaders	120
Rubber Tired Loaders	175

0.005	0.069	0.064	469.824	0.152	0.004
0.005	0.069	0.064	468.466	0.152	0.004
0.005	0.075	0.069	464.555	0.150	0.004
0.005	0.071	0.065	472.303	0.153	0.004
0.005	0.458	0.421	483.030	0.156	0.004
0.005	0.184	0.169	478.681	0.155	0.004
0.005	0.144	0.133	469.560	0.152	0.004
0.005	0.105	0.096	473.177	0.153	0.004
0.005	0.087	0.080	471.295	0.152	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.132	0.132	568.299	0.054	0.005
0.006	0.122	0.122	568.299	0.028	0.004
0.006	0.075	0.075	568.299	0.022	0.004
0.007	0.048	0.048	686.695	0.021	0.004
0.005	0.093	0.086	527.423	0.171	0.005
0.005	0.093	0.086	527.423	0.171	0.005
0.005	0.069	0.063	472.656	0.153	0.004
0.006	0.156	0.143	535.930	0.173	0.005
0.005	0.157	0.144	474.470	0.154	0.004
0.005	0.119	0.110	470.014	0.152	0.004
0.005	0.082	0.075	476.961	0.154	0.004
0.005	0.056	0.051	470.375	0.152	0.004
0.005	0.040	0.037	472.447	0.153	0.004
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.249	0.229	525.328	0.170	0.005
0.005	0.210	0.193	474.116	0.153	0.004
0.005	0.126	0.116	473.122	0.153	0.004
0.005	0.050	0.046	470.126	0.152	0.004
0.005	0.185	0.170	513.796	0.166	0.005

Rubber Tired Loaders	250
Rubber Tired Loaders	500
Rubber Tired Loaders	750
Rubber Tired Loaders	1000
Scrapers	120
Scrapers	175
Scrapers	250
Scrapers	500
Scrapers	750
Signal Boards	15
Signal Boards	50
Signal Boards	120
Signal Boards	175
Signal Boards	250
Skid Steer Loaders	25
Skid Steer Loaders	50
Skid Steer Loaders	120
Surfacing Equipment	50
Surfacing Equipment	120
Surfacing Equipment	175
Surfacing Equipment	250
Surfacing Equipment	500
Surfacing Equipment	750
Sweepers/Scrubbers	15
Sweepers/Scrubbers	25
Sweepers/Scrubbers	50
Sweepers/Scrubbers	120
Sweepers/Scrubbers	175
Sweepers/Scrubbers	250
Tractors/Loaders/Backhoes	25

0.005	0.185	0.170	513.796	0.166	0.005
0.005	0.120	0.110	476.431	0.154	0.004
0.005	0.077	0.070	468.821	0.152	0.004
0.005	0.058	0.053	469.752	0.152	0.004
0.005	0.047	0.043	469.465	0.152	0.004
0.005	0.095	0.087	466.676	0.151	0.004
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.220	0.202	527.095	0.171	0.005
0.005	0.326	0.300	475.690	0.154	0.004
0.005	0.186	0.171	467.733	0.151	0.004
0.005	0.155	0.143	473.849	0.153	0.004
0.005	0.085	0.078	471.613	0.153	0.004
0.005	0.009	0.008	474.471	0.154	0.004
0.008	0.194	0.194	568.300	0.063	0.005
0.007	0.186	0.186	568.299	0.065	0.005
0.007	0.151	0.151	568.299	0.062	0.005
0.006	0.139	0.139	568.299	0.032	0.004
0.006	0.085	0.085	568.299	0.025	0.004
0.006	0.044	0.044	568.299	0.019	0.004
0.005	0.042	0.042	568.299	0.019	0.004
0.005	0.081	0.074	470.292	0.152	0.004
0.005	0.059	0.054	469.446	0.152	0.004
0.005	0.048	0.044	475.049	0.154	0.004
0.005	0.084	0.078	473.767	0.153	0.004
0.005	0.074	0.068	472.857	0.153	0.004

Tractors/Loaders/Backhoes	50
Tractors/Loaders/Backhoes	120
Tractors/Loaders/Backhoes	175
Tractors/Loaders/Backhoes	250
Tractors/Loaders/Backhoes	500
Tractors/Loaders/Backhoes	750
Trenchers	15
Trenchers	25
Trenchers	50
Trenchers	120
Trenchers	175
Trenchers	250
Trenchers	500
Trenchers	750
Welders	15
Welders	25
Welders	50
Welders	120
Welders	175
Welders	250
Welders	500
Water Trucks	175
Water Trucks	250
Water Trucks	500
Water Trucks	750
Water Trucks	1000

2025

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.159	3.113	2.888	0.005	0.022	0.020	525.074	0.170	0.005
0.101	3.173	1.528	0.005	0.027	0.024	472.114	0.153	0.004
0.082	0.966	0.647	0.005	0.009	0.009	472.055	0.153	0.004
0.161	0.991	1.115	0.005	0.033	0.033	568.299	0.014	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.300	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.300	0.064	0.005
0.702	4.880	3.864	0.007	0.135	0.135	568.299	0.063	0.005
0.365	3.655	2.461	0.006	0.123	0.123	568.299	0.032	0.004
0.286	3.202	1.561	0.006	0.077	0.077	568.299	0.025	0.004
0.232	1.096	1.247	0.006	0.039	0.039	568.299	0.020	0.004
0.228	1.053	1.148	0.005	0.038	0.038	568.299	0.020	0.004
0.228	1.053	1.171	0.005	0.038	0.038	568.299	0.020	0.004
0.243	1.090	3.082	0.005	0.061	0.061	568.299	0.021	0.004
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.609	4.331	4.159	0.006	0.219	0.202	529.866	0.171	0.005
0.177	3.251	2.216	0.005	0.090	0.083	461.208	0.149	0.004
0.125	2.978	1.029	0.005	0.046	0.043	478.944	0.155	0.004
0.108	1.046	0.975	0.005	0.032	0.030	470.712	0.152	0.004
0.103	0.994	0.861	0.005	0.029	0.027	464.480	0.150	0.004
0.089	0.985	0.671	0.005	0.026	0.024	480.225	0.155	0.004
0.057	0.943	2.273	0.005	0.018	0.017	471.926	0.153	0.004

0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.693	2.349	4.369	0.007	0.170	0.170	568.299	0.062	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.561	4.330	3.701	0.007	0.115	0.115	568.300	0.050	0.005
0.300	3.500	2.315	0.006	0.106	0.106	568.299	0.027	0.004
0.235	3.072	1.418	0.006	0.067	0.067	568.299	0.021	0.004
1.937	7.269	5.788	0.005	0.577	0.531	517.872	0.168	0.005
0.524	3.906	4.619	0.005	0.301	0.277	469.903	0.152	0.004
0.381	3.389	3.703	0.005	0.196	0.181	474.636	0.154	0.004
0.281	1.502	2.966	0.005	0.123	0.114	472.964	0.153	0.004
0.231	1.933	2.383	0.005	0.096	0.089	472.066	0.153	0.004
0.191	1.283	1.900	0.005	0.080	0.073	470.331	0.152	0.004
0.220	1.031	2.411	0.005	0.064	0.059	472.055	0.153	0.004
1.756	6.685	4.975	0.005	0.466	0.429	515.466	0.167	0.005
0.513	3.852	4.409	0.005	0.335	0.309	476.234	0.154	0.004
0.326	3.227	3.041	0.005	0.170	0.157	471.829	0.153	0.004
0.264	1.370	2.953	0.005	0.115	0.106	471.860	0.153	0.004
0.228	1.780	2.244	0.005	0.093	0.085	474.025	0.153	0.004
0.181	1.159	1.767	0.005	0.066	0.061	472.283	0.153	0.004
0.263	1.588	4.689	0.005	0.115	0.106	474.645	0.154	0.004
0.694	5.008	3.850	0.007	0.125	0.125	568.299	0.062	0.005
0.364	3.697	2.389	0.006	0.112	0.112	568.299	0.032	0.004
0.287	3.243	1.472	0.006	0.071	0.071	568.299	0.025	0.004
0.236	1.109	1.165	0.006	0.036	0.036	568.299	0.021	0.004
0.232	1.062	1.077	0.005	0.035	0.035	568.299	0.021	0.004
0.233	1.063	1.098	0.005	0.036	0.036	568.299	0.021	0.004
0.274	1.096	3.029	0.005	0.059	0.059	568.299	0.024	0.004

0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.417	4.205	3.508	0.005	0.120	0.110	525.979	0.170	0.005
0.417	4.205	3.508	0.005	0.120	0.110	525.979	0.170	0.005
0.217	3.453	2.248	0.005	0.102	0.094	467.384	0.151	0.004
0.170	3.083	1.325	0.005	0.065	0.060	472.428	0.153	0.004
0.139	1.090	1.108	0.005	0.036	0.033	472.442	0.153	0.004
0.121	1.054	0.831	0.005	0.029	0.026	469.711	0.152	0.004
0.142	1.134	1.105	0.005	0.041	0.037	468.652	0.152	0.004
0.692	5.089	4.039	0.005	0.203	0.187	525.483	0.170	0.005
0.300	3.629	2.814	0.005	0.163	0.150	471.529	0.153	0.004
0.224	3.174	1.861	0.005	0.096	0.088	472.106	0.153	0.004
0.196	1.218	1.625	0.005	0.061	0.057	473.326	0.153	0.004
0.218	1.219	1.723	0.005	0.065	0.060	473.615	0.153	0.004
0.612	3.499	4.305	0.008	0.181	0.181	568.299	0.055	0.005
0.697	2.390	4.426	0.007	0.178	0.178	568.299	0.062	0.005
0.475	3.787	3.582	0.007	0.107	0.107	568.299	0.042	0.005
0.260	3.342	2.321	0.006	0.101	0.101	568.299	0.023	0.004
0.197	2.929	1.462	0.006	0.062	0.062	568.299	0.017	0.004
0.155	1.003	1.169	0.006	0.033	0.033	568.299	0.014	0.004
0.151	0.983	1.082	0.005	0.032	0.032	568.300	0.013	0.004
0.152	0.983	1.104	0.005	0.032	0.032	568.299	0.013	0.004
0.183	1.018	2.929	0.005	0.052	0.052	568.300	0.016	0.004
1.850	7.051	5.028	0.005	0.520	0.479	493.791	0.160	0.005
0.683	4.200	5.434	0.005	0.408	0.375	469.821	0.152	0.004
0.364	3.432	3.202	0.005	0.177	0.163	478.497	0.155	0.004
0.262	1.225	3.073	0.005	0.100	0.092	473.669	0.153	0.004
0.293	1.356	2.432	0.005	0.095	0.088	470.266	0.152	0.004
0.264	1.155	1.265	0.005	0.046	0.046	568.300	0.023	0.004
0.302	3.691	2.949	0.005	0.171	0.157	476.371	0.154	0.004
0.183	3.133	1.496	0.005	0.072	0.066	473.097	0.153	0.004
0.169	1.135	1.377	0.005	0.049	0.045	470.689	0.152	0.004
0.169	1.130	1.235	0.005	0.048	0.044	471.925	0.153	0.004
0.189	1.066	2.466	0.005	0.068	0.063	472.055	0.153	0.004
0.224	3.325	1.494	0.005	0.070	0.064	470.264	0.152	0.004
0.202	1.259	1.355	0.005	0.054	0.050	469.113	0.152	0.004

0.185	1.206	1.235	0.005	0.045	0.041	475.220	0.154	0.004
0.259	1.650	2.085	0.005	0.079	0.073	473.839	0.153	0.004
0.209	1.200	3.439	0.005	0.069	0.064	473.097	0.153	0.004
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.828	5.032	4.510	0.006	0.305	0.281	529.209	0.171	0.005
0.382	3.620	3.582	0.005	0.237	0.218	472.125	0.153	0.004
0.261	3.150	2.520	0.005	0.130	0.120	469.545	0.152	0.004
0.175	1.382	1.677	0.005	0.064	0.059	476.484	0.154	0.004
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.546	4.780	3.859	0.005	0.165	0.152	526.176	0.170	0.005
0.287	3.639	2.708	0.005	0.146	0.134	470.000	0.152	0.004
0.191	3.185	1.448	0.005	0.073	0.067	471.850	0.153	0.004
0.173	1.141	1.319	0.005	0.046	0.042	473.223	0.153	0.004
0.158	1.110	1.153	0.005	0.040	0.036	472.929	0.153	0.004

0.115	1.112	0.628	0.005	0.023	0.021	473.464	0.153	0.004
0.198	1.058	3.971	0.005	0.080	0.074	472.055	0.153	0.004
0.943	5.669	4.579	0.005	0.314	0.289	523.709	0.169	0.005
0.220	3.510	2.222	0.005	0.096	0.089	473.588	0.153	0.004
0.208	3.181	1.639	0.005	0.088	0.081	472.219	0.153	0.004
0.210	1.218	1.986	0.005	0.068	0.063	471.482	0.153	0.004
0.212	1.262	1.756	0.005	0.072	0.066	470.297	0.152	0.004
0.058	0.946	2.278	0.005	0.018	0.017	472.055	0.153	0.004
0.950	4.956	4.203	0.005	0.279	0.257	526.857	0.170	0.005
0.950	4.956	4.203	0.005	0.279	0.257	526.857	0.170	0.005
0.337	3.508	3.277	0.005	0.213	0.196	470.226	0.152	0.004
0.191	3.004	1.809	0.005	0.085	0.078	472.661	0.153	0.004
0.119	1.009	1.343	0.005	0.041	0.038	473.236	0.153	0.004
0.143	0.986	1.548	0.005	0.054	0.049	467.171	0.151	0.004
0.523	4.275	3.743	0.005	0.164	0.151	521.058	0.169	0.005
0.523	4.275	3.743	0.005	0.164	0.151	521.058	0.169	0.005
0.262	3.503	2.673	0.005	0.135	0.125	473.175	0.153	0.004
0.197	3.066	1.785	0.005	0.086	0.079	470.661	0.152	0.004
0.138	1.114	1.296	0.005	0.048	0.044	472.212	0.153	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.612	3.499	4.305	0.008	0.181	0.181	568.299	0.055	0.005
0.697	2.390	4.426	0.007	0.178	0.178	568.299	0.062	0.005
0.333	3.233	3.441	0.007	0.087	0.087	568.299	0.030	0.005
0.204	3.191	2.229	0.006	0.084	0.084	568.299	0.018	0.004
0.191	2.907	1.482	0.006	0.062	0.062	568.299	0.017	0.004

0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.299	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.299	0.064	0.005
0.523	3.974	3.630	0.007	0.114	0.114	568.299	0.047	0.005
0.279	3.393	2.352	0.006	0.107	0.107	568.299	0.025	0.004
0.213	2.973	1.486	0.006	0.065	0.065	568.299	0.019	0.004
0.168	1.018	1.189	0.006	0.034	0.034	568.300	0.015	0.004
0.164	0.994	1.098	0.005	0.033	0.033	568.299	0.014	0.004
0.164	0.994	1.120	0.005	0.034	0.034	568.299	0.014	0.004
0.196	1.031	2.960	0.005	0.054	0.054	568.299	0.017	0.004
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.621	4.207	3.824	0.005	0.193	0.177	525.957	0.170	0.005
0.272	3.451	2.843	0.005	0.151	0.138	474.007	0.153	0.004
0.141	2.914	1.324	0.005	0.061	0.056	472.012	0.153	0.004
0.179	1.214	1.977	0.005	0.070	0.064	473.512	0.153	0.004
0.210	1.961	2.216	0.005	0.090	0.083	477.900	0.155	0.004
0.570	3.918	3.653	0.005	0.166	0.152	524.924	0.170	0.005
0.145	3.245	1.914	0.005	0.058	0.054	473.063	0.153	0.004
0.103	2.834	1.044	0.005	0.039	0.036	471.535	0.153	0.004
0.119	0.995	1.480	0.005	0.035	0.032	472.853	0.153	0.004
0.066	0.937	0.476	0.005	0.009	0.008	466.548	0.151	0.004
0.532	3.696	5.014	0.005	0.279	0.257	473.515	0.153	0.004
0.399	1.797	4.090	0.005	0.184	0.170	474.585	0.154	0.004
0.417	3.457	4.030	0.005	0.182	0.168	479.394	0.155	0.004
0.425	2.596	5.334	0.005	0.196	0.180	473.011	0.153	0.004
0.433	1.796	4.532	0.005	0.123	0.123	568.299	0.039	0.004
1.009	5.987	4.468	0.005	0.286	0.263	524.230	0.170	0.005
1.009	5.987	4.468	0.005	0.286	0.263	524.230	0.170	0.005
0.397	3.832	3.339	0.005	0.221	0.203	466.808	0.151	0.004
0.246	3.288	1.884	0.005	0.101	0.092	470.357	0.152	0.004

0.197	1.161	1.806	0.005	0.060	0.056	469.788	0.152	0.004
0.209	1.352	1.702	0.005	0.063	0.058	468.513	0.152	0.004
0.226	1.333	1.881	0.005	0.072	0.066	464.866	0.150	0.004
0.201	1.191	3.544	0.005	0.071	0.066	472.345	0.153	0.004
0.575	4.095	5.632	0.005	0.414	0.381	482.701	0.156	0.004
0.336	3.372	3.156	0.005	0.167	0.153	478.809	0.155	0.004
0.301	1.627	3.014	0.005	0.133	0.123	469.352	0.152	0.004
0.245	1.921	2.477	0.005	0.098	0.090	472.846	0.153	0.004
0.213	1.461	2.187	0.005	0.081	0.074	471.429	0.153	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.559	4.247	3.662	0.007	0.114	0.114	568.299	0.050	0.005
0.296	3.474	2.315	0.006	0.105	0.105	568.299	0.026	0.004
0.229	3.047	1.427	0.006	0.065	0.065	568.299	0.020	0.004
0.224	1.259	1.370	0.007	0.041	0.041	686.695	0.020	0.004
0.350	3.671	3.346	0.005	0.089	0.082	527.801	0.171	0.005
0.350	3.671	3.346	0.005	0.089	0.082	527.801	0.171	0.005
0.147	3.264	1.948	0.005	0.063	0.058	472.847	0.153	0.004
0.333	3.662	3.721	0.006	0.116	0.107	536.030	0.173	0.005
0.251	3.389	2.883	0.005	0.142	0.131	475.381	0.154	0.004
0.228	2.930	2.464	0.005	0.120	0.111	470.077	0.152	0.004
0.176	1.183	2.236	0.005	0.071	0.065	477.096	0.154	0.004
0.134	1.168	1.478	0.005	0.056	0.051	470.252	0.152	0.004
0.094	0.985	0.947	0.005	0.035	0.032	472.983	0.153	0.004
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.746	5.003	4.079	0.005	0.239	0.219	525.328	0.170	0.005
0.332	3.693	3.098	0.005	0.189	0.173	474.116	0.153	0.004
0.266	3.234	2.253	0.005	0.107	0.099	473.122	0.153	0.004
0.164	1.127	1.614	0.005	0.051	0.047	470.126	0.152	0.004
0.590	4.609	3.768	0.005	0.166	0.153	513.852	0.166	0.005

0.590	4.609	3.768	0.005	0.166	0.153	513.852	0.166	0.005
0.227	3.532	2.288	0.005	0.105	0.097	476.731	0.154	0.004
0.176	3.089	1.376	0.005	0.069	0.063	469.403	0.152	0.004
0.168	1.151	1.491	0.005	0.055	0.050	469.914	0.152	0.004
0.150	1.277	1.163	0.005	0.044	0.041	470.084	0.152	0.004
0.221	1.311	2.215	0.005	0.085	0.079	466.638	0.151	0.004
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.601	4.233	3.834	0.005	0.197	0.181	527.022	0.170	0.005
0.494	3.769	4.593	0.005	0.318	0.292	475.632	0.154	0.004
0.364	3.311	3.667	0.005	0.187	0.172	467.733	0.151	0.004
0.312	1.598	3.483	0.005	0.146	0.134	473.846	0.153	0.004
0.192	1.668	1.859	0.005	0.080	0.074	469.994	0.152	0.004
0.064	0.958	0.304	0.005	0.009	0.008	474.478	0.154	0.004
0.690	3.499	4.316	0.008	0.188	0.188	568.299	0.062	0.005
0.718	2.390	4.426	0.007	0.181	0.181	568.299	0.064	0.005
0.646	4.557	3.782	0.007	0.130	0.130	568.299	0.058	0.005
0.336	3.560	2.430	0.006	0.120	0.120	568.299	0.030	0.004
0.261	3.118	1.541	0.006	0.074	0.074	568.299	0.023	0.004
0.210	1.068	1.234	0.006	0.038	0.038	568.299	0.018	0.004
0.206	1.032	1.135	0.005	0.037	0.037	568.299	0.018	0.004
0.224	3.325	1.494	0.005	0.070	0.064	470.264	0.152	0.004
0.202	1.259	1.355	0.005	0.054	0.050	469.113	0.152	0.004
0.185	1.206	1.235	0.005	0.045	0.041	475.220	0.154	0.004
0.259	1.650	2.085	0.005	0.079	0.073	473.839	0.153	0.004
0.209	1.200	3.439	0.005	0.069	0.064	473.097	0.153	0.004

2025		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021	0.019	525.074
Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026	0.024	472.114
Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009	0.009	472.055
Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028	0.028	568.299
Air Compressors	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300
Air Compressors	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Air Compressors	50	0.659	4.851	3.755	0.007	0.116	0.116	568.299
Air Compressors	120	0.345	3.653	2.313	0.006	0.104	0.104	568.299
Air Compressors	175	0.269	3.205	1.383	0.006	0.065	0.065	568.299
Air Compressors	250	0.220	1.094	1.086	0.006	0.033	0.033	568.299
Air Compressors	500	0.217	1.051	1.001	0.005	0.032	0.032	568.299
Air Compressors	750	0.217	1.051	1.021	0.005	0.032	0.032	568.299
Air Compressors	1000	0.231	1.079	2.954	0.005	0.055	0.055	568.299
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193	0.178	532.821
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067	0.062	459.829
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039	0.036	478.266
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031	0.029	470.654
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028	0.026	467.289
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023	0.021	481.250
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019	0.017	471.917

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168	0.168	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099	0.099	568.299
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089	0.089	568.300
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056	0.056	568.300
Cranes	50	1.811	7.072	5.636	0.005	0.543	0.499	517.872
Cranes	120	0.463	3.831	4.135	0.005	0.260	0.240	469.533
Cranes	175	0.334	3.335	3.160	0.005	0.166	0.153	474.748
Cranes	250	0.265	1.470	2.681	0.005	0.114	0.105	472.980
Cranes	500	0.218	1.834	2.154	0.005	0.088	0.081	471.967
Cranes	750	0.172	1.274	1.638	0.005	0.068	0.062	470.276
Cranes	9999	0.229	1.038	2.422	0.005	0.065	0.060	472.055
Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456	0.420	516.128
Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285	0.262	476.134
Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150	0.138	471.592
Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096	0.088	471.622
Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081	0.074	474.007
Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057	0.052	472.408
Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112	0.103	475.490
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107	0.107	568.299
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095	0.095	568.299
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060	0.060	568.299
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031	0.031	568.299
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030	0.030	568.299
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030	0.030	568.299
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053	0.053	568.299

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	25	0.403	4.219	3.453	0.005	0.107	0.099	525.777
Excavators	50	0.403	4.219	3.453	0.005	0.107	0.099	525.777
Excavators	120	0.201	3.439	2.082	0.005	0.085	0.078	466.738
Excavators	175	0.158	3.078	1.154	0.005	0.057	0.052	472.496
Excavators	250	0.131	1.081	0.962	0.005	0.032	0.029	472.560
Excavators	500	0.115	1.051	0.726	0.005	0.026	0.024	470.292
Excavators	750	0.139	1.135	1.026	0.005	0.038	0.035	468.558
Forklifts	50	0.636	5.029	3.932	0.005	0.178	0.164	525.483
Forklifts	120	0.277	3.611	2.607	0.005	0.140	0.128	471.529
Forklifts	175	0.209	3.170	1.653	0.005	0.084	0.078	472.106
Forklifts	250	0.191	1.214	1.466	0.005	0.056	0.052	473.326
Forklifts	500	0.215	1.222	1.658	0.005	0.062	0.057	473.615
Generator Sets	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299
Generator Sets	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299
Generator Sets	50	0.440	3.758	3.481	0.007	0.093	0.093	568.300
Generator Sets	120	0.243	3.338	2.185	0.006	0.087	0.087	568.299
Generator Sets	175	0.184	2.930	1.297	0.006	0.053	0.053	568.299
Generator Sets	250	0.147	1.000	1.020	0.006	0.028	0.028	568.299
Generator Sets	500	0.144	0.981	0.945	0.005	0.027	0.027	568.300
Generator Sets	750	0.145	0.981	0.964	0.005	0.027	0.027	568.299
Generator Sets	9999	0.173	1.008	2.812	0.005	0.047	0.047	568.299
Graders	50	1.864	7.125	5.043	0.005	0.522	0.480	493.532
Graders	120	0.638	4.149	5.074	0.005	0.371	0.342	468.316
Graders	175	0.329	3.418	2.774	0.005	0.152	0.140	478.508
Graders	250	0.230	1.179	2.556	0.005	0.082	0.076	473.470
Graders	500	0.280	1.315	2.265	0.005	0.088	0.081	470.753
Graders	750	0.253	1.141	1.125	0.005	0.041	0.041	568.300
Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144	0.132	476.921
Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065	0.060	473.302
Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040	0.037	470.861
Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045	0.041	471.917
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070	0.064	472.055
Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004
Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126

Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970
Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314
Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369
Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268	0.246	528.954
Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203	0.187	472.748
Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112	0.103	469.843
Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059	0.055	476.296
Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136	0.125	526.176
Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118	0.109	470.000
Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070	0.065	471.850
Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036	0.033	473.223
Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035	0.033	472.929

Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023	0.021	473.464
Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081	0.074	472.055
Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239	0.219	523.709
Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081	0.074	473.588
Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072	0.067	472.219
Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060	0.055	471.482
Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067	0.061	470.297
Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019	0.017	472.055
Pavers	25	0.918	4.945	4.131	0.005	0.265	0.243	526.853
Pavers	50	0.918	4.945	4.131	0.005	0.265	0.243	526.853
Pavers	120	0.314	3.493	3.068	0.005	0.191	0.175	469.899
Pavers	175	0.181	3.007	1.644	0.005	0.077	0.071	472.485
Pavers	250	0.107	1.004	1.035	0.005	0.034	0.031	473.483
Pavers	500	0.115	0.969	1.134	0.005	0.039	0.036	465.882
Paving Equipment	25	0.476	4.203	3.627	0.005	0.142	0.130	520.998
Paving Equipment	50	0.476	4.203	3.627	0.005	0.142	0.130	520.998
Paving Equipment	120	0.242	3.483	2.496	0.005	0.118	0.108	473.424
Paving Equipment	175	0.175	3.038	1.509	0.005	0.075	0.069	470.484
Paving Equipment	250	0.133	1.117	1.110	0.005	0.043	0.040	472.234
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299
Pressure Washers	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299
Pressure Washers	50	0.306	3.210	3.344	0.007	0.075	0.075	568.299
Pressure Washers	120	0.189	3.186	2.100	0.006	0.072	0.072	568.299
Pressure Washers	175	0.178	2.907	1.310	0.006	0.053	0.053	568.299

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299
Pumps	15	0.683	3.491	4.278	0.008	0.183	0.183	568.299
Pumps	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Pumps	50	0.485	3.943	3.528	0.007	0.099	0.099	568.299
Pumps	120	0.261	3.389	2.213	0.006	0.092	0.092	568.299
Pumps	175	0.199	2.974	1.318	0.006	0.056	0.056	568.300
Pumps	250	0.159	1.016	1.038	0.006	0.029	0.029	568.299
Pumps	500	0.156	0.992	0.958	0.005	0.028	0.028	568.300
Pumps	750	0.157	0.992	0.977	0.005	0.029	0.029	568.300
Pumps	9999	0.186	1.020	2.840	0.005	0.049	0.049	568.299
Rollers	15	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	25	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	50	0.569	4.125	3.689	0.005	0.167	0.154	526.141
Rollers	120	0.255	3.444	2.691	0.005	0.135	0.125	473.851
Rollers	175	0.127	2.909	1.101	0.005	0.049	0.046	471.970
Rollers	250	0.173	1.215	1.783	0.005	0.066	0.060	473.681
Rollers	500	0.212	1.968	2.200	0.005	0.091	0.083	477.573
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128	0.118	525.027
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051	0.047	473.037
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030	0.028	471.475
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035	0.033	472.927
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009	0.008	466.541
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231	0.212	474.103
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167	0.153	474.573
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151	0.139	479.092
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196	0.181	472.998
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115	0.115	568.299
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259	0.238	523.908
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259	0.238	523.908
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179	0.165	466.898
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084	0.077	470.459

Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048	0.045	469.871
Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053	0.048	469.143
Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064	0.059	465.052
Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052	0.048	472.456
Scrapers	120	0.566	4.094	5.503	0.005	0.405	0.372	482.363
Scrapers	175	0.290	3.321	2.631	0.005	0.137	0.126	478.948
Scrapers	250	0.291	1.602	2.803	0.005	0.125	0.115	469.446
Scrapers	500	0.216	1.732	2.051	0.005	0.081	0.074	472.539
Scrapers	750	0.184	1.338	1.713	0.005	0.064	0.059	472.115
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	0.522	4.217	3.561	0.007	0.098	0.098	568.299
Signal Boards	120	0.278	3.470	2.179	0.006	0.089	0.089	568.299
Signal Boards	175	0.215	3.049	1.262	0.006	0.055	0.055	568.299
Signal Boards	250	0.213	1.257	1.192	0.007	0.035	0.035	686.695
Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084	0.077	527.861
Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084	0.077	527.861
Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057	0.052	472.630
Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082	0.075	536.140
Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124	0.114	476.766
Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094	0.087	471.040
Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055	0.051	477.110
Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051	0.047	470.283
Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027	0.025	470.551
Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191	0.176	525.328
Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160	0.147	474.116
Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072	0.066	473.122
Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051	0.047	470.126
Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145	0.133	513.803

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145	0.133	513.803
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086	0.079	477.188
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059	0.054	469.329
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047	0.044	470.598
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039	0.036	470.910
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067	0.062	466.452
Trenchers	15	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	25	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	50	0.542	4.120	3.657	0.005	0.163	0.150	527.160
Trenchers	120	0.457	3.734	4.279	0.005	0.285	0.262	475.901
Trenchers	175	0.358	3.309	3.549	0.005	0.179	0.165	467.732
Trenchers	250	0.307	1.601	3.315	0.005	0.144	0.133	473.917
Trenchers	500	0.191	1.676	1.826	0.005	0.079	0.072	470.439
Trenchers	750	0.067	0.962	0.305	0.005	0.009	0.009	474.486
Welders	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300
Welders	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299
Welders	50	0.602	4.524	3.676	0.007	0.112	0.112	568.299
Welders	120	0.316	3.557	2.283	0.006	0.102	0.102	568.299
Welders	175	0.245	3.121	1.365	0.006	0.063	0.063	568.299
Welders	250	0.199	1.065	1.075	0.006	0.032	0.032	568.299
Welders	500	0.196	1.029	0.990	0.005	0.031	0.031	568.299
Water Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004
Water Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126
Water Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970
Water Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369

2026

g/hp/hr	g/hp/hr
CH4	N2O
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.013	0.004
0.061	0.005
0.064	0.005
0.059	0.005
0.031	0.004
0.024	0.004
0.019	0.004
0.019	0.004
0.019	0.004
0.020	0.004
0.172	0.005
0.172	0.005
0.172	0.005
0.149	0.004
0.155	0.004
0.152	0.004
0.151	0.004
0.156	0.004
0.153	0.004

2026		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.154	3.088	2.879	0.005
Aerial Lifts	25	0.154	3.088	2.879	0.005
Aerial Lifts	50	0.154	3.088	2.879	0.005
Aerial Lifts	120	0.099	3.167	1.511	0.005
Aerial Lifts	500	0.085	0.970	0.649	0.005
Aerial Lifts	750	0.153	0.989	0.974	0.005
Air Compressors	15	0.683	3.491	4.278	0.008
Air Compressors	25	0.709	2.376	4.407	0.007
Air Compressors	50	0.659	4.851	3.755	0.007
Air Compressors	120	0.345	3.653	2.313	0.006
Air Compressors	175	0.269	3.205	1.383	0.006
Air Compressors	250	0.220	1.094	1.086	0.006
Air Compressors	500	0.217	1.051	1.001	0.005
Air Compressors	750	0.217	1.051	1.021	0.005
Air Compressors	1000	0.231	1.079	2.954	0.005
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005

0.059	0.005
0.062	0.005
0.061	0.005
0.047	0.005
0.025	0.004
0.019	0.004
0.168	0.005
0.152	0.004
0.154	0.004
0.153	0.004
0.153	0.004
0.152	0.004
0.153	0.004
0.167	0.005
0.154	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.153	0.004
0.154	0.004
0.059	0.005
0.031	0.004
0.024	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.023	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006
Cranes	50	1.811	7.072	5.636	0.005
Cranes	120	0.463	3.831	4.135	0.005
Cranes	175	0.334	3.335	3.160	0.005
Cranes	250	0.265	1.470	2.681	0.005
Cranes	500	0.218	1.834	2.154	0.005
Cranes	750	0.172	1.274	1.638	0.005
Cranes	9999	0.229	1.038	2.422	0.005
Crawler Tractors	50	1.744	6.686	4.936	0.005
Crawler Tractors	120	0.454	3.788	3.961	0.005
Crawler Tractors	175	0.298	3.209	2.688	0.005
Crawler Tractors	250	0.232	1.308	2.462	0.005
Crawler Tractors	500	0.208	1.717	1.920	0.005
Crawler Tractors	750	0.167	1.122	1.545	0.005
Crawler Tractors	1000	0.260	1.593	4.598	0.005
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005

					0.061	0.005
					0.170	0.005
					0.170	0.005
					0.151	0.004
					0.153	0.004
					0.153	0.004
					0.152	0.004
					0.152	0.004
					0.170	0.005
					0.153	0.004
					0.153	0.004
					0.153	0.004
					0.153	0.004
					0.054	0.005
					0.062	0.005
					0.039	0.005
					0.021	0.004
					0.016	0.004
					0.013	0.004
					0.013	0.004
					0.013	0.004
					0.015	0.004
					0.160	0.005
					0.152	0.004
					0.155	0.004
					0.153	0.004
					0.152	0.004
					0.022	0.004
					0.154	0.004
					0.153	0.004
					0.152	0.004
					0.153	0.004
					0.153	0.004
					0.152	0.004
					0.152	0.004

Dumpers/Tenders	25	0.685	2.339	4.332	0.007
Excavators	25	0.403	4.219	3.453	0.005
Excavators	50	0.403	4.219	3.453	0.005
Excavators	120	0.201	3.439	2.082	0.005
Excavators	175	0.158	3.078	1.154	0.005
Excavators	250	0.131	1.081	0.962	0.005
Excavators	500	0.115	1.051	0.726	0.005
Excavators	750	0.139	1.135	1.026	0.005
Forklifts	50	0.636	5.029	3.932	0.005
Forklifts	120	0.277	3.611	2.607	0.005
Forklifts	175	0.209	3.170	1.653	0.005
Forklifts	250	0.191	1.214	1.466	0.005
Forklifts	500	0.215	1.222	1.658	0.005
Generator Sets	15	0.607	3.491	4.269	0.008
Generator Sets	25	0.694	2.376	4.407	0.007
Generator Sets	50	0.440	3.758	3.481	0.007
Generator Sets	120	0.243	3.338	2.185	0.006
Generator Sets	175	0.184	2.930	1.297	0.006
Generator Sets	250	0.147	1.000	1.020	0.006
Generator Sets	500	0.144	0.981	0.945	0.005
Generator Sets	750	0.145	0.981	0.964	0.005
Generator Sets	9999	0.173	1.008	2.812	0.005
Graders	50	1.864	7.125	5.043	0.005
Graders	120	0.638	4.149	5.074	0.005
Graders	175	0.329	3.418	2.774	0.005
Graders	250	0.230	1.179	2.556	0.005
Graders	500	0.280	1.315	2.265	0.005
Graders	750	0.253	1.141	1.125	0.005
Off-Highway Tractors	120	0.276	3.669	2.707	0.005
Off-Highway Tractors	175	0.175	3.142	1.349	0.005
Off-Highway Tractors	250	0.155	1.130	1.116	0.005
Off-Highway Tractors	750	0.167	1.135	1.118	0.005
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005
Off-Highway Trucks	175	0.214	3.328	1.335	0.005
Off-Highway Trucks	250	0.185	1.213	1.129	0.005

0.154	0.004
0.154	0.004
0.153	0.004
0.171	0.005
0.171	0.005
0.171	0.005
0.153	0.004
0.152	0.004
0.154	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.152	0.004
0.153	0.004
0.153	0.004
0.153	0.004

Off-Highway Trucks	500	0.177	1.182	1.064	0.005
Off-Highway Trucks	750	0.235	1.578	1.751	0.005
Off-Highway Trucks	1000	0.187	1.146	3.135	0.005
Other Construction Equipment	15	0.757	4.874	4.306	0.006
Other Construction Equipment	25	0.757	4.874	4.306	0.006
Other Construction Equipment	50	0.757	4.874	4.306	0.006
Other Construction Equipment	120	0.341	3.584	3.252	0.005
Other Construction Equipment	175	0.235	3.136	2.167	0.005
Other Construction Equipment	500	0.168	1.358	1.552	0.005
Other General Industrial Equipment	15	0.492	4.680	3.717	0.005
Other General Industrial Equipment	25	0.492	4.680	3.717	0.005
Other General Industrial Equipment	50	0.492	4.680	3.717	0.005
Other General Industrial Equipment	120	0.258	3.612	2.439	0.005
Other General Industrial Equipment	175	0.189	3.204	1.364	0.005
Other General Industrial Equipment	250	0.155	1.132	1.028	0.005
Other General Industrial Equipment	500	0.152	1.109	1.053	0.005

		Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.153	0.004
		Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.153	0.004
		Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.169	0.005
		Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.153	0.004
		Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.153	0.004
		Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.153	0.004
		Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.152	0.004
		Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.153	0.004
		Pavers	25	0.918	4.945	4.131	0.005	0.170	0.005
		Pavers	50	0.918	4.945	4.131	0.005	0.170	0.005
		Pavers	120	0.314	3.493	3.068	0.005	0.152	0.004
		Pavers	175	0.181	3.007	1.644	0.005	0.153	0.004
		Pavers	250	0.107	1.004	1.035	0.005	0.153	0.004
		Pavers	500	0.115	0.969	1.134	0.005	0.151	0.004
		Paving Equipment	25	0.476	4.203	3.627	0.005	0.169	0.005
		Paving Equipment	50	0.476	4.203	3.627	0.005	0.169	0.005
		Paving Equipment	120	0.242	3.483	2.496	0.005	0.153	0.004
		Paving Equipment	175	0.175	3.038	1.509	0.005	0.152	0.004
		Paving Equipment	250	0.133	1.117	1.110	0.005	0.153	0.004
		Plate Compactors	15	0.661	3.469	4.142	0.008	0.059	0.005
		Pressure Washers	15	0.607	3.491	4.269	0.008	0.054	0.005
		Pressure Washers	25	0.694	2.376	4.407	0.007	0.062	0.005
		Pressure Washers	50	0.306	3.210	3.344	0.007	0.027	0.005
		Pressure Washers	120	0.189	3.186	2.100	0.006	0.017	0.004
		Pressure Washers	175	0.178	2.907	1.310	0.006	0.016	0.004

0.008	0.004
0.061	0.005
0.064	0.005
0.043	0.005
0.023	0.004
0.018	0.004
0.014	0.004
0.014	0.004
0.014	0.004
0.016	0.004
0.170	0.005
0.170	0.005
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.155	0.004
0.170	0.005
0.153	0.004
0.153	0.004
0.153	0.004
0.151	0.004
0.153	0.004
0.154	0.004
0.155	0.004
0.153	0.004
0.037	0.004
0.169	0.005
0.169	0.005
0.151	0.004
0.152	0.004

Pressure Washers	250	0.098	0.986	0.265	0.006
Pumps	15	0.683	3.491	4.278	0.008
Pumps	25	0.709	2.376	4.407	0.007
Pumps	50	0.485	3.943	3.528	0.007
Pumps	120	0.261	3.389	2.213	0.006
Pumps	175	0.199	2.974	1.318	0.006
Pumps	250	0.159	1.016	1.038	0.006
Pumps	500	0.156	0.992	0.958	0.005
Pumps	750	0.157	0.992	0.977	0.005
Pumps	9999	0.186	1.020	2.840	0.005
Rollers	15	0.569	4.125	3.689	0.005
Rollers	25	0.569	4.125	3.689	0.005
Rollers	50	0.569	4.125	3.689	0.005
Rollers	120	0.255	3.444	2.691	0.005
Rollers	175	0.127	2.909	1.101	0.005
Rollers	250	0.173	1.215	1.783	0.005
Rollers	500	0.212	1.968	2.200	0.005
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005

		Rubber Tired Loaders	250	0.177	1.142	1.442	0.005
0.152	0.004						
		Rubber Tired Loaders	500	0.193	1.276	1.433	0.005
0.152	0.004						
		Rubber Tired Loaders	750	0.212	1.333	1.654	0.005
0.150	0.004						
		Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005
0.153	0.004						
0.156	0.004	Scrapers	120	0.566	4.094	5.503	0.005
0.155	0.004	Scrapers	175	0.290	3.321	2.631	0.005
0.152	0.004	Scrapers	250	0.291	1.602	2.803	0.005
0.153	0.004	Scrapers	500	0.216	1.732	2.051	0.005
0.153	0.004	Scrapers	750	0.184	1.338	1.713	0.005
		Signal Boards	15	0.661	3.469	4.142	0.008
0.059	0.005						
		Signal Boards	50	0.522	4.217	3.561	0.007
0.047	0.005						
		Signal Boards	120	0.278	3.470	2.179	0.006
0.025	0.004						
		Signal Boards	175	0.215	3.049	1.262	0.006
0.019	0.004						
		Signal Boards	250	0.213	1.257	1.192	0.007
0.019	0.004						
		Skid Steer Loaders	25	0.341	3.660	3.309	0.006
0.171	0.005						
		Skid Steer Loaders	50	0.341	3.660	3.309	0.006
0.171	0.005						
		Skid Steer Loaders	120	0.140	3.252	1.867	0.005
0.153	0.004						
		Surfacing Equipment	50	0.235	3.537	3.576	0.006
0.173	0.005						
		Surfacing Equipment	120	0.232	3.385	2.659	0.005
0.154	0.004						
		Surfacing Equipment	175	0.187	2.926	1.999	0.005
0.152	0.004						
		Surfacing Equipment	250	0.148	1.143	1.747	0.005
0.154	0.004						
		Surfacing Equipment	500	0.128	1.169	1.327	0.005
0.152	0.004						
		Surfacing Equipment	750	0.085	0.978	0.768	0.005
0.152	0.004						
		Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005
0.170	0.005						
		Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005
0.170	0.005						
		Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005
0.170	0.005						
		Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005
0.153	0.004						
		Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005
0.153	0.004						
		Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005
0.152	0.004						
		Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005
0.166	0.005						

0.166	0.005
0.154	0.004
0.152	0.004
0.152	0.004
0.152	0.004
0.151	0.004
0.171	0.005
0.171	0.005
0.171	0.005
0.154	0.004
0.151	0.004
0.153	0.004
0.152	0.004
0.154	0.004
0.061	0.005
0.064	0.005
0.054	0.005
0.028	0.004
0.022	0.004
0.018	0.004
0.017	0.004
0.152	0.004
0.152	0.004
0.154	0.004
0.154	0.004
0.153	0.004

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005
Trenchers	15	0.542	4.120	3.657	0.005
Trenchers	25	0.542	4.120	3.657	0.005
Trenchers	50	0.542	4.120	3.657	0.005
Trenchers	120	0.457	3.734	4.279	0.005
Trenchers	175	0.358	3.309	3.549	0.005
Trenchers	250	0.307	1.601	3.315	0.005
Trenchers	500	0.191	1.676	1.826	0.005
Trenchers	750	0.067	0.962	0.305	0.005
Welders	15	0.683	3.491	4.278	0.008
Welders	25	0.709	2.376	4.407	0.007
Welders	50	0.602	4.524	3.676	0.007
Welders	120	0.316	3.557	2.283	0.006
Welders	175	0.245	3.121	1.365	0.006
Welders	250	0.199	1.065	1.075	0.006
Welders	500	0.196	1.029	0.990	0.005
Water Trucks	175	0.214	3.328	1.335	0.005
Water Trucks	250	0.185	1.213	1.129	0.005
Water Trucks	500	0.177	1.182	1.064	0.005
Water Trucks	750	0.235	1.578	1.751	0.005
Water Trucks	1000	0.187	1.146	3.135	0.005

2027

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.021	0.019	525.074	0.170	0.005
0.021	0.019	525.074	0.170	0.005
0.021	0.019	525.074	0.170	0.005
0.026	0.024	472.114	0.153	0.004
0.009	0.009	472.055	0.153	0.004
0.028	0.028	568.299	0.013	0.004
0.183	0.183	568.300	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.116	0.116	568.299	0.059	0.005
0.104	0.104	568.299	0.031	0.004
0.065	0.065	568.299	0.024	0.004
0.033	0.033	568.299	0.019	0.004
0.032	0.032	568.299	0.019	0.004
0.032	0.032	568.299	0.019	0.004
0.055	0.055	568.299	0.020	0.004
0.193	0.178	532.821	0.172	0.005
0.193	0.178	532.821	0.172	0.005
0.193	0.178	532.821	0.172	0.005
0.067	0.062	459.829	0.149	0.004
0.039	0.036	478.266	0.155	0.004
0.031	0.029	470.654	0.152	0.004
0.028	0.026	467.289	0.151	0.004
0.023	0.021	481.250	0.156	0.004
0.019	0.017	471.917	0.153	0.004

2027		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.154
Aerial Lifts	25	0.154
Aerial Lifts	50	0.154
Aerial Lifts	120	0.099
Aerial Lifts	500	0.085
Aerial Lifts	750	0.153
Air Compressors	15	0.683
Air Compressors	25	0.709
Air Compressors	50	0.659
Air Compressors	120	0.345
Air Compressors	175	0.269
Air Compressors	250	0.220
Air Compressors	500	0.217
Air Compressors	750	0.217
Air Compressors	1000	0.231
Bore/Drill Rigs	15	0.591
Bore/Drill Rigs	25	0.591
Bore/Drill Rigs	50	0.591
Bore/Drill Rigs	120	0.155
Bore/Drill Rigs	175	0.114
Bore/Drill Rigs	250	0.107
Bore/Drill Rigs	500	0.102
Bore/Drill Rigs	750	0.085
Bore/Drill Rigs	1000	0.062

0.161	0.161	568.299	0.059	0.005
0.168	0.168	568.299	0.062	0.005
0.161	0.161	568.299	0.061	0.005
0.099	0.099	568.299	0.047	0.005
0.089	0.089	568.300	0.025	0.004
0.056	0.056	568.300	0.019	0.004
0.543	0.499	517.872	0.168	0.005
0.260	0.240	469.533	0.152	0.004
0.166	0.153	474.748	0.154	0.004
0.114	0.105	472.980	0.153	0.004
0.088	0.081	471.967	0.153	0.004
0.068	0.062	470.276	0.152	0.004
0.065	0.060	472.055	0.153	0.004
0.456	0.420	516.128	0.167	0.005
0.285	0.262	476.134	0.154	0.004
0.150	0.138	471.592	0.153	0.004
0.096	0.088	471.622	0.153	0.004
0.081	0.074	474.007	0.153	0.004
0.057	0.052	472.408	0.153	0.004
0.112	0.103	475.490	0.154	0.004
0.107	0.107	568.299	0.059	0.005
0.095	0.095	568.299	0.031	0.004
0.060	0.060	568.299	0.024	0.004
0.031	0.031	568.299	0.020	0.004
0.030	0.030	568.299	0.020	0.004
0.030	0.030	568.299	0.020	0.004
0.053	0.053	568.299	0.023	0.004

Cement and Mortar Mixers	15	0.661
Cement and Mortar Mixers	25	0.689
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	0.525
Concrete/Industrial Saws	120	0.283
Concrete/Industrial Saws	175	0.220
Cranes	50	1.811
Cranes	120	0.463
Cranes	175	0.334
Cranes	250	0.265
Cranes	500	0.218
Cranes	750	0.172
Cranes	9999	0.229
Crawler Tractors	50	1.744
Crawler Tractors	120	0.454
Crawler Tractors	175	0.298
Crawler Tractors	250	0.232
Crawler Tractors	500	0.208
Crawler Tractors	750	0.167
Crawler Tractors	1000	0.260
Crushing/Proc. Equipment	50	0.656
Crushing/Proc. Equipment	120	0.345
Crushing/Proc. Equipment	175	0.270
Crushing/Proc. Equipment	250	0.224
Crushing/Proc. Equipment	500	0.221
Crushing/Proc. Equipment	750	0.222
Crushing/Proc. Equipment	9999	0.261

0.161	0.161	568.299	0.061	0.005
0.107	0.099	525.777	0.170	0.005
0.107	0.099	525.777	0.170	0.005
0.085	0.078	466.738	0.151	0.004
0.057	0.052	472.496	0.153	0.004
0.032	0.029	472.560	0.153	0.004
0.026	0.024	470.292	0.152	0.004
0.038	0.035	468.558	0.152	0.004
0.178	0.164	525.483	0.170	0.005
0.140	0.128	471.529	0.153	0.004
0.084	0.078	472.106	0.153	0.004
0.056	0.052	473.326	0.153	0.004
0.062	0.057	473.615	0.153	0.004
0.178	0.178	568.299	0.054	0.005
0.175	0.175	568.299	0.062	0.005
0.093	0.093	568.300	0.039	0.005
0.087	0.087	568.299	0.021	0.004
0.053	0.053	568.299	0.016	0.004
0.028	0.028	568.299	0.013	0.004
0.027	0.027	568.300	0.013	0.004
0.027	0.027	568.299	0.013	0.004
0.047	0.047	568.299	0.015	0.004
0.522	0.480	493.532	0.160	0.005
0.371	0.342	468.316	0.152	0.004
0.152	0.140	478.508	0.155	0.004
0.082	0.076	473.470	0.153	0.004
0.088	0.081	470.753	0.152	0.004
0.041	0.041	568.300	0.022	0.004
0.144	0.132	476.921	0.154	0.004
0.065	0.060	473.302	0.153	0.004
0.040	0.037	470.861	0.152	0.004
0.045	0.041	471.917	0.153	0.004
0.070	0.064	472.055	0.153	0.004
0.065	0.060	470.004	0.152	0.004
0.043	0.040	469.126	0.152	0.004

Dumpers/Tenders	25	0.685
Excavators	25	0.403
Excavators	50	0.403
Excavators	120	0.201
Excavators	175	0.158
Excavators	250	0.131
Excavators	500	0.115
Excavators	750	0.139
Forklifts	50	0.636
Forklifts	120	0.277
Forklifts	175	0.209
Forklifts	250	0.191
Forklifts	500	0.215
Generator Sets	15	0.607
Generator Sets	25	0.694
Generator Sets	50	0.440
Generator Sets	120	0.243
Generator Sets	175	0.184
Generator Sets	250	0.147
Generator Sets	500	0.144
Generator Sets	750	0.145
Generator Sets	9999	0.173
Graders	50	1.864
Graders	120	0.638
Graders	175	0.329
Graders	250	0.230
Graders	500	0.280
Graders	750	0.253
Off-Highway Tractors	120	0.276
Off-Highway Tractors	175	0.175
Off-Highway Tractors	250	0.155
Off-Highway Tractors	750	0.167
Off-Highway Tractors	1000	0.198
Off-Highway Trucks	175	0.214
Off-Highway Trucks	250	0.185

0.038	0.035	474.970	0.154	0.004
0.066	0.061	476.314	0.154	0.004
0.057	0.052	473.369	0.153	0.004
0.268	0.246	528.954	0.171	0.005
0.268	0.246	528.954	0.171	0.005
0.268	0.246	528.954	0.171	0.005
0.203	0.187	472.748	0.153	0.004
0.112	0.103	469.843	0.152	0.004
0.059	0.055	476.296	0.154	0.004
0.136	0.125	526.176	0.170	0.005
0.136	0.125	526.176	0.170	0.005
0.136	0.125	526.176	0.170	0.005
0.118	0.109	470.000	0.152	0.004
0.070	0.065	471.850	0.153	0.004
0.036	0.033	473.223	0.153	0.004
0.035	0.033	472.929	0.153	0.004

Off-Highway Trucks	500	0.177
Off-Highway Trucks	750	0.235
Off-Highway Trucks	1000	0.187
Other Construction Equipment	15	0.757
Other Construction Equipment	25	0.757
Other Construction Equipment	50	0.757
Other Construction Equipment	120	0.341
Other Construction Equipment	175	0.235
Other Construction Equipment	500	0.168
Other General Industrial Equipment	15	0.492
Other General Industrial Equipment	25	0.492
Other General Industrial Equipment	50	0.492
Other General Industrial Equipment	120	0.258
Other General Industrial Equipment	175	0.189
Other General Industrial Equipment	250	0.155
Other General Industrial Equipment	500	0.152

0.023	0.021	473.464	0.153	0.004
0.081	0.074	472.055	0.153	0.004
0.239	0.219	523.709	0.169	0.005
0.081	0.074	473.588	0.153	0.004
0.072	0.067	472.219	0.153	0.004
0.060	0.055	471.482	0.153	0.004
0.067	0.061	470.297	0.152	0.004
0.019	0.017	472.055	0.153	0.004
0.265	0.243	526.853	0.170	0.005
0.265	0.243	526.853	0.170	0.005
0.191	0.175	469.899	0.152	0.004
0.077	0.071	472.485	0.153	0.004
0.034	0.031	473.483	0.153	0.004
0.039	0.036	465.882	0.151	0.004
0.142	0.130	520.998	0.169	0.005
0.142	0.130	520.998	0.169	0.005
0.118	0.108	473.424	0.153	0.004
0.075	0.069	470.484	0.152	0.004
0.043	0.040	472.234	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.178	0.178	568.299	0.054	0.005
0.175	0.175	568.299	0.062	0.005
0.075	0.075	568.299	0.027	0.005
0.072	0.072	568.299	0.017	0.004
0.053	0.053	568.299	0.016	0.004

Other General Industrial Equipment	750	0.117
Other General Industrial Equipment	1000	0.203
Other Material Handling Equipment	50	0.744
Other Material Handling Equipment	120	0.203
Other Material Handling Equipment	175	0.189
Other Material Handling Equipment	250	0.200
Other Material Handling Equipment	500	0.204
Other Material Handling Equipment	9999	0.065
Pavers	25	0.918
Pavers	50	0.918
Pavers	120	0.314
Pavers	175	0.181
Pavers	250	0.107
Pavers	500	0.115
Paving Equipment	25	0.476
Paving Equipment	50	0.476
Paving Equipment	120	0.242
Paving Equipment	175	0.175
Paving Equipment	250	0.133
Plate Compactors	15	0.661
Pressure Washers	15	0.607
Pressure Washers	25	0.694
Pressure Washers	50	0.306
Pressure Washers	120	0.189
Pressure Washers	175	0.178

0.009	0.009	568.299	0.008	0.004
0.183	0.183	568.299	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.099	0.099	568.299	0.043	0.005
0.092	0.092	568.299	0.023	0.004
0.056	0.056	568.300	0.018	0.004
0.029	0.029	568.299	0.014	0.004
0.028	0.028	568.300	0.014	0.004
0.029	0.029	568.300	0.014	0.004
0.049	0.049	568.299	0.016	0.004
0.167	0.154	526.141	0.170	0.005
0.167	0.154	526.141	0.170	0.005
0.167	0.154	526.141	0.170	0.005
0.135	0.125	473.851	0.153	0.004
0.049	0.046	471.970	0.153	0.004
0.066	0.060	473.681	0.153	0.004
0.091	0.083	477.573	0.155	0.004
0.128	0.118	525.027	0.170	0.005
0.051	0.047	473.037	0.153	0.004
0.030	0.028	471.475	0.153	0.004
0.035	0.033	472.927	0.153	0.004
0.009	0.008	466.541	0.151	0.004
0.231	0.212	474.103	0.153	0.004
0.167	0.153	474.573	0.154	0.004
0.151	0.139	479.092	0.155	0.004
0.196	0.181	472.998	0.153	0.004
0.115	0.115	568.299	0.037	0.004
0.259	0.238	523.908	0.169	0.005
0.259	0.238	523.908	0.169	0.005
0.179	0.165	466.898	0.151	0.004
0.084	0.077	470.459	0.152	0.004

Pressure Washers	250	0.098
Pumps	15	0.683
Pumps	25	0.709
Pumps	50	0.485
Pumps	120	0.261
Pumps	175	0.199
Pumps	250	0.159
Pumps	500	0.156
Pumps	750	0.157
Pumps	9999	0.186
Rollers	15	0.569
Rollers	25	0.569
Rollers	50	0.569
Rollers	120	0.255
Rollers	175	0.127
Rollers	250	0.173
Rollers	500	0.212
Rough Terrain Forklifts	50	0.456
Rough Terrain Forklifts	120	0.137
Rough Terrain Forklifts	175	0.087
Rough Terrain Forklifts	250	0.123
Rough Terrain Forklifts	500	0.069
Rubber Tired Dozers	175	0.461
Rubber Tired Dozers	250	0.372
Rubber Tired Dozers	500	0.367
Rubber Tired Dozers	750	0.428
Rubber Tired Dozers	1000	0.414
Rubber Tired Loaders	25	0.960
Rubber Tired Loaders	50	0.960
Rubber Tired Loaders	120	0.352
Rubber Tired Loaders	175	0.224

0.048	0.045	469.871	0.152	0.004
0.053	0.048	469.143	0.152	0.004
0.064	0.059	465.052	0.150	0.004
0.052	0.048	472.456	0.153	0.004
0.405	0.372	482.363	0.156	0.004
0.137	0.126	478.948	0.155	0.004
0.125	0.115	469.446	0.152	0.004
0.081	0.074	472.539	0.153	0.004
0.064	0.059	472.115	0.153	0.004
0.161	0.161	568.299	0.059	0.005
0.098	0.098	568.299	0.047	0.005
0.089	0.089	568.299	0.025	0.004
0.055	0.055	568.299	0.019	0.004
0.035	0.035	686.695	0.019	0.004
0.084	0.077	527.861	0.171	0.005
0.084	0.077	527.861	0.171	0.005
0.057	0.052	472.630	0.153	0.004
0.082	0.075	536.140	0.173	0.005
0.124	0.114	476.766	0.154	0.004
0.094	0.087	471.040	0.152	0.004
0.055	0.051	477.110	0.154	0.004
0.051	0.047	470.283	0.152	0.004
0.027	0.025	470.551	0.152	0.004
0.191	0.176	525.328	0.170	0.005
0.191	0.176	525.328	0.170	0.005
0.191	0.176	525.328	0.170	0.005
0.160	0.147	474.116	0.153	0.004
0.072	0.066	473.122	0.153	0.004
0.051	0.047	470.126	0.152	0.004
0.145	0.133	513.803	0.166	0.005

Rubber Tired Loaders	250	0.177
Rubber Tired Loaders	500	0.193
Rubber Tired Loaders	750	0.212
Rubber Tired Loaders	1000	0.166
Scrapers	120	0.566
Scrapers	175	0.290
Scrapers	250	0.291
Scrapers	500	0.216
Scrapers	750	0.184
Signal Boards	15	0.661
Signal Boards	50	0.522
Signal Boards	120	0.278
Signal Boards	175	0.215
Signal Boards	250	0.213
Skid Steer Loaders	25	0.341
Skid Steer Loaders	50	0.341
Skid Steer Loaders	120	0.140
Surfacing Equipment	50	0.235
Surfacing Equipment	120	0.232
Surfacing Equipment	175	0.187
Surfacing Equipment	250	0.148
Surfacing Equipment	500	0.128
Surfacing Equipment	750	0.085
Sweepers/Scrubbers	15	0.622
Sweepers/Scrubbers	25	0.622
Sweepers/Scrubbers	50	0.622
Sweepers/Scrubbers	120	0.303
Sweepers/Scrubbers	175	0.213
Sweepers/Scrubbers	250	0.170
Tractors/Loaders/Backhoes	25	0.550

0.145	0.133	513.803	0.166	0.005
0.086	0.079	477.188	0.154	0.004
0.059	0.054	469.329	0.152	0.004
0.047	0.044	470.598	0.152	0.004
0.039	0.036	470.910	0.152	0.004
0.067	0.062	466.452	0.151	0.004
0.163	0.150	527.160	0.171	0.005
0.163	0.150	527.160	0.171	0.005
0.163	0.150	527.160	0.171	0.005
0.285	0.262	475.901	0.154	0.004
0.179	0.165	467.732	0.151	0.004
0.144	0.133	473.917	0.153	0.004
0.079	0.072	470.439	0.152	0.004
0.009	0.009	474.486	0.154	0.004
0.183	0.183	568.300	0.061	0.005
0.177	0.177	568.299	0.064	0.005
0.112	0.112	568.299	0.054	0.005
0.102	0.102	568.299	0.028	0.004
0.063	0.063	568.299	0.022	0.004
0.032	0.032	568.299	0.018	0.004
0.031	0.031	568.299	0.017	0.004
0.065	0.060	470.004	0.152	0.004
0.043	0.040	469.126	0.152	0.004
0.038	0.035	474.970	0.154	0.004
0.066	0.061	476.314	0.154	0.004
0.057	0.052	473.369	0.153	0.004

Tractors/Loaders/Backhoes	50	0.550
Tractors/Loaders/Backhoes	120	0.209
Tractors/Loaders/Backhoes	175	0.162
Tractors/Loaders/Backhoes	250	0.154
Tractors/Loaders/Backhoes	500	0.144
Tractors/Loaders/Backhoes	750	0.187
Trenchers	15	0.542
Trenchers	25	0.542
Trenchers	50	0.542
Trenchers	120	0.457
Trenchers	175	0.358
Trenchers	250	0.307
Trenchers	500	0.191
Trenchers	750	0.067
Welders	15	0.683
Welders	25	0.709
Welders	50	0.602
Welders	120	0.316
Welders	175	0.245
Welders	250	0.199
Welders	500	0.196
Water Trucks	175	0.214
Water Trucks	250	0.185
Water Trucks	500	0.177
Water Trucks	750	0.235
Water Trucks	1000	0.187

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g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.088	2.879	0.005	0.021	0.019	525.074	0.170	0.005
3.167	1.511	0.005	0.026	0.024	472.114	0.153	0.004
0.970	0.649	0.005	0.009	0.009	472.055	0.153	0.004
0.989	0.974	0.005	0.028	0.028	568.299	0.013	0.004
3.491	4.278	0.008	0.183	0.183	568.300	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
4.851	3.755	0.007	0.116	0.116	568.299	0.059	0.005
3.653	2.313	0.006	0.104	0.104	568.299	0.031	0.004
3.205	1.383	0.006	0.065	0.065	568.299	0.024	0.004
1.094	1.086	0.006	0.033	0.033	568.299	0.019	0.004
1.051	1.001	0.005	0.032	0.032	568.299	0.019	0.004
1.051	1.021	0.005	0.032	0.032	568.299	0.019	0.004
1.079	2.954	0.005	0.055	0.055	568.299	0.020	0.004
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
4.273	3.978	0.006	0.193	0.178	532.821	0.172	0.005
3.218	1.964	0.005	0.067	0.062	459.829	0.149	0.004
2.974	0.888	0.005	0.039	0.036	478.266	0.155	0.004
1.045	0.957	0.005	0.031	0.029	470.654	0.152	0.004
0.997	0.823	0.005	0.028	0.026	467.289	0.151	0.004
0.983	0.596	0.005	0.023	0.021	481.250	0.156	0.004
0.953	2.289	0.005	0.019	0.017	471.917	0.153	0.004

3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.344	4.357	0.007	0.168	0.168	568.299	0.062	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.297	3.592	0.007	0.099	0.099	568.299	0.047	0.005
3.495	2.176	0.006	0.089	0.089	568.300	0.025	0.004
3.073	1.249	0.006	0.056	0.056	568.300	0.019	0.004
7.072	5.636	0.005	0.543	0.499	517.872	0.168	0.005
3.831	4.135	0.005	0.260	0.240	469.533	0.152	0.004
3.335	3.160	0.005	0.166	0.153	474.748	0.154	0.004
1.470	2.681	0.005	0.114	0.105	472.980	0.153	0.004
1.834	2.154	0.005	0.088	0.081	471.967	0.153	0.004
1.274	1.638	0.005	0.068	0.062	470.276	0.152	0.004
1.038	2.422	0.005	0.065	0.060	472.055	0.153	0.004
6.686	4.936	0.005	0.456	0.420	516.128	0.167	0.005
3.788	3.961	0.005	0.285	0.262	476.134	0.154	0.004
3.209	2.688	0.005	0.150	0.138	471.592	0.153	0.004
1.308	2.462	0.005	0.096	0.088	471.622	0.153	0.004
1.717	1.920	0.005	0.081	0.074	474.007	0.153	0.004
1.122	1.545	0.005	0.057	0.052	472.408	0.153	0.004
1.593	4.598	0.005	0.112	0.103	475.490	0.154	0.004
4.982	3.742	0.007	0.107	0.107	568.299	0.059	0.005
3.694	2.248	0.006	0.095	0.095	568.299	0.031	0.004
3.246	1.301	0.006	0.060	0.060	568.299	0.024	0.004
1.108	1.012	0.006	0.031	0.031	568.299	0.020	0.004
1.061	0.937	0.005	0.030	0.030	568.299	0.020	0.004
1.061	0.955	0.005	0.030	0.030	568.299	0.020	0.004
1.087	2.910	0.005	0.053	0.053	568.299	0.023	0.004

2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.219	3.453	0.005	0.107	0.099	525.777	0.170	0.005
4.219	3.453	0.005	0.107	0.099	525.777	0.170	0.005
3.439	2.082	0.005	0.085	0.078	466.738	0.151	0.004
3.078	1.154	0.005	0.057	0.052	472.496	0.153	0.004
1.081	0.962	0.005	0.032	0.029	472.560	0.153	0.004
1.051	0.726	0.005	0.026	0.024	470.292	0.152	0.004
1.135	1.026	0.005	0.038	0.035	468.558	0.152	0.004
5.029	3.932	0.005	0.178	0.164	525.483	0.170	0.005
3.611	2.607	0.005	0.140	0.128	471.529	0.153	0.004
3.170	1.653	0.005	0.084	0.078	472.106	0.153	0.004
1.214	1.466	0.005	0.056	0.052	473.326	0.153	0.004
1.222	1.658	0.005	0.062	0.057	473.615	0.153	0.004
3.491	4.269	0.008	0.178	0.178	568.299	0.054	0.005
2.376	4.407	0.007	0.175	0.175	568.299	0.062	0.005
3.758	3.481	0.007	0.093	0.093	568.300	0.039	0.005
3.338	2.185	0.006	0.087	0.087	568.299	0.021	0.004
2.930	1.297	0.006	0.053	0.053	568.299	0.016	0.004
1.000	1.020	0.006	0.028	0.028	568.299	0.013	0.004
0.981	0.945	0.005	0.027	0.027	568.300	0.013	0.004
0.981	0.964	0.005	0.027	0.027	568.299	0.013	0.004
1.008	2.812	0.005	0.047	0.047	568.299	0.015	0.004
7.125	5.043	0.005	0.522	0.480	493.532	0.160	0.005
4.149	5.074	0.005	0.371	0.342	468.316	0.152	0.004
3.418	2.774	0.005	0.152	0.140	478.508	0.155	0.004
1.179	2.556	0.005	0.082	0.076	473.470	0.153	0.004
1.315	2.265	0.005	0.088	0.081	470.753	0.152	0.004
1.141	1.125	0.005	0.041	0.041	568.300	0.022	0.004
3.669	2.707	0.005	0.144	0.132	476.921	0.154	0.004
3.142	1.349	0.005	0.065	0.060	473.302	0.153	0.004
1.130	1.116	0.005	0.040	0.037	470.861	0.152	0.004
1.135	1.118	0.005	0.045	0.041	471.917	0.153	0.004
1.077	2.482	0.005	0.070	0.064	472.055	0.153	0.004
3.328	1.335	0.005	0.065	0.060	470.004	0.152	0.004
1.213	1.129	0.005	0.043	0.040	469.126	0.152	0.004

1.182	1.064	0.005	0.038	0.035	474.970	0.154	0.004
1.578	1.751	0.005	0.066	0.061	476.314	0.154	0.004
1.146	3.135	0.005	0.057	0.052	473.369	0.153	0.004
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
4.874	4.306	0.006	0.268	0.246	528.954	0.171	0.005
3.584	3.252	0.005	0.203	0.187	472.748	0.153	0.004
3.136	2.167	0.005	0.112	0.103	469.843	0.152	0.004
1.358	1.552	0.005	0.059	0.055	476.296	0.154	0.004
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
4.680	3.717	0.005	0.136	0.125	526.176	0.170	0.005
3.612	2.439	0.005	0.118	0.109	470.000	0.152	0.004
3.204	1.364	0.005	0.070	0.065	471.850	0.153	0.004
1.132	1.028	0.005	0.036	0.033	473.223	0.153	0.004
1.109	1.053	0.005	0.035	0.033	472.929	0.153	0.004

1.115	0.629	0.005	0.023	0.021	473.464	0.153	0.004
1.067	3.985	0.005	0.081	0.074	472.055	0.153	0.004
5.248	4.233	0.005	0.239	0.219	523.709	0.169	0.005
3.497	2.055	0.005	0.081	0.074	473.588	0.153	0.004
3.168	1.396	0.005	0.072	0.067	472.219	0.153	0.004
1.197	1.774	0.005	0.060	0.055	471.482	0.153	0.004
1.260	1.601	0.005	0.067	0.061	470.297	0.152	0.004
0.959	2.298	0.005	0.019	0.017	472.055	0.153	0.004
4.945	4.131	0.005	0.265	0.243	526.853	0.170	0.005
4.945	4.131	0.005	0.265	0.243	526.853	0.170	0.005
3.493	3.068	0.005	0.191	0.175	469.899	0.152	0.004
3.007	1.644	0.005	0.077	0.071	472.485	0.153	0.004
1.004	1.035	0.005	0.034	0.031	473.483	0.153	0.004
0.969	1.134	0.005	0.039	0.036	465.882	0.151	0.004
4.203	3.627	0.005	0.142	0.130	520.998	0.169	0.005
4.203	3.627	0.005	0.142	0.130	520.998	0.169	0.005
3.483	2.496	0.005	0.118	0.108	473.424	0.153	0.004
3.038	1.509	0.005	0.075	0.069	470.484	0.152	0.004
1.117	1.110	0.005	0.043	0.040	472.234	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.491	4.269	0.008	0.178	0.178	568.299	0.054	0.005
2.376	4.407	0.007	0.175	0.175	568.299	0.062	0.005
3.210	3.344	0.007	0.075	0.075	568.299	0.027	0.005
3.186	2.100	0.006	0.072	0.072	568.299	0.017	0.004
2.907	1.310	0.006	0.053	0.053	568.299	0.016	0.004

0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
3.491	4.278	0.008	0.183	0.183	568.299	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
3.943	3.528	0.007	0.099	0.099	568.299	0.043	0.005
3.389	2.213	0.006	0.092	0.092	568.299	0.023	0.004
2.974	1.318	0.006	0.056	0.056	568.300	0.018	0.004
1.016	1.038	0.006	0.029	0.029	568.299	0.014	0.004
0.992	0.958	0.005	0.028	0.028	568.300	0.014	0.004
0.992	0.977	0.005	0.029	0.029	568.300	0.014	0.004
1.020	2.840	0.005	0.049	0.049	568.299	0.016	0.004
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
4.125	3.689	0.005	0.167	0.154	526.141	0.170	0.005
3.444	2.691	0.005	0.135	0.125	473.851	0.153	0.004
2.909	1.101	0.005	0.049	0.046	471.970	0.153	0.004
1.215	1.783	0.005	0.066	0.060	473.681	0.153	0.004
1.968	2.200	0.005	0.091	0.083	477.573	0.155	0.004
3.740	3.477	0.005	0.128	0.118	525.027	0.170	0.005
3.240	1.821	0.005	0.051	0.047	473.037	0.153	0.004
2.821	0.786	0.005	0.030	0.028	471.475	0.153	0.004
1.001	1.489	0.005	0.035	0.033	472.927	0.153	0.004
0.942	0.477	0.005	0.009	0.008	466.541	0.151	0.004
3.612	4.229	0.005	0.231	0.212	474.103	0.153	0.004
1.720	3.805	0.005	0.167	0.153	474.573	0.154	0.004
2.959	3.370	0.005	0.151	0.139	479.092	0.155	0.004
2.601	5.333	0.005	0.196	0.181	472.998	0.153	0.004
1.725	4.365	0.005	0.115	0.115	568.299	0.037	0.004
5.941	4.348	0.005	0.259	0.238	523.908	0.169	0.005
5.941	4.348	0.005	0.259	0.238	523.908	0.169	0.005
3.791	2.970	0.005	0.179	0.165	466.898	0.151	0.004
3.281	1.590	0.005	0.084	0.077	470.459	0.152	0.004

1.142	1.442	0.005	0.048	0.045	469.871	0.152	0.004
1.276	1.433	0.005	0.053	0.048	469.143	0.152	0.004
1.333	1.654	0.005	0.064	0.059	465.052	0.150	0.004
1.122	3.089	0.005	0.052	0.048	472.456	0.153	0.004
4.094	5.503	0.005	0.405	0.372	482.363	0.156	0.004
3.321	2.631	0.005	0.137	0.126	478.948	0.155	0.004
1.602	2.803	0.005	0.125	0.115	469.446	0.152	0.004
1.732	2.051	0.005	0.081	0.074	472.539	0.153	0.004
1.338	1.713	0.005	0.064	0.059	472.115	0.153	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.217	3.561	0.007	0.098	0.098	568.299	0.047	0.005
3.470	2.179	0.006	0.089	0.089	568.299	0.025	0.004
3.049	1.262	0.006	0.055	0.055	568.299	0.019	0.004
1.257	1.192	0.007	0.035	0.035	686.695	0.019	0.004
3.660	3.309	0.006	0.084	0.077	527.861	0.171	0.005
3.660	3.309	0.006	0.084	0.077	527.861	0.171	0.005
3.252	1.867	0.005	0.057	0.052	472.630	0.153	0.004
3.537	3.576	0.006	0.082	0.075	536.140	0.173	0.005
3.385	2.659	0.005	0.124	0.114	476.766	0.154	0.004
2.926	1.999	0.005	0.094	0.087	471.040	0.152	0.004
1.143	1.747	0.005	0.055	0.051	477.110	0.154	0.004
1.169	1.327	0.005	0.051	0.047	470.283	0.152	0.004
0.978	0.768	0.005	0.027	0.025	470.551	0.152	0.004
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
4.768	3.856	0.005	0.191	0.176	525.328	0.170	0.005
3.664	2.817	0.005	0.160	0.147	474.116	0.153	0.004
3.201	1.638	0.005	0.072	0.066	473.122	0.153	0.004
1.140	1.616	0.005	0.051	0.047	470.126	0.152	0.004
4.560	3.662	0.005	0.145	0.133	513.803	0.166	0.005

4.560	3.662	0.005	0.145	0.133	513.803	0.166	0.005
3.522	2.109	0.005	0.086	0.079	477.188	0.154	0.004
3.083	1.180	0.005	0.059	0.054	469.329	0.152	0.004
1.146	1.235	0.005	0.047	0.044	470.598	0.152	0.004
1.234	1.046	0.005	0.039	0.036	470.910	0.152	0.004
1.261	1.649	0.005	0.067	0.062	466.452	0.151	0.004
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
4.120	3.657	0.005	0.163	0.150	527.160	0.171	0.005
3.734	4.279	0.005	0.285	0.262	475.901	0.154	0.004
3.309	3.549	0.005	0.179	0.165	467.732	0.151	0.004
1.601	3.315	0.005	0.144	0.133	473.917	0.153	0.004
1.676	1.826	0.005	0.079	0.072	470.439	0.152	0.004
0.962	0.305	0.005	0.009	0.009	474.486	0.154	0.004
3.491	4.278	0.008	0.183	0.183	568.300	0.061	0.005
2.376	4.407	0.007	0.177	0.177	568.299	0.064	0.005
4.524	3.676	0.007	0.112	0.112	568.299	0.054	0.005
3.557	2.283	0.006	0.102	0.102	568.299	0.028	0.004
3.121	1.365	0.006	0.063	0.063	568.299	0.022	0.004
1.065	1.075	0.006	0.032	0.032	568.299	0.018	0.004
1.029	0.990	0.005	0.031	0.031	568.299	0.017	0.004
3.328	1.335	0.005	0.065	0.060	470.004	0.152	0.004
1.213	1.129	0.005	0.043	0.040	469.126	0.152	0.004
1.182	1.064	0.005	0.038	0.035	474.970	0.154	0.004
1.578	1.751	0.005	0.066	0.061	476.314	0.154	0.004
1.146	3.135	0.005	0.057	0.052	473.369	0.153	0.004

2028		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4
Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021	0.019	525.074	0.170
Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026	0.024	472.114	0.153
Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009	0.009	472.055	0.153
Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028	0.028	568.299	0.013
Air Compressors	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300	0.061
Air Compressors	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Air Compressors	50	0.659	4.851	3.755	0.007	0.116	0.116	568.299	0.059
Air Compressors	120	0.345	3.653	2.313	0.006	0.104	0.104	568.299	0.031
Air Compressors	175	0.269	3.205	1.383	0.006	0.065	0.065	568.299	0.024
Air Compressors	250	0.220	1.094	1.086	0.006	0.033	0.033	568.299	0.019
Air Compressors	500	0.217	1.051	1.001	0.005	0.032	0.032	568.299	0.019
Air Compressors	750	0.217	1.051	1.021	0.005	0.032	0.032	568.299	0.019
Air Compressors	1000	0.231	1.079	2.954	0.005	0.055	0.055	568.299	0.020
Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193	0.178	532.821	0.172
Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067	0.062	459.829	0.149
Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039	0.036	478.266	0.155
Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031	0.029	470.654	0.152
Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028	0.026	467.289	0.151
Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023	0.021	481.250	0.156
Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019	0.017	471.917	0.153

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168	0.168	568.299	0.062
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099	0.099	568.299	0.047
Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089	0.089	568.300	0.025
Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056	0.056	568.300	0.019
Cranes	50	1.811	7.072	5.636	0.005	0.543	0.499	517.872	0.168
Cranes	120	0.463	3.831	4.135	0.005	0.260	0.240	469.533	0.152
Cranes	175	0.334	3.335	3.160	0.005	0.166	0.153	474.748	0.154
Cranes	250	0.265	1.470	2.681	0.005	0.114	0.105	472.980	0.153
Cranes	500	0.218	1.834	2.154	0.005	0.088	0.081	471.967	0.153
Cranes	750	0.172	1.274	1.638	0.005	0.068	0.062	470.276	0.152
Cranes	9999	0.229	1.038	2.422	0.005	0.065	0.060	472.055	0.153
Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456	0.420	516.128	0.167
Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285	0.262	476.134	0.154
Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150	0.138	471.592	0.153
Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096	0.088	471.622	0.153
Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081	0.074	474.007	0.153
Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057	0.052	472.408	0.153
Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112	0.103	475.490	0.154
Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107	0.107	568.299	0.059
Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095	0.095	568.299	0.031
Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060	0.060	568.299	0.024
Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031	0.031	568.299	0.020
Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030	0.030	568.299	0.020
Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030	0.030	568.299	0.020
Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053	0.053	568.299	0.023

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	25	0.403	4.219	3.453	0.005	0.107	0.099	525.777	0.170
Excavators	50	0.403	4.219	3.453	0.005	0.107	0.099	525.777	0.170
Excavators	120	0.201	3.439	2.082	0.005	0.085	0.078	466.738	0.151
Excavators	175	0.158	3.078	1.154	0.005	0.057	0.052	472.496	0.153
Excavators	250	0.131	1.081	0.962	0.005	0.032	0.029	472.560	0.153
Excavators	500	0.115	1.051	0.726	0.005	0.026	0.024	470.292	0.152
Excavators	750	0.139	1.135	1.026	0.005	0.038	0.035	468.558	0.152
Forklifts	50	0.636	5.029	3.932	0.005	0.178	0.164	525.483	0.170
Forklifts	120	0.277	3.611	2.607	0.005	0.140	0.128	471.529	0.153
Forklifts	175	0.209	3.170	1.653	0.005	0.084	0.078	472.106	0.153
Forklifts	250	0.191	1.214	1.466	0.005	0.056	0.052	473.326	0.153
Forklifts	500	0.215	1.222	1.658	0.005	0.062	0.057	473.615	0.153
Generator Sets	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299	0.054
Generator Sets	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299	0.062
Generator Sets	50	0.440	3.758	3.481	0.007	0.093	0.093	568.300	0.039
Generator Sets	120	0.243	3.338	2.185	0.006	0.087	0.087	568.299	0.021
Generator Sets	175	0.184	2.930	1.297	0.006	0.053	0.053	568.299	0.016
Generator Sets	250	0.147	1.000	1.020	0.006	0.028	0.028	568.299	0.013
Generator Sets	500	0.144	0.981	0.945	0.005	0.027	0.027	568.300	0.013
Generator Sets	750	0.145	0.981	0.964	0.005	0.027	0.027	568.299	0.013
Generator Sets	9999	0.173	1.008	2.812	0.005	0.047	0.047	568.299	0.015
Graders	50	1.864	7.125	5.043	0.005	0.522	0.480	493.532	0.160
Graders	120	0.638	4.149	5.074	0.005	0.371	0.342	468.316	0.152
Graders	175	0.329	3.418	2.774	0.005	0.152	0.140	478.508	0.155
Graders	250	0.230	1.179	2.556	0.005	0.082	0.076	473.470	0.153
Graders	500	0.280	1.315	2.265	0.005	0.088	0.081	470.753	0.152
Graders	750	0.253	1.141	1.125	0.005	0.041	0.041	568.300	0.022
Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144	0.132	476.921	0.154
Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065	0.060	473.302	0.153
Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040	0.037	470.861	0.152
Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045	0.041	471.917	0.153
Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070	0.064	472.055	0.153
Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004	0.152
Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126	0.152

Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970	0.154
Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314	0.154
Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369	0.153
Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268	0.246	528.954	0.171
Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203	0.187	472.748	0.153
Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112	0.103	469.843	0.152
Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059	0.055	476.296	0.154
Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136	0.125	526.176	0.170
Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118	0.109	470.000	0.152
Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070	0.065	471.850	0.153
Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036	0.033	473.223	0.153
Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035	0.033	472.929	0.153

Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023	0.021	473.464	0.153
Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081	0.074	472.055	0.153
Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239	0.219	523.709	0.169
Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081	0.074	473.588	0.153
Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072	0.067	472.219	0.153
Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060	0.055	471.482	0.153
Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067	0.061	470.297	0.152
Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019	0.017	472.055	0.153
Pavers	25	0.918	4.945	4.131	0.005	0.265	0.243	526.853	0.170
Pavers	50	0.918	4.945	4.131	0.005	0.265	0.243	526.853	0.170
Pavers	120	0.314	3.493	3.068	0.005	0.191	0.175	469.899	0.152
Pavers	175	0.181	3.007	1.644	0.005	0.077	0.071	472.485	0.153
Pavers	250	0.107	1.004	1.035	0.005	0.034	0.031	473.483	0.153
Pavers	500	0.115	0.969	1.134	0.005	0.039	0.036	465.882	0.151
Paving Equipment	25	0.476	4.203	3.627	0.005	0.142	0.130	520.998	0.169
Paving Equipment	50	0.476	4.203	3.627	0.005	0.142	0.130	520.998	0.169
Paving Equipment	120	0.242	3.483	2.496	0.005	0.118	0.108	473.424	0.153
Paving Equipment	175	0.175	3.038	1.509	0.005	0.075	0.069	470.484	0.152
Paving Equipment	250	0.133	1.117	1.110	0.005	0.043	0.040	472.234	0.153
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Pressure Washers	15	0.607	3.491	4.269	0.008	0.178	0.178	568.299	0.054
Pressure Washers	25	0.694	2.376	4.407	0.007	0.175	0.175	568.299	0.062
Pressure Washers	50	0.306	3.210	3.344	0.007	0.075	0.075	568.299	0.027
Pressure Washers	120	0.189	3.186	2.100	0.006	0.072	0.072	568.299	0.017
Pressure Washers	175	0.178	2.907	1.310	0.006	0.053	0.053	568.299	0.016

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008
Pumps	15	0.683	3.491	4.278	0.008	0.183	0.183	568.299	0.061
Pumps	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Pumps	50	0.485	3.943	3.528	0.007	0.099	0.099	568.299	0.043
Pumps	120	0.261	3.389	2.213	0.006	0.092	0.092	568.299	0.023
Pumps	175	0.199	2.974	1.318	0.006	0.056	0.056	568.300	0.018
Pumps	250	0.159	1.016	1.038	0.006	0.029	0.029	568.299	0.014
Pumps	500	0.156	0.992	0.958	0.005	0.028	0.028	568.300	0.014
Pumps	750	0.157	0.992	0.977	0.005	0.029	0.029	568.300	0.014
Pumps	9999	0.186	1.020	2.840	0.005	0.049	0.049	568.299	0.016
Rollers	15	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	25	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	50	0.569	4.125	3.689	0.005	0.167	0.154	526.141	0.170
Rollers	120	0.255	3.444	2.691	0.005	0.135	0.125	473.851	0.153
Rollers	175	0.127	2.909	1.101	0.005	0.049	0.046	471.970	0.153
Rollers	250	0.173	1.215	1.783	0.005	0.066	0.060	473.681	0.153
Rollers	500	0.212	1.968	2.200	0.005	0.091	0.083	477.573	0.155
Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128	0.118	525.027	0.170
Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051	0.047	473.037	0.153
Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030	0.028	471.475	0.153
Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035	0.033	472.927	0.153
Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009	0.008	466.541	0.151
Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231	0.212	474.103	0.153
Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167	0.153	474.573	0.154
Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151	0.139	479.092	0.155
Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196	0.181	472.998	0.153
Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115	0.115	568.299	0.037
Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259	0.238	523.908	0.169
Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259	0.238	523.908	0.169
Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179	0.165	466.898	0.151
Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084	0.077	470.459	0.152

Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048	0.045	469.871	0.152
Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053	0.048	469.143	0.152
Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064	0.059	465.052	0.150
Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052	0.048	472.456	0.153
Scrapers	120	0.566	4.094	5.503	0.005	0.405	0.372	482.363	0.156
Scrapers	175	0.290	3.321	2.631	0.005	0.137	0.126	478.948	0.155
Scrapers	250	0.291	1.602	2.803	0.005	0.125	0.115	469.446	0.152
Scrapers	500	0.216	1.732	2.051	0.005	0.081	0.074	472.539	0.153
Scrapers	750	0.184	1.338	1.713	0.005	0.064	0.059	472.115	0.153
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Signal Boards	50	0.522	4.217	3.561	0.007	0.098	0.098	568.299	0.047
Signal Boards	120	0.278	3.470	2.179	0.006	0.089	0.089	568.299	0.025
Signal Boards	175	0.215	3.049	1.262	0.006	0.055	0.055	568.299	0.019
Signal Boards	250	0.213	1.257	1.192	0.007	0.035	0.035	686.695	0.019
Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084	0.077	527.861	0.171
Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084	0.077	527.861	0.171
Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057	0.052	472.630	0.153
Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082	0.075	536.140	0.173
Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124	0.114	476.766	0.154
Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094	0.087	471.040	0.152
Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055	0.051	477.110	0.154
Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051	0.047	470.283	0.152
Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027	0.025	470.551	0.152
Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191	0.176	525.328	0.170
Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160	0.147	474.116	0.153
Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072	0.066	473.122	0.153
Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051	0.047	470.126	0.152
Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145	0.133	513.803	0.166

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145	0.133	513.803	0.166
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086	0.079	477.188	0.154
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059	0.054	469.329	0.152
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047	0.044	470.598	0.152
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039	0.036	470.910	0.152
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067	0.062	466.452	0.151
Trenchers	15	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	25	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	50	0.542	4.120	3.657	0.005	0.163	0.150	527.160	0.171
Trenchers	120	0.457	3.734	4.279	0.005	0.285	0.262	475.901	0.154
Trenchers	175	0.358	3.309	3.549	0.005	0.179	0.165	467.732	0.151
Trenchers	250	0.307	1.601	3.315	0.005	0.144	0.133	473.917	0.153
Trenchers	500	0.191	1.676	1.826	0.005	0.079	0.072	470.439	0.152
Trenchers	750	0.067	0.962	0.305	0.005	0.009	0.009	474.486	0.154
Welders	15	0.683	3.491	4.278	0.008	0.183	0.183	568.300	0.061
Welders	25	0.709	2.376	4.407	0.007	0.177	0.177	568.299	0.064
Welders	50	0.602	4.524	3.676	0.007	0.112	0.112	568.299	0.054
Welders	120	0.316	3.557	2.283	0.006	0.102	0.102	568.299	0.028
Welders	175	0.245	3.121	1.365	0.006	0.063	0.063	568.299	0.022
Welders	250	0.199	1.065	1.075	0.006	0.032	0.032	568.299	0.018
Welders	500	0.196	1.029	0.990	0.005	0.031	0.031	568.299	0.017
Water Trucks	175	0.214	3.328	1.335	0.005	0.065	0.060	470.004	0.152
Water Trucks	250	0.185	1.213	1.129	0.005	0.043	0.040	469.126	0.152
Water Trucks	500	0.177	1.182	1.064	0.005	0.038	0.035	474.970	0.154
Water Trucks	750	0.235	1.578	1.751	0.005	0.066	0.061	476.314	0.154
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057	0.052	473.369	0.153

2029

g/hp/hr	2029		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
N2O	**Equipment**	**MaxHP**	ROG	CO	NOX	SOX	PM10
0.005	Aerial Lifts	15	0.154	3.088	2.879	0.005	0.021
0.005	Aerial Lifts	25	0.154	3.088	2.879	0.005	0.021
0.005	Aerial Lifts	50	0.154	3.088	2.879	0.005	0.021
0.004	Aerial Lifts	120	0.099	3.167	1.511	0.005	0.026
0.004	Aerial Lifts	500	0.085	0.970	0.649	0.005	0.009
0.004	Aerial Lifts	750	0.153	0.989	0.974	0.005	0.028
0.005	Air Compressors	15	0.683	3.491	4.278	0.008	0.183
0.005	Air Compressors	25	0.709	2.376	4.407	0.007	0.177
0.005	Air Compressors	50	0.659	4.851	3.755	0.007	0.116
0.004	Air Compressors	120	0.345	3.653	2.313	0.006	0.104
0.004	Air Compressors	175	0.269	3.205	1.383	0.006	0.065
0.004	Air Compressors	250	0.220	1.094	1.086	0.006	0.033
0.004	Air Compressors	500	0.217	1.051	1.001	0.005	0.032
0.004	Air Compressors	750	0.217	1.051	1.021	0.005	0.032
0.004	Air Compressors	1000	0.231	1.079	2.954	0.005	0.055
0.005	Bore/Drill Rigs	15	0.591	4.273	3.978	0.006	0.193
0.005	Bore/Drill Rigs	25	0.591	4.273	3.978	0.006	0.193
0.005	Bore/Drill Rigs	50	0.591	4.273	3.978	0.006	0.193
0.004	Bore/Drill Rigs	120	0.155	3.218	1.964	0.005	0.067
0.004	Bore/Drill Rigs	175	0.114	2.974	0.888	0.005	0.039
0.004	Bore/Drill Rigs	250	0.107	1.045	0.957	0.005	0.031
0.004	Bore/Drill Rigs	500	0.102	0.997	0.823	0.005	0.028
0.004	Bore/Drill Rigs	750	0.085	0.983	0.596	0.005	0.023
0.004	Bore/Drill Rigs	1000	0.062	0.953	2.289	0.005	0.019

0.005	Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161
0.005	Cement and Mortar Mixers	25	0.689	2.344	4.357	0.007	0.168
0.005	Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	50	0.525	4.297	3.592	0.007	0.099
0.004	Concrete/Industrial Saws	120	0.283	3.495	2.176	0.006	0.089
0.004	Concrete/Industrial Saws	175	0.220	3.073	1.249	0.006	0.056
0.005	Cranes	50	1.811	7.072	5.636	0.005	0.543
0.004	Cranes	120	0.463	3.831	4.135	0.005	0.260
0.004	Cranes	175	0.334	3.335	3.160	0.005	0.166
0.004	Cranes	250	0.265	1.470	2.681	0.005	0.114
0.004	Cranes	500	0.218	1.834	2.154	0.005	0.088
0.004	Cranes	750	0.172	1.274	1.638	0.005	0.068
0.004	Cranes	9999	0.229	1.038	2.422	0.005	0.065
0.005	Crawler Tractors	50	1.744	6.686	4.936	0.005	0.456
0.004	Crawler Tractors	120	0.454	3.788	3.961	0.005	0.285
0.004	Crawler Tractors	175	0.298	3.209	2.688	0.005	0.150
0.004	Crawler Tractors	250	0.232	1.308	2.462	0.005	0.096
0.004	Crawler Tractors	500	0.208	1.717	1.920	0.005	0.081
0.004	Crawler Tractors	750	0.167	1.122	1.545	0.005	0.057
0.004	Crawler Tractors	1000	0.260	1.593	4.598	0.005	0.112
0.005	Crushing/Proc. Equipment	50	0.656	4.982	3.742	0.007	0.107
0.004	Crushing/Proc. Equipment	120	0.345	3.694	2.248	0.006	0.095
0.004	Crushing/Proc. Equipment	175	0.270	3.246	1.301	0.006	0.060
0.004	Crushing/Proc. Equipment	250	0.224	1.108	1.012	0.006	0.031
0.004	Crushing/Proc. Equipment	500	0.221	1.061	0.937	0.005	0.030
0.004	Crushing/Proc. Equipment	750	0.222	1.061	0.955	0.005	0.030
0.004	Crushing/Proc. Equipment	9999	0.261	1.087	2.910	0.005	0.053

0.005	Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	25	0.403	4.219	3.453	0.005	0.107
0.005	Excavators	50	0.403	4.219	3.453	0.005	0.107
0.004	Excavators	120	0.201	3.439	2.082	0.005	0.085
0.004	Excavators	175	0.158	3.078	1.154	0.005	0.057
0.004	Excavators	250	0.131	1.081	0.962	0.005	0.032
0.004	Excavators	500	0.115	1.051	0.726	0.005	0.026
0.004	Excavators	750	0.139	1.135	1.026	0.005	0.038
0.005	Forklifts	50	0.636	5.029	3.932	0.005	0.178
0.004	Forklifts	120	0.277	3.611	2.607	0.005	0.140
0.004	Forklifts	175	0.209	3.170	1.653	0.005	0.084
0.004	Forklifts	250	0.191	1.214	1.466	0.005	0.056
0.004	Forklifts	500	0.215	1.222	1.658	0.005	0.062
0.005	Generator Sets	15	0.607	3.491	4.269	0.008	0.178
0.005	Generator Sets	25	0.694	2.376	4.407	0.007	0.175
0.005	Generator Sets	50	0.440	3.758	3.481	0.007	0.093
0.004	Generator Sets	120	0.243	3.338	2.185	0.006	0.087
0.004	Generator Sets	175	0.184	2.930	1.297	0.006	0.053
0.004	Generator Sets	250	0.147	1.000	1.020	0.006	0.028
0.004	Generator Sets	500	0.144	0.981	0.945	0.005	0.027
0.004	Generator Sets	750	0.145	0.981	0.964	0.005	0.027
0.004	Generator Sets	9999	0.173	1.008	2.812	0.005	0.047
0.005	Graders	50	1.864	7.125	5.043	0.005	0.522
0.004	Graders	120	0.638	4.149	5.074	0.005	0.371
0.004	Graders	175	0.329	3.418	2.774	0.005	0.152
0.004	Graders	250	0.230	1.179	2.556	0.005	0.082
0.004	Graders	500	0.280	1.315	2.265	0.005	0.088
0.004	Graders	750	0.253	1.141	1.125	0.005	0.041
0.004	Off-Highway Tractors	120	0.276	3.669	2.707	0.005	0.144
0.004	Off-Highway Tractors	175	0.175	3.142	1.349	0.005	0.065
0.004	Off-Highway Tractors	250	0.155	1.130	1.116	0.005	0.040
0.004	Off-Highway Tractors	750	0.167	1.135	1.118	0.005	0.045
0.004	Off-Highway Tractors	1000	0.198	1.077	2.482	0.005	0.070
0.004	Off-Highway Trucks	175	0.214	3.328	1.335	0.005	0.065
0.004	Off-Highway Trucks	250	0.185	1.213	1.129	0.005	0.043

0.004	Off-Highway Trucks	500	0.177	1.182	1.064	0.005	0.038
0.004	Off-Highway Trucks	750	0.235	1.578	1.751	0.005	0.066
0.004	Off-Highway Trucks	1000	0.187	1.146	3.135	0.005	0.057
0.005	Other Construction Equipment	15	0.757	4.874	4.306	0.006	0.268
0.005	Other Construction Equipment	25	0.757	4.874	4.306	0.006	0.268
0.005	Other Construction Equipment	50	0.757	4.874	4.306	0.006	0.268
0.004	Other Construction Equipment	120	0.341	3.584	3.252	0.005	0.203
0.004	Other Construction Equipment	175	0.235	3.136	2.167	0.005	0.112
0.004	Other Construction Equipment	500	0.168	1.358	1.552	0.005	0.059
0.005	Other General Industrial Equipment	15	0.492	4.680	3.717	0.005	0.136
0.005	Other General Industrial Equipment	25	0.492	4.680	3.717	0.005	0.136
0.005	Other General Industrial Equipment	50	0.492	4.680	3.717	0.005	0.136
0.004	Other General Industrial Equipment	120	0.258	3.612	2.439	0.005	0.118
0.004	Other General Industrial Equipment	175	0.189	3.204	1.364	0.005	0.070
0.004	Other General Industrial Equipment	250	0.155	1.132	1.028	0.005	0.036
0.004	Other General Industrial Equipment	500	0.152	1.109	1.053	0.005	0.035

0.004	Other General Industrial Equipment	750	0.117	1.115	0.629	0.005	0.023
0.004	Other General Industrial Equipment	1000	0.203	1.067	3.985	0.005	0.081
0.005	Other Material Handling Equipment	50	0.744	5.248	4.233	0.005	0.239
0.004	Other Material Handling Equipment	120	0.203	3.497	2.055	0.005	0.081
0.004	Other Material Handling Equipment	175	0.189	3.168	1.396	0.005	0.072
0.004	Other Material Handling Equipment	250	0.200	1.197	1.774	0.005	0.060
0.004	Other Material Handling Equipment	500	0.204	1.260	1.601	0.005	0.067
0.004	Other Material Handling Equipment	9999	0.065	0.959	2.298	0.005	0.019
0.005	Pavers	25	0.918	4.945	4.131	0.005	0.265
0.005	Pavers	50	0.918	4.945	4.131	0.005	0.265
0.004	Pavers	120	0.314	3.493	3.068	0.005	0.191
0.004	Pavers	175	0.181	3.007	1.644	0.005	0.077
0.004	Pavers	250	0.107	1.004	1.035	0.005	0.034
0.004	Pavers	500	0.115	0.969	1.134	0.005	0.039
0.005	Paving Equipment	25	0.476	4.203	3.627	0.005	0.142
0.005	Paving Equipment	50	0.476	4.203	3.627	0.005	0.142
0.004	Paving Equipment	120	0.242	3.483	2.496	0.005	0.118
0.004	Paving Equipment	175	0.175	3.038	1.509	0.005	0.075
0.004	Paving Equipment	250	0.133	1.117	1.110	0.005	0.043
0.005	Plate Compactors	15	0.661	3.469	4.142	0.008	0.161
0.005	Pressure Washers	15	0.607	3.491	4.269	0.008	0.178
0.005	Pressure Washers	25	0.694	2.376	4.407	0.007	0.175
0.005	Pressure Washers	50	0.306	3.210	3.344	0.007	0.075
0.004	Pressure Washers	120	0.189	3.186	2.100	0.006	0.072
0.004	Pressure Washers	175	0.178	2.907	1.310	0.006	0.053

0.004	Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
0.005	Pumps	15	0.683	3.491	4.278	0.008	0.183
0.005	Pumps	25	0.709	2.376	4.407	0.007	0.177
0.005	Pumps	50	0.485	3.943	3.528	0.007	0.099
0.004	Pumps	120	0.261	3.389	2.213	0.006	0.092
0.004	Pumps	175	0.199	2.974	1.318	0.006	0.056
0.004	Pumps	250	0.159	1.016	1.038	0.006	0.029
0.004	Pumps	500	0.156	0.992	0.958	0.005	0.028
0.004	Pumps	750	0.157	0.992	0.977	0.005	0.029
0.004	Pumps	9999	0.186	1.020	2.840	0.005	0.049
0.005	Rollers	15	0.569	4.125	3.689	0.005	0.167
0.005	Rollers	25	0.569	4.125	3.689	0.005	0.167
0.005	Rollers	50	0.569	4.125	3.689	0.005	0.167
0.004	Rollers	120	0.255	3.444	2.691	0.005	0.135
0.004	Rollers	175	0.127	2.909	1.101	0.005	0.049
0.004	Rollers	250	0.173	1.215	1.783	0.005	0.066
0.004	Rollers	500	0.212	1.968	2.200	0.005	0.091
0.005	Rough Terrain Forklifts	50	0.456	3.740	3.477	0.005	0.128
0.004	Rough Terrain Forklifts	120	0.137	3.240	1.821	0.005	0.051
0.004	Rough Terrain Forklifts	175	0.087	2.821	0.786	0.005	0.030
0.004	Rough Terrain Forklifts	250	0.123	1.001	1.489	0.005	0.035
0.004	Rough Terrain Forklifts	500	0.069	0.942	0.477	0.005	0.009
0.004	Rubber Tired Dozers	175	0.461	3.612	4.229	0.005	0.231
0.004	Rubber Tired Dozers	250	0.372	1.720	3.805	0.005	0.167
0.004	Rubber Tired Dozers	500	0.367	2.959	3.370	0.005	0.151
0.004	Rubber Tired Dozers	750	0.428	2.601	5.333	0.005	0.196
0.004	Rubber Tired Dozers	1000	0.414	1.725	4.365	0.005	0.115
0.005	Rubber Tired Loaders	25	0.960	5.941	4.348	0.005	0.259
0.005	Rubber Tired Loaders	50	0.960	5.941	4.348	0.005	0.259
0.004	Rubber Tired Loaders	120	0.352	3.791	2.970	0.005	0.179
0.004	Rubber Tired Loaders	175	0.224	3.281	1.590	0.005	0.084

0.004	Rubber Tired Loaders	250	0.177	1.142	1.442	0.005	0.048
0.004	Rubber Tired Loaders	500	0.193	1.276	1.433	0.005	0.053
0.004	Rubber Tired Loaders	750	0.212	1.333	1.654	0.005	0.064
0.004	Rubber Tired Loaders	1000	0.166	1.122	3.089	0.005	0.052
0.004	Scrapers	120	0.566	4.094	5.503	0.005	0.405
0.004	Scrapers	175	0.290	3.321	2.631	0.005	0.137
0.004	Scrapers	250	0.291	1.602	2.803	0.005	0.125
0.004	Scrapers	500	0.216	1.732	2.051	0.005	0.081
0.004	Scrapers	750	0.184	1.338	1.713	0.005	0.064
0.005	Signal Boards	15	0.661	3.469	4.142	0.008	0.161
0.005	Signal Boards	50	0.522	4.217	3.561	0.007	0.098
0.004	Signal Boards	120	0.278	3.470	2.179	0.006	0.089
0.004	Signal Boards	175	0.215	3.049	1.262	0.006	0.055
0.004	Signal Boards	250	0.213	1.257	1.192	0.007	0.035
0.005	Skid Steer Loaders	25	0.341	3.660	3.309	0.006	0.084
0.005	Skid Steer Loaders	50	0.341	3.660	3.309	0.006	0.084
0.004	Skid Steer Loaders	120	0.140	3.252	1.867	0.005	0.057
0.005	Surfacing Equipment	50	0.235	3.537	3.576	0.006	0.082
0.004	Surfacing Equipment	120	0.232	3.385	2.659	0.005	0.124
0.004	Surfacing Equipment	175	0.187	2.926	1.999	0.005	0.094
0.004	Surfacing Equipment	250	0.148	1.143	1.747	0.005	0.055
0.004	Surfacing Equipment	500	0.128	1.169	1.327	0.005	0.051
0.004	Surfacing Equipment	750	0.085	0.978	0.768	0.005	0.027
0.005	Sweepers/Scrubbers	15	0.622	4.768	3.856	0.005	0.191
0.005	Sweepers/Scrubbers	25	0.622	4.768	3.856	0.005	0.191
0.005	Sweepers/Scrubbers	50	0.622	4.768	3.856	0.005	0.191
0.004	Sweepers/Scrubbers	120	0.303	3.664	2.817	0.005	0.160
0.004	Sweepers/Scrubbers	175	0.213	3.201	1.638	0.005	0.072
0.004	Sweepers/Scrubbers	250	0.170	1.140	1.616	0.005	0.051
0.005	Tractors/Loaders/Backhoes	25	0.550	4.560	3.662	0.005	0.145

Tractors/Loaders/Backhoes	50	0.550	4.560	3.662	0.005	0.145
Tractors/Loaders/Backhoes	120	0.209	3.522	2.109	0.005	0.086
Tractors/Loaders/Backhoes	175	0.162	3.083	1.180	0.005	0.059
Tractors/Loaders/Backhoes	250	0.154	1.146	1.235	0.005	0.047
Tractors/Loaders/Backhoes	500	0.144	1.234	1.046	0.005	0.039
Tractors/Loaders/Backhoes	750	0.187	1.261	1.649	0.005	0.067
Trenchers	15	0.542	4.120	3.657	0.005	0.163
Trenchers	25	0.542	4.120	3.657	0.005	0.163
Trenchers	50	0.542	4.120	3.657	0.005	0.163
Trenchers	120	0.457	3.734	4.279	0.005	0.285
Trenchers	175	0.358	3.309	3.549	0.005	0.179
Trenchers	250	0.307	1.601	3.315	0.005	0.144
Trenchers	500	0.191	1.676	1.826	0.005	0.079
Trenchers	750	0.067	0.962	0.305	0.005	0.009
Welders	15	0.683	3.491	4.278	0.008	0.183
Welders	25	0.709	2.376	4.407	0.007	0.177
Welders	50	0.602	4.524	3.676	0.007	0.112
Welders	120	0.316	3.557	2.283	0.006	0.102
Welders	175	0.245	3.121	1.365	0.006	0.063
Welders	250	0.199	1.065	1.075	0.006	0.032
Welders	500	0.196	1.029	0.990	0.005	0.031
Water Trucks	175	0.214	3.328	1.335	0.005	0.065
Water Trucks	250	0.185	1.213	1.129	0.005	0.043
Water Trucks	500	0.177	1.182	1.064	0.005	0.038
Water Trucks	750	0.235	1.578	1.751	0.005	0.066
Water Trucks	1000	0.187	1.146	3.135	0.005	0.057

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2030

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.019	525.074	0.170	0.005
0.019	525.074	0.170	0.005
0.019	525.074	0.170	0.005
0.024	472.114	0.153	0.004
0.009	472.055	0.153	0.004
0.028	568.299	0.013	0.004
0.183	568.300	0.061	0.005
0.177	568.299	0.064	0.005
0.116	568.299	0.059	0.005
0.104	568.299	0.031	0.004
0.065	568.299	0.024	0.004
0.033	568.299	0.019	0.004
0.032	568.299	0.019	0.004
0.032	568.299	0.019	0.004
0.055	568.299	0.020	0.004
0.178	532.821	0.172	0.005
0.178	532.821	0.172	0.005
0.178	532.821	0.172	0.005
0.062	459.829	0.149	0.004
0.036	478.266	0.155	0.004
0.029	470.654	0.152	0.004
0.026	467.289	0.151	0.004
0.021	481.250	0.156	0.004
0.017	471.917	0.153	0.004

2030		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.661	3.469
Aerial Lifts	25	0.685	2.339
Aerial Lifts	50	0.339	3.764
Aerial Lifts	120	0.188	3.352
Aerial Lifts	500	0.126	0.986
Aerial Lifts	750	0.126	0.986
Air Compressors	15	0.663	3.470
Air Compressors	25	0.687	2.340
Air Compressors	50	0.506	4.712
Air Compressors	120	0.264	3.630
Air Compressors	175	0.193	3.205
Air Compressors	250	0.179	1.092
Air Compressors	500	0.178	1.048
Air Compressors	750	0.178	1.048
Air Compressors	1000	0.182	1.049
Bore/Drill Rigs	15	0.661	3.469
Bore/Drill Rigs	25	0.685	2.339
Bore/Drill Rigs	50	0.348	4.029
Bore/Drill Rigs	120	0.183	3.434
Bore/Drill Rigs	175	0.127	3.038
Bore/Drill Rigs	250	0.127	1.035
Bore/Drill Rigs	500	0.127	1.006
Bore/Drill Rigs	750	0.127	1.006
Bore/Drill Rigs	1000	0.127	1.006

0.161	568.299	0.059	0.005
0.168	568.299	0.062	0.005
0.161	568.299	0.061	0.005
0.099	568.299	0.047	0.005
0.089	568.300	0.025	0.004
0.056	568.300	0.019	0.004
0.499	517.872	0.168	0.005
0.240	469.533	0.152	0.004
0.153	474.748	0.154	0.004
0.105	472.980	0.153	0.004
0.081	471.967	0.153	0.004
0.062	470.276	0.152	0.004
0.060	472.055	0.153	0.004
0.420	516.128	0.167	0.005
0.262	476.134	0.154	0.004
0.138	471.592	0.153	0.004
0.088	471.622	0.153	0.004
0.074	474.007	0.153	0.004
0.052	472.408	0.153	0.004
0.103	475.490	0.154	0.004
0.107	568.299	0.059	0.005
0.095	568.299	0.031	0.004
0.060	568.299	0.024	0.004
0.031	568.299	0.020	0.004
0.030	568.299	0.020	0.004
0.030	568.299	0.020	0.004
0.053	568.299	0.023	0.004

Cement and Mortar Mixers	15	0.661	3.469
Cement and Mortar Mixers	25	0.685	2.339
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.409	4.199
Concrete/Industrial Saws	120	0.221	3.480
Concrete/Industrial Saws	175	0.163	3.074
Cranes	50	0.684	5.366
Cranes	120	0.343	3.812
Cranes	175	0.253	3.356
Cranes	250	0.224	1.147
Cranes	500	0.222	1.090
Cranes	750	0.222	1.090
Cranes	9999	0.245	1.108
Crawler Tractors	50	0.833	5.605
Crawler Tractors	120	0.405	3.871
Crawler Tractors	175	0.296	3.397
Crawler Tractors	250	0.262	1.207
Crawler Tractors	500	0.257	1.200
Crawler Tractors	750	0.257	1.200
Crawler Tractors	1000	0.265	1.225
Crushing/Proc. Equipment	50	0.525	4.857
Crushing/Proc. Equipment	120	0.272	3.673
Crushing/Proc. Equipment	175	0.197	3.244
Crushing/Proc. Equipment	250	0.185	1.105
Crushing/Proc. Equipment	500	0.184	1.058
Crushing/Proc. Equipment	750	0.184	1.058
Crushing/Proc. Equipment	9999	0.196	1.059

0.161	568.299	0.061	0.005
0.099	525.777	0.170	0.005
0.099	525.777	0.170	0.005
0.078	466.738	0.151	0.004
0.052	472.496	0.153	0.004
0.029	472.560	0.153	0.004
0.024	470.292	0.152	0.004
0.035	468.558	0.152	0.004
0.164	525.483	0.170	0.005
0.128	471.529	0.153	0.004
0.078	472.106	0.153	0.004
0.052	473.326	0.153	0.004
0.057	473.615	0.153	0.004
0.178	568.299	0.054	0.005
0.175	568.299	0.062	0.005
0.093	568.300	0.039	0.005
0.087	568.299	0.021	0.004
0.053	568.299	0.016	0.004
0.028	568.299	0.013	0.004
0.027	568.300	0.013	0.004
0.027	568.299	0.013	0.004
0.047	568.299	0.015	0.004
0.480	493.532	0.160	0.005
0.342	468.316	0.152	0.004
0.140	478.508	0.155	0.004
0.076	473.470	0.153	0.004
0.081	470.753	0.152	0.004
0.041	568.300	0.022	0.004
0.132	476.921	0.154	0.004
0.060	473.302	0.153	0.004
0.037	470.861	0.152	0.004
0.041	471.917	0.153	0.004
0.064	472.055	0.153	0.004
0.060	470.004	0.152	0.004
0.040	469.126	0.152	0.004

Dumpers/Tenders	25	0.685	2.340
Excavators	25	0.685	2.339
Excavators	50	0.602	5.309
Excavators	120	0.301	3.806
Excavators	175	0.213	3.362
Excavators	250	0.203	1.145
Excavators	500	0.202	1.088
Excavators	750	0.202	1.088
Forklifts	50	0.565	5.272
Forklifts	120	0.283	3.799
Forklifts	175	0.199	3.360
Forklifts	250	0.195	1.144
Forklifts	500	0.195	1.088
Generator Sets	15	0.592	3.470
Generator Sets	25	0.686	2.340
Generator Sets	50	0.315	3.640
Generator Sets	120	0.178	3.316
Generator Sets	175	0.130	2.929
Generator Sets	250	0.120	0.998
Generator Sets	500	0.119	0.978
Generator Sets	750	0.119	0.978
Generator Sets	9999	0.128	0.979
Graders	50	0.648	5.239
Graders	120	0.323	3.775
Graders	175	0.237	3.326
Graders	250	0.216	1.148
Graders	500	0.214	1.097
Graders	750	0.214	1.097
Off-Highway Tractors	120	0.518	3.944
Off-Highway Tractors	175	0.373	3.435
Off-Highway Tractors	250	0.315	1.286
Off-Highway Tractors	750	0.304	1.351
Off-Highway Tractors	1000	0.318	1.409
Off-Highway Trucks	175	0.229	3.425
Off-Highway Trucks	250	0.217	1.166

0.035	474.970	0.154	0.004
0.061	476.314	0.154	0.004
0.052	473.369	0.153	0.004
0.246	528.954	0.171	0.005
0.246	528.954	0.171	0.005
0.246	528.954	0.171	0.005
0.187	472.748	0.153	0.004
0.103	469.843	0.152	0.004
0.055	476.296	0.154	0.004
0.125	526.176	0.170	0.005
0.125	526.176	0.170	0.005
0.125	526.176	0.170	0.005
0.109	470.000	0.152	0.004
0.065	471.850	0.153	0.004
0.033	473.223	0.153	0.004
0.033	472.929	0.153	0.004

Off-Highway Trucks	500	0.216	1.104
Off-Highway Trucks	750	0.217	1.104
Off-Highway Trucks	1000	0.220	1.107
Other Construction Equipment	15	0.661	3.469
Other Construction Equipment	25	0.685	2.339
Other Construction Equipment	50	0.429	4.390
Other Construction Equipment	120	0.225	3.538
Other Construction Equipment	175	0.161	3.127
Other Construction Equipment	500	0.154	1.028
Other General Industrial Equipment	15	0.589	3.469
Other General Industrial Equipment	25	0.685	2.339
Other General Industrial Equipment	50	0.609	5.299
Other General Industrial Equipment	120	0.309	3.802
Other General Industrial Equipment	175	0.223	3.357
Other General Industrial Equipment	250	0.209	1.143
Other General Industrial Equipment	500	0.208	1.087

0.021	473.464	0.153	0.004
0.074	472.055	0.153	0.004
0.219	523.709	0.169	0.005
0.074	473.588	0.153	0.004
0.067	472.219	0.153	0.004
0.055	471.482	0.153	0.004
0.061	470.297	0.152	0.004
0.017	472.055	0.153	0.004
0.243	526.853	0.170	0.005
0.243	526.853	0.170	0.005
0.175	469.899	0.152	0.004
0.071	472.485	0.153	0.004
0.031	473.483	0.153	0.004
0.036	465.882	0.151	0.004
0.130	520.998	0.169	0.005
0.130	520.998	0.169	0.005
0.108	473.424	0.153	0.004
0.069	470.484	0.152	0.004
0.040	472.234	0.153	0.004
0.161	568.299	0.059	0.005
0.178	568.299	0.054	0.005
0.175	568.299	0.062	0.005
0.075	568.299	0.027	0.005
0.072	568.299	0.017	0.004
0.053	568.299	0.016	0.004

Other General Industrial Equipment	750	0.208	1.087
Other General Industrial Equipment	1000	0.212	1.088
Other Material Handling Equipment	50	0.598	5.237
Other Material Handling Equipment	120	0.304	3.784
Other Material Handling Equipment	175	0.220	3.341
Other Material Handling Equipment	250	0.206	1.138
Other Material Handling Equipment	500	0.205	1.083
Other Material Handling Equipment	9999	0.218	1.084
Pavers	25	0.685	2.339
Pavers	50	0.845	5.396
Pavers	120	0.408	3.800
Pavers	175	0.300	3.326
Pavers	250	0.259	1.192
Pavers	500	0.253	1.181
Paving Equipment	25	0.685	2.339
Paving Equipment	50	0.802	5.309
Paving Equipment	120	0.390	3.774
Paving Equipment	175	0.290	3.306
Paving Equipment	250	0.250	1.171
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.592	3.470
Pressure Washers	25	0.686	2.340
Pressure Washers	50	0.215	3.124
Pressure Washers	120	0.134	3.167
Pressure Washers	175	0.126	2.907

0.009	568.299	0.008	0.004
0.183	568.299	0.061	0.005
0.177	568.299	0.064	0.005
0.099	568.299	0.043	0.005
0.092	568.299	0.023	0.004
0.056	568.300	0.018	0.004
0.029	568.299	0.014	0.004
0.028	568.300	0.014	0.004
0.029	568.300	0.014	0.004
0.049	568.299	0.016	0.004
0.154	526.141	0.170	0.005
0.154	526.141	0.170	0.005
0.154	526.141	0.170	0.005
0.125	473.851	0.153	0.004
0.046	471.970	0.153	0.004
0.060	473.681	0.153	0.004
0.083	477.573	0.155	0.004
0.118	525.027	0.170	0.005
0.047	473.037	0.153	0.004
0.028	471.475	0.153	0.004
0.033	472.927	0.153	0.004
0.008	466.541	0.151	0.004
0.212	474.103	0.153	0.004
0.153	474.573	0.154	0.004
0.139	479.092	0.155	0.004
0.181	472.998	0.153	0.004
0.115	568.299	0.037	0.004
0.238	523.908	0.169	0.005
0.238	523.908	0.169	0.005
0.165	466.898	0.151	0.004
0.077	470.459	0.152	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.663	3.470
Pumps	25	0.687	2.340
Pumps	50	0.348	3.814
Pumps	120	0.193	3.367
Pumps	175	0.142	2.973
Pumps	250	0.130	1.013
Pumps	500	0.129	0.989
Pumps	750	0.129	0.989
Pumps	9999	0.139	0.990
Rollers	15	0.661	3.469
Rollers	25	0.685	2.339
Rollers	50	0.587	4.784
Rollers	120	0.299	3.639
Rollers	175	0.223	3.203
Rollers	250	0.195	1.099
Rollers	500	0.193	1.056
Rough Terrain Forklifts	50	0.548	5.031
Rough Terrain Forklifts	120	0.279	3.725
Rough Terrain Forklifts	175	0.200	3.291
Rough Terrain Forklifts	250	0.191	1.121
Rough Terrain Forklifts	500	0.190	1.070
Rubber Tired Dozers	175	0.398	3.496
Rubber Tired Dozers	250	0.335	1.322
Rubber Tired Dozers	500	0.322	1.401
Rubber Tired Dozers	750	0.323	1.401
Rubber Tired Dozers	1000	0.338	1.465
Rubber Tired Loaders	25	0.685	2.339
Rubber Tired Loaders	50	0.634	5.181
Rubber Tired Loaders	120	0.317	3.759
Rubber Tired Loaders	175	0.232	3.312

0.045	469.871	0.152	0.004
0.048	469.143	0.152	0.004
0.059	465.052	0.150	0.004
0.048	472.456	0.153	0.004
0.372	482.363	0.156	0.004
0.126	478.948	0.155	0.004
0.115	469.446	0.152	0.004
0.074	472.539	0.153	0.004
0.059	472.115	0.153	0.004
0.161	568.299	0.059	0.005
0.098	568.299	0.047	0.005
0.089	568.299	0.025	0.004
0.055	568.299	0.019	0.004
0.035	686.695	0.019	0.004
0.077	527.861	0.171	0.005
0.077	527.861	0.171	0.005
0.052	472.630	0.153	0.004
0.075	536.140	0.173	0.005
0.114	476.766	0.154	0.004
0.087	471.040	0.152	0.004
0.051	477.110	0.154	0.004
0.047	470.283	0.152	0.004
0.025	470.551	0.152	0.004
0.176	525.328	0.170	0.005
0.176	525.328	0.170	0.005
0.176	525.328	0.170	0.005
0.147	474.116	0.153	0.004
0.066	473.122	0.153	0.004
0.047	470.126	0.152	0.004
0.133	513.803	0.166	0.005

Rubber Tired Loaders	250	0.210	1.138
Rubber Tired Loaders	500	0.208	1.085
Rubber Tired Loaders	750	0.208	1.085
Rubber Tired Loaders	1000	0.214	1.099
Scrapers	120	0.410	3.866
Scrapers	175	0.301	3.389
Scrapers	250	0.264	1.206
Scrapers	500	0.259	1.184
Scrapers	750	0.259	1.184
Signal Boards	15	0.661	3.470
Signal Boards	50	0.393	4.099
Signal Boards	120	0.213	3.451
Signal Boards	175	0.157	3.048
Signal Boards	250	0.176	1.255
Skid Steer Loaders	25	0.685	2.340
Skid Steer Loaders	50	0.411	4.386
Skid Steer Loaders	120	0.214	3.538
Surfacing Equipment	50	0.518	4.295
Surfacing Equipment	120	0.264	3.492
Surfacing Equipment	175	0.197	3.071
Surfacing Equipment	250	0.172	1.064
Surfacing Equipment	500	0.169	1.032
Surfacing Equipment	750	0.169	1.032
Sweepers/Scrubbers	15	0.589	3.470
Sweepers/Scrubbers	25	0.685	2.340
Sweepers/Scrubbers	50	0.509	4.947
Sweepers/Scrubbers	120	0.261	3.703
Sweepers/Scrubbers	175	0.187	3.275
Sweepers/Scrubbers	250	0.182	1.116
Tractors/Loaders/Backhoes	25	0.685	2.339

0.133	513.803	0.166	0.005
0.079	477.188	0.154	0.004
0.054	469.329	0.152	0.004
0.044	470.598	0.152	0.004
0.036	470.910	0.152	0.004
0.062	466.452	0.151	0.004
0.150	527.160	0.171	0.005
0.150	527.160	0.171	0.005
0.150	527.160	0.171	0.005
0.262	475.901	0.154	0.004
0.165	467.732	0.151	0.004
0.133	473.917	0.153	0.004
0.072	470.439	0.152	0.004
0.009	474.486	0.154	0.004
0.183	568.300	0.061	0.005
0.177	568.299	0.064	0.005
0.112	568.299	0.054	0.005
0.102	568.299	0.028	0.004
0.063	568.299	0.022	0.004
0.032	568.299	0.018	0.004
0.031	568.299	0.017	0.004
0.060	470.004	0.152	0.004
0.040	469.126	0.152	0.004
0.035	474.970	0.154	0.004
0.061	476.314	0.154	0.004
0.052	473.369	0.153	0.004

Tractors/Loaders/Backhoes	50	0.539	4.966
Tractors/Loaders/Backhoes	120	0.272	3.705
Tractors/Loaders/Backhoes	175	0.193	3.273
Tractors/Loaders/Backhoes	250	0.183	1.115
Tractors/Loaders/Backhoes	500	0.182	1.066
Tractors/Loaders/Backhoes	750	0.182	1.066
Trenchers	15	0.661	3.469
Trenchers	25	0.685	2.339
Trenchers	50	0.851	5.208
Trenchers	120	0.409	3.743
Trenchers	175	0.300	3.273
Trenchers	250	0.256	1.188
Trenchers	500	0.249	1.209
Trenchers	750	0.249	1.209
Welders	15	0.663	3.470
Welders	25	0.687	2.340
Welders	50	0.449	4.387
Welders	120	0.239	3.535
Welders	175	0.176	3.121
Welders	250	0.162	1.063
Welders	500	0.161	1.027
Water Trucks	175	0.229	3.425
Water Trucks	250	0.217	1.166
Water Trucks	500	0.216	1.104
Water Trucks	750	0.217	1.104
Water Trucks	1000	0.220	1.107

2031

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	2031
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O	**Equipment**
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Aerial Lifts
4.332	0.007	0.162	0.162	568.299	0.061	0.005	Aerial Lifts
3.135	0.007	0.040	0.040	568.300	0.030	0.005	Aerial Lifts
1.657	0.006	0.036	0.036	568.299	0.017	0.004	Aerial Lifts
0.479	0.005	0.016	0.016	568.299	0.011	0.004	Aerial Lifts
0.485	0.005	0.016	0.016	568.299	0.011	0.004	Aerial Lifts
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Air Compressors
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Air Compressors
3.340	0.007	0.046	0.046	568.299	0.045	0.005	Air Compressors
1.729	0.006	0.041	0.041	568.299	0.023	0.004	Air Compressors
0.633	0.006	0.027	0.027	568.299	0.017	0.004	Air Compressors
0.529	0.006	0.018	0.018	568.299	0.016	0.004	Air Compressors
0.499	0.005	0.017	0.017	568.299	0.016	0.004	Air Compressors
0.505	0.005	0.017	0.017	568.300	0.016	0.004	Air Compressors
2.600	0.005	0.033	0.033	568.299	0.016	0.004	Air Compressors
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Bore/Drill Rigs
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Bore/Drill Rigs
3.020	0.007	0.013	0.013	568.299	0.031	0.005	Bore/Drill Rigs
1.415	0.006	0.012	0.012	568.299	0.016	0.004	Bore/Drill Rigs
0.279	0.006	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.006	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.005	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
0.274	0.005	0.010	0.010	568.299	0.011	0.004	Bore/Drill Rigs
2.372	0.005	0.021	0.021	568.299	0.011	0.004	Bore/Drill Rigs

4.142	0.008	0.161	0.161	568.299	0.059	0.005	Cement and Mortar Mixers
4.333	0.007	0.162	0.162	568.299	0.061	0.005	Cement and Mortar Mixers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Concrete/Industrial Saws
3.222	0.007	0.041	0.041	568.299	0.036	0.005	Concrete/Industrial Saws
1.667	0.006	0.036	0.036	568.299	0.019	0.004	Concrete/Industrial Saws
0.590	0.006	0.025	0.025	568.299	0.014	0.004	Concrete/Industrial Saws
3.598	0.007	0.075	0.075	568.299	0.061	0.005	Cranes
1.987	0.006	0.067	0.067	568.299	0.030	0.004	Cranes
0.916	0.006	0.042	0.042	568.299	0.022	0.004	Cranes
0.748	0.006	0.024	0.024	568.299	0.020	0.004	Cranes
0.697	0.005	0.023	0.023	568.299	0.020	0.004	Cranes
0.709	0.005	0.024	0.024	568.300	0.020	0.004	Cranes
2.800	0.005	0.043	0.043	568.299	0.022	0.004	Cranes
3.808	0.007	0.116	0.116	568.299	0.075	0.005	Crawler Tractors
2.341	0.006	0.105	0.105	568.299	0.036	0.004	Crawler Tractors
1.266	0.006	0.065	0.065	568.299	0.026	0.004	Crawler Tractors
1.104	0.006	0.040	0.040	568.299	0.023	0.004	Crawler Tractors
1.016	0.005	0.038	0.038	568.299	0.023	0.004	Crawler Tractors
1.033	0.005	0.038	0.038	568.299	0.023	0.004	Crawler Tractors
3.094	0.005	0.056	0.056	568.300	0.023	0.004	Crawler Tractors
3.351	0.007	0.043	0.043	568.299	0.047	0.005	Crushing/Proc. Equipment
1.708	0.006	0.038	0.038	568.299	0.024	0.004	Crushing/Proc. Equipment
0.600	0.006	0.025	0.025	568.299	0.017	0.004	Crushing/Proc. Equipment
0.502	0.006	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
0.476	0.005	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
0.478	0.005	0.017	0.017	568.299	0.016	0.004	Crushing/Proc. Equipment
2.590	0.005	0.032	0.032	568.299	0.017	0.004	Crushing/Proc. Equipment

4.332	0.007	0.161	0.161	568.299	0.061	0.005	Dumpers/Tenders
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Excavators
3.393	0.007	0.038	0.038	568.299	0.054	0.005	Excavators
1.676	0.006	0.034	0.034	568.299	0.027	0.004	Excavators
0.525	0.006	0.023	0.023	568.299	0.019	0.004	Excavators
0.452	0.006	0.016	0.016	568.299	0.018	0.004	Excavators
0.433	0.005	0.016	0.016	568.299	0.018	0.004	Excavators
0.437	0.005	0.016	0.016	568.299	0.018	0.004	Excavators
3.330	0.007	0.023	0.023	568.299	0.051	0.005	Forklifts
1.555	0.006	0.021	0.021	568.299	0.025	0.004	Forklifts
0.391	0.006	0.015	0.015	568.299	0.018	0.004	Forklifts
0.341	0.006	0.012	0.012	568.299	0.017	0.004	Forklifts
0.341	0.005	0.012	0.012	568.299	0.017	0.004	Forklifts
4.164	0.008	0.166	0.166	568.299	0.053	0.005	Generator Sets
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Generator Sets
3.107	0.007	0.038	0.038	568.299	0.028	0.005	Generator Sets
1.645	0.006	0.034	0.034	568.299	0.016	0.004	Generator Sets
0.601	0.006	0.023	0.023	568.299	0.011	0.004	Generator Sets
0.504	0.006	0.016	0.016	568.299	0.010	0.004	Generator Sets
0.476	0.005	0.015	0.015	568.299	0.010	0.004	Generator Sets
0.482	0.005	0.015	0.015	568.299	0.010	0.004	Generator Sets
2.483	0.005	0.029	0.029	568.299	0.011	0.004	Generator Sets
3.530	0.007	0.065	0.065	568.299	0.058	0.005	Graders
1.903	0.006	0.058	0.058	568.299	0.029	0.004	Graders
0.815	0.006	0.038	0.038	568.300	0.021	0.004	Graders
0.684	0.006	0.024	0.024	568.299	0.019	0.004	Graders
0.647	0.005	0.023	0.023	568.299	0.019	0.004	Graders
0.654	0.005	0.023	0.023	568.299	0.019	0.004	Graders
2.959	0.006	0.175	0.175	568.299	0.046	0.004	Off-Highway Tractors
1.916	0.006	0.104	0.104	568.299	0.033	0.004	Off-Highway Tractors
1.715	0.006	0.064	0.064	568.299	0.028	0.004	Off-Highway Tractors
1.590	0.005	0.060	0.060	568.299	0.027	0.004	Off-Highway Tractors
3.569	0.005	0.078	0.078	568.300	0.028	0.004	Off-Highway Tractors
0.563	0.006	0.025	0.025	568.299	0.020	0.004	Off-Highway Trucks
0.481	0.006	0.017	0.017	568.300	0.019	0.004	Off-Highway Trucks

0.458	0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks
0.463	0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks
2.651	0.005	0.033	0.033	568.300	0.019	0.004	Off-Highway Trucks
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Other Construction Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Other Construction Equipment
3.190	0.007	0.030	0.030	568.299	0.038	0.005	Other Construction Equipment
1.576	0.006	0.027	0.027	568.300	0.020	0.004	Other Construction Equipment
0.459	0.006	0.019	0.019	568.299	0.014	0.004	Other Construction Equipment
0.391	0.005	0.014	0.014	568.300	0.013	0.004	Other Construction Equipment
4.142	0.008	0.161	0.161	568.299	0.053	0.005	Other General Industrial Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Other General Industrial Equipment
3.460	0.007	0.048	0.048	568.299	0.054	0.005	Other General Industrial Equipment
1.766	0.006	0.043	0.043	568.299	0.027	0.004	Other General Industrial Equipment
0.641	0.006	0.028	0.028	568.299	0.020	0.004	Other General Industrial Equipment
0.536	0.006	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment
0.506	0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment

0.512	0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment
2.660	0.005	0.035	0.035	568.299	0.019	0.004	Other General Industrial Equipment
3.447	0.007	0.048	0.048	568.299	0.053	0.005	Other Material Handling Equipment
1.762	0.006	0.043	0.043	568.299	0.027	0.004	Other Material Handling Equipment
0.640	0.006	0.028	0.028	568.299	0.019	0.004	Other Material Handling Equipment
0.535	0.006	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment
0.505	0.005	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment
2.653	0.005	0.035	0.035	568.299	0.019	0.004	Other Material Handling Equipment
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Pavers
3.841	0.007	0.134	0.134	568.299	0.076	0.005	Pavers
2.468	0.006	0.121	0.121	568.300	0.036	0.004	Pavers
1.425	0.006	0.074	0.074	568.299	0.027	0.004	Pavers
1.246	0.006	0.045	0.045	568.299	0.023	0.004	Pavers
1.141	0.005	0.043	0.043	568.299	0.022	0.004	Pavers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Paving Equipment
3.809	0.007	0.126	0.126	568.299	0.072	0.005	Paving Equipment
2.393	0.006	0.114	0.114	568.300	0.035	0.004	Paving Equipment
1.363	0.006	0.070	0.070	568.299	0.026	0.004	Paving Equipment
1.176	0.006	0.042	0.042	568.299	0.022	0.004	Paving Equipment
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors
4.164	0.008	0.166	0.166	568.300	0.053	0.005	Pressure Washers
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Pressure Washers
2.989	0.007	0.030	0.030	568.299	0.019	0.005	Pressure Washers
1.594	0.006	0.028	0.028	568.300	0.012	0.004	Pressure Washers
0.619	0.006	0.024	0.024	568.299	0.011	0.004	Pressure Washers

0.265	0.006	0.009	0.009	568.299	0.008	0.004	Pressure Washers
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Pumps
4.347	0.007	0.165	0.165	568.300	0.061	0.005	Pumps
3.146	0.007	0.040	0.040	568.299	0.031	0.005	Pumps
1.662	0.006	0.036	0.036	568.299	0.017	0.004	Pumps
0.610	0.006	0.024	0.024	568.299	0.012	0.004	Pumps
0.511	0.006	0.016	0.016	568.299	0.011	0.004	Pumps
0.482	0.005	0.016	0.016	568.299	0.011	0.004	Pumps
0.488	0.005	0.016	0.016	568.299	0.011	0.004	Pumps
2.504	0.005	0.030	0.030	568.299	0.012	0.004	Pumps
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Rollers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Rollers
3.480	0.007	0.073	0.073	568.299	0.053	0.005	Rollers
1.950	0.006	0.066	0.066	568.299	0.027	0.004	Rollers
0.907	0.006	0.042	0.042	568.299	0.020	0.004	Rollers
0.745	0.006	0.024	0.024	568.299	0.017	0.004	Rollers
0.697	0.005	0.023	0.023	568.299	0.017	0.004	Rollers
3.359	0.007	0.039	0.039	568.299	0.049	0.005	Rough Terrain Forklifts
1.671	0.006	0.034	0.034	568.299	0.025	0.004	Rough Terrain Forklifts
0.537	0.006	0.023	0.023	568.299	0.018	0.004	Rough Terrain Forklifts
0.463	0.006	0.016	0.016	568.299	0.017	0.004	Rough Terrain Forklifts
0.443	0.005	0.016	0.016	568.300	0.017	0.004	Rough Terrain Forklifts
2.034	0.006	0.111	0.111	568.299	0.035	0.004	Rubber Tired Dozers
1.828	0.006	0.069	0.069	568.299	0.030	0.004	Rubber Tired Dozers
1.658	0.005	0.064	0.064	568.299	0.029	0.004	Rubber Tired Dozers
1.694	0.005	0.064	0.064	568.299	0.029	0.004	Rubber Tired Dozers
3.676	0.005	0.082	0.082	568.299	0.030	0.004	Rubber Tired Dozers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Rubber Tired Loaders
3.500	0.007	0.062	0.062	568.300	0.057	0.005	Rubber Tired Loaders
1.875	0.006	0.056	0.056	568.299	0.028	0.004	Rubber Tired Loaders
0.787	0.006	0.036	0.036	568.299	0.020	0.004	Rubber Tired Loaders

0.655	0.006	0.022	0.022	568.299	0.018	0.004	Rubber Tired Loaders
0.619	0.005	0.021	0.021	568.299	0.018	0.004	Rubber Tired Loaders
0.627	0.005	0.022	0.022	568.299	0.018	0.004	Rubber Tired Loaders
2.722	0.005	0.039	0.039	568.299	0.019	0.004	Rubber Tired Loaders
2.384	0.006	0.111	0.111	568.299	0.037	0.004	Scrapers
1.320	0.006	0.068	0.068	568.299	0.027	0.004	Scrapers
1.149	0.006	0.042	0.042	568.299	0.023	0.004	Scrapers
1.057	0.005	0.040	0.040	568.299	0.023	0.004	Scrapers
1.075	0.005	0.040	0.040	568.299	0.023	0.004	Scrapers
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Signal Boards
3.193	0.007	0.040	0.040	568.299	0.035	0.005	Signal Boards
1.657	0.006	0.035	0.035	568.300	0.019	0.004	Signal Boards
0.586	0.006	0.024	0.024	568.299	0.014	0.004	Signal Boards
0.594	0.007	0.019	0.019	686.695	0.015	0.004	Signal Boards
4.332	0.007	0.162	0.162	568.299	0.061	0.005	Skid Steer Loaders
3.128	0.007	0.018	0.018	568.299	0.037	0.005	Skid Steer Loaders
1.477	0.006	0.017	0.017	568.299	0.019	0.004	Skid Steer Loaders
3.400	0.007	0.075	0.075	568.299	0.046	0.005	Surfacing Equipment
1.959	0.006	0.068	0.068	568.299	0.023	0.004	Surfacing Equipment
0.939	0.006	0.043	0.043	568.299	0.017	0.004	Surfacing Equipment
0.789	0.006	0.026	0.026	568.299	0.015	0.004	Surfacing Equipment
0.738	0.005	0.025	0.025	568.299	0.015	0.004	Surfacing Equipment
0.749	0.005	0.025	0.025	568.299	0.015	0.004	Surfacing Equipment
4.142	0.008	0.161	0.161	568.299	0.053	0.005	Sweepers/Scrubbers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Sweepers/Scrubbers
3.294	0.007	0.026	0.026	568.299	0.046	0.005	Sweepers/Scrubbers
1.569	0.006	0.023	0.023	568.299	0.023	0.004	Sweepers/Scrubbers
0.431	0.006	0.017	0.017	568.299	0.016	0.004	Sweepers/Scrubbers
0.370	0.006	0.013	0.013	568.299	0.016	0.004	Sweepers/Scrubbers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Tractors/Loaders/Backhoes

3.299	0.007	0.033	0.033	568.299	0.048	0.005	Tractors/Loaders/Backhoes
1.624	0.006	0.030	0.030	568.299	0.024	0.004	Tractors/Loaders/Backhoes
0.485	0.006	0.020	0.020	568.299	0.017	0.004	Tractors/Loaders/Backhoes
0.418	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
0.403	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
0.407	0.006	0.014	0.014	568.299	0.016	0.004	Tractors/Loaders/Backhoes
4.142	0.008	0.161	0.161	568.299	0.059	0.005	Trenchers
4.332	0.007	0.161	0.161	568.299	0.061	0.005	Trenchers
3.835	0.007	0.144	0.144	568.299	0.076	0.005	Trenchers
2.559	0.006	0.132	0.132	568.299	0.036	0.004	Trenchers
1.529	0.006	0.080	0.080	568.300	0.027	0.004	Trenchers
1.348	0.006	0.049	0.049	568.300	0.023	0.004	Trenchers
1.231	0.005	0.046	0.046	568.299	0.022	0.004	Trenchers
1.254	0.005	0.047	0.047	568.299	0.022	0.004	Trenchers
4.164	0.008	0.166	0.166	568.299	0.059	0.005	Welders
4.347	0.007	0.165	0.165	568.299	0.061	0.005	Welders
3.273	0.007	0.045	0.045	568.299	0.040	0.005	Welders
1.707	0.006	0.040	0.040	568.299	0.021	0.004	Welders
0.628	0.006	0.027	0.027	568.299	0.015	0.004	Welders
0.525	0.006	0.017	0.017	568.299	0.014	0.004	Welders
0.495	0.005	0.017	0.017	568.299	0.014	0.004	Welders
0.563	0.006	0.025	0.025	568.299	0.020	0.004	Water Trucks
0.481	0.006	0.017	0.017	568.300	0.019	0.004	Water Trucks
0.458	0.005	0.017	0.017	568.299	0.019	0.004	Water Trucks
0.463	0.005	0.017	0.017	568.299	0.019	0.004	Water Trucks
2.651	0.005	0.033	0.033	568.300	0.019	0.004	Water Trucks

	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
MaxHP	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
50	0.339	3.764	3.135	0.007	0.040	0.040	568.300	0.030	0.005
120	0.188	3.352	1.657	0.006	0.036	0.036	568.299	0.017	0.004
500	0.126	0.986	0.479	0.005	0.016	0.016	568.299	0.011	0.004
750	0.126	0.986	0.485	0.005	0.016	0.016	568.299	0.011	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.506	4.712	3.340	0.007	0.046	0.046	568.299	0.045	0.005
120	0.264	3.630	1.729	0.006	0.041	0.041	568.299	0.023	0.004
175	0.193	3.205	0.633	0.006	0.027	0.027	568.299	0.017	0.004
250	0.179	1.092	0.529	0.006	0.018	0.018	568.299	0.016	0.004
500	0.178	1.048	0.499	0.005	0.017	0.017	568.299	0.016	0.004
750	0.178	1.048	0.505	0.005	0.017	0.017	568.300	0.016	0.004
1000	0.182	1.049	2.600	0.005	0.033	0.033	568.299	0.016	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.348	4.029	3.020	0.007	0.013	0.013	568.299	0.031	0.005
120	0.183	3.434	1.415	0.006	0.012	0.012	568.299	0.016	0.004
175	0.127	3.038	0.279	0.006	0.010	0.010	568.299	0.011	0.004
250	0.127	1.035	0.274	0.006	0.010	0.010	568.299	0.011	0.004
500	0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
750	0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
1000	0.127	1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.333	0.007	0.162	0.162	568.299	0.061	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.409	4.199	3.222	0.007	0.041	0.041	568.299	0.036	0.005
120	0.221	3.480	1.667	0.006	0.036	0.036	568.299	0.019	0.004
175	0.163	3.074	0.590	0.006	0.025	0.025	568.299	0.014	0.004
50	0.684	5.366	3.598	0.007	0.075	0.075	568.299	0.061	0.005
120	0.343	3.812	1.987	0.006	0.067	0.067	568.299	0.030	0.004
175	0.253	3.356	0.916	0.006	0.042	0.042	568.299	0.022	0.004
250	0.224	1.147	0.748	0.006	0.024	0.024	568.299	0.020	0.004
500	0.222	1.090	0.697	0.005	0.023	0.023	568.299	0.020	0.004
750	0.222	1.090	0.709	0.005	0.024	0.024	568.300	0.020	0.004
9999	0.245	1.108	2.800	0.005	0.043	0.043	568.299	0.022	0.004
50	0.833	5.605	3.808	0.007	0.116	0.116	568.299	0.075	0.005
120	0.405	3.871	2.341	0.006	0.105	0.105	568.299	0.036	0.004
175	0.296	3.397	1.266	0.006	0.065	0.065	568.299	0.026	0.004
250	0.262	1.207	1.104	0.006	0.040	0.040	568.299	0.023	0.004
500	0.257	1.200	1.016	0.005	0.038	0.038	568.299	0.023	0.004
750	0.257	1.200	1.033	0.005	0.038	0.038	568.299	0.023	0.004
1000	0.265	1.225	3.094	0.005	0.056	0.056	568.300	0.023	0.004
50	0.525	4.857	3.351	0.007	0.043	0.043	568.299	0.047	0.005
120	0.272	3.673	1.708	0.006	0.038	0.038	568.299	0.024	0.004
175	0.197	3.244	0.600	0.006	0.025	0.025	568.299	0.017	0.004
250	0.185	1.105	0.502	0.006	0.017	0.017	568.299	0.016	0.004
500	0.184	1.058	0.476	0.005	0.017	0.017	568.299	0.016	0.004
750	0.184	1.058	0.478	0.005	0.017	0.017	568.299	0.016	0.004
9999	0.196	1.059	2.590	0.005	0.032	0.032	568.299	0.017	0.004

25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.602	5.309	3.393	0.007	0.038	0.038	568.299	0.054	0.005
120	0.301	3.806	1.676	0.006	0.034	0.034	568.299	0.027	0.004
175	0.213	3.362	0.525	0.006	0.023	0.023	568.299	0.019	0.004
250	0.203	1.145	0.452	0.006	0.016	0.016	568.299	0.018	0.004
500	0.202	1.088	0.433	0.005	0.016	0.016	568.299	0.018	0.004
750	0.202	1.088	0.437	0.005	0.016	0.016	568.299	0.018	0.004
50	0.565	5.272	3.330	0.007	0.023	0.023	568.299	0.051	0.005
120	0.283	3.799	1.555	0.006	0.021	0.021	568.299	0.025	0.004
175	0.199	3.360	0.391	0.006	0.015	0.015	568.299	0.018	0.004
250	0.195	1.144	0.341	0.006	0.012	0.012	568.299	0.017	0.004
500	0.195	1.088	0.341	0.005	0.012	0.012	568.299	0.017	0.004
15	0.592	3.470	4.164	0.008	0.166	0.166	568.299	0.053	0.005
25	0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.315	3.640	3.107	0.007	0.038	0.038	568.299	0.028	0.005
120	0.178	3.316	1.645	0.006	0.034	0.034	568.299	0.016	0.004
175	0.130	2.929	0.601	0.006	0.023	0.023	568.299	0.011	0.004
250	0.120	0.998	0.504	0.006	0.016	0.016	568.299	0.010	0.004
500	0.119	0.978	0.476	0.005	0.015	0.015	568.299	0.010	0.004
750	0.119	0.978	0.482	0.005	0.015	0.015	568.299	0.010	0.004
9999	0.128	0.979	2.483	0.005	0.029	0.029	568.299	0.011	0.004
50	0.648	5.239	3.530	0.007	0.065	0.065	568.299	0.058	0.005
120	0.323	3.775	1.903	0.006	0.058	0.058	568.299	0.029	0.004
175	0.237	3.326	0.815	0.006	0.038	0.038	568.300	0.021	0.004
250	0.216	1.148	0.684	0.006	0.024	0.024	568.299	0.019	0.004
500	0.214	1.097	0.647	0.005	0.023	0.023	568.299	0.019	0.004
750	0.214	1.097	0.654	0.005	0.023	0.023	568.299	0.019	0.004
120	0.518	3.944	2.959	0.006	0.175	0.175	568.299	0.046	0.004
175	0.373	3.435	1.916	0.006	0.104	0.104	568.299	0.033	0.004
250	0.315	1.286	1.715	0.006	0.064	0.064	568.299	0.028	0.004
750	0.304	1.351	1.590	0.005	0.060	0.060	568.299	0.027	0.004
1000	0.318	1.409	3.569	0.005	0.078	0.078	568.300	0.028	0.004
175	0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
250	0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004

500	0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
750	0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
1000	0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.429	4.390	3.190	0.007	0.030	0.030	568.299	0.038	0.005
120	0.225	3.538	1.576	0.006	0.027	0.027	568.300	0.020	0.004
175	0.161	3.127	0.459	0.006	0.019	0.019	568.299	0.014	0.004
500	0.154	1.028	0.391	0.005	0.014	0.014	568.300	0.013	0.004
15	0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.609	5.299	3.460	0.007	0.048	0.048	568.299	0.054	0.005
120	0.309	3.802	1.766	0.006	0.043	0.043	568.299	0.027	0.004
175	0.223	3.357	0.641	0.006	0.028	0.028	568.299	0.020	0.004
250	0.209	1.143	0.536	0.006	0.018	0.018	568.299	0.018	0.004
500	0.208	1.087	0.506	0.005	0.018	0.018	568.299	0.018	0.004

750	0.208	1.087	0.512	0.005	0.018	0.018	568.299	0.018	0.004
1000	0.212	1.088	2.660	0.005	0.035	0.035	568.299	0.019	0.004
50	0.598	5.237	3.447	0.007	0.048	0.048	568.299	0.053	0.005
120	0.304	3.784	1.762	0.006	0.043	0.043	568.299	0.027	0.004
175	0.220	3.341	0.640	0.006	0.028	0.028	568.299	0.019	0.004
250	0.206	1.138	0.535	0.006	0.018	0.018	568.299	0.018	0.004
500	0.205	1.083	0.505	0.005	0.018	0.018	568.299	0.018	0.004
9999	0.218	1.084	2.653	0.005	0.035	0.035	568.299	0.019	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.845	5.396	3.841	0.007	0.134	0.134	568.299	0.076	0.005
120	0.408	3.800	2.468	0.006	0.121	0.121	568.300	0.036	0.004
175	0.300	3.326	1.425	0.006	0.074	0.074	568.299	0.027	0.004
250	0.259	1.192	1.246	0.006	0.045	0.045	568.299	0.023	0.004
500	0.253	1.181	1.141	0.005	0.043	0.043	568.299	0.022	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.802	5.309	3.809	0.007	0.126	0.126	568.299	0.072	0.005
120	0.390	3.774	2.393	0.006	0.114	0.114	568.300	0.035	0.004
175	0.290	3.306	1.363	0.006	0.070	0.070	568.299	0.026	0.004
250	0.250	1.171	1.176	0.006	0.042	0.042	568.299	0.022	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
15	0.592	3.470	4.164	0.008	0.166	0.166	568.300	0.053	0.005
25	0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.215	3.124	2.989	0.007	0.030	0.030	568.299	0.019	0.005
120	0.134	3.167	1.594	0.006	0.028	0.028	568.300	0.012	0.004
175	0.126	2.907	0.619	0.006	0.024	0.024	568.299	0.011	0.004

250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.300	0.061	0.005
50	0.348	3.814	3.146	0.007	0.040	0.040	568.299	0.031	0.005
120	0.193	3.367	1.662	0.006	0.036	0.036	568.299	0.017	0.004
175	0.142	2.973	0.610	0.006	0.024	0.024	568.299	0.012	0.004
250	0.130	1.013	0.511	0.006	0.016	0.016	568.299	0.011	0.004
500	0.129	0.989	0.482	0.005	0.016	0.016	568.299	0.011	0.004
750	0.129	0.989	0.488	0.005	0.016	0.016	568.299	0.011	0.004
9999	0.139	0.990	2.504	0.005	0.030	0.030	568.299	0.012	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.587	4.784	3.480	0.007	0.073	0.073	568.299	0.053	0.005
120	0.299	3.639	1.950	0.006	0.066	0.066	568.299	0.027	0.004
175	0.223	3.203	0.907	0.006	0.042	0.042	568.299	0.020	0.004
250	0.195	1.099	0.745	0.006	0.024	0.024	568.299	0.017	0.004
500	0.193	1.056	0.697	0.005	0.023	0.023	568.299	0.017	0.004
50	0.548	5.031	3.359	0.007	0.039	0.039	568.299	0.049	0.005
120	0.279	3.725	1.671	0.006	0.034	0.034	568.299	0.025	0.004
175	0.200	3.291	0.537	0.006	0.023	0.023	568.299	0.018	0.004
250	0.191	1.121	0.463	0.006	0.016	0.016	568.299	0.017	0.004
500	0.190	1.070	0.443	0.005	0.016	0.016	568.300	0.017	0.004
175	0.398	3.496	2.034	0.006	0.111	0.111	568.299	0.035	0.004
250	0.335	1.322	1.828	0.006	0.069	0.069	568.299	0.030	0.004
500	0.322	1.401	1.658	0.005	0.064	0.064	568.299	0.029	0.004
750	0.323	1.401	1.694	0.005	0.064	0.064	568.299	0.029	0.004
1000	0.338	1.465	3.676	0.005	0.082	0.082	568.299	0.030	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.634	5.181	3.500	0.007	0.062	0.062	568.300	0.057	0.005
120	0.317	3.759	1.875	0.006	0.056	0.056	568.299	0.028	0.004
175	0.232	3.312	0.787	0.006	0.036	0.036	568.299	0.020	0.004

250	0.210	1.138	0.655	0.006	0.022	0.022	568.299	0.018	0.004
500	0.208	1.085	0.619	0.005	0.021	0.021	568.299	0.018	0.004
750	0.208	1.085	0.627	0.005	0.022	0.022	568.299	0.018	0.004
1000	0.214	1.099	2.722	0.005	0.039	0.039	568.299	0.019	0.004
120	0.410	3.866	2.384	0.006	0.111	0.111	568.299	0.037	0.004
175	0.301	3.389	1.320	0.006	0.068	0.068	568.299	0.027	0.004
250	0.264	1.206	1.149	0.006	0.042	0.042	568.299	0.023	0.004
500	0.259	1.184	1.057	0.005	0.040	0.040	568.299	0.023	0.004
750	0.259	1.184	1.075	0.005	0.040	0.040	568.299	0.023	0.004
15	0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
50	0.393	4.099	3.193	0.007	0.040	0.040	568.299	0.035	0.005
120	0.213	3.451	1.657	0.006	0.035	0.035	568.300	0.019	0.004
175	0.157	3.048	0.586	0.006	0.024	0.024	568.299	0.014	0.004
250	0.176	1.255	0.594	0.007	0.019	0.019	686.695	0.015	0.004
25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
50	0.411	4.386	3.128	0.007	0.018	0.018	568.299	0.037	0.005
120	0.214	3.538	1.477	0.006	0.017	0.017	568.299	0.019	0.004
50	0.518	4.295	3.400	0.007	0.075	0.075	568.299	0.046	0.005
120	0.264	3.492	1.959	0.006	0.068	0.068	568.299	0.023	0.004
175	0.197	3.071	0.939	0.006	0.043	0.043	568.299	0.017	0.004
250	0.172	1.064	0.789	0.006	0.026	0.026	568.299	0.015	0.004
500	0.169	1.032	0.738	0.005	0.025	0.025	568.299	0.015	0.004
750	0.169	1.032	0.749	0.005	0.025	0.025	568.299	0.015	0.004
15	0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
25	0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.509	4.947	3.294	0.007	0.026	0.026	568.299	0.046	0.005
120	0.261	3.703	1.569	0.006	0.023	0.023	568.299	0.023	0.004
175	0.187	3.275	0.431	0.006	0.017	0.017	568.299	0.016	0.004
250	0.182	1.116	0.370	0.006	0.013	0.013	568.299	0.016	0.004
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

50	0.539	4.966	3.299	0.007	0.033	0.033	568.299	0.048	0.005
120	0.272	3.705	1.624	0.006	0.030	0.030	568.299	0.024	0.004
175	0.193	3.273	0.485	0.006	0.020	0.020	568.299	0.017	0.004
250	0.183	1.115	0.418	0.006	0.014	0.014	568.299	0.016	0.004
500	0.182	1.066	0.403	0.006	0.014	0.014	568.299	0.016	0.004
750	0.182	1.066	0.407	0.006	0.014	0.014	568.299	0.016	0.004
15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
50	0.851	5.208	3.835	0.007	0.144	0.144	568.299	0.076	0.005
120	0.409	3.743	2.559	0.006	0.132	0.132	568.299	0.036	0.004
175	0.300	3.273	1.529	0.006	0.080	0.080	568.300	0.027	0.004
250	0.256	1.188	1.348	0.006	0.049	0.049	568.300	0.023	0.004
500	0.249	1.209	1.231	0.005	0.046	0.046	568.299	0.022	0.004
750	0.249	1.209	1.254	0.005	0.047	0.047	568.299	0.022	0.004
15	0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
25	0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
50	0.449	4.387	3.273	0.007	0.045	0.045	568.299	0.040	0.005
120	0.239	3.535	1.707	0.006	0.040	0.040	568.299	0.021	0.004
175	0.176	3.121	0.628	0.006	0.027	0.027	568.299	0.015	0.004
250	0.162	1.063	0.525	0.006	0.017	0.017	568.299	0.014	0.004
500	0.161	1.027	0.495	0.005	0.017	0.017	568.299	0.014	0.004
175	0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
250	0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004
500	0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
750	0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
1000	0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004

2032

2032		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.162	0.162
Aerial Lifts	50	0.339	3.764	3.135	0.007	0.040	0.040
Aerial Lifts	120	0.188	3.352	1.657	0.006	0.036	0.036
Aerial Lifts	500	0.126	0.986	0.479	0.005	0.016	0.016
Aerial Lifts	750	0.126	0.986	0.485	0.005	0.016	0.016
Air Compressors	15	0.663	3.470	4.164	0.008	0.166	0.166
Air Compressors	25	0.687	2.340	4.347	0.007	0.165	0.165
Air Compressors	50	0.506	4.712	3.340	0.007	0.046	0.046
Air Compressors	120	0.264	3.630	1.729	0.006	0.041	0.041
Air Compressors	175	0.193	3.205	0.633	0.006	0.027	0.027
Air Compressors	250	0.179	1.092	0.529	0.006	0.018	0.018
Air Compressors	500	0.178	1.048	0.499	0.005	0.017	0.017
Air Compressors	750	0.178	1.048	0.505	0.005	0.017	0.017
Air Compressors	1000	0.182	1.049	2.600	0.005	0.033	0.033
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161
Bore/Drill Rigs	50	0.348	4.029	3.020	0.007	0.013	0.013
Bore/Drill Rigs	120	0.183	3.434	1.415	0.006	0.012	0.012
Bore/Drill Rigs	175	0.127	3.038	0.279	0.006	0.010	0.010
Bore/Drill Rigs	250	0.127	1.035	0.274	0.006	0.010	0.010
Bore/Drill Rigs	500	0.127	1.006	0.274	0.005	0.010	0.010
Bore/Drill Rigs	750	0.127	1.006	0.274	0.005	0.010	0.010
Bore/Drill Rigs	1000	0.127	1.006	2.372	0.005	0.021	0.021

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161
Cement and Mortar Mixers	25	0.685	2.339	4.333	0.007	0.162	0.162
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161
Concrete/Industrial Saws	50	0.409	4.199	3.222	0.007	0.041	0.041
Concrete/Industrial Saws	120	0.221	3.480	1.667	0.006	0.036	0.036
Concrete/Industrial Saws	175	0.163	3.074	0.590	0.006	0.025	0.025
Cranes	50	0.684	5.366	3.598	0.007	0.075	0.075
Cranes	120	0.343	3.812	1.987	0.006	0.067	0.067
Cranes	175	0.253	3.356	0.916	0.006	0.042	0.042
Cranes	250	0.224	1.147	0.748	0.006	0.024	0.024
Cranes	500	0.222	1.090	0.697	0.005	0.023	0.023
Cranes	750	0.222	1.090	0.709	0.005	0.024	0.024
Cranes	9999	0.245	1.108	2.800	0.005	0.043	0.043
Crawler Tractors	50	0.833	5.605	3.808	0.007	0.116	0.116
Crawler Tractors	120	0.405	3.871	2.341	0.006	0.105	0.105
Crawler Tractors	175	0.296	3.397	1.266	0.006	0.065	0.065
Crawler Tractors	250	0.262	1.207	1.104	0.006	0.040	0.040
Crawler Tractors	500	0.257	1.200	1.016	0.005	0.038	0.038
Crawler Tractors	750	0.257	1.200	1.033	0.005	0.038	0.038
Crawler Tractors	1000	0.265	1.225	3.094	0.005	0.056	0.056
Crushing/Proc. Equipment	50	0.525	4.857	3.351	0.007	0.043	0.043
Crushing/Proc. Equipment	120	0.272	3.673	1.708	0.006	0.038	0.038
Crushing/Proc. Equipment	175	0.197	3.244	0.600	0.006	0.025	0.025
Crushing/Proc. Equipment	250	0.185	1.105	0.502	0.006	0.017	0.017
Crushing/Proc. Equipment	500	0.184	1.058	0.476	0.005	0.017	0.017
Crushing/Proc. Equipment	750	0.184	1.058	0.478	0.005	0.017	0.017
Crushing/Proc. Equipment	9999	0.196	1.059	2.590	0.005	0.032	0.032

Dumpers/Tenders	25	0.685	2.340	4.332	0.007	0.161	0.161
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161
Excavators	50	0.602	5.309	3.393	0.007	0.038	0.038
Excavators	120	0.301	3.806	1.676	0.006	0.034	0.034
Excavators	175	0.213	3.362	0.525	0.006	0.023	0.023
Excavators	250	0.203	1.145	0.452	0.006	0.016	0.016
Excavators	500	0.202	1.088	0.433	0.005	0.016	0.016
Excavators	750	0.202	1.088	0.437	0.005	0.016	0.016
Forklifts	50	0.565	5.272	3.330	0.007	0.023	0.023
Forklifts	120	0.283	3.799	1.555	0.006	0.021	0.021
Forklifts	175	0.199	3.360	0.391	0.006	0.015	0.015
Forklifts	250	0.195	1.144	0.341	0.006	0.012	0.012
Forklifts	500	0.195	1.088	0.341	0.005	0.012	0.012
Generator Sets	15	0.592	3.470	4.164	0.008	0.166	0.166
Generator Sets	25	0.686	2.340	4.347	0.007	0.165	0.165
Generator Sets	50	0.315	3.640	3.107	0.007	0.038	0.038
Generator Sets	120	0.178	3.316	1.645	0.006	0.034	0.034
Generator Sets	175	0.130	2.929	0.601	0.006	0.023	0.023
Generator Sets	250	0.120	0.998	0.504	0.006	0.016	0.016
Generator Sets	500	0.119	0.978	0.476	0.005	0.015	0.015
Generator Sets	750	0.119	0.978	0.482	0.005	0.015	0.015
Generator Sets	9999	0.128	0.979	2.483	0.005	0.029	0.029
Graders	50	0.648	5.239	3.530	0.007	0.065	0.065
Graders	120	0.323	3.775	1.903	0.006	0.058	0.058
Graders	175	0.237	3.326	0.815	0.006	0.038	0.038
Graders	250	0.216	1.148	0.684	0.006	0.024	0.024
Graders	500	0.214	1.097	0.647	0.005	0.023	0.023
Graders	750	0.214	1.097	0.654	0.005	0.023	0.023
Off-Highway Tractors	120	0.518	3.944	2.959	0.006	0.175	0.175
Off-Highway Tractors	175	0.373	3.435	1.916	0.006	0.104	0.104
Off-Highway Tractors	250	0.315	1.286	1.715	0.006	0.064	0.064
Off-Highway Tractors	750	0.304	1.351	1.590	0.005	0.060	0.060
Off-Highway Tractors	1000	0.318	1.409	3.569	0.005	0.078	0.078
Off-Highway Trucks	175	0.229	3.425	0.563	0.006	0.025	0.025
Off-Highway Trucks	250	0.217	1.166	0.481	0.006	0.017	0.017

Off-Highway Trucks	500	0.216	1.104	0.458	0.005	0.017	0.017
Off-Highway Trucks	750	0.217	1.104	0.463	0.005	0.017	0.017
Off-Highway Trucks	1000	0.220	1.107	2.651	0.005	0.033	0.033
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Other Construction Equipment	50	0.429	4.390	3.190	0.007	0.030	0.030
Other Construction Equipment	120	0.225	3.538	1.576	0.006	0.027	0.027
Other Construction Equipment	175	0.161	3.127	0.459	0.006	0.019	0.019
Other Construction Equipment	500	0.154	1.028	0.391	0.005	0.014	0.014
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Other General Industrial Equipment	50	0.609	5.299	3.460	0.007	0.048	0.048
Other General Industrial Equipment	120	0.309	3.802	1.766	0.006	0.043	0.043
Other General Industrial Equipment	175	0.223	3.357	0.641	0.006	0.028	0.028
Other General Industrial Equipment	250	0.209	1.143	0.536	0.006	0.018	0.018
Other General Industrial Equipment	500	0.208	1.087	0.506	0.005	0.018	0.018

Other General Industrial Equipment	750	0.208	1.087	0.512	0.005	0.018	0.018
Other General Industrial Equipment	1000	0.212	1.088	2.660	0.005	0.035	0.035
Other Material Handling Equipment	50	0.598	5.237	3.447	0.007	0.048	0.048
Other Material Handling Equipment	120	0.304	3.784	1.762	0.006	0.043	0.043
Other Material Handling Equipment	175	0.220	3.341	0.640	0.006	0.028	0.028
Other Material Handling Equipment	250	0.206	1.138	0.535	0.006	0.018	0.018
Other Material Handling Equipment	500	0.205	1.083	0.505	0.005	0.018	0.018
Other Material Handling Equipment	9999	0.218	1.084	2.653	0.005	0.035	0.035
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161
Pavers	50	0.845	5.396	3.841	0.007	0.134	0.134
Pavers	120	0.408	3.800	2.468	0.006	0.121	0.121
Pavers	175	0.300	3.326	1.425	0.006	0.074	0.074
Pavers	250	0.259	1.192	1.246	0.006	0.045	0.045
Pavers	500	0.253	1.181	1.141	0.005	0.043	0.043
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161
Paving Equipment	50	0.802	5.309	3.809	0.007	0.126	0.126
Paving Equipment	120	0.390	3.774	2.393	0.006	0.114	0.114
Paving Equipment	175	0.290	3.306	1.363	0.006	0.070	0.070
Paving Equipment	250	0.250	1.171	1.176	0.006	0.042	0.042
Plate Compactors	15	0.661	3.469	4.142	0.008	0.161	0.161
Pressure Washers	15	0.592	3.470	4.164	0.008	0.166	0.166
Pressure Washers	25	0.686	2.340	4.347	0.007	0.165	0.165
Pressure Washers	50	0.215	3.124	2.989	0.007	0.030	0.030
Pressure Washers	120	0.134	3.167	1.594	0.006	0.028	0.028
Pressure Washers	175	0.126	2.907	0.619	0.006	0.024	0.024

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009
Pumps	15	0.663	3.470	4.164	0.008	0.166	0.166
Pumps	25	0.687	2.340	4.347	0.007	0.165	0.165
Pumps	50	0.348	3.814	3.146	0.007	0.040	0.040
Pumps	120	0.193	3.367	1.662	0.006	0.036	0.036
Pumps	175	0.142	2.973	0.610	0.006	0.024	0.024
Pumps	250	0.130	1.013	0.511	0.006	0.016	0.016
Pumps	500	0.129	0.989	0.482	0.005	0.016	0.016
Pumps	750	0.129	0.989	0.488	0.005	0.016	0.016
Pumps	9999	0.139	0.990	2.504	0.005	0.030	0.030
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161
Rollers	25	0.685	2.339	4.332	0.007	0.161	0.161
Rollers	50	0.587	4.784	3.480	0.007	0.073	0.073
Rollers	120	0.299	3.639	1.950	0.006	0.066	0.066
Rollers	175	0.223	3.203	0.907	0.006	0.042	0.042
Rollers	250	0.195	1.099	0.745	0.006	0.024	0.024
Rollers	500	0.193	1.056	0.697	0.005	0.023	0.023
Rough Terrain Forklifts	50	0.548	5.031	3.359	0.007	0.039	0.039
Rough Terrain Forklifts	120	0.279	3.725	1.671	0.006	0.034	0.034
Rough Terrain Forklifts	175	0.200	3.291	0.537	0.006	0.023	0.023
Rough Terrain Forklifts	250	0.191	1.121	0.463	0.006	0.016	0.016
Rough Terrain Forklifts	500	0.190	1.070	0.443	0.005	0.016	0.016
Rubber Tired Dozers	175	0.398	3.496	2.034	0.006	0.111	0.111
Rubber Tired Dozers	250	0.335	1.322	1.828	0.006	0.069	0.069
Rubber Tired Dozers	500	0.322	1.401	1.658	0.005	0.064	0.064
Rubber Tired Dozers	750	0.323	1.401	1.694	0.005	0.064	0.064
Rubber Tired Dozers	1000	0.338	1.465	3.676	0.005	0.082	0.082
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161
Rubber Tired Loaders	50	0.634	5.181	3.500	0.007	0.062	0.062
Rubber Tired Loaders	120	0.317	3.759	1.875	0.006	0.056	0.056
Rubber Tired Loaders	175	0.232	3.312	0.787	0.006	0.036	0.036

Rubber Tired Loaders	250	0.210	1.138	0.655	0.006	0.022	0.022
Rubber Tired Loaders	500	0.208	1.085	0.619	0.005	0.021	0.021
Rubber Tired Loaders	750	0.208	1.085	0.627	0.005	0.022	0.022
Rubber Tired Loaders	1000	0.214	1.099	2.722	0.005	0.039	0.039
Scrapers	120	0.410	3.866	2.384	0.006	0.111	0.111
Scrapers	175	0.301	3.389	1.320	0.006	0.068	0.068
Scrapers	250	0.264	1.206	1.149	0.006	0.042	0.042
Scrapers	500	0.259	1.184	1.057	0.005	0.040	0.040
Scrapers	750	0.259	1.184	1.075	0.005	0.040	0.040
Signal Boards	15	0.661	3.470	4.142	0.008	0.161	0.161
Signal Boards	50	0.393	4.099	3.193	0.007	0.040	0.040
Signal Boards	120	0.213	3.451	1.657	0.006	0.035	0.035
Signal Boards	175	0.157	3.048	0.586	0.006	0.024	0.024
Signal Boards	250	0.176	1.255	0.594	0.007	0.019	0.019
Skid Steer Loaders	25	0.685	2.340	4.332	0.007	0.162	0.162
Skid Steer Loaders	50	0.411	4.386	3.128	0.007	0.018	0.018
Skid Steer Loaders	120	0.214	3.538	1.477	0.006	0.017	0.017
Surfacing Equipment	50	0.518	4.295	3.400	0.007	0.075	0.075
Surfacing Equipment	120	0.264	3.492	1.959	0.006	0.068	0.068
Surfacing Equipment	175	0.197	3.071	0.939	0.006	0.043	0.043
Surfacing Equipment	250	0.172	1.064	0.789	0.006	0.026	0.026
Surfacing Equipment	500	0.169	1.032	0.738	0.005	0.025	0.025
Surfacing Equipment	750	0.169	1.032	0.749	0.005	0.025	0.025
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161
Sweepers/Scrubbers	50	0.509	4.947	3.294	0.007	0.026	0.026
Sweepers/Scrubbers	120	0.261	3.703	1.569	0.006	0.023	0.023
Sweepers/Scrubbers	175	0.187	3.275	0.431	0.006	0.017	0.017
Sweepers/Scrubbers	250	0.182	1.116	0.370	0.006	0.013	0.013
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161

Tractors/Loaders/Backhoes	50	0.539	4.966	3.299	0.007	0.033	0.033
Tractors/Loaders/Backhoes	120	0.272	3.705	1.624	0.006	0.030	0.030
Tractors/Loaders/Backhoes	175	0.193	3.273	0.485	0.006	0.020	0.020
Tractors/Loaders/Backhoes	250	0.183	1.115	0.418	0.006	0.014	0.014
Tractors/Loaders/Backhoes	500	0.182	1.066	0.403	0.006	0.014	0.014
Tractors/Loaders/Backhoes	750	0.182	1.066	0.407	0.006	0.014	0.014
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161
Trenchers	50	0.851	5.208	3.835	0.007	0.144	0.144
Trenchers	120	0.409	3.743	2.559	0.006	0.132	0.132
Trenchers	175	0.300	3.273	1.529	0.006	0.080	0.080
Trenchers	250	0.256	1.188	1.348	0.006	0.049	0.049
Trenchers	500	0.249	1.209	1.231	0.005	0.046	0.046
Trenchers	750	0.249	1.209	1.254	0.005	0.047	0.047
Welders	15	0.663	3.470	4.164	0.008	0.166	0.166
Welders	25	0.687	2.340	4.347	0.007	0.165	0.165
Welders	50	0.449	4.387	3.273	0.007	0.045	0.045
Welders	120	0.239	3.535	1.707	0.006	0.040	0.040
Welders	175	0.176	3.121	0.628	0.006	0.027	0.027
Welders	250	0.162	1.063	0.525	0.006	0.017	0.017
Welders	500	0.161	1.027	0.495	0.005	0.017	0.017
Water Trucks	175	0.229	3.425	0.563	0.006	0.025	0.025
Water Trucks	250	0.217	1.166	0.481	0.006	0.017	0.017
Water Trucks	500	0.216	1.104	0.458	0.005	0.017	0.017
Water Trucks	750	0.217	1.104	0.463	0.005	0.017	0.017
Water Trucks	1000	0.220	1.107	2.651	0.005	0.033	0.033

2033

g/hp/hr	g/hp/hr	g/hp/hr
CO2	CH4	N2O
568.299	0.059	0.005
568.299	0.061	0.005
568.300	0.030	0.005
568.299	0.017	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.045	0.005
568.299	0.023	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.300	0.016	0.004
568.299	0.016	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.031	0.005
568.299	0.016	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004

2033		g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX
Aerial Lifts	15	0.661	3.469	4.142
Aerial Lifts	25	0.685	2.339	4.332
Aerial Lifts	50	0.339	3.764	3.135
Aerial Lifts	120	0.188	3.352	1.657
Aerial Lifts	500	0.126	0.986	0.479
Aerial Lifts	750	0.126	0.986	0.485
Air Compressors	15	0.663	3.470	4.164
Air Compressors	25	0.687	2.340	4.347
Air Compressors	50	0.506	4.712	3.340
Air Compressors	120	0.264	3.630	1.729
Air Compressors	175	0.193	3.205	0.633
Air Compressors	250	0.179	1.092	0.529
Air Compressors	500	0.178	1.048	0.499
Air Compressors	750	0.178	1.048	0.505
Air Compressors	1000	0.182	1.049	2.600
Bore/Drill Rigs	15	0.661	3.469	4.142
Bore/Drill Rigs	25	0.685	2.339	4.332
Bore/Drill Rigs	50	0.348	4.029	3.020
Bore/Drill Rigs	120	0.183	3.434	1.415
Bore/Drill Rigs	175	0.127	3.038	0.279
Bore/Drill Rigs	250	0.127	1.035	0.274
Bore/Drill Rigs	500	0.127	1.006	0.274
Bore/Drill Rigs	750	0.127	1.006	0.274
Bore/Drill Rigs	1000	0.127	1.006	2.372

568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.061	0.005
568.299	0.036	0.005
568.299	0.019	0.004
568.299	0.014	0.004
568.299	0.061	0.005
568.299	0.030	0.004
568.299	0.022	0.004
568.299	0.020	0.004
568.299	0.020	0.004
568.300	0.020	0.004
568.299	0.022	0.004
568.299	0.075	0.005
568.299	0.036	0.004
568.299	0.026	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.300	0.023	0.004
568.299	0.047	0.005
568.299	0.024	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.017	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142
Cement and Mortar Mixers	25	0.685	2.339	4.333
Concrete/Industrial Saws	25	0.685	2.339	4.332
Concrete/Industrial Saws	50	0.409	4.199	3.222
Concrete/Industrial Saws	120	0.221	3.480	1.667
Concrete/Industrial Saws	175	0.163	3.074	0.590
Cranes	50	0.684	5.366	3.598
Cranes	120	0.343	3.812	1.987
Cranes	175	0.253	3.356	0.916
Cranes	250	0.224	1.147	0.748
Cranes	500	0.222	1.090	0.697
Cranes	750	0.222	1.090	0.709
Cranes	9999	0.245	1.108	2.800
Crawler Tractors	50	0.833	5.605	3.808
Crawler Tractors	120	0.405	3.871	2.341
Crawler Tractors	175	0.296	3.397	1.266
Crawler Tractors	250	0.262	1.207	1.104
Crawler Tractors	500	0.257	1.200	1.016
Crawler Tractors	750	0.257	1.200	1.033
Crawler Tractors	1000	0.265	1.225	3.094
Crushing/Proc. Equipment	50	0.525	4.857	3.351
Crushing/Proc. Equipment	120	0.272	3.673	1.708
Crushing/Proc. Equipment	175	0.197	3.244	0.600
Crushing/Proc. Equipment	250	0.185	1.105	0.502
Crushing/Proc. Equipment	500	0.184	1.058	0.476
Crushing/Proc. Equipment	750	0.184	1.058	0.478
Crushing/Proc. Equipment	9999	0.196	1.059	2.590

568.299	0.061	0.005
568.299	0.061	0.005
568.299	0.054	0.005
568.299	0.027	0.004
568.299	0.019	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.051	0.005
568.299	0.025	0.004
568.299	0.018	0.004
568.299	0.017	0.004
568.299	0.017	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.028	0.005
568.299	0.016	0.004
568.299	0.011	0.004
568.299	0.010	0.004
568.299	0.010	0.004
568.299	0.010	0.004
568.299	0.011	0.004
568.299	0.058	0.005
568.299	0.029	0.004
568.300	0.021	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.299	0.046	0.004
568.299	0.033	0.004
568.299	0.028	0.004
568.299	0.027	0.004
568.300	0.028	0.004
568.299	0.020	0.004
568.300	0.019	0.004

Dumpers/Tenders	25	0.685	2.340	4.332
Excavators	25	0.685	2.339	4.332
Excavators	50	0.602	5.309	3.393
Excavators	120	0.301	3.806	1.676
Excavators	175	0.213	3.362	0.525
Excavators	250	0.203	1.145	0.452
Excavators	500	0.202	1.088	0.433
Excavators	750	0.202	1.088	0.437
Forklifts	50	0.565	5.272	3.330
Forklifts	120	0.283	3.799	1.555
Forklifts	175	0.199	3.360	0.391
Forklifts	250	0.195	1.144	0.341
Forklifts	500	0.195	1.088	0.341
Generator Sets	15	0.592	3.470	4.164
Generator Sets	25	0.686	2.340	4.347
Generator Sets	50	0.315	3.640	3.107
Generator Sets	120	0.178	3.316	1.645
Generator Sets	175	0.130	2.929	0.601
Generator Sets	250	0.120	0.998	0.504
Generator Sets	500	0.119	0.978	0.476
Generator Sets	750	0.119	0.978	0.482
Generator Sets	9999	0.128	0.979	2.483
Graders	50	0.648	5.239	3.530
Graders	120	0.323	3.775	1.903
Graders	175	0.237	3.326	0.815
Graders	250	0.216	1.148	0.684
Graders	500	0.214	1.097	0.647
Graders	750	0.214	1.097	0.654
Off-Highway Tractors	120	0.518	3.944	2.959
Off-Highway Tractors	175	0.373	3.435	1.916
Off-Highway Tractors	250	0.315	1.286	1.715
Off-Highway Tractors	750	0.304	1.351	1.590
Off-Highway Tractors	1000	0.318	1.409	3.569
Off-Highway Trucks	175	0.229	3.425	0.563
Off-Highway Trucks	250	0.217	1.166	0.481

568.299	0.019	0.004
568.299	0.019	0.004
568.300	0.019	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.038	0.005
568.300	0.020	0.004
568.299	0.014	0.004
568.300	0.013	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.054	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.018	0.004
568.299	0.018	0.004

Off-Highway Trucks	500	0.216	1.104	0.458
Off-Highway Trucks	750	0.217	1.104	0.463
Off-Highway Trucks	1000	0.220	1.107	2.651
Other Construction Equipment	15	0.661	3.469	4.142
Other Construction Equipment	25	0.685	2.339	4.332
Other Construction Equipment	50	0.429	4.390	3.190
Other Construction Equipment	120	0.225	3.538	1.576
Other Construction Equipment	175	0.161	3.127	0.459
Other Construction Equipment	500	0.154	1.028	0.391
Other General Industrial Equipment	15	0.589	3.469	4.142
Other General Industrial Equipment	25	0.685	2.339	4.332
Other General Industrial Equipment	50	0.609	5.299	3.460
Other General Industrial Equipment	120	0.309	3.802	1.766
Other General Industrial Equipment	175	0.223	3.357	0.641
Other General Industrial Equipment	250	0.209	1.143	0.536
Other General Industrial Equipment	500	0.208	1.087	0.506

568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.053	0.005
568.299	0.027	0.004
568.299	0.019	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.061	0.005
568.299	0.076	0.005
568.300	0.036	0.004
568.299	0.027	0.004
568.299	0.023	0.004
568.299	0.022	0.004
568.299	0.061	0.005
568.299	0.072	0.005
568.300	0.035	0.004
568.299	0.026	0.004
568.299	0.022	0.004
568.299	0.059	0.005
568.300	0.053	0.005
568.299	0.061	0.005
568.299	0.019	0.005
568.300	0.012	0.004
568.299	0.011	0.004

Other General Industrial Equipment	750	0.208	1.087	0.512
Other General Industrial Equipment	1000	0.212	1.088	2.660
Other Material Handling Equipment	50	0.598	5.237	3.447
Other Material Handling Equipment	120	0.304	3.784	1.762
Other Material Handling Equipment	175	0.220	3.341	0.640
Other Material Handling Equipment	250	0.206	1.138	0.535
Other Material Handling Equipment	500	0.205	1.083	0.505
Other Material Handling Equipment	9999	0.218	1.084	2.653
Pavers	25	0.685	2.339	4.332
Pavers	50	0.845	5.396	3.841
Pavers	120	0.408	3.800	2.468
Pavers	175	0.300	3.326	1.425
Pavers	250	0.259	1.192	1.246
Pavers	500	0.253	1.181	1.141
Paving Equipment	25	0.685	2.339	4.332
Paving Equipment	50	0.802	5.309	3.809
Paving Equipment	120	0.390	3.774	2.393
Paving Equipment	175	0.290	3.306	1.363
Paving Equipment	250	0.250	1.171	1.176
Plate Compactors	15	0.661	3.469	4.142
Pressure Washers	15	0.592	3.470	4.164
Pressure Washers	25	0.686	2.340	4.347
Pressure Washers	50	0.215	3.124	2.989
Pressure Washers	120	0.134	3.167	1.594
Pressure Washers	175	0.126	2.907	0.619

568.299	0.008	0.004
568.299	0.059	0.005
568.300	0.061	0.005
568.299	0.031	0.005
568.299	0.017	0.004
568.299	0.012	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.011	0.004
568.299	0.012	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.053	0.005
568.299	0.027	0.004
568.299	0.020	0.004
568.299	0.017	0.004
568.299	0.017	0.004
568.299	0.049	0.005
568.299	0.025	0.004
568.299	0.018	0.004
568.299	0.017	0.004
568.300	0.017	0.004
568.299	0.035	0.004
568.299	0.030	0.004
568.299	0.029	0.004
568.299	0.029	0.004
568.299	0.030	0.004
568.299	0.061	0.005
568.300	0.057	0.005
568.299	0.028	0.004
568.299	0.020	0.004

Pressure Washers	250	0.098	0.986	0.265
Pumps	15	0.663	3.470	4.164
Pumps	25	0.687	2.340	4.347
Pumps	50	0.348	3.814	3.146
Pumps	120	0.193	3.367	1.662
Pumps	175	0.142	2.973	0.610
Pumps	250	0.130	1.013	0.511
Pumps	500	0.129	0.989	0.482
Pumps	750	0.129	0.989	0.488
Pumps	9999	0.139	0.990	2.504
Rollers	15	0.661	3.469	4.142
Rollers	25	0.685	2.339	4.332
Rollers	50	0.587	4.784	3.480
Rollers	120	0.299	3.639	1.950
Rollers	175	0.223	3.203	0.907
Rollers	250	0.195	1.099	0.745
Rollers	500	0.193	1.056	0.697
Rough Terrain Forklifts	50	0.548	5.031	3.359
Rough Terrain Forklifts	120	0.279	3.725	1.671
Rough Terrain Forklifts	175	0.200	3.291	0.537
Rough Terrain Forklifts	250	0.191	1.121	0.463
Rough Terrain Forklifts	500	0.190	1.070	0.443
Rubber Tired Dozers	175	0.398	3.496	2.034
Rubber Tired Dozers	250	0.335	1.322	1.828
Rubber Tired Dozers	500	0.322	1.401	1.658
Rubber Tired Dozers	750	0.323	1.401	1.694
Rubber Tired Dozers	1000	0.338	1.465	3.676
Rubber Tired Loaders	25	0.685	2.339	4.332
Rubber Tired Loaders	50	0.634	5.181	3.500
Rubber Tired Loaders	120	0.317	3.759	1.875
Rubber Tired Loaders	175	0.232	3.312	0.787

568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.018	0.004
568.299	0.019	0.004
568.299	0.037	0.004
568.299	0.027	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.023	0.004
568.299	0.059	0.005
568.299	0.035	0.005
568.300	0.019	0.004
568.299	0.014	0.004
686.695	0.015	0.004
568.299	0.061	0.005
568.299	0.037	0.005
568.299	0.019	0.004
568.299	0.046	0.005
568.299	0.023	0.004
568.299	0.017	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.015	0.004
568.299	0.053	0.005
568.299	0.061	0.005
568.299	0.046	0.005
568.299	0.023	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.061	0.005

Rubber Tired Loaders	250	0.210	1.138	0.655
Rubber Tired Loaders	500	0.208	1.085	0.619
Rubber Tired Loaders	750	0.208	1.085	0.627
Rubber Tired Loaders	1000	0.214	1.099	2.722
Scrapers	120	0.410	3.866	2.384
Scrapers	175	0.301	3.389	1.320
Scrapers	250	0.264	1.206	1.149
Scrapers	500	0.259	1.184	1.057
Scrapers	750	0.259	1.184	1.075
Signal Boards	15	0.661	3.470	4.142
Signal Boards	50	0.393	4.099	3.193
Signal Boards	120	0.213	3.451	1.657
Signal Boards	175	0.157	3.048	0.586
Signal Boards	250	0.176	1.255	0.594
Skid Steer Loaders	25	0.685	2.340	4.332
Skid Steer Loaders	50	0.411	4.386	3.128
Skid Steer Loaders	120	0.214	3.538	1.477
Surfacing Equipment	50	0.518	4.295	3.400
Surfacing Equipment	120	0.264	3.492	1.959
Surfacing Equipment	175	0.197	3.071	0.939
Surfacing Equipment	250	0.172	1.064	0.789
Surfacing Equipment	500	0.169	1.032	0.738
Surfacing Equipment	750	0.169	1.032	0.749
Sweepers/Scrubbers	15	0.589	3.470	4.142
Sweepers/Scrubbers	25	0.685	2.340	4.332
Sweepers/Scrubbers	50	0.509	4.947	3.294
Sweepers/Scrubbers	120	0.261	3.703	1.569
Sweepers/Scrubbers	175	0.187	3.275	0.431
Sweepers/Scrubbers	250	0.182	1.116	0.370
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332

568.299	0.048	0.005
568.299	0.024	0.004
568.299	0.017	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.016	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.076	0.005
568.299	0.036	0.004
568.300	0.027	0.004
568.300	0.023	0.004
568.299	0.022	0.004
568.299	0.022	0.004
568.299	0.059	0.005
568.299	0.061	0.005
568.299	0.040	0.005
568.299	0.021	0.004
568.299	0.015	0.004
568.299	0.014	0.004
568.299	0.014	0.004
568.299	0.020	0.004
568.300	0.019	0.004
568.299	0.019	0.004
568.299	0.019	0.004
568.300	0.019	0.004

Tractors/Loaders/Backhoes	50	0.539	4.966	3.299
Tractors/Loaders/Backhoes	120	0.272	3.705	1.624
Tractors/Loaders/Backhoes	175	0.193	3.273	0.485
Tractors/Loaders/Backhoes	250	0.183	1.115	0.418
Tractors/Loaders/Backhoes	500	0.182	1.066	0.403
Tractors/Loaders/Backhoes	750	0.182	1.066	0.407
Trenchers	15	0.661	3.469	4.142
Trenchers	25	0.685	2.339	4.332
Trenchers	50	0.851	5.208	3.835
Trenchers	120	0.409	3.743	2.559
Trenchers	175	0.300	3.273	1.529
Trenchers	250	0.256	1.188	1.348
Trenchers	500	0.249	1.209	1.231
Trenchers	750	0.249	1.209	1.254
Welders	15	0.663	3.470	4.164
Welders	25	0.687	2.340	4.347
Welders	50	0.449	4.387	3.273
Welders	120	0.239	3.535	1.707
Welders	175	0.176	3.121	0.628
Welders	250	0.162	1.063	0.525
Welders	500	0.161	1.027	0.495
Water Trucks	175	0.229	3.425	0.563
Water Trucks	250	0.217	1.166	0.481
Water Trucks	500	0.216	1.104	0.458
Water Trucks	750	0.217	1.104	0.463
Water Trucks	1000	0.220	1.107	2.651

2034

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
SOX	PM10	PM2.5	CO2	CH4	N2O
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.040	0.040	568.300	0.030	0.005
0.006	0.036	0.036	568.299	0.017	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.046	0.046	568.299	0.045	0.005
0.006	0.041	0.041	568.299	0.023	0.004
0.006	0.027	0.027	568.299	0.017	0.004
0.006	0.018	0.018	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.300	0.016	0.004
0.005	0.033	0.033	568.299	0.016	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.013	0.013	568.299	0.031	0.005
0.006	0.012	0.012	568.299	0.016	0.004
0.006	0.010	0.010	568.299	0.011	0.004
0.006	0.010	0.010	568.299	0.011	0.004
0.005	0.010	0.010	568.299	0.011	0.004
0.005	0.010	0.010	568.299	0.011	0.004
0.005	0.021	0.021	568.299	0.011	0.004

2034	
Equipment	**MaxHP**
Aerial Lifts	15
Aerial Lifts	25
Aerial Lifts	50
Aerial Lifts	120
Aerial Lifts	500
Aerial Lifts	750
Air Compressors	15
Air Compressors	25
Air Compressors	50
Air Compressors	120
Air Compressors	175
Air Compressors	250
Air Compressors	500
Air Compressors	750
Air Compressors	1000
Bore/Drill Rigs	15
Bore/Drill Rigs	25
Bore/Drill Rigs	50
Bore/Drill Rigs	120
Bore/Drill Rigs	175
Bore/Drill Rigs	250
Bore/Drill Rigs	500
Bore/Drill Rigs	750
Bore/Drill Rigs	1000

0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.041	0.041	568.299	0.036	0.005
0.006	0.036	0.036	568.299	0.019	0.004
0.006	0.025	0.025	568.299	0.014	0.004
0.007	0.075	0.075	568.299	0.061	0.005
0.006	0.067	0.067	568.299	0.030	0.004
0.006	0.042	0.042	568.299	0.022	0.004
0.006	0.024	0.024	568.299	0.020	0.004
0.005	0.023	0.023	568.299	0.020	0.004
0.005	0.024	0.024	568.300	0.020	0.004
0.005	0.043	0.043	568.299	0.022	0.004
0.007	0.116	0.116	568.299	0.075	0.005
0.006	0.105	0.105	568.299	0.036	0.004
0.006	0.065	0.065	568.299	0.026	0.004
0.006	0.040	0.040	568.299	0.023	0.004
0.005	0.038	0.038	568.299	0.023	0.004
0.005	0.038	0.038	568.299	0.023	0.004
0.005	0.056	0.056	568.300	0.023	0.004
0.007	0.043	0.043	568.299	0.047	0.005
0.006	0.038	0.038	568.299	0.024	0.004
0.006	0.025	0.025	568.299	0.017	0.004
0.006	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.017	0.017	568.299	0.016	0.004
0.005	0.032	0.032	568.299	0.017	0.004

Cement and Mortar Mixers	15
Cement and Mortar Mixers	25
Concrete/Industrial Saws	25
Concrete/Industrial Saws	50
Concrete/Industrial Saws	120
Concrete/Industrial Saws	175
Cranes	50
Cranes	120
Cranes	175
Cranes	250
Cranes	500
Cranes	750
Cranes	9999
Crawler Tractors	50
Crawler Tractors	120
Crawler Tractors	175
Crawler Tractors	250
Crawler Tractors	500
Crawler Tractors	750
Crawler Tractors	1000
Crushing/Proc. Equipment	50
Crushing/Proc. Equipment	120
Crushing/Proc. Equipment	175
Crushing/Proc. Equipment	250
Crushing/Proc. Equipment	500
Crushing/Proc. Equipment	750
Crushing/Proc. Equipment	9999

0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.038	0.038	568.299	0.054	0.005
0.006	0.034	0.034	568.299	0.027	0.004
0.006	0.023	0.023	568.299	0.019	0.004
0.006	0.016	0.016	568.299	0.018	0.004
0.005	0.016	0.016	568.299	0.018	0.004
0.005	0.016	0.016	568.299	0.018	0.004
0.007	0.023	0.023	568.299	0.051	0.005
0.006	0.021	0.021	568.299	0.025	0.004
0.006	0.015	0.015	568.299	0.018	0.004
0.006	0.012	0.012	568.299	0.017	0.004
0.005	0.012	0.012	568.299	0.017	0.004
0.008	0.166	0.166	568.299	0.053	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.038	0.038	568.299	0.028	0.005
0.006	0.034	0.034	568.299	0.016	0.004
0.006	0.023	0.023	568.299	0.011	0.004
0.006	0.016	0.016	568.299	0.010	0.004
0.005	0.015	0.015	568.299	0.010	0.004
0.005	0.015	0.015	568.299	0.010	0.004
0.005	0.029	0.029	568.299	0.011	0.004
0.007	0.065	0.065	568.299	0.058	0.005
0.006	0.058	0.058	568.299	0.029	0.004
0.006	0.038	0.038	568.300	0.021	0.004
0.006	0.024	0.024	568.299	0.019	0.004
0.005	0.023	0.023	568.299	0.019	0.004
0.005	0.023	0.023	568.299	0.019	0.004
0.006	0.175	0.175	568.299	0.046	0.004
0.006	0.104	0.104	568.299	0.033	0.004
0.006	0.064	0.064	568.299	0.028	0.004
0.005	0.060	0.060	568.299	0.027	0.004
0.005	0.078	0.078	568.300	0.028	0.004
0.006	0.025	0.025	568.299	0.020	0.004
0.006	0.017	0.017	568.300	0.019	0.004

Dumpers/Tenders	25
Excavators	25
Excavators	50
Excavators	120
Excavators	175
Excavators	250
Excavators	500
Excavators	750
Forklifts	50
Forklifts	120
Forklifts	175
Forklifts	250
Forklifts	500
Generator Sets	15
Generator Sets	25
Generator Sets	50
Generator Sets	120
Generator Sets	175
Generator Sets	250
Generator Sets	500
Generator Sets	750
Generator Sets	9999
Graders	50
Graders	120
Graders	175
Graders	250
Graders	500
Graders	750
Off-Highway Tractors	120
Off-Highway Tractors	175
Off-Highway Tractors	250
Off-Highway Tractors	750
Off-Highway Tractors	1000
Off-Highway Trucks	175
Off-Highway Trucks	250

0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks	500
0.005	0.017	0.017	568.299	0.019	0.004	Off-Highway Trucks	750
0.005	0.033	0.033	568.300	0.019	0.004	Off-Highway Trucks	1000
0.008	0.161	0.161	568.299	0.059	0.005	Other Construction Equipment	15
0.007	0.161	0.161	568.299	0.061	0.005	Other Construction Equipment	25
0.007	0.030	0.030	568.299	0.038	0.005	Other Construction Equipment	50
0.006	0.027	0.027	568.300	0.020	0.004	Other Construction Equipment	120
0.006	0.019	0.019	568.299	0.014	0.004	Other Construction Equipment	175
0.005	0.014	0.014	568.300	0.013	0.004	Other Construction Equipment	500
0.008	0.161	0.161	568.299	0.053	0.005	Other General Industrial Equipment	15
0.007	0.161	0.161	568.299	0.061	0.005	Other General Industrial Equipment	25
0.007	0.048	0.048	568.299	0.054	0.005	Other General Industrial Equipment	50
0.006	0.043	0.043	568.299	0.027	0.004	Other General Industrial Equipment	120
0.006	0.028	0.028	568.299	0.020	0.004	Other General Industrial Equipment	175
0.006	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment	250
0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment	500

0.005	0.018	0.018	568.299	0.018	0.004	Other General Industrial Equipment	750
0.005	0.035	0.035	568.299	0.019	0.004	Other General Industrial Equipment	1000
0.007	0.048	0.048	568.299	0.053	0.005	Other Material Handling Equipment	50
0.006	0.043	0.043	568.299	0.027	0.004	Other Material Handling Equipment	120
0.006	0.028	0.028	568.299	0.019	0.004	Other Material Handling Equipment	175
0.006	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment	250
0.005	0.018	0.018	568.299	0.018	0.004	Other Material Handling Equipment	500
0.005	0.035	0.035	568.299	0.019	0.004	Other Material Handling Equipment	9999
0.007	0.161	0.161	568.299	0.061	0.005	Pavers	25
0.007	0.134	0.134	568.299	0.076	0.005	Pavers	50
0.006	0.121	0.121	568.300	0.036	0.004	Pavers	120
0.006	0.074	0.074	568.299	0.027	0.004	Pavers	175
0.006	0.045	0.045	568.299	0.023	0.004	Pavers	250
0.005	0.043	0.043	568.299	0.022	0.004	Pavers	500
0.007	0.161	0.161	568.299	0.061	0.005	Paving Equipment	25
0.007	0.126	0.126	568.299	0.072	0.005	Paving Equipment	50
0.006	0.114	0.114	568.300	0.035	0.004	Paving Equipment	120
0.006	0.070	0.070	568.299	0.026	0.004	Paving Equipment	175
0.006	0.042	0.042	568.299	0.022	0.004	Paving Equipment	250
0.008	0.161	0.161	568.299	0.059	0.005	Plate Compactors	15
0.008	0.166	0.166	568.300	0.053	0.005	Pressure Washers	15
0.007	0.165	0.165	568.299	0.061	0.005	Pressure Washers	25
0.007	0.030	0.030	568.299	0.019	0.005	Pressure Washers	50
0.006	0.028	0.028	568.300	0.012	0.004	Pressure Washers	120
0.006	0.024	0.024	568.299	0.011	0.004	Pressure Washers	175

0.006	0.009	0.009	568.299	0.008	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.300	0.061	0.005
0.007	0.040	0.040	568.299	0.031	0.005
0.006	0.036	0.036	568.299	0.017	0.004
0.006	0.024	0.024	568.299	0.012	0.004
0.006	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.016	0.016	568.299	0.011	0.004
0.005	0.030	0.030	568.299	0.012	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.073	0.073	568.299	0.053	0.005
0.006	0.066	0.066	568.299	0.027	0.004
0.006	0.042	0.042	568.299	0.020	0.004
0.006	0.024	0.024	568.299	0.017	0.004
0.005	0.023	0.023	568.299	0.017	0.004
0.007	0.039	0.039	568.299	0.049	0.005
0.006	0.034	0.034	568.299	0.025	0.004
0.006	0.023	0.023	568.299	0.018	0.004
0.006	0.016	0.016	568.299	0.017	0.004
0.005	0.016	0.016	568.300	0.017	0.004
0.006	0.111	0.111	568.299	0.035	0.004
0.006	0.069	0.069	568.299	0.030	0.004
0.005	0.064	0.064	568.299	0.029	0.004
0.005	0.064	0.064	568.299	0.029	0.004
0.005	0.082	0.082	568.299	0.030	0.004
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.062	0.062	568.300	0.057	0.005
0.006	0.056	0.056	568.299	0.028	0.004
0.006	0.036	0.036	568.299	0.020	0.004

Pressure Washers	250
Pumps	15
Pumps	25
Pumps	50
Pumps	120
Pumps	175
Pumps	250
Pumps	500
Pumps	750
Pumps	9999
Rollers	15
Rollers	25
Rollers	50
Rollers	120
Rollers	175
Rollers	250
Rollers	500
Rough Terrain Forklifts	50
Rough Terrain Forklifts	120
Rough Terrain Forklifts	175
Rough Terrain Forklifts	250
Rough Terrain Forklifts	500
Rubber Tired Dozers	175
Rubber Tired Dozers	250
Rubber Tired Dozers	500
Rubber Tired Dozers	750
Rubber Tired Dozers	1000
Rubber Tired Loaders	25
Rubber Tired Loaders	50
Rubber Tired Loaders	120
Rubber Tired Loaders	175

0.006	0.022	0.022	568.299	0.018	0.004
0.005	0.021	0.021	568.299	0.018	0.004
0.005	0.022	0.022	568.299	0.018	0.004
0.005	0.039	0.039	568.299	0.019	0.004
0.006	0.111	0.111	568.299	0.037	0.004
0.006	0.068	0.068	568.299	0.027	0.004
0.006	0.042	0.042	568.299	0.023	0.004
0.005	0.040	0.040	568.299	0.023	0.004
0.005	0.040	0.040	568.299	0.023	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.040	0.040	568.299	0.035	0.005
0.006	0.035	0.035	568.300	0.019	0.004
0.006	0.024	0.024	568.299	0.014	0.004
0.007	0.019	0.019	686.695	0.015	0.004
0.007	0.162	0.162	568.299	0.061	0.005
0.007	0.018	0.018	568.299	0.037	0.005
0.006	0.017	0.017	568.299	0.019	0.004
0.007	0.075	0.075	568.299	0.046	0.005
0.006	0.068	0.068	568.299	0.023	0.004
0.006	0.043	0.043	568.299	0.017	0.004
0.006	0.026	0.026	568.299	0.015	0.004
0.005	0.025	0.025	568.299	0.015	0.004
0.005	0.025	0.025	568.299	0.015	0.004
0.008	0.161	0.161	568.299	0.053	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.026	0.026	568.299	0.046	0.005
0.006	0.023	0.023	568.299	0.023	0.004
0.006	0.017	0.017	568.299	0.016	0.004
0.006	0.013	0.013	568.299	0.016	0.004
0.007	0.161	0.161	568.299	0.061	0.005

Rubber Tired Loaders	250
Rubber Tired Loaders	500
Rubber Tired Loaders	750
Rubber Tired Loaders	1000
Scrapers	120
Scrapers	175
Scrapers	250
Scrapers	500
Scrapers	750
Signal Boards	15
Signal Boards	50
Signal Boards	120
Signal Boards	175
Signal Boards	250
Skid Steer Loaders	25
Skid Steer Loaders	50
Skid Steer Loaders	120
Surfacing Equipment	50
Surfacing Equipment	120
Surfacing Equipment	175
Surfacing Equipment	250
Surfacing Equipment	500
Surfacing Equipment	750
Sweepers/Scrubbers	15
Sweepers/Scrubbers	25
Sweepers/Scrubbers	50
Sweepers/Scrubbers	120
Sweepers/Scrubbers	175
Sweepers/Scrubbers	250
Tractors/Loaders/Backhoes	25

0.007	0.033	0.033	568.299	0.048	0.005
0.006	0.030	0.030	568.299	0.024	0.004
0.006	0.020	0.020	568.299	0.017	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.006	0.014	0.014	568.299	0.016	0.004
0.008	0.161	0.161	568.299	0.059	0.005
0.007	0.161	0.161	568.299	0.061	0.005
0.007	0.144	0.144	568.299	0.076	0.005
0.006	0.132	0.132	568.299	0.036	0.004
0.006	0.080	0.080	568.300	0.027	0.004
0.006	0.049	0.049	568.300	0.023	0.004
0.005	0.046	0.046	568.299	0.022	0.004
0.005	0.047	0.047	568.299	0.022	0.004
0.008	0.166	0.166	568.299	0.059	0.005
0.007	0.165	0.165	568.299	0.061	0.005
0.007	0.045	0.045	568.299	0.040	0.005
0.006	0.040	0.040	568.299	0.021	0.004
0.006	0.027	0.027	568.299	0.015	0.004
0.006	0.017	0.017	568.299	0.014	0.004
0.005	0.017	0.017	568.299	0.014	0.004
0.006	0.025	0.025	568.299	0.020	0.004
0.006	0.017	0.017	568.300	0.019	0.004
0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.017	0.017	568.299	0.019	0.004
0.005	0.033	0.033	568.300	0.019	0.004

Tractors/Loaders/Backhoes	50
Tractors/Loaders/Backhoes	120
Tractors/Loaders/Backhoes	175
Tractors/Loaders/Backhoes	250
Tractors/Loaders/Backhoes	500
Tractors/Loaders/Backhoes	750
Trenchers	15
Trenchers	25
Trenchers	50
Trenchers	120
Trenchers	175
Trenchers	250
Trenchers	500
Trenchers	750
Welders	15
Welders	25
Welders	50
Welders	120
Welders	175
Welders	250
Welders	500
Water Trucks	175
Water Trucks	250
Water Trucks	500
Water Trucks	750
Water Trucks	1000

2035

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
0.339	3.764	3.135	0.007	0.040	0.040	568.300	0.030	0.005
0.188	3.352	1.657	0.006	0.036	0.036	568.299	0.017	0.004
0.126	0.986	0.479	0.005	0.016	0.016	568.299	0.011	0.004
0.126	0.986	0.485	0.005	0.016	0.016	568.299	0.011	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.506	4.712	3.340	0.007	0.046	0.046	568.299	0.045	0.005
0.264	3.630	1.729	0.006	0.041	0.041	568.299	0.023	0.004
0.193	3.205	0.633	0.006	0.027	0.027	568.299	0.017	0.004
0.179	1.092	0.529	0.006	0.018	0.018	568.299	0.016	0.004
0.178	1.048	0.499	0.005	0.017	0.017	568.299	0.016	0.004
0.178	1.048	0.505	0.005	0.017	0.017	568.300	0.016	0.004
0.182	1.049	2.600	0.005	0.033	0.033	568.299	0.016	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.348	4.029	3.020	0.007	0.013	0.013	568.299	0.031	0.005
0.183	3.434	1.415	0.006	0.012	0.012	568.299	0.016	0.004
0.127	3.038	0.279	0.006	0.010	0.010	568.299	0.011	0.004
0.127	1.035	0.274	0.006	0.010	0.010	568.299	0.011	0.004
0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
0.127	1.006	0.274	0.005	0.010	0.010	568.299	0.011	0.004
0.127	1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.333	0.007	0.162	0.162	568.299	0.061	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.409	4.199	3.222	0.007	0.041	0.041	568.299	0.036	0.005
0.221	3.480	1.667	0.006	0.036	0.036	568.299	0.019	0.004
0.163	3.074	0.590	0.006	0.025	0.025	568.299	0.014	0.004
0.684	5.366	3.598	0.007	0.075	0.075	568.299	0.061	0.005
0.343	3.812	1.987	0.006	0.067	0.067	568.299	0.030	0.004
0.253	3.356	0.916	0.006	0.042	0.042	568.299	0.022	0.004
0.224	1.147	0.748	0.006	0.024	0.024	568.299	0.020	0.004
0.222	1.090	0.697	0.005	0.023	0.023	568.299	0.020	0.004
0.222	1.090	0.709	0.005	0.024	0.024	568.300	0.020	0.004
0.245	1.108	2.800	0.005	0.043	0.043	568.299	0.022	0.004
0.833	5.605	3.808	0.007	0.116	0.116	568.299	0.075	0.005
0.405	3.871	2.341	0.006	0.105	0.105	568.299	0.036	0.004
0.296	3.397	1.266	0.006	0.065	0.065	568.299	0.026	0.004
0.262	1.207	1.104	0.006	0.040	0.040	568.299	0.023	0.004
0.257	1.200	1.016	0.005	0.038	0.038	568.299	0.023	0.004
0.257	1.200	1.033	0.005	0.038	0.038	568.299	0.023	0.004
0.265	1.225	3.094	0.005	0.056	0.056	568.300	0.023	0.004
0.525	4.857	3.351	0.007	0.043	0.043	568.299	0.047	0.005
0.272	3.673	1.708	0.006	0.038	0.038	568.299	0.024	0.004
0.197	3.244	0.600	0.006	0.025	0.025	568.299	0.017	0.004
0.185	1.105	0.502	0.006	0.017	0.017	568.299	0.016	0.004
0.184	1.058	0.476	0.005	0.017	0.017	568.299	0.016	0.004
0.184	1.058	0.478	0.005	0.017	0.017	568.299	0.016	0.004
0.196	1.059	2.590	0.005	0.032	0.032	568.299	0.017	0.004

0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.602	5.309	3.393	0.007	0.038	0.038	568.299	0.054	0.005
0.301	3.806	1.676	0.006	0.034	0.034	568.299	0.027	0.004
0.213	3.362	0.525	0.006	0.023	0.023	568.299	0.019	0.004
0.203	1.145	0.452	0.006	0.016	0.016	568.299	0.018	0.004
0.202	1.088	0.433	0.005	0.016	0.016	568.299	0.018	0.004
0.202	1.088	0.437	0.005	0.016	0.016	568.299	0.018	0.004
0.565	5.272	3.330	0.007	0.023	0.023	568.299	0.051	0.005
0.283	3.799	1.555	0.006	0.021	0.021	568.299	0.025	0.004
0.199	3.360	0.391	0.006	0.015	0.015	568.299	0.018	0.004
0.195	1.144	0.341	0.006	0.012	0.012	568.299	0.017	0.004
0.195	1.088	0.341	0.005	0.012	0.012	568.299	0.017	0.004
0.592	3.470	4.164	0.008	0.166	0.166	568.299	0.053	0.005
0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.315	3.640	3.107	0.007	0.038	0.038	568.299	0.028	0.005
0.178	3.316	1.645	0.006	0.034	0.034	568.299	0.016	0.004
0.130	2.929	0.601	0.006	0.023	0.023	568.299	0.011	0.004
0.120	0.998	0.504	0.006	0.016	0.016	568.299	0.010	0.004
0.119	0.978	0.476	0.005	0.015	0.015	568.299	0.010	0.004
0.119	0.978	0.482	0.005	0.015	0.015	568.299	0.010	0.004
0.128	0.979	2.483	0.005	0.029	0.029	568.299	0.011	0.004
0.648	5.239	3.530	0.007	0.065	0.065	568.299	0.058	0.005
0.323	3.775	1.903	0.006	0.058	0.058	568.299	0.029	0.004
0.237	3.326	0.815	0.006	0.038	0.038	568.300	0.021	0.004
0.216	1.148	0.684	0.006	0.024	0.024	568.299	0.019	0.004
0.214	1.097	0.647	0.005	0.023	0.023	568.299	0.019	0.004
0.214	1.097	0.654	0.005	0.023	0.023	568.299	0.019	0.004
0.518	3.944	2.959	0.006	0.175	0.175	568.299	0.046	0.004
0.373	3.435	1.916	0.006	0.104	0.104	568.299	0.033	0.004
0.315	1.286	1.715	0.006	0.064	0.064	568.299	0.028	0.004
0.304	1.351	1.590	0.005	0.060	0.060	568.299	0.027	0.004
0.318	1.409	3.569	0.005	0.078	0.078	568.300	0.028	0.004
0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004

0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.429	4.390	3.190	0.007	0.030	0.030	568.299	0.038	0.005
0.225	3.538	1.576	0.006	0.027	0.027	568.300	0.020	0.004
0.161	3.127	0.459	0.006	0.019	0.019	568.299	0.014	0.004
0.154	1.028	0.391	0.005	0.014	0.014	568.300	0.013	0.004
0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.609	5.299	3.460	0.007	0.048	0.048	568.299	0.054	0.005
0.309	3.802	1.766	0.006	0.043	0.043	568.299	0.027	0.004
0.223	3.357	0.641	0.006	0.028	0.028	568.299	0.020	0.004
0.209	1.143	0.536	0.006	0.018	0.018	568.299	0.018	0.004
0.208	1.087	0.506	0.005	0.018	0.018	568.299	0.018	0.004

0.208	1.087	0.512	0.005	0.018	0.018	568.299	0.018	0.004
0.212	1.088	2.660	0.005	0.035	0.035	568.299	0.019	0.004
0.598	5.237	3.447	0.007	0.048	0.048	568.299	0.053	0.005
0.304	3.784	1.762	0.006	0.043	0.043	568.299	0.027	0.004
0.220	3.341	0.640	0.006	0.028	0.028	568.299	0.019	0.004
0.206	1.138	0.535	0.006	0.018	0.018	568.299	0.018	0.004
0.205	1.083	0.505	0.005	0.018	0.018	568.299	0.018	0.004
0.218	1.084	2.653	0.005	0.035	0.035	568.299	0.019	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.845	5.396	3.841	0.007	0.134	0.134	568.299	0.076	0.005
0.408	3.800	2.468	0.006	0.121	0.121	568.300	0.036	0.004
0.300	3.326	1.425	0.006	0.074	0.074	568.299	0.027	0.004
0.259	1.192	1.246	0.006	0.045	0.045	568.299	0.023	0.004
0.253	1.181	1.141	0.005	0.043	0.043	568.299	0.022	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.802	5.309	3.809	0.007	0.126	0.126	568.299	0.072	0.005
0.390	3.774	2.393	0.006	0.114	0.114	568.300	0.035	0.004
0.290	3.306	1.363	0.006	0.070	0.070	568.299	0.026	0.004
0.250	1.171	1.176	0.006	0.042	0.042	568.299	0.022	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.592	3.470	4.164	0.008	0.166	0.166	568.300	0.053	0.005
0.686	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.215	3.124	2.989	0.007	0.030	0.030	568.299	0.019	0.005
0.134	3.167	1.594	0.006	0.028	0.028	568.300	0.012	0.004
0.126	2.907	0.619	0.006	0.024	0.024	568.299	0.011	0.004

0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.300	0.061	0.005
0.348	3.814	3.146	0.007	0.040	0.040	568.299	0.031	0.005
0.193	3.367	1.662	0.006	0.036	0.036	568.299	0.017	0.004
0.142	2.973	0.610	0.006	0.024	0.024	568.299	0.012	0.004
0.130	1.013	0.511	0.006	0.016	0.016	568.299	0.011	0.004
0.129	0.989	0.482	0.005	0.016	0.016	568.299	0.011	0.004
0.129	0.989	0.488	0.005	0.016	0.016	568.299	0.011	0.004
0.139	0.990	2.504	0.005	0.030	0.030	568.299	0.012	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.587	4.784	3.480	0.007	0.073	0.073	568.299	0.053	0.005
0.299	3.639	1.950	0.006	0.066	0.066	568.299	0.027	0.004
0.223	3.203	0.907	0.006	0.042	0.042	568.299	0.020	0.004
0.195	1.099	0.745	0.006	0.024	0.024	568.299	0.017	0.004
0.193	1.056	0.697	0.005	0.023	0.023	568.299	0.017	0.004
0.548	5.031	3.359	0.007	0.039	0.039	568.299	0.049	0.005
0.279	3.725	1.671	0.006	0.034	0.034	568.299	0.025	0.004
0.200	3.291	0.537	0.006	0.023	0.023	568.299	0.018	0.004
0.191	1.121	0.463	0.006	0.016	0.016	568.299	0.017	0.004
0.190	1.070	0.443	0.005	0.016	0.016	568.300	0.017	0.004
0.398	3.496	2.034	0.006	0.111	0.111	568.299	0.035	0.004
0.335	1.322	1.828	0.006	0.069	0.069	568.299	0.030	0.004
0.322	1.401	1.658	0.005	0.064	0.064	568.299	0.029	0.004
0.323	1.401	1.694	0.005	0.064	0.064	568.299	0.029	0.004
0.338	1.465	3.676	0.005	0.082	0.082	568.299	0.030	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.634	5.181	3.500	0.007	0.062	0.062	568.300	0.057	0.005
0.317	3.759	1.875	0.006	0.056	0.056	568.299	0.028	0.004
0.232	3.312	0.787	0.006	0.036	0.036	568.299	0.020	0.004

0.210	1.138	0.655	0.006	0.022	0.022	568.299	0.018	0.004
0.208	1.085	0.619	0.005	0.021	0.021	568.299	0.018	0.004
0.208	1.085	0.627	0.005	0.022	0.022	568.299	0.018	0.004
0.214	1.099	2.722	0.005	0.039	0.039	568.299	0.019	0.004
0.410	3.866	2.384	0.006	0.111	0.111	568.299	0.037	0.004
0.301	3.389	1.320	0.006	0.068	0.068	568.299	0.027	0.004
0.264	1.206	1.149	0.006	0.042	0.042	568.299	0.023	0.004
0.259	1.184	1.057	0.005	0.040	0.040	568.299	0.023	0.004
0.259	1.184	1.075	0.005	0.040	0.040	568.299	0.023	0.004
0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.393	4.099	3.193	0.007	0.040	0.040	568.299	0.035	0.005
0.213	3.451	1.657	0.006	0.035	0.035	568.300	0.019	0.004
0.157	3.048	0.586	0.006	0.024	0.024	568.299	0.014	0.004
0.176	1.255	0.594	0.007	0.019	0.019	686.695	0.015	0.004
0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
0.411	4.386	3.128	0.007	0.018	0.018	568.299	0.037	0.005
0.214	3.538	1.477	0.006	0.017	0.017	568.299	0.019	0.004
0.518	4.295	3.400	0.007	0.075	0.075	568.299	0.046	0.005
0.264	3.492	1.959	0.006	0.068	0.068	568.299	0.023	0.004
0.197	3.071	0.939	0.006	0.043	0.043	568.299	0.017	0.004
0.172	1.064	0.789	0.006	0.026	0.026	568.299	0.015	0.004
0.169	1.032	0.738	0.005	0.025	0.025	568.299	0.015	0.004
0.169	1.032	0.749	0.005	0.025	0.025	568.299	0.015	0.004
0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
0.685	2.340	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.509	4.947	3.294	0.007	0.026	0.026	568.299	0.046	0.005
0.261	3.703	1.569	0.006	0.023	0.023	568.299	0.023	0.004
0.187	3.275	0.431	0.006	0.017	0.017	568.299	0.016	0.004
0.182	1.116	0.370	0.006	0.013	0.013	568.299	0.016	0.004
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

0.539	4.966	3.299	0.007	0.033	0.033	568.299	0.048	0.005
0.272	3.705	1.624	0.006	0.030	0.030	568.299	0.024	0.004
0.193	3.273	0.485	0.006	0.020	0.020	568.299	0.017	0.004
0.183	1.115	0.418	0.006	0.014	0.014	568.299	0.016	0.004
0.182	1.066	0.403	0.006	0.014	0.014	568.299	0.016	0.004
0.182	1.066	0.407	0.006	0.014	0.014	568.299	0.016	0.004
0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
0.851	5.208	3.835	0.007	0.144	0.144	568.299	0.076	0.005
0.409	3.743	2.559	0.006	0.132	0.132	568.299	0.036	0.004
0.300	3.273	1.529	0.006	0.080	0.080	568.300	0.027	0.004
0.256	1.188	1.348	0.006	0.049	0.049	568.300	0.023	0.004
0.249	1.209	1.231	0.005	0.046	0.046	568.299	0.022	0.004
0.249	1.209	1.254	0.005	0.047	0.047	568.299	0.022	0.004
0.663	3.470	4.164	0.008	0.166	0.166	568.299	0.059	0.005
0.687	2.340	4.347	0.007	0.165	0.165	568.299	0.061	0.005
0.449	4.387	3.273	0.007	0.045	0.045	568.299	0.040	0.005
0.239	3.535	1.707	0.006	0.040	0.040	568.299	0.021	0.004
0.176	3.121	0.628	0.006	0.027	0.027	568.299	0.015	0.004
0.162	1.063	0.525	0.006	0.017	0.017	568.299	0.014	0.004
0.161	1.027	0.495	0.005	0.017	0.017	568.299	0.014	0.004
0.229	3.425	0.563	0.006	0.025	0.025	568.299	0.020	0.004
0.217	1.166	0.481	0.006	0.017	0.017	568.300	0.019	0.004
0.216	1.104	0.458	0.005	0.017	0.017	568.299	0.019	0.004
0.217	1.104	0.463	0.005	0.017	0.017	568.299	0.019	0.004
0.220	1.107	2.651	0.005	0.033	0.033	568.300	0.019	0.004

2035		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019	0.019	568.299
Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017	0.017	568.299
Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011	0.011	568.299
Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011	0.011	568.299
Air Compressors	15	0.661	3.469	4.143	0.008	0.162	0.162	568.300
Air Compressors	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299
Air Compressors	50	0.463	4.674	3.215	0.007	0.023	0.023	568.299
Air Compressors	120	0.238	3.623	1.530	0.006	0.020	0.020	568.299
Air Compressors	175	0.170	3.205	0.391	0.006	0.015	0.015	568.300
Air Compressors	250	0.166	1.091	0.347	0.006	0.012	0.012	568.299
Air Compressors	500	0.166	1.048	0.343	0.005	0.012	0.012	568.299
Air Compressors	750	0.166	1.048	0.344	0.005	0.012	0.012	568.299
Air Compressors	1000	0.167	1.048	2.473	0.005	0.026	0.026	568.299
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013	0.013	568.299
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012	0.012	568.300
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010	0.010	568.299
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010	0.010	568.299
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010	0.010	568.299
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010	0.010	568.299
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021	0.021	568.299

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021	0.021	568.300
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018	0.018	568.299
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014	0.014	568.299
Cranes	50	0.600	5.292	3.401	0.007	0.039	0.039	568.299
Cranes	120	0.300	3.801	1.676	0.006	0.036	0.036	568.300
Cranes	175	0.212	3.357	0.519	0.006	0.024	0.024	568.299
Cranes	250	0.203	1.143	0.463	0.006	0.016	0.016	568.299
Cranes	500	0.202	1.087	0.441	0.005	0.016	0.016	568.299
Cranes	750	0.202	1.087	0.446	0.005	0.016	0.016	568.299
Cranes	9999	0.209	1.089	2.618	0.005	0.031	0.031	568.299
Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066	0.066	568.299
Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060	0.060	568.299
Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038	0.038	568.299
Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026	0.026	568.299
Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025	0.025	568.299
Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025	0.025	568.299
Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041	0.041	568.299
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023	0.023	568.299
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020	0.020	568.299
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015	0.015	568.299
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012	0.012	568.300
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012	0.012	568.299
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012	0.012	568.299
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026	0.026	568.299

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Excavators	50	0.572	5.287	3.323	0.007	0.024	0.024	568.299
Excavators	120	0.284	3.802	1.551	0.006	0.021	0.021	568.299
Excavators	175	0.197	3.363	0.365	0.006	0.015	0.015	568.299
Excavators	250	0.195	1.145	0.342	0.006	0.013	0.013	568.300
Excavators	500	0.195	1.089	0.337	0.005	0.013	0.013	568.299
Excavators	750	0.195	1.088	0.338	0.005	0.013	0.013	568.299
Forklifts	50	0.558	5.234	3.268	0.007	0.017	0.017	568.299
Forklifts	120	0.275	3.787	1.495	0.006	0.016	0.016	568.299
Forklifts	175	0.189	3.350	0.299	0.006	0.012	0.012	568.300
Forklifts	250	0.188	1.141	0.290	0.006	0.011	0.011	568.300
Forklifts	500	0.188	1.085	0.290	0.005	0.011	0.011	568.299
Generator Sets	15	0.589	3.470	4.143	0.008	0.162	0.162	568.299
Generator Sets	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Generator Sets	50	0.276	3.607	2.991	0.007	0.018	0.018	568.299
Generator Sets	120	0.156	3.310	1.458	0.006	0.016	0.016	568.299
Generator Sets	175	0.113	2.929	0.373	0.006	0.013	0.013	568.299
Generator Sets	250	0.110	0.998	0.331	0.006	0.011	0.011	568.299
Generator Sets	500	0.110	0.978	0.328	0.005	0.011	0.011	568.299
Generator Sets	750	0.110	0.978	0.328	0.005	0.011	0.011	568.299
Generator Sets	9999	0.114	0.978	2.362	0.005	0.022	0.022	568.299
Graders	50	0.593	5.189	3.356	0.007	0.037	0.037	568.299
Graders	120	0.293	3.767	1.661	0.006	0.034	0.034	568.299
Graders	175	0.206	3.326	0.506	0.006	0.022	0.022	568.300
Graders	250	0.196	1.137	0.452	0.006	0.016	0.016	568.299
Graders	500	0.195	1.083	0.434	0.005	0.016	0.016	568.299
Graders	750	0.195	1.083	0.438	0.005	0.016	0.016	568.299
Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107	0.107	568.299
Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065	0.065	568.299
Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042	0.042	568.299
Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040	0.040	568.299
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056	0.056	568.299
Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299
Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299

Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018	0.018	568.299
Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017	0.017	568.299
Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013	0.013	568.299
Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011	0.011	568.299
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161	568.299
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025	0.025	568.299
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022	0.022	568.300
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016	0.016	568.300
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013	0.013	568.299
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013	0.013	568.299

Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013	0.013	568.299
Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028	0.028	568.299
Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025	0.025	568.299
Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022	0.022	568.299
Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016	0.016	568.299
Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013	0.013	568.299
Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013	0.013	568.299
Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027	0.027	568.299
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Pavers	50	0.694	5.260	3.555	0.007	0.076	0.076	568.299
Pavers	120	0.338	3.774	1.986	0.006	0.069	0.069	568.299
Pavers	175	0.244	3.319	0.889	0.006	0.043	0.043	568.299
Pavers	250	0.221	1.157	0.772	0.006	0.027	0.027	568.300
Pavers	500	0.218	1.111	0.722	0.005	0.026	0.026	568.299
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Paving Equipment	50	0.664	5.181	3.511	0.007	0.070	0.070	568.300
Paving Equipment	120	0.326	3.753	1.928	0.006	0.064	0.064	568.299
Paving Equipment	175	0.235	3.303	0.832	0.006	0.040	0.040	568.299
Paving Equipment	250	0.212	1.140	0.714	0.006	0.024	0.024	568.299
Plate Compactors	15	0.661	3.470	4.142	0.008	0.161	0.161	568.299
Pressure Washers	15	0.589	3.470	4.143	0.008	0.162	0.162	568.300
Pressure Washers	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Pressure Washers	50	0.188	3.101	2.882	0.007	0.015	0.015	568.299
Pressure Washers	120	0.116	3.161	1.421	0.006	0.014	0.014	568.299
Pressure Washers	175	0.109	2.907	0.382	0.006	0.013	0.013	568.299

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299
Pumps	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299
Pumps	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299
Pumps	50	0.306	3.778	3.028	0.007	0.019	0.019	568.299
Pumps	120	0.170	3.360	1.470	0.006	0.017	0.017	568.299
Pumps	175	0.123	2.973	0.377	0.006	0.014	0.014	568.299
Pumps	250	0.119	1.012	0.335	0.006	0.011	0.011	568.299
Pumps	500	0.119	0.989	0.331	0.005	0.011	0.011	568.299
Pumps	750	0.119	0.989	0.331	0.005	0.011	0.011	568.299
Pumps	9999	0.124	0.989	2.380	0.005	0.023	0.023	568.299
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Rollers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300
Rollers	50	0.507	4.711	3.280	0.007	0.038	0.038	568.299
Rollers	120	0.258	3.629	1.650	0.006	0.035	0.035	568.299
Rollers	175	0.184	3.204	0.523	0.006	0.023	0.023	568.299
Rollers	250	0.173	1.091	0.465	0.006	0.016	0.016	568.299
Rollers	500	0.172	1.048	0.442	0.005	0.016	0.016	568.300
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022	0.022	568.299
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020	0.020	568.299
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015	0.015	568.299
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012	0.012	568.299
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012	0.012	568.300
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071	0.071	568.299
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046	0.046	568.299
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043	0.043	568.300
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043	0.043	568.299
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060	0.060	568.299
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035	0.035	568.299
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033	0.033	568.299
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022	0.022	568.299

Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015	0.015	568.299
Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015	0.015	568.299
Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015	0.015	568.299
Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030	0.030	568.299
Scrapers	120	0.348	3.842	1.943	0.006	0.064	0.064	568.299
Scrapers	175	0.250	3.382	0.824	0.006	0.040	0.040	568.299
Scrapers	250	0.229	1.175	0.717	0.006	0.026	0.026	568.299
Scrapers	500	0.226	1.123	0.674	0.005	0.025	0.025	568.300
Scrapers	750	0.226	1.123	0.682	0.005	0.025	0.025	568.299
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Signal Boards	50	0.356	4.067	3.082	0.007	0.020	0.020	568.299
Signal Boards	120	0.192	3.445	1.482	0.006	0.018	0.018	568.299
Signal Boards	175	0.138	3.048	0.372	0.006	0.014	0.014	568.299
Signal Boards	250	0.162	1.254	0.401	0.007	0.014	0.014	686.695
Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015	0.015	568.299
Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014	0.014	568.299
Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041	0.041	568.299
Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038	0.038	568.299
Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025	0.025	568.299
Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016	0.016	568.299
Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016	0.016	568.299
Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016	0.016	568.300
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161	568.299
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300
Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017	0.017	568.299
Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016	0.016	568.299
Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012	0.012	568.299
Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011	0.011	568.299
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022	0.022	568.299
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020	0.020	568.299
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015	0.015	568.299
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012	0.012	568.299
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012	0.012	568.299
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012	0.012	568.299
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299
Trenchers	50	0.681	5.055	3.548	0.007	0.084	0.084	568.299
Trenchers	120	0.332	3.713	2.049	0.006	0.076	0.076	568.300
Trenchers	175	0.241	3.264	0.966	0.006	0.048	0.048	568.299
Trenchers	250	0.216	1.149	0.847	0.006	0.031	0.031	568.299
Trenchers	500	0.213	1.126	0.790	0.005	0.029	0.029	568.299
Trenchers	750	0.213	1.126	0.801	0.005	0.029	0.029	568.300
Welders	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299
Welders	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299
Welders	50	0.406	4.349	3.147	0.007	0.022	0.022	568.299
Welders	120	0.214	3.528	1.509	0.006	0.019	0.019	568.299
Welders	175	0.153	3.121	0.387	0.006	0.015	0.015	568.299
Welders	250	0.149	1.063	0.343	0.006	0.012	0.012	568.299
Welders	500	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Water Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299
Water Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299
Water Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Water Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299
Water Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299

2036

g/hp/hr	g/hp/hr
CH4	N2O
0.059	0.005
0.061	0.005
0.026	0.005
0.014	0.004
0.010	0.004
0.010	0.004
0.059	0.005
0.061	0.005
0.041	0.005
0.021	0.004
0.015	0.004
0.014	0.004
0.014	0.004
0.014	0.004
0.015	0.004
0.059	0.005
0.061	0.005
0.031	0.005
0.016	0.004
0.011	0.004
0.011	0.004
0.011	0.004
0.011	0.004
0.011	0.004

2036		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX
Aerial Lifts	15	0.661	3.469	4.142	0.008
Aerial Lifts	25	0.685	2.339	4.332	0.007
Aerial Lifts	50	0.297	3.726	3.017	0.007
Aerial Lifts	120	0.166	3.345	1.466	0.006
Aerial Lifts	500	0.116	0.986	0.330	0.005
Aerial Lifts	750	0.116	0.986	0.330	0.005
Air Compressors	15	0.661	3.469	4.143	0.008
Air Compressors	25	0.685	2.339	4.332	0.007
Air Compressors	50	0.463	4.674	3.215	0.007
Air Compressors	120	0.238	3.623	1.530	0.006
Air Compressors	175	0.170	3.205	0.391	0.006
Air Compressors	250	0.166	1.091	0.347	0.006
Air Compressors	500	0.166	1.048	0.343	0.005
Air Compressors	750	0.166	1.048	0.344	0.005
Air Compressors	1000	0.167	1.048	2.473	0.005
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005

0.059	0.005
0.061	0.005
0.061	0.005
0.033	0.005
0.018	0.004
0.012	0.004
0.054	0.005
0.027	0.004
0.019	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.063	0.005
0.031	0.004
0.022	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.020	0.004
0.044	0.005
0.022	0.004
0.015	0.004
0.015	0.004
0.015	0.004
0.015	0.004
0.016	0.004

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006
Cranes	50	0.600	5.292	3.401	0.007
Cranes	120	0.300	3.801	1.676	0.006
Cranes	175	0.212	3.357	0.519	0.006
Cranes	250	0.203	1.143	0.463	0.006
Cranes	500	0.202	1.087	0.441	0.005
Cranes	750	0.202	1.087	0.446	0.005
Cranes	9999	0.209	1.089	2.618	0.005
Crawler Tractors	50	0.708	5.493	3.558	0.007
Crawler Tractors	120	0.345	3.850	1.922	0.006
Crawler Tractors	175	0.247	3.391	0.794	0.006
Crawler Tractors	250	0.229	1.182	0.695	0.006
Crawler Tractors	500	0.227	1.145	0.657	0.005
Crawler Tractors	750	0.227	1.145	0.664	0.005
Crawler Tractors	1000	0.231	1.159	2.792	0.005
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005

0.061	0.005
0.061	0.005
0.051	0.005
0.025	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.050	0.005
0.024	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.053	0.005
0.061	0.005
0.024	0.005
0.014	0.004
0.010	0.004
0.009	0.004
0.009	0.004
0.009	0.004
0.010	0.004
0.053	0.005
0.026	0.004
0.018	0.004
0.017	0.004
0.017	0.004
0.017	0.004
0.037	0.004
0.027	0.004
0.024	0.004
0.023	0.004
0.024	0.004
0.019	0.004
0.018	0.004

Dumpers/Tenders	25	0.685	2.339	4.332	0.007
Excavators	25	0.685	2.339	4.332	0.007
Excavators	50	0.572	5.287	3.323	0.007
Excavators	120	0.284	3.802	1.551	0.006
Excavators	175	0.197	3.363	0.365	0.006
Excavators	250	0.195	1.145	0.342	0.006
Excavators	500	0.195	1.089	0.337	0.005
Excavators	750	0.195	1.088	0.338	0.005
Forklifts	50	0.558	5.234	3.268	0.007
Forklifts	120	0.275	3.787	1.495	0.006
Forklifts	175	0.189	3.350	0.299	0.006
Forklifts	250	0.188	1.141	0.290	0.006
Forklifts	500	0.188	1.085	0.290	0.005
Generator Sets	15	0.589	3.470	4.143	0.008
Generator Sets	25	0.685	2.340	4.332	0.007
Generator Sets	50	0.276	3.607	2.991	0.007
Generator Sets	120	0.156	3.310	1.458	0.006
Generator Sets	175	0.113	2.929	0.373	0.006
Generator Sets	250	0.110	0.998	0.331	0.006
Generator Sets	500	0.110	0.978	0.328	0.005
Generator Sets	750	0.110	0.978	0.328	0.005
Generator Sets	9999	0.114	0.978	2.362	0.005
Graders	50	0.593	5.189	3.356	0.007
Graders	120	0.293	3.767	1.661	0.006
Graders	175	0.206	3.326	0.506	0.006
Graders	250	0.196	1.137	0.452	0.006
Graders	500	0.195	1.083	0.434	0.005
Graders	750	0.195	1.083	0.438	0.005
Off-Highway Tractors	120	0.418	3.902	2.350	0.006
Off-Highway Tractors	175	0.301	3.421	1.252	0.006
Off-Highway Tractors	250	0.268	1.232	1.115	0.006
Off-Highway Tractors	750	0.262	1.238	1.045	0.005
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005
Off-Highway Trucks	175	0.211	3.425	0.380	0.006
Off-Highway Trucks	250	0.208	1.167	0.353	0.006

0.018	0.004
0.018	0.004
0.018	0.004
0.059	0.005
0.061	0.005
0.037	0.005
0.019	0.004
0.013	0.004
0.013	0.004
0.053	0.005
0.061	0.005
0.050	0.005
0.025	0.004
0.018	0.004
0.017	0.004
0.017	0.004

Off-Highway Trucks	500	0.208	1.105	0.348	0.005
Off-Highway Trucks	750	0.208	1.105	0.348	0.005
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005
Other Construction Equipment	15	0.661	3.469	4.142	0.008
Other Construction Equipment	25	0.685	2.339	4.332	0.007
Other Construction Equipment	50	0.410	4.377	3.124	0.007
Other Construction Equipment	120	0.213	3.536	1.474	0.006
Other Construction Equipment	175	0.150	3.128	0.334	0.006
Other Construction Equipment	500	0.147	1.029	0.311	0.005
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005

0.017	0.004	Other General Industrial Equipment	750	0.195	1.087	0.351	0.005
0.017	0.004	Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005
0.049	0.005	Other Material Handling Equipment	50	0.552	5.189	3.321	0.007
0.025	0.004	Other Material Handling Equipment	120	0.277	3.774	1.563	0.006
0.017	0.004	Other Material Handling Equipment	175	0.196	3.338	0.398	0.006
0.017	0.004	Other Material Handling Equipment	250	0.192	1.137	0.354	0.006
0.017	0.004	Other Material Handling Equipment	500	0.192	1.082	0.350	0.005
0.017	0.004	Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005
0.061	0.005	Pavers	25	0.685	2.339	4.332	0.007
0.062	0.005	Pavers	50	0.694	5.260	3.555	0.007
0.030	0.004	Pavers	120	0.338	3.774	1.986	0.006
0.022	0.004	Pavers	175	0.244	3.319	0.889	0.006
0.019	0.004	Pavers	250	0.221	1.157	0.772	0.006
0.019	0.004	Pavers	500	0.218	1.111	0.722	0.005
0.061	0.005	Paving Equipment	25	0.685	2.339	4.332	0.007
0.059	0.005	Paving Equipment	50	0.664	5.181	3.511	0.007
0.029	0.004	Paving Equipment	120	0.326	3.753	1.928	0.006
0.021	0.004	Paving Equipment	175	0.235	3.303	0.832	0.006
0.019	0.004	Paving Equipment	250	0.212	1.140	0.714	0.006
0.059	0.005	Plate Compactors	15	0.661	3.470	4.142	0.008
0.053	0.005	Pressure Washers	15	0.589	3.470	4.143	0.008
0.061	0.005	Pressure Washers	25	0.685	2.340	4.332	0.007
0.016	0.005	Pressure Washers	50	0.188	3.101	2.882	0.007
0.010	0.004	Pressure Washers	120	0.116	3.161	1.421	0.006
0.009	0.004	Pressure Washers	175	0.109	2.907	0.382	0.006

0.008	0.004
0.059	0.005
0.061	0.005
0.027	0.005
0.015	0.004
0.011	0.004
0.010	0.004
0.010	0.004
0.010	0.004
0.011	0.004
0.059	0.005
0.061	0.005
0.045	0.005
0.023	0.004
0.016	0.004
0.015	0.004
0.015	0.004
0.047	0.005
0.023	0.004
0.016	0.004
0.016	0.004
0.016	0.004
0.029	0.004
0.025	0.004
0.025	0.004
0.025	0.004
0.025	0.004
0.061	0.005
0.051	0.005
0.025	0.004
0.018	0.004

Pressure Washers	250	0.098	0.986	0.265	0.006
Pumps	15	0.661	3.469	4.143	0.008
Pumps	25	0.685	2.340	4.332	0.007
Pumps	50	0.306	3.778	3.028	0.007
Pumps	120	0.170	3.360	1.470	0.006
Pumps	175	0.123	2.973	0.377	0.006
Pumps	250	0.119	1.012	0.335	0.006
Pumps	500	0.119	0.989	0.331	0.005
Pumps	750	0.119	0.989	0.331	0.005
Pumps	9999	0.124	0.989	2.380	0.005
Rollers	15	0.661	3.469	4.142	0.008
Rollers	25	0.685	2.340	4.332	0.007
Rollers	50	0.507	4.711	3.280	0.007
Rollers	120	0.258	3.629	1.650	0.006
Rollers	175	0.184	3.204	0.523	0.006
Rollers	250	0.173	1.091	0.465	0.006
Rollers	500	0.172	1.048	0.442	0.005
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006

		Rubber Tired Loaders	250	0.191	1.129	0.434	0.006
		Rubber Tired Loaders	500	0.191	1.076	0.416	0.005
		Rubber Tired Loaders	750	0.191	1.076	0.421	0.005
		Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005
		Scrapers	120	0.348	3.842	1.943	0.006
		Scrapers	175	0.250	3.382	0.824	0.006
		Scrapers	250	0.229	1.175	0.717	0.006
		Scrapers	500	0.226	1.123	0.674	0.005
		Scrapers	750	0.226	1.123	0.682	0.005
		Signal Boards	15	0.661	3.469	4.142	0.008
		Signal Boards	50	0.356	4.067	3.082	0.007
		Signal Boards	120	0.192	3.445	1.482	0.006
		Signal Boards	175	0.138	3.048	0.372	0.006
		Signal Boards	250	0.162	1.254	0.401	0.007
		Skid Steer Loaders	25	0.685	2.339	4.332	0.007
		Skid Steer Loaders	50	0.411	4.390	3.097	0.007
		Skid Steer Loaders	120	0.211	3.540	1.442	0.006
		Surfacing Equipment	50	0.439	4.221	3.193	0.007
		Surfacing Equipment	120	0.226	3.482	1.659	0.006
		Surfacing Equipment	175	0.162	3.072	0.567	0.006
		Surfacing Equipment	250	0.149	1.050	0.497	0.006
		Surfacing Equipment	500	0.148	1.018	0.471	0.005
		Surfacing Equipment	750	0.148	1.018	0.477	0.005
		Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008
		Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007
		Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007
		Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006
		Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006
		Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006
		Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007

0.046	0.005
0.023	0.004
0.016	0.004
0.016	0.004
0.015	0.004
0.015	0.004
0.059	0.005
0.061	0.005
0.061	0.005
0.030	0.004
0.021	0.004
0.019	0.004
0.019	0.004
0.019	0.004
0.059	0.005
0.061	0.005
0.036	0.005
0.019	0.004
0.013	0.004
0.013	0.004
0.000	0.004
0.019	0.004
0.018	0.004
0.018	0.004
0.018	0.004
0.018	0.004

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006
Trenchers	15	0.661	3.469	4.142	0.008
Trenchers	25	0.685	2.339	4.332	0.007
Trenchers	50	0.681	5.055	3.548	0.007
Trenchers	120	0.332	3.713	2.049	0.006
Trenchers	175	0.241	3.264	0.966	0.006
Trenchers	250	0.216	1.149	0.847	0.006
Trenchers	500	0.213	1.126	0.790	0.005
Trenchers	750	0.213	1.126	0.801	0.005
Welders	15	0.661	3.469	4.143	0.008
Welders	25	0.685	2.339	4.332	0.007
Welders	50	0.406	4.349	3.147	0.007
Welders	120	0.214	3.528	1.509	0.006
Welders	175	0.153	3.121	0.387	0.006
Welders	250	0.149	1.063	0.343	0.006
Welders	500	0.149	1.027	0.339	0.005
Water Trucks	175	0.211	3.425	0.380	0.006
Water Trucks	250	0.208	1.167	0.353	0.006
Water Trucks	500	0.208	1.105	0.348	0.005
Water Trucks	750	0.208	1.105	0.348	0.005
Water Trucks	1000	0.209	1.105	2.565	0.005

2037

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM10	PM2.5	CO2	CH4	N2O
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.019	0.019	568.299	0.026	0.005
0.017	0.017	568.299	0.014	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.162	0.162	568.300	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.023	0.023	568.299	0.041	0.005
0.020	0.020	568.299	0.021	0.004
0.015	0.015	568.300	0.015	0.004
0.012	0.012	568.299	0.014	0.004
0.012	0.012	568.299	0.014	0.004
0.012	0.012	568.299	0.014	0.004
0.026	0.026	568.299	0.015	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.013	0.013	568.299	0.031	0.005
0.012	0.012	568.300	0.016	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.010	0.010	568.299	0.011	0.004
0.021	0.021	568.299	0.011	0.004

2037		g/hp/hr
Equipment	**MaxHP**	ROG
Aerial Lifts	15	0.661
Aerial Lifts	25	0.685
Aerial Lifts	50	0.297
Aerial Lifts	120	0.166
Aerial Lifts	500	0.116
Aerial Lifts	750	0.116
Air Compressors	15	0.661
Air Compressors	25	0.685
Air Compressors	50	0.463
Air Compressors	120	0.238
Air Compressors	175	0.170
Air Compressors	250	0.166
Air Compressors	500	0.166
Air Compressors	750	0.166
Air Compressors	1000	0.167
Bore/Drill Rigs	15	0.661
Bore/Drill Rigs	25	0.685
Bore/Drill Rigs	50	0.348
Bore/Drill Rigs	120	0.183
Bore/Drill Rigs	175	0.126
Bore/Drill Rigs	250	0.126
Bore/Drill Rigs	500	0.126
Bore/Drill Rigs	750	0.126
Bore/Drill Rigs	1000	0.126

0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.161	0.161	568.299	0.061	0.005
0.021	0.021	568.300	0.033	0.005
0.018	0.018	568.299	0.018	0.004
0.014	0.014	568.299	0.012	0.004
0.039	0.039	568.299	0.054	0.005
0.036	0.036	568.300	0.027	0.004
0.024	0.024	568.299	0.019	0.004
0.016	0.016	568.299	0.018	0.004
0.016	0.016	568.299	0.018	0.004
0.016	0.016	568.299	0.018	0.004
0.031	0.031	568.299	0.018	0.004
0.066	0.066	568.299	0.063	0.005
0.060	0.060	568.299	0.031	0.004
0.038	0.038	568.299	0.022	0.004
0.026	0.026	568.299	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.041	0.041	568.299	0.020	0.004
0.023	0.023	568.299	0.044	0.005
0.020	0.020	568.299	0.022	0.004
0.015	0.015	568.299	0.015	0.004
0.012	0.012	568.300	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.026	0.026	568.299	0.016	0.004

Cement and Mortar Mixers	15	0.661
Cement and Mortar Mixers	25	0.685
Concrete/Industrial Saws	25	0.685
Concrete/Industrial Saws	50	0.375
Concrete/Industrial Saws	120	0.200
Concrete/Industrial Saws	175	0.143
Cranes	50	0.600
Cranes	120	0.300
Cranes	175	0.212
Cranes	250	0.203
Cranes	500	0.202
Cranes	750	0.202
Cranes	9999	0.209
Crawler Tractors	50	0.708
Crawler Tractors	120	0.345
Crawler Tractors	175	0.247
Crawler Tractors	250	0.229
Crawler Tractors	500	0.227
Crawler Tractors	750	0.227
Crawler Tractors	1000	0.231
Crushing/Proc. Equipment	50	0.487
Crushing/Proc. Equipment	120	0.249
Crushing/Proc. Equipment	175	0.176
Crushing/Proc. Equipment	250	0.172
Crushing/Proc. Equipment	500	0.172
Crushing/Proc. Equipment	750	0.172
Crushing/Proc. Equipment	9999	0.177

0.161	0.161	568.299	0.061	0.005
0.161	0.161	568.299	0.061	0.005
0.024	0.024	568.299	0.051	0.005
0.021	0.021	568.299	0.025	0.004
0.015	0.015	568.299	0.017	0.004
0.013	0.013	568.300	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.017	0.017	568.299	0.050	0.005
0.016	0.016	568.299	0.024	0.004
0.012	0.012	568.300	0.017	0.004
0.011	0.011	568.300	0.017	0.004
0.011	0.011	568.299	0.017	0.004
0.162	0.162	568.299	0.053	0.005
0.162	0.162	568.299	0.061	0.005
0.018	0.018	568.299	0.024	0.005
0.016	0.016	568.299	0.014	0.004
0.013	0.013	568.299	0.010	0.004
0.011	0.011	568.299	0.009	0.004
0.011	0.011	568.299	0.009	0.004
0.011	0.011	568.299	0.009	0.004
0.022	0.022	568.299	0.010	0.004
0.037	0.037	568.299	0.053	0.005
0.034	0.034	568.299	0.026	0.004
0.022	0.022	568.300	0.018	0.004
0.016	0.016	568.299	0.017	0.004
0.016	0.016	568.299	0.017	0.004
0.016	0.016	568.299	0.017	0.004
0.107	0.107	568.299	0.037	0.004
0.065	0.065	568.299	0.027	0.004
0.042	0.042	568.299	0.024	0.004
0.040	0.040	568.299	0.023	0.004
0.056	0.056	568.299	0.024	0.004
0.016	0.016	568.299	0.019	0.004
0.013	0.013	568.299	0.018	0.004

Dumpers/Tenders	25	0.685
Excavators	25	0.685
Excavators	50	0.572
Excavators	120	0.284
Excavators	175	0.197
Excavators	250	0.195
Excavators	500	0.195
Excavators	750	0.195
Forklifts	50	0.558
Forklifts	120	0.275
Forklifts	175	0.189
Forklifts	250	0.188
Forklifts	500	0.188
Generator Sets	15	0.589
Generator Sets	25	0.685
Generator Sets	50	0.276
Generator Sets	120	0.156
Generator Sets	175	0.113
Generator Sets	250	0.110
Generator Sets	500	0.110
Generator Sets	750	0.110
Generator Sets	9999	0.114
Graders	50	0.593
Graders	120	0.293
Graders	175	0.206
Graders	250	0.196
Graders	500	0.195
Graders	750	0.195
Off-Highway Tractors	120	0.418
Off-Highway Tractors	175	0.301
Off-Highway Tractors	250	0.268
Off-Highway Tractors	750	0.262
Off-Highway Tractors	1000	0.269
Off-Highway Trucks	175	0.211
Off-Highway Trucks	250	0.208

0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.028	0.028	568.299	0.018	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.018	0.018	568.299	0.037	0.005
0.017	0.017	568.299	0.019	0.004
0.013	0.013	568.299	0.013	0.004
0.011	0.011	568.299	0.013	0.004
0.161	0.161	568.299	0.053	0.005
0.161	0.161	568.299	0.061	0.005
0.025	0.025	568.299	0.050	0.005
0.022	0.022	568.300	0.025	0.004
0.016	0.016	568.300	0.018	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004

Off-Highway Trucks	500	0.208
Off-Highway Trucks	750	0.208
Off-Highway Trucks	1000	0.209
Other Construction Equipment	15	0.661
Other Construction Equipment	25	0.685
Other Construction Equipment	50	0.410
Other Construction Equipment	120	0.213
Other Construction Equipment	175	0.150
Other Construction Equipment	500	0.147
Other General Industrial Equipment	15	0.589
Other General Industrial Equipment	25	0.685
Other General Industrial Equipment	50	0.564
Other General Industrial Equipment	120	0.282
Other General Industrial Equipment	175	0.199
Other General Industrial Equipment	250	0.195
Other General Industrial Equipment	500	0.195

0.013	0.013	568.299	0.017	0.004
0.028	0.028	568.299	0.017	0.004
0.025	0.025	568.299	0.049	0.005
0.022	0.022	568.299	0.025	0.004
0.016	0.016	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.013	0.013	568.299	0.017	0.004
0.027	0.027	568.299	0.017	0.004
0.161	0.161	568.299	0.061	0.005
0.076	0.076	568.299	0.062	0.005
0.069	0.069	568.299	0.030	0.004
0.043	0.043	568.299	0.022	0.004
0.027	0.027	568.300	0.019	0.004
0.026	0.026	568.299	0.019	0.004
0.161	0.161	568.299	0.061	0.005
0.070	0.070	568.300	0.059	0.005
0.064	0.064	568.299	0.029	0.004
0.040	0.040	568.299	0.021	0.004
0.024	0.024	568.299	0.019	0.004
0.161	0.161	568.299	0.059	0.005
0.162	0.162	568.300	0.053	0.005
0.162	0.162	568.299	0.061	0.005
0.015	0.015	568.299	0.016	0.005
0.014	0.014	568.299	0.010	0.004
0.013	0.013	568.299	0.009	0.004

Other General Industrial Equipment	750	0.195
Other General Industrial Equipment	1000	0.196
Other Material Handling Equipment	50	0.552
Other Material Handling Equipment	120	0.277
Other Material Handling Equipment	175	0.196
Other Material Handling Equipment	250	0.192
Other Material Handling Equipment	500	0.192
Other Material Handling Equipment	9999	0.197
Pavers	25	0.685
Pavers	50	0.694
Pavers	120	0.338
Pavers	175	0.244
Pavers	250	0.221
Pavers	500	0.218
Paving Equipment	25	0.685
Paving Equipment	50	0.664
Paving Equipment	120	0.326
Paving Equipment	175	0.235
Paving Equipment	250	0.212
Plate Compactors	15	0.661
Pressure Washers	15	0.589
Pressure Washers	25	0.685
Pressure Washers	50	0.188
Pressure Washers	120	0.116
Pressure Washers	175	0.109

0.009	0.009	568.299	0.008	0.004
0.162	0.162	568.299	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.019	0.019	568.299	0.027	0.005
0.017	0.017	568.299	0.015	0.004
0.014	0.014	568.299	0.011	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.011	0.011	568.299	0.010	0.004
0.023	0.023	568.299	0.011	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.300	0.061	0.005
0.038	0.038	568.299	0.045	0.005
0.035	0.035	568.299	0.023	0.004
0.023	0.023	568.299	0.016	0.004
0.016	0.016	568.299	0.015	0.004
0.016	0.016	568.300	0.015	0.004
0.022	0.022	568.299	0.047	0.005
0.020	0.020	568.299	0.023	0.004
0.015	0.015	568.299	0.016	0.004
0.012	0.012	568.299	0.016	0.004
0.012	0.012	568.300	0.016	0.004
0.071	0.071	568.299	0.029	0.004
0.046	0.046	568.299	0.025	0.004
0.043	0.043	568.300	0.025	0.004
0.043	0.043	568.299	0.025	0.004
0.060	0.060	568.299	0.025	0.004
0.161	0.161	568.299	0.061	0.005
0.035	0.035	568.299	0.051	0.005
0.033	0.033	568.299	0.025	0.004
0.022	0.022	568.299	0.018	0.004

Pressure Washers	250	0.098
Pumps	15	0.661
Pumps	25	0.685
Pumps	50	0.306
Pumps	120	0.170
Pumps	175	0.123
Pumps	250	0.119
Pumps	500	0.119
Pumps	750	0.119
Pumps	9999	0.124
Rollers	15	0.661
Rollers	25	0.685
Rollers	50	0.507
Rollers	120	0.258
Rollers	175	0.184
Rollers	250	0.173
Rollers	500	0.172
Rough Terrain Forklifts	50	0.521
Rough Terrain Forklifts	120	0.262
Rough Terrain Forklifts	175	0.184
Rough Terrain Forklifts	250	0.181
Rough Terrain Forklifts	500	0.181
Rubber Tired Dozers	175	0.322
Rubber Tired Dozers	250	0.286
Rubber Tired Dozers	500	0.279
Rubber Tired Dozers	750	0.279
Rubber Tired Dozers	1000	0.287
Rubber Tired Loaders	25	0.685
Rubber Tired Loaders	50	0.575
Rubber Tired Loaders	120	0.286
Rubber Tired Loaders	175	0.200

0.015	0.015	568.299	0.017	0.004
0.015	0.015	568.299	0.017	0.004
0.015	0.015	568.299	0.017	0.004
0.030	0.030	568.299	0.017	0.004
0.064	0.064	568.299	0.031	0.004
0.040	0.040	568.299	0.022	0.004
0.026	0.026	568.299	0.020	0.004
0.025	0.025	568.300	0.020	0.004
0.025	0.025	568.299	0.020	0.004
0.161	0.161	568.299	0.059	0.005
0.020	0.020	568.299	0.032	0.005
0.018	0.018	568.299	0.017	0.004
0.014	0.014	568.299	0.012	0.004
0.014	0.014	686.695	0.014	0.004
0.161	0.161	568.299	0.061	0.005
0.015	0.015	568.299	0.037	0.005
0.014	0.014	568.299	0.019	0.004
0.041	0.041	568.299	0.039	0.005
0.038	0.038	568.299	0.020	0.004
0.025	0.025	568.299	0.014	0.004
0.016	0.016	568.299	0.013	0.004
0.016	0.016	568.299	0.013	0.004
0.016	0.016	568.300	0.013	0.004
0.161	0.161	568.299	0.053	0.005
0.161	0.161	568.300	0.061	0.005
0.017	0.017	568.299	0.045	0.005
0.016	0.016	568.299	0.022	0.004
0.012	0.012	568.299	0.015	0.004
0.011	0.011	568.299	0.015	0.004
0.161	0.161	568.299	0.061	0.005

Rubber Tired Loaders	250	0.191
Rubber Tired Loaders	500	0.191
Rubber Tired Loaders	750	0.191
Rubber Tired Loaders	1000	0.193
Scrapers	120	0.348
Scrapers	175	0.250
Scrapers	250	0.229
Scrapers	500	0.226
Scrapers	750	0.226
Signal Boards	15	0.661
Signal Boards	50	0.356
Signal Boards	120	0.192
Signal Boards	175	0.138
Signal Boards	250	0.162
Skid Steer Loaders	25	0.685
Skid Steer Loaders	50	0.411
Skid Steer Loaders	120	0.211
Surfacing Equipment	50	0.439
Surfacing Equipment	120	0.226
Surfacing Equipment	175	0.162
Surfacing Equipment	250	0.149
Surfacing Equipment	500	0.148
Surfacing Equipment	750	0.148
Sweepers/Scrubbers	15	0.589
Sweepers/Scrubbers	25	0.685
Sweepers/Scrubbers	50	0.505
Sweepers/Scrubbers	120	0.253
Sweepers/Scrubbers	175	0.175
Sweepers/Scrubbers	250	0.173
Tractors/Loaders/Backhoes	25	0.685

0.022	0.022	568.299	0.046	0.005
0.020	0.020	568.299	0.023	0.004
0.015	0.015	568.299	0.016	0.004
0.012	0.012	568.299	0.016	0.004
0.012	0.012	568.299	0.015	0.004
0.012	0.012	568.299	0.015	0.004
0.161	0.161	568.299	0.059	0.005
0.161	0.161	568.299	0.061	0.005
0.084	0.084	568.299	0.061	0.005
0.076	0.076	568.300	0.030	0.004
0.048	0.048	568.299	0.021	0.004
0.031	0.031	568.299	0.019	0.004
0.029	0.029	568.299	0.019	0.004
0.029	0.029	568.300	0.019	0.004
0.162	0.162	568.299	0.059	0.005
0.162	0.162	568.299	0.061	0.005
0.022	0.022	568.299	0.036	0.005
0.019	0.019	568.299	0.019	0.004
0.015	0.015	568.299	0.013	0.004
0.012	0.012	568.299	0.013	0.004
0.012	0.012	568.299	0.013	0.004
0.016	0.016	568.299	0.019	0.004
0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.013	0.013	568.299	0.018	0.004
0.028	0.028	568.299	0.018	0.004

Tractors/Loaders/Backhoes	50	0.515
Tractors/Loaders/Backhoes	120	0.258
Tractors/Loaders/Backhoes	175	0.179
Tractors/Loaders/Backhoes	250	0.177
Tractors/Loaders/Backhoes	500	0.177
Tractors/Loaders/Backhoes	750	0.177
Trenchers	15	0.661
Trenchers	25	0.685
Trenchers	50	0.681
Trenchers	120	0.332
Trenchers	175	0.241
Trenchers	250	0.216
Trenchers	500	0.213
Trenchers	750	0.213
Welders	15	0.661
Welders	25	0.685
Welders	50	0.406
Welders	120	0.214
Welders	175	0.153
Welders	250	0.149
Welders	500	0.149
Water Trucks	175	0.211
Water Trucks	250	0.208
Water Trucks	500	0.208
Water Trucks	750	0.208
Water Trucks	1000	0.209

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g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
CO	NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.726	3.017	0.007	0.019	0.019	568.299	0.026	0.005
3.345	1.466	0.006	0.017	0.017	568.299	0.014	0.004
0.986	0.330	0.005	0.011	0.011	568.299	0.010	0.004
0.986	0.330	0.005	0.011	0.011	568.299	0.010	0.004
3.469	4.143	0.008	0.162	0.162	568.300	0.059	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
4.674	3.215	0.007	0.023	0.023	568.299	0.041	0.005
3.623	1.530	0.006	0.020	0.020	568.299	0.021	0.004
3.205	0.391	0.006	0.015	0.015	568.300	0.015	0.004
1.091	0.347	0.006	0.012	0.012	568.299	0.014	0.004
1.048	0.343	0.005	0.012	0.012	568.299	0.014	0.004
1.048	0.344	0.005	0.012	0.012	568.299	0.014	0.004
1.048	2.473	0.005	0.026	0.026	568.299	0.015	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.030	3.019	0.007	0.013	0.013	568.299	0.031	0.005
3.434	1.411	0.006	0.012	0.012	568.300	0.016	0.004
3.039	0.272	0.006	0.010	0.010	568.299	0.011	0.004
1.035	0.272	0.006	0.010	0.010	568.299	0.011	0.004
1.006	0.272	0.005	0.010	0.010	568.299	0.011	0.004
1.006	0.272	0.005	0.010	0.010	568.299	0.011	0.004
1.006	2.372	0.005	0.021	0.021	568.299	0.011	0.004

3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.174	3.107	0.007	0.021	0.021	568.300	0.033	0.005
3.476	1.491	0.006	0.018	0.018	568.299	0.018	0.004
3.075	0.374	0.006	0.014	0.014	568.299	0.012	0.004
5.292	3.401	0.007	0.039	0.039	568.299	0.054	0.005
3.801	1.676	0.006	0.036	0.036	568.300	0.027	0.004
3.357	0.519	0.006	0.024	0.024	568.299	0.019	0.004
1.143	0.463	0.006	0.016	0.016	568.299	0.018	0.004
1.087	0.441	0.005	0.016	0.016	568.299	0.018	0.004
1.087	0.446	0.005	0.016	0.016	568.299	0.018	0.004
1.089	2.618	0.005	0.031	0.031	568.299	0.018	0.004
5.493	3.558	0.007	0.066	0.066	568.299	0.063	0.005
3.850	1.922	0.006	0.060	0.060	568.299	0.031	0.004
3.391	0.794	0.006	0.038	0.038	568.299	0.022	0.004
1.182	0.695	0.006	0.026	0.026	568.299	0.020	0.004
1.145	0.657	0.005	0.025	0.025	568.299	0.020	0.004
1.145	0.664	0.005	0.025	0.025	568.299	0.020	0.004
1.159	2.792	0.005	0.041	0.041	568.299	0.020	0.004
4.819	3.237	0.007	0.023	0.023	568.299	0.044	0.005
3.665	1.531	0.006	0.020	0.020	568.299	0.022	0.004
3.242	0.382	0.006	0.015	0.015	568.299	0.015	0.004
1.104	0.342	0.006	0.012	0.012	568.300	0.015	0.004
1.058	0.338	0.005	0.012	0.012	568.299	0.015	0.004
1.058	0.338	0.005	0.012	0.012	568.299	0.015	0.004
1.058	2.482	0.005	0.026	0.026	568.299	0.016	0.004

2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.287	3.323	0.007	0.024	0.024	568.299	0.051	0.005
3.802	1.551	0.006	0.021	0.021	568.299	0.025	0.004
3.363	0.365	0.006	0.015	0.015	568.299	0.017	0.004
1.145	0.342	0.006	0.013	0.013	568.300	0.017	0.004
1.089	0.337	0.005	0.013	0.013	568.299	0.017	0.004
1.088	0.338	0.005	0.013	0.013	568.299	0.017	0.004
5.234	3.268	0.007	0.017	0.017	568.299	0.050	0.005
3.787	1.495	0.006	0.016	0.016	568.299	0.024	0.004
3.350	0.299	0.006	0.012	0.012	568.300	0.017	0.004
1.141	0.290	0.006	0.011	0.011	568.300	0.017	0.004
1.085	0.290	0.005	0.011	0.011	568.299	0.017	0.004
3.470	4.143	0.008	0.162	0.162	568.299	0.053	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.607	2.991	0.007	0.018	0.018	568.299	0.024	0.005
3.310	1.458	0.006	0.016	0.016	568.299	0.014	0.004
2.929	0.373	0.006	0.013	0.013	568.299	0.010	0.004
0.998	0.331	0.006	0.011	0.011	568.299	0.009	0.004
0.978	0.328	0.005	0.011	0.011	568.299	0.009	0.004
0.978	0.328	0.005	0.011	0.011	568.299	0.009	0.004
0.978	2.362	0.005	0.022	0.022	568.299	0.010	0.004
5.189	3.356	0.007	0.037	0.037	568.299	0.053	0.005
3.767	1.661	0.006	0.034	0.034	568.299	0.026	0.004
3.326	0.506	0.006	0.022	0.022	568.300	0.018	0.004
1.137	0.452	0.006	0.016	0.016	568.299	0.017	0.004
1.083	0.434	0.005	0.016	0.016	568.299	0.017	0.004
1.083	0.438	0.005	0.016	0.016	568.299	0.017	0.004
3.902	2.350	0.006	0.107	0.107	568.299	0.037	0.004
3.421	1.252	0.006	0.065	0.065	568.299	0.027	0.004
1.232	1.115	0.006	0.042	0.042	568.299	0.024	0.004
1.238	1.045	0.005	0.040	0.040	568.299	0.023	0.004
1.268	3.116	0.005	0.056	0.056	568.299	0.024	0.004
3.425	0.380	0.006	0.016	0.016	568.299	0.019	0.004
1.167	0.353	0.006	0.013	0.013	568.299	0.018	0.004

1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	2.565	0.005	0.028	0.028	568.299	0.018	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.377	3.124	0.007	0.018	0.018	568.299	0.037	0.005
3.536	1.474	0.006	0.017	0.017	568.299	0.019	0.004
3.128	0.334	0.006	0.013	0.013	568.299	0.013	0.004
1.029	0.311	0.005	0.011	0.011	568.299	0.013	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.053	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.255	3.334	0.007	0.025	0.025	568.299	0.050	0.005
3.794	1.567	0.006	0.022	0.022	568.300	0.025	0.004
3.355	0.399	0.006	0.016	0.016	568.300	0.018	0.004
1.143	0.355	0.006	0.013	0.013	568.299	0.017	0.004
1.087	0.351	0.005	0.013	0.013	568.299	0.017	0.004

1.087	0.351	0.005	0.013	0.013	568.299	0.017	0.004
1.087	2.532	0.005	0.028	0.028	568.299	0.017	0.004
5.189	3.321	0.007	0.025	0.025	568.299	0.049	0.005
3.774	1.563	0.006	0.022	0.022	568.299	0.025	0.004
3.338	0.398	0.006	0.016	0.016	568.299	0.017	0.004
1.137	0.354	0.006	0.013	0.013	568.299	0.017	0.004
1.082	0.350	0.005	0.013	0.013	568.299	0.017	0.004
1.082	2.525	0.005	0.027	0.027	568.299	0.017	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.260	3.555	0.007	0.076	0.076	568.299	0.062	0.005
3.774	1.986	0.006	0.069	0.069	568.299	0.030	0.004
3.319	0.889	0.006	0.043	0.043	568.299	0.022	0.004
1.157	0.772	0.006	0.027	0.027	568.300	0.019	0.004
1.111	0.722	0.005	0.026	0.026	568.299	0.019	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.181	3.511	0.007	0.070	0.070	568.300	0.059	0.005
3.753	1.928	0.006	0.064	0.064	568.299	0.029	0.004
3.303	0.832	0.006	0.040	0.040	568.299	0.021	0.004
1.140	0.714	0.006	0.024	0.024	568.299	0.019	0.004
3.470	4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.470	4.143	0.008	0.162	0.162	568.300	0.053	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.101	2.882	0.007	0.015	0.015	568.299	0.016	0.005
3.161	1.421	0.006	0.014	0.014	568.299	0.010	0.004
2.907	0.382	0.006	0.013	0.013	568.299	0.009	0.004

0.986	0.265	0.006	0.009	0.009	568.299	0.008	0.004
3.469	4.143	0.008	0.162	0.162	568.299	0.059	0.005
2.340	4.332	0.007	0.162	0.162	568.299	0.061	0.005
3.778	3.028	0.007	0.019	0.019	568.299	0.027	0.005
3.360	1.470	0.006	0.017	0.017	568.299	0.015	0.004
2.973	0.377	0.006	0.014	0.014	568.299	0.011	0.004
1.012	0.335	0.006	0.011	0.011	568.299	0.010	0.004
0.989	0.331	0.005	0.011	0.011	568.299	0.010	0.004
0.989	0.331	0.005	0.011	0.011	568.299	0.010	0.004
0.989	2.380	0.005	0.023	0.023	568.299	0.011	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.340	4.332	0.007	0.161	0.161	568.300	0.061	0.005
4.711	3.280	0.007	0.038	0.038	568.299	0.045	0.005
3.629	1.650	0.006	0.035	0.035	568.299	0.023	0.004
3.204	0.523	0.006	0.023	0.023	568.299	0.016	0.004
1.091	0.465	0.006	0.016	0.016	568.299	0.015	0.004
1.048	0.442	0.005	0.016	0.016	568.300	0.015	0.004
5.011	3.267	0.007	0.022	0.022	568.299	0.047	0.005
3.722	1.530	0.006	0.020	0.020	568.299	0.023	0.004
3.292	0.364	0.006	0.015	0.015	568.299	0.016	0.004
1.121	0.334	0.006	0.012	0.012	568.299	0.016	0.004
1.071	0.331	0.005	0.012	0.012	568.300	0.016	0.004
3.481	1.345	0.006	0.071	0.071	568.299	0.029	0.004
1.262	1.203	0.006	0.046	0.046	568.299	0.025	0.004
1.279	1.107	0.005	0.043	0.043	568.300	0.025	0.004
1.279	1.126	0.005	0.043	0.043	568.299	0.025	0.004
1.312	3.204	0.005	0.060	0.060	568.299	0.025	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.126	3.337	0.007	0.035	0.035	568.299	0.051	0.005
3.751	1.639	0.006	0.033	0.033	568.299	0.025	0.004
3.312	0.481	0.006	0.022	0.022	568.299	0.018	0.004

1.129	0.434	0.006	0.015	0.015	568.299	0.017	0.004
1.076	0.416	0.005	0.015	0.015	568.299	0.017	0.004
1.076	0.421	0.005	0.015	0.015	568.299	0.017	0.004
1.082	2.584	0.005	0.030	0.030	568.299	0.017	0.004
3.842	1.943	0.006	0.064	0.064	568.299	0.031	0.004
3.382	0.824	0.006	0.040	0.040	568.299	0.022	0.004
1.175	0.717	0.006	0.026	0.026	568.299	0.020	0.004
1.123	0.674	0.005	0.025	0.025	568.300	0.020	0.004
1.123	0.682	0.005	0.025	0.025	568.299	0.020	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.067	3.082	0.007	0.020	0.020	568.299	0.032	0.005
3.445	1.482	0.006	0.018	0.018	568.299	0.017	0.004
3.048	0.372	0.006	0.014	0.014	568.299	0.012	0.004
1.254	0.401	0.007	0.014	0.014	686.695	0.014	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.390	3.097	0.007	0.015	0.015	568.299	0.037	0.005
3.540	1.442	0.006	0.014	0.014	568.299	0.019	0.004
4.221	3.193	0.007	0.041	0.041	568.299	0.039	0.005
3.482	1.659	0.006	0.038	0.038	568.299	0.020	0.004
3.072	0.567	0.006	0.025	0.025	568.299	0.014	0.004
1.050	0.497	0.006	0.016	0.016	568.299	0.013	0.004
1.018	0.471	0.005	0.016	0.016	568.299	0.013	0.004
1.018	0.477	0.005	0.016	0.016	568.300	0.013	0.004
3.470	4.142	0.008	0.161	0.161	568.299	0.053	0.005
2.340	4.332	0.007	0.161	0.161	568.300	0.061	0.005
4.929	3.214	0.007	0.017	0.017	568.299	0.045	0.005
3.698	1.486	0.006	0.016	0.016	568.299	0.022	0.004
3.271	0.313	0.006	0.012	0.012	568.299	0.015	0.004
1.114	0.294	0.006	0.011	0.011	568.299	0.015	0.004
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005

4.949	3.244	0.007	0.022	0.022	568.299	0.046	0.005
3.703	1.521	0.006	0.020	0.020	568.299	0.023	0.004
3.275	0.348	0.006	0.015	0.015	568.299	0.016	0.004
1.115	0.331	0.006	0.012	0.012	568.299	0.016	0.004
1.066	0.326	0.006	0.012	0.012	568.299	0.015	0.004
1.066	0.327	0.006	0.012	0.012	568.299	0.015	0.004
3.469	4.142	0.008	0.161	0.161	568.299	0.059	0.005
2.339	4.332	0.007	0.161	0.161	568.299	0.061	0.005
5.055	3.548	0.007	0.084	0.084	568.299	0.061	0.005
3.713	2.049	0.006	0.076	0.076	568.300	0.030	0.004
3.264	0.966	0.006	0.048	0.048	568.299	0.021	0.004
1.149	0.847	0.006	0.031	0.031	568.299	0.019	0.004
1.126	0.790	0.005	0.029	0.029	568.299	0.019	0.004
1.126	0.801	0.005	0.029	0.029	568.300	0.019	0.004
3.469	4.143	0.008	0.162	0.162	568.299	0.059	0.005
2.339	4.332	0.007	0.162	0.162	568.299	0.061	0.005
4.349	3.147	0.007	0.022	0.022	568.299	0.036	0.005
3.528	1.509	0.006	0.019	0.019	568.299	0.019	0.004
3.121	0.387	0.006	0.015	0.015	568.299	0.013	0.004
1.063	0.343	0.006	0.012	0.012	568.299	0.013	0.004
1.027	0.339	0.005	0.012	0.012	568.299	0.013	0.004
3.425	0.380	0.006	0.016	0.016	568.299	0.019	0.004
1.167	0.353	0.006	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	0.348	0.005	0.013	0.013	568.299	0.018	0.004
1.105	2.565	0.005	0.028	0.028	568.299	0.018	0.004

2038		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO	NOX	SOX	PM10	PM2.5	CO2	CH4
Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019	0.019	568.299	0.026
Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017	0.017	568.299	0.014
Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011	0.011	568.299	0.010
Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011	0.011	568.299	0.010
Air Compressors	15	0.661	3.469	4.143	0.008	0.162	0.162	568.300	0.059
Air Compressors	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061
Air Compressors	50	0.463	4.674	3.215	0.007	0.023	0.023	568.299	0.041
Air Compressors	120	0.238	3.623	1.530	0.006	0.020	0.020	568.299	0.021
Air Compressors	175	0.170	3.205	0.391	0.006	0.015	0.015	568.300	0.015
Air Compressors	250	0.166	1.091	0.347	0.006	0.012	0.012	568.299	0.014
Air Compressors	500	0.166	1.048	0.343	0.005	0.012	0.012	568.299	0.014
Air Compressors	750	0.166	1.048	0.344	0.005	0.012	0.012	568.299	0.014
Air Compressors	1000	0.167	1.048	2.473	0.005	0.026	0.026	568.299	0.015
Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013	0.013	568.299	0.031
Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012	0.012	568.300	0.016
Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010	0.010	568.299	0.011
Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010	0.010	568.299	0.011
Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010	0.010	568.299	0.011
Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010	0.010	568.299	0.011
Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021	0.021	568.299	0.011

Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021	0.021	568.300	0.033
Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018	0.018	568.299	0.018
Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014	0.014	568.299	0.012
Cranes	50	0.600	5.292	3.401	0.007	0.039	0.039	568.299	0.054
Cranes	120	0.300	3.801	1.676	0.006	0.036	0.036	568.300	0.027
Cranes	175	0.212	3.357	0.519	0.006	0.024	0.024	568.299	0.019
Cranes	250	0.203	1.143	0.463	0.006	0.016	0.016	568.299	0.018
Cranes	500	0.202	1.087	0.441	0.005	0.016	0.016	568.299	0.018
Cranes	750	0.202	1.087	0.446	0.005	0.016	0.016	568.299	0.018
Cranes	9999	0.209	1.089	2.618	0.005	0.031	0.031	568.299	0.018
Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066	0.066	568.299	0.063
Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060	0.060	568.299	0.031
Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038	0.038	568.299	0.022
Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026	0.026	568.299	0.020
Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025	0.025	568.299	0.020
Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025	0.025	568.299	0.020
Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041	0.041	568.299	0.020
Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023	0.023	568.299	0.044
Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020	0.020	568.299	0.022
Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015	0.015	568.299	0.015
Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012	0.012	568.300	0.015
Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012	0.012	568.299	0.015
Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012	0.012	568.299	0.015
Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026	0.026	568.299	0.016

Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Excavators	50	0.572	5.287	3.323	0.007	0.024	0.024	568.299	0.051
Excavators	120	0.284	3.802	1.551	0.006	0.021	0.021	568.299	0.025
Excavators	175	0.197	3.363	0.365	0.006	0.015	0.015	568.299	0.017
Excavators	250	0.195	1.145	0.342	0.006	0.013	0.013	568.300	0.017
Excavators	500	0.195	1.089	0.337	0.005	0.013	0.013	568.299	0.017
Excavators	750	0.195	1.088	0.338	0.005	0.013	0.013	568.299	0.017
Forklifts	50	0.558	5.234	3.268	0.007	0.017	0.017	568.299	0.050
Forklifts	120	0.275	3.787	1.495	0.006	0.016	0.016	568.299	0.024
Forklifts	175	0.189	3.350	0.299	0.006	0.012	0.012	568.300	0.017
Forklifts	250	0.188	1.141	0.290	0.006	0.011	0.011	568.300	0.017
Forklifts	500	0.188	1.085	0.290	0.005	0.011	0.011	568.299	0.017
Generator Sets	15	0.589	3.470	4.143	0.008	0.162	0.162	568.299	0.053
Generator Sets	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Generator Sets	50	0.276	3.607	2.991	0.007	0.018	0.018	568.299	0.024
Generator Sets	120	0.156	3.310	1.458	0.006	0.016	0.016	568.299	0.014
Generator Sets	175	0.113	2.929	0.373	0.006	0.013	0.013	568.299	0.010
Generator Sets	250	0.110	0.998	0.331	0.006	0.011	0.011	568.299	0.009
Generator Sets	500	0.110	0.978	0.328	0.005	0.011	0.011	568.299	0.009
Generator Sets	750	0.110	0.978	0.328	0.005	0.011	0.011	568.299	0.009
Generator Sets	9999	0.114	0.978	2.362	0.005	0.022	0.022	568.299	0.010
Graders	50	0.593	5.189	3.356	0.007	0.037	0.037	568.299	0.053
Graders	120	0.293	3.767	1.661	0.006	0.034	0.034	568.299	0.026
Graders	175	0.206	3.326	0.506	0.006	0.022	0.022	568.300	0.018
Graders	250	0.196	1.137	0.452	0.006	0.016	0.016	568.299	0.017
Graders	500	0.195	1.083	0.434	0.005	0.016	0.016	568.299	0.017
Graders	750	0.195	1.083	0.438	0.005	0.016	0.016	568.299	0.017
Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107	0.107	568.299	0.037
Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065	0.065	568.299	0.027
Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042	0.042	568.299	0.024
Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040	0.040	568.299	0.023
Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056	0.056	568.299	0.024
Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299	0.019
Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299	0.018

Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299	0.018
Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018	0.018	568.299	0.037
Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017	0.017	568.299	0.019
Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013	0.013	568.299	0.013
Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011	0.011	568.299	0.013
Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161	0.161	568.299	0.053
Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025	0.025	568.299	0.050
Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022	0.022	568.300	0.025
Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016	0.016	568.300	0.018
Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013	0.013	568.299	0.017
Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013	0.013	568.299	0.017

Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013	0.013	568.299	0.017
Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028	0.028	568.299	0.017
Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025	0.025	568.299	0.049
Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022	0.022	568.299	0.025
Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016	0.016	568.299	0.017
Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013	0.013	568.299	0.017
Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013	0.013	568.299	0.017
Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027	0.027	568.299	0.017
Pavers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Pavers	50	0.694	5.260	3.555	0.007	0.076	0.076	568.299	0.062
Pavers	120	0.338	3.774	1.986	0.006	0.069	0.069	568.299	0.030
Pavers	175	0.244	3.319	0.889	0.006	0.043	0.043	568.299	0.022
Pavers	250	0.221	1.157	0.772	0.006	0.027	0.027	568.300	0.019
Pavers	500	0.218	1.111	0.722	0.005	0.026	0.026	568.299	0.019
Paving Equipment	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Paving Equipment	50	0.664	5.181	3.511	0.007	0.070	0.070	568.300	0.059
Paving Equipment	120	0.326	3.753	1.928	0.006	0.064	0.064	568.299	0.029
Paving Equipment	175	0.235	3.303	0.832	0.006	0.040	0.040	568.299	0.021
Paving Equipment	250	0.212	1.140	0.714	0.006	0.024	0.024	568.299	0.019
Plate Compactors	15	0.661	3.470	4.142	0.008	0.161	0.161	568.299	0.059
Pressure Washers	15	0.589	3.470	4.143	0.008	0.162	0.162	568.300	0.053
Pressure Washers	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Pressure Washers	50	0.188	3.101	2.882	0.007	0.015	0.015	568.299	0.016
Pressure Washers	120	0.116	3.161	1.421	0.006	0.014	0.014	568.299	0.010
Pressure Washers	175	0.109	2.907	0.382	0.006	0.013	0.013	568.299	0.009

Pressure Washers	250	0.098	0.986	0.265	0.006	0.009	0.009	568.299	0.008
Pumps	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299	0.059
Pumps	25	0.685	2.340	4.332	0.007	0.162	0.162	568.299	0.061
Pumps	50	0.306	3.778	3.028	0.007	0.019	0.019	568.299	0.027
Pumps	120	0.170	3.360	1.470	0.006	0.017	0.017	568.299	0.015
Pumps	175	0.123	2.973	0.377	0.006	0.014	0.014	568.299	0.011
Pumps	250	0.119	1.012	0.335	0.006	0.011	0.011	568.299	0.010
Pumps	500	0.119	0.989	0.331	0.005	0.011	0.011	568.299	0.010
Pumps	750	0.119	0.989	0.331	0.005	0.011	0.011	568.299	0.010
Pumps	9999	0.124	0.989	2.380	0.005	0.023	0.023	568.299	0.011
Rollers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Rollers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300	0.061
Rollers	50	0.507	4.711	3.280	0.007	0.038	0.038	568.299	0.045
Rollers	120	0.258	3.629	1.650	0.006	0.035	0.035	568.299	0.023
Rollers	175	0.184	3.204	0.523	0.006	0.023	0.023	568.299	0.016
Rollers	250	0.173	1.091	0.465	0.006	0.016	0.016	568.299	0.015
Rollers	500	0.172	1.048	0.442	0.005	0.016	0.016	568.300	0.015
Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022	0.022	568.299	0.047
Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020	0.020	568.299	0.023
Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015	0.015	568.299	0.016
Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012	0.012	568.299	0.016
Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012	0.012	568.300	0.016
Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071	0.071	568.299	0.029
Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046	0.046	568.299	0.025
Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043	0.043	568.300	0.025
Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043	0.043	568.299	0.025
Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060	0.060	568.299	0.025
Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035	0.035	568.299	0.051
Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033	0.033	568.299	0.025
Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022	0.022	568.299	0.018

Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015	0.015	568.299	0.017
Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015	0.015	568.299	0.017
Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015	0.015	568.299	0.017
Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030	0.030	568.299	0.017
Scrapers	120	0.348	3.842	1.943	0.006	0.064	0.064	568.299	0.031
Scrapers	175	0.250	3.382	0.824	0.006	0.040	0.040	568.299	0.022
Scrapers	250	0.229	1.175	0.717	0.006	0.026	0.026	568.299	0.020
Scrapers	500	0.226	1.123	0.674	0.005	0.025	0.025	568.300	0.020
Scrapers	750	0.226	1.123	0.682	0.005	0.025	0.025	568.299	0.020
Signal Boards	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Signal Boards	50	0.356	4.067	3.082	0.007	0.020	0.020	568.299	0.032
Signal Boards	120	0.192	3.445	1.482	0.006	0.018	0.018	568.299	0.017
Signal Boards	175	0.138	3.048	0.372	0.006	0.014	0.014	568.299	0.012
Signal Boards	250	0.162	1.254	0.401	0.007	0.014	0.014	686.695	0.014
Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015	0.015	568.299	0.037
Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014	0.014	568.299	0.019
Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041	0.041	568.299	0.039
Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038	0.038	568.299	0.020
Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025	0.025	568.299	0.014
Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016	0.016	568.299	0.013
Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016	0.016	568.299	0.013
Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016	0.016	568.300	0.013
Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161	0.161	568.299	0.053
Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161	0.161	568.300	0.061
Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017	0.017	568.299	0.045
Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016	0.016	568.299	0.022
Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012	0.012	568.299	0.015
Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011	0.011	568.299	0.015
Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061

Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022	0.022	568.299	0.046
Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020	0.020	568.299	0.023
Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015	0.015	568.299	0.016
Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012	0.012	568.299	0.016
Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012	0.012	568.299	0.015
Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012	0.012	568.299	0.015
Trenchers	15	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Trenchers	25	0.685	2.339	4.332	0.007	0.161	0.161	568.299	0.061
Trenchers	50	0.681	5.055	3.548	0.007	0.084	0.084	568.299	0.061
Trenchers	120	0.332	3.713	2.049	0.006	0.076	0.076	568.300	0.030
Trenchers	175	0.241	3.264	0.966	0.006	0.048	0.048	568.299	0.021
Trenchers	250	0.216	1.149	0.847	0.006	0.031	0.031	568.299	0.019
Trenchers	500	0.213	1.126	0.790	0.005	0.029	0.029	568.299	0.019
Trenchers	750	0.213	1.126	0.801	0.005	0.029	0.029	568.300	0.019
Welders	15	0.661	3.469	4.143	0.008	0.162	0.162	568.299	0.059
Welders	25	0.685	2.339	4.332	0.007	0.162	0.162	568.299	0.061
Welders	50	0.406	4.349	3.147	0.007	0.022	0.022	568.299	0.036
Welders	120	0.214	3.528	1.509	0.006	0.019	0.019	568.299	0.019
Welders	175	0.153	3.121	0.387	0.006	0.015	0.015	568.299	0.013
Welders	250	0.149	1.063	0.343	0.006	0.012	0.012	568.299	0.013
Welders	500	0.149	1.027	0.339	0.005	0.012	0.012	568.299	0.013
Water Trucks	175	0.211	3.425	0.380	0.006	0.016	0.016	568.299	0.019
Water Trucks	250	0.208	1.167	0.353	0.006	0.013	0.013	568.299	0.018
Water Trucks	500	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Water Trucks	750	0.208	1.105	0.348	0.005	0.013	0.013	568.299	0.018
Water Trucks	1000	0.209	1.105	2.565	0.005	0.028	0.028	568.299	0.018

2039

g/hp/hr	2039		g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
N2O	**Equipment**	**MaxHP**	ROG	CO	NOX	SOX	PM10
0.005	Aerial Lifts	15	0.661	3.469	4.142	0.008	0.161
0.005	Aerial Lifts	25	0.685	2.339	4.332	0.007	0.161
0.005	Aerial Lifts	50	0.297	3.726	3.017	0.007	0.019
0.004	Aerial Lifts	120	0.166	3.345	1.466	0.006	0.017
0.004	Aerial Lifts	500	0.116	0.986	0.330	0.005	0.011
0.004	Aerial Lifts	750	0.116	0.986	0.330	0.005	0.011
0.005	Air Compressors	15	0.661	3.469	4.143	0.008	0.162
0.005	Air Compressors	25	0.685	2.339	4.332	0.007	0.162
0.005	Air Compressors	50	0.463	4.674	3.215	0.007	0.023
0.004	Air Compressors	120	0.238	3.623	1.530	0.006	0.020
0.004	Air Compressors	175	0.170	3.205	0.391	0.006	0.015
0.004	Air Compressors	250	0.166	1.091	0.347	0.006	0.012
0.004	Air Compressors	500	0.166	1.048	0.343	0.005	0.012
0.004	Air Compressors	750	0.166	1.048	0.344	0.005	0.012
0.004	Air Compressors	1000	0.167	1.048	2.473	0.005	0.026
0.005	Bore/Drill Rigs	15	0.661	3.469	4.142	0.008	0.161
0.005	Bore/Drill Rigs	25	0.685	2.339	4.332	0.007	0.161
0.005	Bore/Drill Rigs	50	0.348	4.030	3.019	0.007	0.013
0.004	Bore/Drill Rigs	120	0.183	3.434	1.411	0.006	0.012
0.004	Bore/Drill Rigs	175	0.126	3.039	0.272	0.006	0.010
0.004	Bore/Drill Rigs	250	0.126	1.035	0.272	0.006	0.010
0.004	Bore/Drill Rigs	500	0.126	1.006	0.272	0.005	0.010
0.004	Bore/Drill Rigs	750	0.126	1.006	0.272	0.005	0.010
0.004	Bore/Drill Rigs	1000	0.126	1.006	2.372	0.005	0.021

0.005	Cement and Mortar Mixers	15	0.661	3.469	4.142	0.008	0.161
0.005	Cement and Mortar Mixers	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	25	0.685	2.339	4.332	0.007	0.161
0.005	Concrete/Industrial Saws	50	0.375	4.174	3.107	0.007	0.021
0.004	Concrete/Industrial Saws	120	0.200	3.476	1.491	0.006	0.018
0.004	Concrete/Industrial Saws	175	0.143	3.075	0.374	0.006	0.014
0.005	Cranes	50	0.600	5.292	3.401	0.007	0.039
0.004	Cranes	120	0.300	3.801	1.676	0.006	0.036
0.004	Cranes	175	0.212	3.357	0.519	0.006	0.024
0.004	Cranes	250	0.203	1.143	0.463	0.006	0.016
0.004	Cranes	500	0.202	1.087	0.441	0.005	0.016
0.004	Cranes	750	0.202	1.087	0.446	0.005	0.016
0.004	Cranes	9999	0.209	1.089	2.618	0.005	0.031
0.005	Crawler Tractors	50	0.708	5.493	3.558	0.007	0.066
0.004	Crawler Tractors	120	0.345	3.850	1.922	0.006	0.060
0.004	Crawler Tractors	175	0.247	3.391	0.794	0.006	0.038
0.004	Crawler Tractors	250	0.229	1.182	0.695	0.006	0.026
0.004	Crawler Tractors	500	0.227	1.145	0.657	0.005	0.025
0.004	Crawler Tractors	750	0.227	1.145	0.664	0.005	0.025
0.004	Crawler Tractors	1000	0.231	1.159	2.792	0.005	0.041
0.005	Crushing/Proc. Equipment	50	0.487	4.819	3.237	0.007	0.023
0.004	Crushing/Proc. Equipment	120	0.249	3.665	1.531	0.006	0.020
0.004	Crushing/Proc. Equipment	175	0.176	3.242	0.382	0.006	0.015
0.004	Crushing/Proc. Equipment	250	0.172	1.104	0.342	0.006	0.012
0.004	Crushing/Proc. Equipment	500	0.172	1.058	0.338	0.005	0.012
0.004	Crushing/Proc. Equipment	750	0.172	1.058	0.338	0.005	0.012
0.004	Crushing/Proc. Equipment	9999	0.177	1.058	2.482	0.005	0.026

0.005	Dumpers/Tenders	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	25	0.685	2.339	4.332	0.007	0.161
0.005	Excavators	50	0.572	5.287	3.323	0.007	0.024
0.004	Excavators	120	0.284	3.802	1.551	0.006	0.021
0.004	Excavators	175	0.197	3.363	0.365	0.006	0.015
0.004	Excavators	250	0.195	1.145	0.342	0.006	0.013
0.004	Excavators	500	0.195	1.089	0.337	0.005	0.013
0.004	Excavators	750	0.195	1.088	0.338	0.005	0.013
0.005	Forklifts	50	0.558	5.234	3.268	0.007	0.017
0.004	Forklifts	120	0.275	3.787	1.495	0.006	0.016
0.004	Forklifts	175	0.189	3.350	0.299	0.006	0.012
0.004	Forklifts	250	0.188	1.141	0.290	0.006	0.011
0.004	Forklifts	500	0.188	1.085	0.290	0.005	0.011
0.005	Generator Sets	15	0.589	3.470	4.143	0.008	0.162
0.005	Generator Sets	25	0.685	2.340	4.332	0.007	0.162
0.005	Generator Sets	50	0.276	3.607	2.991	0.007	0.018
0.004	Generator Sets	120	0.156	3.310	1.458	0.006	0.016
0.004	Generator Sets	175	0.113	2.929	0.373	0.006	0.013
0.004	Generator Sets	250	0.110	0.998	0.331	0.006	0.011
0.004	Generator Sets	500	0.110	0.978	0.328	0.005	0.011
0.004	Generator Sets	750	0.110	0.978	0.328	0.005	0.011
0.004	Generator Sets	9999	0.114	0.978	2.362	0.005	0.022
0.005	Graders	50	0.593	5.189	3.356	0.007	0.037
0.004	Graders	120	0.293	3.767	1.661	0.006	0.034
0.004	Graders	175	0.206	3.326	0.506	0.006	0.022
0.004	Graders	250	0.196	1.137	0.452	0.006	0.016
0.004	Graders	500	0.195	1.083	0.434	0.005	0.016
0.004	Graders	750	0.195	1.083	0.438	0.005	0.016
0.004	Off-Highway Tractors	120	0.418	3.902	2.350	0.006	0.107
0.004	Off-Highway Tractors	175	0.301	3.421	1.252	0.006	0.065
0.004	Off-Highway Tractors	250	0.268	1.232	1.115	0.006	0.042
0.004	Off-Highway Tractors	750	0.262	1.238	1.045	0.005	0.040
0.004	Off-Highway Tractors	1000	0.269	1.268	3.116	0.005	0.056
0.004	Off-Highway Trucks	175	0.211	3.425	0.380	0.006	0.016
0.004	Off-Highway Trucks	250	0.208	1.167	0.353	0.006	0.013

0.004	Off-Highway Trucks	500	0.208	1.105	0.348	0.005	0.013
0.004	Off-Highway Trucks	750	0.208	1.105	0.348	0.005	0.013
0.004	Off-Highway Trucks	1000	0.209	1.105	2.565	0.005	0.028
0.005	Other Construction Equipment	15	0.661	3.469	4.142	0.008	0.161
0.005	Other Construction Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Other Construction Equipment	50	0.410	4.377	3.124	0.007	0.018
0.004	Other Construction Equipment	120	0.213	3.536	1.474	0.006	0.017
0.004	Other Construction Equipment	175	0.150	3.128	0.334	0.006	0.013
0.004	Other Construction Equipment	500	0.147	1.029	0.311	0.005	0.011
0.005	Other General Industrial Equipment	15	0.589	3.469	4.142	0.008	0.161
0.005	Other General Industrial Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Other General Industrial Equipment	50	0.564	5.255	3.334	0.007	0.025
0.004	Other General Industrial Equipment	120	0.282	3.794	1.567	0.006	0.022
0.004	Other General Industrial Equipment	175	0.199	3.355	0.399	0.006	0.016
0.004	Other General Industrial Equipment	250	0.195	1.143	0.355	0.006	0.013
0.004	Other General Industrial Equipment	500	0.195	1.087	0.351	0.005	0.013

0.004	Other General Industrial Equipment	750	0.195	1.087	0.351	0.005	0.013
0.004	Other General Industrial Equipment	1000	0.196	1.087	2.532	0.005	0.028
0.005	Other Material Handling Equipment	50	0.552	5.189	3.321	0.007	0.025
0.004	Other Material Handling Equipment	120	0.277	3.774	1.563	0.006	0.022
0.004	Other Material Handling Equipment	175	0.196	3.338	0.398	0.006	0.016
0.004	Other Material Handling Equipment	250	0.192	1.137	0.354	0.006	0.013
0.004	Other Material Handling Equipment	500	0.192	1.082	0.350	0.005	0.013
0.004	Other Material Handling Equipment	9999	0.197	1.082	2.525	0.005	0.027
0.005	Pavers	25	0.685	2.339	4.332	0.007	0.161
0.005	Pavers	50	0.694	5.260	3.555	0.007	0.076
0.004	Pavers	120	0.338	3.774	1.986	0.006	0.069
0.004	Pavers	175	0.244	3.319	0.889	0.006	0.043
0.004	Pavers	250	0.221	1.157	0.772	0.006	0.027
0.004	Pavers	500	0.218	1.111	0.722	0.005	0.026
0.005	Paving Equipment	25	0.685	2.339	4.332	0.007	0.161
0.005	Paving Equipment	50	0.664	5.181	3.511	0.007	0.070
0.004	Paving Equipment	120	0.326	3.753	1.928	0.006	0.064
0.004	Paving Equipment	175	0.235	3.303	0.832	0.006	0.040
0.004	Paving Equipment	250	0.212	1.140	0.714	0.006	0.024
0.005	Plate Compactors	15	0.661	3.470	4.142	0.008	0.161
0.005	Pressure Washers	15	0.589	3.470	4.143	0.008	0.162
0.005	Pressure Washers	25	0.685	2.340	4.332	0.007	0.162
0.005	Pressure Washers	50	0.188	3.101	2.882	0.007	0.015
0.004	Pressure Washers	120	0.116	3.161	1.421	0.006	0.014
0.004	Pressure Washers	175	0.109	2.907	0.382	0.006	0.013

0.004	Pressure Washers	250	0.098	0.986	0.265	0.006	0.009
0.005	Pumps	15	0.661	3.469	4.143	0.008	0.162
0.005	Pumps	25	0.685	2.340	4.332	0.007	0.162
0.005	Pumps	50	0.306	3.778	3.028	0.007	0.019
0.004	Pumps	120	0.170	3.360	1.470	0.006	0.017
0.004	Pumps	175	0.123	2.973	0.377	0.006	0.014
0.004	Pumps	250	0.119	1.012	0.335	0.006	0.011
0.004	Pumps	500	0.119	0.989	0.331	0.005	0.011
0.004	Pumps	750	0.119	0.989	0.331	0.005	0.011
0.004	Pumps	9999	0.124	0.989	2.380	0.005	0.023
0.005	Rollers	15	0.661	3.469	4.142	0.008	0.161
0.005	Rollers	25	0.685	2.340	4.332	0.007	0.161
0.005	Rollers	50	0.507	4.711	3.280	0.007	0.038
0.004	Rollers	120	0.258	3.629	1.650	0.006	0.035
0.004	Rollers	175	0.184	3.204	0.523	0.006	0.023
0.004	Rollers	250	0.173	1.091	0.465	0.006	0.016
0.004	Rollers	500	0.172	1.048	0.442	0.005	0.016
0.005	Rough Terrain Forklifts	50	0.521	5.011	3.267	0.007	0.022
0.004	Rough Terrain Forklifts	120	0.262	3.722	1.530	0.006	0.020
0.004	Rough Terrain Forklifts	175	0.184	3.292	0.364	0.006	0.015
0.004	Rough Terrain Forklifts	250	0.181	1.121	0.334	0.006	0.012
0.004	Rough Terrain Forklifts	500	0.181	1.071	0.331	0.005	0.012
0.004	Rubber Tired Dozers	175	0.322	3.481	1.345	0.006	0.071
0.004	Rubber Tired Dozers	250	0.286	1.262	1.203	0.006	0.046
0.004	Rubber Tired Dozers	500	0.279	1.279	1.107	0.005	0.043
0.004	Rubber Tired Dozers	750	0.279	1.279	1.126	0.005	0.043
0.004	Rubber Tired Dozers	1000	0.287	1.312	3.204	0.005	0.060
0.005	Rubber Tired Loaders	25	0.685	2.339	4.332	0.007	0.161
0.005	Rubber Tired Loaders	50	0.575	5.126	3.337	0.007	0.035
0.004	Rubber Tired Loaders	120	0.286	3.751	1.639	0.006	0.033
0.004	Rubber Tired Loaders	175	0.200	3.312	0.481	0.006	0.022

0.004	Rubber Tired Loaders	250	0.191	1.129	0.434	0.006	0.015
0.004	Rubber Tired Loaders	500	0.191	1.076	0.416	0.005	0.015
0.004	Rubber Tired Loaders	750	0.191	1.076	0.421	0.005	0.015
0.004	Rubber Tired Loaders	1000	0.193	1.082	2.584	0.005	0.030
0.004	Scrapers	120	0.348	3.842	1.943	0.006	0.064
0.004	Scrapers	175	0.250	3.382	0.824	0.006	0.040
0.004	Scrapers	250	0.229	1.175	0.717	0.006	0.026
0.004	Scrapers	500	0.226	1.123	0.674	0.005	0.025
0.004	Scrapers	750	0.226	1.123	0.682	0.005	0.025
0.005	Signal Boards	15	0.661	3.469	4.142	0.008	0.161
0.005	Signal Boards	50	0.356	4.067	3.082	0.007	0.020
0.004	Signal Boards	120	0.192	3.445	1.482	0.006	0.018
0.004	Signal Boards	175	0.138	3.048	0.372	0.006	0.014
0.004	Signal Boards	250	0.162	1.254	0.401	0.007	0.014
0.005	Skid Steer Loaders	25	0.685	2.339	4.332	0.007	0.161
0.005	Skid Steer Loaders	50	0.411	4.390	3.097	0.007	0.015
0.004	Skid Steer Loaders	120	0.211	3.540	1.442	0.006	0.014
0.005	Surfacing Equipment	50	0.439	4.221	3.193	0.007	0.041
0.004	Surfacing Equipment	120	0.226	3.482	1.659	0.006	0.038
0.004	Surfacing Equipment	175	0.162	3.072	0.567	0.006	0.025
0.004	Surfacing Equipment	250	0.149	1.050	0.497	0.006	0.016
0.004	Surfacing Equipment	500	0.148	1.018	0.471	0.005	0.016
0.004	Surfacing Equipment	750	0.148	1.018	0.477	0.005	0.016
0.005	Sweepers/Scrubbers	15	0.589	3.470	4.142	0.008	0.161
0.005	Sweepers/Scrubbers	25	0.685	2.340	4.332	0.007	0.161
0.005	Sweepers/Scrubbers	50	0.505	4.929	3.214	0.007	0.017
0.004	Sweepers/Scrubbers	120	0.253	3.698	1.486	0.006	0.016
0.004	Sweepers/Scrubbers	175	0.175	3.271	0.313	0.006	0.012
0.004	Sweepers/Scrubbers	250	0.173	1.114	0.294	0.006	0.011
0.005	Tractors/Loaders/Backhoes	25	0.685	2.339	4.332	0.007	0.161

0.005	Tractors/Loaders/Backhoes	50	0.515	4.949	3.244	0.007	0.022
0.004	Tractors/Loaders/Backhoes	120	0.258	3.703	1.521	0.006	0.020
0.004	Tractors/Loaders/Backhoes	175	0.179	3.275	0.348	0.006	0.015
0.004	Tractors/Loaders/Backhoes	250	0.177	1.115	0.331	0.006	0.012
0.004	Tractors/Loaders/Backhoes	500	0.177	1.066	0.326	0.006	0.012
0.004	Tractors/Loaders/Backhoes	750	0.177	1.066	0.327	0.006	0.012
0.005	Trenchers	15	0.661	3.469	4.142	0.008	0.161
0.005	Trenchers	25	0.685	2.339	4.332	0.007	0.161
0.005	Trenchers	50	0.681	5.055	3.548	0.007	0.084
0.004	Trenchers	120	0.332	3.713	2.049	0.006	0.076
0.004	Trenchers	175	0.241	3.264	0.966	0.006	0.048
0.004	Trenchers	250	0.216	1.149	0.847	0.006	0.031
0.004	Trenchers	500	0.213	1.126	0.790	0.005	0.029
0.004	Trenchers	750	0.213	1.126	0.801	0.005	0.029
0.005	Welders	15	0.661	3.469	4.143	0.008	0.162
0.005	Welders	25	0.685	2.339	4.332	0.007	0.162
0.005	Welders	50	0.406	4.349	3.147	0.007	0.022
0.004	Welders	120	0.214	3.528	1.509	0.006	0.019
0.004	Welders	175	0.153	3.121	0.387	0.006	0.015
0.004	Welders	250	0.149	1.063	0.343	0.006	0.012
0.004	Welders	500	0.149	1.027	0.339	0.005	0.012
0.004	Water Trucks	175	0.211	3.425	0.380	0.006	0.016
0.004	Water Trucks	250	0.208	1.167	0.353	0.006	0.013
0.004	Water Trucks	500	0.208	1.105	0.348	0.005	0.013
0.004	Water Trucks	750	0.208	1.105	0.348	0.005	0.013
0.004	Water Trucks	1000	0.209	1.105	2.565	0.005	0.028

2040

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
PM2.5	CO2	CH4	N2O
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.019	568.299	0.026	0.005
0.017	568.299	0.014	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.162	568.300	0.059	0.005
0.162	568.299	0.061	0.005
0.023	568.299	0.041	0.005
0.020	568.299	0.021	0.004
0.015	568.300	0.015	0.004
0.012	568.299	0.014	0.004
0.012	568.299	0.014	0.004
0.012	568.299	0.014	0.004
0.026	568.299	0.015	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.013	568.299	0.031	0.005
0.012	568.300	0.016	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.010	568.299	0.011	0.004
0.021	568.299	0.011	0.004

2040		g/hp/hr	g/hp/hr
Equipment	**MaxHP**	ROG	CO
Aerial Lifts	15	0.661	3.469
Aerial Lifts	25	0.685	2.339
Aerial Lifts	50	0.295	3.723
Aerial Lifts	120	0.161	3.344
Aerial Lifts	500	0.112	0.986
Aerial Lifts	750	0.112	0.986
Air Compressors	15	0.661	3.469
Air Compressors	25	0.685	2.339
Air Compressors	50	0.458	4.659
Air Compressors	120	0.232	3.619
Air Compressors	175	0.161	3.201
Air Compressors	250	0.160	1.090
Air Compressors	500	0.160	1.047
Air Compressors	750	0.160	1.047
Air Compressors	1000	0.160	1.047
Bore/Drill Rigs	15	0.661	3.469
Bore/Drill Rigs	25	0.685	2.339
Bore/Drill Rigs	50	0.348	4.032
Bore/Drill Rigs	120	0.183	3.435
Bore/Drill Rigs	175	0.127	3.039
Bore/Drill Rigs	250	0.127	1.035
Bore/Drill Rigs	500	0.127	1.006
Bore/Drill Rigs	750	0.127	1.006
Bore/Drill Rigs	1000	0.127	1.006

0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.161	568.299	0.061	0.005
0.021	568.300	0.033	0.005
0.018	568.299	0.018	0.004
0.014	568.299	0.012	0.004
0.039	568.299	0.054	0.005
0.036	568.300	0.027	0.004
0.024	568.299	0.019	0.004
0.016	568.299	0.018	0.004
0.016	568.299	0.018	0.004
0.016	568.299	0.018	0.004
0.031	568.299	0.018	0.004
0.066	568.299	0.063	0.005
0.060	568.299	0.031	0.004
0.038	568.299	0.022	0.004
0.026	568.299	0.020	0.004
0.025	568.299	0.020	0.004
0.025	568.299	0.020	0.004
0.041	568.299	0.020	0.004
0.023	568.299	0.044	0.005
0.020	568.299	0.022	0.004
0.015	568.299	0.015	0.004
0.012	568.300	0.015	0.004
0.012	568.299	0.015	0.004
0.012	568.299	0.015	0.004
0.026	568.299	0.016	0.004

Cement and Mortar Mixers	15	0.661	3.470
Cement and Mortar Mixers	25	0.685	2.339
Concrete/Industrial Saws	25	0.685	2.339
Concrete/Industrial Saws	50	0.373	4.175
Concrete/Industrial Saws	120	0.195	3.477
Concrete/Industrial Saws	175	0.136	3.076
Cranes	50	0.567	5.268
Cranes	120	0.282	3.797
Cranes	175	0.197	3.358
Cranes	250	0.195	1.144
Cranes	500	0.195	1.087
Cranes	750	0.195	1.087
Cranes	9999	0.198	1.087
Crawler Tractors	50	0.653	5.443
Crawler Tractors	120	0.316	3.839
Crawler Tractors	175	0.221	3.388
Crawler Tractors	250	0.211	1.167
Crawler Tractors	500	0.210	1.113
Crawler Tractors	750	0.210	1.113
Crawler Tractors	1000	0.213	1.122
Crushing/Proc. Equipment	50	0.488	4.833
Crushing/Proc. Equipment	120	0.245	3.670
Crushing/Proc. Equipment	175	0.170	3.246
Crushing/Proc. Equipment	250	0.168	1.106
Crushing/Proc. Equipment	500	0.168	1.059
Crushing/Proc. Equipment	750	0.169	1.059
Crushing/Proc. Equipment	9999	0.170	1.059

0.161	568.299	0.061	0.005
0.161	568.299	0.061	0.005
0.024	568.299	0.051	0.005
0.021	568.299	0.025	0.004
0.015	568.299	0.017	0.004
0.013	568.300	0.017	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.017	568.299	0.050	0.005
0.016	568.299	0.024	0.004
0.012	568.300	0.017	0.004
0.011	568.300	0.017	0.004
0.011	568.299	0.017	0.004
0.162	568.299	0.053	0.005
0.162	568.299	0.061	0.005
0.018	568.299	0.024	0.005
0.016	568.299	0.014	0.004
0.013	568.299	0.010	0.004
0.011	568.299	0.009	0.004
0.011	568.299	0.009	0.004
0.011	568.299	0.009	0.004
0.022	568.299	0.010	0.004
0.037	568.299	0.053	0.005
0.034	568.299	0.026	0.004
0.022	568.300	0.018	0.004
0.016	568.299	0.017	0.004
0.016	568.299	0.017	0.004
0.016	568.299	0.017	0.004
0.107	568.299	0.037	0.004
0.065	568.299	0.027	0.004
0.042	568.299	0.024	0.004
0.040	568.299	0.023	0.004
0.056	568.299	0.024	0.004
0.016	568.299	0.019	0.004
0.013	568.299	0.018	0.004

Dumpers/Tenders	25	0.685	2.339
Excavators	25	0.685	2.339
Excavators	50	0.567	5.283
Excavators	120	0.279	3.802
Excavators	175	0.193	3.363
Excavators	250	0.192	1.145
Excavators	500	0.192	1.089
Excavators	750	0.192	1.089
Forklifts	50	0.562	5.256
Forklifts	120	0.276	3.794
Forklifts	175	0.189	3.356
Forklifts	250	0.189	1.143
Forklifts	500	0.189	1.087
Generator Sets	15	0.589	3.469
Generator Sets	25	0.685	2.339
Generator Sets	50	0.273	3.601
Generator Sets	120	0.152	3.308
Generator Sets	175	0.107	2.928
Generator Sets	250	0.106	0.997
Generator Sets	500	0.106	0.978
Generator Sets	750	0.106	0.978
Generator Sets	9999	0.107	0.978
Graders	50	0.563	5.161
Graders	120	0.278	3.764
Graders	175	0.193	3.326
Graders	250	0.188	1.133
Graders	500	0.188	1.079
Graders	750	0.188	1.079
Off-Highway Tractors	120	0.362	3.878
Off-Highway Tractors	175	0.257	3.412
Off-Highway Tractors	250	0.237	1.198
Off-Highway Tractors	750	0.234	1.164
Off-Highway Tractors	1000	0.238	1.183
Off-Highway Trucks	175	0.205	3.426
Off-Highway Trucks	250	0.204	1.167

0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.028	568.299	0.018	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.018	568.299	0.037	0.005
0.017	568.299	0.019	0.004
0.013	568.299	0.013	0.004
0.011	568.299	0.013	0.004
0.161	568.299	0.053	0.005
0.161	568.299	0.061	0.005
0.025	568.299	0.050	0.005
0.022	568.300	0.025	0.004
0.016	568.300	0.018	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004

Off-Highway Trucks	500	0.204	1.105
Off-Highway Trucks	750	0.204	1.105
Off-Highway Trucks	1000	0.205	1.105
Other Construction Equipment	15	0.661	3.470
Other Construction Equipment	25	0.685	2.339
Other Construction Equipment	50	0.409	4.377
Other Construction Equipment	120	0.210	3.536
Other Construction Equipment	175	0.145	3.128
Other Construction Equipment	500	0.145	1.029
Other General Industrial Equipment	15	0.589	3.470
Other General Industrial Equipment	25	0.685	2.339
Other General Industrial Equipment	50	0.562	5.257
Other General Industrial Equipment	120	0.277	3.794
Other General Industrial Equipment	175	0.191	3.356
Other General Industrial Equipment	250	0.190	1.143
Other General Industrial Equipment	500	0.190	1.087

0.013	568.299	0.017	0.004
0.028	568.299	0.017	0.004
0.025	568.299	0.049	0.005
0.022	568.299	0.025	0.004
0.016	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.013	568.299	0.017	0.004
0.027	568.299	0.017	0.004
0.161	568.299	0.061	0.005
0.076	568.299	0.062	0.005
0.069	568.299	0.030	0.004
0.043	568.299	0.022	0.004
0.027	568.300	0.019	0.004
0.026	568.299	0.019	0.004
0.161	568.299	0.061	0.005
0.070	568.300	0.059	0.005
0.064	568.299	0.029	0.004
0.040	568.299	0.021	0.004
0.024	568.299	0.019	0.004
0.161	568.299	0.059	0.005
0.162	568.300	0.053	0.005
0.162	568.299	0.061	0.005
0.015	568.299	0.016	0.005
0.014	568.299	0.010	0.004
0.013	568.299	0.009	0.004

Other General Industrial Equipment	750	0.190	1.087
Other General Industrial Equipment	1000	0.191	1.087
Other Material Handling Equipment	50	0.551	5.191
Other Material Handling Equipment	120	0.272	3.775
Other Material Handling Equipment	175	0.188	3.339
Other Material Handling Equipment	250	0.187	1.137
Other Material Handling Equipment	500	0.187	1.082
Other Material Handling Equipment	9999	0.189	1.082
Pavers	25	0.685	2.339
Pavers	50	0.618	5.189
Pavers	120	0.302	3.763
Pavers	175	0.213	3.319
Pavers	250	0.200	1.138
Pavers	500	0.198	1.085
Paving Equipment	25	0.685	2.339
Paving Equipment	50	0.589	5.111
Paving Equipment	120	0.291	3.744
Paving Equipment	175	0.205	3.304
Paving Equipment	250	0.193	1.127
Plate Compactors	15	0.661	3.469
Pressure Washers	15	0.589	3.469
Pressure Washers	25	0.685	2.339
Pressure Washers	50	0.186	3.098
Pressure Washers	120	0.113	3.160
Pressure Washers	175	0.103	2.907

0.009	568.299	0.008	0.004
0.162	568.299	0.059	0.005
0.162	568.299	0.061	0.005
0.019	568.299	0.027	0.005
0.017	568.299	0.015	0.004
0.014	568.299	0.011	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.011	568.299	0.010	0.004
0.023	568.299	0.011	0.004
0.161	568.299	0.059	0.005
0.161	568.300	0.061	0.005
0.038	568.299	0.045	0.005
0.035	568.299	0.023	0.004
0.023	568.299	0.016	0.004
0.016	568.299	0.015	0.004
0.016	568.300	0.015	0.004
0.022	568.299	0.047	0.005
0.020	568.299	0.023	0.004
0.015	568.299	0.016	0.004
0.012	568.299	0.016	0.004
0.012	568.300	0.016	0.004
0.071	568.299	0.029	0.004
0.046	568.299	0.025	0.004
0.043	568.300	0.025	0.004
0.043	568.299	0.025	0.004
0.060	568.299	0.025	0.004
0.161	568.299	0.061	0.005
0.035	568.299	0.051	0.005
0.033	568.299	0.025	0.004
0.022	568.299	0.018	0.004

Pressure Washers	250	0.098	0.986
Pumps	15	0.661	3.469
Pumps	25	0.685	2.339
Pumps	50	0.303	3.770
Pumps	120	0.165	3.358
Pumps	175	0.116	2.971
Pumps	250	0.114	1.012
Pumps	500	0.114	0.989
Pumps	750	0.114	0.989
Pumps	9999	0.116	0.989
Rollers	15	0.661	3.469
Rollers	25	0.685	2.339
Rollers	50	0.469	4.682
Rollers	120	0.240	3.625
Rollers	175	0.168	3.205
Rollers	250	0.165	1.092
Rollers	500	0.165	1.048
Rough Terrain Forklifts	50	0.519	5.010
Rough Terrain Forklifts	120	0.258	3.722
Rough Terrain Forklifts	175	0.178	3.292
Rough Terrain Forklifts	250	0.177	1.121
Rough Terrain Forklifts	500	0.177	1.071
Rubber Tired Dozers	175	0.275	3.470
Rubber Tired Dozers	250	0.253	1.225
Rubber Tired Dozers	500	0.249	1.198
Rubber Tired Dozers	750	0.250	1.198
Rubber Tired Dozers	1000	0.254	1.218
Rubber Tired Loaders	25	0.685	2.339
Rubber Tired Loaders	50	0.545	5.102
Rubber Tired Loaders	120	0.271	3.748
Rubber Tired Loaders	175	0.188	3.314

0.015	568.299	0.017	0.004
0.015	568.299	0.017	0.004
0.015	568.299	0.017	0.004
0.030	568.299	0.017	0.004
0.064	568.299	0.031	0.004
0.040	568.299	0.022	0.004
0.026	568.299	0.020	0.004
0.025	568.300	0.020	0.004
0.025	568.299	0.020	0.004
0.161	568.299	0.059	0.005
0.020	568.299	0.032	0.005
0.018	568.299	0.017	0.004
0.014	568.299	0.012	0.004
0.014	686.695	0.014	0.004
0.161	568.299	0.061	0.005
0.015	568.299	0.037	0.005
0.014	568.299	0.019	0.004
0.041	568.299	0.039	0.005
0.038	568.299	0.020	0.004
0.025	568.299	0.014	0.004
0.016	568.299	0.013	0.004
0.016	568.299	0.013	0.004
0.016	568.300	0.013	0.004
0.161	568.299	0.053	0.005
0.161	568.300	0.061	0.005
0.017	568.299	0.045	0.005
0.016	568.299	0.022	0.004
0.012	568.299	0.015	0.004
0.011	568.299	0.015	0.004
0.161	568.299	0.061	0.005

Rubber Tired Loaders	250	0.185	1.128
Rubber Tired Loaders	500	0.185	1.076
Rubber Tired Loaders	750	0.185	1.076
Rubber Tired Loaders	1000	0.186	1.076
Scrapers	120	0.316	3.833
Scrapers	175	0.221	3.381
Scrapers	250	0.210	1.159
Scrapers	500	0.209	1.100
Scrapers	750	0.209	1.100
Signal Boards	15	0.661	3.469
Signal Boards	50	0.356	4.074
Signal Boards	120	0.188	3.447
Signal Boards	175	0.131	3.050
Signal Boards	250	0.157	1.255
Skid Steer Loaders	25	0.685	2.339
Skid Steer Loaders	50	0.411	4.392
Skid Steer Loaders	120	0.211	3.540
Surfacing Equipment	50	0.395	4.183
Surfacing Equipment	120	0.206	3.477
Surfacing Equipment	175	0.146	3.073
Surfacing Equipment	250	0.140	1.047
Surfacing Equipment	500	0.140	1.015
Surfacing Equipment	750	0.140	1.015
Sweepers/Scrubbers	15	0.589	3.470
Sweepers/Scrubbers	25	0.685	2.340
Sweepers/Scrubbers	50	0.504	4.925
Sweepers/Scrubbers	120	0.251	3.697
Sweepers/Scrubbers	175	0.172	3.270
Sweepers/Scrubbers	250	0.172	1.114
Tractors/Loaders/Backhoes	25	0.685	2.339

0.022	568.299	0.046	0.005
0.020	568.299	0.023	0.004
0.015	568.299	0.016	0.004
0.012	568.299	0.016	0.004
0.012	568.299	0.015	0.004
0.012	568.299	0.015	0.004
0.161	568.299	0.059	0.005
0.161	568.299	0.061	0.005
0.084	568.299	0.061	0.005
0.076	568.300	0.030	0.004
0.048	568.299	0.021	0.004
0.031	568.299	0.019	0.004
0.029	568.299	0.019	0.004
0.029	568.300	0.019	0.004
0.162	568.299	0.059	0.005
0.162	568.299	0.061	0.005
0.022	568.299	0.036	0.005
0.019	568.299	0.019	0.004
0.015	568.299	0.013	0.004
0.012	568.299	0.013	0.004
0.012	568.299	0.013	0.004
0.016	568.299	0.019	0.004
0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.013	568.299	0.018	0.004
0.028	568.299	0.018	0.004

Tractors/Loaders/Backhoes	50	0.508	4.946
Tractors/Loaders/Backhoes	120	0.254	3.703
Tractors/Loaders/Backhoes	175	0.175	3.276
Tractors/Loaders/Backhoes	250	0.174	1.116
Tractors/Loaders/Backhoes	500	0.174	1.066
Tractors/Loaders/Backhoes	750	0.174	1.066
Trenchers	15	0.661	3.469
Trenchers	25	0.685	2.339
Trenchers	50	0.598	4.980
Trenchers	120	0.293	3.699
Trenchers	175	0.207	3.260
Trenchers	250	0.193	1.126
Trenchers	500	0.191	1.081
Trenchers	750	0.191	1.081
Welders	15	0.661	3.469
Welders	25	0.685	2.339
Welders	50	0.402	4.336
Welders	120	0.208	3.524
Welders	175	0.145	3.118
Welders	250	0.143	1.062
Welders	500	0.143	1.026
Water Trucks	175	0.205	3.426
Water Trucks	250	0.204	1.167
Water Trucks	500	0.204	1.105
Water Trucks	750	0.204	1.105
Water Trucks	1000	0.205	1.105

g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr	g/hp/hr
NOX	SOX	PM10	PM2.5	CO2	CH4	N2O
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.966	0.007	0.013	0.013	568.299	0.026	0.005
1.407	0.006	0.012	0.012	568.299	0.014	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.300	0.061	0.005
3.159	0.007	0.016	0.016	568.300	0.041	0.005
1.468	0.006	0.015	0.015	568.299	0.020	0.004
0.307	0.006	0.012	0.012	568.299	0.014	0.004
0.291	0.006	0.010	0.010	568.299	0.014	0.004
0.291	0.005	0.010	0.010	568.300	0.014	0.004
0.291	0.005	0.010	0.010	568.299	0.014	0.004
2.439	0.005	0.023	0.023	568.299	0.014	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.019	0.007	0.013	0.013	568.300	0.031	0.005
1.411	0.006	0.012	0.012	568.299	0.016	0.004
0.272	0.006	0.010	0.010	568.299	0.011	0.004
0.272	0.006	0.010	0.010	568.300	0.011	0.004
0.272	0.005	0.010	0.010	568.299	0.011	0.004
0.272	0.005	0.010	0.010	568.299	0.011	0.004
2.372	0.005	0.021	0.021	568.299	0.011	0.004

4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.058	0.007	0.014	0.014	568.299	0.033	0.005
1.434	0.006	0.013	0.013	568.299	0.017	0.004
0.297	0.006	0.011	0.011	568.300	0.012	0.004
3.324	0.007	0.024	0.024	568.299	0.051	0.005
1.552	0.006	0.021	0.021	568.299	0.025	0.004
0.371	0.006	0.016	0.016	568.299	0.017	0.004
0.344	0.006	0.013	0.013	568.299	0.017	0.004
0.340	0.005	0.013	0.013	568.299	0.017	0.004
0.341	0.005	0.013	0.013	568.299	0.017	0.004
2.534	0.005	0.027	0.027	568.299	0.017	0.004
3.420	0.007	0.042	0.042	568.299	0.058	0.005
1.709	0.006	0.039	0.039	568.299	0.028	0.004
0.539	0.006	0.025	0.025	568.299	0.020	0.004
0.491	0.006	0.018	0.018	568.299	0.019	0.004
0.470	0.005	0.018	0.018	568.299	0.018	0.004
0.475	0.005	0.018	0.018	568.299	0.019	0.004
2.652	0.005	0.032	0.032	568.299	0.019	0.004
3.194	0.007	0.017	0.017	568.299	0.044	0.005
1.477	0.006	0.015	0.015	568.299	0.022	0.004
0.306	0.006	0.012	0.012	568.299	0.015	0.004
0.292	0.006	0.011	0.011	568.299	0.015	0.004
0.292	0.005	0.011	0.011	568.299	0.015	0.004
0.292	0.005	0.011	0.011	568.299	0.015	0.004
2.457	0.005	0.024	0.024	568.299	0.015	0.004

4.332	0.007	0.161	0.161	568.299	0.061	0.005
4.332	0.007	0.161	0.161	568.300	0.061	0.005
3.290	0.007	0.019	0.019	568.299	0.051	0.005
1.507	0.006	0.017	0.017	568.299	0.025	0.004
0.311	0.006	0.013	0.013	568.299	0.017	0.004
0.300	0.006	0.011	0.011	568.299	0.017	0.004
0.300	0.005	0.011	0.011	568.299	0.017	0.004
0.300	0.005	0.011	0.011	568.299	0.017	0.004
3.272	0.007	0.017	0.017	568.299	0.050	0.005
1.491	0.006	0.016	0.016	568.299	0.024	0.004
0.288	0.006	0.012	0.012	568.299	0.017	0.004
0.288	0.006	0.011	0.011	568.299	0.017	0.004
0.288	0.005	0.011	0.011	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.941	0.007	0.012	0.012	568.300	0.024	0.005
1.399	0.006	0.012	0.012	568.299	0.013	0.004
0.293	0.006	0.010	0.010	568.299	0.009	0.004
0.277	0.006	0.009	0.009	568.299	0.009	0.004
0.277	0.005	0.009	0.009	568.299	0.009	0.004
0.277	0.005	0.009	0.009	568.300	0.009	0.004
2.330	0.005	0.020	0.020	568.299	0.009	0.004
3.298	0.007	0.026	0.026	568.300	0.050	0.005
1.560	0.006	0.024	0.024	568.299	0.025	0.004
0.380	0.006	0.017	0.017	568.299	0.017	0.004
0.360	0.006	0.013	0.013	568.299	0.017	0.004
0.351	0.005	0.013	0.013	568.299	0.017	0.004
0.353	0.005	0.013	0.013	568.299	0.017	0.004
1.976	0.006	0.067	0.067	568.299	0.032	0.004
0.836	0.006	0.041	0.041	568.299	0.023	0.004
0.747	0.006	0.028	0.028	568.299	0.021	0.004
0.710	0.005	0.027	0.027	568.299	0.021	0.004
2.844	0.005	0.042	0.042	568.299	0.021	0.004
0.318	0.006	0.013	0.013	568.299	0.018	0.004
0.305	0.006	0.012	0.012	568.300	0.018	0.004

0.305	0.005	0.012	0.012	568.299	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
2.532	0.005	0.026	0.026	568.299	0.018	0.004
4.142	0.008	0.161	0.161	568.300	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.096	0.007	0.015	0.015	568.300	0.036	0.005
1.441	0.006	0.014	0.014	568.299	0.018	0.004
0.290	0.006	0.011	0.011	568.299	0.013	0.004
0.282	0.005	0.010	0.010	568.299	0.013	0.004
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.283	0.007	0.019	0.019	568.299	0.050	0.005
1.506	0.006	0.017	0.017	568.299	0.025	0.004
0.315	0.006	0.012	0.012	568.299	0.017	0.004
0.299	0.006	0.011	0.011	568.299	0.017	0.004
0.299	0.005	0.011	0.011	568.299	0.017	0.004

0.299	0.005	0.011	0.011	568.299	0.017	0.004
2.500	0.005	0.025	0.025	568.299	0.017	0.004
3.269	0.007	0.018	0.018	568.299	0.049	0.005
1.502	0.006	0.017	0.017	568.300	0.024	0.004
0.314	0.006	0.012	0.012	568.299	0.017	0.004
0.298	0.006	0.011	0.011	568.299	0.016	0.004
0.298	0.005	0.011	0.011	568.299	0.016	0.004
2.493	0.005	0.025	0.025	568.300	0.017	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.393	0.007	0.047	0.047	568.299	0.055	0.005
1.731	0.006	0.043	0.043	568.299	0.027	0.004
0.583	0.006	0.027	0.027	568.299	0.019	0.004
0.525	0.006	0.018	0.018	568.299	0.018	0.004
0.498	0.005	0.018	0.018	568.299	0.017	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.361	0.007	0.042	0.042	568.300	0.053	0.005
1.687	0.006	0.039	0.039	568.299	0.026	0.004
0.536	0.006	0.025	0.025	568.299	0.018	0.004
0.485	0.006	0.017	0.017	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.142	0.008	0.161	0.161	568.299	0.053	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.836	0.007	0.010	0.010	568.299	0.016	0.005
1.365	0.006	0.010	0.010	568.299	0.010	0.004
0.293	0.006	0.010	0.010	568.299	0.009	0.004

0.265	0.006	0.009	0.009	568.299	0.008	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
2.976	0.007	0.013	0.013	568.299	0.027	0.005
1.410	0.006	0.012	0.012	568.299	0.014	0.004
0.295	0.006	0.010	0.010	568.299	0.010	0.004
0.279	0.006	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
0.279	0.005	0.009	0.009	568.299	0.010	0.004
2.347	0.005	0.020	0.020	568.299	0.010	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.207	0.007	0.024	0.024	568.299	0.042	0.005
1.525	0.006	0.021	0.021	568.299	0.021	0.004
0.373	0.006	0.015	0.015	568.299	0.015	0.004
0.348	0.006	0.012	0.012	568.299	0.014	0.004
0.341	0.005	0.012	0.012	568.299	0.014	0.004
3.228	0.007	0.017	0.017	568.300	0.046	0.005
1.485	0.006	0.016	0.016	568.299	0.023	0.004
0.303	0.006	0.012	0.012	568.300	0.016	0.004
0.292	0.006	0.011	0.011	568.299	0.016	0.004
0.292	0.005	0.011	0.011	568.299	0.016	0.004
0.903	0.006	0.045	0.045	568.299	0.024	0.004
0.810	0.006	0.031	0.031	568.299	0.022	0.004
0.758	0.005	0.029	0.029	568.299	0.022	0.004
0.767	0.005	0.029	0.029	568.300	0.022	0.004
2.910	0.005	0.045	0.045	568.300	0.023	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.283	0.007	0.024	0.024	568.300	0.049	0.005
1.543	0.006	0.022	0.022	568.300	0.024	0.004
0.365	0.006	0.016	0.016	568.299	0.017	0.004

0.346	0.006	0.013	0.013	568.299	0.016	0.004
0.338	0.005	0.013	0.013	568.300	0.016	0.004
0.340	0.005	0.013	0.013	568.299	0.016	0.004
2.522	0.005	0.026	0.026	568.299	0.016	0.004
1.715	0.006	0.040	0.040	568.299	0.028	0.004
0.549	0.006	0.026	0.026	568.299	0.020	0.004
0.498	0.006	0.018	0.018	568.300	0.018	0.004
0.475	0.005	0.017	0.017	568.299	0.018	0.004
0.480	0.005	0.017	0.017	568.299	0.018	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
3.037	0.007	0.014	0.014	568.299	0.032	0.005
1.428	0.006	0.013	0.013	568.299	0.016	0.004
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0.341	0.007	0.012	0.012	686.695	0.014	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.093	0.007	0.014	0.014	568.299	0.037	0.005
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4.142	0.008	0.161	0.161	568.300	0.053	0.005
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3.203	0.007	0.016	0.016	568.300	0.045	0.005
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0.284	0.006	0.011	0.011	568.299	0.015	0.004
4.332	0.007	0.161	0.161	568.299	0.061	0.005

3.220	0.007	0.018	0.018	568.299	0.045	0.005
1.485	0.006	0.016	0.016	568.299	0.022	0.004
0.305	0.006	0.012	0.012	568.299	0.015	0.004
0.297	0.006	0.011	0.011	568.300	0.015	0.004
0.297	0.006	0.011	0.011	568.299	0.015	0.004
0.297	0.006	0.011	0.011	568.299	0.015	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.374	0.007	0.052	0.052	568.299	0.054	0.005
1.767	0.006	0.047	0.047	568.299	0.026	0.004
0.639	0.006	0.030	0.030	568.300	0.018	0.004
0.573	0.006	0.020	0.020	568.300	0.017	0.004
0.542	0.005	0.020	0.020	568.300	0.017	0.004
0.549	0.005	0.020	0.020	568.299	0.017	0.004
4.142	0.008	0.161	0.161	568.299	0.059	0.005
4.332	0.007	0.161	0.161	568.299	0.061	0.005
3.093	0.007	0.015	0.015	568.300	0.036	0.005
1.447	0.006	0.014	0.014	568.299	0.018	0.004
0.303	0.006	0.011	0.011	568.299	0.013	0.004
0.287	0.006	0.010	0.010	568.300	0.012	0.004
0.287	0.005	0.010	0.010	568.299	0.012	0.004
0.318	0.006	0.013	0.013	568.299	0.018	0.004
0.305	0.006	0.012	0.012	568.300	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
0.305	0.005	0.012	0.012	568.299	0.018	0.004
2.532	0.005	0.026	0.026	568.299	0.018	0.004

Basic Conversions	Factor	Value	Units	Source
	1 pound equals	453.592	grams	
	1 MT equals	1.102	tons	
	Total # of days in a week	7	days	
	1 kg equals	1,000	grams	
	1 Year equals	365	days	
	1 ton equals	2,000	pounds	
	Global Warming Potential of CH4	25	N/A	http://www.arb.ca.gov/cc/inventory/backgro
	Global Warming Potential of N2O	298	N/A	http://www.arb.ca.gov/cc/inventory/backgro

ɔund/gwp.htm
ɔund/gwp.htm

Energy Calculations

On-road Mobile (Construction) Energy Usage - Widening

Step 1:

Total Daily Worker VMT

2,600

Total Daily Asphault Hauling VMT

30

Step 2:

Given:

Assumed Fleet Mix for Workers

LDA	LDT1	LDT2
0.33333333	0.333333	0.333333

Assumed Fleet Mix for Vendors

MHD	HHD
0.5	0.5

And:

MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

Gasoline:

LDA	LDT1	LDT2
29.93	24.88	22.22

Diesel:

MHD	HHD
8.1	5.53

Therefore:

Weighted Average Worker (Gasoline) MPG Factor

25.7

Weighted Average Hauler (Diesel) MPG Factor

6.8

Step 3:

Therefore:

101 **Worker daily gallons of gasoline**

Therefore:

4 **Vendor daily gallons of diesel**

Step 4:

264 **# of Days**

Therefore:

Result: **26,732** **Total gallons of gasoline**

Therefore:

1,162 **Total gallons of diesel**

On-road Mobile (Construction) Energy Usage - CA Aqueduct Bridge

Step 1:

Total Daily Worker VMT

2,360

Total Daily Asphault Hauling VMT

30

Step 2:

Given:

Assumed Fleet Mix for Workers

LDA	LDT1	LDT2
0.33333333	0.333333	0.333333

Assumed Fleet Mix for Vendors

MHD	HHD
0.5	0.5

And:

MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

Gasoline:

LDA	LDT1	LDT2
29.93	24.88	22.22

Diesel:

MHD	HHD
8.1	5.53

Therefore:

Weighted Average Worker (Gasoline) MPG Factor

25.7

Weighted Average Hauler (Diesel) MPG Factor

6.8

Step 3:

Therefore:

92 **Worker daily gallons of gasoline**

Therefore:

4 **Vendor daily gallons of diesel**

Step 4:

132 **# of Days**

Therefore:

Result: **12,132** **Total gallons of gasoline**

Therefore:

581 **Total gallons of diesel**

On-road Mobile (Construction) Energy Usage - Delta Mendota Canal Bridge

Step 1:

Total Daily Worker VMT

2,360

Total Daily Asphault Hauling VMT

30

Step 2:

Given:

Assumed Fleet Mix for Workers

LDA	LDT1	LDT2
0.33333333	0.333333	0.333333

Assumed Fleet Mix for Vendors

MHD	HHD
0.5	0.5

And:

MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2020

Gasoline:

LDA	LDT1	LDT2
29.93	24.88	22.22

Diesel:

MHD	HHD
8.1	5.53

Therefore:

Weighted Average Worker (Gasoline) MPG Factor

25.7

Weighted Average Hauler (Diesel) MPG Factor

6.8

Step 3:

Therefore:

92 **Worker daily gallons of gasoline**

Therefore:

4 **Vendor daily gallons of diesel**

Step 4:

132 **# of Days**

Therefore:

Result: **12,132** **Total gallons of gasoline**

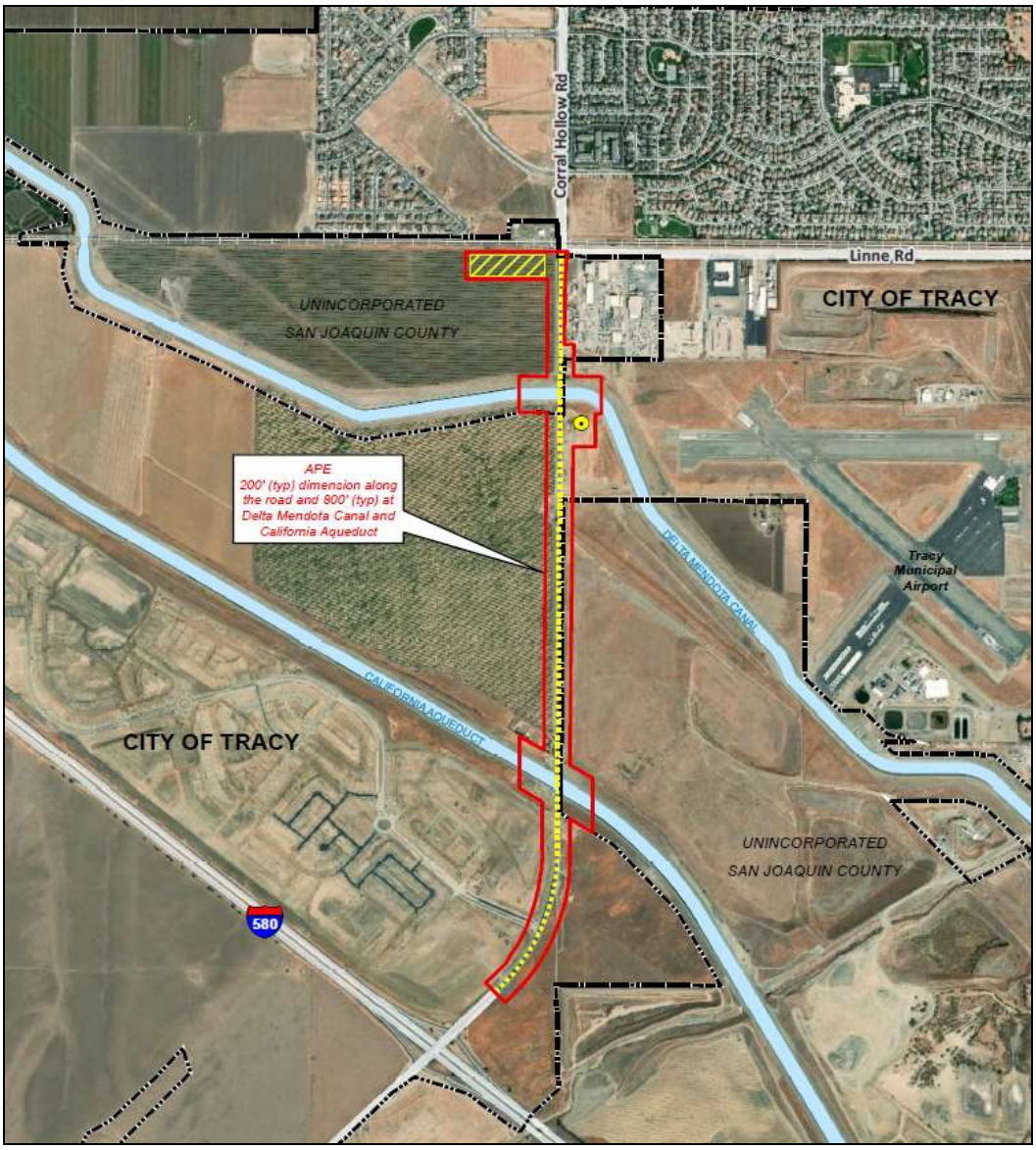
Therefore:

581 **Total gallons of diesel**

Appendix B

Biological Assessment

Corral Hollow Road Widening Phase 2
Linne Road to I-580



Biological Assessment

San Joaquin County, California

April 28, 2020

Biological Assessment

Corral Hollow Road Widening Phase 2 Linne Road to I-580

San Joaquin County, California

April 28, 2020

Prepared By: Steve McMurtry, Principal/Biologist
(916) 580-9818
De Novo Planning Group, Inc.
El Dorado Hills

Summary of Findings, Conclusions and Determinations

Purpose and Need

The purpose of the project is to upgrade a second phase of Corral Hollow Road to accommodate the existing and future transportation functions anticipated through General Plan buildout. The upgraded roadway is needed to increase vehicle capacity, improve level of service, increase safety for vehicles/bikes/pedestrians, ensure adequate emergency vehicle access to approved development.

Project Location/Jurisdiction

Corral Hollow Road is located within the jurisdiction of both City of Tracy and San Joaquin County. The City and County agreed that the City of Tracy would serve as lead agency for the widening of Corral Hollow Road in the county areas. Corral Hollow Road has two existing bridges, one over California Aqueduct and the other over Delta Mendota Canal. The Aqueduct is within the jurisdiction of State and is managed and operated by Department of Water Resources (DWR). DWR has discretionary approval over actions that directly affect their facilities. DWR will serve as a Responsible Agency. The Delta Mendota Canal is under federal jurisdiction and is managed and operated by U.S. Bureau of Reclamation (USBR). USBR will serve as the federal lead agency for NEPA and other federal approvals.

Project Description

The proposed project consists of widening Corral Hollow Road from the existing two-lane roadway to a four-lane major arterial with median island, sidewalks, bike facilities, landscaping, and street lights from Linne Road to I-580. The project will include design of at least two traffic signals and widening or replacement of bridges over the Delta Mendota Canal and California Aqueduct.

The project will require additional right of way from the fronting property owners. The project also fronts a newly proposed development project (Tracy Hills) that has recently obtained entitlements for the construction.

The precise line plan for this segment of Corral Hollow Road was prepared and adopted by the City Council on November 20, 2016. The Precise Plan line of the street results in an amendment of the general street cross section listed in the City's Roadway Master Plan. The construction cost for the project is estimated at $ 25 Million.

Protected Plant Species

This Biological Assessment (BA) evaluated 35 special status plant species, two of which are listed under the federal and/or state endangered species act. All plants were evaluated and it was determined that based on the lack of quality habitat, no known occurrences, and no observation during the plant survey, that these species are not present within the PIA.

Protected Animals Species

This BA evaluated 41 special status animal species, 19 of which are listed under the federal and/or state endangered species act. It was determined that based on the lack of appropriate habitat, no known occurrences, and no observations during the field survey, that 15 of these species are not present. The evaluation found that four listed species were either present, their habitat is present, or they are present in the vicinity. These include the San Joaquin kit fox (SJKF), giant garter snake (GGS), California tiger salamander (CTS), and Swainson's hawk (SH). It was found that there was no evidence of activity on the project site (i.e. no SJKF dens, no quality GGS upland habitat, no CTS breeding/aestivation habitat, no SH nests). It was found that the project *may affect, not likely to adversely affect* each of these species with the implementation of avoidance and minimization measures. In addition, the project will be covered under the SJMSCP and the project will be required to implement ITMMs issued by the SJCOG. Coverage under the SJMSCP will result in the issuance of a incidental take permit.

Essential Fish Habitat Consultation Summary

The project would not result in any impacts to Federal fisheries or essential fish habitat because there is no suitable habitat for any listed or protected fish species within the PIA.

Wetlands and Other Waters

It is anticipated that the USACE and CDFW will claim jurisdiction over the waters of the California Aqueduct and Delta Mendota Canal given that they have downstream connectivity to the Delta and San Francisco Bay. The project is anticipated to be eligible for a Section 404 Nationwide Permit (NWP) 14 for Linear Transportation Projects. The project will require a Section 401 Water Quality certification to be issued by the Regional Water Quality Control Board. The project will require a Section 1600 Streambed Alteration Agreement to be issued by the California Department of Fish and Wildlife.

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List of Abbreviated Terms

ACOE	Army Corps of Engineers
BA	Biological Assessment
PIA	Biological Study Area
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	San Joaquin County
dbh	Diameter at breast height (~4 ft)
DWR	Department of Water Resources
ESA	Federal Endangered Species Act
ft	foot/feet
GIS	Geographic Information System
GPS	Global Positioning System
IPaC	USFWS Information Planning and Conservation System
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NRCS	U.S. Department of Agriculture Natural Resources Conservation Service
PIA	Project Impact Area
PM	post mile
PM10	Particulate Matter
RE	resident engineer
ROW	rights-of-way
USBR	U.S. Bureau of Reclamation
USFWS	Fish and Wildlife Service
USGS	U.S. Geological Survey

Chapter 1. Introduction

The purpose of this biological assessment is to provide technical information and to review the proposed project in sufficient detail to determine to what extent the proposed project may affect threatened, endangered, or proposed species. The biological assessment is prepared in accordance with legal requirements found in Section 7 (a)(2) of the Endangered Species Act (16 U.S. C 1536(c)) and with California specific regulation, policy and guidance. The document presents technical information upon which later decisions regarding project impacts are developed.

1.1. Purpose and Need

The purpose of the project is to upgrade a second phase of Corral Hollow Road to accommodate the existing and future transportation functions anticipated through General Plan buildout. The upgraded roadway is needed to increase vehicle capacity, improve level of service, increase safety for vehicles/bikes/pedestrians, ensure adequate emergency vehicle access to approved development.

1.2. Project History

The proposed widening to Corral Hollow Road is located within the jurisdiction of both City of Tracy and the San Joaquin County. The City and San Joaquin County agreed that the City of Tracy would serve as lead agency for the widening of Corral Hollow Road in the county areas.

Corral Hollow Road has two existing bridges, one over California Aqueduct and the other over Delta Mendota Canal. The California Aqueduct is within the jurisdiction of State of California and is managed and operated by Department of Water Resources (DWR). The DWR has discretionary approval over actions that directly affect their facilities. For the proposed project, the DWR will serve as a Responsible Agency. The Delta Mendota Canal is under the Federal jurisdiction and is managed and operated by U.S. Bureau of Reclamation (USBR). The USBR will serve as the federal lead agency for NEPA and other federal approvals.

The precise line plan for this segment of Corral Hollow Road was prepared and adopted by the City Council on November 20, 2016. The Precise Plan line of the street results in an amendment of the general street cross section listed in the City's

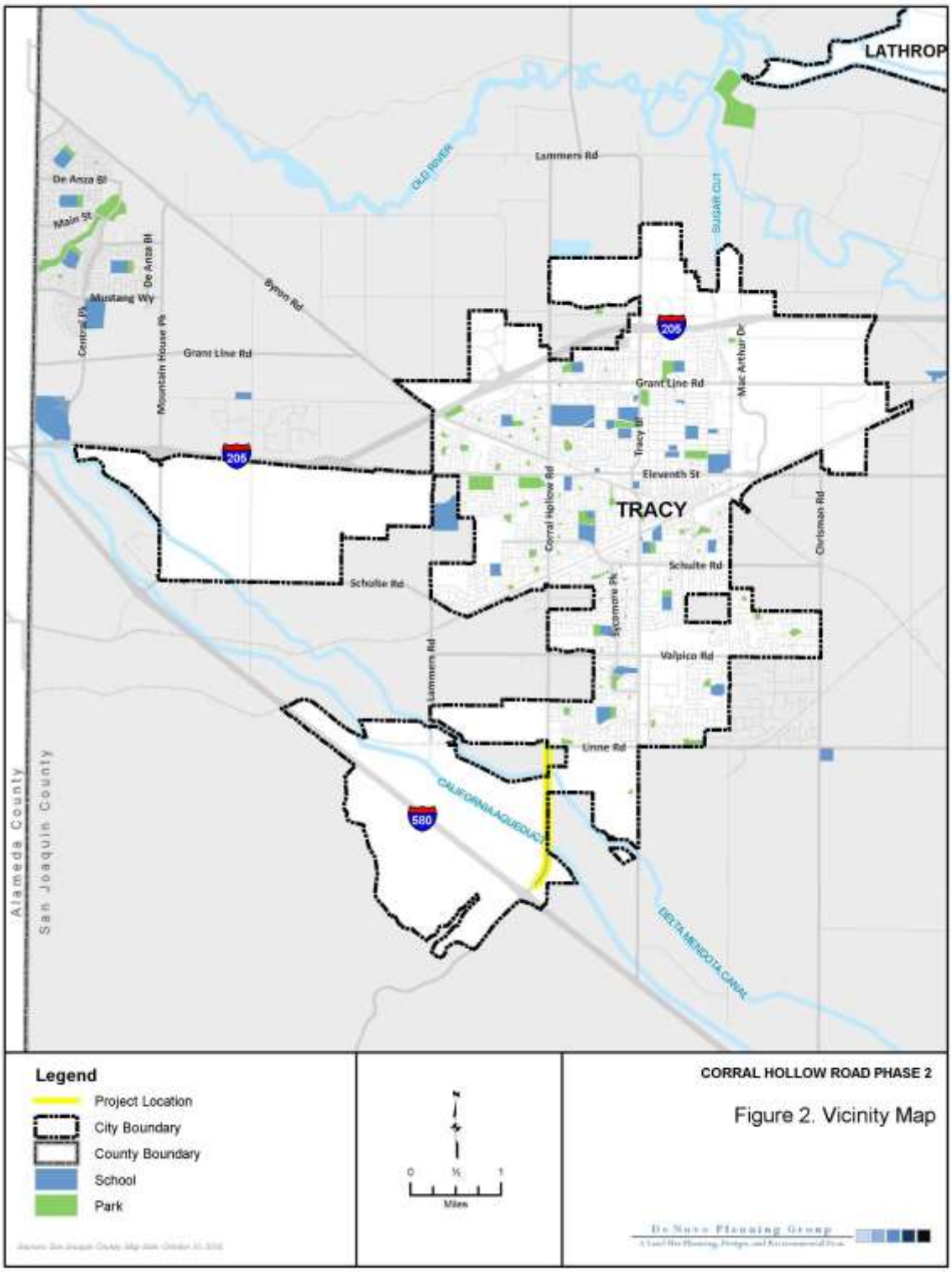
Roadway Master Plan. The construction cost for the project is estimated at $ 25 Million.

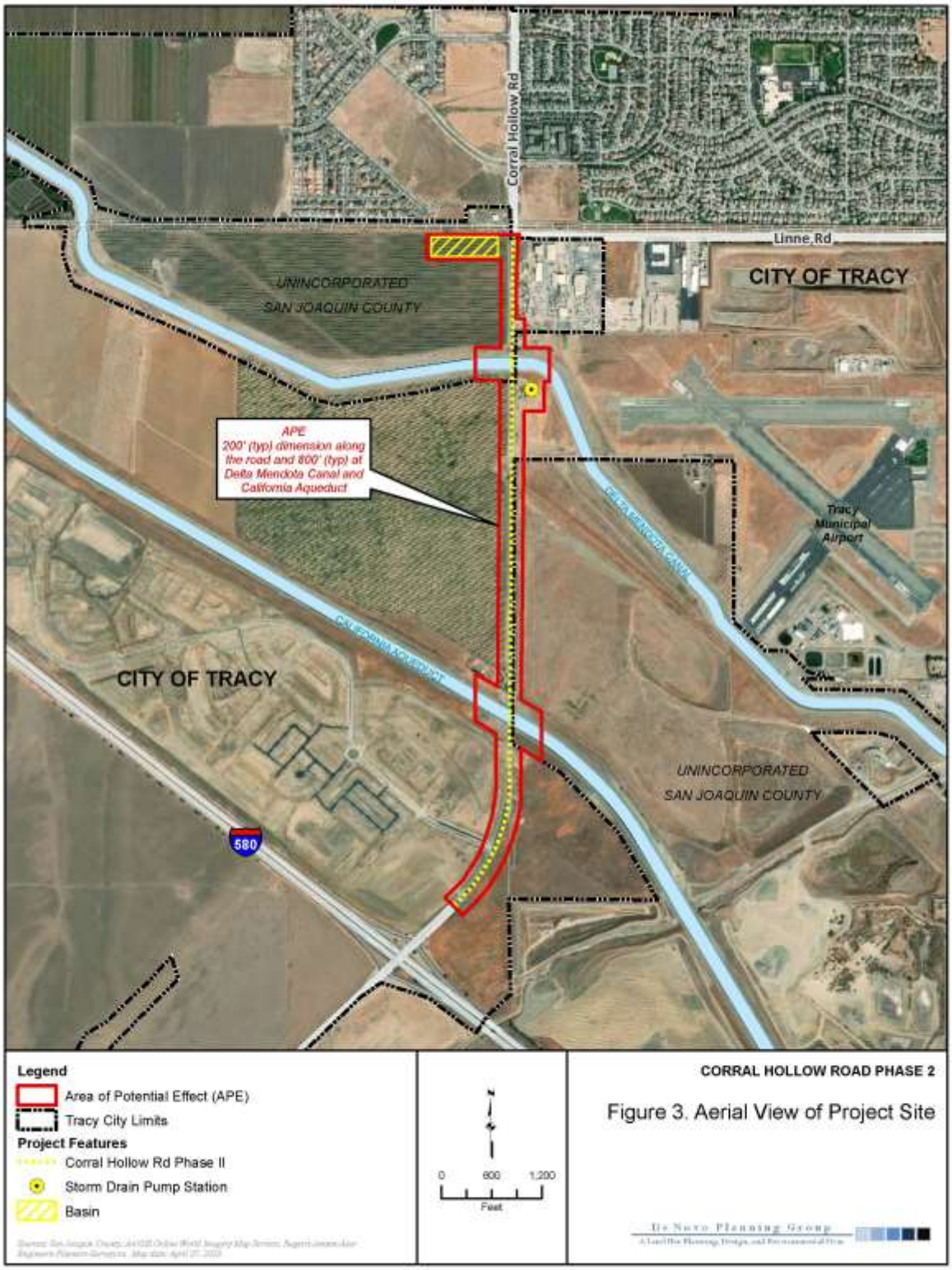
1.3. Project Description

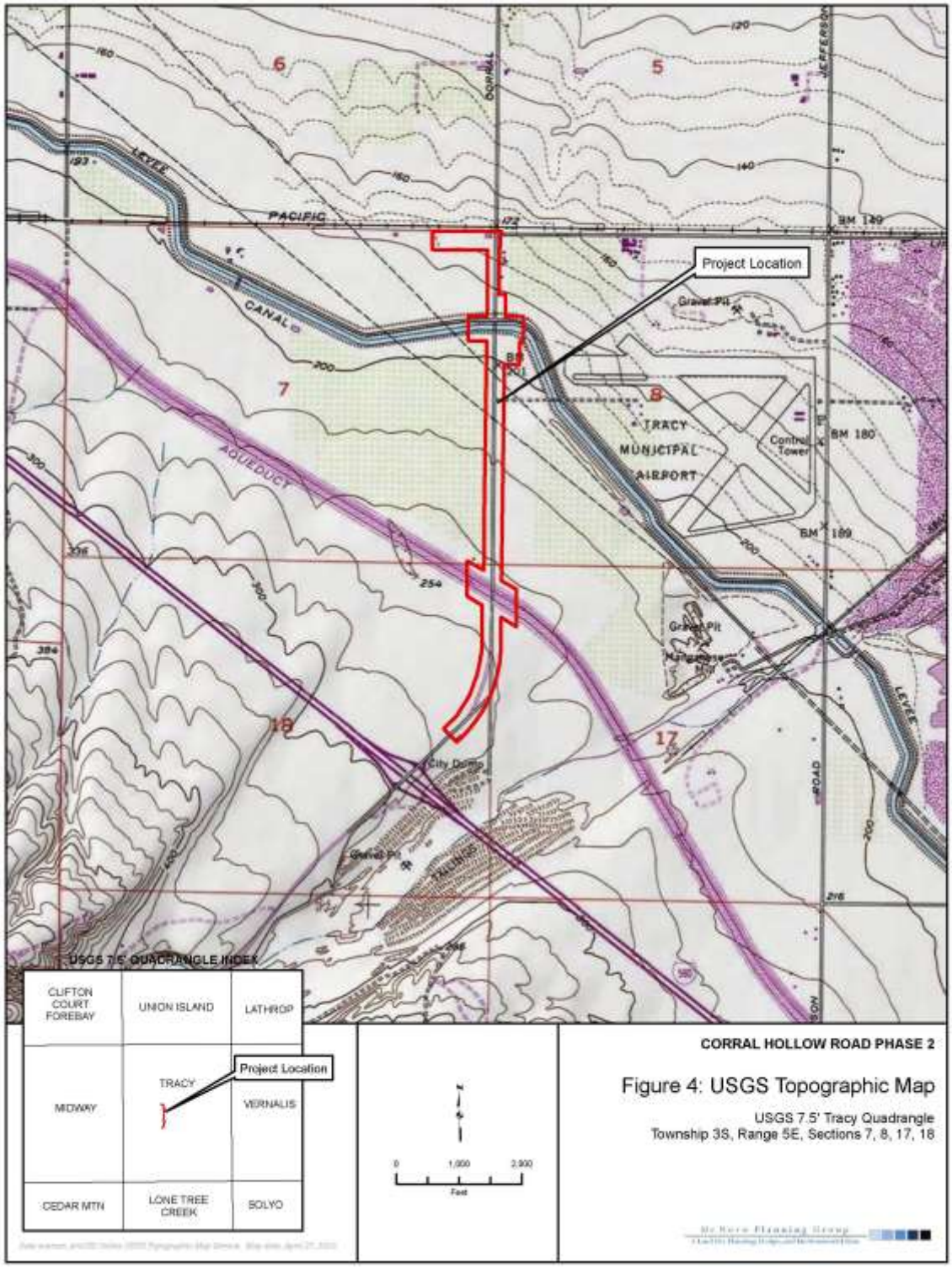
The proposed project consists of widening Corral Hollow Road from the existing two-lane roadway to a four-lane major arterial with median island, sidewalks, bike facilities, landscaping, and street lights from Linne Road to I-580. The project will include design of at least two traffic signals and widening or replacement of bridges over the Delta Mendota Canal and California Aqueduct.

These existing bridges are being evaluated for widening of the existing structures or full replacement to accommodate additional lanes of traffic.

The project will require additional right of way from the fronting property owners. The project also fronts a newly proposed development project (Tracy Hills) that has recently obtained entitlements for the construction.


LATHROP
TRACY
Lammers Rd
OLD RIVER
SUGAR CUT
De Anza Bl
Main St
Mustang Wy
Central Pk
Mountain House Pk
Byron Rd
Grant Line Rd
Mac Arthur Dr
Tracy Bl
Eleventh St
Corral Hollow Rd
Schulte Rd
Sycamore Pk
Valpico Rd
Chrisman Rd
Linne Rd
CALIFORNIA AQUEDUCT
DELTA MENDOTA CANAL
205
580
Alameda County
San Joaquin County
Legend
Project Location
City Boundary
County Boundary
School
Park
0
½
1
Miles
CORRAL HOLLOW ROAD PHASE 2
Figure 2. Vicinity Map
De Novo Planning Group


Corral Hollow Rd
Linne Rd
CITY OF TRACY
UNINCORPORATED
SAN JOAQUIN COUNTY
APE
200' (typ) dimension along the road and 800' (typ) at Delta Mendota Canal and California Aqueduct
Tracy Municipal Airport
CITY OF TRACY
UNINCORPORATED
SAN JOAQUIN COUNTY
580
Legend
Area of Potential Effect (APE)
Tracy City Limits
Project Features
Corral Hollow Rd Phase II
Storm Drain Pump Station
Basin
0
800
1,200
Feet
CORRAL HOLLOW ROAD PHASE 2
Figure 3. Aerial View of Project Site


Project Location
TRACY
MUNICIPAL
AIRPORT
Control Tower
PACIFIC
CANAL
AQUEDUCT
LEVEE
CORRAL
JEFFERSON
ROAD
City Dump
Gravel Pit
USGS 7.5' QUADRANGLE INDEX
CLIFTON COURT FOREBAY
UNION ISLAND
LATHROP
MIDWAY
TRACY
VERNALIS
CEDAR MTN
LONE TREE CREEK
SOLYO
Project Location
0
1,000
2,000
Feet
CORRAL HOLLOW ROAD PHASE 2
Figure 4: USGS Topographic Map
USGS 7.5' Tracy Quadrangle
Township 3S, Range 5E, Sections 7, 8, 17, 18

Chapter 2. Study Methods

2.1. Regulatory Requirements

The primary regulations affecting biological resource effects are discussed in this section. If construction of this project, or related activities associated with construction, impact federal and/or state-listed species, the project may be subject to the California Endangered Species Act (CESA) and the Federal Endangered Species Act (FESA). If activities directly impact migratory birds or cause the destruction or abandonment of nests, the project would be subject to the Migratory Bird Treaty Act (MBTA). Additional regulations could also apply to the project. The following paragraphs provide a brief summary of the applicable provisions of these regulations.

Federal Endangered Species Act

The FESA protects federally-listed threatened and endangered species. Section 9 of FESA prohibits actions which result in "take" of threatened or endangered species. "Take" generally includes killing, harming, or harassment of listed species. "Harm" has been further defined to include killing or injuring due to significant obstruction of essential behavior patterns (i.e. breeding, feeding, or sheltering) through significant habitat modification or degradation.

Two sections of the FESA contain provisions for allowing "take" which is incidental to otherwise lawful activities. Under Section 7, a federal agency which proposes to conduct, fund or approve an action which may result in "take" of listed species is required to consult with the U.S. Fish and Wildlife Service (USFWS). The result of this formal consultation is a Biological Opinion, which includes either a jeopardy or non-jeopardy decision issued by USFWS to the consulting federal agency. Included in the Biological Opinion is the possible issuance of authorization for "incidental take." Section 10(a) of FESA provides a method for permitting a state or private action that may result in "incidental take." Under Section 10(a), the project proponent must provide the USFWS with a Habitat Conservation Plan for the affected species, and publish notification of the application for a permit in the Federal Register.

State Endangered Species Act

The CESA incorporates provisions that permit impacts to California-listed rare, threatened, or endangered species. Those provisions are similar to, but not identical to, provisions in the FESA in that there is a permitting process.

California Fish and Game Code

Several sections of the California Fish and Game Code are applicable to analysis of biological resource impacts that may be associated with the project. The following paragraphs summarize these sections.

Section 1580: This section declares that the policy of the state is to protect threatened or endangered native plants, wildlife, or aquatic organisms or specialized habitat types, both terrestrial and non-marine aquatic, or large heterogeneous natural gene pools for the future use of mankind through the establishment of ecological reserves.

Sections 1600-1616: An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake without providing notification to the California Department of Fish and Wildlife (CDFW).

This notification may result in a Streambed Alteration Agreement between the project applicant and CDFW. Activities in intermittent streams and canals may require Streambed Alteration Agreements.

This portion of the Fish and Game Code is known as the “Native Plant Protection Act.” The purpose of this chapter is to preserve, protect and enhance endangered or rare native plants of this state. Many species and subspecies of native plants are endangered because their habitats are threatened with destruction, drastic modification, or severe curtailment, or because of commercial exploitation or by other means, or because of disease or other factors. This portion of the code designates California rare, threatened, and endangered plant taxa.

Section 1930-1933: These sections find and declare that because areas containing diverse ecological and geological characteristics are vital to the continual health and well-being of the state's natural resources and of its citizens, the Significant Natural Areas Program was established to be administered by the CDFW. The CDFW, in

administering this program, is charged with being responsible for obtaining access to the most recent information with respect to natural resources by maintaining, expanding, and keeping current a data management system, designated the California Natural Diversity Database (CNDDB), designed to document information on these resources. That data is required to be made available to interested parties on request. Costs are to be shared by all who use the data management system.

Clean Water Act

Section 404: United States Army Corps of Engineers (USACE) has jurisdiction over fill materials in essentially all water bodies, including wetlands. All federal agencies are to avoid impacts to wetlands whenever there is a practicable alternative. Section 404 established a permit program administered by USACE regulating the discharge of dredged or fill material into waters of the US (including wetlands).

Section 401: Requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S., must obtain a state certification that the discharge complies with other provisions of the Clean Water Act (CWA). The Regional Water Quality Boards (RWQCB) administer the certification program in California.

The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse effect.

Porter-Cologne Water Quality Control Act

This regulatory law is becoming more prominent on projects involving impacts to isolated waters of the State (non-404/401 waters). The RWQCB is increasingly requiring Waste Discharge Requirement (WDR) permits for impacts to waters of the State.

Migratory Bird Treaty Act

This treaty with Canada, Mexico and Japan makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season. California Fish and Game Code (Sec 3500) also prohibits the destruction of any nest, egg, or nestling.)

Executive Order 11990 – Protection of Wetlands

Established a national policy to avoid adverse effects on wetlands whenever there is a practicable alternative. The U. S. Department of Transportation (DOT) promulgated DOT Order 5660.1A in 1978 to comply with this direction. On federally funded projects, effects on wetlands must be identified. Alternatives that avoid wetlands must be considered. If wetland effects cannot be avoided, then all practicable measures to minimize harm must be included.

This must be documented in a specific Wetlands Only Practicable Alternative Finding.

Additional requirement is to provide early public involvement in projects affecting wetlands. FHWA provides technical assistance (Technical Advisory 6640.8A) and reviews environmental documents for compliance.

Executive Order 13112 – Invasive Species

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration (FHWA) guidance issued August 10, 1999 directs the use of the State's invasive species list, maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project.

Under the E.O., federal agencies cannot authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless all reasonable measures to minimize risk of harm have been analyzed and considered.

2.2. Studies Required

This BA has been completed in a manner consistent with Caltrans guidelines as described in Volume 3 of the Environmental Handbook and the Standard Environmental Reference. The intent is to provide the level of information necessary for all lead agencies, and responsible agencies to be provided with the biological information necessary for their

decisions. Due to the high level of disturbance and lack of vegetation within the PIA, absence of appropriate habitat could be determined for most species. Therefore, protocol level surveys for these species were not warranted. Plant surveys were performed within the appropriate blooming period.

2.3. Personnel and Survey Dates

2.3.1. Field Surveys

Table 1 summarizes survey efforts conducted in 2018 on the proposed project (refer to Appendix E for surveyor qualifications).

Table 1: Survey Tasks, Dates, and Personnel

Date	Surveyor(s)	Survey Task
3/28/2018	Steve McMurtry	Floristic and General Biological Survey
4/5/2018	Steve McMurtry	Floristic and General Biological Survey
5/9/2018	Steve McMurtry	Floristic and General Biological Survey

2.3.1.1. GENERAL WILDLIFE SURVEY

Following the preliminary desktop analysis of the database records, De Novo Planning Group conducted three general biological surveys to evaluate the project area and assess the current conditions. The surveys were conducted under clear and warm weather conditions and consisted of walking the road shoulders and documenting the vegetation types, wildlife, and current land use practices. The survey primarily focused on site conditions within the public ROW located along the road widening segment, in addition to the two bridges. Additional visual observations were conducted with the aid of a Vortex 20-60x80 spotting scope, and Bushnell 10x42 binoculars along the areas up to approximately 100 feet beyond the public ROW with the intent of documenting habitat areas and identifying any features (e.g., trees and telephone poles) that may provide habitat for wildlife species, including migratory birds and raptors.

Based on the results of the field surveys conducted for the project, private property restrictions, and information obtained from literature review, protocol level surveys for special-status plants or wildlife were deemed unnecessary. The presence of sensitive species has been inferred and the appropriate avoidance and minimization measures have been proposed to avoid and minimize impacts to any species that may inadvertently enter the PIA.

2.3.1.2. BOTANICAL SURVEY

A floristic botanical survey (i.e., during the flowering season for most plant species with a complete botanical inventory) was performed on March 28, 2018, April 5, 2018, and May 9, 2018. The PIA is nearly devoid of vegetation from routine road shoulder maintenance activities; therefore, further floristic surveys were not warranted.

2.4. Agency Coordination and Professional Contacts

An initial meeting was also held with the United States Bureau of Reclamation on March 28, 2018 to discuss the project, and the scope of the environmental and technical studies. An initial meeting was held with the Department of Water Resources on April 5, 2018 to discuss the project, and the scope of the environmental and technical studies. In addition, Steve McMurtry of De Novo Planning Group requested an official species list for the project from the USFWS on October 22, 2018 (see Appendix C).

2.5. Document Preparation History

This BA was prepared for the City of Tracy and the USBR, and in coordination with DWR and SJOG. It is anticipated that this BA will support environmental documents prepared pursuant to the California Environmental Quality Act and the National Environmental Policy Act. In addition, this BA will serve as support documentation for consideration of by the San Joaquin Council of Governments serving as the administrator for the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). The SJMSCP is a USFWS approved Habitat Conservation Plan (HCP), and a CDFW approved Natural Community Conservation Plan (NCCP). It is anticipated that the proposed project would qualify for coverage under these two plans, which would allow for the issuance of an ESA Section 10 permit, and a FGC Section 2081 permit with Incidental Take and Minimization Measures. ESA Section 10 permit, and an FGC Section 2081 permit with Incidental Take and Minimization Measures.

BA Preparation and Project Manager: De Novo Planning Group, Steve McMurtry, Principal Biologist, (916) 580-9818, smcmurtry@denovoplanning.com.

BA Graphics: De Martino Mapping Services, Jennifer DeMartino, GIS Specialist, (916) 300-1661, jennifer@demartinomapping.com, prepared project maps and

graphics using global positioning system (GPS) field data and Geographic Information System (GIS) software.

2.6. Limitations That May Influence Results

The surveys conducted by De Novo Planning Group occurred in the typical blooming period for sensitive plant species; however, special-status plant species with the potential to occur in the project area may be annual species that may be difficult to detect following seasons of abnormal rainfall. The surveys were performed in 2018, which was considered an average rainfall year. However, due to the level of disturbance within the PIA, occurrences of rare plant species are not expected to occur. It is important to note that physical examination of habitat beyond the public ROW is limited to visual observation from the roadway, as no permission was granted to access adjacent private property. For the purposes of this report, the PIA will be limited to 100 feet of the public ROW.

Chapter 3. Results: Environmental Setting

3.1. Description of Existing Biological and Physical Conditions

The proposed project is located in the Great Central Valley, which is predominately characterized by extensive agricultural land. The land surrounding the project limits includes agricultural land, aquatic habitat (Delta Mendota Canal and California Aqueduct), ruderal habitat, and rural/developed areas/roadways. The surrounding agricultural land in the region includes irrigated pastures, alfalfa, vineyards, orchards, and row crops. Most of this land is irrigated by irrigation canals that traverse the region. The irrigation canals are the primary source of aquatic habitat in the immediate vicinity. Figure 5 illustrates the hydrology of the region. The rural development in the vicinity is predominately agricultural outbuildings and rural residential development. The San Joaquin River is located approximately nine miles east of the project limits.

3.1.1 Biological Conditions in the Biological Study Area

Agricultural Lands: Agricultural lands occur throughout the region. Agricultural lands include irrigated pastures, alfalfa, vineyards, orchards, and row crops. Depending on the crop pattern and the land's proximity to native habitats, agricultural lands can provide valuable habitat for wildlife, particularly as foraging habitat. Raptor species use row- and grain-crop agricultural lands for foraging because several species of common rodents are present at or near these crop types. Agricultural land also provides habitat for wintering waterfowl and shorebirds. Some aquatic wildlife can also use agricultural land as upland for foraging, breeding, or basking habitat. Agricultural land is the dominant habitat in the vicinity of the project.

Aquatic Habitat: Aquatic habitat in the region is primarily comprised of irrigation canals, and stock ponds. The deeper water aquatic habitats are areas that are inundated and do not support rooted-emergent or woody plant species. Shallow water, seasonal aquatic, or the edges of deeper water aquatic habitat are inundated to a lesser extent and can support rooted-emergent or woody plant species. There are various irrigation canals located throughout the project vicinity that serve the agricultural operations of the region and/or municipal water supplies, two of which are within the project limits (Delta Mendota Canal and California Aqueduct). These facilities have deeper water aquatic habitat that does not support rooted-emergent or woody plant species. The

edge of the Delta Mendota Canal and California Aqueduct are shallow water aquatic habitat that does not support a prevalence of emergent vegetation due to the maintenance and weed abatement activities along the Canal bank.

Ruderal Habitat: Ruderal habitat is found throughout the region in areas that are disturbed as part of a maintenance regime such as roadsides, urban areas, canals, sloughs, and ditches. These disturbed areas provide an environment that is initially void of vegetation. Plants that can germinate and grow quickly will generally thrive in this environment. Such plants include many of the non-native plants that are common to the Central Valley. The project limits is best characterized as ruderal habitat, or barren. There was very limited vegetation within the project limits which can be attributed to the frequency of disturbance associated with agricultural activities and roadway traffic.

Developed Areas: Development in the area is concentrated in the City of Tracy to the north and east, as well as the Tracy Hills project to the south, which is currently under construction. In the immediate vicinity there are agricultural outbuildings, rural residential development, and infrastructure (i.e. roads, power lines, etc.) at a low density. Vegetation types within urban areas are typically introduced non-native plants, which provide limited habitat for wildlife.

3.1.1.1. VEGETATION

The area within the project limits is composed of a gravel shoulder associated with the roadway, disturbed soil associated with the agricultural operations, the Delta Mendota Canal, and the California Aqueduct. Vegetation was largely absent from the gravel shoulder, with the roadway, and agricultural areas in and immediately adjacent to the project limits. This area is best characterized as ruderal in some locations and barren in others. Plants observed included: wild oats (*Avena* spp.), mustard (*Brassica* spp), bromes (*Bromus* spp.), barley (*Hordeum* spp.), and rye (*Lolium* spp.). Other plants that were not observed, but are commonly found in ruderal areas of the region and are likely to occur in the project limits between disturbances include: fiddleneck (*Amsinkia menziesii*), scarlet pimpernel (*Anagalis arvensis*), field owls clover (*Castilleja campestris*), star thistle (*Centaurea solstitialis*), filaree (*Erodium botrys*), cut-leaf filaree (*Erodium cicutarium*), cut-leaf geranium (*Geranium dissectum*), birdfoot deer vetch (*Lotus corniculatus*), miniature lupine (*Lupinus bicolor*), jointed wild radish (*Raphanus raphanistrum*), wild radish (*Raphanus sativus*), milk thistle (*Silybum marianum*), medusa-head (*Taeniatherum caput-medusae*), rose clover (*Trifolium hirtum*), and cocklebur (*Xanthium strumarium*).

The banks of the Delta Mendota Canal and California Aqueduct were largely void of vegetation, which is anticipated to be a result of regular weed abatement. There was some vegetation along the water edge. Common aquatic plants along the water edge of major irrigation canals in the region include: water-milfoil (*Myriophyllum* spp.), waterweeds (*Elodea* spp.), pondweeds (*Potamogeton* spp.), and duckweeds (*Lemna* spp.) among others.

3.1.1.2. ANIMALS

Agricultural and ruderal areas can provide habitat for both common wildlife populations. For example, some commonly observed wildlife species in the region include: California ground squirrel (*Spermophilus beecheyi*), California vole (*Microtus californicus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), white-tailed kite (*Elanus leucurus*), American killdeer (*Charadrius vociferus*), gopher snake (*Pituophis melanoleucus*), garter snake (*Thamnophis species*), and western fence lizard (*Sceloporus occidentalis*), as well as many native insect species. Many of these species would be expected to cross through the project limits at times.

3.1.1.3. LISTED AND PROPOSED SPECIES POTENTIALLY IN THE BIOLOGICAL STUDY AREA

There are numerous special-status species known to occur within the region. Some species require localized micro-habitats, while others are highly mobile and may occur throughout the region. The CDFW (CNDDB) and USFWS (IPAC) documents 76 special status species, 21 of which are listed as federal or state endangered or threatened within a nine quad radius of the BSA. (Figure 4) (Clifton Court Forebay, Union Island, Lathrop, Midway, Tracy, Vernalis, Cedar Mountain, Lone Tree Creek, and Solyo USGS 7.5 minute quadrangles). This includes three amphibians, four birds, two crustaceans, four fish, three mammals, one insect, two reptiles, and two plants. Table 2 provided below is a collection of each listed species. In addition to these listed species, the CNDDB and CNPS document numerous other species, that are not federal or state listed but have some protective status. The full list of species, inclusive of those not listed as endangered or threatened is provided in Appendix A, B, C, and D.

Table 2: Federal / State- Listed, Proposed Species, and Critical Habitat Potentially Occurring or Known to Occur in the PIA

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Rationale
Plants					
Delta button-celery	*Eryngium racemosum*	-/CE/1B.1	Riparian scrub, seasonally inundated depressions along floodplains on clay soils; below 75 m. June-August.	A	The PIA is outside the critical habitat. Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
large-flowered fiddleneck	*Amsinckia grandiflora*	FE/CE/1B.1	Cismontane woodland, valley and foothill grassland. Annual grassland in various soils. 275-550 m. (Mar)Apr-May.	A	The PIA is outside the critical habitat. Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Amphibians					
California red-legged frog	*Rana draytonii*	FT/--	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	A	The PIA is outside the critical habitat. The aquatic habitat in the Delta Mendota and California Aqueduct is populated with aggressive fish predators (striped bass, largemouth bass) that inhibit the use of this habitat for CRLF. The Delta Mendota and California Aqueduct also lacks significant emergent vegetation, and adjacent lands are intensively cultivated causing there to be a lack upland sites. There are no documented occurrences within one mile of the PIA. Documented occurrences exist in the foothills to the east of the project site in the Corral Hollow Creek drainage. This species is not known to occur in the valley floor.
California tiger salamander	*Ambystoma californiense*	FT/CT	Breeds in ponds or other deeply ponded wetlands, and uses gopher holes and ground squirrel burrows in adjacent grasslands for upland refugia/foraging.	P – Present within migratory range	The PIA is outside the critical habitat. The aquatic habitat in the Delta Mendota and California Aqueduct is populated with aggressive fish predators (striped bass, largemouth bass) that inhibit the use of this habitat for CTS breeding. The upland portion of the PIA is disturbed and does not provide quality refugia habitat for estivating CTS. There is a documented occurrence within one mile of the PIA. Documented occurrences exist in the foothills to the east of the project site in the Corral Hollow Creek drainage. The project site is within the migratory range, however, the PIA does not present quality refuge habitat and this species is not believed to migrate to the PIA.

foothill yellow-legged frog	*Rana boylii*	--/CC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	A	The PIA is outside the critical habitat. The aquatic habitat in the Delta Mendota and California Aqueduct is populated with aggressive fish predators (striped bass, largemouth bass) that inhibit the use of this habitat for FYLF. The Delta Mendota and California Aqueduct also lacks significant emergent vegetation, and adjacent lands are intensively cultivated causing there to be a lack upland sites. There are no documented occurrences within one mile of the PIA. Documented occurrences exist in the foothills to the east of the project site in the Corral Hollow Creek drainage. This species is not known to occur in the valley floor.
Birds					
least Bell's vireo	*Vireo bellii pusillus*	FE/CE	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	A	This species is not documented within the PIA and was not observed during field surveys. The PIA does not support riparian habitat, and lacks willows, cottonwoods, and other woody riparian vegetation necessary for this species. Adjacent uplands outside PIA also lack riparian habitat. The closest occurrence of this species is in the foothills to the east of the project site in the Corral Hollow Creek drainage, which supports riparian habitat. Given the lack of riparian habitat in the PIA, there is a very low likelihood of this species being present. This species is not anticipated to be present in the PIA.
Swainson's hawk	*Buteo swainsoni*	--/CT	Nests in tall cottonwoods, valley oaks or willows. Forages in fields, cropland, irrigated pasture, and grassland often near riparian corridors.	HP	This species is not documented within the PIA, however, they are highly mobile and documented throughout the region. The PIA does not provide quality nesting trees, however, there is abundant foraging habitat on lands adjacent to the PIA.
tricolored blackbird	*Agelaius tricolor*	--/CT	Colonial nester in cattails, bulrush, or blackberries associated with wetland or drainage habitats. Also need foraging areas such as grasslands or agricultural pastures.	A	This species is not documented within the PIA and was not observed during field surveys. The PIA does not support habitat necessary for this species. The closest occurrence of this species is in the foothills to the east of the project site in the Corral Hollow Creek drainage, which supports nesting habitat. Given the lack of habitat in the PIA, there is a very low likelihood of this species being present. This species is not anticipated to be present in the PIA.
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT/CE	Wide, dense riparian forests with a thick understory of willows for nesting; sites with	A	This species is not documented within the PIA and was not observed during field surveys. The PIA does not support riparian habitat, and lacks

			a dominant cottonwood overstory are preferred for foraging; may avoid valley oak riparian habitats where scrub jays are abundant		willows, cottonwoods, and other woody riparian vegetation necessary for this species. Adjacent uplands outside PIA also lack riparian habitat. The closest occurrence of this species is in the foothills to the east of the project site in the Corral Hollow Creek drainage, which supports riparian habitat. Given the lack of riparian habitat in the PIA, there is a very low likelihood of this species being present. This species is not anticipated to be present in the PIA.
Crustaceans					
vernal pool fairy shrimp	*Branchinecta lynchi*	FT/--	Vernal pools or other seasonal wetlands. Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County.	A	The aquatic habitat in the Aqueduct and Delta Mendota functions as a year-round wet environment, which is not consistent with the seasonal wetland habitat requirements for this species. No suitable habitat is present in PIA.
Vernal Pool tadpole shrimp	*Lepidurus packardi*	FE/--	Vernal pools, and seasonal wetlands that fill with water during fall and winter rains and dry up in spring and summer.	A	The aquatic habitat in the Aqueduct and Delta Mendota functions as a year-round wet environment, which is not consistent with the seasonal wetland habitat requirements for this species. No suitable habitat is present in PIA.
Fishes					
Delta smelt	*Hypomesus transpacificus*	FT/CE	Occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand.	A	The aquatic habitat in the Aqueduct and Delta Mendota Canal does not contain the appropriate estuary or shallow tidal freshwater habitat that is needed for Delta smelt. The habitat is non-saline, warm-water habitat that supports a fishery for bass, crappie, sunfish, catfish, and shad. There are no documented occurrences of this species in the Delta Mendota Canal or Aqueduct.
eulachon	*Thaleichthys pacificus*	FT/--	Found in Klamath River, Mad River, Redwood Creek, and in small numbers in Smith River and Humboldt Bay tributaries. Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris.	A	The aquatic habitat in the Aqueduct and Delta Mendota Canal does not contain the appropriate cold-water habitat with gravel and sandy bottoms that are needed for this species. The habitat is warm-water habitat that supports a fishery for bass, crappie, sunfish, catfish, and shad. The Aqueduct and Delta Mendota Canal is not known to be populated with this species.
longfin smelt	*Spirinchus thaleichthys*	FC/CT	Prior to spawning, these fish aggregate in deepwater habitats available in the northern Delta,	A	The aquatic habitat in the Aqueduct and Delta Mendota Canal does not contain the appropriate estuary or shallow tidal freshwater habitat that is needed for longfin smelt. The habitat

			including, primarily, the channel habitats of Suisun Bay and the Sacramento River. Spawning occurs in fresh water on the San Joaquin River below Medford Island and on the Sacramento River below Rio Vista.		is non-saline, warm-water habitat that supports a fishery for bass, crappie, sunfish, catfish, and shad. There are no documented occurrences of this species in the Delta Mendota Canal. The Aqueduct and Delta Mendota Canal is not known to be populated with this species.
steelhead - Central Valley DPS	*Oncorhynchus mykiss irideus*	FT/--	Populations in the Sacramento and San Joaquin Rivers and their tributaries. Free of heavy sedimentation with adequate flow and cool, clear water. Gravel that is between 0.5 to 6.0 inches in diameter, dominated by 2 to 3-inch gravel. Escape cover such as logs, undercut banks, and deep pools for spawning adults.	A	The aquatic habitat in the Aqueduct and Delta Mendota Canal does not contain the appropriate cold-water habitat with pools, riffles, and runs that are needed for steelhead. The habitat is warm-water habitat that supports a fishery for bass, crappie, sunfish, catfish, and shad. The Aqueduct and Delta Mendota Canal is not known to be populated with this species.
Insects					
valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT/--	Dependent upon elderberry plant (*Sambucus mexicana*) as primary host species. Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant. Stream side habitats below 3,000 feet throughout the Central Valley.	A	The PIA does not contain any host plants.
Mammals					
riparian (=San Joaquin Valley) woodrat	*Neotoma fuscipes riparia*	FE/--	Riparian habitats with dense shrub cover, willow thickets, and an oak overstory	A	The PIA does not contain the appropriate riparian habitat. The PIA is highly disturbed barren ground. Adjacent uplands outside PIA do not contain riparian habitat, and are disturbed by regular cultivation. The absence of riparian habitat, combined with the fact that the PIA is largely barren, creates a very low likelihood of presence. This species is not anticipated to be present in the PIA.
riparian brush rabbit	*Sylvilagus bachmani riparius*	FE/CE	Native valley riparian habitats with large clumps of dense shrubs, low-growing vines, and some tall shrubs and trees	A	The PIA does not contain the appropriate riparian habitat. The PIA is highly disturbed barren ground. Adjacent uplands outside PIA do not contain riparian habitat, and are disturbed by regular cultivation. The absence of riparian habitat, combined with the fact that the PIA is largely barren, creates a very low likelihood of presence. This species is not anticipated to be present in the PIA.

San Joaquin kit fox	*Vulpes macrotis mutica*	FE/CT	Saltbush scrub, grassland, oak, savanna, and freshwater scrub	HP	This species is mobile and is documented in the region and could travel through the PIA at times. No dens were observed during field surveys.
Reptiles					
Alameda whipsnake	*Masticophis lateralis euryxanthus*	FT/CT	Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna and woodland habitats. Mostly south-facing slopes and ravines, with rock outcrops, deep crevices or abundant rodent burrows, where shrubs form a vegetative mosaic with oak trees and grasses.	A	The PIA is outside the critical habitat. The PIA is highly disturbed barren ground. Adjacent uplands outside PIA do not contain appropriate habitat, and are disturbed by regular cultivation. The absence of habitat, combined with the fact that the PIA is largely barren, creates a very low likelihood of presence. This species is not anticipated to be present in the PIA.
Giant Garter snake	*Thamnophis gigas*	FT/CT	Freshwater marshes, sloughs, ponds, small lakes or low gradient streams with adjacent upland areas. Also has adapted to drainage canals, irrigation ditches, and agricultural wetlands especially flooded rice fields.	HP (Marginal Aquatic, and poor upland)	GGS is not documented within the regional vicinity of the PIA and was not observed during field surveys. Marginal aquatic habitat is present in the PIA for GGS given the lack of emergent vegetation. PIA has poor upland habitat given lack burrows, barren ground, and maintenance/weed abatement activities. Adjacent uplands outside PIA lack burrows and are disturbed by regular cultivation, fertilizers, pesticides, and herbicides, creating poor upland habitat for GGS. The combination of marginal aquatic habitat and poor upland habitat present a very low likelihood of GGS presence. This species is not anticipated to be present in the PIA.

Notes:

Habitat Present/Absent:

Absent [A] = No habitat present and no further work needed.
Habitat Present [HP] = Habitat is, or may be present. The species may be present.
Present [P] = Species is present.
Critical Habitat [CH] = Project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

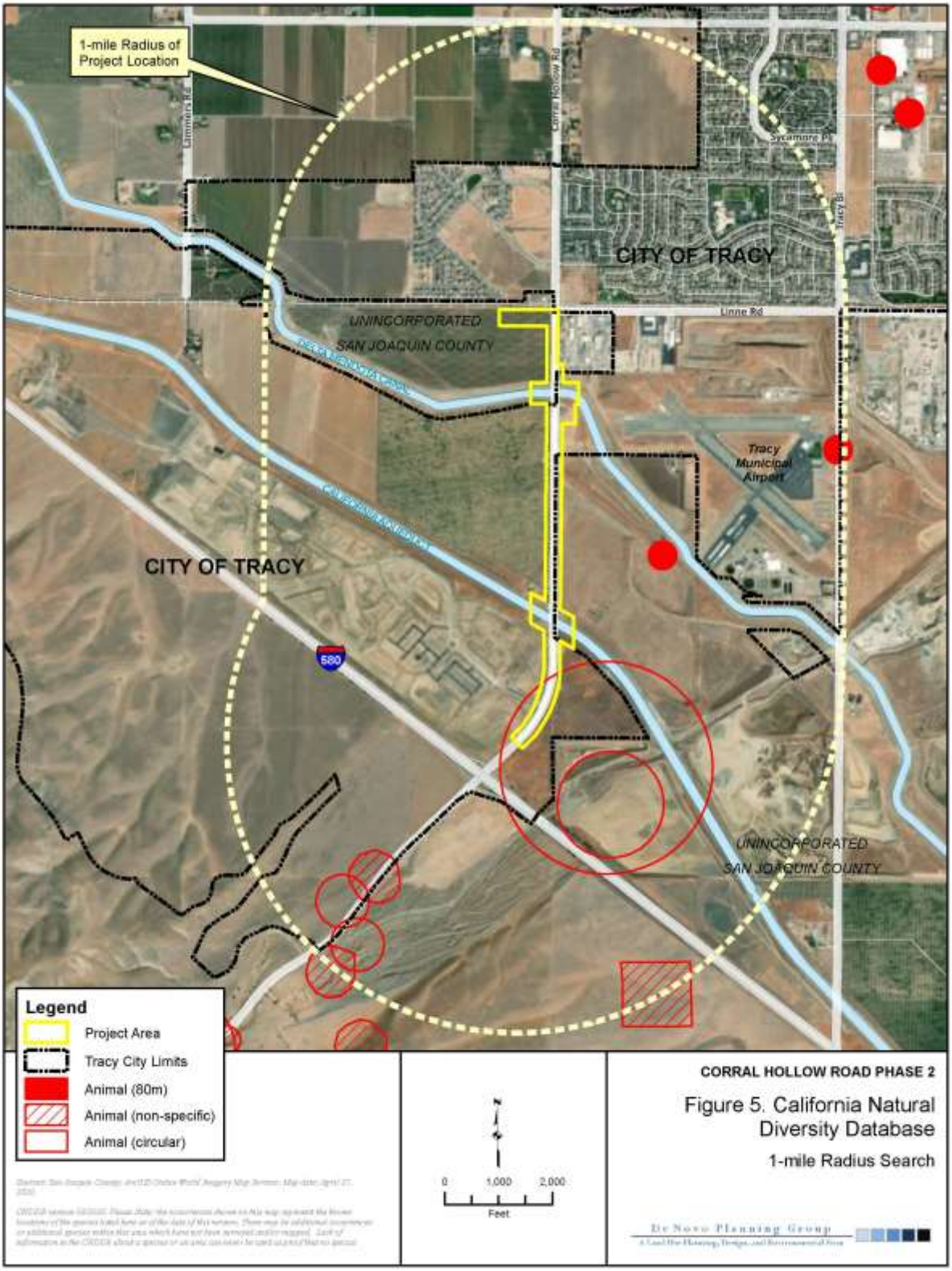
Status (Fed/CA/CNPS):

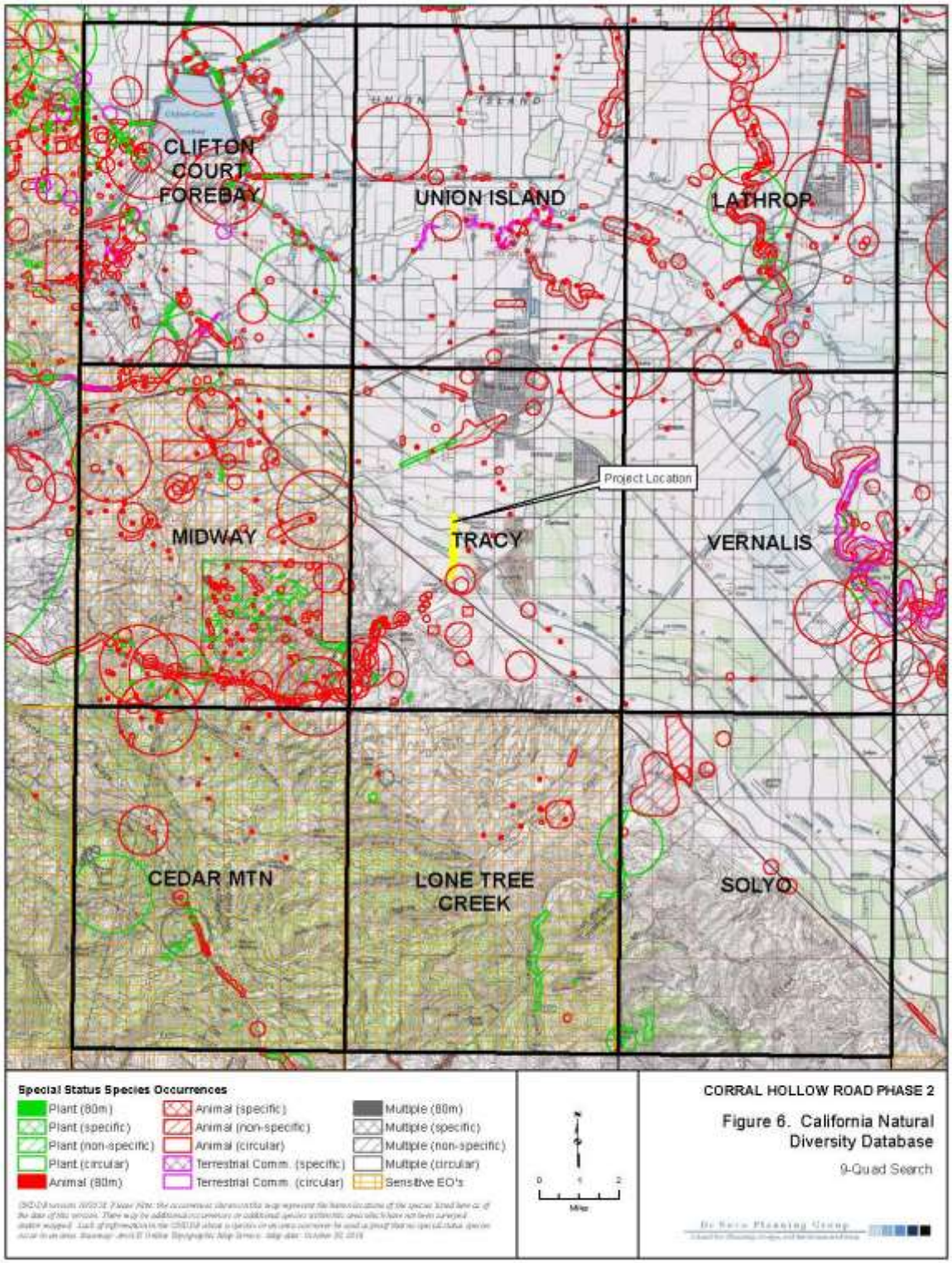
Federal:
FE = endangered under FESA
FT = threatened under FESA
FC = candidate for listing under FESA
State
CE = endangered under CESA
CT = threatened under CESA
CC = candidate for listing under CESA
CR = rare under CESA
FP = fully protected.
WL = watch list.
California Native Plant Society (CNPS)
1B = rare, threatened, or endangered in California and elsewhere.
2 = rare, threatened, or endangered in California, but more common elsewhere.
3 = a review list – plants about which more information is needed.

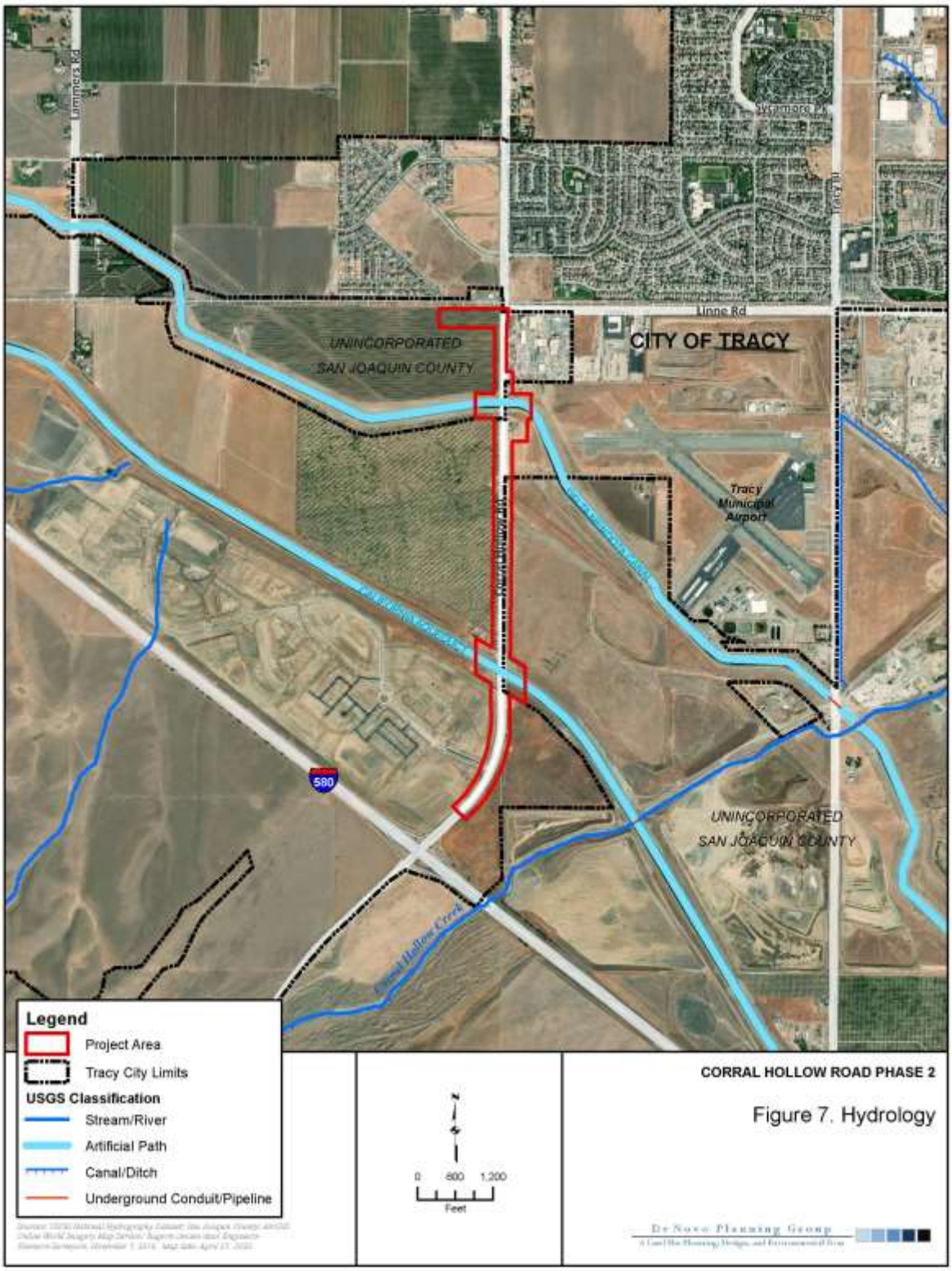
4 = plants of limited distribution – a watch list
.1 = seriously endangered in California (over 80% of occurrences threatened-high degree and immediacy of threat).
.2 = fairly endangered in California (20-80% occurrences threatened).
.3 = not very endangered in California (<20% of occurrences threatened).

In addition to the federally listed species presented above, there are a variety of birds that are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization that plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures. De Novo Planning Group's biologist initiated a review of potentially occurring birds protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act by reviewing the USFWS Information Planning and Conservation System (IPaC). Below is the list of the 9 birds that were provided on the IPaC report:

- Burrowing Owl (*Athene cunicularia*) - Breeds Mar-Aug
- Common Yellowthroat (Geothlypis trichas sinuosa) -
- Golden Eagle (Aquila chrysaetos) – Breeds Jan-Aug
- Long-billed Curlew (*Numenius americanus*) –Breeds elsewhere
- Nuttall's Woodpecker (*Picoides nuttallii*) - Year-round, breeds April-July
- Rufous Hummingbird (*Selasphorus rufus*) - Breeds elsewhere
- Spotted Towhee (*Pipilo maculatus clementae*) – Breeds April-July
- Tricolored Blackbird (*Agelaius tricolor*) - Breeds Mar-Aug
- Yellow-billed Magpie (*Pica nuttalli*) - Breeds April-July


1-mile Radius of Project Location
Lammers Rd
Corral Hollow Rd
Sycamore Pl
Tracy Blvd
CITY OF TRACY
Linne Rd
UNINCORPORATED SAN JOAQUIN COUNTY
Tracy Municipal Airport
CITY OF TRACY
580
UNINCORPORATED SAN JOAQUIN COUNTY
Legend
Project Area
Tracy City Limits
Animal (80m)
Animal (non-specific)
Animal (circular)
0
1,000
2,000
Feet
CORRAL HOLLOW ROAD PHASE 2
Figure 5. California Natural Diversity Database
1-mile Radius Search
De Novo Planning Group


CLIFTON COURT FOREBAY
UNION ISLAND
LATHROP
MIDWAY
TRACY
Project Location
VERNALIS
CEDAR MTN
LONE TREE CREEK
SOLYO
Special Status Species Occurrences
Plant (80m)
Plant (specific)
Plant (non-specific)
Plant (circular)
Animal (80m)
Animal (specific)
Animal (non-specific)
Animal (circular)
Terrestrial Comm. (specific)
Terrestrial Comm. (circular)
Multiple (80m)
Multiple (specific)
Multiple (non-specific)
Multiple (circular)
Sensitive EO's
Miles
CORRAL HOLLOW ROAD PHASE 2
Figure 6. California Natural Diversity Database
9-Quad Search


Lammers Rd
Linne Rd
CITY OF TRACY
UNINCORPORATED
SAN JOAQUIN COUNTY
Tracy Municipal Airport
580
UNINCORPORATED
SAN JOAQUIN COUNTY
Legend
Project Area
Tracy City Limits
USGS Classification
Stream/River
Artificial Path
Canal/Ditch
Underground Conduit/Pipeline
0 600 1,200
Feet
CORRAL HOLLOW ROAD PHASE 2
Figure 7. Hydrology
De Novo Planning Group

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation

4.1. Federal/State-Listed/Proposed Plant Species

Based on a review of sensitive species occurrences in the area, there are no federally-listed plant species that have been identified within the PIA and evaluated for the potential to occur within the project site.

4.1.1. Discussion of Federal/State Listed Plants

There are two listed plant species documented within the regional vicinity. The large-flowered fiddleneck (*Amsinckia grandiflora*) requires cismontane woodland, or valley and foothill grassland. The Delta button-celery (*Eryngium racemosum*) requires riparian scrub, seasonally inundated depressions along floodplains on clay soils. The PIA is outside the critical habitat for these species and they were not observed during field surveys. There is no evidence of documented occurrences within PIA or immediately adjacent. The PIA is high disturbed land, and is mostly void of vegetation.

4.1.1.1. SURVEY RESULTS

Based on this preliminary evaluation of listed plant species in the region and the known site conditions within the PIA, it was determined that no suitable habitat occurs within the PIA. Therefore, the project would result in no effect to federally listed plant species or federally proposed plant species.

4.1.1.2. CRITICAL HABITAT

The PIA is not within the critical habitat area for any of the plant species listed in the above section.

4.1.1.3. PROJECT EFFECTS

Due to the absence of listed plant species in the project area, the proposed project would have ***no effect*** on listed plant species.

4.1.1.4. AVOIDANCE AND MINIMIZATION EFFORTS

Due to absence of listed plant species in the PIA, avoidance and minimization measures are not proposed.

4.1.1.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

Modification to the project is not necessary to mitigate effects to listed plants.

4.1.1.6. CUMULATIVE EFFECTS (FESA)

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the project area considered in this BA. The project area includes agricultural land immediately adjacent to the existing roadway. Future federal actions unrelated to the proposed action, if any, are not considered in this section because they would require separate consultation. To date, there are no known non-federal actions anticipated to occur within the project area. Therefore, there are no known cumulative effects to listed plant species.

4.2. Federal/State Listed Animal Species Occurrences

There are numerous special-status species known to occur within the region. Some species require localized micro-habitats, while others are highly mobile and may occur throughout the region. The CDFW CNDDB and USFWS IPAC Report list 76 special status species within a nine-quad search. Table 4 provided in Appendix A identifies each of the special status species and their habitat requirements. The IPAC Report and USFWS Official Species list is provided in Appendix B and Appendix.

4.2.1. Discussion of San Joaquin kit fox

The San Joaquin kit fox (SJKF; *Vulpes macrotis mutica*) is federally listed as endangered and state listed and threatened. The loss of suitable kit fox habitat to intensive agricultural, oil production, and land development has contributed to the decline of this species.

SJKF occurs primarily in the San Joaquin Valley, with satellite populations occurring in the southern Salinas Valley and possibly the eastern Pajaro River Valley. It inhabits valley and foothill grasslands, sparsely vegetated shrubby habitats, and some agricultural and urban areas. Adult foxes are usually solitary during the late summer and fall. By September and October, adult females have begun to excavate and enlarge natal dens. Adult males join the vixens in October or November, and mating typically occurs near the first of the year. Pups typically are born in late February or early March, begin foraging on their own at about 4 to 5 months, and disperse shortly thereafter.

SJKF use complex dens for shelter and protection. Most SJKF dens are located in flat terrain or the lower slopes of hills. Common locations for dens include washes, drainages, and roadside berms. SJKF are reputed to be poor diggers and are usually found in areas

with loose-textured, friable soils. Some studies have suggested that where hardpan layers predominate, kit foxes create dens by enlarging the burrows of California ground squirrel (*Otospermophilus beecheyi*) or American badger (*Taxidea taxus*). They also commonly den in human-made structures such as small-diameter culverts. A diet of small rodents, such as kangaroo rats (*Dipodomys* spp.) and California ground squirrels, is common for SJKF.

4.2.1.1. SURVEY RESULTS

There are numerous CNDDB records of SJKF in the regional vicinity, including one occurrence within the PIA. There were no active or inactive dens that could potentially support this species observed 50 feet from the public ROW. There are various farming operations along the boundary of the PIA that could provide facilities/equipment for refuge/denning opportunities for SJKF.

4.2.1.2. CRITICAL HABITAT

Critical habitat has not been designated for SJKF.

4.2.1.3. PROJECT EFFECTS

Potential impacts to SJKF are based on the assumption that this species transects the PIA to forage and den within adjacent suitable habitat. As a result, there is a potential for direct effects to this species that occur as a result of construction activities. Potential for vehicle strikes from construction equipment is not considered to be any greater than potential strikes from existing traffic levels on the roadway. Indirect impacts are not expected as a result from the proposed project, as the existing road is maintained on an annual basis and provides very little habitat value. Therefore, the proposed project ***may affect, not likely to adversely affect*** this species with implementation of avoidance and minimization measures.

4.2.1.4. AVOIDANCE AND MINIMIATION EFFORTS

To avoid and minimize potential effects to SJKF, the City proposes the following measures, which are consistent with *USFWS Standard Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2004).

1. Prior to commencement of any grading activities, the City shall seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through implementation of incidental take and minimization Measures (ITMMs) and payment of fees for conversion of lands that may provide habitat for covered

special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. Obtaining coverage for a Project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a), California Fish and Game Code Section 2081, and the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species.

2. No less than 14 days and no more than 30 days prior to initiation of site disturbance and/or construction, a qualified biologist shall conduct a pre-activity (i.e., pre-construction) survey for known or potentially sensitive species, including San Joaquin kit fox dens, and submit a letter to the City of Tracy, USBR, and SJCOG, reporting the date the survey was conducted, the survey methodology, survey results, and what measures were necessary (and completed), as applicable, to address any San Joaquin kit fox activity within the project limits.

3. Prior to or during project activities, if any observations are made of San Joaquin kit fox, or any known or potential San Joaquin kit fox dens are discovered within the project limits, the qualified biologist shall notify the City of Tracy. The City of Tracy will notify the SJCOG. All work in the area of discovery will stop until such time that SJCOG determines ways to proceed with the project and avoid take.

4. During the site-disturbance and/or construction phase, all construction pipes, culverts, or similar structures or materials that contact a hole with a diameter of 4-inches or greater and that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for San Joaquin kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. All pipes, culverts, or similar structures with a diameter of 4-inches or greater that will be stored onsite for more than one night shall be capped after it is inspected for San Joaquin kit fox. Road culverts shall be capped prior to the start of project activities. If any San Joaquin kit fox are found, the City of Tracy will notify the SJCOG. All work in the area of discovery will stop until such time that SJCOG determines ways to proceed with the project and avoid take.

5. Prior to, during, and after the site-disturbance and/or construction phase, use of pesticides or herbicides shall be in compliance with all federal, state, and local regulations. This is necessary to minimize the probability of primary or secondary poisoning of endangered species utilizing adjacent habitats, and the depletion of prey upon which San Joaquin kit foxes depend.

6. To prevent inadvertent entrapment of San Joaquin kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep shall be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. If at any time a trapped or injured San Joaquin kit fox is discovered, the City of Tracy shall be notified. The City of Tracy will notify the SJCOG. All work in the area of discovery will stop until such time that SJCOG determines ways to proceed with the project and avoid take.

7. During the site-disturbance and/or construction phase, any contractor or employee that inadvertently kills or injures a San Joaquin kit fox, or who finds any canines that resemble kit fox, either dead, injured, or entrapped shall be required to report the incident immediately to the City of Tracy. In the event that any observations are made of injured or dead San Joaquin kit fox, the City of Tracy shall be notified. The City of Tracy will notify the SJCOG. All work in the area of discovery will stop until such time that SJCOG determines ways to proceed with the project and avoid take. Prior to final inspection, should any long internal or perimeter fencing be proposed or installed, the City of Tracy shall do the following to provide for San Joaquin kit fox passage:

    - If a wire strand/pole design is used, the lowest strand shall be no closer to the ground than 12 inches.

    - If a more solid wire mesh fence is used, 8×12-inch openings near the ground shall be provided every 100 yards.

4.2.1.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

Modification to the project is not necessary to mitigate effects on SJKF.

4.2.1.6. CUMULATIVE EFFECTS (FESA)

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the project area considered in this BA. The project area includes habitat immediately adjacent to the bridge and the roadways. Future federal actions unrelated to the proposed action are not considered in this section because they would require separate consultation. To date, there are no known non-federal actions anticipated to occur within the project area. Therefore, there are no known cumulative effects to SJKF.

4.2.2. Discussion of Giant Garter Snake

The Giant Garter snake (*Thamnophis gigas*) federally listed as threatened. The giant garter snake inhabits marshes, sloughs, ponds, small lakes, low gradient streams, other waterways and agricultural wetlands such as irrigation and drainage canals and rice fields, and the adjacent uplands. Essential habitat components consist of (1) adequate water during the snake's active period (i.e., early spring through mid-fall) to provide a prey base and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat; and (3) upland habitat for basking, cover, refuge from flood waters, and hibernation in burrows. According to USFWS published programmatic biological opinions for giant garter snake (USFWS 1997), a basic giant garter snake habitat unit will typically consist of 2.00 acres (0.81 hectares) of surrounding upland for every 1.00 acre (0.40 hectare) of aquatic habitat. The 2.00 acres (0.81 hectares) of upland also may be defined as 218 linear feet (66 meters) of bankside habitat which incorporates adjacent uplands to a width of 200 feet (61 meters) from the edge of the bank.

4.2.2.1. SURVEY RESULTS

This species is not documented within, or in the regional vicinity of the PIA and none were observed during field surveys. The aquatic habitat in the PIA is marginal for giant garter snake given the lack of emergent vegetation. The banks of the aquatic facilities were largely void of vegetation, which is anticipated to be a result of regular weed abatement. There was some vegetation along the water edge. Common aquatic plants along the water edge included water-milfoil (*Myriophyllum* spp.), waterweeds (*Elodea* spp.), pondweeds (*Potamogeton* spp.), and duckweeds (*Lemna* spp.) among others.

The PIA has poor upland habitat given that it lacks burrows, is largely barren. The adjacent uplands just outside of the PIA lands are actively cultivated, which requires active ground disturbance and the use of chemicals such as fertilizers, pesticides, and herbicides, all of which make it poor upland habitat for giant garter snake. These areas also lack burrows. The combination of marginal aquatic habitat and poor upland habitat present a very low likelihood of giant garter snake presence. Based on the absence of quality aquatic and upland habitat, and the absence of recent occurrences, this species is not anticipated to be present in the PIA.

4.2.2.2. CRITICAL HABITAT

There are no critical habitats within the project limits.

4.2.2.3. PROJECT EFFECTS

Potential impacts to GGS are based on the assumption that this species could transect through the aquatic habitat in the PIA during the active season and find hibernation habitat

in the uplands. First, consideration should be given to the fact that the aquatic habitat in the California Aqueduct and Delta Mendota Canal is considered marginal. The deeper water habitat does not support rooted-emergent or woody plant species, which is a key component for GGS aquatic habitat. The shallower edge of these facilities do not support a prevalence of emergent vegetation due to the maintenance and weed abatement activities along the Canal bank. The absence of quality emergent vegetation along the water edge makes this marginal habitat for GGS.

The PIA has poor upland habitat given that it lacks burrows, is largely barren. Additionally, the adjacent lands outside of the PIA lands are poor upland habitat given that they are actively cultivated, and use chemicals such as fertilizers, pesticides, and herbicides. The combination of marginal aquatic habitat and poor upland habitat present a very low likelihood of GGS presence. Based on the absence of quality aquatic and upland habitat, and the absence of recent occurrences, this species is not anticipated to be present in the PIA during the active season and it not anticipated to enter the PIA to hibernate for the inactive season. Therefore, the proposed project ***may affect, not likely to adversely affect*** this species with implementation of avoidance and minimization measures.

4.2.2.4. AVOIDANCE AND MINIMIATION EFFORTS

To avoid and minimize impacts to giant garter snake the proposed project activities shall be compliant with the following Standard Avoidance and Minimization Measures during Construction Activities in Giant Garter Snake (*Thamnophis gigas*) Habitat:

8. Construction activity in aquatic areas should typically be conducted between May 1 and October 1 when feasible. This is the active period for giant garter snakes and direct mortality is lessened, because snakes are expected to actively move and avoid danger. Construction anticipated to begin in the inactive season for giant garter snake will require a biologist to survey the construction site for ten consecutive days during the final days of the active season to ensure that snakes are not moving into the area for the inactive season. This survey shall occur between September 15 and October 1st. If it is determined by the biologist, in consultation with the SJCOG, that giant garter snakes are not present during the active season, and are not moving into the construction area for the inactive season, then construction activities can continue into or commence in the inactive season given the documented absence of the snakes and low likelihood of their presence.

9. A biologist shall be on-call during construction activities in the event that a giant garter snake is identified within the construction zone. In the event that giant garter

snake is found work shall stop immediately, the City will inform SJCOG to determine the appropriate measures needed to continue work if feasible.

10. Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate marginal giant garter snake habitat within or adjacent to the project impact area as Environmentally Sensitive Areas. This area should be avoided by all construction personnel.

11. Construction personnel shall receive Service-approved worker environmental awareness training. This training instructs workers to recognize giant garter snakes and their habitat(s).

12. 24-hours prior to construction activities, the project area should be surveyed for giant garter snakes. Survey of the project area should be repeated if a lapse in construction activity of two weeks or greater has occurred during the inactive season. In the event that giant garter snake is found work shall stop immediately, the City will inform SJCOG to determine the appropriate measures and ways to proceed with the project and avoid take.

13. After completion of construction activities, remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions.

4.2.2.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

Modification to the project is not necessary to mitigate effects on GGS.

4.2.2.6. CUMULATIVE EFFECTS (FESA)

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the project area considered in this BA. The project area includes habitat immediately adjacent to the bridge and the roadways. Future federal actions unrelated to the proposed action are not considered in this section because they would require separate consultation. To date, there are no known non-federal actions anticipated to occur within the project area. Therefore, there are no known cumulative effects to GGS.

4.2.3. Discussion of California Tiger Salamander

California tiger salamander (CTS) is a federal and state listed threatened species that requires both aquatic and upland habitat to complete its life cycle. The aquatic habitat serves as breeding habitat and is usually found in vernal pools and seasonal water sources,

including slow moving streams, ponds, and swales that are free of predatory fish and bullfrogs. In early winter, just after sufficient rains have fallen for the ground to be moist and for temporary pools to begin to form, CTS begin their nocturnal breeding migration. On rainy nights, the adults emerge from their underground burrows and disperse up to a mile to lay their eggs in newly replenished vernal pools. Males typically outnumber females and often precede females to the pools/ponds. Shortly after breeding, adults will return to their terrestrial habitat. Larvae hatch from the eggs within two weeks and they continue to live in the pool for four to five months. CTS metamorphosis is considerably slower than other native amphibians, making the time frame of the presence of water critical to their survival. Usually by late spring or early summer, juveniles are ready to disperse to their terrestrial habitat. As the season shifts toward the driest summer months the CTS aestivates, not coming out until the wetter months arrive. The upland habitat is usually found in undisturbed grasslands near the aquatic breeding sites.

4.2.3.1. SURVEY RESULTS

The PIA is outside the critical habitat for this species. The aquatic habitat in the Delta Mendota and California Aqueduct is populated with aggressive fish predators (striped bass, largemouth bass) that inhibit the use of this habitat for CTS breeding. The upland portion of the PIA is disturbed and does not provide quality refugia habitat for estivating CTS.

CTS are not documented in the PIA, but there are documented occurrences in the foothills to the east of the PIA in the Corral Hollow Creek drainage. The project site is within the 1.3-mile migratory range; however, the PIA does not present quality refuge habitat and this species is not believed to migrate to the PIA.

The PIA does not contain appropriate aquatic breeding habitat given that the aquatic features are fast flowing waterways that lack pools or other stillwaters. CTS do not breed in fast flowing waters because larva or eggs would be washed away. This species is not adapted to breeding in fast flowing waters. Additionally, the PIA lacks burrows, and lacks an active ground squirrel population that could establish burrows needed to maintain a population of CTS. The upland areas within the PIA also lacks debris, such as wood piles, vehicles, etc., that can serve as refuge habitat for this species. The PIA is largely barren and lacks any significant aquatic or upland habitat for CTS.

There are no indications that CTS disperses down the Corral Hollow Creek drainage to the valley floor. While CTS can potentially travel up to a mile to reach suitable habitat, given lack of occurrences, and lack of upland and aquatic habitat within the PIA it is unlikely that the species would disperse north to the PIA.

4.2.3.2. CRITICAL HABITAT

There are no critical habitats within the project limits.

4.2.3.3. PROJECT EFFECTS

Potential impacts to CTS are based on the assumption that this species could migrate from their known population located to the east of the PIA in the foothill region along Corral Hollow Creek during the active season and find aestivation habitat. First, consideration should be given to the fact that CTS are not documented in the PIA, and the PIA does not contain appropriate aquatic breeding habitat given that the aquatic features are fast flowing waterways that lack pools or other stillwaters. Secondly, the PIA lacks burrows, and lacks an active ground squirrel population that could establish burrows needed to maintain a population of CTS. The upland areas within the PIA also lacks debris, such as wood piles, vehicles, etc., that can serve as refuge habitat for this species. The PIA is largely barren and lacks any significant aquatic or upland habitat for CTS.

There are no indications that CTS disperses down the Corral Hollow Creek drainage to the valley floor. While CTS can potentially travel up to a mile to reach suitable habitat, given lack of occurrences, and lack of upland and aquatic habitat within the PIA it is unlikely that the species would disperse north to the PIA. Therefore, the proposed project ***may affect, not likely to adversely affect*** this species with implementation of avoidance and minimization measures.

4.2.3.4. AVOIDANCE AND MINIMIATION EFFORTS

To avoid and minimize impacts to CTS the proposed project activities shall be compliant with the following measures:

14. Retain a biologist to conduct a preconstruction survey.

15. Install drift fences around the perimeter of the PIA to prevent any CTS from moving into the area.

16. Retain a biologist to monitor the PIA during construction to ensure that no CTS are harmed.

17. Retail a biologist to provide construction worker education for CTS.

4.2.3.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

Modification to the project is not necessary to mitigate effects on CTS.

4.2.3.6. CUMULATIVE EFFECTS (FESA)

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the project area considered in this BA. The project area includes habitat immediately adjacent to the bridge and the roadways. Future federal actions unrelated to the proposed action are not considered in this section because they would require separate consultation. To date, there are no known non-federal actions anticipated to occur within the project area. Therefore, there are no known cumulative effects to CTS.

4.2.4. Discussion of Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is a state listed threatened species that nests in the Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. The highest nesting densities occur near Davis and Woodland, Yolo County. Nests commonly occur in oaks or cottonwoods in or near riparian habitats and they forage in grasslands, irrigated pastures, and grain fields.

4.2.4.1. SURVEY RESULTS

This species is well documented within the region, and there are many nesting sites located to the east along the San Joaquin River within the riparian habitat. This species forages within a ten-mile radius of their nesting sites. This species was not observed within the PIA, nor where there any of active or remnant nest sites. The adjacent agricultural fields are appropriate foraging habitat.

4.2.4.2. CRITICAL HABITAT

There are no critical habitats within the project limits.

4.2.4.3. PROJECT EFFECTS

The PIA lacks trees for nesting Swainson's hawks. This species is well documented throughout the region and is commonly seen foraging over agricultural fields. The proposed project would not directly remove agricultural foraging habitat; however, construction would elevate the amount of activities in the area temporarily. Construction activities could temporarily affect the desirability of the adjacent agricultural fields during the construction period. The effect would be expected to be temporary and associated with the noise and activities required to construction the bridges. At the completion of construction, the birds would have uninterrupted use of the agricultural fields. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, the project would not adversely affect these birds. The proposed project ***may***

affect, not likely to adversely affect this species with implementation of avoidance and minimization measures.

4.2.4.4. AVOIDANCE AND MINIMIATION EFFORTS

To avoid and minimize effects to Swainson's hawk, the proposed project activities shall be compliance with the following measures:

18. **Avoidance**: In order to avoid impacts to nesting raptors and migratory birds, project activities will occur, where possible, outside the nesting season. The nesting season is February15- September 1.

19. **Pre-construction Survey**: If project activities must occur during the nesting season (February15-September 1), a qualified biologist will conduct pre-construction surveys for active raptor and migratory bird nests within 30 days of the onset of these activities. For migratory birds and raptors, the survey area will include all PIAs. If no active nests are found within the survey area, no further mitigation is required. It is noted that cliff swallow nests were observed on the bridge, and impacts are addressed in a separate measure.

20. **Establish Buffers:** Should any active nests be discovered within the biological survey area, the biologist will determine the appropriate construction setback distances based on applicable regulatory agency guidelines and/or the biology of the affected species. Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged. It is noted that cliff swallow nests were observed on the bridge, and impacts are addressed in a separate measure.

4.2.4.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

Modification to the project is not necessary to mitigate effects on this species.

4.2.4.6. CUMULATIVE EFFECTS (FESA)

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the project area considered in this BA. The project area includes habitat immediately adjacent to the bridge and the roadways. Future federal actions unrelated to the proposed action are not considered in this section because they would require separate consultation. To date, there are no known non-federal actions anticipated to occur within the project area. Therefore, there are no known cumulative effects to this species.

4.3. Non-Federal/State Listed Animal Species Occurrences

There are numerous special-status species that are not federal or state listed that are known to occur within the region. Some species require localized micro-habitats, while others are highly mobile and may occur throughout the region. The following provides a discussion of some of the special status species that are not federal or state listed.

4.3.1. Discussion of Migratory Birds and Raptors

The following table provides a list of special status birds known to occur in the region, and have potential to occur (i.e. forage) through the PIA.

Table 3: Special Status Birds Occurring or Known to Occur in the PIA

Birds					
burrowing owl	*Athene cunicularia*	--/SSC	Nests in abandoned ground squirrel burrows associated with open grassland habitats. Found in areas with sparse vegetation and few trees.	HP	This species is not documented within the PIA, however, they are highly mobile and documented throughout the region. The PIA does not provide quality burrow habitat, however, there is abundant foraging habitat on lands adjacent to the PIA.
California horned lark	*Eremophila alpestris actia*	--/WL	Coastal regions, chiefly from Sonoma County to San Diego County. Also main part of San Joaquin Valley and east to foothills. Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	HP	This species is documented within close proximity to the PIA and they are highly mobile. There is abundant foraging habitat on lands adjacent to the PIA.
ferruginous hawk	*Buteo regalis*	--/WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	HP	This species is documented in the regional vicinity and is likely to forage through the area at times.
golden eagle	*Aquila chrysaetos*	--/FP	Winter range spans most of California; breeding range excludes the Central Valley floor. Nests in cliffs, rocky outcrops and large trees. Forages in a variety of open habitats, including grassland, shrubland, and cropland.	HP	This species is documented in the regional vicinity and is likely to forage through the area at times.
grasshopper sparrow	*Ammodramus savannarum*	--/SSC	Prefer open grasslands with barren ground for foraging. Tend to be found in areas with vegetation and scrub cover especially in grasslands and prairies.	HP	This species is documented in the regional vicinity and is likely to forage through the area at times.
loggerhead shrike	*Lanius ludovicianus*	--/SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub & washes. Prefers open	HP	This species is documented in the regional vicinity and is likely to forage through the area at times.

			country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.		
merlin	*Falco columbarius*	--/WL	It is not known to nest in California, but it is a winter transient throughout most of California with wintering populations in the Central Valley. Avoid dense forests and inhabit fairly open land.	HP	This species is documented in the regional vicinity and is likely to forage through the area at times.
northern harrier	*Circus cyaneus*	--/SSC	Coastal salt & freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	HP	This species is documented in the regional vicinity and may forage through the area at times.
short-eared owl	*Asio flammeus*	--/SSC	Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	HP	This species is documented in the regional vicinity and is likely to forage through the area at times.
Swainson's hawk	*Buteo swainsoni*	--/CT	Nests in tall cottonwoods, valley oaks or willows. Forages in fields, cropland, irrigated pasture, and grassland often near riparian corridors.	HP	This species is not documented within the PIA, however, they are highly mobile and documented throughout the region. The PIA does not provide quality nesting trees, however, there is abundant foraging habitat on lands adjacent to the PIA.
white-tailed kite	*Elanus leucurus*	--/FP	Nests in riparian corridors along streams and rivers, and forages in nearby grasslands and fields.	HP	This species is documented in the regional vicinity and is likely to forage through the area at times.

Raptors: Raptors are fully protected under the California Fish and Game Code Section 3503.5. A variety of raptors are very common throughout the Central Valley, while several species are considered rare. Raptor species are often found either foraging or nesting, at various times. Some raptors are migratory and thus are only in the region during certain periods of the year, while many are residents. There was no evidence of a remnant or active nest located in the PIA during the surveys. Ground nesters, such as burrowing owl and northern harrier have some potential nesting habitat in the adjacent lands, but not within the PIA. Horned lark is documented immediately adjacent to the PIA, and would be expected to traverse through the PIA at times.

Migratory Birds: The Pacific Flyway, which is a migratory travel route for millions of birds, and more than 350 species, is located through the Central Valley of California. The PIA is located on the western fringe of the Pacific Flyway. Migratory birds travel this avian

flyway each year from the Bering Strait to South America. Many of the birds travel from the north to overwinter in California, including the Central Valley region. The birds overwintering arrive as early as August. Other birds travel south to overwinter, and arrive back in California as early as February to nest/breed.

There is a wide variety of migratory birds, including water birds, which use the Central Valley for foraging. A review of the USFWS Information Planning and Conservation System (IPaC) revealed the following 9 birds as potentially present.

- Burrowing Owl (*Athene cunicularia*) - Breeds Mar-Aug
- Common Yellowthroat (Geothlypis trichas sinuosa) -
- Golden Eagle (Aquila chrysaetos) – Breeds Jan-Aug
- Long-billed Curlew (*Numenius americanus*) –Breeds elsewhere
- Nuttall's Woodpecker (*Picoides nuttallii*) - Year-round, breeds April-July
- Rufous Hummingbird (*Selasphorus rufus*) - Breeds elsewhere
- Spotted Towhee (*Pipilo maculatus clementae*) – Breeds April-July
- Tricolored Blackbird (*Agelaius tricolor*) - Breeds Mar-Aug
- Yellow-billed Magpie (*Pica nuttalli*) - Breeds April-July

4.3.1.1. SURVEY RESULTS

The proposed project is located in an area with documented occurrences of a variety of raptors and migratory birds. There was no evidence of active or remnant nests located in the PIA or immediate vicinity. The PIA does not contain appropriate nesting habitat for most birds given that it lacks trees. Ground nesters, such as burrowing owls can occupy sites where ground squirrels have established burrows. At the time of the survey, there was no evidence of burrows, or burrowing owls within the PIA.

Appropriate foraging habitat for raptors and migratory birds, is located in the agricultural fields located immediately adjacent to the PIA. Construction activities is not expected to remove foraging habitat for these protected birds, although construction activities could temporarily make the agricultural fields immediately adjacent to the project limits to be less desirable for foraging while construction occurs.

Additionally, cliff swallows are a migratory bird that are very common nesters throughout the Central Valley, and are typically found nesting under bridges. Nesting cliff swallows were not observed within the during the survey, however, these birds can inhabit a bridge for nesting in any given year. The nesting season is February 15 - September 1.

4.3.1.2. CRITICAL HABITAT

Critical habitat has not been designated for Migratory Birds or Raptors.

4.3.1.3. PROJECT EFFECTS

The PIA lacks trees and burrow habitat for nesting raptors. There is a wide variety of migratory birds, including water birds, which use the Aqueduct and Delta Mendota canal and adjacent agricultural fields for foraging. Migratory birds in this area are use to a relatively high frequency of disturbance associated with the agricultural production; however, construction would elevate the activities temporarily. Construction activities could temporarily affect these migratory birds if they were using the Aqueduct and Delta Mendota canal and adjacent agricultural fields for foraging at the commencement of construction. The effect would be expected to be temporary and associated with the noise and activities required to rebuild the bridge. At the completion of construction, the migratory birds would have uninterrupted use of the Aqueduct and Delta Mendota canal and adjacent agricultural fields. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, the project would not adversely affect migratory birds.

The bridge itself provides potential nesting habitat for cliff sparrows. This species was not observed during field surveys, but they can easily occupy a bridge in future years. The proposed project would require work on the bridges, which would impact nesting colonies if they were to occupy the bridge in future years. Abandoned young would become deceased without support. In order to avoid impacts to nesting cliff swallows, a preconstruction survey would be necessary, and if they were found to occupy the bridges, the project activities would need to occur outside the nesting season or cliff swallows would need to be excluded prior to the nesting season. The nesting season is February 15 - September 1. The proposed project ***may affect, not likely to adversely affect*** this species with implementation of avoidance and minimization measures.

4.3.1.4. AVOIDANCE AND MINIMIATION EFFORTS

To avoid and minimize potential impacts to migratory birds and raptors, the City proposes the following measures:

21. **Cliff swallow**: If the preconstruction survey shows that cliff swallow has taken occupancy of the bridge for nesting purposes then the avoidance measures will be necessary. In order to avoid impacts to nesting cliff swallows, project activities that require direct impacts to the bridge (i.e. bridge removal) shall occur outside the nesting season, when feasible. The nesting season is February 15-September 1;

therefore, bridge removal shall occur between September and January, when feasible.

If bridge removal will occur during the nesting season, suitable exclusionary devices shall be installed prior to February15, when the bridge is vacant of nesting birds and before construction activities are to commence. Construction activities that include the rebuilding of the bridge are not expected to directly impact nesting cliff swallows; therefore, rebuilding activities shall not be limited by the nesting season for the purposes of avoiding cliff swallow nests.

4.3.1.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

Modification to the project is not necessary to mitigate effects on migratory birds and raptors.

4.3.1.6. CUMULATIVE EFFECTS (FESA)

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the project area considered in this BA. The project area includes habitat immediately adjacent to the bridge and the roadways. Future federal actions unrelated to the proposed action are not considered in this section because they would require separate consultation. To date, there are no known non-federal actions anticipated to occur within the project area. Therefore, there are no known cumulative effects to migratory birds or raptors.

4.3.2. Discussion of Bats

Bats are also highly mobile and could travel through the project limits at times for foraging. Bats will also utilize crevices of bridges for roosting. There was no evidence of roosting within the bridges. It is possible for a variety of bats to use the bridges, and other structures in the region for maternal or non-material roosting, although there was no evidence of such activities observed.

4.3.2.1. SURVEY RESULTS

None were observed.

4.3.2.2. PROJECT EFFECTS

Bridges, and other structures in the regions provide habitat for a variety of bat species. Bats commonly utilize crevices of these areas for roosting (day roosts, night roosts, maternal roosts, and hibernation roosts). The maternal roosting period typically begins as the temperatures increase (May – August). It is possible for a variety of bats to use the area for maternal or non-maternal roosting from year to year. Bats are also highly mobile and could

travel through the PIA at times for foraging. There was no evidence of guano under the bridges. Avoidance and minimization measures ensure that there would be ***no effect*** on bats.

4.3.2.3. AVOIDANCE AND MINIMIATION MEASURES

To avoid and minimize effects to this species, the proposed project activities shall be compliance with the following measures:

22. **Bats:** To avoid effects to bats, a qualified biologist will conduct pre-construction surveys for bats within 30 days of the onset of construction activities. If no evidence of bats is found, no further mitigation is required. If it is determined that bats are roosting within the PIA, it should be determined by the biologist whether the use is for maternal roosting (generally May – August). If it is not a maternal roost site, a buffer should be established to ensure that there are no incidental impacts to the bats at the roost. If a buffer cannot be established, exclusionary devices will be installed at least seven days before work can commence. By waiting the seven days, the bats can exit the roost and relocate to another location in the vicinity. Once these devices have been installed, they must be maintained and kept in good working order.

4.3.2.4. COMPENSATORY MITIGATION

None required.

4.3.2.5. CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the project area considered in this document. The project area includes habitat immediately adjacent to PIA. Future actions unrelated to the proposed action would require separate consultation. To date, there are no known actions anticipated to occur within the project area. Therefore, there are no known cumulative effects to bats.

4.3.3. Discussion of Invasive Species

Construction activities and soil disturbance from the proposed project could result in the introduction and spread of noxious weeds and other invasive plants, as could inappropriate erosion control measures. Erosion control measures such as use of straw bales and seed can also result in the inadvertent introduction of invasive plants within the PIA and beyond. Implementation of the following measure would reduce the risk of spreading noxious weeds by ensuring that equipment and vehicles are weed free before entry into the project

area, and that weed free erosion control measures are in place by the fall of the final construction season.

4.3.3.1. AVOIDANCE AND MINIMIZATION MEASURES

To avoid and minimize potential associated with invasive non-native plants, the City proposes the following measures:

23. **Non-native plants:** To minimize the risk of introducing additional non-native species into the area, weed-free erosion control applications shall be used. No dry-farmed straw will be used and certified weed-free straw shall be required where erosion control straw is to be used. In addition, hydro-seed mulch or any other erosion control application must also be certified weed-free. If a revegetation seed mix is to be used, the mix shall also be certified weed-free and contain native species appropriate for the project area.

    All off-road equipment to be cleaned of potential noxious weed sources (mud, vegetation) before entry onto the PIA, to help ensure noxious weeds are not introduced into the project area. The contractor shall employ whatever cleaning methods (typically with the use of a high-pressure water hose) are necessary to ensure that equipment is free of noxious weeds. Equipment shall be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools is not required.

4.3.4. Discussion of Western pond turtle

Western pond turtle is a thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation. They need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 KM from water for egg-laying. Western pond turtle is documented in many canals and waterbody's through the region. It is anticiapted that this species is in the Aqueduct and Delta Mendota Canal in the vicinity of the bridge sites.

4.3.4.1. SURVEY RESULTS

None were observed.

4.3.4.2. PROJECT EFFECTS

Direct effects to western pond turtle could occur as a result of instream construction in Aqueduct and/or Delta Mendota Canal. Construction activities near the Aqueduct and Delta Mendota Canal could also temporarily reduce the availability of upland retreat sites for the turtle. If pond turtles are present in the waterway in the immediate vicinity of construction, they can usually disperse away from such disturbance without difficulty. Potential water quality effects associated with instream construction and roadway runoff could threaten western pond turtles. Implementation of the Avoidance and Minimization Measures, along with implementation of BMP's while working in and around waterways will ensure that the proposed project will not directly injure or kill any western pond turtles or impact its habitat.

4.3.4.3. AVOIDANCE AND MINIMIATION MEASURES

To avoid and minimize effects to this species, the proposed project activities shall be compliance with the following measures:

24. **Western pond turtle:** Prior to construction within the Aqueduct and Delta Mendota Canal, a focused survey for western pond turtle will be conducted by a qualified Biologist no more than 24 hours prior to onset of construction. If no western pond turtles are observed, no further mitigation would be necessary. If this species is observed on or adjacent to the project site, a qualified biologist, in coordination with the SJCOG, will capture and relocate the turtle to appropriate habitat at a safe distance from the construction site.

4.3.4.4. CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the project area considered in this BA. The project area includes habitat immediately adjacent to the bridge and the roadways. Future actions unrelated to the proposed action would require separate consultation. To date, there are no known actions anticipated to occur within the project area. Therefore, there are no known cumulative effects to turtles.

4.3.5. Discussion of Natural Community

The PIA contains two aquatic features: the California Aqueducct and the Delta Mendota Canal. There are no other aquatic habitats or natural communities of special concern found within the PIA.

4.3.5.1. SURVEY RESULTS

Based on this evaluation of the region and the known site conditions within the PIA, it was determined that no natural communities of special concern occur within the PIA beyond the Aqueduct and Delta Mendota Canal itself. Additionally, there are not designated critical habitats within or immediately adjacent to the PIA.

4.3.5.2. PROJECT EFFECTS

Any fill activity associated with construction activities at this bridge sites would require compliance with Section 404 of the Clean Water Act. The USACE has held that canals such as the Aqueduct and Delta Mendota Canal have connectivity to waters of the US and are considered jurisdictional. It is anticipated that the project activities are eligible for a nationwide permit authorized by the Clean Water Act (NWP 14 Linear Transportation Projects). It should also be noted that any work performed for these sites would require a Section 401 Water Quality certification to be issued by the Regional Water Quality Control Board and a Section 1600 Streambed Alteration Agreement to be issued by the California Department of Fish and Wildlife.

4.3.5.3. AVOIDANCE AND MINIMIZATION MEASURES

To avoid and minimize effects to wetlands, the proposed project activities shall be compliance with the following measures:

25. **Section 404 Compliance**: The project requires a Section 404 permit to be issued by the US Army Corps of Engineers. The project is anticipated to be eligible for a Nationwide Permit (NWP) 14 Linear Transportation Projects. A Pre-construction Notification is required only for projects over 0.1 acres under the NWP 14, unless there is a discharge in a special aquatic site, including wetlands.

26. **Section 401 Compliance**: The project requires a Section 401 Water Quality certification to be issued by the Regional Water Quality Control Board.

27. **Section 1600 Compliance**: The project requires a Section 1600 Streambed Alteration Agreement to be issued by the California Department of Fish and Wildlife.

4.3.5.4. COMPENSATORY MITIGATION

Adhere to any compensatory requirements in the Section 404, 401, and 1600 permits.

4.3.5.5. CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the project area considered in this BA. The project area

includes habitat immediately adjacent to the bridges and the roadways. Future actions unrelated to the proposed action are not considered in this section because they would require separate consultation. To date, there are no known non actions anticipated to occur within the project area. Therefore, there are no known cumulative effects to natural communities of special concern.

Chapter 5. Conclusions and Determination

5.1. Conclusions

5.1.1. SJCOG Consultation Summary - San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

A Habitat Conservation Plan (HCP) is a federal planning document that is prepared pursuant to Section 10 of the FESA. An approved HCP within a defined plan area allows for the incidental take of species and habitat that are otherwise protected under FESA during development activities.

A Natural Community Conservation Plan (NCCP) is a state planning document administered by CDFW. An approved NCCP within a defined plan area allows for the incidental take of species and habitat that are otherwise protected under CESA during growth and development activities.

Background: The key purpose of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), is to provide a strategy for balancing the need to conserve Open Space and the need to Convert Open Space to non-Open Space uses while protecting the region's agricultural economy; preserving landowner property rights; providing for the long-term management of plant, fish and wildlife species, especially those that are currently listed, or may be listed in the future, under the Federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA); providing and maintaining multiple-use Open Spaces which contribute to the quality of life of the residents of San Joaquin County; and accommodating a growing population while minimizing costs to Project Proponents and society at large.

San Joaquin County's past and future (2001-2051) growth has affected and will continue to affect 97 special status plant, fish and wildlife species in 52 vegetative communities scattered throughout San Joaquin County's 1,400+ square miles and 900,000+ acres, which include 43% of the Sacramento-San Joaquin Delta's Primary Zone. The SJMSCP, in accordance with ESA Section 10(a)(1)(B) and CESA Section 2081(b) Incidental Take Permits, provides compensation for the Conversion of Open Space to non-Open Space uses which affect the plant, fish and wildlife species covered by the Plan, hereinafter referred to as "SJMSCP Covered Species". In

addition, the SJMSCP provides some compensation to offset the impacts of open space land conversions on non-wildlife related resources such as recreation, agriculture, scenic values and other beneficial Open Space uses.

The SJMSCP compensates for Conversions of Open Space for the following activities: urban development, mining, expansion of existing urban boundaries, non-agricultural activities occurring outside of urban boundaries, levee maintenance undertaken by the San Joaquin Area Flood Control Agency, transportation projects, school expansions, non-federal flood control projects, new parks and trails, maintenance of existing facilities for non-federal irrigation district projects, utility installation, maintenance activities, managing Preserves, and similar public agency projects. These activities will be undertaken by both public and private individuals and agencies throughout San Joaquin County and within the County's incorporated cities of Escalon, Manteca, Lodi, Manteca, Ripon, Stockton and Tracy. Public agencies including Caltrans (for transportation projects), and the San Joaquin Council of Governments (for transportation projects) also will undertake activities which will be covered by the SJMSCP. In addition, 5,340 acres is allocated for anticipated projects (e.g., annexations, general plan amendments)

The 97 SJMSCP Covered Species include 25 state and/or federally listed species. The SJMSCP Covered Species include 27 plants (6 listed), 4 fish (2 listed), 4 amphibians (1 listed), 4 reptiles (1 listed), 33 birds (7 listed), 15 mammals (3 listed) and 10 invertebrates (5 listed).

Implementation: The SJMSCP is administered by a Joint Powers Authority consisting of members of the San Joaquin County Council of Governments (SJCOG), the CDFW, and the USFWS. Development project applicants are given the option of participating in the SJMSCP as a way to streamline compliance with required local, State and federal laws regarding biological resources, and typically avoid having to approach each agency independently. According to the SJMSCP, adoption and implementation by local planning jurisdictions provides full compensation and mitigation for impacts to plants, fish and wildlife. Adoption and implementation of the SJMSCP also secures compliance pursuant to the state and federal laws such as CEQA, the National Environmental Policy Act (NEPA), the Planning and Zoning Law, the State Subdivision Map Act, the Porter-Cologne Act and the Cortese-Knox Act in regard to species covered under the SJMSCP.

Applicants pay mitigation fees on a per-acre basis, as established by the Joint Powers Authority according to the measures needed to mitigate impacts to the various habitat and biological resources. Different types of land require different levels of mitigation; i.e., one category requires that one acre of a similar land type be preserved for each acre developed, while another type requires that two acres be preserved for each acre developed. The entire County is mapped according to these categories so that land owners, project proponents and project reviewers are easily aware of the applicable SJMSCP fees for the proposed development.

The appropriate fees are collected by the City and remitted to SJCOG for administration. SJCOG uses the funds to preserve open space land of comparable types throughout the County, often coordinating with other private or public land trusts to purchase conservation easements or buy land outright for preservation. Development occurring on land that has been classified under the SJMSCP as "no-pay" would not be required to pay a fee. This category usually refers to already urbanized land and infill development areas. Although the fees are automatically adjusted on an annual basis, based on the construction cost index, they often cannot keep pace with the rapidly rising land prices in the Central Valley.

Project Coverage: A measure has been incorporated into the project that commits the City to seeking coverage under the SJMSCP. The requirement is as follows:

> *"Prior to commencement of any grading activities, the Project proponent shall seek coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through implementation of incidental take and minimization Measures (ITMMs) and payment of fees for conversion of lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. Obtaining coverage for a Project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a), California Fish and Game Code Section 2081, and the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species."*

5.1.2. Federal Endangered Species Act Consultation Summary

The USFWS provided an official species list for the project on May 7, 2019. This list did not indicate that there is any critical habitat associated with the project. An evaluation of the project site led to a determination that all the species are either absent from the project site due to the lack of habitat and that project implementation would have no effect on these species, or the species is known to occur in the region and with avoidance and minimization measures the project implementation is not likely to

adversely effect these species. In addition, the project will be covered under the SJMSCP and the project will be required to implement ITMMs issued by the SJCOG. Coverage under the SJMSCP will result in the issuance of a ESA Section 10(a)(1)(B) permit.

5.1.3. California Endangered Species Act Consultation Summary

The CNDDB was review and an evaluation of the project site led to a determination that all the species are either absent from the project site due to the lack of habitat and that project implementation would have no effect on these species, or the species is known to occur in the region and with avoidance and minimization measures the project implementation is not likely to adversely effect these species. In addition, the project will be covered under the SJMSCP and the project will be required to implement ITMMs issued by the SJCOG. Coverage under the SJMSCP will result in the issuance of a CESA Section 2081(b) permit.

5.1.4. Essential Fish Habitat Consultation Summary

The project would not result in any impacts to Federal fisheries or essential fish habitat because there is no suitable habitat for any listed or protected fish species within the PIA. As a result, no coordination regarding species of fish would be necessary.

5.1.5. Wetlands and Other Waters Coordination Summary

Section 404 Compliance: The project is anticipated to be eligible for a Nationwide Permit (NWP) 14 Linear Transportation Projects. A Pre-construction Notification is required only for projects over 0.1 acres under the NWP 14, unless there is a discharge in a special aquatic site, including wetlands. Because of the man-made nature of the Aqueduct and Delta Mendota, it is not anticipated that the US Army Corps would consider this aquatic site as a “special aquatic site.” The special aquatic site designation is typically associated with “riffle and pool complexes,” which are not present and with “vegetated shallows.” Vegetated shallows are defined as areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems. The Aqueduct and Delta Mendota Delta Mendota Canal is permanently inundated with some rooted aquatic vegetation along the water edges; however, a combination of facts makes the conditions not meet the definition of a vegetated shallow. First, the Aqueduct and Delta Mendota Delta

Mendota Canal is a manmade structure with an artificial water source that fluctuates throughout the year based on irrigation needs. Vegetation along the water edge is in a constant state of disturbance which includes absence and presence of water at different times of the year based on irrigation pumping. The absence of water at low flow causes the aquatic edge plants to die and new growth to occur at the new water edge lower on the bank. As the water flow increases and inundation occurs higher on the bank, the new growth is submerged in deeper waters and new growth occurs higher on the bank. The submerged vegetation in the deeper water is disturbed and will die back during this higher flow regime. For these reasons it is anticipated that the project will qualify for a NWP 14 under the non-notification requires; however, the USACE should be consulted for a final determination before commencing construction.

Section 401 Compliance: The project requires a Section 401 Water Quality certification to be issued by the Regional Water Quality Control Board.

Section 1600 Compliance: The project requires a Section 1600 Streambed Alteration Agreement to be issued by the California Department of Fish and Wildlife.

5.2. Determination

The following bullets summarize the affect determinations for each evaluated species. Refer to Chapter 4 to review detailed discussions of each species.

5.2.1. Federally-Protected Plant Species

Based on the following criteria, the proposed project will have no effect on the threatened or endangered plants:

- Existing habitat is highly disturbed and nearly devoid of vegetation.
- There is no critical habitat designated for any plant species within the study area.
- There are no known occurrences of any listed plant species in the study area.

5.2.2. Federally-Protected Wildlife Species

5.2.2.1. SAN JOAQUIN KIT FOX

Based on the following criteria, the proposed project *may affect, not likely to adversely* affect SJKF.

- No evidence of SJKF was identified within the project site.
- No dens were identified within the project area during field surveys.
- No take is anticipated with the implementation of avoidance and minimization measures.

5.2.2.2. GIANT GARTER SNAKE

Based on the following criteria, the proposed project *may affect, not likely to adversely affect* GGS.

- No evidence of GGS was identified within the project site.
- No quality upland habitat was identified within the project area during field surveys.
- No take is anticipated with the implementation of avoidance and minimization measures.

5.2.2.3. CALIFORNIA TIGER SALAMANDER

Based on the following criteria, the proposed project *may affect, not likely to adversely affect* CTS.

- No evidence of CTS was identified within the project site.
- No quality aquatic breeding or upland aestivation nhabitat was identified within the project area during field surveys.
- No take is anticipated with the implementation of avoidance and minimization measures.

5.2.3. State-Protected Wildlife Species

5.2.3.1. SWAINSON'S HAWK

Based on the following criteria, the proposed project *may affect, not likely to adversely affect* Swainson's hawk.

- No evidence of Swainson's hawk nesting was identified within the project site.
- No nesting habitat was identified within the project area during field surveys.

- No take is anticipated with the implementation of avoidance and minimization measures.

Chapter 6. References

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Appendix A *Special Status Species within a 9-quad Search*

Table 4: Species and Critical Habitat Potentially Occurring or Known to Occur in the 9-Quad Radius for the PIA

Common Name	Scientific Name	Status (Fed/CA/ CNPS)	General Habitat Description	Habitat Present/ Absent	Rationale
Plants					
alkali milk-vetch	*Astragalus tener var. tener*	--/--/1B.2	Favors alkaline playas, valley and foothill grasslands, and vernal pools. Also occurs in open, alkaline and seasonally moist meadows. 1 – 60 meters. Mar-Jun.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
big tarplant	*Blepharizonia plumosa*	--/--/1B.1	Valley and foothill grassland; 30-505 m. July-Oct.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Brewer's western flax	*Hesperolinon breweri*	--/--/1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Often in rocky serpentine soil in serpentine chaparral and serpentine grassland. 195-910 m. May-Jul.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
California alkali grass	*Puccinellia simplex*	--/--/1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools. 2 – 930 meters. Mar-May.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
caper-fruited tropidocarpum	*Tropidocarpum capparideum*	--/--/1B.1	Alkaline hills in valley and foothill grassland; below 455 m. March-April.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
chaparral harebell	*Campanula exigua*	--/--/1B.2	Chaparral. Rocky sites, usually on serpentine in chaparral. 90-1375 m. May-Jun.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
chaparral ragwort	*Senecio aphanactis*	--/--/2B.2	Chaparral, cismontane woodland, coastal scrub. Drying alkaline flats. 20-855 m. Jan-Apr(May).	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Delta button-celery	*Eryngium racemosum*	-/CE/1B.1	Riparian scrub, seasonally inundated depressions along floodplains on clay soils; below 75 m. June-August.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or

Common Name	Scientific Name	Status (Fed/CA/ CNPS)	General Habitat Description	Habitat Present/ Absent	Rationale
					immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Delta mudwort	*Limosella australis*	--/--/2B.1	Riparian scrub, marshes and swamps. Usually on mud banks of the Delta in marshy or scrubby riparian associations; often with Lilaeopsis masonii. 0-5 m. May-Aug.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Diablo helianthella	*Helianthella castanea*	--/--/1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. 45-1070 m. Mar-Jun.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
diamond-petaled California poppy	*Eschscholzia rhombipetala*	--/--/1B.1	Valley and foothill grassland. Alkaline, clay slopes and flats. 30-625 m. Mar-Apr.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
dwarf soaproot	*Chlorogalum pomeridianum var. minus*	--/--/1B.2	Chaparral. Serpentine. 120-1220 m. May-Aug.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Hall's bush-mallow	*Malacothamnus hallii*	--/--/1B.2	Chaparral, coastal scrub. Some populations on serpentine. 10-735 m. (Apr)May-Sep(Oct).	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
heartscale	*Atriplex cordulata var. cordulata*	--/--/1B.2	Grows in grasslands with sandy alkaline or saline soils. Favors chenopod scrub, meadows, seeps, valley and foothill grasslands. 0 – 650 meters. Apr-Oct.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Hospital Canyon larkspur	*Delphinium californicum ssp. interius*	--/--/1B.2	Cismontane woodland, chaparral, coastal scrub. In wet, boggy meadows, openings in chaparral and in canyons. 195-1095 m. Apr-Jun.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
large-flowered fiddleneck	*Amsinckia grandiflora*	FE/CE/1B .1	Cismontane woodland, valley and foothill grassland. Annual grassland in various soils. 275-550 m. (Mar)Apr-May.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Lemmon's	*Caulanthus lemmonii*	--/--/1B.2	Pinyon and juniper woodland, valley and foothill	A	Not observed during field surveys. No evidence

Common Name	Scientific Name	Status (Fed/CA/ CNPS)	General Habitat Description	Habitat Present/ Absent	Rationale
jewelflower			grassland. 75-1585 m. Feb-May.		of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Loma Prieta hoita	*Hoita strobilina*	--/--/1B.1	Chaparral, cismontane woodland, riparian woodland. Serpentine; mesic sites. 60-975 m. May-Jul(Aug-Oct).	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
long-styled sand-spurrey	*Spergularia macrotheca var. longistyla*	--/--/1B.2	Marshes and swamps, meadows and seeps. Alkaline. 0-220 m. Feb-May.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Mason's lilaeopsis	*Lilaeopsis masonii*	--/CR/1B.1	Marshes and swamps, riparian scrub. Tidal zones, in muddy or silty soil formed through river deposition or river bank erosion. In brackish or freshwater. 0-10 m. Apr-Nov.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Mt. Diablo phacelia	*Phacelia phacelioides*	--/--/1B.2	Chaparral, cismontane woodland. Adjacent to trails, on rock outcrops and talus slopes; sometimes on serpentine. 605-1345 m. Apr-May.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Mt. Hamilton coreopsis	*Leptosyne hamiltonii*	--/--/1B.2	Cismontane woodland. On steep shale talus with open southwestern exposure. 535-1280 m. Mar-May.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Mt. Hamilton fountain thistle	*Cirsium fontinale var. campylon*	--/--/1B.2	Cismontane woodland, chaparral, valley and foothill grassland. In seasonal and perennial drainages on serpentine. 75-890 m. (Feb)Apr-Oct.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
recurved larkspur	*Delphinium recurvatum*	--/--/1B.2	Alkaline soils in saltbush scrub, cismontane woodland, valley and foothill grassland; 3-750 m. Mar-May.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
San Joaquin spearscale	*Extriplex joaquinana*	--/--/1B.2	Alkaline. Chenopod scrub, meadows and seeps, playas, valley and foothill grassland. 1-835 m. Apr-Oct.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Santa Clara red	*Clarkia concinna ssp.*	--/--/4.3	Cismontane woodland, chaparral. On slopes and near	A	Not observed during field surveys. No evidence

Common Name	Scientific Name	Status (Fed/CA/ CNPS)	General Habitat Description	Habitat Present/ Absent	Rationale
ribbons	*automixa*		drainages. 90-1500 m. (Apr)May-Jun(Jul).		of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Sharsmith's onion	*Allium sharsmithiae*	--/--/1B.3	Cismontane woodland, chaparral. Rocky, serpentine slopes. 425-975 m. Mar-May.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
shining navarretia	*Navarretia nigelliformis ssp. radians*	--/--/1B.2	Cismontane woodland, valley and foothill grassland, vernal pools. Apparently in grassland, and not necessarily in vernal pools. 60-975 m. (Mar)Apr-Jul.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
showy golden madia	*Madia radiata*	--/--/1B.1	Valley and foothill grassland, cismontane woodland. Mostly on adobe clay in grassland or among shrubs. 75-1220 m. Mar-May.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
slough thistle	*Cirsium crassicaule*	--/--/1B.1	Chenopod scrub, marshes and swamps, riparian scrub. Sloughs, riverbanks, and marshy areas. 3-95 m. May-Aug.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
spiny-sepaled button-celery	*Eryngium spinosepalum*	--/--/1B.2	Vernal pools, valley and foothill grassland. Some sites on clay soil of granitic origin; vernal pools, within grassland. 15-1270 m. Apr-Jun.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
talus fritillary	*Fritillaria falcata*	--/--/1B.2	Chaparral, cismontane woodland, lower montane coniferous forest. Mostly on serpentine talus, but occasionally found on granitics. 425-1435 m. Mar-May.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Tracy's eriastrum	*Eriastrum tracyi*	--/CR/3.2	Chaparral, cismontane woodland, valley and foothill grassland. Gravelly shale or clay; often in open areas. 315-2400 m. May-Jul.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
woolly rose-mallow	*Hibiscus lasiocarpos var. occidentalis*	--/--/1B.2	Marshes and swamps (freshwater). Moist, freshwater-soaked river banks and low peat islands in sloughs; can also occur on riprap and levees. In California. 0-120 m. Jun-Sep.	A	Not observed during field surveys. No evidence of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Wright's	*Trichocoronis wrightii*	--/--/2B.1	Floodplains, moist places, on alkaline soils; below 450	A	Not observed during field surveys. No evidence

Common Name	Scientific Name	Status (Fed/CA/ CNPS)	General Habitat Description	Habitat Present/ Absent	Rationale
trichocoronis	*var. wrightii*		m. May- Sep.		of documented occurrences within PIA or immediately adjacent. Highly disturbed land within the PIA is not optimal habitat.
Amphibians					
California red-legged frog	*Rana draytonii*	FT/--	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	A	The PIA is outside the critical habitat. The aquatic habitat in the Delta Mendota and California Aqueduct is populated with aggressive fish predators (striped bass, largemouth bass) that inhibit the use of this habitat for CRLF. The Delta Mendota and California Aqueduct also lacks significant emergent vegetation, and adjacent lands are intensively cultivated causing there to be a lack upland sites. There are no documented occurrences within one mile of the PIA. Documented occurrences exist in the foothills to the east of the project site in the Corral Hollow Creek drainage. This species is not known to occur in the valley floor.
California tiger salamander	*Ambystoma californiense*	FT/CT (WL)	Breeds in ponds or other deeply ponded wetlands, and uses gopher holes and ground squirrel burrows in adjacent grasslands for upland refugia/foraging.	HP	The PIA is outside the critical habitat. The aquatic habitat in the Delta Mendota and California Aqueduct is populated with aggressive fish predators (striped bass, largemouth bass) that inhibit the use of this habitat for CTS breeding. The upland portion of the PIA is disturbed and does not provide quality refugia habitat for estivating CTS. There is a documented occurrence within one mile of the PIA. Documented occurrences exist in the foothills to the east of the project site in the Corral Hollow Creek drainage. The project site is within the migratory range, however, the PIA does not present quality refuge habitat and this species is not believed to migrate to the PIA.
foothill yellow-legged frog	*Rana boylii*	--/CC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	A	The PIA is outside the critical habitat. The aquatic habitat in the Delta Mendota and California Aqueduct is populated with aggressive fish predators (striped bass, largemouth bass) that

Common Name	Scientific Name	Status (Fed/CA/ CNPS)	General Habitat Description	Habitat Present/ Absent	Rationale
					inhibit the use of this habitat for FYLF. The Delta Mendota and California Aqueduct also lacks significant emergent vegetation, and adjacent lands are intensively cultivated causing there to be a lack upland sites. There are no documented occurrences within one mile of the PIA. Documented occurrences exist in the foothills to the east of the project site in the Corral Hollow Creek drainage. This species is not known to occur in the valley floor.
western pond turtle	*Emys marmorata*	--/SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	HP	The PIA contains the Aqueduct and Delta Mendota Canal, both of which are potential habitat for this species.
western spadefoot	*Spea hammondii*	--/SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	A	The PIA does not contain essential vernal pool habitat, and this species is not anticipated to be present.
Birds					
burrowing owl	*Athene cunicularia*	--/SSC	Nests in abandoned ground squirrel burrows associated with open grassland habitats. Found in areas with sparse vegetation and few trees.	HP	This species is not documented within the PIA, however, they are highly mobile and documented throughout the region. The PIA does not provide quality burrow habitat, however, there is abundant foraging habitat on lands adjacent to the PIA.
California horned lark	*Eremophila alpestris actia*	--/WL	Coastal regions, chiefly from Sonoma County to San Diego County. Also main part of San Joaquin Valley and east to foothills. Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	HP	This species is documented within close proximity to the PIA and they are highly mobile. There is abundant foraging habitat on lands adjacent to the PIA.
ferruginous hawk	*Buteo regalis*	--/WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	HP	This species is documented in the regional vicinity and is likely to forage through the area at times.
golden eagle	*Aquila chrysaetos*	--/FP	Winter range spans most of California; breeding range	HP	This species is documented in the regional

Common Name	Scientific Name	Status (Fed/CA/ CNPS)	General Habitat Description	Habitat Present/ Absent	Rationale
			excludes the Central Valley floor. Nests in cliffs, rocky outcrops and large trees. Forages in a variety of open habitats, including grassland, shrubland, and cropland.		vicinity and is likely to forage through the area at times.
grasshopper sparrow	*Ammodramus savannarum*	--/SSC	Prefer open grasslands with barren ground for foraging. Tend to be found in areas with vegetation and scrub cover especially in grasslands and prairies.	HP	This species is documented in the regional vicinity and is likely to forage through the area at times.
least Bell's vireo	*Vireo bellii pusillus*	FE/CE	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.	A	This species is not documented within the PIA and was not observed during field surveys. The PIA does not support riparian habitat, and lacks willows, cottonwoods, and other woody riparian vegetation necessary for this species. Adjacent uplands outside PIA also lack riparian habitat. The closest occurrence of this species is in the foothills to the east of the project site in the Corral Hollow Creek drainage, which supports riparian habitat. Given the lack of riparian habitat in the PIA, there is a very low likelihood of this species being present. This species is not anticipated to be present in the PIA.
loggerhead shrike	*Lanius ludovicianus*	--/SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub & washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	HP	This species is documented in the regional vicinity and is likely to forage through the area at times.
merlin	*Falco columbarius*	--/WL	It is not known to nest in California, but it is a winter transient throughout most of California with wintering populations in the Central Valley. Avoid dense forests and inhabit fairly open land.	HP	This species is documented in the regional vicinity and is likely to forage through the area at times.
northern harrier	*Circus cyaneus*	--/SSC	Coastal salt & freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	HP	This species is documented in the regional vicinity and may forage through the area at times.
short-eared owl	*Asio flammeus*	--/SSC	Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on	HP	This species is documented in the regional vicinity and is likely to forage through the area at times.

Common Name	Scientific Name	Status (Fed/CA/ CNPS)	General Habitat Description	Habitat Present/ Absent	Rationale
			dry ground in depression concealed in vegetation.		
song sparrow ("Modesto" population)	*Melospiza melodia*	--/SSC	Found in emergent freshwater marshes dominated by tules (*Scirpus* spp.) and cattails (*Typha* spp.) as well as riparian willow (*Salix* spp.) thickets. They also nest in riparian forests of Valley Oak (*Quercus lobata*) with a sufficient understory of blackberry (*Rubus* spp.), along vegetated irrigation canals and levees, and in recently planted Valley Oak restoration sites.	A	This species is not documented within the PIA and was not observed during field surveys. The PIA does not support habitat necessary for this species. There is a very low likelihood of this species being present. This species is not anticipated to be present in the PIA.
Swainson's hawk	*Buteo swainsoni*	--/CT	Nests in tall cottonwoods, valley oaks or willows. Forages in fields, cropland, irrigated pasture, and grassland often near riparian corridors.	HP	This species is not documented within the PIA, however, they are highly mobile and documented throughout the region. The PIA does not provide quality nesting trees, however, there is abundant foraging habitat on lands adjacent to the PIA.
tricolored blackbird	*Agelaius tricolor*	--/CT	Colonial nester in cattails, bulrush, or blackberries associated with wetland or drainage habitats. Also need foraging areas such as grasslands or agricultural pastures.	A	This species is not documented within the PIA and was not observed during field surveys. The PIA does not support habitat necessary for this species. The closest occurrence of this species is in the foothills to the east of the project site in the Corral Hollow Creek drainage, which supports nesting habitat. Given the lack of habitat in the PIA, there is a very low likelihood of this species being present. This species is not anticipated to be present in the PIA.
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT/CE	Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley oak riparian habitats where scrub jays are abundant	A	This species is not documented within the PIA and was not observed during field surveys. The PIA does not support riparian habitat, and lacks willows, cottonwoods, and other woody riparian vegetation necessary for this species. Adjacent uplands outside PIA also lack riparian habitat. The closest occurrence of this species is in the foothills to the east of the project site in the Corral Hollow Creek drainage, which supports riparian habitat. Given the lack of riparian habitat in the PIA, there is a very low likelihood of this species being present. This species is not anticipated to be present in the PIA.

Common Name	Scientific Name	Status (Fed/CA/ CNPS)	General Habitat Description	Habitat Present/ Absent	Rationale
white-tailed kite	*Elanus leucurus*	--/FP	Nests in riparian corridors along streams and rivers, and forages in nearby grasslands and fields.	HP	This species is documented in the regional vicinity and is likely to forage through the area at times.
yellow-headed blackbird	*Xanthocephalus xanthocephalus*	--/SSC	Nests only where large insects such as odonatan are abundant, nesting timed with maximum emergence of aquatic insects.	A	This species is not documented within the PIA and was not observed during field surveys. The PIA does not support habitat necessary for this species. Given the lack of habitat in the PIA, there is a very low likelihood of this species being present. This species is not anticipated to be present in the PIA.
Invertebrates					
vernal pool fairy shrimp	*Branchinecta lynchi*	FT/--	Vernal pools or other seasonal wetlands. Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County.	A	The aquatic habitat in the Aqueduct and Delta Mendota functions as a year-round wet environment, which is not consistent with the seasonal wetland habitat requirements for this species. No suitable habitat is present in PIA.
Vernal Pool tadpole shrimp	*Lepidurus packardi*	FE/--	Vernal pools, and seasonal wetlands that fill with water during fall and winter rains and dry up in spring and summer.	A	The aquatic habitat in the Aqueduct and Delta Mendota functions as a year-round wet environment, which is not consistent with the seasonal wetland habitat requirements for this species. No suitable habitat is present in PIA.
valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT/--	Dependent upon elderberry plant (*Sambucus mexicana*) as primary host species. Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant. Stream side habitats below 3,000 feet throughout the Central Valley.	A	The PIA does not contain any host plants.
Fishes					
Delta smelt	*Hypomesus transpacificus*	FT/CE	Occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand.	A	The aquatic habitat in the Aqueduct and Delta Mendota Canal does not contain the appropriate estuary or shallow tidal freshwater habitat that is needed for Delta smelt. The habitat is non-saline, warm-water habitat that supports a fishery for bass, crappie, sunfish, catfish, and shad. There are no documented occurrences of this species in the Delta Mendota Canal or Aqueduct.
eulachon	*Thaleichthys pacificus*	FT/--	Found in Klamath River, Mad River, Redwood Creek,	A	The aquatic habitat in the Aqueduct and Delta

Common Name	Scientific Name	Status (Fed/CA/ CNPS)	General Habitat Description	Habitat Present/ Absent	Rationale
			and in small numbers in Smith River and Humboldt Bay tributaries. Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris.		Mendota Canal does not contain the appropriate cold-water habitat with gravel and sandy bottoms that are needed for this species. The habitat is warm-water habitat that supports a fishery for bass, crappie, sunfish, catfish, and shad. The Aqueduct and Delta Mendota Canal is not known to be populated with this species.
longfin smelt	*Spirinchus thaleichthys*	FC/CT	Prior to spawning, these fish aggregate in deepwater habitats available in the northern Delta, including, primarily, the channel habitats of Suisun Bay and the Sacramento River. Spawning occurs in fresh water on the San Joaquin River below Medford Island and on the Sacramento River below Rio Vista.	A	The aquatic habitat in the Aqueduct and Delta Mendota Canal does not contain the appropriate estuary or shallow tidal freshwater habitat that is needed for longfin smelt. The habitat is non-saline, warm-water habitat that supports a fishery for bass, crappie, sunfish, catfish, and shad. There are no documented occurrences of this species in the Delta Mendota Canal. The Aqueduct and Delta Mendota Canal is not known to be populated with this species.
steelhead - Central Valley DPS	*Oncorhynchus mykiss irideus*	FT/--	Populations in the Sacramento and San Joaquin Rivers and their tributaries. Free of heavy sedimentation with adequate flow and cool, clear water. Gravel that is between 0.5 to 6.0 inches in diameter, dominated by 2 to 3-inch gravel. Escape cover such as logs, undercut banks, and deep pools for spawning adults.	A	The aquatic habitat in the Aqueduct and Delta Mendota Canal does not contain the appropriate cold-water habitat with pools, riffles, and runs that are needed for steelhead. The habitat is warm-water habitat that supports a fishery for bass, crappie, sunfish, catfish, and shad. The Aqueduct and Delta Mendota Canal is not known to be populated with this species.
Mammals					
American badger	*Taxidea taxus*	--/SSC	This species prefers dry open fields, grasslands, and pastures. From high alpine meadows to se a level.	HP	This species is mobile and is documented in the region and could travel through the PIA at times. No dens were observed during field surveys.
pallid bat	*Antrozous pallidus*	--/SSC	Roosts in rock outcrops, hollow trees, abandoned mines, barns, and attics.	HP	The PIA contains foraging habitat for this species.
riparian (=San Joaquin Valley) woodrat	*Neotoma fuscipes riparia*	FE/--	Riparian habitats with dense shrub cover, willow thickets, and an oak overstory	A	The PIA does not contain the appropriate riparian habitat. The PIA is highly disturbed barren ground. Adjacent uplands outside PIA do not contain riparian habitat, and are disturbed by regular cultivation. The absence of riparian

Common Name	Scientific Name	Status (Fed/CA/ CNPS)	General Habitat Description	Habitat Present/ Absent	Rationale
					habitat, combined with the fact that the PIA is largely barren, creates a very low likelihood of presence. This species is not anticipated to be present in the PIA.
riparian brush rabbit	*Sylvilagus bachmani riparius*	FE/CE	Native valley riparian habitats with large clumps of dense shrubs, low-growing vines, and some tall shrubs and trees	A	The PIA does not contain the appropriate riparian habitat. The PIA is highly disturbed barren ground. Adjacent uplands outside PIA do not contain riparian habitat, and are disturbed by regular cultivation. The absence of riparian habitat, combined with the fact that the PIA is largely barren, creates a very low likelihood of presence. This species is not anticipated to be present in the PIA.
San Joaquin kit fox	*Vulpes macrotis mutica*	FE/CT	Saltbush scrub, grassland, oak, savanna, and freshwater scrub	HP	This species is mobile and is documented in the region and could travel through the PIA at times. No dens were observed during field surveys.
Townsend's big-eared bat	*Corynorhinus townsendii*	--/SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	HP	The PIA contains foraging habitat for this species.
western mastiff bat	*Eumops perotis californicus*	--/SSC	Many open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	HP	The PIA contains foraging habitat for this species.
Reptiles					
Alameda whipsnake	*Masticophis lateralis euryxanthus*	FT/CT	Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna and woodland habitats. Mostly south-facing slopes and ravines, with rock outcrops, deep crevices or abundant rodent burrows, where shrubs form a vegetative mosaic with oak trees and grasses.	A	The PIA is outside the critical habitat. The PIA is highly disturbed barren ground. Adjacent uplands outside PIA do not contain appropriate habitat, and are disturbed by regular cultivation. The absence of habitat, combined with the fact that the PIA is largely barren, creates a very low likelihood of presence. This species is not anticipated to be present in the PIA.
California glossy snake	*Arizona elegans occidentalis*	--/SSC	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja	HP (Marginal habitat	The PIA does not provide quality habitat for this species, however, there is areas along the fringes of adjacent agricultural fields that could provide

Common Name	Scientific Name	Status (Fed/CA/ CNPS)	General Habitat Description	Habitat Present/ Absent	Rationale
			California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.	along the fringes of ag fields)	some marginal habitat.
coast horned lizard	*Phrynosoma blainvillii*	--/SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	HP (Marginal habitat along the fringes of ag fields)	The PIA does not provide quality habitat for this species, however, there is areas along the fringes of adjacent agricultural fields that could provide some marginal habitat.
Giant Garter snake	*Thamnophis gigas*	FT/CT	Freshwater marshes, sloughs, ponds, small lakes or low gradient streams with adjacent upland areas. Also has adapted to drainage canals, irrigation ditches, and agricultural wetlands especially flooded rice fields.	HP (Marginal Aquatic, and poor upland)	GGS is not documented within the regional vicinity of the PIA and was not observed during field surveys. Marginal aquatic habitat is present in the PIA for GGS given the lack of emergent vegetation. PIA has poor upland habitat given lack burrows, barren ground, and maintenance/weed abatement activities. Adjacent uplands outside PIA lack burrows and are disturbed by regular cultivation, fertilizers, pesticides, and herbicides, creating poor upland habitat for GGS. The combination of marginal aquatic habitat and poor upland habitat present a very low likelihood of GGS presence. This species is not anticipated to be present in the PIA.
northern California legless lizard	*Anniella pulchra*	--/SSC	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	HP (Marginal habitat along the fringes of ag fields)	The PIA does not provide quality habitat for this species, however, there is areas along the fringes of adjacent agricultural fields that could provide some marginal habitat.
San Joaquin coachwhip	*Masticophis flagellum ruddocki*	--/SSC	Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. Needs mammal burrows for refuge and oviposition sites.	HP (Marginal habitat along the fringes of ag fields)	The PIA does not provide quality habitat for this species, however, there is areas along the fringes of adjacent agricultural fields that could provide some marginal habitat.

Common Name	Scientific Name	Status (Fed/CA/ CNPS)	General Habitat Description	Habitat Present/ Absent	Rationale

Habitat Present/Absent:
Absent [A] = No habitat present and no further work needed.
Habitat Present [HP] = Habitat is, or may be present. The species may be present.
Present [P] = Species is present.
Critical Habitat [CH] = Project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

Status (Fed/CA/CNPS):
Federal:
FE = endangered under FESA
FT = threatened under FESA
FC = candidate for listing under FESA

State
CE = endangered under CESA
CT = threatened under CESA CC = candidate for listing under CESA
CR = rare under CESA
FP = fully protected.
WL = watch list.
California Native Plant Society (CNPS)
1B = rare, threatened, or endangered in California and elsewhere.
2 = rare, threatened, or endangered in California, but more common elsewhere.
3 = a review list – plants about which more information is needed.
4 = plants of limited distribution – a watch list
.1 = seriously endangered in California (over 80% of occurrences threatened-high degree and immediacy of threat).
.2 = fairly endangered in California (20-80% occurrences threatened).
.3 = not very endangered in California (<20% of occurrences threatened).

Appendix B *IPaC Resource List*

IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

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Location

San Joaquin County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

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Mammals

NAME	STATUS
San Joaquin Kit Fox Vulpes macrotis mutica No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2873	Endangered

Reptiles

NAME	STATUS
Giant Garter Snake Thamnophis gigas No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
San Bruno Elfin Butterfly Callophrys mossii bayensis There is **proposed** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3394	Endangered

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Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Large-flowered Fiddleneck Amsinckia grandiflora There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5558	Endangered

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Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

[1] and the Bald and Golden Eagle Protection Act[1].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.

2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

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NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Burrowing Owl *Athene cunicularia* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31

Common Yellowthroat Geothlypis trichas sinuosa This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Long-billed Curlew Numenius americanus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere
Nuttall's Woodpecker Picoides nuttallii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Rufous Hummingbird selasphorus rufus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds elsewhere
Spotted Towhee Pipilo maculatus clementae This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/4243	Breeds Apr 15 to Jul 20
Tricolored Blackbird Agelaius tricolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Yellow-billed Magpie Pica nuttalli This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur

and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

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Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

NOT FOR CONSTRUCTION

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE
- R2UBHx

A full description for each wetland code can be found at the National Wetlands Inventory website

NOT FOR CONSULTATION

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this

inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Appendix C *USFWS Official List*

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: October 22, 2018
Consultation Code: 08ESMF00-2019-SLI-0165
Event Code: 08ESMF00-2019-E-00477
Project Name: Corral Hollow Road Widening - Phase 2 - W. Linne Rd. to I-580

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2019-SLI-0165

Event Code: 08ESMF00-2019-E-00477

Project Name: Corral Hollow Road Widening - Phase 2 - W. Linne Rd. to I-580

Project Type: TRANSPORTATION

Project Description: The proposed project consists of widening Corral Hollow Road from the existing two-lane roadway to a four-lane major arterial with median island, sidewalks, bike facilities, landscaping, and street lights from Linne Road to I-580. The project will include design of at least two traffic signals and widening or replacement of bridges over the Delta Mendota Canal and California Aqueduct.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/37.68420936515341N121.4527943487428W

Counties: San Joaquin, CA

Endangered Species Act Species

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Reptiles

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
San Bruno Elfin Butterfly *Callophrys mossii bayensis* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3394	Endangered
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Large-flowered Fiddleneck *Amsinckia grandiflora* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5558	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Appendix D *CNPS List*

CNPS California Native Plant Society

Plant List

Inventory of Rare and Endangered Plants

37 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B],
FESA is one of [Endangered, Threatened, Candidate, Not Listed],
CESA is one of [Endangered, Threatened, Rare, Not Listed], Found in Quads 3712175, 3712174, 3712173, 3712165, 3712164, 3712163, 3712155 3712154 and 3712153;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Allium sharsmithiae	Sharsmith's onion	Alliaceae	perennial bulbiferous herb	Mar-May	1B.3	S2	G2
Amsinckia grandiflora	large-flowered fiddleneck	Boraginaceae	annual herb	(Mar)Apr-May	1B.1	S1	G1
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S1	G2T1
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Atriplex coronata var. vallicola	Lost Hills crownscale	Chenopodiaceae	annual herb	Apr-Sep	1B.2	S2	G4T2
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	Jul-Oct	1B.1	S1S2	G1G2
Campanula exigua	chaparral harebell	Campanulaceae	annual herb	May-Jun	1B.2	S2	G2
Caulanthus lemmonii	Lemmon's jewelflower	Brassicaceae	annual herb	Feb-May	1B.2	S3	G3
Chlorogalum pomeridianum var. minus	dwarf soaproot	Agavaceae	perennial bulbiferous herb	May-Aug	1B.2	S3	G5T3
Cirsium crassicaule	slough thistle	Asteraceae	annual / perennial herb	May-Aug	1B.1	S1	G1
Cirsium fontinale var. campylon	Mt. Hamilton fountain thistle	Asteraceae	perennial herb	(Feb)Apr-Oct	1B.2	S2	G2T2
Delphinium californicum ssp. interius	Hospital Canyon larkspur	Ranunculaceae	perennial herb	Apr-Jun	1B.2	S3	G3T3
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?

Eryngium racemosum	Delta button-celery	Apiaceae	annual / perennial herb	Jun-Oct	1B.1	S1	G1
Eryngium spinosepalum	spiny-sepaled button-celery	Apiaceae	annual / perennial herb	Apr-Jun	1B.2	S2	G2
Eschscholzia rhombipetala	diamond-petaled California poppy	Papaveraceae	annual herb	Mar-Apr	1B.1	S1	G1
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Fritillaria falcata	talus fritillary	Liliaceae	perennial bulbiferous herb	Mar-May	1B.2	S2	G2
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	May-Jul	1B.2	S2	G2
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Hoita strobilina	Loma Prieta hoita	Fabaceae	perennial herb	May-Jul(Aug-Oct)	1B.1	S2?	G2?
Leptosyne hamiltonii	Mt. Hamilton coreopsis	Asteraceae	annual herb	Mar-May	1B.2	S2	G2
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	1B.1	S2	G2
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	May-Aug	2B.1	S2	G4G5
Madia radiata	showy golden madia	Asteraceae	annual herb	Mar-May	1B.1	S3	G3
Malacothamnus hallii	Hall's bush-mallow	Malvaceae	perennial evergreen shrub	(Apr)May-Sep(Oct)	1B.2	S2	G2
Navarretia nigelliformis ssp. radians	shining navarretia	Polemoniaceae	annual herb	(Mar)Apr-Jul	1B.2	S2	G4T2
Phacelia phacelioides	Mt. Diablo phacelia	Hydrophyllaceae	annual herb	Apr-May	1B.2	S2	G2
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May	1B.2	S2	G5T2
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	2B.1	S1	G4T3
	caper-fruited tropidocarpum	Brassicaceae	annual herb	Mar-Apr	1B.1	S1	G1

Tropidocarpum capparideum

Suggested Citation

California Native Plant Society, Rare Plant Program. 2019. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 20 May 2019].

Search the Inventory
Simple Search
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Glossary

Information
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About the Rare Plant Program
CNPS Home Page
About CNPS
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Contributors
The Calflora Database
The California Lichen Society
California Natural Diversity Database
The Jepson Flora Project
The Consortium of California Herbaria
CalPhotos

Questions and Comments
rareplants@cnps.org

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Appendix E *Surveyor Qualifications*

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

STEVE MCMURTRY

PRINCIPAL/BIOLOGIST

Mr. McMurtry is a Principal and Biologist with De Novo Planning Group and is responsible for project management, preparation of biological assessments, natural environmental studies, wetland delineations, special status species surveys, botanical surveys, water quality reports, federal Incidental Take Permits (Section 7/Section 10), California Incidental Take Permits (Section 2800), Section 404 Permits, Section 401 Water Quality Certifications, Section 1600 Stream Bed Alteration Agreements, Biological Monitoring, and Construction Worker Education. Mr. McMurtry has extensive experience working for local, state, and federal agencies, and currently serves as an on-call Biologist for various governmental agencies in California. Mr. McMurtry also has experience providing litigation support and expert witness testimony. Mr. McMurtry graduated from Cal Poly San Luis Obispo with a bachelor's degree in Natural Resource Management with graduate studies in Biological Sciences at San Jose State University. His college coursework includes botany, wildlife biology, conservation biology, genetics, soil science, hydrology, ecology, forest sciences, and natural resource management. He has also received the appropriate education and certificates to qualify as a wetland delineator.

EDUCATION

BS, Natural Resources Management, Cal Poly San Luis Obispo

ORGANIZATIONS

Associates of Environmental Professionals

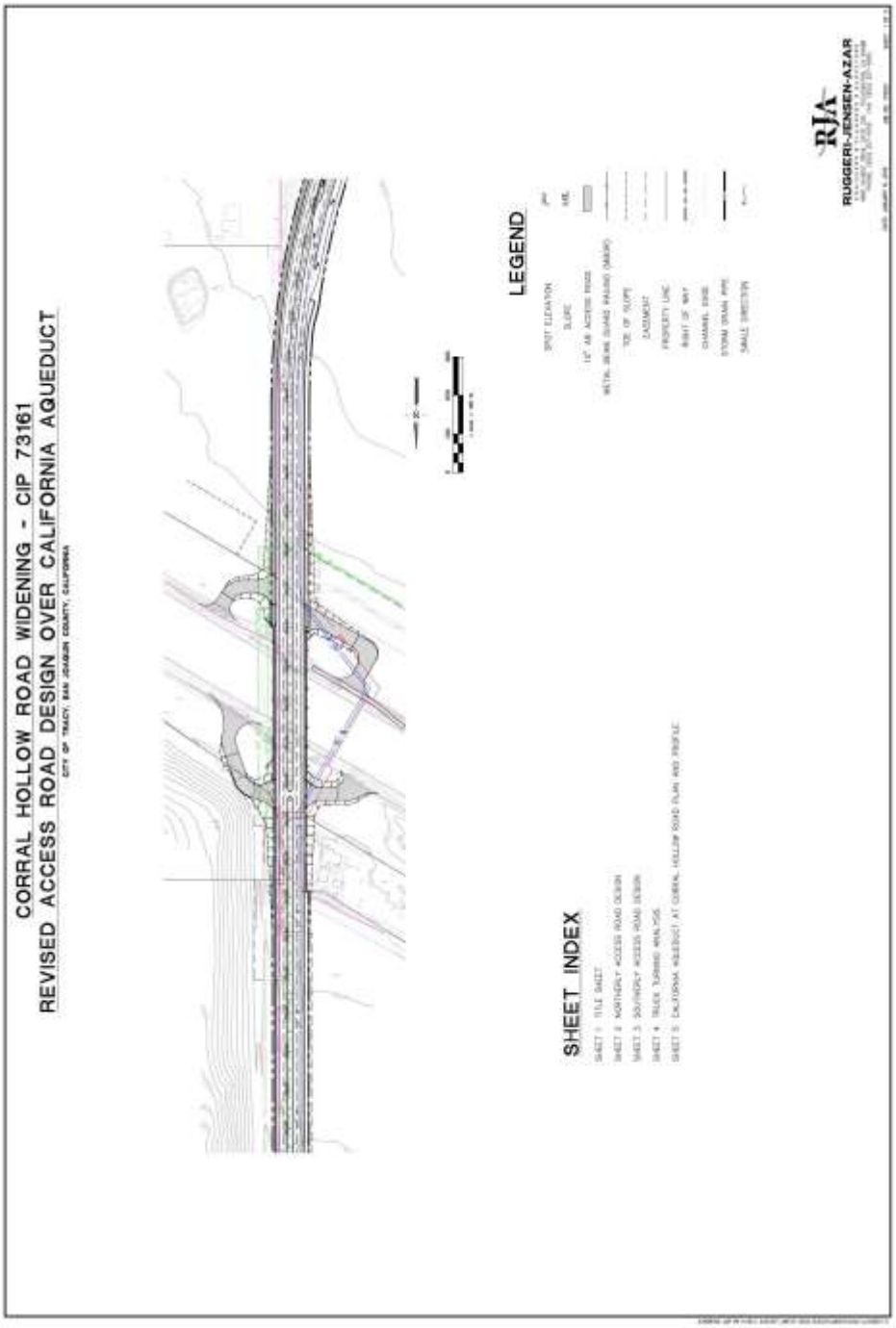
Native Plant Society

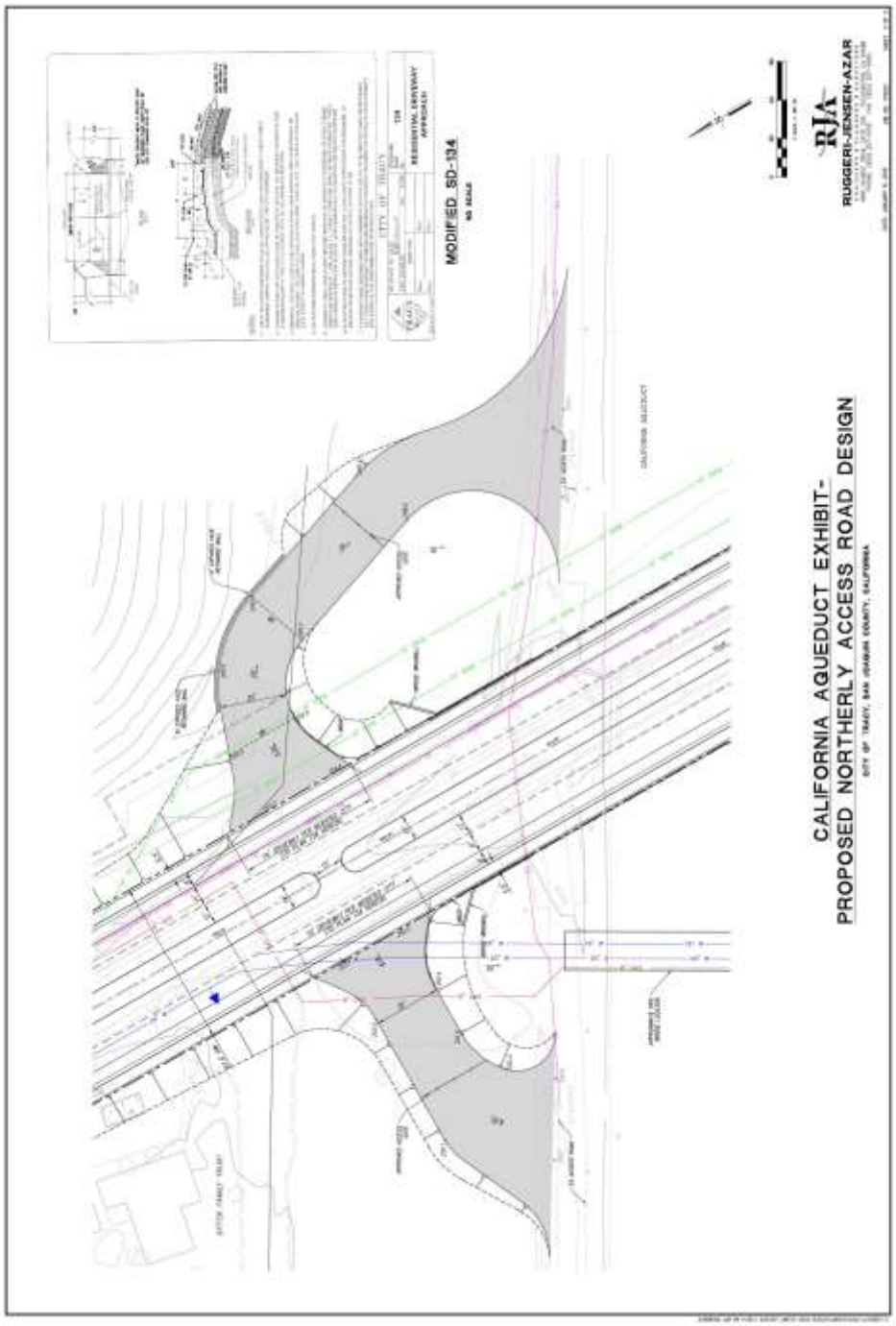
RELEVANT PROJECT EXPERIENCE*

- City of Half Moon Bay – Biological Resources Assessment for City In-fill Site and Senior Housing Project.
- City of Tracy- Biological Assessment and Habitat Conservation Plan Applications for the Holly Sugar Sports Park.
- City of Brentwood – Biological Resources General Plan Background Report
- Town of Truckee/USFS – Phase IV Legacy Trail Biological Assessment/Biological Evaluation
- City of Manteca – Wetland Delineation and 404/401 Permitting for the French Camp Canal Outlet Improvements and Water Park Project.
- City of Davis - Cannery Park Master Plan, Biological Assessment.
- County of Fresno– Natural Environmental Study for the Belmont Avenue Widening.
- City of Placerville/Caltrans - Natural Environmental Study for the El Dorado Trails Project (Clay to Bedford).
- Butte County Association of Governments/Caltrans – Natural Environmental Study for the State Route 99/Neal Road Intersection Project.
- Yuba County/Caltrans – Natural Environmental Study for the State Route 70/Feather River Boulevard Interchange Project.
- Amador County Transportation Commission – Biological Field Surveys for the State Route 88/Pine Grove Corridor Project.
- Paradise Irrigation District- Botanical Survey Report for the PID Corporation Yard.
- Amador County Transportation Commission – Biological Resources Assessment for the Plymouth Transportation Improvement Project
- City of Manteca – Wetland Mitigation Bank Draft Prospectus.
- Paradise Irrigation District- Biological Resources Assessment for the PID Corporation Yard.

DE NOVO PLANNING GROUP | SOUTHERN CALIFORNIA OFFICE
CORPORATE ADDRESS: 1020 SUNCAST LANE, SUITE 106, EL DORADO HILLS, CA 95762
smcmurtry@denovoplanning.com | (916) 580-9818

Appendix F *Project Plans*

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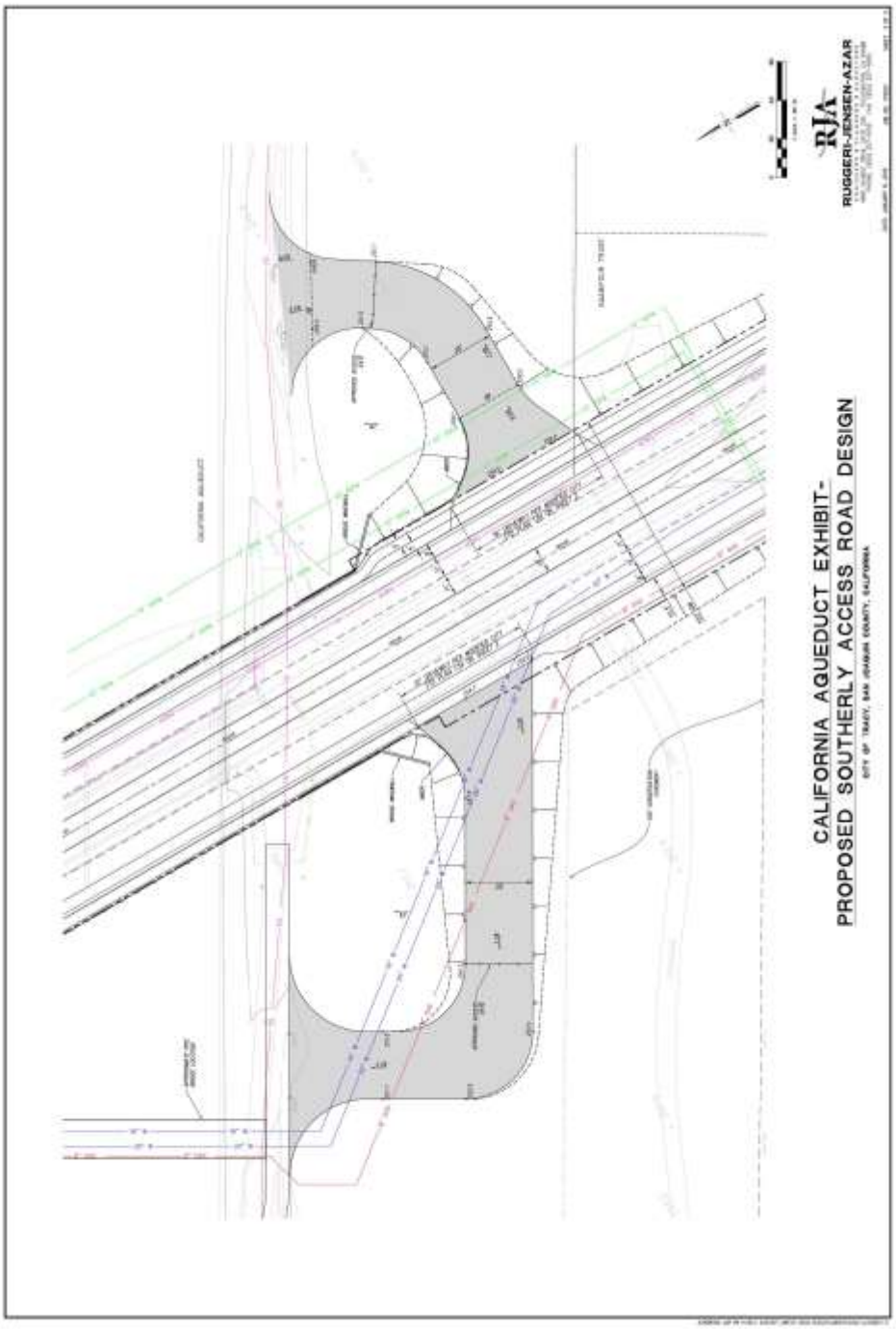
PROPOSED NORTHERLY ACCESS ROAD DESIGN
RJA
RUGGERI-JENSEN-AZAR
MODIFIED SD-134
CALIFORNIA AQUEDUCT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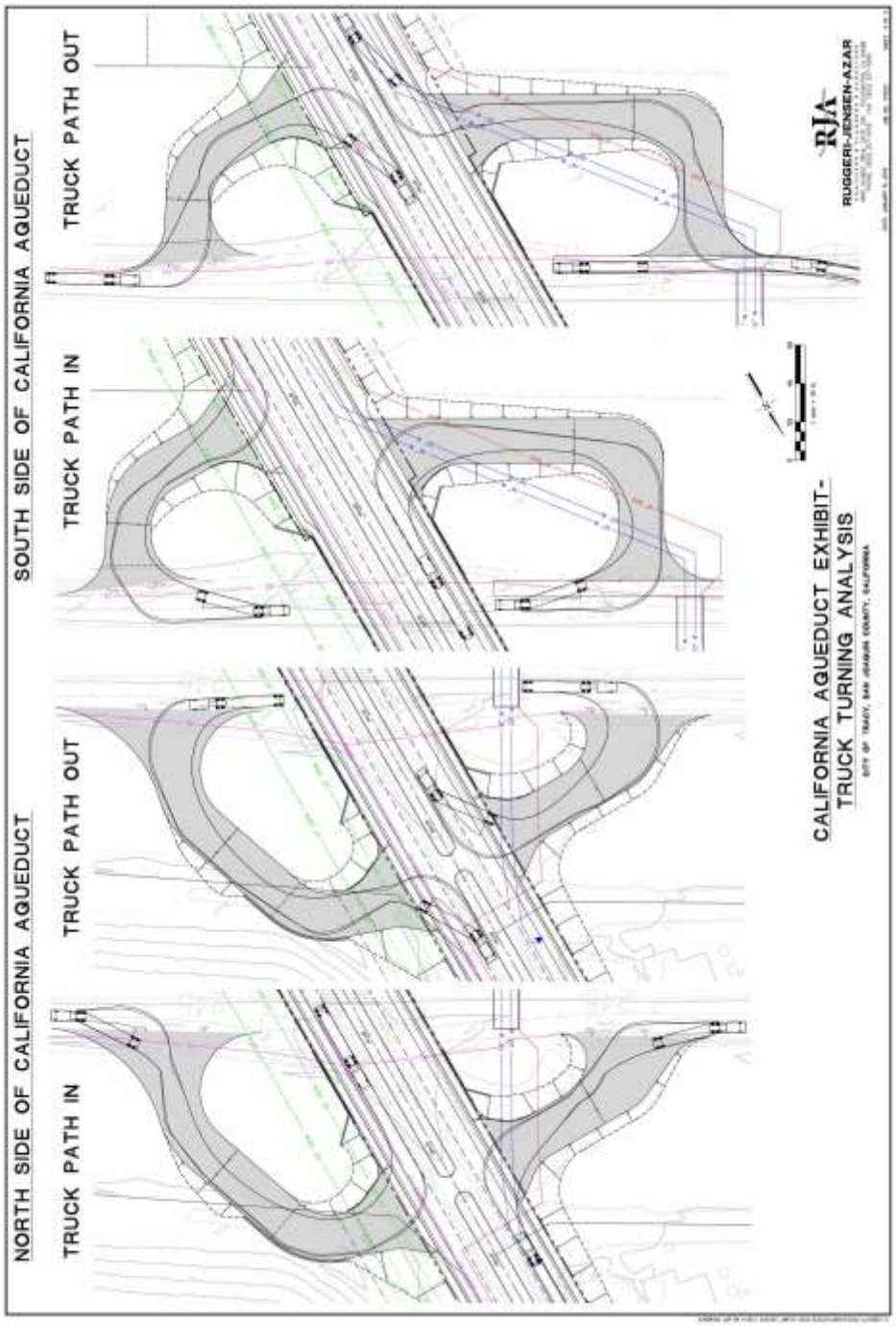
RJA
RUGGERI-JENSEN-AZAR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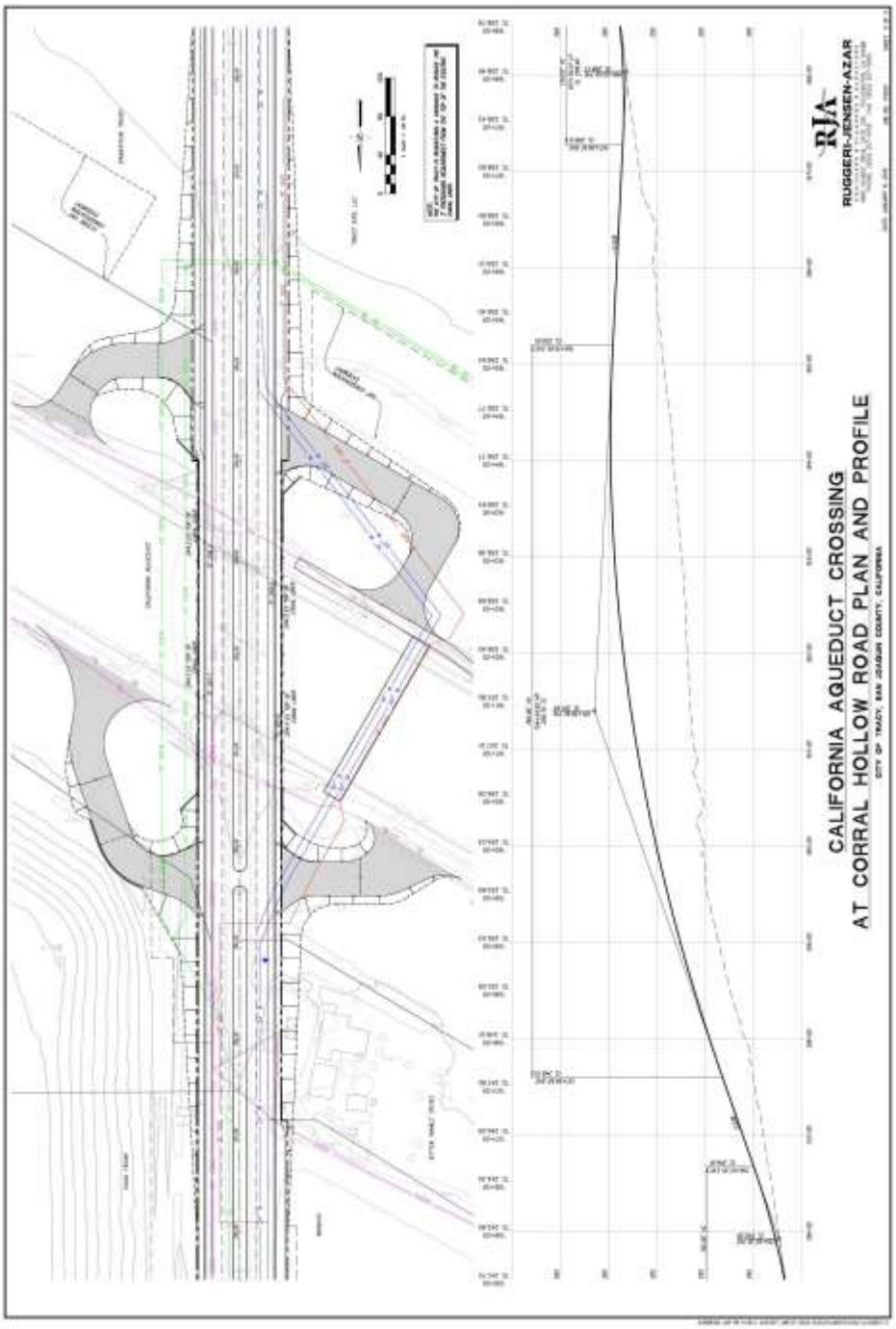
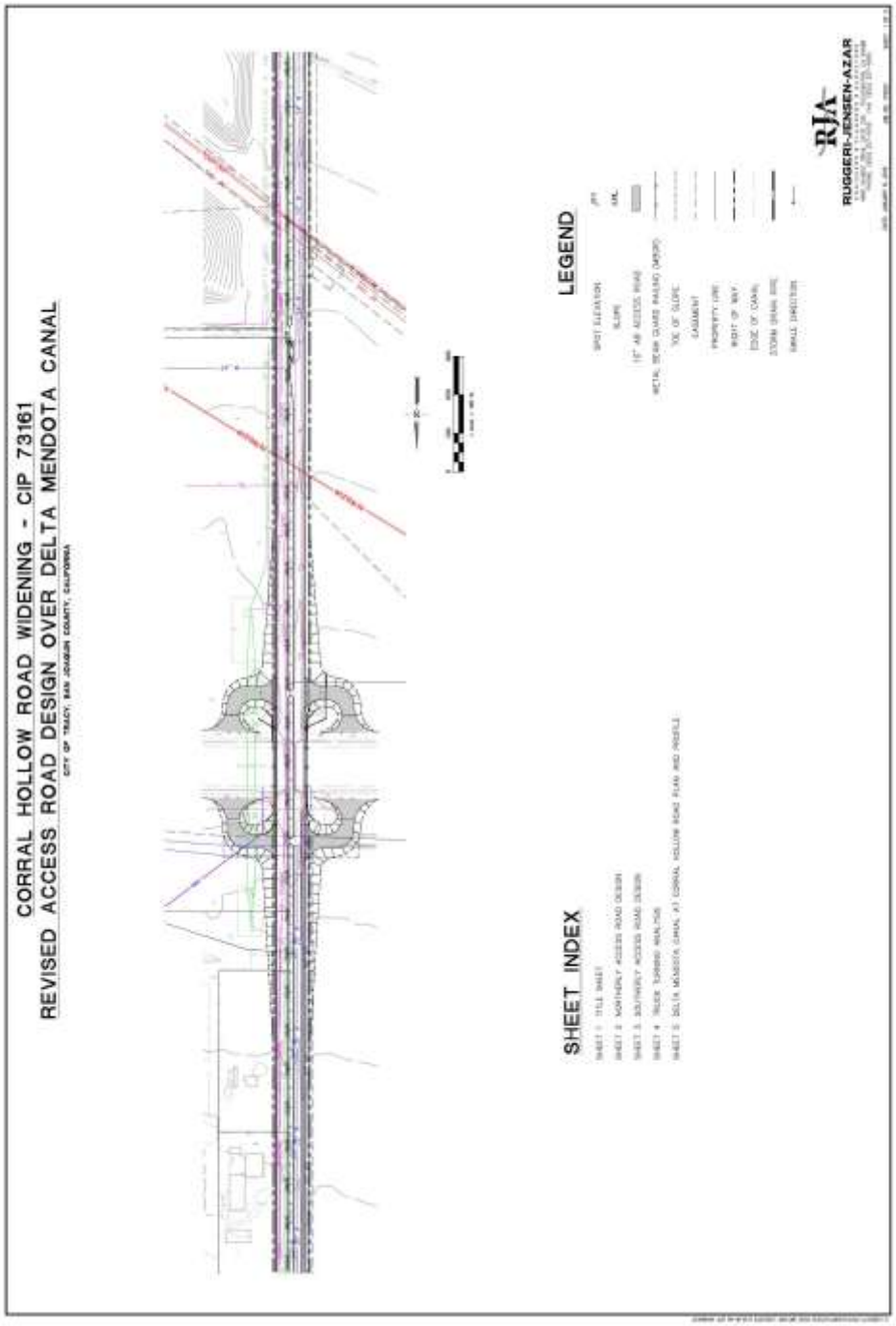
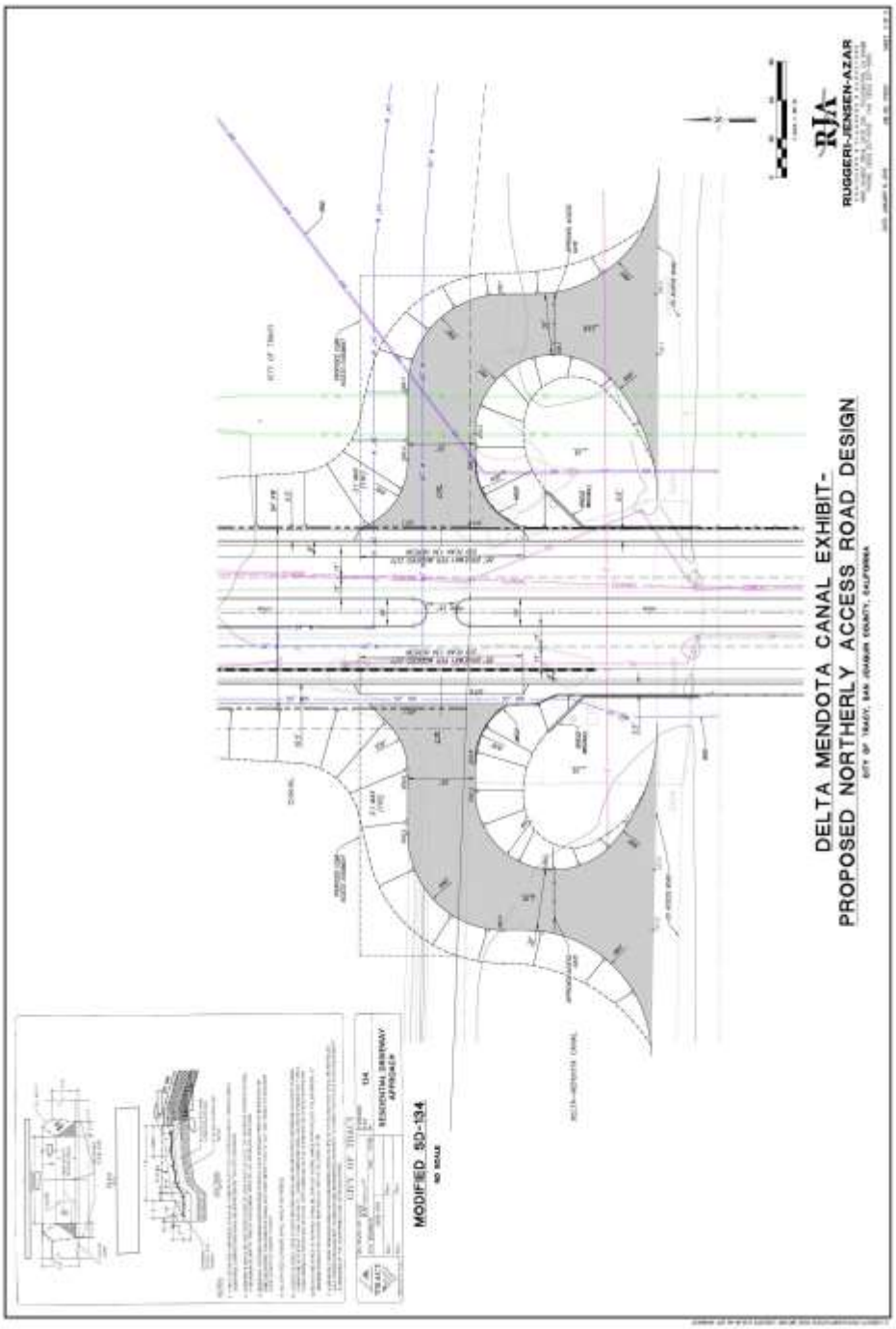
SOUTH SIDE OF CALIFORNIA AQUEDUCT
TRUCK PATH IN
TRUCK PATH OUT
TRUCK PATH IN
TRUCK PATH OUT
CALIFORNIA AQUEDUCT EXHIBIT-
TRUCK TURNING ANALYSIS
RJA
RUGGERI-JENSEN-AZAR


CALIFORNIA AQUEDUCT CROSSING
AT CORRAL HOLLOW ROAD PLAN AND PROFILE
CITY OF TRACY, SAN JOAQUIN COUNTY, CALIFORNIA
RJA
RUGGERI-JENSEN-AZAR


CORRAL HOLLOW ROAD WIDENING - CIP 73161
REVISED ACCESS ROAD DESIGN OVER DELTA MENDOTA CANAL
CITY OF TRACY, SAN JOAQUIN COUNTY, CALIFORNIA
SHEET INDEX
SHEET 1 TITLE SHEET
SHEET 2 NORTHERLY ACCESS ROAD DESIGN
SHEET 3 SOUTHERLY ACCESS ROAD DESIGN
SHEET 4 BLOCK TURNOUT ANALYSIS
SHEET 5 DELTA MENDOTA CANAL AT CORRAL HOLLOW ROAD PLAN AND PROFILE
LEGEND
SPOT ELEVATION
SLOPE
12" AB ACCESS RAMP
METAL BEAM GUARD RAILING (MBGR)
TOE OF SLOPE
EASEMENT
PROPERTY LINE
RIGHT OF WAY
EDGE OF CANAL
STORM DRAIN PIPE
SWALE DIRECTION
RJA
RUGGERI-JENSEN-AZAR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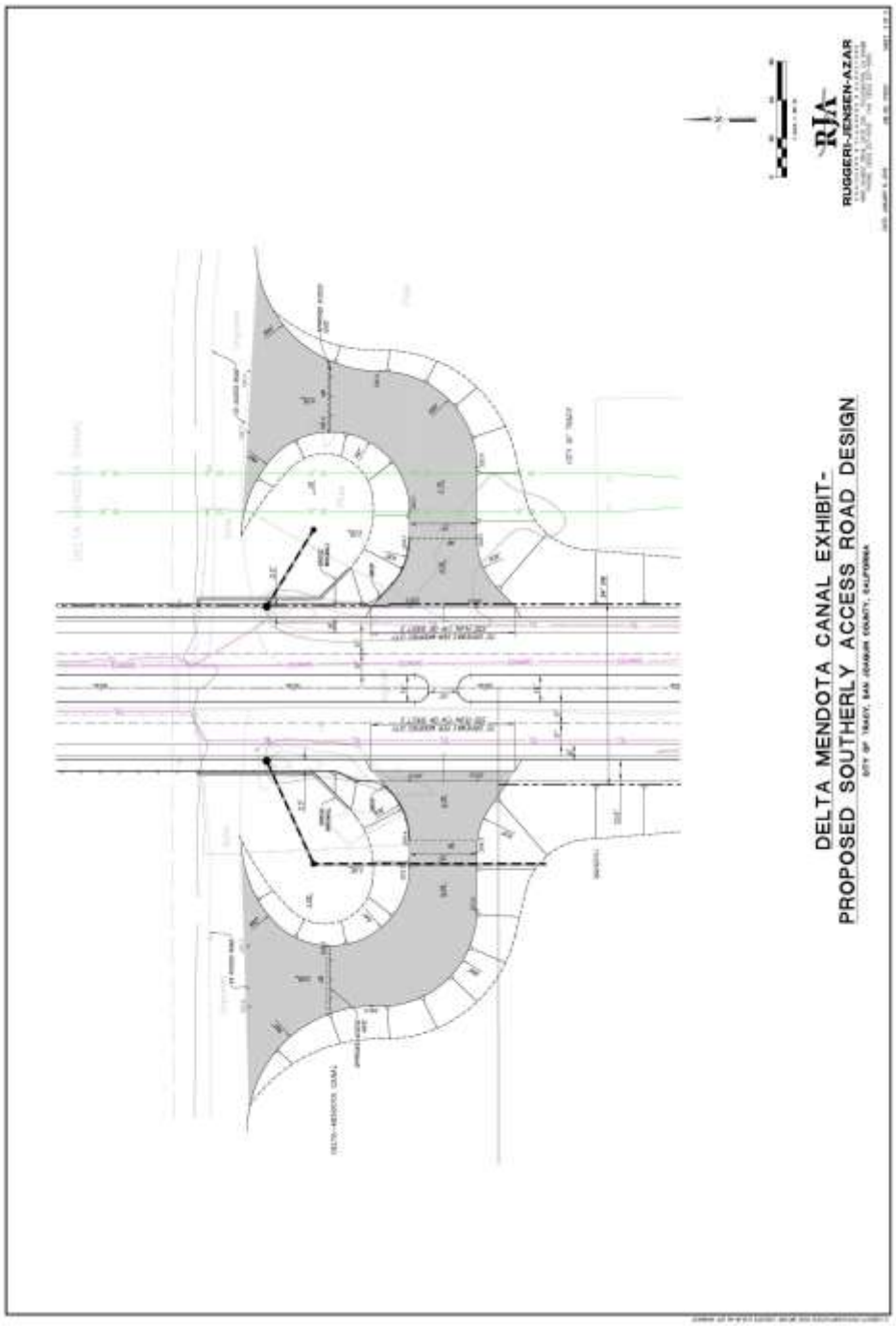
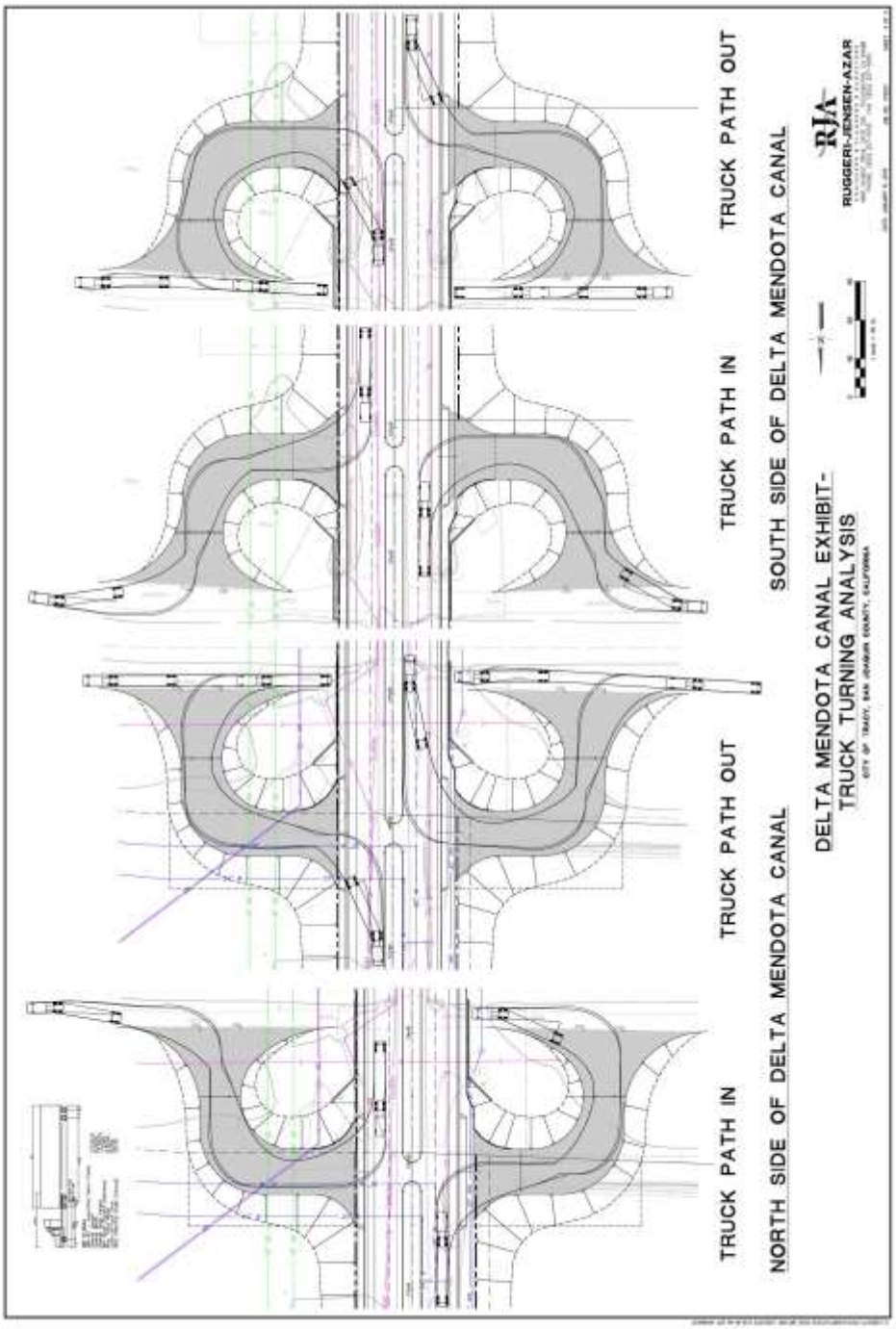
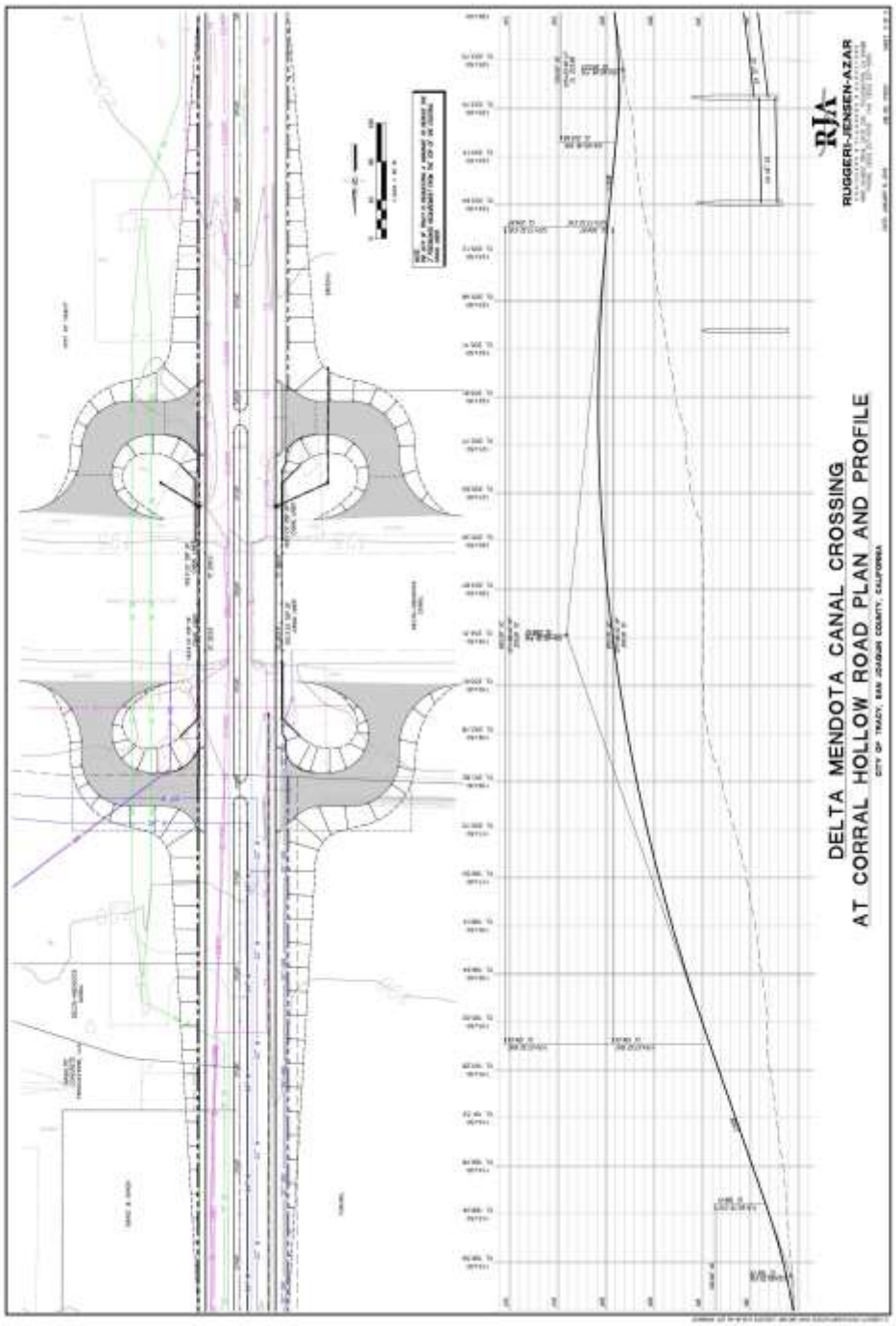
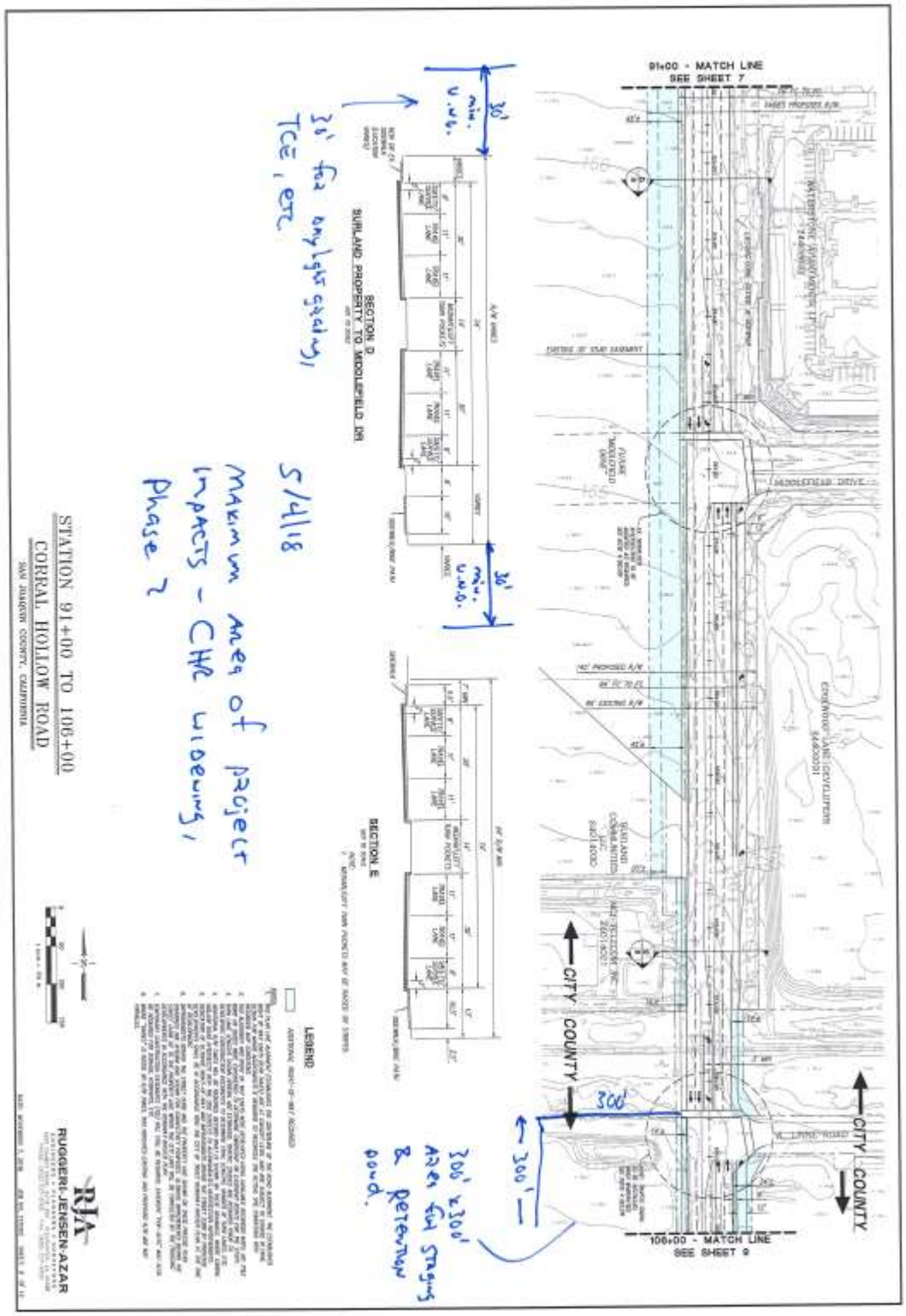
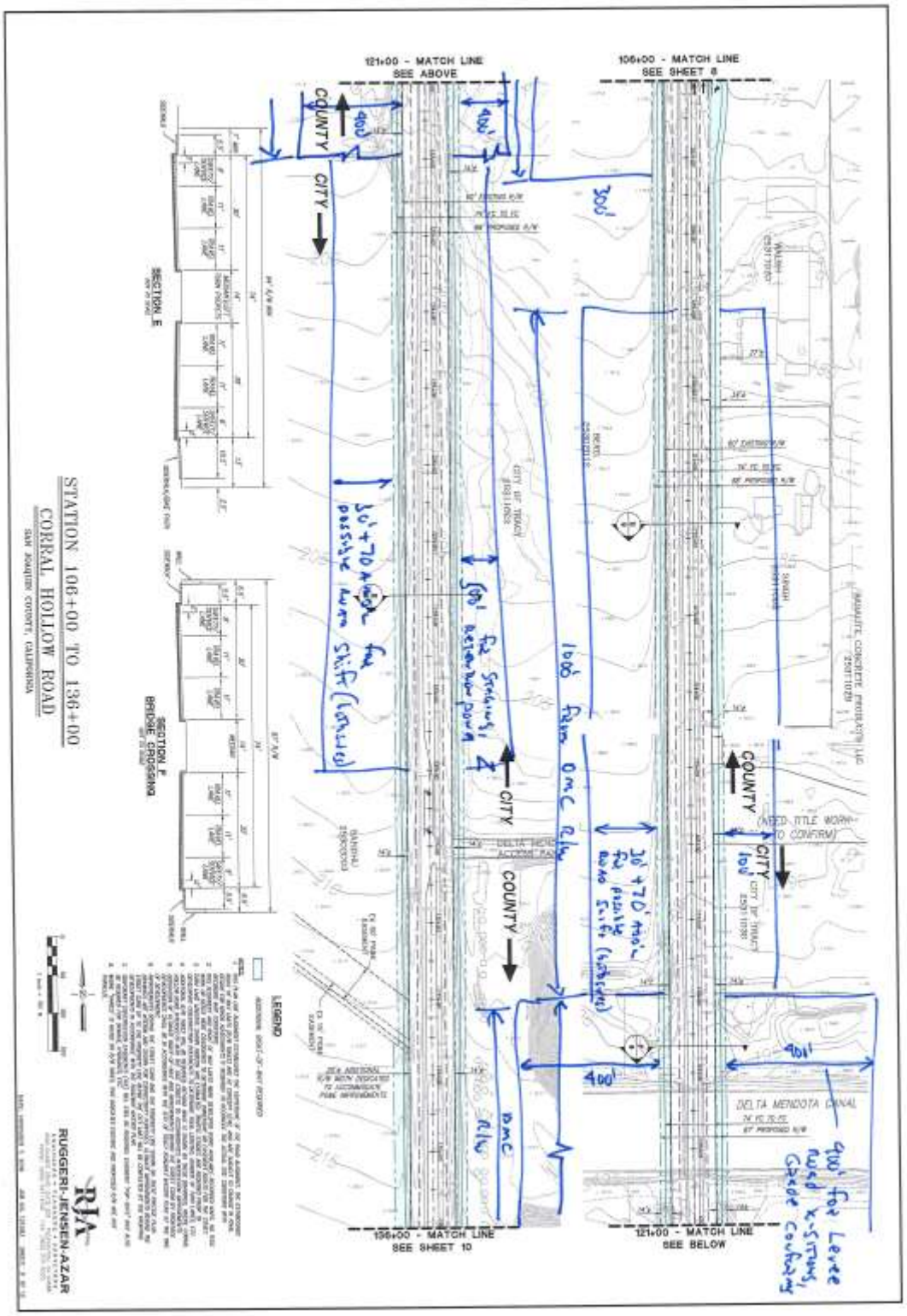
RJA
RUGGERI-JENSEN-AZAR
MODIFIED SD-134
NO SCALE

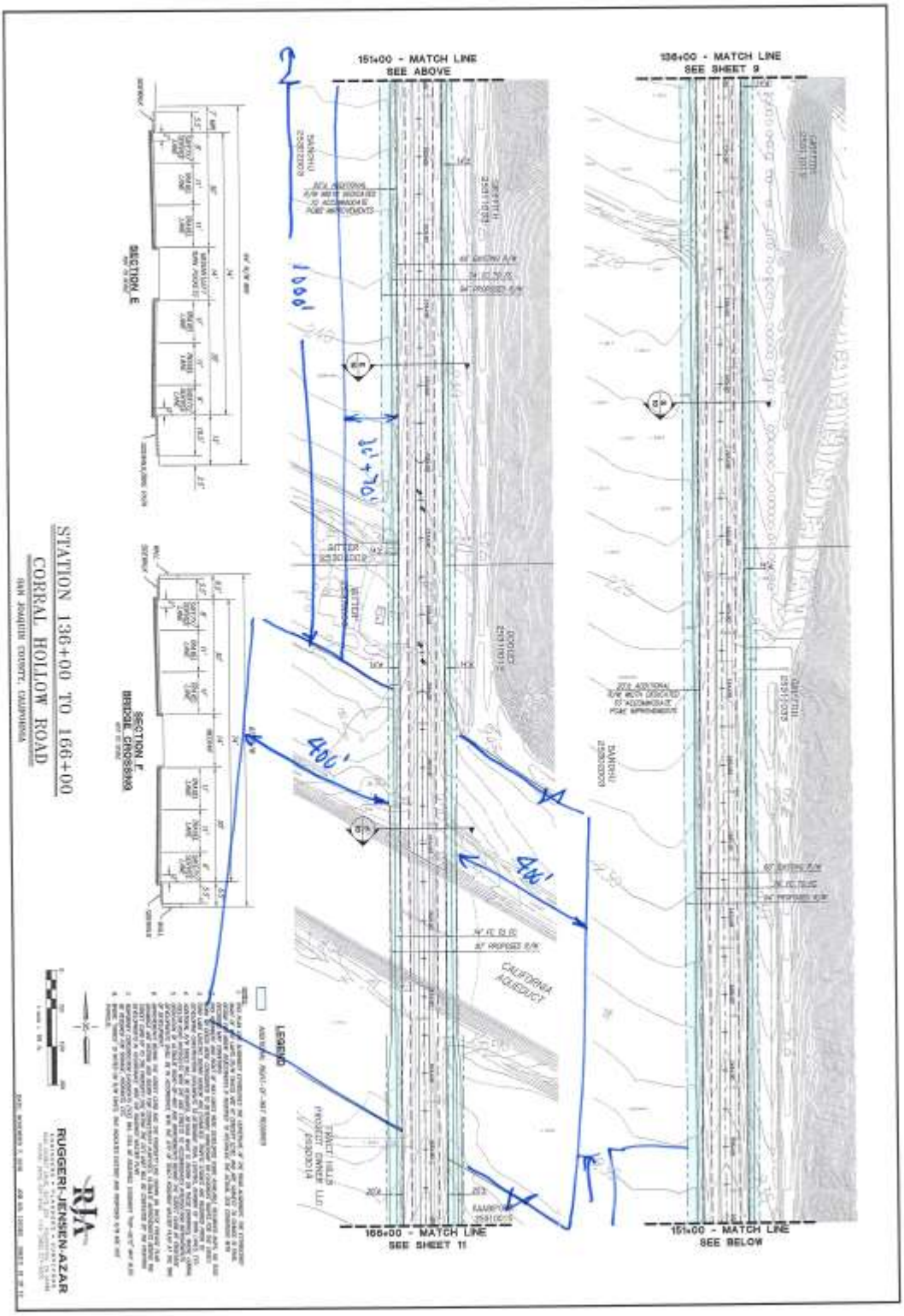

DELTA MENDOTA CANAL EXHIBIT-
PROPOSED SOUTHERLY ACCESS ROAD DESIGN
RJA
RUGGERI-JENSEN-AZAR

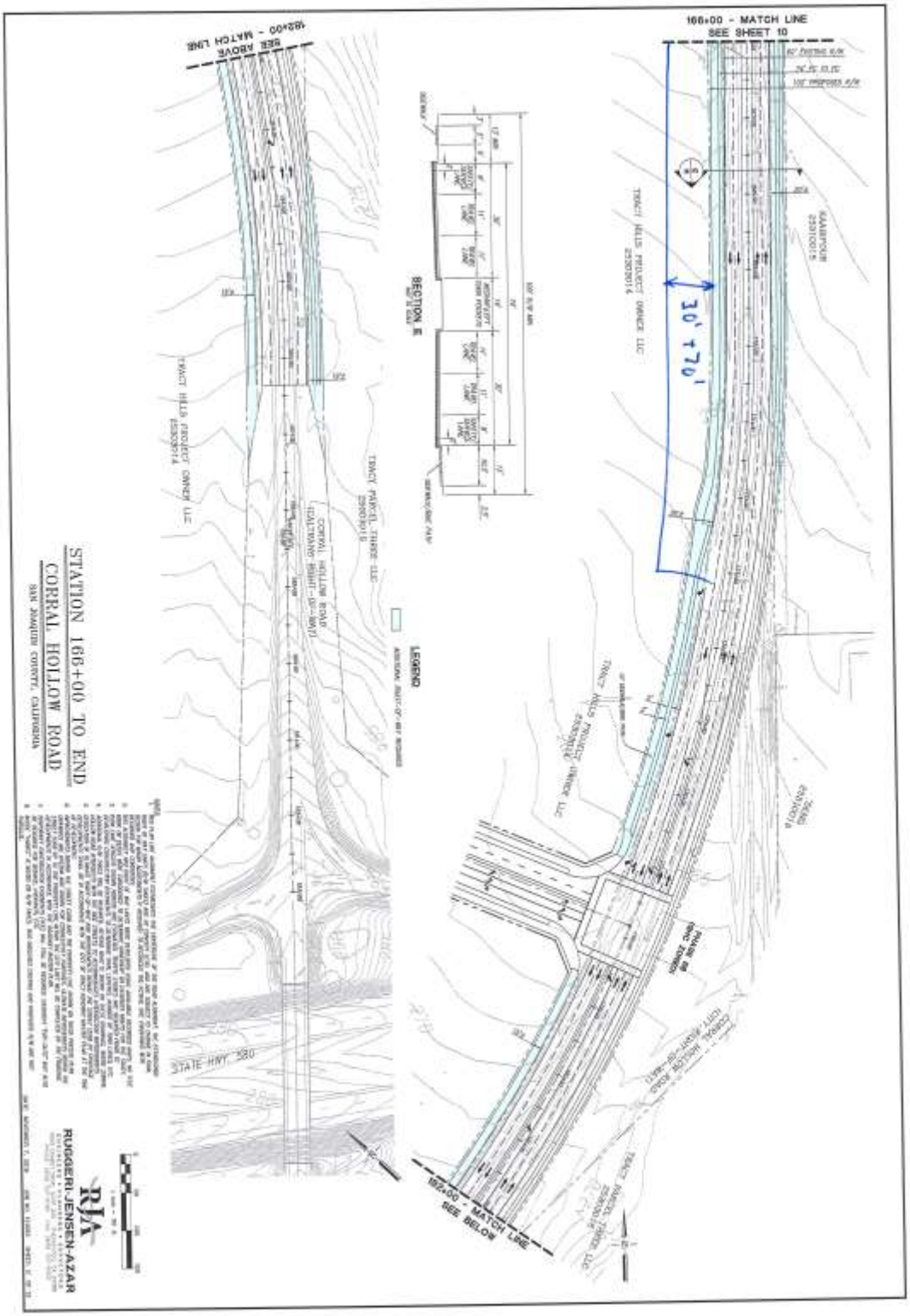

TRUCK PATH IN
NORTH SIDE OF DELTA MENDOTA CANAL
TRUCK PATH OUT
TRUCK PATH IN
SOUTH SIDE OF DELTA MENDOTA CANAL
TRUCK PATH OUT
DELTA MENDOTA CANAL EXHIBIT-
TRUCK TURNING ANALYSIS
RJA
RUGGERI-JENSEN-AZAR


RJA
RUGGERI-JENSEN-AZAR
DELTA MENDOTA CANAL CROSSING
AT CORRAL HOLLOW ROAD PLAN AND PROFILE
CITY OF TRACY, SAN JOAQUIN COUNTY, CALIFORNIA


91+00 - MATCH LINE
SEE SHEET 7
CITY
COUNTY
MIDDLEFIELD DRIVE
CITY
COUNTY
300'
300' x 300' area for staging & retention pond.
106+00 - MATCH LINE
SEE SHEET 9
30' min. w.o.
30' for only light grading, TCE, etc
SECTION D
SURLAND PROPERTY TO MIDDLEFIELD DR
SECTION E
5/4/18
Maximum area of project impacts - CHR widening, Phase 2
LEGEND
STATION 91+00 TO 106+00
CORRAL HOLLOW ROAD
SAN JOAQUIN COUNTY, CALIFORNIA
RJA
RUGGERI-JENSEN-AZAR


121+00 - MATCH LINE
SEE ABOVE
106+00 - MATCH LINE
SEE SHEET 8
COUNTY
CITY
400'
300'
100' from OMC Alig
30' + 70' Align for pressure main shift (Left side)
50' for Stations 4 Retention Pond
DELTA MENDOTA CANAL
(NEED TITLE WORK TO CONFIRM)
400' for Levee road x-sections, Grade Country
136+00 - MATCH LINE
SEE SHEET 10
121+00 - MATCH LINE
SEE BELOW
SECTION E
SECTION E
BRIDGE CROSSING
LEGEND
STATION 106+00 TO 136+00
CORRAL HOLLOW ROAD
SAN JOAQUIN COUNTY, CALIFORNIA
RJA
RUGGERI-JENSEN-AZAR


151+00 - MATCH LINE
SEE ABOVE
136+00 - MATCH LINE
SEE SHEET 9
166+00 - MATCH LINE
SEE SHEET 11
151+00 - MATCH LINE
SEE BELOW
SECTION E
SECTION F
BRIDGE CROSSING
CALIFORNIA AQUEDUCT
LEGEND
STATION 136+00 TO 166+00
CORRAL HOLLOW ROAD
SAN JOAQUIN COUNTY, CALIFORNIA
RUGGERI-JENSEN-AZAR
1000'
400'
400'


166+00 - MATCH LINE
SEE SHEET 10
30' +70'
SECTION E
LEGEND
STATE HWY 580
STATION 166+00 TO END
CORRAL HOLLOW ROAD
SAN JOAQUIN COUNTY, CALIFORNIA
RUGGERI-JENSEN-AZAR

Appendix C

Determination of Eligibility and Effect

DERMINTATION OF ELIGIBILITY AND EFFECT

FOR THE CORRAL HOLLOW ROAD WIDENING

PROJECT, CITY OF TRACY,

SAN JOAQUIN COUNTY, CALIFORNIA

Prepared by

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With Contributions by

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Prepared for

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El Dorado Hills, CA 95762

April 27, 2020
(Job #17-075)

INTRODUCTION

The purpose of the project is to implement the second phase of the Corral Hollow precise line plan, which will result in the ultimate buildout of this roadway including two bridges, one of which is a federal bridge under the jurisdiction of the United States Bureau of Reclamation (USBR). This project is needed to accommodate existing vehicle trips, as well as future trips that are anticipated from new development within the City of Tracy and County of San Joaquin.

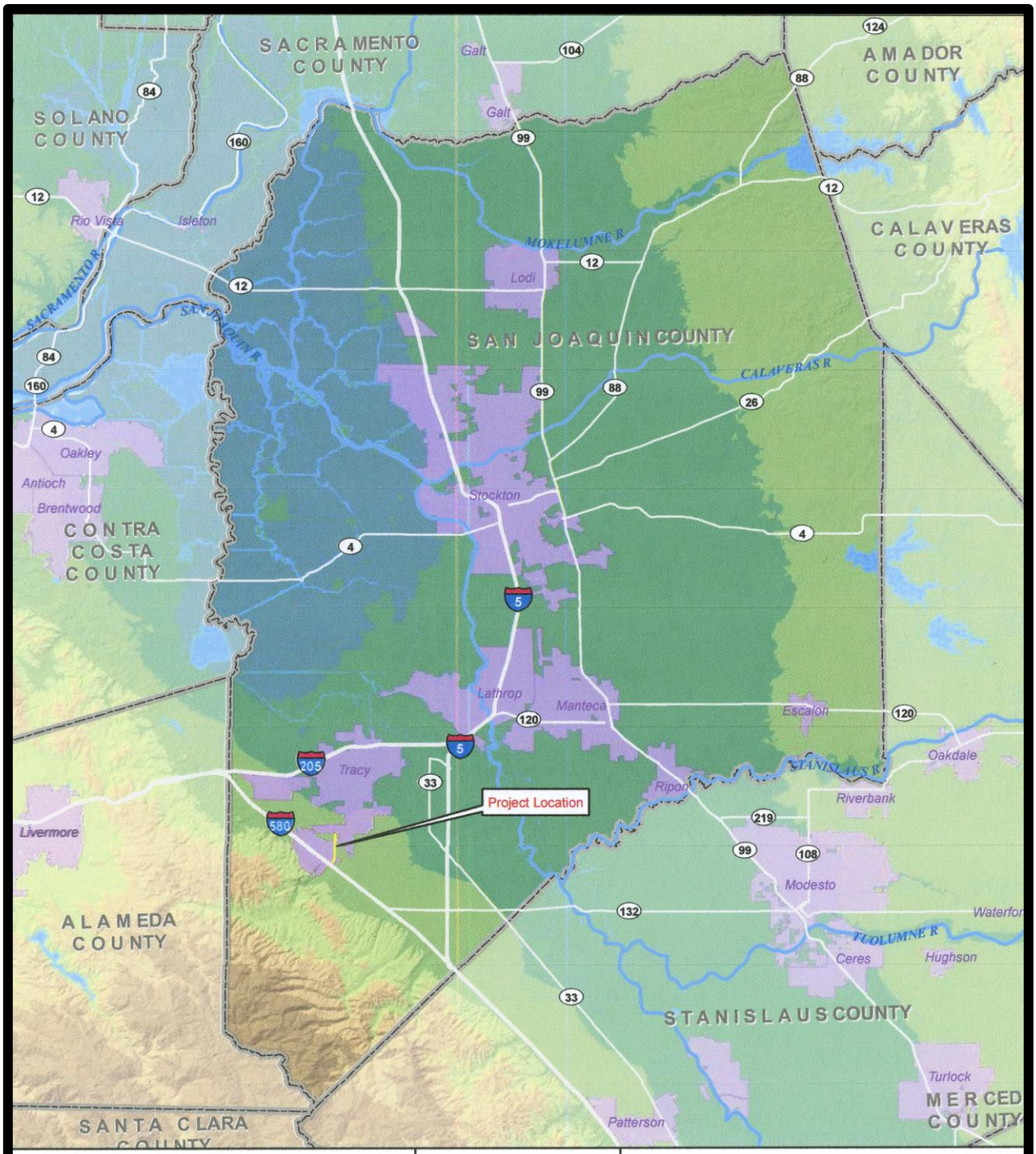
The USBR action is focused on the removal/replacement of a bridge over the Delta Mendota Canal, which is needed for two reasons. First, removal/replacement of the bridge will ensure that existing and future vehicular travelers along Corral Hollow Road can safety navigate their vehicles over this federal facility given the changes to Corral Hollow Road. Secondly, the action will allow for the removal of an aging and structurally deficient bridge that will be replaced with a modern bridge built to the latest seismic design standards.

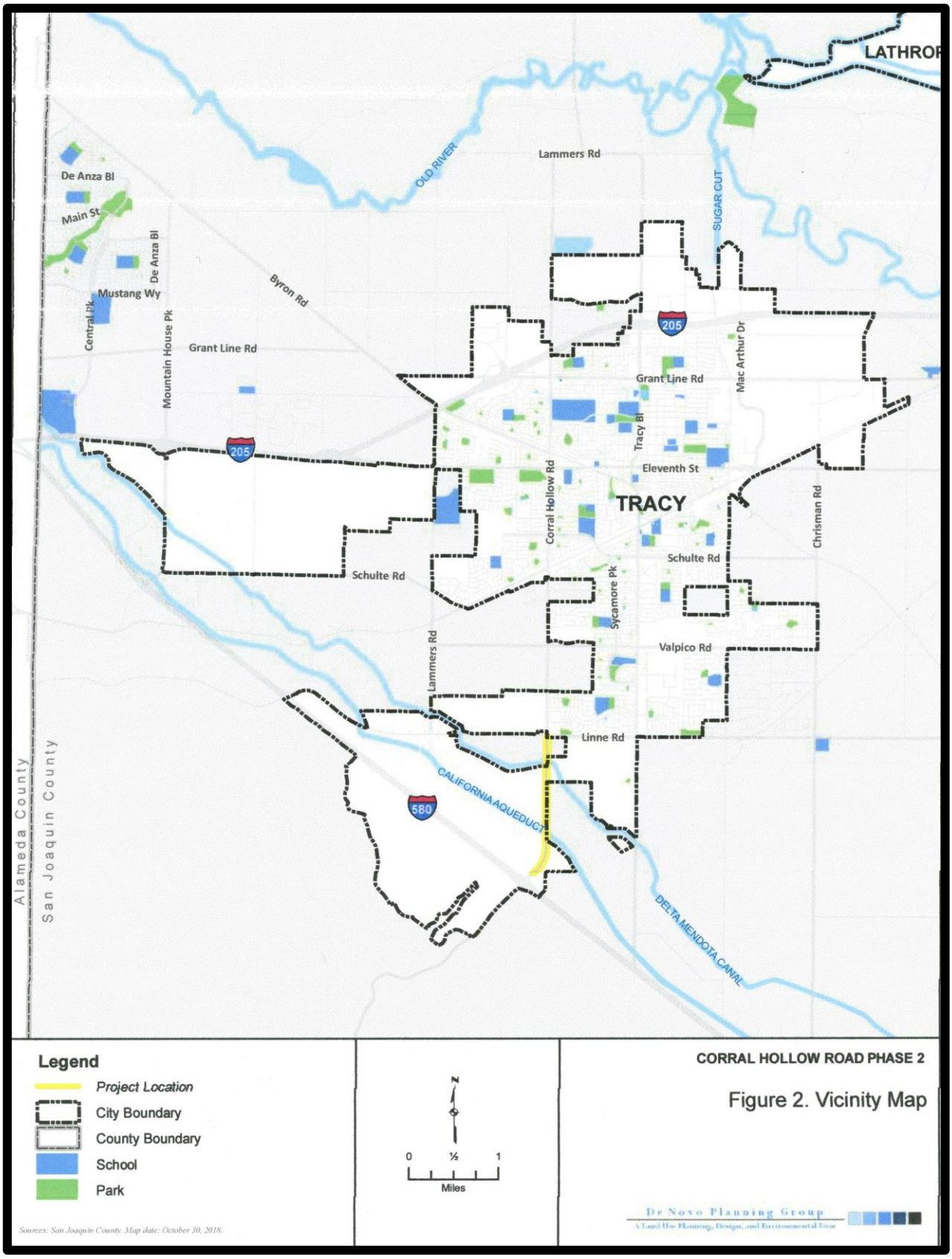
The proposed project is located along Corral Hollow Road within the jurisdiction of both the City of Tracy and San Joaquin County. The City of Tracy will serve as lead agency for the widening of Corral Hollow Road in the county areas. The proposed project is located in Township 3 South, Range 5 East, sections 7, 8, 17 and 18 as mapped on the United States Geological Survey (USGS) 7.5-minute Tracy topographic quadrangle (Figures 1-4).

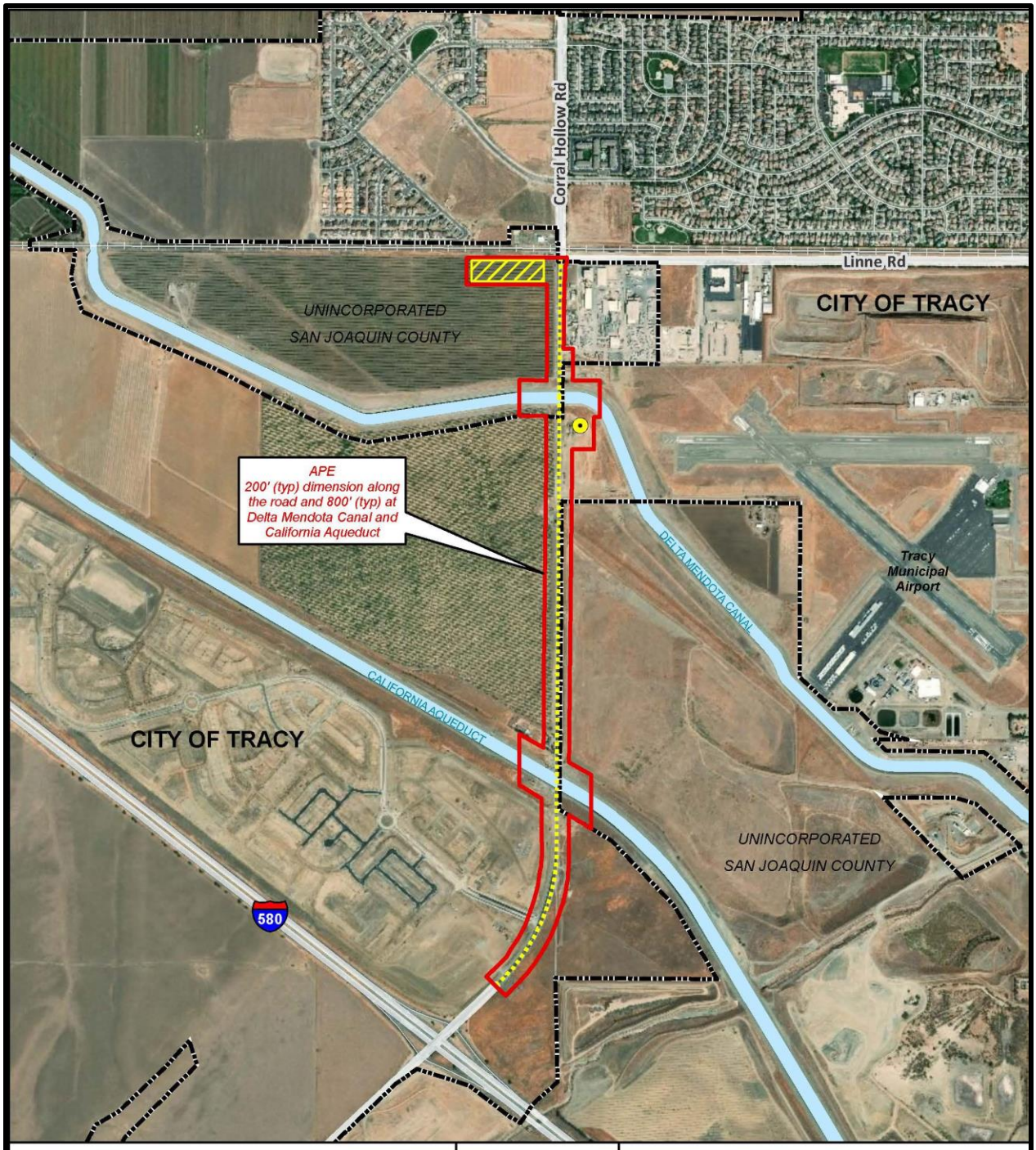
Corral Hollow Road has two existing bridges, one over California Aqueduct and the other over Delta Mendota Canal. The California Aqueduct is within the jurisdiction of State of California and is managed and operated by Department of Water Resources (DWR). The DWR has discretionary approval over actions that directly affect their facilities. For the proposed project, the DWR will serve as a Responsible Agency. The Delta Mendota Canal is under the Federal jurisdiction and is managed and operated by U.S. Bureau of Reclamation (USBR). The USBR will serve as the federal lead agency for NEPA and other federal approvals.

The precise line plan for this segment of Corral Hollow Road was prepared and adopted by the Tracy City Council on November 20, 2016. The precise line plan resulted in an amendment to the City of Tracy's Roadway Master Plan to reflect the future roadway section. The construction cost for the project is estimated at $25 million. The City of Tracy has phased the improvement.

The proposed project is Phase 2 of the precise line plan and consists of widening Corral Hollow Road from the existing two-lane roadway to a four-lane arterial with median island, sidewalks, bike facilities, landscaping and street lights from Linne Road to I-580. The project will include design of at least two traffic signals and widening or replacement of bridges over the Delta Mendota Canal and California Aqueduct.


SACRAMENTO COUNTY
AMADOR COUNTY
SOLANO COUNTY
CALAVERAS COUNTY
SAN JOAQUIN COUNTY
CONTRA COSTA COUNTY
ALAMEDA COUNTY
STANISLAUS COUNTY
SANTA CLARA COUNTY
MERCED COUNTY
Galt
Rio Vista
Isleton
Lodi
Stockton
Oakley
Antioch
Brentwood
Lathrop
Manteca
Escalon
Tracy
Ripon
Oakdale
Riverbank
Livermore
Modesto
Ceres
Hughson
Waterford
Turlock
Patterson
MOKELUMNE R
SACRAMENTO R
SAN JOAQUIN R
CALAVERAS R
STANISLAUS R
TUOLUMNE R
Project Location
Legend
Project Location
City Area
County Boundary
0 2½ 5
Miles
Sources: CalAtlas; Sacramento County; San Joaquin County; Stanislaus County; Santa Clara County; Alameda County; Contra Costa County; Solano County.
Map date: October 30, 2018.
CORRAL HOLLOW ROAD PHASE 2
Figure 1. Regional Location Map
De Novo Planning Group


LATHROP
OLD RIVER
Lammers Rd
SUGAR CUT
De Anza Bl
Main St
De Anza Bl
Mustang Wy
Byron Rd
Central Pk
Mountain House Pk
Grant Line Rd
205
Grant Line Rd
Mac Arthur Dr
Tracy Bl
Eleventh St
TRACY
Corral Hollow Rd
Chrisman Rd
Schulte Rd
Schulte Rd
Sycamore Pk
Valpico Rd
Lammers Rd
Linne Rd
CALIFORNIA AQUEDUCT
580
DELTA MENDOTA CANAL
Alameda County
San Joaquin County
Legend
Project Location
City Boundary
County Boundary
School
Park
N
0
½
1
Miles
Sources: San Joaquin County. Map date: October 30, 2018.
CORRAL HOLLOW ROAD PHASE 2
Figure 2. Vicinity Map
De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm



Legend

- Area of Potential Effect (APE)
- Tracy City Limits

Project Features

- Corral Hollow Rd Phase II
- Storm Drain Pump Station
- Basin

Sources: San Joaquin County; ArcGIS Online World Imagery Map Service; Rugerri-Jensen-Azar Engineers-Planners-Surveyors. Map date: April 27, 2020.

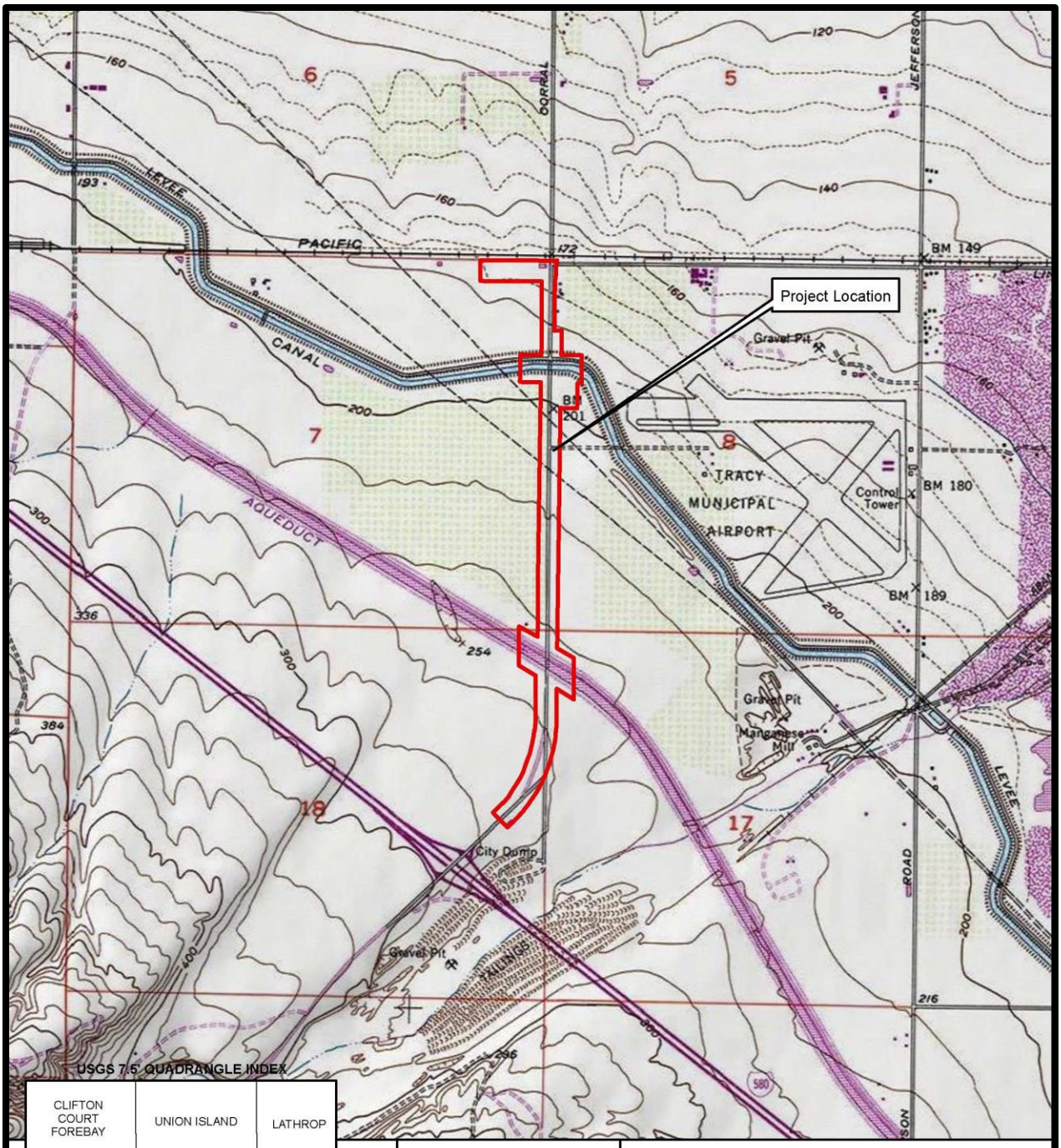
N

0 600 1,200
Feet

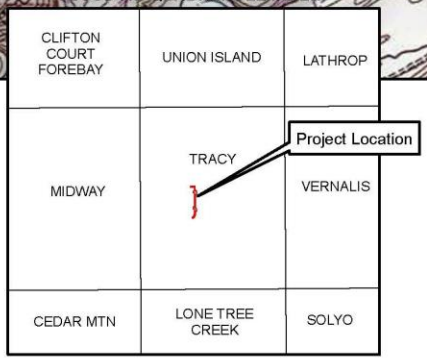
CORRAL HOLLOW ROAD PHASE 2

Figure 3. Aerial View of Project Site

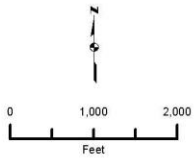
De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm



USGS 7.5' QUADRANGLE INDEX



Data sources: ArcGIS Online USGS Topographic Map Service. Map date: April 27, 2020.



CORRAL HOLLOW ROAD PHASE 2

Figure 4: USGS Topographic Map

USGS 7.5' Tracy Quadrangle
Township 3S, Range 5E, Sections 7, 8, 17, 18

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

Construction activities and stockpiling of material for construction of the bridge are anticipated to occur within the footprint of the proposed APE, which may include the roadway and roadway embankments, and may also be in the area of the proposed well and basin toward the north end of the APE. Staging and stockpiling will not occur outside the APE.

The vertical APE at the Delta Mendota Canal bridge includes temporary excavation to a maximum depth of 5 feet below existing grade at the footprint of the bridge abutments and drilling a total of twelve, 4 foot diameter cast-in-drilled hole concrete piles to a depth of approximately 50 feet below existing grade for the bridge abutments. The vertical APE for the roadway improvements is anticipated to be 2-3 feet deep.

Cultural Resources

Although the project lies primarily on State and private lands, there is a small section of federally-managed land at the crossing of the Delta Mendota Canal (United States Bureau of Reclamation: USBR). The USBR issued "Permission to Conduct Non-Collection Cultural Resources Investigations for the City of Tracy Land Use Authorization Over the Delta-Mendota Canal (DMC), San Joaquin County, California (18-SCAO-084)" on May 7, 2018 (Appendix 1).

Melinda Peak served as principal investigator for the current study, preparing the report. Peak and Neal Neuenschwander completed the 2018 cultural resource survey (resumes, Appendix 2).

Through her education and experience, Ms. Peak meets the Secretary of Interior Standards for historian, prehistoric archeologist and historic archeologist.

Pamela Daly of Daly and Associates completed the recordation and evaluation of the bridges and canal systems crossed by project alignment. Through her education and experience, Ms. Daly meets the Secretary of Interior Standards for architectural historian (resume, Appendix 2). Ms. Daly completed the recordation and evaluation of the bridge over the Delta Mendota Canal, as well as the Delta Mendota Canal segment in the project area. Ms. Daly also completed the recordation of the bridge over the California Aqueduct, and the segment of the California Aqueduct in the project area.

FEDERAL REGULATORY CONTEXT

The Section 106 review process is implemented using a five step procedure: 1) identification and evaluation of historic properties; 2) assessment of the effects of the undertaking on properties that are eligible for the National Register; 3) consultation with the State Historic Preservation Office (SHPO) and other agencies for the development of a memorandum of agreement (MOA) that addresses the treatment of historic properties; 4) receipt of Advisory Council on Historic

Preservation comments on the MOA or results of consultation; and 5) the project implementation according to the conditions of the MOA.

The Section 106 compliance process may not consist of all the steps above, depending on the situation. For example, if identification and evaluation result in the documented conclusion that no properties included in or eligible for inclusion are present, the process ends with the identification and evaluation step.

FRAMEWORK FOR EVALUATION

Decisions regarding management of cultural resources hinge on determinations of their significance (36 CFR 60.2). As part of this decision-making process the National Park Service has identified components which must be considered in the evaluation process, including:

- criteria for significance;
- historic context; and
- integrity.

Criteria for Significance

Significance of cultural resources is measured against the National Register criteria for evaluation:

> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and,
>
> (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (b) that are associated with the lives of persons significant in our past; or
>
> (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (d) that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

Historic Context

The historic context is a narrative statement "that groups information about a series of historic properties based on a shared theme, specific time period, and geographical area." To evaluate resources in accordance with federal guidelines, these sites must be examined to determine whether they are examples of a defined "property type." The property type is a "grouping of individual properties based on shared physical or associative characteristics." Through this evaluation, each site is viewed as a representative of a class of similar properties rather than as a unique phenomenon.

A well-developed historical context helps determine the association between property types and broad patterns of American history. Once this linkage is established, each resource's potential to address specific research issues can be explicated.

Integrity

For a property to be eligible for listing in the National Register it must meet one of the criteria for significance (36 CFR 60.4 [a, b, c, or d]) and retain integrity. Integrity is defined as "the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period."

The following discussion is derived from National Register Bulletin 15 ("How to Apply the National Register Criteria for Evaluation").

Within the concept of integrity, there are seven aspects or qualities that define integrity in various combinations. The seven aspects are: location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity, a property will possess several or usually most of these aspects. The retention of specific aspects is necessary for a property to convey this significance. Determining which of the seven aspects are important involves knowing why, where and when the property is significant.

The prescribed steps in assessing integrity are as follows:

- define the essential physical features that must be present for a property to represent its significance;
- determine whether the essential physical features are visible enough to convey their significance;
- determine whether the property needs to be compared with similar properties; and,
- determine, based on the significance and essential physical features, which aspects of integrity are particularly vital to the property being nominated and if they are present.

Ultimately, the question of integrity is answered by whether or not the property retains the identity for which it is significant.

All properties change over time. It is not necessary for a property to retain all its historic physical features or characteristics. However, the property must retain the essential physical features that enable it to convey its historic identity. The essential physical features are those features that define why a property is significant.

A property's historic significance depends on certain aspects of integrity. Determining which of the aspects is most important to a particular property requires an understanding of the property's significance and its essential physical features. For example, a property's historic significance can be related to its association with an important event, historical pattern or person. A property that is significant for its historic association is eligible for listing if it retains the essential physical features that made up its character or appearance during the period of its association with the important event, historical pattern, or person.

A property important for association with an event, historical pattern, or person ideally might retain some features of all seven aspects of integrity. Integrity of design and workmanship, however, might not be as important to the significance, and would not be relevant if the property were an archeological site. A basic integrity test for a property associated with an important event or person is whether a historical contemporary would recognize the property as it exists today. For archeological sites that are eligible under criteria A and B, the seven aspects of integrity can be applied in much the same way as they are to buildings, structures, or objects.

In sum, the assessment of a resource's National Register eligibility hinges on meeting two conditions:

- the site must possess the potential to be eligible for listing in the National Register under one of the evaluation criteria either individually or as a contributing element of a district based on the historic context that is established; and

- the site must possess sufficient integrity, i.e. it must retain the qualities that make it eligible for the National Register.

For the National Register, "a district possesses a significant concentration, linkage, or continuity of "... objects united historically or aesthetically by plan or physical development." The identity of a district derives from the relationship of its resources, which can be an arrangement of functionally related properties.

STATE REGULATIONS

State historic preservation regulations affecting this project include the statutes and guidelines contained in the California Environmental Quality Act (CEQA; Public Resources Code sections 21083.2 and 21084.1 and sections 15064.5 and 15126.4 (b) of the CEQA Guidelines). CEQA Section 15064.5 requires that lead agencies determine whether projects may have a significant effect on archaeological and historical resources. Public Resources Code Section 21098.1 further cites: A project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

An "historical resource" includes, but is not limited to, any object, building, structure, site, area, place, record or manuscript that is historically or archaeologically significant (Public Resources Code section 5020.1).

Advice on procedures to identify such resources, evaluate their importance, and estimate potential effects is given in several agency publications such as the series produced by the Governor's Office of Planning and Research (OPR), *CEQA and Archaeological Resources,* 1994. The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities, including, but not limited to, museums, historical commissions, associations and societies be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of the antiquity and provides for the sensitive treatment and disposition of those remains (California Health and Safety Code Section 7050.5, California Public Resources Codes Sections 5097.94 et al).

The California Register of Historical Resources (Public Resources Code Section 5020 et seq.)

The State Historic Preservation Office (SHPO) maintains the California Register of Historical Resources (CRHR). Properties listed, or formally designated as eligible for listing, on the National Register of Historic Places are automatically listed on the CRHR, as are State Landmarks and Points of Interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

For the purposes of CEQA, an historical resource is a resource listed in, or determined eligible for listing in the California Register of Historical Resources. When a project will impact a site, it needs to be determined whether the site is an historical resource. The criteria are set forth in Section 15064.5(a) (3) of the CEQA Guidelines, and are defined as any resource that does any of the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, the CEQA Guidelines, Section 15064.5(a) (4) states:

The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code section 5020.1(j) or 5024.1.

California Health and Safety Code Sections 7050.5, 7051, and 7054

These sections collectively address the illegality of interference with human burial remains, as well as the disposition of Native American burials in archaeological sites. The law protects such remains from disturbance, vandalism, or inadvertent destruction, and establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project, including the treatment of remains prior to, during, and after evaluation, and reburial procedures.

California Public Resources Code Section 15064.5(e)

This law addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction. The section establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project and establishes the Native American Heritage Commission as the entity responsible to resolve disputes regarding the disposition of such remains.

Assembly Bill 52

Assembly Bill (AB) 52 establishes a formal consultation process for California tribes as part of CEQA and equates significant impacts on tribal cultural resources with significant environmental impacts. AB 52 defines a “California Native American Tribe” as a Native American tribe located in California that is on the contact list maintained by the Native American Heritage Commission. AB 52 requires formal consultation with California Native

American Tribes prior to determining the level of environmental document if a tribe has requested to be informed by the lead agency of proposed projects. AB 52 also requires that consultation address project alternatives, mitigation measures, for significant effects, if requested by the California Native American Tribe, and that consultation be considered concluded when either the parties agree to measures to mitigate or avoid a significant effect, or the agency concludes that mutual agreement cannot be reached. Under AB 52, such measures shall be recommended for inclusion in the environmental document and adopted mitigation monitoring program if determined to avoid or lessen a significant impact on a tribal cultural resource.

PROJECT SETTING

Archeological Setting

The Central Valley region was among the first in the state to attract intensive fieldwork, and research has continued to the present day. This has resulted in a substantial accumulation of data.

In the early decades of the 1900s, E.J. Dawson explored numerous sites near Stockton and Lodi, later collaborating with W.E. Schenck (Schenck and Dawson 1929). By 1933, the focus of work was directed to the Cosumnes locality, where survey and excavation studies were conducted by the Sacramento Junior College (Lillard and Purves 1936). Excavation data, in particular from the stratified Windmiller site (CA-Sac-107), suggested two temporally distinct cultural traditions. Later work at other mounds by Sacramento Junior College and the University of California, Berkeley, enabled the investigators to identify a third cultural tradition, intermediate between the previously postulated Early and Late Horizons. The three-horizon sequence, based on discrete changes in ornamental artifacts and mortuary practices, as well as on observed differences in soils within sites (Lillard, Heizer and Fenenga 1939), was later refined by Beardsley (1954). An expanded definition of artifacts diagnostic of each time period was developed, and its application extended to parts of the central California coast. Traits held in common allow the application of this system within certain limits of time and space to other areas of prehistoric central California.

The Windmiller Culture (Early Horizon) is characterized by ventrally-extended burials (some dorsal extensions are known), with westerly orientation of heads; a high percentage of burials with grave goods; frequent presence of red ocher in graves; large projectile points, of which 60 percent are of materials other than obsidian; rectangular *Haliotis* beads; *Olivella* shell beads (types A1a and L); rare use of bone; some use of baked clay objects; and well-fashioned charmstones, usually perforated.

The Cosumnes Culture (Middle Horizon) displays considerable changes from the preceding cultural expression. The burial mode is predominately flexed, with variable cardinal orientation and some cremations present. There are a lower percentage of burials with grave goods, and ocher staining is common in graves. *Olivella* beads of types C1, F and G predominate, and there is abundant use of green *Haliotis sp.* rather than red *Haliotis sp.* Other characteristic artifacts include perforated and canid teeth; asymmetrical and "fishtail" charmstones, usually unperforated; cobble mortars and evidence of wooden mortars; extensive use of bone for tools and ornaments; large projectile points, with considerable use of rock other than obsidian; and use of baked clay.

Hotchkiss Culture (Late Horizon) -- The burial pattern retains the use of the flexed mode, and there is wide spread evidence of cremation, lesser use of red ocher, heavy sue of baked clay, *Olivella* beads of Types E and M, extensive use of *Haliotis* ornaments of many elaborate shapes and forms, shaped mortars and cylindrical pestles, bird-bone tubes with elaborate geometric designs, clam shell disc beads, small projectile points indicative of the introduction of the bow and arrow, flanged tubular pipes of steatite and schist, and use of magnesite (Moratto 1984:181-183). The characteristics noted are not all-inclusive, but cover the more important traits.

Schulz (1981), in an extensive examination of the central California evidence for the use of acorns, used the terms Early, Middle and Late Complexes, but the traits attributed to them remain generally the same. While it is not altogether clear, Schulz seemingly uses the term “Complex” to refer to the particular archeological entities (above called “Horizons”) as defined in this region. Ragir’s (1972) cultures are the same as Schulz's complexes.

Bennyhoff and Hughes (1984) have presented alternative dating schemes for the Central California Archeological Sequence. The primary emphasis is a more elaborate division of the horizons to reflect what is seen as cultural/temporal changes within the three horizons and a compression of the temporal span.

There have been other chronologies proposed, including Fredrickson (1973), and since it is correlated with Bennyhoff’s (1977) work, it does merit discussion. The particular archeological cultural entities Fredrickson has defined, based upon the work of Bennyhoff, are patterns, phases and aspects. Bennyhoff’s (1977) work in the Plains Miwok area is the best definition of the Cosumnes District, which likely conforms to Fredrickson's pattern. Fredrickson also proposed periods of time associated heavily with economic modes, which provides a temporal term for comparing contemporary cultural entities. It corresponds with Willey and Phillips’ (1958) earlier “tradition”, although it is tied more specifically to the archeological record in California.

Ethnographic Background

The project lies within the ethnographic territory of the Yokuts people. The Yokuts were members of the Penutian language family which held all of the Central Valley, San Francisco Bay Area, and the Pacific Coast from Marin County to near Point Sur. The Yokuts differed from other ethnographic groups in California as they had true tribal divisions with group names (Kroeber 1925). Each tribe spoke a particular dialect, common to its members, but similar enough to other Yokuts that they were mutually intelligible (Kroeber 1925).

The Yokuts held portions of the San Joaquin Valley from the Tehachapis in the south to Stockton in the north. On the north they were bordered by the Plains Miwok, on the west by the Saclan or Bay Miwok and Costonoan peoples. Although neighbors were often from distinct language families, differences between the people appear to have been more influenced by environmental factors as opposed to linguistic affinities. Thus, the Plains Miwok were more similar to the nearby Yokuts than to foothill members of their own language group. Similarities in cultural inventory co-varied with distance from other groups and proximity to culturally diverse people. The material culture of the southern San Joaquin Yokuts was therefore more closely related to that of their non-Yokuts neighbors than to that of Delta members of their own language group.

The best estimates place the pre-contact population for each of the southern tribes at 350 persons. For the northern groups, population figures have been calculated on the basis of average population density per square mile. The highest density was 10+ persons per square mile, according to these figures, achieved along major drainages. On the plains, primarily east of the San Joaquin River, the average density was only two to three persons per square mile, while even fewer persons occupied the drier foothills to the west of the valley (Wallace 1978a:448; Wallace 1978b:462).

The archeology of the northernmost San Joaquin Valley suggests that the Yokuts were relative latecomers to the area. Cultural differentiation from the Plains Miwok culture occurred before A.D. 1500. Artifacts recovered from sites in the western side of the San Joaquin Valley in Merced and Fresno counties have been assigned to the time between A.D. 1500-1600 and the beginning of contact with the Spanish. Linguistic data suggest that the Northern Valley Yokuts were pressured by their eastern neighbors -- the Monache -- who moved down the Sierra foothills and caused Yokuts to spread northward across the valley into what had formerly been Costanoan and Miwok territory. This territorial shift took place over a span of two hundred years, leaving the Yokuts well-established in the San Joaquin Valley before the first Spanish expeditions (Wallace 1978b:463). The Southern Valley Yokuts may have been established in their ethnographic territory somewhat earlier, perhaps as early has 2000 years ago, although physical signs of human occupation near Buena Vista Lake have been dated at 6000 B.C. (Wallace 1978a:449).

The most northern Yokuts tribes subsisted in much the same way as did their Bay Miwok neighbors, who relied heavily on acorn and salmon as dietary staples. Because of their dependence on riverine resources, the Northern Yokuts situated large villages near the San Joaquin River and its tributaries. They built their villages on low mounds to protect them from seasonal flooding caused by rains and rivers swollen by melting Sierra snows. To the west side of the valley, the Yokuts concentrated in smaller settlements along semi-permanent drainages in the foothills (Wallace 1978b:463-464). Southern tribes also concentrated along waterways and near the marshes where waterfowl and fish were plentiful (Wallace 1978a:449-450).

Geese, ducks, mudhens, and other waterfowl provided a substantial portion of Yokuts diet. Birds were easy prey for hunters who lured them with decoys and caught them with specialized techniques. They also raided eggs from the nests. Seeds of grasses, tule, and flowering herbs added variety to Yokuts meals. The Yokuts ate tender leaves and stems of clover, fiddle-neck, alfilaria, other plants, and gathered roots of grassnuts and tule. Like the neighboring Costanoans, the Yokuts practiced controlled plant management by burning vegetation (Wallace 1978a:450; 1978b:464). Hunting large mammals apparently was less important to sustain the Yokuts, although they did hunt antelope and elk. Hunters disguised themselves and waited for the animals to come to lakes or sloughs to drink, then snared individual animals or shot into the herd and turned the fleeing animals into fenced enclosures. The Yokuts organized communal jackrabbit drives and snared small animals and some birds (Latta 1949:141-143; Wallace 1978a:450).

Northern Yokuts built small houses with tule mats that covered wooden frameworks. These dwellings were round to oval, 25 to 40 feet in diameter, with hard-packed dirt floors excavated two feet below ground level, and served as single-family dwellings. The southern tribes also built large, gable-roofed communal residences that were partitioned to accommodate ten or more families. These structures were covered with tule stalks sewn together. In some instances, one house sheltered the people of an entire village. Earth-covered sweathouses, which measured up to 15 feet in length, were used by men for daily sweatbaths and in winter for sleeping. Latta (1949:96-97) recounted that sweathouses were built at the downstream limits of a village so that the bathing would not contaminate the water used by the villagers. Northern villages featured very large earth-covered assembly structures, but southern villages did not include these ceremonial buildings. One communal structure found at a village site on Los Banos Creek measured 84 by 93 feet (Kroeber 1925:521-523; Latta 1949:87-97; Wallace 1978a:450-451; 1978b:464-465). Arrangement of the buildings in a village was orderly, as Stephen Powers described:

> (The Yokuts) display in their encampments a military precision and regularity which are remarkable. Every village consists of a single row of wigwams, conical or wedge-shaped, generally made of tule, and just enough hollowed out within so that the inmates may sleep with the head higher than the feet, all in perfect alignment, and with a continuous awning of

> brushwood stretching along in front. In one end-wigwam the village captain; in the other, the shaman or *si-se'ro* (Spanish, *hechizero).* In the mountains there is some approach to this martial array, but it is universal on the plains [Powers 1877:370-371].

Latta (1949:99) reported that a village of 200 to 300 Yokuts might have four or five large houses that were used for ten or twelve years or until a family member died, and which time the Indians burned the house in which the death had occurred. If a sick or aged person died outside the dwelling, the family did not burn the house. When a Northern Yokuts died, his body was cremated or buried in a flexed position. Southern tribes normally buried their dead, although they did cremate shamans, persons who died away from their village and, among the Tachi, persons of great importance (Wallace 1978b:468).

The most devastating impacts of the Spanish colonization effort were not the result of military conflicts, but came from Old World diseases newly introduced to the native people. Three major epidemics swept through the missions: a respiratory virus at Mission Santa Clara in 1777, pneumonia and diphtheria that killed children from Mission San Carlos to San Luis Obispo, and the devastating measles epidemic that killed at least 1600 natives at missions from San Francisco to Santa Barbara (Castillo 1978:103). These epidemics at the missions were followed in 1833 by a severe malaria epidemic that claimed thousands of lives and virtually destroyed many villages and tribes. Up to three-quarters of the population in the San Joaquin Valley was killed by this contagious disease, which was brought to California by a party of Hudson's Bay Company fur trappers from the Oregon country. In 1834, the Mexican government secularized the missions and many of the Indian residents returned to their former territories, where they survived by a combination of strategies that included traditional hunting and gathering and livestock raiding (Wallace 1978a:459-460; Wallace 1978b:468-469).

History

In 1848, after James Marshall discovered gold at Sutter's Mill in Coloma, thousands of people flocked to California to seek their fortunes. Although some people took overland trails to California, arriving in Sacramento, most traveled the faster route by sea, arriving in San Francisco. With thousands of miners arriving weekly, San Francisco became the initial staging area for the many people heading off to the gold fields of the Sierra Nevada foothills. The Project lies along one of the routes to the southern mining region. This route ran east from Mission San José past Livermore, over Altamont Pass, to Mountain House before continuing to Stockton, Sacramento, or the gold camps beyond those cities.

In 1849, when Thomas Goodall (or Goodale) constructed an adobe building along the route, he founded Mountain House, west of the Project. The building served as a rest stop for stagecoaches, travelers and stockmen. In 1850 Simon Zimmerman purchased the stop and through his hard work,

Mountain House became a famous way station on the road to Stockton (Wood 1883:464-65; Thompson and West 1878:25).

The only problem with this route was the Old River branch of the San Joaquin River. In order to travel to Stockton or the southern mines by this route, people needed to cross the river. By the early 1850s, Maurice Byrnes established a ferry on the El Pescadero land grant north of the Project. By the mid-1850s German immigrant Henry Mohr assumed control of Byrnes (Burns) Landing. In addition to running the ferry, Mohr also established a grain and stock farm on Union Island, across Old River, north of the Project. Seeing Mohr's success other farmers moved into the area, acquired land, and developed their own farms (Tinkham 1923: 963).

The arrival of permanent settlers led to the discovery of coal deposits in nearby Corral Hollow in the hills south of the Project in 1856. In this pre-railroad era the only way to ship the coal to San Francisco was down the Old River. Between 1856 and 1861 the Corral Hollow coal companies shipped approximately 1,200 tons of coal from Mohr's landing. This arrangement worked well until the winter of 1861-62 when heavy rains caused flooding throughout the state. Apparently, the Old River's high waters destroyed Mohr's Ferry and landing (Tinkham 1923:963).

When Mohr's ferry and landing were destroyed, people in the area recognized the need for a new settlement on higher ground. The most logical place for the new town, subsequently named for the property owner, was on property owned by Erick P. Wicklund, a Swedish farmer. His property was located about one-third of a mile southwest of the old Mohr's Landing site. With the continued expansion of the coal mining industry and its related shipments, and the increase in grain farming in the area, Wicklund soon became the local center for transportation and trade. The town's structures included a coal depot and coal bunkers, a hotel, a warehouse, and a blacksmith shop. Wicklund’s success continued until 1868 when it reached its peak. At that time a daily stage provided service to Antioch and a steamer made two trips per week between San Francisco and the Mohr's Landing at Wicklund (Tinkham 1923:963,301).

With the arrival of the Central Pacific Railroad in 1869 and the establishment of the community of Ellis to serve as a coal station for the trains, Wicklund’s popularity soon diminished. Accelerating the demise of the town, the Corral Hollow coal mines played out, leaving Wicklund with little shipping business for Mohr's landing and causing Wicklund residents to move their houses to Ellis due to its close proximity to the railroad. By November 1870, the town had over 45 buildings (Gilbert 1879:130).

Despite the loss of the shipping business and most of the residents, some people remained in Wicklund for at least ten more years. In 1879 the hotel, blacksmith shop, and a warehouse still remained, but the completion of another branch of the Central Pacific and the subsequent establishment of Bethany in 1879 led to the final abandonment of Wicklund (Gilbert 1879:130).

Unlike other areas that experienced a population growth with the arrival of the railroad, the project area's population did not expand significantly. The lack of a consistent year-around source of water limited the agricultural potential to dry farming crops such as wheat or other grain products. The water problem was not addressed until well after the turn of the century when first the federal government and later the state orchestrated large water projects that supplied central and southern California with water.

The history of the community of Tracy is tied to the railroad. In 1869 the Central Pacific Railroad completed its line through the area and within a few years Lathrop Junction, west of the future town of Tracy, was established to service the railroad. A coaling station was built at the base of Altamont Pass and the small community that sprang up around it became known as Ellis. By 1878, the Central Pacific was constructing a new connecting rail line from Oakland and at the junction with the earlier line Tracy was established. As a railroad created town, Tracy was named after Lathrop J. Tracy, a grain merchant and railroad official from Ohio. Soon after the founding of Tracy, the coaling station at Ellis was closed and the workers, their families, and even two of the former town's hotels were moved eastward to the community of Tracy (hppt//www.ci.tracy.us/about/history).

Transportation was the main employer in the area until the availability of irrigation water after 1915 led to increased interest, and profits, in agriculture. With agricultural abundance and transportation facilities in place, the two interests came together to assist the US war effort with the creation of the Sharpe Army Depot in 1941. The 720-acre facility was used by the US Army to receive, store, package and ship supplies- including local agricultural products, to forces in the Pacific Theater until its closure in 1976. It was also used to store and maintain heavy equipment and aircraft and at one time employed about 1,200 people.

Another growth-inducing impact to the local area was the creation of the Lawrence Livermore National Laboratory Livermore facility in the hills southwest of Tracy in the early 1950s to supplement the activities at Los Alamos and the main lab site on the UC Berkeley campus. This Cold War era facility led to a population increase in the neighboring communities of Livermore and Tracy as the workers and their families at the "Lab" settled in.

Increasing land values in the San Francisco Bay Area in the past few decades have led to a spur in population growth in the City of Tracy and surrounding areas.

RESEARCH

Records of previously recorded cultural resources and cultural resource investigations were examined by the Central California Information Center (CCIC) of the California Historical

Resources Information System (Appendix 2) on June 21, 2018 for the project area and a one-half mile radius (CCIC File # 10746L). The results of this search are included in Appendix 3.

The only resources known to the CCIC to be located within the project area are an unrecorded segment of P-39-000089, the Delta-Mendota Canal and an unrecorded segment of P-39-000090, the California Aqueduct. Two other resources are recorded within the search radius: P-39-000048 (a seed drill recorded in 1992) and P-39-000362 (land modification related to a gravel pit of unknown age).

DELTA MENDOTA CANAL AT CORRAL HOLLOW ROAD GEOARCHAEOLOGICAL ASSESSMENT

The parent soil on both the north and south sides of the Delta Mendota Canal at Corral Hollow Road is Zacharias clay loam. Zacharias clay loams are derived from alluvium on fans extending out from the base of the coastal range to the west. There is typically a gravel lens at approximately 53 inches beneath the ground surface with no restrictive layer (hardpan) up to 80 inches in depth (www.nrcs.gov).

The California Aqueduct has Zacharias clay loam on the north side and Carbona clay loam on the south side. Carbona clay loam is Pleistocene in age but otherwise shares many characteristics with neighboring Zacharias clay loams.

Zacharias clay loams are Early to Middle Holocene in age (7,000 – 4,000 BP) and are considered to have "high" sensitivity for the potential to possess buried deposits of cultural material (Meyer and Rosenthal, 2004, Appendix D). The "high" sensitivity rating is due to the overlap in time when the Zacharias soil series were being deposited and human activity is evident in the general area. Carbona clay loams have a "very low" sensitivity (Meyer and Rosenthal 2004b: Appendix D) obviously due to their extreme age.

That is not to say however, that all areas with Zacharias clay loam soils possess the same sensitivity. As Meyer and Rosenthal (2004b:103) state, "Ideally, predictions about where buried archaeological sites are located would take into account a number of characteristics related to the past distribution of important subsistence resources (i.e., distance to water) and other environmental factors (e.g., aspect, ecotone, slope) that may have made a specific location more favorable for occupation than another."

The closest natural waterway to the Delta Mendota Canal/California Aqueduct and Corral Hollow Road junction is Corral Hollow Creek, approximately one and one-half miles to the

south. Two other very minor drainages are located approximately three quarters of a mile to the west and southwest. The two water conveyance features are located near the center and side of an apex of a broad alluvial fan that would appear to never of had the potential to support surface water features.

In summary, although the project area has Early to Middle Holocene sediment and potential for buried deposits, the distance to permanent water sources would probably have precluded human use and settlement during the prehistoric period. The possibility of encountering buried prehistoric period cultural material is therefore likely low for the APE encompassing both the Delta Mendota Canal and California Aqueduct due the environmental setting of these features.

NATIVE AMERICAN CONSULTATION

The Native American Heritage Commission (NAHC) replied to a Sacred Lands file search request from Peak & Associates on November 19, 2018 stating that there were no known Sacred Lands recorded for the project area (Appendix 4). The NAHC also provided a list with seven organizations who may have information or concerns regarding cultural resources within or near the project area.

In November 21, 2018 letters requesting information and/or comment with a map of the project area were sent to: Rhonda Morningstar Pope, Chairperson, Buena Vista Rancheria of Me-Wuk Indians; the California Valley Miwok Tribe; California Valley Miwok Tribe AKA Sheep Ranch Rancheria of Me-Wuk Indians of CA; Sara Dutschke Setchwaelo, Chairperson, Ione Band of Miwok Indians; Katherine Erolinda Perez, Chairperson, North Valley Yokuts Tribe; Gene Whitehouse, Chairperson, United Auburn Indian Community of the Auburn Rancheria; and, Raymond Hitchcock, Chairperson, Wilton Rancheria (Appendix 4).

After submittal of the report in December 2018, we received email correspondence from James Sarmento representing Buena Vista Rancheria of Me-Wuk Indians on December 5, 2018. He recommended a survey be undertaken as the area was potentially sensitive for archeological resources, and cultural sensitivity training be given to the construction crews when the work starts. He asked that the tribe continue to be informed about the project as it moves forward.

FIELD SURVEY

A complete, intensive inspection of the project area was undertaken on August 16, 2018 by Melinda Peak and Neal Neuenschwander. The project area was nearly entirely free of vegetative

ground cover due to the location next to an existing roadway, grading and construction activities associated with ongoing development in adjoining parcels, and plowed orchards.

Corral Hollow Road south of Linne Road does not have improved shoulders, so there were no widespread areas of fill covering the native ground. A large borrow pit south of the California Aqueduct had apparently been created to construct this feature but there were no other areas of obvious landscape modification. The surveyors found no prehistoric period or historic period artifacts in the surveyed area, and conclude there are no prehistoric period resources in the project area.

The only resources that exist in the project area are the four major structures: Delta Mendota Canal, Corral Hollow Road bridge that crosses the Canal (Bridge No. 29C0186), California Aqueduct, and the Corral Hollow Road bridge that crosses the Aqueduct (Bridge No. 29C0185). All four of these properties have been field visited and recorded by Pamela Daly, who prepared the following site descriptions, as well as the site evaluations and the DPR 523 forms in Appendix 5.

Delta Mendota Canal (P-39-000089/P-50-001904 Update)

The canal in this section, where it runs under Corral Hollow Road bridge, is 98 feet wide at the surface and a width of 48 feet wide at the base of the canal. The trapezoidal section of the canal is lined with concrete, is approximately 16 feet deep with sides sloped at 2.5:1. Associated un-paved service roads run along the top of both sides of the canal, and drainage culverts with wood railings are located along both sides of Corral Hollow Road, and south of the canal. Bureau of Reclamation staff believe that the water gauge stations on the north side of the canal were installed after the original construction of the canal in 1947 (Communication with Brandee Bruce, Bureau of Reclamation, October 3, 2018).

Bridge No. 29C0186 (Corral Hollow Road/Delta Mendota Canal)

The bridge is a steel I-beam frame style bridge with a concrete deck, which spans over a segment of the Delta Mendota Canal (DMC). The bridge is supported over the canal by two cast-concrete piers that are set approximately 12’ apart, in the floor of the DMC channel. The bridge is 107’ long and carries two lanes of traffic, for a total approximate width of 22’. A narrow (approximately 18” wide, 12” high) cast-concrete curb lines the outside edge of the bridge deck. A guardrail comprised of steel W rails is attached to square wood posts, which are imbedded into the concrete curb. It appears that the curb was added to the bridge deck at some point in time. The ends of the bridge meet the roadway at the top of the canal wall.

California Aqueduct Segment (P-39-000090 update)

The segment of the California Aqueduct (canal mile point (cmp) 17.05 to 17.15) that is situated within the Corral Hollow Road Widening Project has a top width of approximately 122 feet wide between canal mile point (cmp) 17.05 and 17.15. The canal channel is a trapezoidal, concrete-lined conduit, with a bottom width of approximately 40 feet, a depth of 32.5 feet, and a side slope ratio of 1.5:1.

Bridge No. 29C0185 (Corral Hollow Road/California Aqueduct)

The bridge is a steel I-beam frame with a concrete deck, which spans over the California Aqueduct and is supported over the canal by a cast-concrete pier set in the floor of the canal structure. The bridge is 171.43' long and carries two lanes of traffic, and narrow safety lane, for a total approximate width of 32'. A narrow (approximately 18" wide, 10" high) cast-concrete curb lines the outside edge of the bridge deck. A guardrail comprised of steel W rails is attached to steel posts, which are attached to the outside of the concrete curb. Cast-concrete bridge abutments carry the ends of the road deck above the top of both sides of the canal.

SITE EVALUATIONS

Delta Mendota Canal (P-39-000089/P-50-001904 Update)

The Delta Mendota Canal (DMC) was completed in 1951 and delivers water for agricultural use to approximately 1 million acres of land in the San Joaquin Valley. From the Tracy Pumping Plant, water is sent to the headworks about one mile downstream where it is then discharged across five counties, for 116 miles in southerly and easterly directions. The majority of the canal is concrete lined. Some of the contributing features of the DMC are adjacent operating roads, inlets, drains, siphon crossings, and check or recording structures. The "Draft" Delta Mendota Canal National Register of Historic Places nomination document, prepared by U.S. Bureau of Reclamation in 2006 (on-file at Central California Information Center for Primary #39-00089/50-001904), considers the bridges that cross over the DMC as "non-contributing" resources to the historic canal system.

The entire DMC has been determined to be eligible for listing in the National Register of Historic Places under Criterion A, and is significant for the theme of development, construction, and operation of the Central Valley Project. (per "Draft" Delta Mendota Canal National Register of Historic Places nomination document, prepared by U.S. Bureau of Reclamation in 2006.)

Bridge Number 29C0185 carries Corral Hollow Road over this segment of the DMC. The removal of the current bridge and the installation of a new bridge will not have a significant adverse effect to the physical and engineering integrity of the bridge.

There are also roadside drainage culverts that may be features associated with the DMC. These features are widely found along the path of the canal where it intersects with roadways. The drainage culverts are not unique in their design, and the physical integrity of the canal at this is not dependent on the existence of the culverts. The removal of these culverts as part of the proposed project to remove and replace Corral Hollow Road bridge would not be considered a significant adverse effect to the DMC.

As the project holders will need to consult with Bureau of Reclamation to remove/replace Corral Hollow Road bridge, the Bureau of Reclamation will instruct as how to institute the *Secretary of the Interior's Guidelines for the Treatment of Historic Properties* (revised: Grimmer 2017) to assure that the DMC will be properly repaired and rehabilitated after the new bridge and roadway widening has been completed.

Bridge No. 29C0186 (Corral Hollow Road/Delta Mendota Canal)

Bridge No. 29C0186 was constructed in 1947 to carry Corral Hollow Road over the newly constructed section of the Delta-Mendota Canal where it intersected with the pre-existing road. The bridge was constructed as part of the San Joaquin County road system, not as an integral feature of the DMC. Bridge No. 29C0186 is just one of the many steel-frame, concrete deck bridges that were built to carry vehicles over the canal's path, in the late 1940s and early 1950s. The Draft of the National Register of Historic Places nomination document for the DMC, prepared by U.S. Bureau of Reclamation in 2006 (Central California Information Center for Primary #39-00089/50-001904), considers the bridges that cross over the DMC as "non-contributing" resources to the historic canal system. Steel I-beam frame bridges with concrete decks were a very popular type of bridge for vehicular traffic, especially after the end of World War II when steel mills could produce beams for infrastructure projects instead of for military uses. Steel beam type bridges have been still installed all over the world since the 1940s.

Bridge No. 29C0186 has not been found to be associated with any important themes regarding the type or engineering of county road system bridges after World War II and does not appear eligible for listing in the National Register of Historic Places (NRHP) under Criterion A, or in the California Register of Historical Resources (CRHR) under Criterion 1.

Bridge No. 29C0186 has not been found to be directly associated with any persons important to the history of this region of San Joaquin Valley, or with the engineering of road bridges in

California or the United States. Bridge No. 29C0186 does not appear eligible for listing in the National Register of Historic Places (NRHP) under Criterion B, or in the California Register of Historical Resources (CRHR) under Criterion 2.

Bridge No. 29C0186 is a steel frame type of bridge that was widely installed in California and the United States after the end of World War due to wide availability of good quality steel beams. The subject, county road system, bridge over the California Aqueduct does not present any evidence of innovative or advancement in the engineering design of steel I-beam, concrete-deck, vehicular bridges, and appears to have been altered with the construction of the cast-concrete curbs. The curbs were constructed with, what appear to be the original guard rail support posts, planted into the solid concrete curb. Bridge No. 29C0186 does not appear eligible for listing in the National Register of Historic Places (NRHP) under Criterion C, or in the California Register of Historical Resources (CRHR) under Criterion 3.

Bridge No. 29C0186 does not appear to have the potential to reveal any important information into the history of the design, construction, or maintenance of county road system, steel I-beam bridges in the United States or California. Bridge No. 29C0186 does not appear eligible for listing in the National Register of Historic Places (NRHP) under Criterion D, or in the California Register of Historical Resources (CRHR) under Criterion 4.

California Aqueduct Segment (P-39-000090 update)

The California Aqueduct is 444 miles long and runs between the Sacramento-San Joaquin Delta in the North San Joaquin Division, to Lake Perris in Riverside County. The resource includes the canal service roads, bridges constructed to new roads that intersected with the canals path, siphons, culverts, canal drains, pump stations, and reservoirs.

The entire California Aqueduct, from prior studies, has been determined to be eligible for listing in the National Register of Historic Places as appearing "eligible for NR as an individual property through survey evaluation" (Ambacher 2012).

The California Aqueduct system has been found eligible for listing in the National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) under Criterion A/1 for its representation of a comprehensively planned and publicly sanctioned water conveyance public works project to supply the needs of California agricultural, commercial, and residential needs.

The California Aqueduct system has also been found eligible for listing in the NRHP and CRHR under Criterion C/3 as a complex engineering project of massive proportions, and for its ability to rise, and fall, over rough and hostile terrain, yet maintain a steady delivery of water to southern regions of California.

Bridge Number 29C0185 carries Corral Hollow Road over this segment of the California Aqueduct. The removal of the current bridge and the installation of a new bridge will not have a significant adverse effect to the physical, and engineering, integrity of the bridge. The City of Tracy (the bridges owner) will be required to coordinate with the Department of Water Resources (DWR) to engage in the replacement of the Corral Hollow Road bridge.

The DWR will ensure that the segment of the canal, in the project area that may be disturbed during bridge work, is repaired to its original appearance and engineering specifications after the new road bridge is installed.

Bridge No. 29C0185 (Corral Hollow Road/California Aqueduct)

Bridge No. 29C0185 was constructed in 1967 to carry Corral Hollow Road over the newly constructed section of the California Aqueduct where it intersected with the pre-existing road and is under the jurisdiction of the City of Tracy. Bridge No. 29C0185 is just one of the many steel-frame, concrete deck bridges built to carry vehicles over the canal's path. Steel I-beam frame bridges with concrete decks were a very popular type of bridge for vehicular traffic, especially after the end of World War II when steel mills could produce beams for infrastructure projects instead of for military uses. Steel beam type bridges have been still installed all over the world since the 1950s.

Bridge No. 29C0185 has not been found to be associated with any important themes regarding the type or engineering of road bridges built in Tracy after World War II and does not appear eligible for listing in the National Register of Historic Places (NRHP) under Criterion A, or in the California Register of Historical Resources (CRHR) under Criterion 1.

Bridge No. 29C0185 has not been found to be directly associated with any persons important to the history of this region of San Joaquin Valley, or with the engineering of road bridges in California or the United States. Bridge No. 29C0185 does not appear eligible for listing in the National Register of Historic Places (NRHP) under Criterion B, or in the California Register of Historical Resources (CRHR) under Criterion 2.

Bridge No. 29C0185 is a steel frame type of bridge that was widely installed in California and the United States after the end of World War due to wide availability of good quality steel beams. The subject bridge over the California Aqueduct does not present any evidence of innovative or advancement in the engineering design of steel I-beam, concrete-deck, vehicular bridges. Bridge No. 29C0185 does not appear eligible for listing in the National Register of Historic Places (NRHP) under Criterion C, or in the California Register of Historical Resources (CRHR) under Criterion 3.

Bridge No. 29C0185 does not appear to have the potential to reveal any important information into the history of the design, construction, or maintenance of steel I-beam bridges in the United States or California. Bridge No. 29C0185 does not appear eligible for listing in the National Register of Historic Places (NRHP) under Criterion D, or in the California Register of Historical Resources (CRHR) under Criterion 4.

EFFECTS OF THE PROPOSED PROJECT

As a result of the identification and evaluation efforts, an agency official may find that there are no historic properties present or there are historic properties present but the undertaking will have no effect upon them as defined in Section 800.16 (i).

If the agency official finds there are historic properties that may be affected by the undertaking, the agency official shall apply NHPA criteria to determine whether an adverse effect will occur. "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association" (Section 800.5 (a)).

There are three possible findings:

- **Finding of no historic properties affected:** There is no effect of any kind on the historic properties.

- **Finding of no adverse effect:** There could be an effect, but the effect would not be harmful to the characteristics that qualify the property for inclusion in the National Register; or

- **Adverse effect:** There could be an effect, and that effect could diminish the integrity of such characteristics.

There are two historic properties present within the project: Delta Mendota Canal and California Aqueduct, with only the Delta Mendota Canal on federal land. The bridge crossing the DMC is not considered a contributing feature, so the proposed changes and replacement of the bridge will not affect the DMC in any way. With regard to Section 106 of the NHPA, it is recommended that agency seek concurrence from the California SHPO with a finding of "no adverse effect" per § 800.4(d) (1) for the project.

RECOMMENDATIONS

There is always a possibility that a site may exist in the project area and be obscured by vegetation, siltation or historic activities, leaving no surface evidence. If artifacts, exotic rock, shell or bone are uncovered during the construction, work should stop in that area immediately. A qualified archeologist should be contacted to examine and evaluate the deposit.

Discovery of Human Remains

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area suspected to overlie adjacent remains until the San Joaquin County Coroner has determined that the remains are not subject to any provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.

If the San Joaquin County Coroner determines that the remains are not subject to his or her authority and if the Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC).

After notification, the NAHC will follow the procedures outlined in Public Resources Code Section 5097.98, that include notification of most likely descendants (MLDs), and recommendations for treatment of the remains. The MLDs will have 24 hours after notification by the NAHC to make their recommendations (PRC Section 5097.98).

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APPENDIX 1

United States Bureau of Reclamation Field Authorization

United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, California 95825-1898

MAY 0 7 2018

IN REPLY REFER TO:
MP-153
ENV-3.00

Ms. Melinda Peak
Peak and Associates, Inc.
3941 Park Drive, Suite 20-329
El Dorado Hills, CA 95762

Subject: Permission to Conduct Non-Collection Cultural Resources Investigations for the City of Tracy Land Use Authorization Over the Delta Mendota Canal (DMC), San Joaquin County, California (18-SCAO-084)

Dear Ms. Peak:

The Bureau of Reclamation reviewed your May 4, 2018, request to conduct cultural resources surveys on Reclamation land for City of Tracy Land Use Authorization Over the DMC. Reclamation's undertaking involves the Corral Hollow Road bridge which spans the DMC and a small work area on Reclamation administered lands totaling approximately 0.5 acres. The project is located within Section 7 and 8 in T. 3 S., R. 5 E., Mount Diablo Meridian, as depicted on the Tracy Municipal Airport 7.5' U.S. Geological Survey topographic quadrangle map, as shown on the map provided in the fieldwork authorization application.

This letter serves as a field authorization for Peak and Associates, Inc. to conduct a non-collection survey on Reclamation land for this project. This authorization is for access only to lands administered by Reclamation along the DMC in the vicinity of Corral Hollow Road. You will be responsible for obtaining permission from other appropriate landowners to access non-Reclamation lands.

Permission is hereby granted to conduct cultural resources fieldwork with the following stipulations:

1. The work is conducted to Department of the Interior's *Standards and Guidelines for Archaeological and Historical Preservation* and Reclamation's *Directives and Standards for Cultural Resources Management* (LND 02-01). All built environment resources must be recorded, evaluated, and reported by, or under the direct supervision of, a qualified Historian, Historic Architect, or Architectural Historian.

2. All fieldwork is conducted by, or under the direct supervision of, personnel meeting the Secretary of the Interior's *Standards and Guidelines, Professional Qualifications Standards* (36 CFR Part 61).

3. All fieldwork is completed prior to September 1, 2018.

4. No excavation will occur and no artifacts are to be collected from Reclamation lands.

5. A copy of the draft survey report will be provided to Reclamation for review. Reclamation will be provided an opportunity to review and approve all recommendations of National Register of Historic Places eligibility for any cultural resource on Reclamation land prior to submitting to the California State Historic Preservation Officer. Peak and Associates, Inc., cultural resources staff will consider and respond to all comments (reference our tracking number 18-SCAO-084 on all correspondence and reports).

6. In the event that human remains are discovered, Ms. Anastasia Leigh, Regional Environmental Officer, will be notified immediately at 916-978-5568 or 916-281-8472 (cell). In addition, Dr. Melanie Ryan, Reclamation Native American Graves Repatriation Act (NAGPA) Specialist, will be notified immediately at 916-978-5526 or 916-425-2348 (cell). Any discovery of Native American human remains on Reclamation lands will be handled in accordance with NAGPRA.

7. The permittee hereby agrees to indemnify and hold harmless the United States, its employees, agents, and assigns from any loss or damage and from any liability because of personal injury, property damage, or claims for personal injury or death arising out of the permittee's activities under this agreement (43 CFR 429.9).

Please carry a copy of this authorization with you during fieldwork. Prior to conducting the survey on Reclamation lands, please notify Mr. Scott Williams, Archaeologist, at 916-978-5042 or sawilliams@usbr.gov of the fieldwork dates. Should you have any questions regarding these requirements or require information regarding Reclamation's cultural resources policy, please contact Mr. Williams or me at 916-978-5568 or aleigh@usbr.gov.

Sincerely,

Anastasia T. Leigh
Regional Environmental Officer

APPENDIX 2

Resumes

PEAK & ASSOCIATES, INC.

RESUME

MELINDA A. PEAK **January 2020**

Senior Historian/Archeologist
3941 Park Drive, Suite 20 #329
El Dorado Hills, CA 95762
(916) 939-2405

PROFESSIONAL EXPERIENCE

Ms. Peak has served as the principal investigator on a wide range of prehistoric and historic excavations throughout California. She has directed laboratory analyses of archeological materials, including the historic period. She has also conducted a wide variety of cultural resource assessments in California, including documentary research, field survey, Native American consultation and report preparation.

In addition, Ms. Peak has developed a second field of expertise in applied history, specializing in site-specific research for historic period resources. She is a registered professional historian and has completed a number of historical research projects for a wide variety of site types.

Through her education and experience, Ms. Peak meets the Secretary of Interior Standards for historian, architectural historian, prehistoric archeologist and historic archeologist.

EDUCATION

M.A. - History - California State University, Sacramento, 1989

Thesis: *The Bellevue Mine: A Historical Resources Management Site Study in Plumas and Sierra Counties, California*

B.A. - Anthropology - University of California, Berkeley

PROJECTS

In recent years, Ms. Peak has led the team completing the cultural resource sections for General Plan and General Plan Updates, for a number of cities/neighborhoods including Campbell, Milpitas, Yountville, Manteca, The Springs, Sebastopol, Martinez, Brentwood, Colusa County and Foster City. Older General Plan efforts include Wheatland, Rocklin, Sheridan, Granite Bay and South Sutter County.

In recent months, Ms. Peak has completed a number of determinations of eligibility and effect documents in coordination with the Corps of Engineers for projects requiring federal permits, assessing the eligibility of a number of sites for the National Register of Historic Places.

She has also completed historical research projects on a wide variety of topics for a number of projects including the development of a winery in a ranch in Folsom, commercial buildings in the City of Davis, a lumber mill in Clovis, older farmhouses dating to the 1860s, an early roadhouse, bridges, canals, former small townsite, and a section of an electric railway line.

In recent years, Ms. Peak has prepared a number of cultural resource overviews and predictive models for blocks of land proposed for future development for general and specific plans. She has been able to direct a number of surveys of these areas, allowing the model to be tested.

Ms. Peak completed the cultural resource research and contributed to the text prepared for the DeSabla-Centerville PAD for the initial stage of the FERC relicensing. She also served cultural resource project manager for the FERC relicensing of the Beardsley-Donnells Project. For the South Feather Power Project and the Woodleaf-Palermo and Sly Creek Transmission Lines, her team completing the technical work for the project.

She served as principal investigator for the multi-phase Twelve Bridges Golf Club project in Placer County. She served as liaison with the various agencies, helped prepare the historic properties treatment plan, managed the various phases of test and data recovery excavations, and completed the final report on the analysis of the test phase excavations of a number of prehistoric sites. She is currently involved as the principal investigator for the Clover Valley Lakes project adjacent to Twelve Bridges in the City of Rocklin, coordinating contacts with Native Americans, the Corps of Engineers and the Office of Historic Preservation.

Ms. Peak has served as project manager for a number of major survey and excavation projects in recent years, including the many surveys and site definition excavations for the 172-mile-long Pacific Pipeline proposed for construction in Santa Barbara, Ventura and Los Angeles counties. She also completed an archival study in the City of Los Angeles for the project, and served as principal investigator for a major coaxial cable removal project for AT&T.

Additionally, she completed a number of small surveys, served as a construction monitor at several urban sites, and conducted emergency recovery excavations for sites found during monitoring. She has directed the excavations of several historic complexes in Sacramento, Placer and El Dorado Counties.

Ms. Peak is the author of a chapter and two sections of a published history (1999) of Sacramento County, *Sacramento: Gold Rush Legacy, Metropolitan Legacy*. She served as the consultant for a children's book on California, published by Capstone Press in 2003 in the land of Liberty series.

PEAK & ASSOCIATES, INC.
RESUME

NEAL J. NEUENSCHWANDER **August 2018**
Staff Archeologist
3941 Park Drive, Suite 20-329 3161 Godman Avenue, Suite A
El Dorado Hills, CA 95672 Chico, CA 95973
(916) 939-2405 (530) 342-2800

PROFESSIONAL EXPERIENCE

Mr. Neuenschwander has compiled an excellent record of supervision of excavation and survey projects for both the public and private sectors over the past thirty-nine years. He has supervised the fieldwork of over 1,800 projects throughout California, Oregon, Nevada, and southern Idaho.

EDUCATION

M.A. candidate - Anthropology - California State University, Chico
B.A. - Anthropology - California State University, Chico (with distinction)
B.A. - Geography - California State University, Chico (with distinction)

RECENT PROJECTS

Mr. Neuenschwander manages the North Valley office of Peak & Associates, located in Chico, California.

Neuenschwander's duties at Peak & Associates have included the field direction for multiple site excavations and surveys throughout northern, central, and southern California, Nevada, Oregon and Idaho. In this capacity, he has been responsible for the planning and implementation of every aspect of the fieldwork, analysis, and report production phases. During his twenty-nine years with the company, he has developed a reputation for his ability to complete projects on-time and within budget parameters, while at the same time maximizing the recovery and analysis of data for the professional community.

Notable projects under Neuenschwander's direction include the nine week excavation at Clarks Flat in Calaveras County, eleven weeks with a crew of over twenty technicians at the Upper Mountain locale (a remote camp six miles from the nearest road), ten weeks of an over 9,000-acre survey at Elk Hills Naval Petroleum Reserve, and a two-phase excavation at CA-PLU-88, a site that contained radiocarbon evidence of the some of the earliest inhabitation of the Sierra Nevada Mountains.

Mr. Neuenschwander also served as the field director for multiple phases of recordation, testing and evaluation for the 172-mile-long Pacific Pipeline Project proposed for construction in Santa Barbara, Ventura, and Los Angeles counties. He also has served as field director or co-director on a number of AT&T fiber optic projects throughout California, Oregon and Idaho.

PAMELA DALY

2242 El Capitan Drive, Riverside, California 92506 (951) 369-1366

Education

•Master of Science - Historic Preservation - University of Vermont, Burlington, Vermont. 1998
Awarded Graduate Teaching Fellowship in Historic Preservation.
•Bachelor of Science - Business Administration - Elmira College, Elmira, New York. 1994

Experience and Skills

Historic Preservation

● **Federal Level Projects**

Section 106 – Historic Resource Evaluation of Hillsdale Cinema Building, San Mateo, CA
Section 106 – Edwards Air Force Base, CA – Evaluation of 27 Cold War-era buildings for listing in the National Register, and review of building survey records for all built-environment resources on the entire base.
Section 106 - Riverside Auto Camp, Red Bluff, CA
Section 106 – Programmatic Agreement for the Waterman Housing Development Project, San Bernardino, CA
Section 106 – Kelly Cutover Transmission Project, Daggett, San Bernardino County, CA
Section 106 – Ballona Wetlands Restoration Project, Marina Del Rey, Los Angeles County, CA
Section 106 – Diablo Country Club Pump System, Diablo, Contra Costa County, CA
Section 106 – Tahoe City Water Company Tank, Tahoe National Forest, Tahoe City, CA
Section 106 – Carbon Canyon Diversion Channel, Orange County Flood Control District, Anaheim, CA
Section 106 – 404 Permit – Historic Context for Phase I Ballona Creek Wetlands Restoration, Culver City, CA
Section 106 – 404 Permit – Historic Resource Evaluation for Lake Street Improvements, Lake Elsinore, CA
Section 106 - 404 Permit – Historic Resource Evaluation for Foothill Parkway Extension Project, Corona, CA
Section 106 – NEPA Historic Resource Evaluation of Green Beach Trestle, San Onofre, CA
Section 106 – NHPA Historic Resource Evaluation of Brea Tracks Project, Brea, CA
Section 106 – NEPA Historic Resource Evaluation of Upper Arroyo Seco Canyon, Pasadena, CA
Section 106 – NEPA Historic Resource Evaluation of Big Santa Anita Wash, Angeles National Forest, CA.
Section 106 – NEPA Historic Resource Evaluation of a segment of the California Aqueduct, Kings County, CA.
Section 106 – Federal Highway Administration – Historic Resources Evaluation, Mitigation, and Treatment Plan for the Westside Subway Extension, Metropolitan Transportation Agency, Los Angeles, CA. Survey and evaluation of buildings, bridges, landscapes dating from 1910 to 1975 in an eight-mile long corridor.
Section 106 – U.S. Housing and Urban Development – San Bernardino Housing Agency – Historic Resource Evaluation of Waterman Housing Development, San Bernardino County, CA. Survey and evaluation of a public housing development dating from 1943.
Section 106 – Claremont Police Communication Tower, Los Angeles County, CA. Perform evaluation for siting of a communications cell tower.
Section 106 – U.S. Forest Service, San Bernardino National Forest. Developed building plans for the construction of a new recreational cabin to be constructed in a historic cabin tract. Plans reviewed and accepted by California SHPO.
Section 106 – Cobb Reservoir, Angeles National Forest, Altadena, CA. Perform a Historic Resource Survey and Eligibility Investigation of a privately owned reservoir constructed in 1910.
Section 106 – Keyes Mine and Walker Cabin, Sequoia National Forest, Keyesville, CA. Perform a Historic Resource Survey and Eligibility Investigation for structures related to the early mining days of California. The project also included the preparation of detailed drawings and structural evaluations of the stamp mill building and Walker barn.
Section 106 – Bitter Creek National Wildlife Refuge, Maricopa, CA. Perform a Historic Resource Survey and Eligibility Investigation for the Hudson Family Homestead Ranch Historic District for eligibility to the National Register. The project also included the preparation of detailed drawings and structural evaluations of the building known as “Percy’s Place”.
Section 106 – Ivanpah Valley, Eastern Mojave Desert, CA. Perform a Historic Resource Survey and Eligibility Investigation for two historic roads and a railroad line for eligibility to the National Register.

Section 106 – Army Corp of Engineers, 404 Permit Historic Resource Assessment Report of the East Garden Grove Wintersburg Channel, part of the Orange County Flood Control System, Bolsa Chica, CA.
Section 106 – Evaluate impact of proposed removal and storage of National Register-eligible object at Camp Parks Army Reserve Base, Dublin, CA.
Section 106 – Naval Air Station, North Island, San Diego, California. Historic Resources Survey and Eligibility Investigation of thirteen historic airplane hangars for eligibility to the National Register.
Section 106 - Edwards Air Force Base, California – Report of findings on 37 Historic Wells and Homesteads. Includes HAER documentation, analysis and curation of historic and pre-historic artifacts, site form preparation, archival research, Phase II and Phase III reports.
Section 106 – Air Force Research Laboratory, Mesa, Arizona – Historic Building Assessment and Evaluation Report. Project included archival research, historic context, building description and site form.
Section 106 – Army Corp of Engineers, 404 Permit review of the decommissioned Marine Corps Air Station El Toro, California. Project consisted of re-surveying 76 buildings and structures previously reviewed in 1996 for National Register Eligibility. Project included field survey, archival research, and updating site forms.
Section 106 - Nellis Air Force Base, Nevada – Historic Building Report on Capehart & Wherry Housing. Project included archival research, site forms, photography.
Section 106 - Andersen Air Force Base, Guam - Supervise archaeological subcontractors Phase III survey project for Air Force client.
Section 106 - Clear Air Force Base, Alaska – Project to create booklet, bronze plaque and outdoor interpretive signs to record the Cold War radar operations.
Section 106 – Bureau of Land Management, Kern Front Oil Fields, Bakersfield, CA - Historic Building Assessment and Evaluation Report for leaseholder. Project included archival research, historic context, building description, industrial archeology investigation and site form.
Section 106 – Army Corp of Engineers, Union Pacific Railroad - Historic Building Assessment and Evaluation Report of all the bridges and culverts located in 102 mile section. Project included field survey, archival research, historic context, bridge and culvert descriptions, and site forms.
Section 106 review of Jim's Corner Store, Burlington, VT.
Section 106 Level 1 Reconnaissance of Jericho, VT, Rt. 15 intersection.
Section 106 Level 1 Reconnaissance of Milton, VT, sidewalk project.
Section 106 Level 1 Reconnaissance of Essex, VT, sidewalk project.
Section 106 Level 1 Reconnaissance of Town of Hartford, VT, sidewalk/bike project.
CALTRANS – Historic Resource Evaluation of Olney Creek Bridge Replacement, Redding, CA
CALTRANS – Historic Resource Evaluation of Pacific Electric ROW, Garden Grove, CA
CALTRANS – Historic Resource Evaluation of Sharon Avenue Bridge over A.C.I.D. canal, Redding, CA
CALTRANS – Historic Resource Evaluation of SR14 and SR138 Interchange Project, Palmdale, CA
CALTRANS – Historic Resource Evaluation of Interstate 405 Widening Project, Irvine, CA
CALTRANS – Historic Resource Evaluation of Old Newport Blvd. Improvement, Newport Beach, CA
CALTRANS – Historic Resource Evaluation of Brittan School Sidewalk Improvements, Sutter, CA
CALTRANS – Historic Resource Evaluation of Interstate 10 and Avenue 50 Interchange, Coachella, CA
CALTRANS – Historic Resource Survey of APE, Route 94, Jumal, San Diego County, CA
CALTRANS – Finding of Effects for High Desert Corridor Project, Los Angeles and San Bernardino Counties
CALTRANS – Historic Resource Survey of APE for Park Avenue Bridge, Balboa Island, Orange County, CA
CALTRANS – Historic Resource Evaluation of two bridges in Madera County, CA
CALTRANS – Historic Resources Evaluation of Kentucky Avenue and Streets Widening, Woodland, CA
CALTRANS – Historic Resources Evaluation of five housing tracts and two individual resources for the Brookhurst Road Widening Project, Anaheim, CA.
CALTRANS – Historic Resources Evaluation, Lincoln Avenue Widening Project, Orange, CA.
CALTRANS – Historic Resources Evaluation, Bridge Evaluation, and Finding of Effect for Araz Bridge in the All-American Canal Historic District, Araz Junction, CA.
CALTRANS – Historic Resources Evaluation Report and Finding of Effect for the Park Once Transit Parking Structure, Redlands Santa Fe Depot Historic District, Redlands, CA.
CALTRANS – Survey and evaluation of the project corridor for the proposed Cabot-Camino Bridge, Mission Viejo, CA.

CALTRANS – Survey and evaluation of Pacific Mobile Home Park, Huntington Beach, CA.
CALTRANS – Finding of Project Effects, Victoria Avenue, Riverside, CA.
CALTRANS - Survey and evaluation of 45 buildings and structures along State Route 99, Stockton, CA.
CALTRANS - Survey and evaluation of 1915 railroad bridge for seismic repair project, El Monte, CA.
CALTRANS - Survey and evaluation of 75 buildings and structures along State Route 99, Manteca, CA.
CALTRANS - Survey and evaluation of Pacific Coast Highway Interchange, Long Beach, CA.
CALTRANS - Review of residential structures located in the project area, Red Hill Avenue, Orange County.
NYSDOT - Survey of historic bridges in Owego, Oswego and Onondaga Counties, New York.
ISTEA Historic Resource survey, Lake Champlain Railroad Causeway/Bikepath, Colchester, VT.
VSA22 Historic Resource review, Goodrich Memorial Library, Newport, VT.
VAOT Highway Resurfacing Program, Dufresne-Henry Engineers. 2001-2003.
National Register Historic Landscape survey of historic agricultural properties in Essex County, NY. Intensive level survey of 8 historic farmsteads.
National Register Nomination for Residential Historic District, Vergennes, VT. NR nomination of 110 residences and outbuildings dating ca. 1790 to 1950.
National Register Nomination of Fairfield Baptist Church, Fairfield, VT. Nomination of rural community church with ties to President Chester Arthur.
National Register nomination for Laurel Hall, Cuttingsville, VT. Nomination of private country villa, conservatory, carriage barn, and mausoleum.
Integrated Cultural Resources Management Plan (ICRMP) Update – Corona Naval Weapons Center – update historic properties treatment.
Integrated Cultural Resources Management Plan (ICRMP) Update – Seal Beach Naval Weapons Center – update historic properties treatment.
Integrated Cultural Resources Management Plan (ICRMP) Update – Fort Hunter Liggett, U.S. Army Reserves Base – update historic properties treatment.
Integrated Cultural Resources Management Plan (ICRMP) Update – Camp Parks, U.S. Army Reserves Base – update historic properties treatment.
Integrated Cultural Resources Management Plan (ICRMP) – Moffat Field, U.S. Army Real Property – create historic properties treatment for ICRMP.

● **State Level Projects**

CEQA – Historic Resource Assessment of Vanguard University Master Plan, Costa Mesa, CA
CEQA – Historic Resource Assessment of Properties within Hampton Inn Project, Santa Ana, CA
CEQA – Historic Resource Evaluation of Historic Lopez Vineyard, Rancho Cucamonga, CA
CEQA – Historic Resource Assessment for Colony Center East Project, Ontario, CA
CEQA – Historic Resource Evaluation of 281 Cypress Drive, Laguna Beach, CA
CEQA – Historic Resource Evaluation of Canyon Crest Family Housing Complex, UC Riverside, CA
CEQA – Phase I Evaluation of project activities to Andersen School and UCLA campus, CA
CEQA – Historic Resource Evaluation of three parcels on Old Santa Susana Pass Road, Chatsworth, CA
CEQA – Historic Resource Assessment of Orange County Water District pump station, Huntington Beach, CA
CEQA – Historic Resource Assessment of 40174 Lakeview Drive, Big Bear City, CA
CEQA – Evaluation of project impacts to Metropolitan Hospital Historic District, Norwalk, CA
CEQA - Historic Resource Assessment of Margan Apartment Building, U.C.L.A., CA
CEQA – Historic Resource Assessment of First Baptist Church, Ontario, CA
CEQA – Historic Resource Assessment of North School Campus, Hermosa Beach, CA
CEQA – Historic Resource Assessment Report of Sunkist Water Tower, Ontario, CA
CEQA – Phase 1 Evaluation of Potential Historic Resources, Culver Oil Field, Culver City, CA
CEQA – Phase 1 Evaluation of Potential Historic Resources, Rosecrans Pump Station, Fullerton, CA
CEQA – Historic Resource Assessment Report of Huntington Middle School, San Marino, CA
CEQA – Historic Resource Assessment Report of Galvin Park and Baseball Field, Ontario, CA
CEQA – Phase 1 Evaluation of Potential Historic Resource, Orange County Sewer District, Newport Beach, CA
CEQA – Phase 1 Evaluation of Potential Historic Resources, Santa Clarita, Ca
CEQA – Historic Resource Assessment Report of Lincoln Street Improvements, Taft, CA
CEQA – Historic Resource Assessment Report of Chollas Creek Bikeway Project, San Diego, CA

CEQA – Historic Resource Assessment Report of Brookside Equestrian Center, Walnut, CA
CEQA – Historic Resource Assessment Report of George Washington School, Colton Joint Unified School District, CA
CEQA – Historic Resource Assessment Report of 985 South Hamilton Blvd., Pomona, CA
CEQA – Historic Resource Assessment Report of Oak Crest School, San Dieguito School District, CA
CEQA – Historic Resource Assessment Report of 812 North State Street, Hemet, Riverside County, CA
CEQA – Historic Resource Assessment Report of Killefer School, Orange Unified School District, Orange County, CA
CEQA – Historic Resource Assessment Report of the Dam at Lake Gregory, San Bernardino County, CA
CEQA – Historic Resource Assessment Report of 1336 – 1365 East Colorado Boulevard Project, Pasadena, CA
CEQA – Historic Resource Assessment Report of St. George Catholic Church (1923), Ontario, CA
CEQA – Historic Resource Assessment Report of Upper Arroyo Seco Parkway, Pasadena, CA
CEQA – Historic Resource Assessment Report for Old Schoolhouse, Azusa School District, CA
CEQA – Phase 1 Evaluation of Potential Historic Resources, West Desert Hot Springs Master Drainage Project, CA
CEQA – Historic Resource Assessment Report of 12655 Garber Street, Pacoima, Los Angeles County, CA
CEQA – Phase 1 Evaluation of Potential Historic Resources, Moorpark, CA
CEQA – Historic Resource Assessment Report of Magnolia-Plaza Substations, Riverside, CA
CEQA – Historic Resource Assessment Report of 777-779 South Coast Highway, Laguna Beach, CA
CEQA – Historic Resource Assessment Report of Granite Mountain Biology Center, University California Riverside, CA
CEQA – Historic Resource Assessment Report of UCLA Stuart House, Santa Monica, CA
CEQA – Historic Resource Assessment Report of 705 No. Camden Drive, Beverly Hills, CA
CEQA – Historic Resource Assessment Report of 56831 Olive Avenue, Thermal, CA
CEQA – Historic Resource Assessment Report of 18771 Oriente Drive, Yorba Linda, CA.
CEQA – Historic Resource Assessment Report of Beckman Coulter complex, Fullerton, CA.
CEQA – Evaluation of proposed project to Central Historic District, Pasadena, CA.
CEQA – Historic Resource Assessment Report of Palm Springs High School campus, Palm Springs, CA.
CEQA – Historic Resource Assessment Report of El Camino Community College, Torrance, CA.
CEQA – Historic Resource Assessment Report of Camp Kilpatrick Juvenile Detention Camp, Los Angeles County, CA.
CEQA – Historic Resource Assessment Report of Jordan High School, Long Beach, CA.
CEQA – Historic Resource Assessment Report of Pitchess Detention Center, Los Angeles County, CA.
CEQA – Historic Resource Assessment Report for Santa Anita Wash Debris Basin, Los Angeles County, CA.
CEQA – Historic Resource Assessment Report of Ramon Academy Administration Building, Palm Springs High School, CA.
CEQA – Historic Resource Assessment Report of Bryn Mawr Schoolhouse, Loma Linda, CA.
CEQA – Evaluation of proposed project to Irvine Regional Park, Orange County, CA.
CEQA – Historic Resource Assessment Report of Holtz Ranch property, Silverado Canyon, CA.
CEQA – Evaluation of new construction on Santa Fe Avenue, Fullerton, CA.
CEQA – Historic Resource Assessment Report of Upper Sunset Canyon Debris Basin Dam, Los Angeles County, CA.
CEQA – Historic Resource Assessment Report of 1920s adobe-brick homestead in Lancaster, CA.
CEQA – Historic Resource Assessment Report of the Glendale Courthouse, Glendale, CA.
CEQA – Historic Resource Assessment Report of the California State Printing Plant, Sacramento, CA.
CEQA – Historic Resource Assessment Report of the Olympic Tank Farm, Wilmington, CA.
CEQA – Historic Resource Assessment Report of the Swiss Ross (Albion) Dairy property, Los Angeles, CA.
CEQA – Historic Resource Assessment Report of three parcels on Cole Avenue and the El Nido Hotel, Hollywood, CA.
CEQA – Historic Resource Assessment Report of the property at 255 St. Ann's Drive, Laguna Beach, CA.
CEQA – Historic Resource Assessment Report for the properties at 625 and 641 Landfair Avenue, and 548 and 564 Glenrock Avenue, Westwood Village, CA.
CEQA – Historic Resource Assessment Report of the property at 37162 South Coast Highway, Laguna Beach, CA.
CEQA – Historic Resource Assessment Report of a 1940s self-contained sewage treatment plant, Lancaster, CA.
CEQA – Historic Resource Assessment Report for the Riverside County Economic Development Agency - Coachella Valley Rescue Mission, Indio, CA.
CEQA – Historic Resource Assessment Report for the Brookhurst Street Widening Project, Anaheim, CA.
CEQA – Historic Resource Assessment Report for Riverside County Economic Development Agency – Riviera Restaurant, Rubidoux, CA.

CEQA – Perform peer review services on documents prepared for California Energy Commission for a project in Palmdale, CA. Prepare historic context of project area, and describe potential impacts to built-environment resources and provide recommended mitigation measures.
CEQA – Historic Resource Assessment Report for 4149 Chestnut Street, Riverside, CA.
CEQA – Historic Resource Assessment Report for 942 West Holt Avenue, Pomona, CA.
CEQA – Historic Resource Assessment Report of Banning Ranch, Newport Beach, CA.
CEQA – Historic Resource Assessment Report for Centennial Ranch Project, Gorman, CA.
CEQA – Historic Resource Assessment Report of historic irrigation system, Turlock, CA.
CEQA – Historic Resource Assessment Report of 2385 South Willow Avenue, Rialto, CA.
CEQA – Historic Resource Assessment Report, Orange County Civic Center, Santa Ana, CA.
CEQA – Historic Resource Assessment Report of Los Angeles County Fire Station, Malibu, CA.
CEQA – Historic Resources Assessment Report of water diversion features, Sonoma, CA.
CEQA – Historic Resources Assessment Report for Fontana Fire Station #1, and American Legion Post 262, constructed in 1927.
CEQA – Historic Resources Assessment Report for Department of Water Resources, Redlands, CA. Record and research historic Cold War-era structures and landscape.
CEQA – Historic Resources Assessment Report of historic date and citrus farm in Coachella, CA.
CEQA – Historic Resources Assessment Report for Glendale College Expansion Project.
CEQA – Historic Resources Assessment Report of residential structure in Apple Valley, CA.
CEQA – Historic Resources Assessment Report of structures in Loma Linda, CA.
CEQA – Historic Resources Assessment Report of residence on Cedar Street, Glendale, CA.
CEQA – Historic Resources Assessment Report of 1894 carriage house in Los Angeles, CA.
CEQA – Historic Resources Assessment Report of farmhouse in the City of Moreno Valley, CA.
CEQA – Historic Resources Assessment Report of four properties on Carlton Avenue, Hollywood, CA.
CEQA - Wrightwood Housing Development – record and research historic structure located in the project ROW. Consult with San Bernardino County environmental department.
CEQA – White Springs Sulphur Pools, Riverside, CA – Phase I survey for determination of CRHR and NR eligibility.
CEQA – Fitch Avenue Bridge – Phase I survey determination of rural one-lane bridge.
CEQA –New Model Colony housing development – Phase I & II survey of rural agricultural properties, Ontario, CA.

● **Local Level Projects**
Evaluate building projects for Secretary of the Interior's Standards, Riverside, CA
Create interpretive signage for Sunkist Water Tower and Tank, Ontario, CA
Construction monitoring for excavation road work near Pacific Electric rails, Los Angeles, CA
Create interpretive signage for Waterman Gardens Housing Complex, San Bernardino, CA
HABS-level documentation of Waterman Gardens Housing Complex, San Bernardino, CA
Evaluation of proposed project to historic property in Rancho Cucamonga, CA
HAER-level documentation of Sunkist Water Tank and Tower, Ontario, CA
HABS-level documentation of Mabey Canyon Creek stone bridge, Corona, CA
Evaluation of proposed project to stone wall at 18771 Oriente Drive, Yorba Linda, CA
Construction monitoring of the Beckman Coulter project, Fullerton, CA
Evaluation of proposed project to Governor's Mansion, Sacramento, CA
HABS Level 1 documentation for Sexlinger House and Orchard, Santa Ana, CA
Construction monitoring for the Pine Valley Highway Bridge, San Diego County, CA
Evaluation of proposed alterations to Rawlins House, City Landmark Property, Fullerton, CA
HABS-level documentation for mitigation of rock walls in Irvine Regional Park, Orange County, CA.
Develop Mitigation Measures Plan (MMP) for historic resource listed on the National Register and California Register of Historic Resources, in accordance with the Secretary of the Interiors Standard of Treatment for Preservation of Historic Structures. Redlands, CA.
HAER-level documentation of Reservoir #1, Yorba Linda, CA.
HABS-level documentation of Fire Station #1, Fontana, CA.
HABS-level documentation of American Legion Post 261, Fontana, CA.

HABS level documentation of Riverock bungalows in Riverside, CA.
HABS-level documentation of The Quilt Stop, Sparks, NV.
HABS-level documentation of the Snyder Ranch, Apple Valley, CA.
Historic resource evaluation of commercial property on Euclid Avenue, Ontario, CA.
Viewscape review for proposed housing development, Reno, NV.
Historic Sites and Structures Survey for the Town of Shelburne, VT. Phase II survey of 40 residential and agricultural properties
Survey Plan for the City of Burlington, Burlington, VT. Ten-year plan for future survey work in city.
Urban Survey, 2000, City of Burlington, Burlington, VT. Phase I survey and photographs of 250 urban historic resources.
Urban Survey, 2001, City of Burlington, Burlington, VT. Phase I survey and photographs of 220 urban historic resources.
Historic Sites and Structures Survey: Phase IV for the Town of Windsor, VT. Phase II survey of 40 structures and historic context of Buena Vista District.
Historic Sites and Structures Survey: Phase V for the Town of Windsor, VT. Review of 1977 National Register nomination, proposed additions, and additional description of resources.

● Architectural Conservation Projects (per Secretary of the Interior's Standards)
Develop exterior paint treatment for the historic Sunkist Water Tank and Tower, Ontario, CA
Prepare preliminary cost estimate for the rehabilitation/adaptive reuse of historic Azusa Schoolhouse.
Develop exterior alteration plans for alterations to Palm Springs High School Auditorium, Palm Springs, CA
Develop exterior design plans for the rehabilitation and addition to a historic cabin in the San Bernardino National Forest.
Provide consulting services to the City of LaVerne to review the proposed alterations to the auditorium in Founder's Hall on LaVerne University.
Review exterior design plans for the alteration of the Johnson Cabin in the San Bernardino National Forest.
Develop exterior design plans for the alteration of a historic cabin in the San Bernardino National Forest.
Develop exterior design plans for the rebuilding of a historic cabin in San Bernardino National Forest.
Historic Structures Report, including conditions assessment and treatment plan for 1885 Lindo Lake Boathouse, Lakeside, CA.
Historic Structures Report, including conditions assessment and treatment plan for 1887 Bancroft Rock House, Spring Valley, CA.
Historic Structures Report, including conditions assessment and treatment plan for 1865Rutland Railroad Train Station, Vergennes, VT.
Historic Structures Report for emergency stabilization of endangered historic property in Essex, NY.
Repair and restoration of early 20th century house in Riverside, CA.
Architectural repair specifications for the 1805 Bradley Law Office, Westminster, VT
Project management of early 19th century house rehabilitation, St. Albans, VT.
Repairs and maintenance of converted barn in Ithaca, NY.
Historic paint finishes analysis for Town of Rockingham, VT.
Historic paint finishes analysis for Middlebury Town Hall, VT.
Historic paint finishes analysis for Labor Union Hall, Barre, VT.
Repair and restoration of cast iron fence for Greystone Mansion, Essex, NY.
Photo survey of Labor Union Hall, Barre, VT, prior to rehabilitation.
Evaluation and research of historic colonial tannery structure in Essex, NY.
Rehabilitation of 19th century barn for use as residence, Trumansburg, NY.

● Historic Preservation Educational Projects
Presentation to the Orange County Association of Environmental Professionals (AEP) "Current Issues with CEQA and Historic Resources."
Presentation to the Mission Inn Museum – "Hidden Histories."
Presentation to the Moreno Valley Historical Society – "Explaining Historic Resource Eligibility Criteria."
Presentation to the U.S. Forest Service – Region 5, "Evaluating Historic Resources."
Create text on the history of the San Antonio Valley after 1850 for Fort Hunter Liggett Army Reserve.
Education and slide presentation of American architectural styles.

Education and slide presentation of California revival architectural styles.
Walking tours of Windsor, Vergennes and Shelburne, Vermont.
Research paper on decorative historic painted finishes created in Vermont public buildings during the late 19th century.

● **Other Preservation Projects:**
Adaptive Reuse – Downtown Development Project for six historic structures in Morrisville, VT.

Develop Revised Design Review and Zoning Guidelines, City of Burlington, VT.
Part of team to develop guidelines for protecting historic resources in the city.
Presenter at Vermont Historic Preservation Conference on Industrial Archeology and site research.
Developed and implemented educational tours and day programs of historic sites and properties.
Awarded grant proposals for educational and historic preservation projects.
Developed and designed fundraising and publicity brochures.

● **Preservation Skills**
Maintenance and repairs to historic structures including painting, mortar analysis, mortar repointing, and plaster repair.
Historic Structures Reports - condition assessment reports.
Use of the Secretary of the Interiors Standards for the restoration, rehabilitation, or restoration of historic buildings.
Historical paint analysis (chromochronology).
Research of historic structures using deeds, wills, public records and archival documentation.
Nomination of historic sites and structures for the National Register of Historic Places.
Section 106 and 110 of the National Historic Preservation Act.
Federal Historic Preservation Tax Incentive program.
California "Mills Act" historic preservation program.

Business Management/Accounting

- Over 25 years experience in financial management and accounting.
- Competence in all accounting aspects: profit and not-for-profit organizations.
- Successful grant writing and funding from state, private and federal agencies.
- Extensive experience corresponding with federal, state, county and private organizations regarding agency fiscal requirements.
- Analyzed the efficiency of business internal accounting systems, implementing procedures to improve financial accuracy and operating cost-effectiveness.

Financial Project Management/Supervision

- Managed agency and individual project budgets from $350,000 to $2.5 million.
- Responsible for overseeing budget and direct labor requirements of Government contracts.
- Financial project management for 26 concurrent projects valued at $29 million.
- Coordinated five departments to meet financial and organizational goals.
- Supervised eight project managers to meet contractual agreements.
- Negotiated prime and sub-contractor agreements and purchase orders.
- Qualified contract specialist with U.S. Department of Defense, NASA and National Park Service. Experience with FAR, DFAR and associated regulations.

Employment History

2005 - present	Architectural Historian Consultant	Daly & Associates, Riverside, CA.
2003 – 2005	Sr. Architectural Historian	Earth Tech, Inc., Colton, CA.
1998 to June 2003	Architectural Historian Consultant	Daly & Associates, Shelburne, VT.
1998 (two semesters)	Teaching Assistant	Historic Preservation Dept.,

		University of Vermont
1989 - 1997	Director of Contracts	Odyssey Research Assoc., Inc., Ithaca, NY.
1987 - 1989	Senior Corporate Accountant	Emerson Power Transmission, Ithaca, NY.

Volunteer History

1999– 2003	Commission Member – Town of Shelburne, Vermont Historic Preservation Design Review Board.
1996 - 1997	President - Board of Directors, Historic Ithaca, NY.
1993 - 1996	Board Member, Secretary, Historic Ithaca, NY.

Professional Affiliations

APT – Association for Preservation Technology
LTA - Land Trust Alliance
NTHP - National Trust for Historic Preservation
SIA - Society for Industrial Archeology
VAF - Vernacular Architecture Forum

APPENDIX 3

Central California Information Center Record Search

CENTRAL CALIFORNIA INFORMATION CENTER

California Historical Resources Information System
Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307

Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties

Date: 6/21/2018

Records Search File No.: 10746L
Access Agreement: #137
Project: Corral Hollow Road

Robert A. Gerry
Peak & Associates, Inc.
3941 Park Drive, Suite 20-329
El Dorado Hills, CA 95762

peakinc@surewest.net

Dear Mr. Gerry:

The Central California Information Center received your record search request for the project areas referenced above, located on the Tracy 7.5' quadrangle in San Joaquin County. The following reflects the results of the records search for the project study area and radius:

As per data currently available at the CCaIC, the locations of resources/reports are provided in the following format: ☒ custom GIS maps ☐ shapefiles ☐ hand-drawn maps

Summary Data:

Resources within project area:	2: Unrecorded segments of P-39-000089* and 90
Resources within 1/8 mi radius:	2: P-39-000048 and 362
Reports within project area:	10: SJ-000621, 748, 1846, 2646, 2753, 2759, 2857, 6625, 7779, 8114
Reports within 1/8 mi radius:	7: SJ-02001, 2190, 2930, 3637, 3903, 4220, 8229

*** Notes on the Central Valley Project**

CCaIC Report ME/SJ/ST/TO-07779 and Additional Citations A & B

In the Central California Information Center's area of responsibility the following features were considered part of the Central Valley Project by the Bureau of Reclamation in the reports referenced above:

P-24-001703, **P-39-000089**, P-50-001904 Delta Mendota Canal

Merced County:	B. F. Fisk Dam O'Neill Dam O'Neill Pumping Plant/W.R. Gianelli Pumping and Generating Plant P-24-002008 San Luis Canal P-24-001926* San Luis Drain (Wasteway) P-24-001848*

*Also listed as contributors to the Miller-Lux District P-24-002104

Tuolumne	Melones Dam, New Melones Dam and Power Plant (Powerhouse) P-55-002299/P-05-003793 (All part of New Melones Archaeological/ Historical Districts P-55-007282 & P-05-002075

The "Central Valley Project", a water conveyance system is listed in the HPDF (under Merced & Stanislaus Counties,"2S2", individual property determined eligible for the NRHP by a consensus through the Section 106 process; listed on the CRHR). The U. S. Bureau of Reclamation has submitted a multiple property nomination for the Central Valley Project, which is currently being revamped. The CCaIC has copies of this form and two other additional reports. Anyone interested in the nomination process contact Mr. Lex Palmer, Architectural Historian, BOR, 2800 Cottage Way, MP-153, Sacramento, CA 95825 for further information.

Resource Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed
OHP Historic Properties Directory:	☐ enclosed	☐ not requested	☒ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☒ not requested	☐ nothing listed
Caltrans Bridge Survey:	☐ enclosed	☒ not requested	☐ nothing listed
Ethnographic Information:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Literature:	☐ enclosed	☒ not requested	☐ nothing listed

Historical Maps: ☐ enclosed ☒ not requested ☐ nothing listed

Local Inventories: ☐ enclosed ☒ not requested ☐ nothing listed

GLO and/or Rancho Plat Maps: ☐ enclosed ☒ not requested ☐ nothing listed

Shipwreck Inventory: ☒ not available at CCIC; please go to http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp

Soil Survey Maps: ☒ not available at CCIC; please go to http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Resources known to have value to local cultural groups: None have been formally reported to the CCaIC.

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

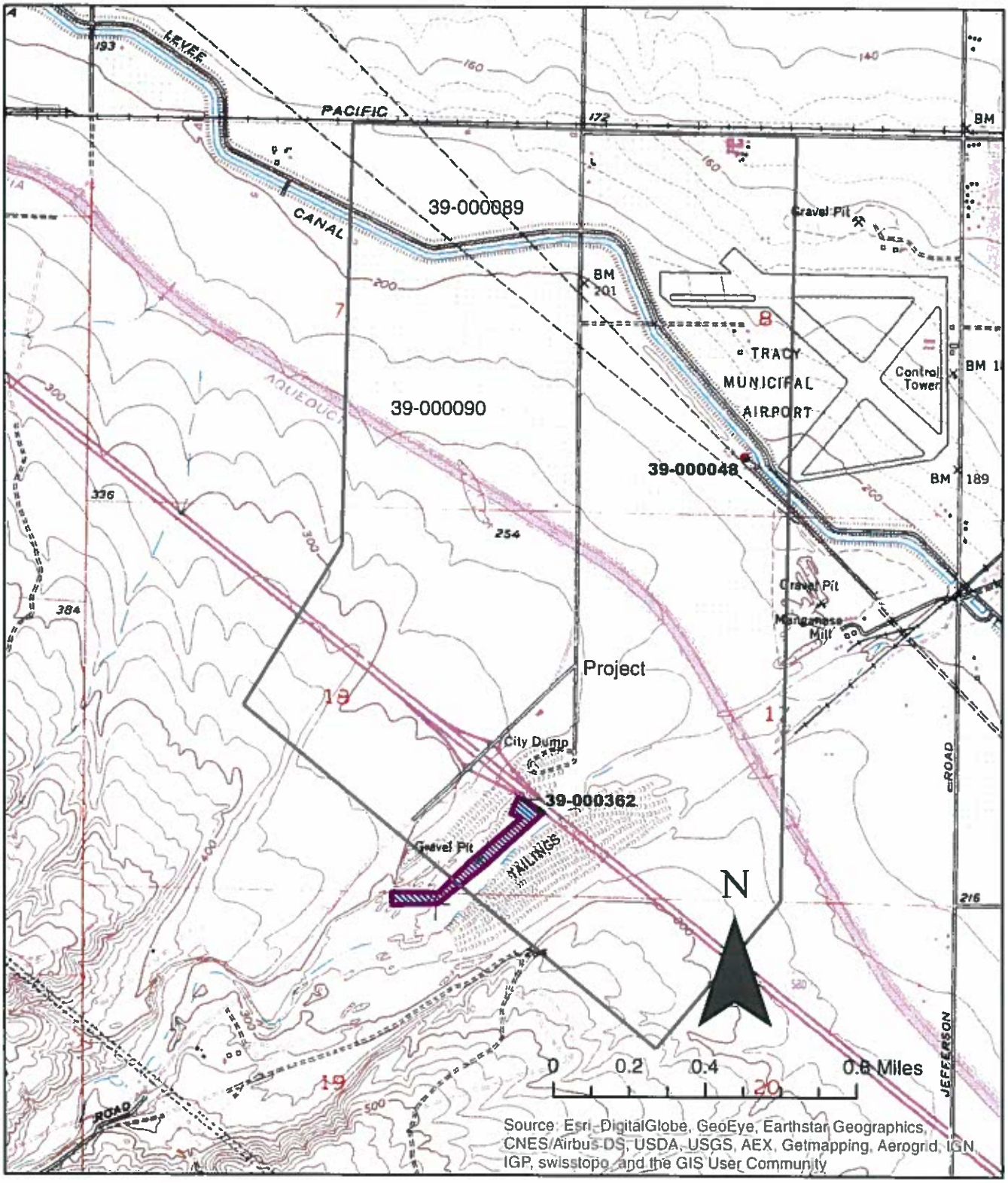
Note: Billing will be transmitted separately via email by our Financial Services office *($391.05), payable within 60 days of receipt of the invoice.

Sincerely,

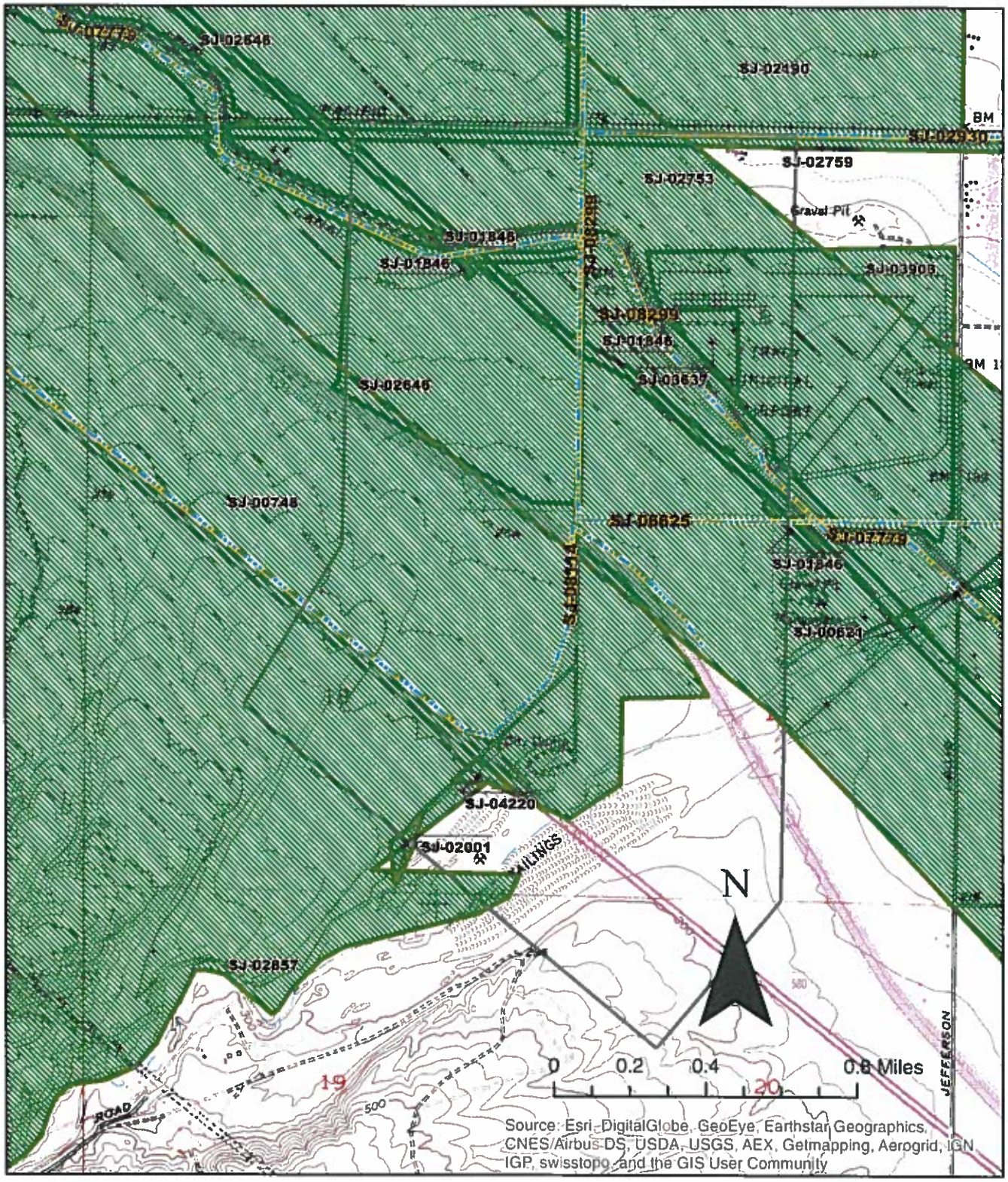
E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System

* Invoice Request sent to: Laurie Marroquin CSU Stanislaus Financial Services
lamarroquin@csustan.edu

CCalC 10746L Resources



CCalC 10746L Reports



APPENDIX 4

Native American Consultation

NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710

November 19, 2018

Neal Neuenschwander
Peak & Associates

Sent by Email: peakinc@yahoo.com
Number of Pages: 2

RE: Corral Hollow Road Improvements, Tracy, San Joaquin County

Dear Mr. Neuenschwander:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. **Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.**

I suggest you contact all of those listed, if they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. **By contacting all those on the list, your organization will be better able to respond to claims of failure to consult**. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: Sharaya.Souza@nahc.ca.gov.

Sincerely,

Sharaya Souza
Staff Services Analyst
(916) 573-0168

Native American Heritage Commission
Native American Contacts List
11/19/2018

Buena Vista Rancheria of Me-Wuk Indians
Rhonda Morningstar Pope, Chairperson
1418 20th Street, Suite 200 — Me-Wuk / Miwok
Sacramento ›CA 95811
rhonda@buenavistatribe.com
(916) 491-0011 Office
(916) 491-0012 Fax

California Valley Miwok Tribe
4620 Shippee Lane — Miwok
Stockton ›CA 95212
(209) 931-4567 Office
(209) 931-4333 Fax

California Valley Miwok Tribe
AKA Sheep Rancheria of Me-Wuk Indians of Ca
P.O. Box 395 — Miwok
West Point ›CA 95255
l.ewilson@yahoo.com
(209) 293-4179 Office

Ione Band of Miwok Indians
Sara Dutschke Setchwaelo, Chairperson
P.O. Box 699 — Miwok
Plymouth ›CA 95669
sara@ionemiwok.net
(209) 245-5800 Office
(209) 245-6377 Fax

North Valley Yokuts Tribe
Katherine Erolinda Perez, Chairperson
P.O. Box 717 — Ohlone/Costanoan
Linden ›CA 95236 — Northern Valley Yokuts
canutes@verizon.net — Bay Miwok
(209) 887-3415

United Auburn Indian Community of the Auburn Rancheria
Gene Whitehouse, Chairperson
10720 Indian Hill Road — Maidu
Auburn ›CA 95603 — Miwok
(530) 883-2390 Office
(530) 883-2380 Fax

Wilton Rancheria
Raymond Hitchcock, Chairperson
9728 Kent Street — Miwok
Elk Grove ›CA 95624
rhitchcock@wiltonrancheria-nsn.gov
(916) 683-6000 Office
(916) 683-6015 Fax

This list is current as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code,Section 5097.94 of the Public Resources Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American Tribes for the proposed:
Corral Hollow Road Improvements, Tracy, San Joaquin County.

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

November 21, 2018

Rhonda Morningstar Pope, Chairperson
Buena Vista Rancheria of Me-Wuk Indians
1418 20th Street, Suite 200
Sacramento, CA 95811

Subject: Corral Hollow Road Widening Project, City of Tracy, San Joaquin County, California.

Dear Honorable Chairperson Pope,

The City of Tracy is proposing to widen Corral Hollow Road from the intersection of Corral Hollow and Linne Roads south to the junction of Corral Hollow Road with Interstate 580. The proposed widening activities will involve a portion of the Delta Mendota Canal and California Aqueduct which is crossed by this roadway. The proposed project lies in the southwestern portion of the City of Tracy, San Joaquin County near the Tracy Municipal Airport (please see attached USGS Tracy 7.5-minute series quadrangle).

If you have any information concerning cultural resources in, or in the immediate vicinity of, the project area, please don't hesitate to contact me, Neal Neuenschwander, Staff Archeologist, Peak & Associates, Inc., 3161 Godman Avenue, Chico, CA 95973, (530) 342-2800, peakinc@yahoo.com Thank you for your time reviewing this letter and attached topographic map of the project area.

Sincerely,

Neal Neuenschwander
Neal Neuenschwander
Staff Archeologist

Enc. USGS topographic map

- 3941 Park Drive, Suite 20#329, El Dorado Hills, CA 95762/Phone: (916)939-2405/peakinc@sbcglobal.net
- 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/ peakinc@yahoo.com

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

November 21, 2018

Sara Dutschke Setchwaelo, Chairperson
Ione Band of Miwok Indians
P.O. Box 699
Plymouth, CA 95669

Subject: Corral Hollow Road Widening Project, City of Tracy, San Joaquin County, California.

Dear Honorable Chairperson Setchwaelo,

The City of Tracy is proposing to widen Corral Hollow Road from the intersection of Corral Hollow and Linne Roads south to the junction of Corral Hollow Road with Interstate 580. The proposed widening activities will involve a portion of the Delta Mendota Canal and California Aqueduct which is crossed by this roadway. The proposed project lies in the southwestern portion of the City of Tracy, San Joaquin County near the Tracy Municipal Airport (please see attached USGS Tracy 7.5-minute series quadrangle).

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PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

November 21, 2018

Katherine Erolinda Perez, Chairperson
North Valley Yokuts Tribe
P.O. Box 717
Linden, CA 95236

Subject: Corral Hollow Road Widening Project, City of Tracy, San Joaquin County, California.

Dear Honorable Chairperson Perez,

The City of Tracy is proposing to widen Corral Hollow Road from the intersection of Corral Hollow and Linne Roads south to the junction of Corral Hollow Road with Interstate 580. The proposed widening activities will involve a portion of the Delta Mendota Canal and California Aqueduct which is crossed by this roadway. The proposed project lies in the southwestern portion of the City of Tracy, San Joaquin County near the Tracy Municipal Airport (please see attached USGS Tracy 7.5-minute series quadrangle).

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Staff Archeologist

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- 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/ peakinc@yahoo.com

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

November 21, 2018

Gene Whitehouse, Chairperson
United Auburn Indian Community of the Auburn Rancheria
10720 Indian Hill Road
Auburn, CA 95603

Subject: Corral Hollow Road Widening Project, City of Tracy, San Joaquin County, California.

Dear Honorable Chairperson Whitehouse,

The City of Tracy is proposing to widen Corral Hollow Road from the intersection of Corral Hollow and Linne Roads south to the junction of Corral Hollow Road with Interstate 580. The proposed widening activities will involve a portion of the Delta Mendota Canal and California Aqueduct which is crossed by this roadway. The proposed project lies in the southwestern portion of the City of Tracy, San Joaquin County near the Tracy Municipal Airport (please see attached USGS Tracy 7.5-minute series quadrangle).

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Neal Neuenschwander

Neal Neuenschwander
Staff Archeologist

Enc. USGS topographic map

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- 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/ peakinc@yahoo.com

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

November 21, 2018

Raymond Hitchcock, Chairperson
Wilton Rancheria
9728 Kent Street
Elk Grove, CA 95624

Subject: Corral Hollow Road Widening Project, City of Tracy, San Joaquin County, California.

Dear Honorable Chairperson Hitchcock,

The City of Tracy is proposing to widen Corral Hollow Road from the intersection of Corral Hollow and Linne Roads south to the junction of Corral Hollow Road with Interstate 580. The proposed widening activities will involve a portion of the Delta Mendota Canal and California Aqueduct which is crossed by this roadway. The proposed project lies in the southwestern portion of the City of Tracy, San Joaquin County near the Tracy Municipal Airport (please see attached USGS Tracy 7.5-minute series quadrangle).

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Neal Neuenschwander

Neal Neuenschwander
Staff Archeologist

Enc. USGS topographic map

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- 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/ peakinc@yahoo.com

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

November 21, 2018

California Valley Miwok Tribe
4620 Shippee Lane
Stockton, CA 95212

Subject: Corral Hollow Road Widening Project, City of Tracy, San Joaquin County, California.

Dear California Valley Miwok Tribe,

The City of Tracy is proposing to widen Corral Hollow Road from the intersection of Corral Hollow and Linne Roads south to the junction of Corral Hollow Road with Interstate 580. The proposed widening activities will involve a portion of the Delta Mendota Canal and California Aqueduct which is crossed by this roadway. The proposed project lies in the southwestern portion of the City of Tracy, San Joaquin County near the Tracy Municipal Airport (please see attached USGS Tracy 7.5-minute series quadrangle).

If you have any information concerning cultural resources in, or in the immediate vicinity of, the project area, please don't hesitate to contact me, Neal Neuenschwander, Staff Archeologist, Peak & Associates, Inc., 3161 Godman Avenue, Chico, CA 95973, (530) 342-2800, peakinc@yahoo.com Thank you for your time reviewing this letter and attached topographic map of the project area.

Sincerely,

Neal Neuenschwander

Neal Neuenschwander
Staff Archeologist

Enc. USGS topographic map

PEAK & ASSOCIATES, INC.
CONSULTING ARCHEOLOGY

November 21, 2018

California Valley Miwok Tribe
AKA Sheep Ranch Rancheria of Me-Wuk Indians of Ca
P.O. Box 395
West Point, CA 95255

Subject: Corral Hollow Road Widening Project, City of Tracy, San Joaquin County, California.

Dear California Valley Miwok Tribe,

The City of Tracy is proposing to widen Corral Hollow Road from the intersection of Corral Hollow and Linne Roads south to the junction of Corral Hollow Road with Interstate 580. The proposed widening activities will involve a portion of the Delta Mendota Canal and California Aqueduct which is crossed by this roadway. The proposed project lies in the southwestern portion of the City of Tracy, San Joaquin County near the Tracy Municipal Airport (please see attached USGS Tracy 7.5-minute series quadrangle).

If you have any information concerning cultural resources in, or in the immediate vicinity of, the project area, please don't hesitate to contact me, Neal Neuenschwander, Staff Archeologist, Peak & Associates, Inc., 3161 Godman Avenue, Chico, CA 95973, (530) 342-2800, peakinc@yahoo.com Thank you for your time reviewing this letter and attached topographic map of the project area.

Sincerely,

Neal Neuenschwander

Neal Neuenschwander
Staff Archeologist

Enc. USGS topographic map

- 3941 Park Drive, Suite 20#329, El Dorado Hills, CA 95762/Phone: (916)939-2405/peakinc@sbcglobal.net
- 3161 Godman Avenue, Suite A, Chico, CA 95973/Phone: (530)342-2800/ peakinc@yahoo.com

•

James Sarmento <james@buenavistatribe.com>

To:peakinc@yahoo.com

Wed, Dec 5, 2018 at 3:09 PM

Dear Mr. Neuenschwander,

I am contacting you in regards to the Corral Hollow Road Widening Project. Currently, Buena Vista Rancheria of Me-Wuk Indians is not aware of any Cultural Resources in the vicinity of the project area, however the area may be sensitive for archaeological resources . The Tribe recommends that a Cultural Resources Survey be conducted on the projects Area of Potential Effect. Additionally, we recommend that a Cultural Sensitivity Training be given to ground crews when the work starts. Please continue to keep the tribe informed of the project as it moves forward.

If you have any questions, please feel free to contact me. Please use the identification number BVR-2018-12-04.

Thank you for your consideration.

Respectfully,

James Sarmento

James Sarmento, Ph.D Candidate, Native American Studies

Tribal Historic Preservation Officer

Buena Vista Rancheria of Me-Wuk Indians

1418 20th Street, Suite 200

Sacramento, CA 95811

TEL: Sacramento - 916.491.0011 ext 255

FAX: 916.491.0012

james@buenavistatribe.com

APPENDIX 5

DPR 523 Forms

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **PRIMARY RECORD**	Primary # 39-000089/50-001904 Update HRI # Trinomial **NRHP Status Code:** 3S Other Listings Review Code ____ Reviewer ____ Date ____

***Resource Name or #:** Delta-Mendota Canal segment, canal mile point (cmp) 14.77-14.82 **Page 1 of 4**

P1. Other Identifier: Delta-Medota Canal where it intersects with Corral Hollow Road

***P2. Location:** ____ **Not for Publication** X **Unrestricted**

***a. County** San Joaquin **County/Route/Postmile:** Corral Hollow Road

***b. USGS 7.5' Quad:** Tracy **Date** 1981 **T** 3S **;R** 5E **of** bordr **of Sec** 7 + 8 ; M.D. **B.M.**

c. Address Corral Hollow Road **City** Tracy **Zip** ____

d. UTM:: NAD 83 **Zone** 10 , 636419 **mE/** 4172745 **mN**

***e. Other Locational Data** (APN #, etc.)

***P3a. Description:** (Briefly describe resource below)

The canal in this section, where it runs under Corral Hollow Road bridge, is 98 feet wide at the surface and a width of 48 feet wide at the base of the canal. The trapezoidal section of the canal is lined with concrete, is approximately 16 feet deep with sides sloped at 2.5:1. Associated un-paved service roads run along the top of both sides of the canal, and drainage culverts with wood railings are located along both sides of Corral Hollow Road, and south of the canal. Bureau of Reclamation staff believe that the water gauge stations on the north side of the canal were installed after the original construction of the canal in 1947. (Communication with Brandee Bruce, Bureau of Reclamation, October 3, 2018.)

***P3b. Resource Attibutes:** AH6 (water conveyance structure: lined canal)

****P4. Resources Present:** ____ Building X Structure ____ Object ____ Site ____ District X Elements of District ____ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: Corral Hollow Road crossing over segment of canal. View looking southeast.

***P6. Date Constructed/Age:** 1947 per Caltrans.

X Historic ____ Prehistoric ____ Both

***P7. Owner and Address:**
Bureau of Reclamation
Mid-Pacific Region
2800 Cottage Way
Sacramento, CA

***P8. Recorded by:**
Pamela Daly, M.S.H.P.
Daly & Associates
2242 El Capitan Drive
Riverside, CA 92506

***P9. Date Recorded:** October 10, 2018

***P10. Type of Survey:** X Intensive ____ Reconnaissance ____ Other

Describe: CEQA

***P11. Report Citation:** Peak, Melinda A. *Determination of Eligibility and Effect for the Corral Hollow Road Widening Project, City of Tracy, San Joaquin County, California*. Peak & Associates, November 2018.

***Attachments:** ____ NONE X Map Sheet X Continuation Sheet ____ Building, Structure and Object Record
____ Linear Resource Record ____ Archaeological Record ____ District Record ____ Milling Station Record ____ Rock Art Record
____ Artifact Record ____ Photograph Record ____ Other (List): ____

***Recorded by:** Pamela Daly, M.S.H.P. ***Date:** October 10, 2018 ☒Continuation ☒Update

B. 10. Statement of Significance

The Delta-Mendota Canal (DMC) was completed in 1951 and delivers water for agricultural use to approximately 1 million acres of land in the San Joaquin Valley. From the Tracy Pumping Plant, water is sent to the headworks about one mile downstream where it is then discharged across five counties, for 116 miles in southerly and easterly directions. The majority of the canal is concrete lined. Some of the contributing features of the DMC are adjacent operating roads, inlets, drains, siphon crossings, and check or recording structures. The "Draft" Delta-Mendota Canal National Register of Historic Places nomination document, prepared by U.S. Bureau of Reclamation in 2006 (on-file at Central California Information Center for Primary #39-00089/50-001904), considers the bridges that cross over the DMC as "non-contributing" resources to the historic canal system.

The entire DMC has been determined to be eligible for listing in the National Register of Historic Places under Criterion A, and is significant for the theme of development, construction, and operation of the Central Valley Project. (per "Draft" Delta-Mendota Canal National Register of Historic Places nomination document, prepared by U.S. Bureau of Reclamation in 2006.)

Bridge Number 29C0185 carries Corral Hollow Road over this segment of the DMC. The removal of the current bridge and the installation of a new bridge will not have a significant adverse effect to the physical and engineering integrity of the bridge.

There are also roadside drainage culverts that may be features associated with the DMC. These features are widely found along the path of the canal where it intersects with roadways. The drainage culverts are not unique in their design, and the physical integrity of the canal at this is not dependent on the existence of the culverts. The removal of these culverts as part of the proposed project to remove and replace Corral Hollow Road bridge would not be considered a significant adverse effect to the DMC.

As the project holders will need to consult with Bureau of Reclamation to remove/replace Corral Hollow Road bridge, the Bureau of Reclamation will instruct as how to institute the *Secretary of the Interior's Guidelines for the Treatment of Historic Properties* (revised: Grimmer 2017) to assure that the DMC will be properly repaired and rehabilitated after the new bridge and roadway widening has been completed.

Bridge No. 29C0186 carrying Corral Hollow Road over the Delta-Mendota Canal. View looking east.

***Recorded by:** Pamela Daly, M.S.H.P. ***Date:** October 10, 2018 ☒Continuation ☒Update

Cast-concrete drainage openings with associated safety railings on the east and west sides of Corral Hollow Road, immediately south of the DMC channel. View looking west.

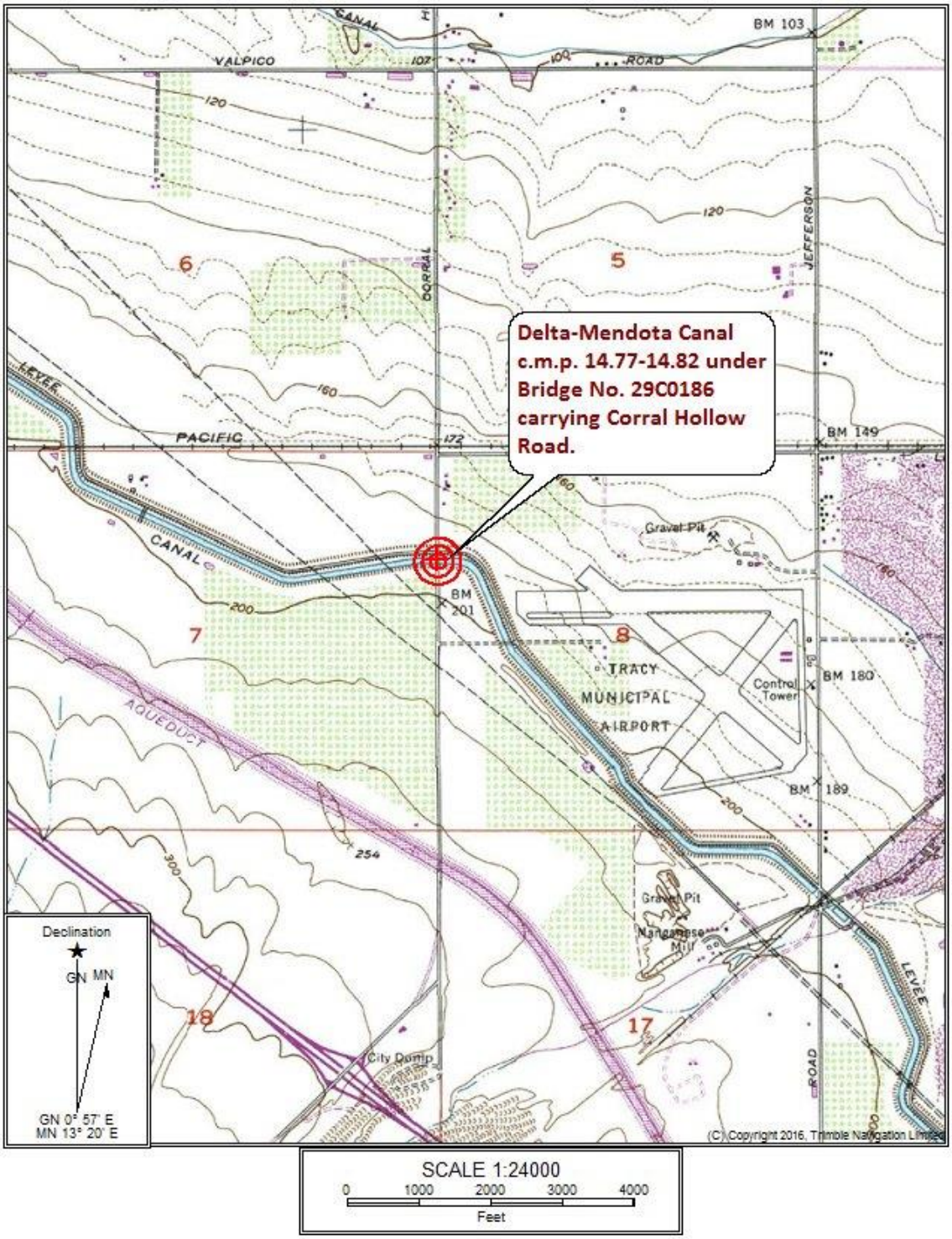
Water gauges on north side of DMC, east side of Corral Hollow Road. View looking northwest.

LOCATION MAP

***Resource Name or #:** Delta-Mendota Canal segment, cmp 14.77-14.82

***Map Name:** Tracy

***Scale:** 1:24,000 ***Date of Map:** 1981



*Required information

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **PRIMARY RECORD**	Primary # 39-000089/50-001904 Update HRI # Trinomial **NRHP Status Code:** 3S Other Listings Review Code ____ Reviewer ____ Date ____

***Resource Name or #:** Delta-Mendota Canal segment, canal mile point (cmp) 14.77-14.82 **Page 1 of 4**

P1. Other Identifier: Delta-Medota Canal where it intersects with Corral Hollow Road

***P2. Location:** ____ **Not for Publication** X **Unrestricted**

***a. County** San Joaquin **County/Route/Postmile:** Corral Hollow Road

***b. USGS 7.5' Quad:** Tracy **Date** 1981 **T** 3S **;R** 5E **of** bordr **of Sec** 7 + 8 ; M.D. **B.M.**

c. Address Corral Hollow Road **City** Tracy **Zip** ____

d. UTM:: NAD 83 **Zone** 10 , 636419 **mE/** 4172745 **mN**

***e. Other Locational Data** (APN #, etc.)

***P3a. Description:** (Briefly describe resource below)

The canal in this section, where it runs under Corral Hollow Road bridge, is 98 feet wide at the surface and a width of 48 feet wide at the base of the canal. The trapezoidal section of the canal is lined with concrete, is approximately 16 feet deep with sides sloped at 2.5:1. Associated un-paved service roads run along the top of both sides of the canal, and drainage culverts with wood railings are located along both sides of Corral Hollow Road, and south of the canal. Bureau of Reclamation staff believe that the water gauge stations on the north side of the canal were installed after the original construction of the canal in 1947. (Communication with Brandee Bruce, Bureau of Reclamation, October 3, 2018.)

***P3b. Resource Attibutes:** AH6 (water conveyance structure: lined canal)

****P4. Resources Present:** ____ Building X Structure ____ Object ____ Site ____ District X Elements of District ____ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: Corral Hollow Road crossing over segment of canal. View looking southeast.

***P6. Date Constructed/Age:** 1947 per Caltrans.

X Historic ____ Prehistoric ____ Both

***P7. Owner and Address:**
Bureau of Reclamation
Mid-Pacific Region
2800 Cottage Way
Sacramento, CA

***P8. Recorded by:**
Pamela Daly, M.S.H.P.
Daly & Associates
2242 El Capitan Drive
Riverside, CA 92506

***P9. Date Recorded:** October 10, 2018

***P10. Type of Survey:** X Intensive ____ Reconnaissance ____ Other

Describe: CEQA

***P11. Report Citation:** Peak, Melinda A. *Determination of Eligibility and Effect for the Corral Hollow Road Widening Project, City of Tracy, San Joaquin County, California*. Peak & Associates, November 2018.

***Attachments:** ____ NONE X Map Sheet X Continuation Sheet ____ Building, Structure and Object Record
____ Linear Resource Record ____ Archaeological Record ____ District Record ____ Milling Station Record ____ Rock Art Record
____ Artifact Record ____ Photograph Record ____ Other (List): ____

***Recorded by:** Pamela Daly, M.S.H.P. ***Date:** October 10, 2018 ☒Continuation ☒Update

B. 10. Statement of Significance

The Delta-Mendota Canal (DMC) was completed in 1951 and delivers water for agricultural use to approximately 1 million acres of land in the San Joaquin Valley. From the Tracy Pumping Plant, water is sent to the headworks about one mile downstream where it is then discharged across five counties, for 116 miles in southerly and easterly directions. The majority of the canal is concrete lined. Some of the contributing features of the DMC are adjacent operating roads, inlets, drains, siphon crossings, and check or recording structures. The "Draft" Delta-Mendota Canal National Register of Historic Places nomination document, prepared by U.S. Bureau of Reclamation in 2006 (on-file at Central California Information Center for Primary #39-00089/50-001904), considers the bridges that cross over the DMC as "non-contributing" resources to the historic canal system.

The entire DMC has been determined to be eligible for listing in the National Register of Historic Places under Criterion A, and is significant for the theme of development, construction, and operation of the Central Valley Project. (per "Draft" Delta-Mendota Canal National Register of Historic Places nomination document, prepared by U.S. Bureau of Reclamation in 2006.)

Bridge Number 29C0185 carries Corral Hollow Road over this segment of the DMC. The removal of the current bridge and the installation of a new bridge will not have a significant adverse effect to the physical and engineering integrity of the bridge.

There are also roadside drainage culverts that may be features associated with the DMC. These features are widely found along the path of the canal where it intersects with roadways. The drainage culverts are not unique in their design, and the physical integrity of the canal at this is not dependent on the existence of the culverts. The removal of these culverts as part of the proposed project to remove and replace Corral Hollow Road bridge would not be considered a significant adverse effect to the DMC.

As the project holders will need to consult with Bureau of Reclamation to remove/replace Corral Hollow Road bridge, the Bureau of Reclamation will instruct as how to institute the *Secretary of the Interior's Guidelines for the Treatment of Historic Properties* (revised: Grimmer 2017) to assure that the DMC will be properly repaired and rehabilitated after the new bridge and roadway widening has been completed.

Bridge No. 29C0186 carrying Corral Hollow Road over the Delta-Mendota Canal. View looking east.

***Recorded by:** Pamela Daly, M.S.H.P. ***Date:** October 10, 2018 ☒Continuation ☒Update

Cast-concrete drainage openings with associated safety railings on the east and west sides of Corral Hollow Road, immediately south of the DMC channel. View looking west.

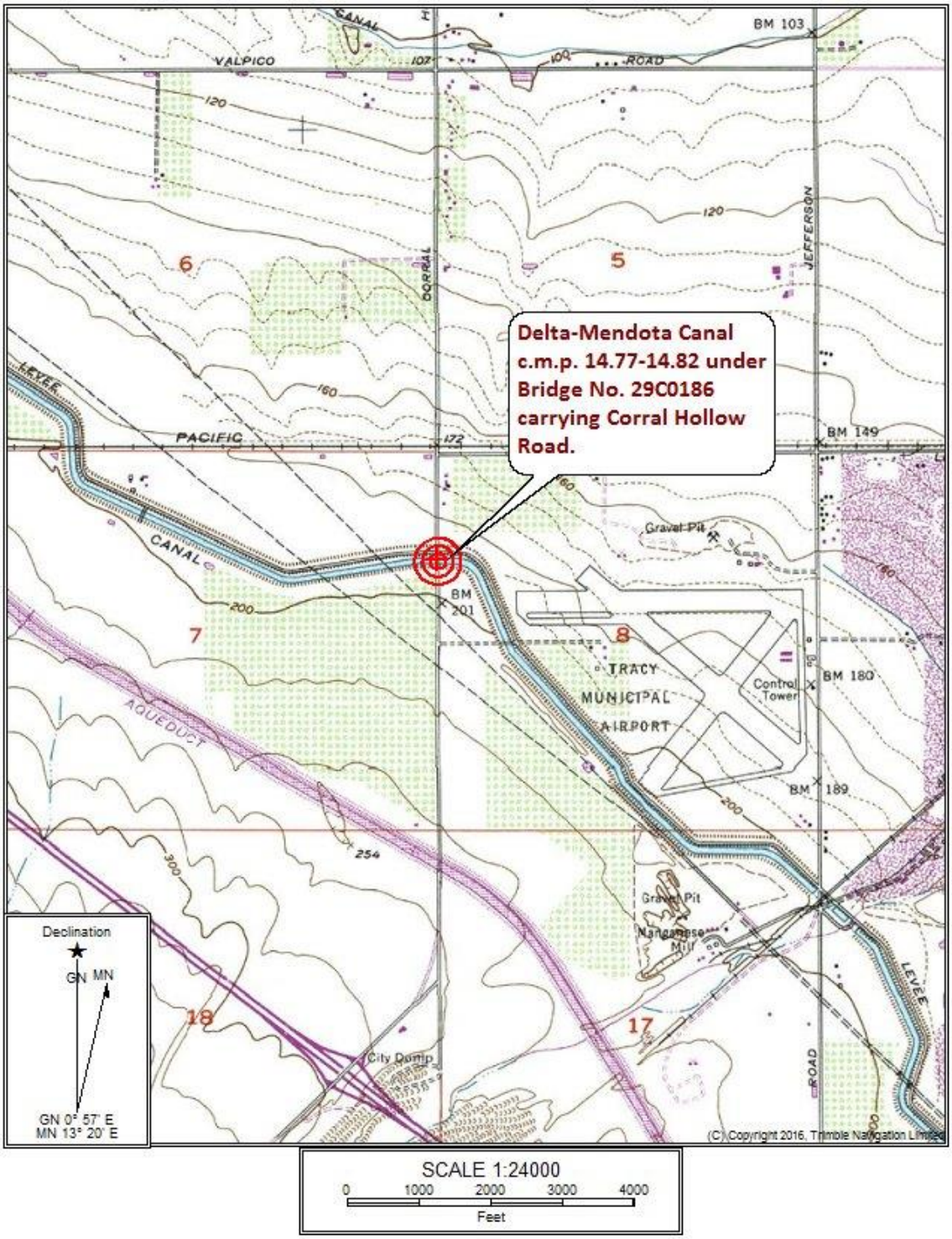
Water gauges on north side of DMC, east side of Corral Hollow Road. View looking northwest.

LOCATION MAP

***Resource Name or #:** Delta-Mendota Canal segment, cmp 14.77-14.82

***Map Name:** Tracy

***Scale:** 1:24,000 ***Date of Map:** 1981



*Required information

State of California — The Resources Agency	Primary #	P 39-000090 update
DEPARTMENT OF PARKS AND RECREATION	HRI #	
PRIMARY RECORD	Trinomial	
	NRHP Status Code:	3S
	Other Listings	
	Review Code ____ Reviewer ____ Date ____	

***Resource Name or #:** California Aqueduct segment, canal mile point (cmp) 17.05 to 17.15

P1. Other Identifier: California Aqueduct segment, cmp 17.05-17.15 under bridge carrying Corral Hollow Road.

***P2. Location:** ____ **Not for Publication** X **Unrestricted**

***a. County** San Joaquin **County/Route/Postmile:** Corral Hollow Road

***b. USGS 7.5' Quad:** Tracy **Date** 1981 **T** 3S **;R** 5E **of** bordr **of Sec** 17 + 18 ; M.D. **B.M.**

c. Address Corral Hollow Road **City** Tracy **Zip** ____

d. UTM:: NAD 83 **Zone** 10 , 636433 **mE/** 4171462 **mN**

***e. Other Locational Data** (APN #, etc.)

***P3a. Description:** (Briefly describe resource below)

The segment of the California Aqueduct that is situated within the Corral Hollow Road Widening Project has a top width of approximately 122 feet wide between canal mile point (cmp) 17.05 and 17.15. The canal channel is a trapezoidal, concrete-lined conduit, with a bottom width of approximately 40 feet, a depth of 32.5 feet, and a side slope ratio of 1.5:1.

***P3b. Resource Attibutes:** AH6 (water conveyance structure: lined canal), HP19 (bridge).

****P4. Resources Present:** ____ Building X Structure ____ Object ____ Site ____ District ____ Elements of District ____ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: Bridge No. 29C0185 carrying Corral Hollow Road over segment of California Aqueduct. View looking south.

***P6. Date Constructed/Age:** Section built circa 1967

X Historic ____ Prehistoric ____ Both

***P7. Owner and Address:** California Department of Water Resources, 1416 9th Street, Sacramento, CA 95814

***P8. Recorded by:** Pamela Daly, M.S.H.P., Daly & Associates, 2242 El Capitan Drive, Riverside, CA 92506

***P9. Date Recorded:** October 10, 2018

***P10. Type of Survey:** X Intensive ____ Reconnaissance ____ Other

Describe: CEQA

***P11. Report Citation:** Peak, Melinda A. *Determination of Eligibility and Effect for the Corral Hollow Road Widening Project, City of Tracy, San Joaquin County, California*. Peak & Associates, November 2018.

***Attachments:** ____ NONE X Map Sheet X Continuation Sheet ____ Building, Structure and Object Record ____ Linear Resource Record ____ Archaeological Record ____ District Record ____ Milling Station Record ____ Rock Art Record ____ Artifact Record ____ Photograph Record ____ Other (List): ____

***Recorded by:** Pamela Daly, M.S.H.P. ***Date:** October 10, 2018 ☒Continuation ☒Update

B. 10. Statement of Significance

The California Aqueduct is 444 miles long and runs between the Sacramento-San Joaquin Delta in the North San Joaquin Division, to Lake Perris in Riverside County. The resource includes the canal service roads, bridges constructed to new roads that intersected with the canals path, siphons, culverts, canal drains, pump stations, and reservoirs.

The entire California Aqueduct, from prior studies, has been determined to be eligible for listing in the National Register of Historic Places as appearing "eligible for NR as an individual property through survey evaluation" (Ambacher, Patricia. *Historical Resources Evaluation Report: 17 Bridges Seismic Retrofit Project*. AECOM 2012)

The California Aqueduct system has been found eligible for listing in the National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) under Criterion A/1 for its representation of a comprehensively planned and publicly sanctioned water conveyance public works project to supply the needs of California agricultural, commercial, and residential needs.

The California Aqueduct system has also been found eligible for listing in the NRHP and CRHR under Criterion C/3 as a complex engineering project of massive proportions, and for its ability to rise, and fall, over rough and hostile terrain, yet maintain a steady delivery of water to southern regions of California.

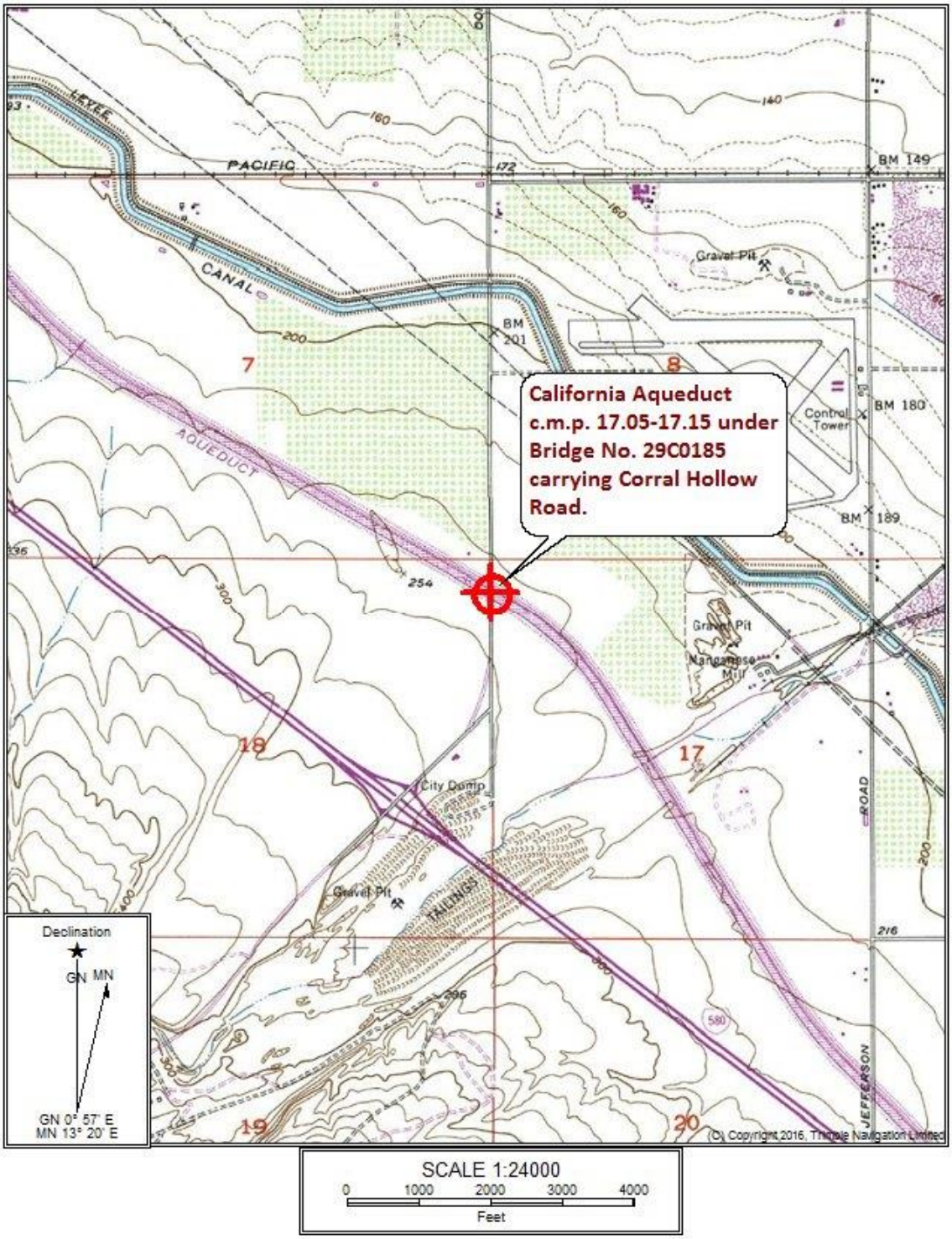
Bridge Number 29C0185 carries Corral Hollow Road over this segment of the California Aqueduct. The removal of the current bridge and the installation of a new bridge will not have a significant adverse effect to the physical, and engineering, integrity of the bridge. The City of Tracy (the bridges owner) will be required to coordinate with the Department of Water Resources (DWR) to engage in the replacement of the Corral Hollow Road bridge. The DWR will ensure that the segment of the canal, in the project area that may be disturbed during bridge work, is repaired to its original appearance and engineering specifications after the new road bridge is installed.

Bridge No. 29C0185 carrying Corral Hollow Road over the California Aqueduct. View looking west.

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **LOCATION MAP**	Primary #: P 39-000090 Update HRI# Trinomial

Page 3 **of** 3 ***Resource Name or #:** California Aqueduct segment, cmp 17.05-17.15

***Map Name:** Tracy ***Scale:** 1:24,000 ***Date of Map:** 1981



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code: 6Z
Other Listings
Review Code Reviewer Date

***Resource Name or #:** Bridge No. 29C0185 .:
P1. Other Identifier: Bridge carrying Corral Hollow Road over the California Aqueduct segment, cmp 17.05-17.15
***P2. Location:** ____ **Not for Publication** X **Unrestricted**
***a. County** San Joaquin **County/Route/Postmile:** Corral Hollow Road
***b. USGS 7.5' Quad:** Tracy **Date** 1981 **T** 3S **;R** 5E **of** bordr **of Sec** 17 + 18 ; M.D. **B.M.**
c. Address Corral Hollow Road **City** Tracy **Zip**
d. UTM:: NAD 83 **Zone** 10 , 636433 **mE/** 4171462 **mN**
***e. Other Locational Data** (APN #, etc.)
***P3a. Description:** (Briefly describe resource below)

The bridge is a steel I-beam frame with a concrete deck, which spans over the California Aqueduct and is supported over the canal by a cast-concrete pier set in the floor of the canal structure. The bridge is 171.43' long and carries two lanes of traffic, and narrow safety lane, for a total approximate width of 32'. A narrow (approximately 18" wide, 10" high) cast-concrete curb lines the outside edge of the bridge deck. A guardrail comprised of steel W rails is attached to steel posts, which are attached to the outside of the concrete curb. Cast-concrete bridge abutments carry the ends of the road deck above the top of both sides of the canal.

***P3b. Resource Attibutes:** HP19 (bridge), AH6 (water conveyance structure: lined canal)
****P4. Resources Present:** ____ Building X Structure ____ Object ____ Site ____ District ____ Elements of District ____ Other

P5a. Photograph or Drawing

P5b. Description of Photo: Bridge No. 29C0185 carrying Corral Hollow Road over segment of Cal Aqudct. View looking south.

***P6. Date Constructed/Age:** 1967 per Caltrans.
X Historic ____ Prehistoric ____ Both

***P7. Owner and Address:** City of Tracy

***P8. Recorded by:**
Pamela Daly, M.S.H.P.
Daly & Associates
2242 El Capitan Drive
Riverside, CA 92506

***P9. Date Recorded:** October 10, 2018

***P10. Type of Survey:** X Intensive ____ Reconnaissance ____ Other
Describe: CEQA

***P11. Report Citation:** Peak, Melinda A. *Determination of Eligibility and Effect for the Corral Hollow Road Widening Project, City of Tracy, San Joaquin County, California*. Peak & Associates, November 2018.

***Attachments:** ____ NONE ____ Map Sheet X Continuation Sheet X Building, Structure and Object Record
____ Linear Resource Record ____ Archaeological Record ____ District Record ____ Milling Station Record ____ Rock Art Record
____ Artifact Record ____ Photograph Record ____ Other (List):

*Required Information.

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code: 6Z

***Resource Name or # : Bridge # 29C0185**

B1. Historic Name:
B2. Common Name: Corral Hollow Road Bridge over the California Aqueduct
B3. Original Use: 2-lane road bridge B4. Present Use: 2-lane road bridge

***B5. Architectural Style:** Steel frame, concrete deck bridge.

***B6. Construction History:** (Construction date, alterations, and date of alterations)
Constructed in 1967 per Caltrans Structure Maintenance & Investigation (SM&I) list for Local Agency bridges, District 10, San Joaquin County, City of Tracy.

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**

***B8. Related Features: none.**

B9a. Architect: Unknown b. Builder: Unknown

***B10. Significance:** None **Theme:** 1960s-era roadway bridges **Area:** San Joaquin County
Period of Significance: None **Property Type:** Steel-frame bridge **Applicable Criteria:** None.

Bridge No. 29C0185 was constructed in 1967 to carry Corral Hollow Road over the newly constructed section of the California Aqueduct where it intersected with the pre-existing road and is under the jurisdiction of the City of Tracy. Bridge No. 29C0185 is just one of the many steel-frame, concrete deck bridges built to carry vehicles over the canal's path. Steel I-beam frame bridges with concrete decks were a very popular type of bridge for vehicular traffic, especially after the end of World War II when steel mills could produce beams for infrastructure projects instead of for military uses. Steel beam type bridges have been still installed all over the world since the 1950s.

Bridge No. 29C0185 has not been found to be associated with any important themes regarding the type or engineering of road bridges built in Tracy after World War II and does not appear eligible for listing in the National Register of Historic Places (NRHP) under Criterion A, or in the California Register of Historical Resources (CRHR) under Criterion 1.

Bridge No. 29C0185 has not been found to be directly associated with any persons important to the history of this region of San Joaquin Valley, or with the engineering of road bridges in California or the United States. Bridge No. 29C0185 does not appear eligible for listing in the National Register of Historic Places (NRHP) under Criterion B, or in the California Register of Historical Resources (CRHR) under Criterion 2.

Bridge No. 29C0185 is a steel frame type of bridge that was widely installed in California and the United States after the end of World War due to wide availability of good quality steel beams. The subject bridge over the California Aqueduct does not present any evidence of innovative or advancement in the engineering design of steel I-beam, concrete-deck, vehicular bridges. Bridge No. 29C0185 does not appear eligible for listing in the National Register of Historic Places (NRHP) under Criterion C, or in the California Register of Historical Resources (CRHR) under Criterion 3.

Bridge No. 29C0185 does not appear to have the potential to reveal any important information into the history of the design, construction, or maintenance of steel I-beam bridges in the United States or California. Bridge No. 29C0185 does not appear eligible for listing in the National Register of Historic Places (NRHP) under Criterion D, or in the California Register of Historical Resources (CRHR) under Criterion 4.

B11. Additional Resource Attributes: None.

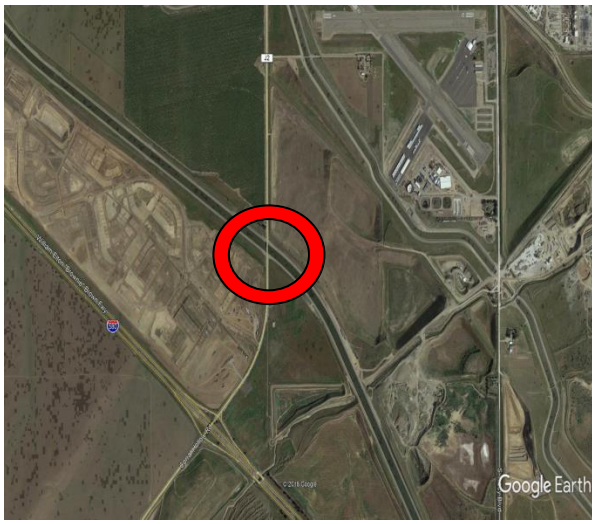
***B12. References:**

Federal Highway Administration. *Steel Bridge Design Handbook: Bridge Deck Design, Volume 17*. November 2012.
Federal Highway Administration. *Steel Bridge Design Handbook: Steel Bridge Design Handbook, Volume 22*. November 2012.

B13. Remarks: Bridge No. 29C0185 was listed as a Category 5 "not eligible for NRHP" in the list of Local Agency Bridges.

***B14. Evaluator:** Pamela Daly, M.S.H.P.

***Date of Evaluation:** October 10, 2018



Intersection of Corral Hollow Road and California Aqueduct.

(This space reserved for official comments.)

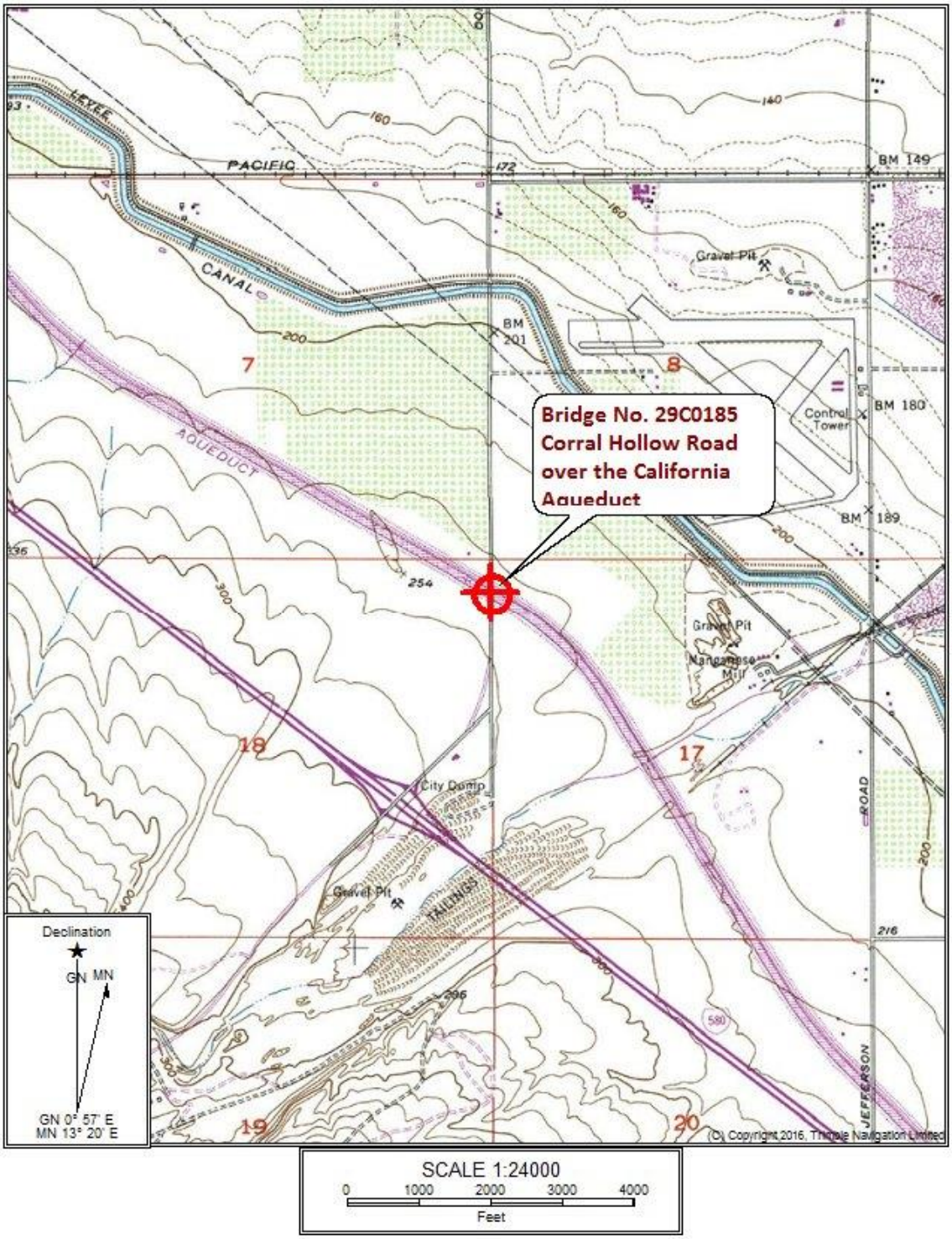
***Recorded by:** Pamela Daly, M.S.H.P. ***Date:** October 10, 2018

Bridge No. 29C0185 over the California Aqueduct. View of the east side of the bridge.

Concrete deck (roadway) of Bridge No. 29C0185. View looking south.

☒Continuation ☐ Update

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **LOCATION MAP**	Primary # HRI# Trinomial

Page 4 **of** 4 ***Resource Name or #:** Bridge No. 29C0185

***Map Name:** Tracy ***Scale:** 1:24,000 ***Date of Map:** 1981