APPENDIX A

NOTICE OF PREPARATION AND SCOPING COMMENTS

NOTICE OF PREPARATION

City of Healdsburg

Notice of Preparation of Supplemental Environmental Impact Report (SEIR)

To Governor's Office of Planning and Research
Responsible and trustee agencies
Adjacent property owners
Interested parties

From City of Healdsburg Planning & Building Department

Date August 1, 2018

Project Name: City of Healdsburg Wastewater Treatment Upgrade Project Supplemental Environmental Impact Report

Project Location: Unincorporated Sonoma County, south of the City limits (see attached Exhibit 1).

Applicant Name: City of Healdsburg, Municipal Utility Department

Project Description: The City of Healdsburg (City) will serve as the lead agency under CEQA for the preparation of a SEIR for the proposed Wastewater Reuse Project. The SEIR supplements the *City of Healdsburg Wastewater Treatment Upgrade Project Environmental Impact Report* (2005 EIR), which assessed the potential environmental impacts of implementing a water recycling program as part of a larger wastewater treatment plant (WWTP) upgrade. The 2005 EIR was certified on June 13, 2005 (State Clearinghouse Number 2002072083).

In 2009, a subsequent Initial Study/Mitigation Negative Declaration (IS/MND) to the 2005 EIR was prepared. The IS/MND addressed the seasonal irrigation of several additional properties and a revision to the pipeline alignment connecting the additional properties and the WWTP, which were not previously analyzed in the 2005 EIR. In addition, two subsequent Addenda to the 2005 EIR were prepared in April 2014 and March 2016. In the 2014 Addendum, the City considered delivery of recycled water for seasonal irrigation on up to 25,000 additional acres of agricultural land during the 2014 and 2015 irrigation seasons and the use of trucks (in addition to pipelines) to deliver some of the recycled water. In the 2016 Addendum, the City considered the use of recycled water for irrigation on 600 additional acres of agricultural land during the 2016-2020 irrigation seasons via a new recycled water pipeline and the continued hauling of recycled water for irrigation of up to 25,000 acres of agricultural land.

CEQA Guidelines Section 15163 states that a lead agency may choose to prepare a supplement to an EIR rather than a subsequent EIR if proposed changes meet the conditions described in CEQA Guidelines Section 15162 and if only minor additions and changes would be necessary to make the previous EIR adequate.

The City must reduce the volume of treated wastewater discharged to surface waters from its municipal WWTP. At present, the WWTP discharges a portion of its annual effluent to the Russian River. The North Coast Regional Water Quality Control Board has ordered the City to eliminate surface water discharges to protect water quality and associated beneficial uses.

In 2005, the City implemented a water recycling program that made a portion of the treated wastewater available to nearby water users. Uses of the treated wastewater are limited to vineyard irrigation, commercial landscaping, and landscape irrigation. Treated wastewater is

conveyed from the City's WWTP to several places of use via two pipelines that extend north and south of the WWTP and via trucks, which haul water to additional users. In the 2005 EIR, the City considered recycled water deliveries to irrigate 1,356 acres.

The City is now proposing to increase the volume of water in the water recycling program. To increase the volume of water and to eliminate discharges to surface waters, the City proposes to:

- Install recycled water conveyance pipelines;
- Add approximately 2,100 acres of land that could receive recycled water through new pipelines (2018 Proposed Area) to the program;
- Expand the list of water uses beyond those currently allowed in the water recycling program to potentially include:
  - orchards (apple, peach, plum/prune);
  - cannabis;
  - irrigated pasture;
  - direct livestock watering (not including dairy cows);
  - frost protection; and
  - other agricultural uses occurring in the vicinity of the WWTP.
- Add 2,630 acres of land that potentially could receive recycled water at a future date (2018 Program Expansion Area).

The locations of the proposed conveyance pipeline alignments, 2018 Proposed Area, and 2018 Program Expansion Areas are shown on attached Exhibit 2.

Probable Environmental Impacts: Because the City has determined that a SEIR will be prepared for the proposed project, an Initial Study has not been prepared (CEQA Guidelines Section 15063[a]). The 2005 EIR comprehensively addressed impacts associated with implementation of a water recycling program. The SEIR would provide additional information to supplement the analysis presented in the 2005 EIR. When combined with the 2005 EIR, the SEIR would address construction of new or modification of existing conveyance pipelines and new lands and new uses that may receive recycled water supplies. Changes in CEQA that have occurred since the 2005 EIR was certified will also be addressed in the SEIR. The City anticipates that the SEIR would focus on additional information on the following environmental resources: Air Quality, Cultural Resources, Geology and Soils, Energy, Greenhouse Gas Emissions, Land Use and Agriculture, Fisheries Resources, Terrestrial Biological Resources, Noise, Transportation, Tribal Cultural Resources, and Water Quality.

The City does not anticipate new or more extensive impacts associated with these topics from those previously identified in the 2005 EIR. However, additional information would be provided to ensure the analysis and reporting in the SEIR is current and fully addresses the proposed changes to the City's water recycling program.

The City of Healdsburg will be the Lead Agency and will prepare a SEIR for the project identified above. Responsible and trustee agencies may need to use the SEIR when considering a permit or other approval for the project.

The City would like to know your views as to the significant environmental issues and possible mitigation measures that should be included in the SEIR.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but not later than 30 days after receipt of this notice. **The public review period is from August 1, 2018, to August 31, 2018.**

Please send your response to the following person.

Patrick Fuss, Water/Wastewater Principal Engineer
City of Healdsburg
401 Grove Street
Healdsburg, CA 95448

The City will hold a public scoping meeting to obtain comments regarding the content and scope of the SEIR. Public agencies, organizations, and interested parties are encouraged to attend and participate at this meeting.

This scoping meeting will take place on August 21, 2018 at 6:00 PM at the following location:

City Council Chambers
Healdsburg City Hall
401 Grove Street
Healdsburg, CA 95448

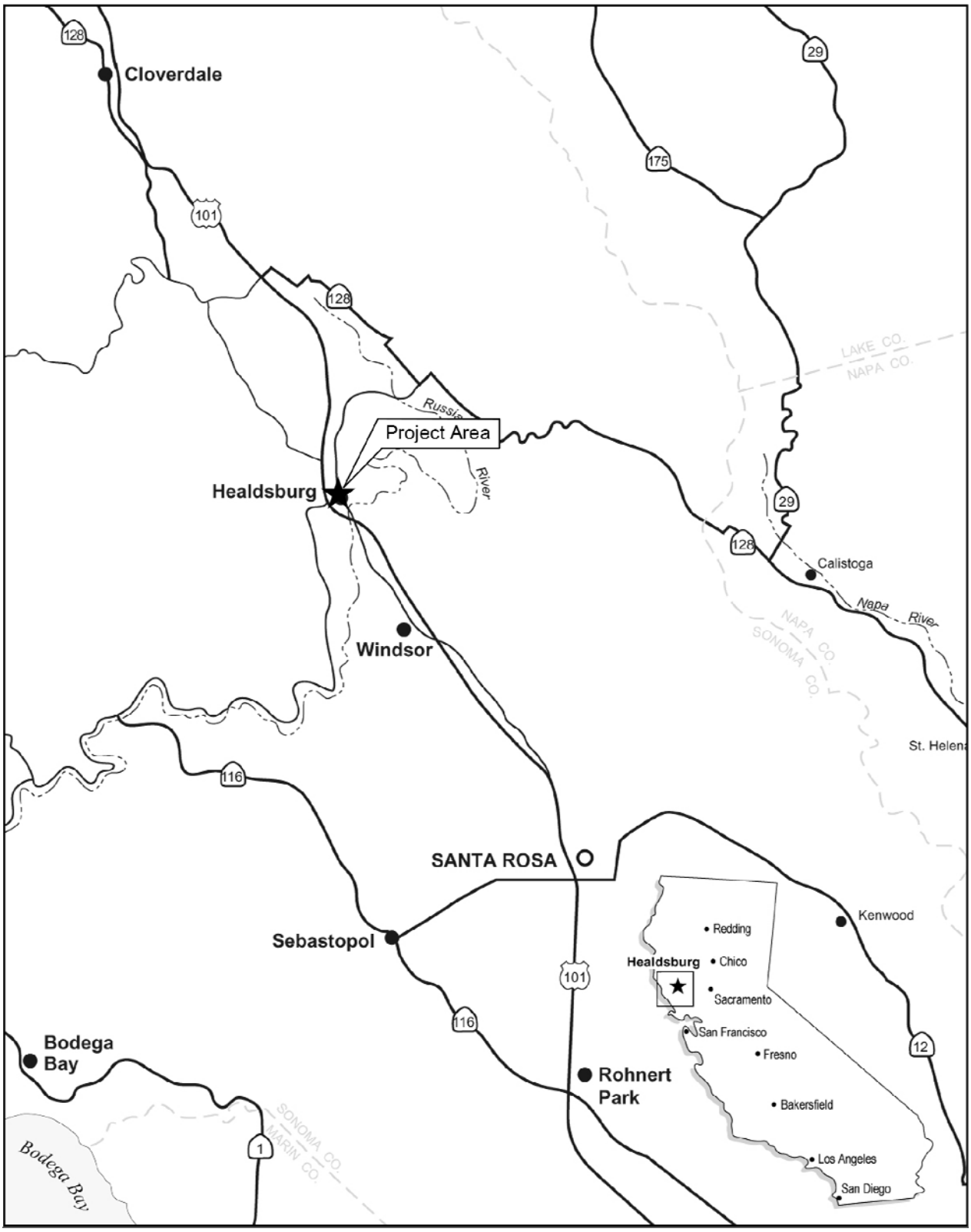
Contact Patrick Fuss at 707.217.3218 or pfuss@ci.healdsburg.ca.us if you need further information regarding this notice.

Maya DeRosa, Director
Planning & Building Department

Attachments:

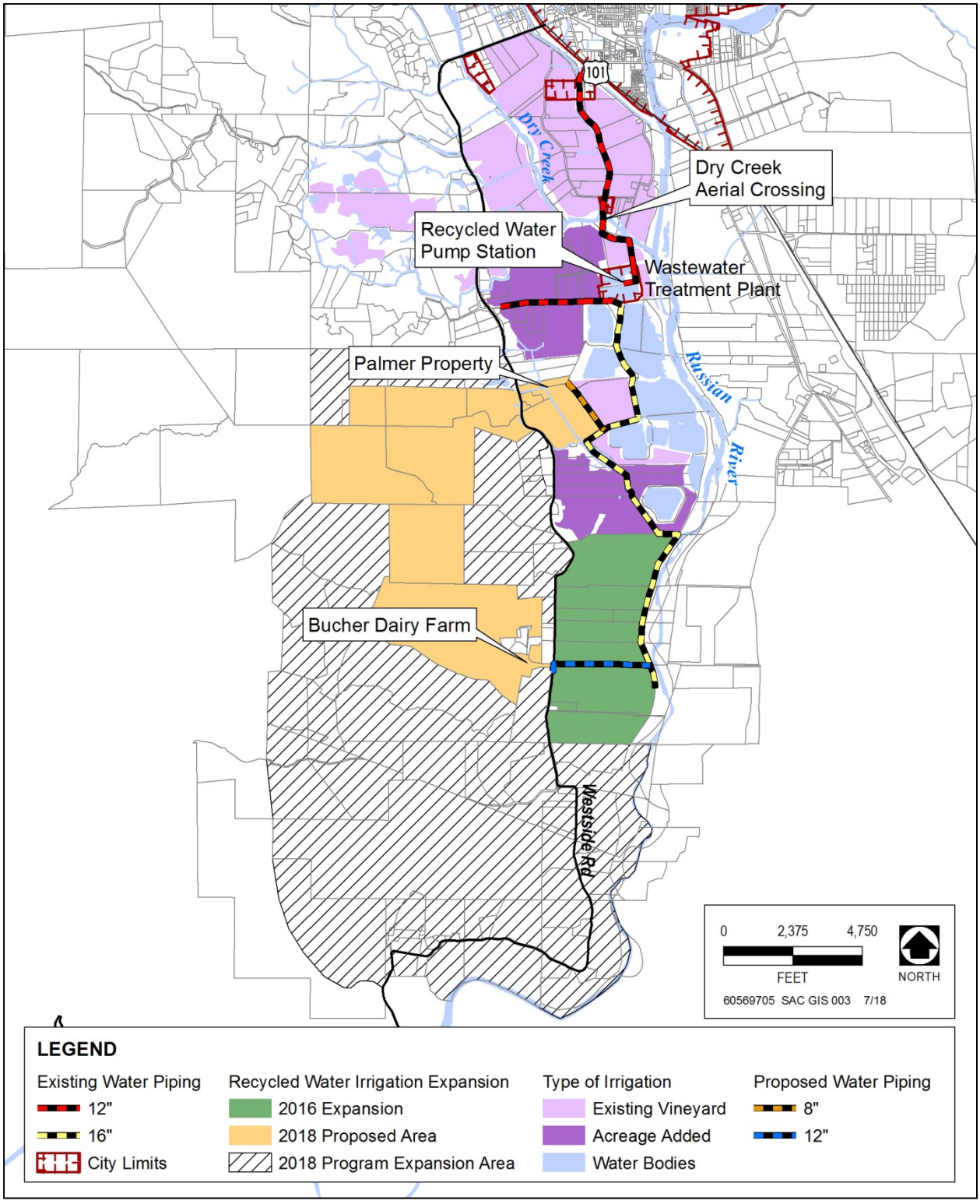
Exhibit 1. Regional Location

Exhibit 2. Recycled Water Program Expansion Map



Source: EDAW 2004

Exhibit 1. Regional Setting



Source: City of Healdsburg 2018

Exhibit 2. Recycled Water Program Proposed Expansion Map

City of Healdsburg

Notice of Preparation of Subsequent Environmental Impact Report (SEIR)

To	Governor's Office of Planning and Research Responsible and trustee agencies Adjacent property owners Interested parties
From	City of Healdsburg Planning & Building Department
Date	February 5, 2019
Project Name:	City of Healdsburg Wastewater Treatment Upgrade Project Subsequent Environmental Impact Report

Project Location: Unincorporated Sonoma County, south of the City limits (see attached Exhibit 1).

Applicant Name: City of Healdsburg, Municipal Utility Department

Background: On August 1st, 2018 a Notice of Preparation (NOP) was circulated for the project, which indicated that a Supplemental Environmental Impact Report (EIR) would be prepared to analyze potential impacts from proposed facilities and operations. Based in part on comments received during the NOP public review period, the City now intends to prepare a Subsequent EIR, in accordance with the California Environmental Quality Act (CEQA) Guidelines Section 15162. This NOP is being recirculated to update interested parties of the type of CEQA document that will be prepared, and to provide refinements to the proposed project description.

Project Description: The City of Healdsburg (City) will serve as the lead agency under CEQA for the preparation of a Subsequent EIR for the proposed Wastewater Reuse Project. The SEIR will expand upon the *City of Healdsburg Wastewater Treatment Upgrade Project Environmental Impact Report* (2005 EIR), which assessed the potential environmental impacts of implementing a water recycling program as part of a larger wastewater treatment plant upgrade that constructed the City's Water Reclamation Facility (WRF) on Foreman Lane. The 2005 EIR was certified on June 13, 2005 (State Clearinghouse Number 2002072083).

The City must seasonally curtail wastewater discharged to surface waters from its WRF. At present, the WWTP discharges a portion of its annual effluent to the Russian River. The North Coast Regional Water Quality Control Board has ordered the City to eliminate surface water discharges during the period of May 15 through September 30 of each year to protect water quality and associated beneficial uses.

In 2005, the City implemented a water recycling program that made a portion of the treated wastewater available to nearby water users. Uses of the treated wastewater as recycled water are limited to vineyard irrigation, commercial landscaping, and landscape irrigation. Recycled water is conveyed from the City's WRF to several places of use via three pipelines that extend north, south, and west of the WRF and via trucks, which haul water to additional users. In the 2005 EIR, the City considered recycled water deliveries to irrigate 1,350 acres.

In 2009, an Initial Study/Mitigation Negative Declaration (IS/MND) was prepared to address the seasonal irrigation of several additional properties in the vicinity of the WRF and a proposed modification of the recycled water pipeline alignments, which were not previously analyzed in

the 2005 EIR. Two Addenda to the 2005 EIR were prepared in April 2014 and March 2016. In the 2014 Addendum, the City considered delivery of recycled water for seasonal irrigation for up to 25,000 additional acres of agricultural land during the 2014 and 2015 irrigation seasons. The 2014 Addendum also allowed trucks (in addition to pipelines) to deliver a portion of the recycled water. The 2016 Addendum addressed the continued irrigation of the 25,000 acres through the year 2020, and the irrigation of 600 acres within this larger area via a new recycled water pipeline.

CEQA Guidelines Section 15162 indicates that a subsequent EIR should be prepared where: substantial changes are proposed in the project which require major revisions of the previous EIR; substantial changes occur with respect to the circumstances under which the project is undertaken requiring major revisions of the previous EIR; or new information of substantial importance, which was not known and could not have been known at the time the previous EIR was certified as complete, shows new or more severe environmental impacts.

The City is currently proposing to increase the volume of water in the water recycling program supplied for beneficial uses. To increase the volume of recycled water and to eliminate seasonal discharges to surface waters during the May 15 to September 30 season, the City proposes to:

- Extend existing recycled water transmission pipelines along two alignments totaling approximately 5,600 linear feet;
- Add approximately 1,160 acres of land that could receive recycled water through the proposed new pipelines (2018 Proposed Area);
- Construct a recycled water distribution system within the 2018 Proposed Area to irrigate approximately 150 acres of pasture lands and 40 acres of vineyards;
- Expand the list of recycled water uses beyond those currently allowed in the program to include:
  - orchards (apple, peach, plum/prune);
  - cannabis;
  - irrigated pasture;
  - direct livestock watering (not including dairy cows);
  - frost protection; and
  - other agricultural uses occurring in the vicinity of the WWTP, consistent with Title 22 of the California Code of Regulations.
- Add 3,540 acres of land that potentially could receive recycled water at a future date (2018 Program Expansion Area).
- Make permanent the temporary program for the application of recycled water via truck delivery on approximately 25,000 acres of lands, which is set to expire at the end of 2020.

The regional location of the project is shown in Exhibit 1. The locations of the proposed conveyance pipeline alignments, 2018 Proposed Area, and 2018 Program Expansion Areas are shown in Exhibit 2. The area temporarily approved for application of recycled water is shown in Exhibit 3.

Probable Environmental Impacts: Because the City has determined that a Subsequent EIR will be prepared for the proposed project, an Initial Study has not been prepared (CEQA Guidelines Section 15063[a]). The 2005 EIR comprehensively addressed impacts associated with implementation of a water recycling program. The Subsequent EIR would provide

additional information to expand the analysis presented in the 2005 EIR, and specifically consider whether the proposed project would result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact. Changes in CEQA that have occurred since the 2005 EIR was certified will also be addressed in the Subsequent EIR. Additional information would be provided to ensure the analysis and conclusions in the Subsequent EIR are current and fully analyze the proposed changes to the City's water recycling program. Applicable mitigation measures from the 2005 EIR will be identified and, if necessary, additional mitigation measures will be formulated to reduce or avoid any new significant impacts.

The City of Healdsburg will be the Lead Agency and will prepare a Subsequent EIR for the project identified above. Responsible and trustee agencies may need to use the Subsequent EIR when considering a permit or other approval for the project.

The City would like to know your views as to the significant environmental issues and possible mitigation measures that should be included in the Subsequent EIR.

In accordance with the time limits mandated by State law, your response must be sent at the earliest possible date, but not later than 30 days after receipt of this notice. **The public review period of this NOP is from February 6, 2019, to March 8, 2019.**

Please send your response to Patrick Fuss via email at pfuss@ci.healdsburg.ca.us, or regular mail:

Patrick Fuss, Water/Wastewater Principal Engineer
City of Healdsburg
401 Grove Street
Healdsburg, CA 95448

An NOP was previously circulated in August 2018 and a public scoping meeting for the proposed project was conducted by the City on August 21, 2018 to obtain comments regarding the content and scope of the environmental review. All comments received in response to prior scoping will be carried forward and considered during analysis for the Subsequent EIR. No additional scoping meeting will be conducted for this recirculated NOP.

Contact Patrick Fuss at 707.217.3218 or pfuss@ci.healdsburg.ca.us if you need further information regarding this notice.

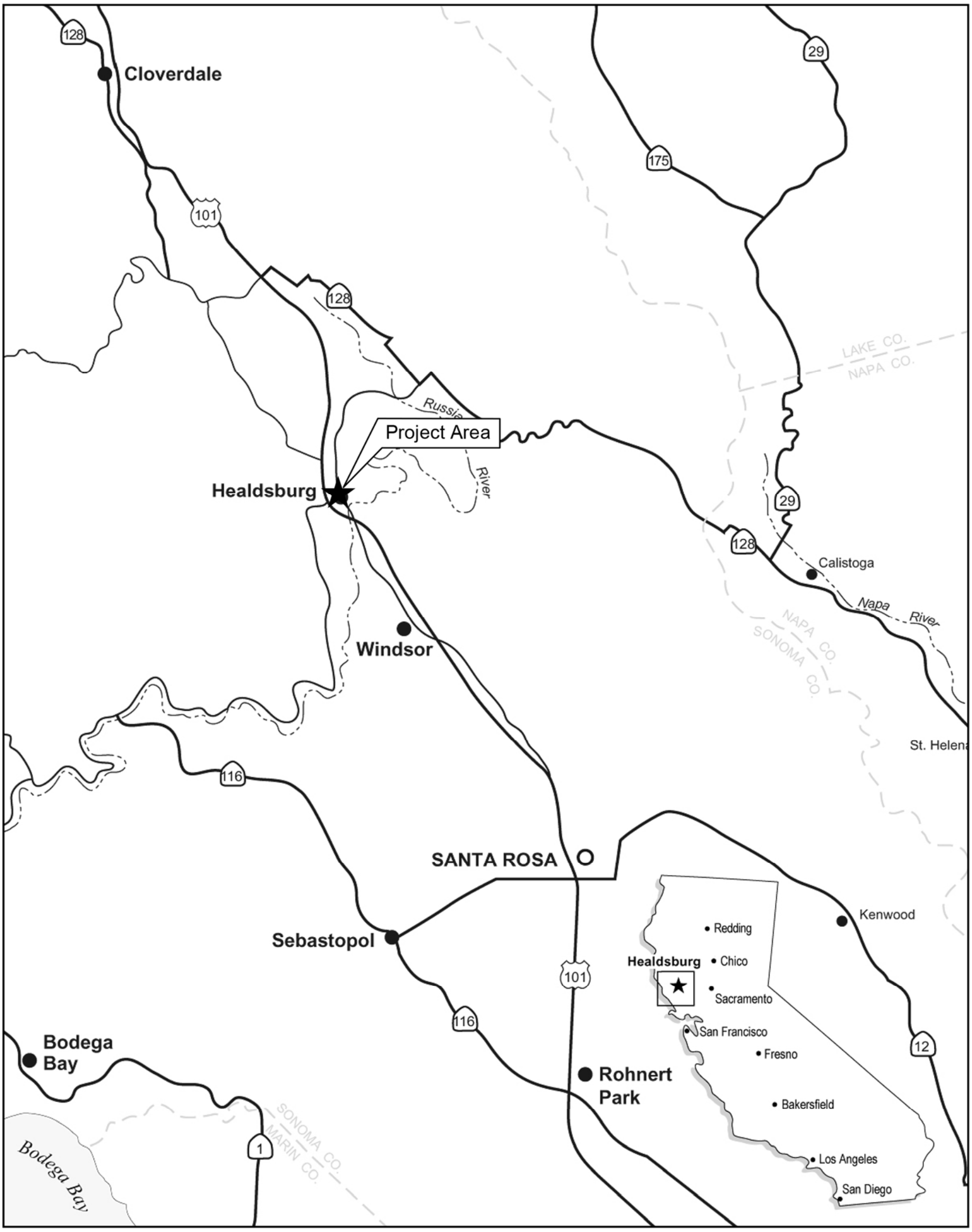
Maya DeRosa, Director
Planning & Building Department

Attachments:

Exhibit 1. Regional Location

Exhibit 2. Recycled Water Program Expansion Map

Exhibit 3: Truck Hauling Program Area



Source: EDAW 2004

Exhibit 1. Regional Setting

CITY OF HEALDSBURG

Proposed Recycled Water Irrigation Expansion

Dry Creek

US HIGHWAY 101

Dry Creek Aerial Crossing

Recycled Water Pump Station

Foreman Lane

Westside Road

Proposed 8"

Russian River

Proposed 12"

Westside Road

Westside Road

Legend

Recycled Water Piping

- 12" Proposed
- 12" Existing
- 16" Existing
- 8" Proposed

Recycled Water Irrigation Areas

- 2016 Approved Irrigation
- Program Expansion Area
- Proposed Irrigation Area
- 2005 Approved Irrigation Area

- Wastewater Treatment Plant
- Water Bodies
- City Limits

NORTH

0 0.25 0.5 Miles

Map Date 1/30/2019

Document Path: M:\GIS Projects\Public Works Utilities\Recycled_Water\2019_RecycledWaterExhibits\RW_Expansion_201901_Exhibit_2.mxd

Rockpile Area

1506 Acres

Dry Creek Valley

32850 Acres

Alexander Valley

35398 Acres

Healdsburg

Russian River Valley

33194 Acres

Piped Reclaimed Service Area

Urban Service Area

Hauling Area

Total Hauling Area

Rockpile Area

Russian River Valley

Dry Creek Valley

Alexander Valley

1 0.5 0 Miles

1 in = 1 miles

NORTH

Document Path: M:\GIS Projects\Public Works Utilities\Recycled_Water\2019_RecycledWaterExhibits\RW_Expansion_201901_Exhibit_3.mxd

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NP
OpenStreetMap contributors, and the GIS User Community.

Map Date: 2/4/2019

SCOPING MEETING

City of Healdsburg Wastewater Treatment Upgrade Project

Supplemental Environmental Impact Report

Scoping Meeting

August 21, 2018

Welcome and Introductions

- City of Healdsburg
  - Patrick Fuss, P.E, Water/Wastewater Engineer
- AECOM (Consultant Services)
  - Matthew Gerken, Project Director
  - Petra Unger, Technical Director
  - Natalie Smith, Project Manager

Meeting Purpose

- To gather input on the issue areas that will be included in the Supplemental Environmental Impact Report (SEIR)

- We want your input on the following topics:
  - Environmental issues to be analyzed
  - Possible alternatives or mitigation measures to consider
  - Questions or concerns related to the expansion of the Seasonal Irrigation Program and associated SEIR

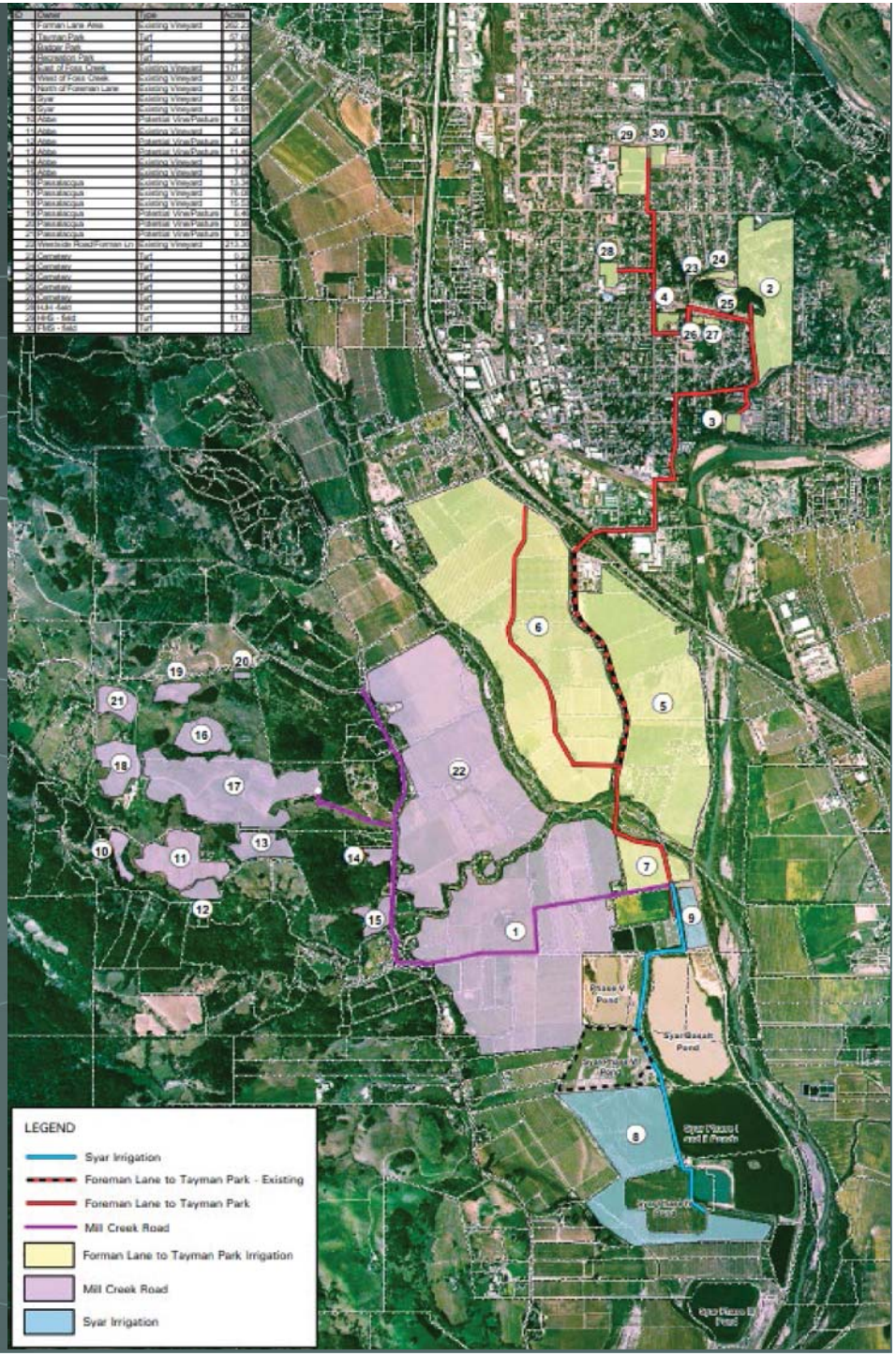
- Input will be used to develop the “scope” of the SEIR

Project Background

- Original EIR for the City's Wastewater Treatment Plant Upgrade Project was prepared in 2005
  - Upgrade the WWTP treatment processes to produce disinfected tertiary effluent to meet regulatory requirements for disposal/discharge of effluent
  - Options evaluated in the 2005 EIR
    - WWTP upgrade treatment technologies
    - Effluent disposal/discharge locations
    - Beneficial irrigation reuse

Approved Project (2005)

- Membrane bioreactor (MBR) with biological nutrient removal (BNR) treatment
- Effluent disposal to the Basalt Pond (Oct 1- May 14)
- Agricultural and urban seasonal reuse (May 15 to Sept 30 discharge prohibition)
  - Voluntary/willing users
  - Limited to vineyard and landscape irrigation
  - Irrigation of approximately 1,356 acres of agricultural lands
  - Reuse all of the flow during the discharge prohibition period



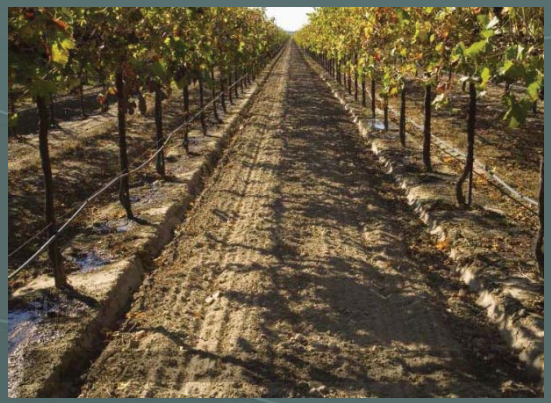
Seasonal Irrigation Reuse Program Expansion

- In 2009 – 214 acres added for seasonal agricultural irrigation
- In 2014 – Hauling of recycled water to irrigate an additional 25,000 acres of agricultural land (2014-2015 season)
- In 2016 – 600 acres added for seasonal agricultural irrigation and continued hauling of recycled water (2016-2020 seasons)

Need for Project Modifications

- The City must curtail discharge to the Basalt Pond during the discharge prohibition period in order to comply with current regulatory requirements and cease and desist order issued by the North Coast Regional Water Quality Control Board

- The City is proposing to increase the volume of tertiary treated wastewater utilized in the Seasonal Irrigation Reuse Program to accomplish compliance

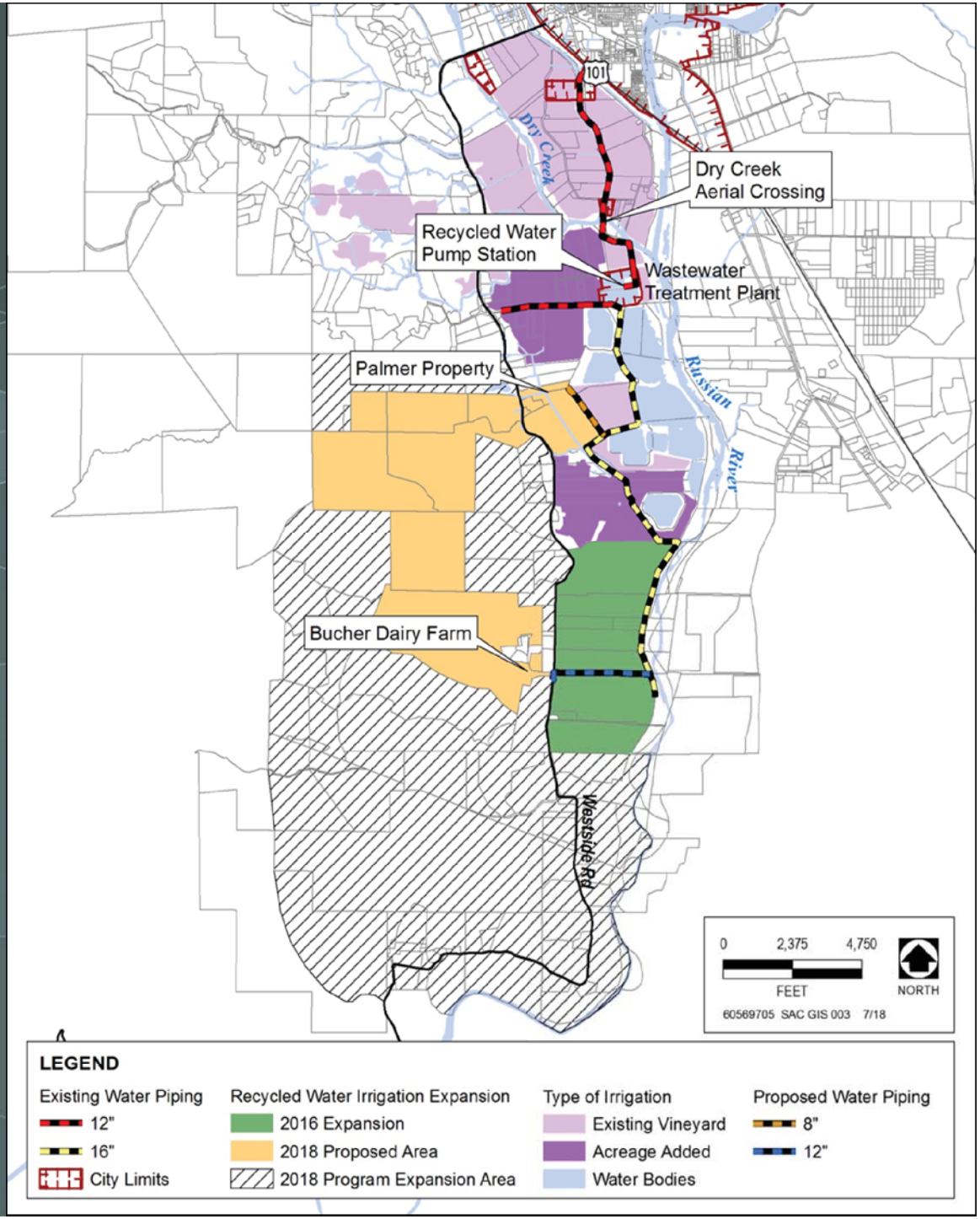


Description of Proposed Modifications

- Expand the list of water uses beyond those currently approved for the entire service area including:
  - orchards (apple, peach, plum/prune);
  - cannabis;
  - irrigated pasture;
  - direct livestock watering (not including dairy cows);
  - frost protection; and
  - other agricultural uses occurring in the vicinity of the WWTP.
- Add new pipelines to serve agricultural land within the existing agricultural irrigation program service area (2018 Proposed Area).
- Add additional acres of land that potentially could receive recycled water at a future date (2018 Program Expansion Area).

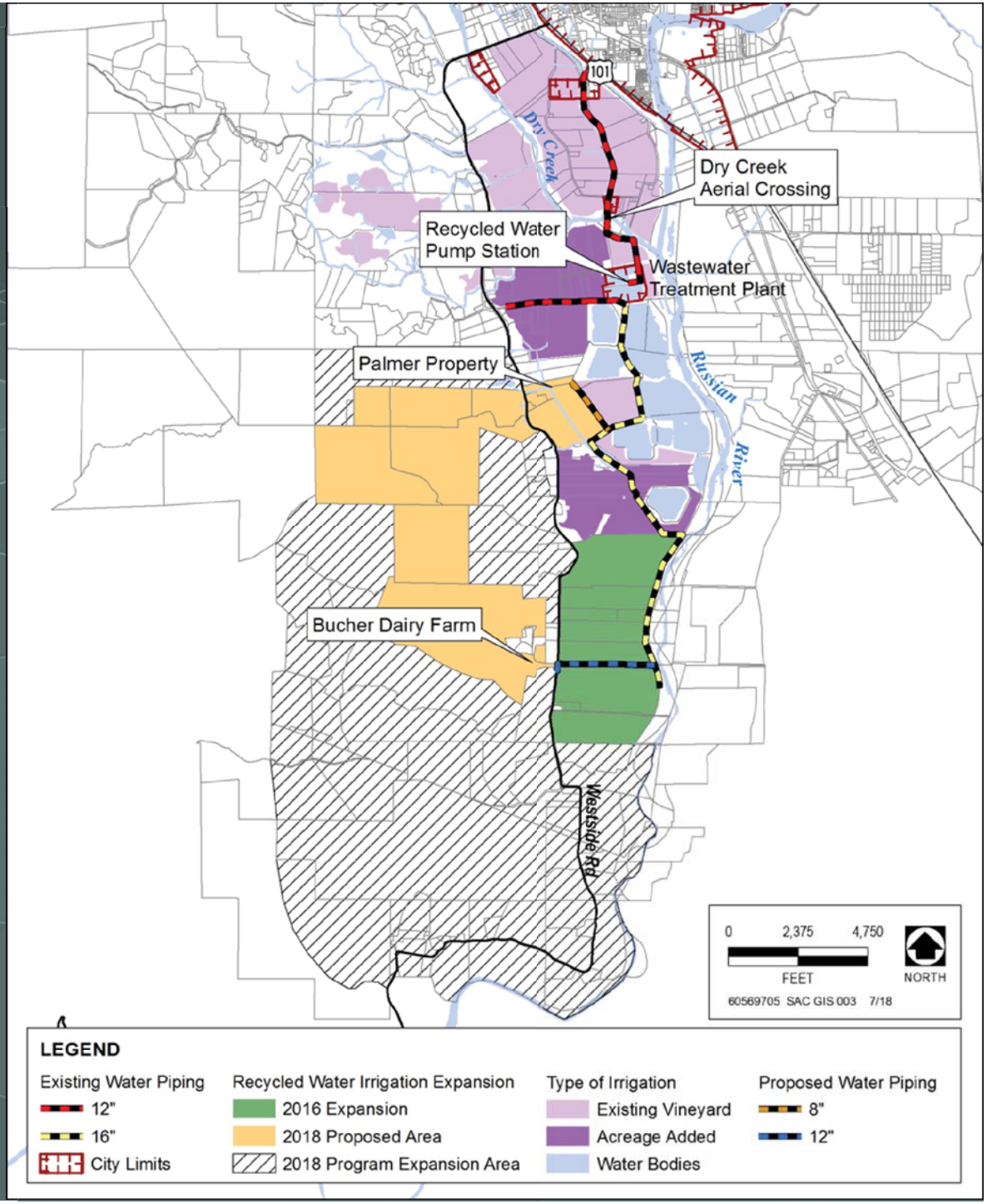
2018 Proposed Area

- Approximately 2,160 feet of 8-inch pipeline to serve Palmer Ranch Property
- Approximately 3,600 feet of 12-inch pipeline to serve Bucher Dairy Farm
- Provide direct service to approximately 2,100 acres of land
- Underground pipelines within existing right-of-ways



2018 Program Expansion Area

- Voluntary/willing users or specific properties are undefined
- Future service to an additional 2,000+ acres



Environmental Analysis in the SEIR

- The SEIR only needs to contain the information necessary to make the previous EIR adequate for the project as modified.
- At this time, the City anticipates that the SEIR would focus on the following areas where additional information may be necessary.
  - Air Quality
  - Cultural Resources
  - Geology and Soils
  - Energy
  - Greenhouse Gas Emissions
  - Land use and Agriculture
  - Fisheries Resources
  - Terrestrial Biological Resources
  - Noise
  - Transportation
  - Tribal Cultural Resources
  - Water Quality

General Overview of CEQA Process

Prepare/Distribute Notice of Intent/Preparation* (30 days)

Scoping Meeting* (August 2018)

Review and Evaluate Scoping Comments

Prepare Draft SEIR (Fall 2018)

Public and Agency Review of Draft SEIR* (45 days)

Public Meeting on Draft SEIR* (Early 2019)

Prepare Final SEIR Including Response to Comments

Planning Commission/City Council Hearing* (March 2019)

File Notice of Determination

**Opportunities for Public / Agency Input*

How to Provide Comments

- **Comment verbally or in writing (comment cards provided) at this meeting**
- **Submit written comments *by 5 p.m., August 31, 2018 to:***

Patrick Fuss, Water/Wastewater Principal Engineer
City of Healdsburg
401 Grove Street
Healdsburg, CA 95448
pfuss@ci.healdsburg.ca.us

The City of Healdsburg will be reviewing all comments provided during this period.

More information available on the City's website:

http://www.ci.healdsburg.ca.us/619/Agricultural-Irrigation-Program.html

Ground Rules

- Comments will be taken in order of comment cards.
- Once called, clearly say and spell your name and affiliation.
- Focus comments on the “scope” of the SEIR.
- Value all ideas and points of view.
- Comments can also be submitted at the sign-in table, or mailed before August 31st.

Your cooperation is greatly appreciated

Thank you!

Recycled Water User Agreement

- Agreement between the City and the User (property owner)

- Specifies the terms and conditions for use and application of recycled water
  - Delivery period (generally April 1 to October 31)
  - Delivery quantities, rate and pressure
  - Compliance with the Water Quality Board Order
  - Measurements of recycled water
  - Monitoring reports

Recycled Water User Agreement

- Requires compliance with the conditions and mitigation measures contained in the 2005 EIR and subsequent environmental studies including:
  - All Recycled Water shall be used for vineyard irrigation
  - Vineyard irrigation is restricted to agronomic rates of application as determined by the Programmatic Operations and Management Technical Report for Micro-Irrigation of Vineyards in the Healdsburg Area prepared by Larry Walker Associates April 2014
  - Storage of Recycled Water in unlined ponds is prohibited
  - Recycled Water may not be used for frost protection
  - User shall be the sole party using the Recycled Water

Scoping Meeting for the Draft EIR for the
Wastewater Treatment Upgrade Project

SPEAKER

(Please hand in during the meeting.)

Name: RICHARD HAY JR

Organization (if any): WEST SIDE COMMUNITY ASSOC

Address (optional): 2320 WEST SIDE RD

City, State, Zip: HEALDSBURG

Scoping Meeting for the Draft EIR for the
Wastewater Treatment Upgrade Project

SPEAKER

(Please hand in during the meeting.)

Name: John R. Sonoco

Organization (if any):

Address (optional): 415 Grant Ave

City, State, Zip: Healdsburg Ca 95448

Scoping Meeting for the Draft EIR for the
Wastewater Treatment Upgrade Project

SPEAKER

(Please hand in during the meeting.)

Name: Diane Bucher

Organization (if any):

Address (optional): 5293 Westside Rd

City, State, Zip: Healdsburg CA 95448

Scoping Meeting for the Draft EIR for the
Wastewater Treatment Upgrade Project

SPEAKER

(Please hand in during the meeting.)

Name: Cecile Isaacs

Organization (if any): Palmer Crk Assn

Address (optional): 12888 Cloud Ridge

City, State, Zip: 95448

Scoping Meeting for the Draft EIR for the
Wastewater Treatment Upgrade Project

SPEAKER

(Please hand in during the meeting.)

Name: JOHN BUCHER

Organization (if any): BUCHER FARMS

Address (optional):

City, State, Zip: HEALDSBURG

City of Healdsburg Wastewater Treatment Upgrade Project
Scoping Meeting

SIGN IN SHEET

AUGUST 21, 2018

(Please sign in before the meeting.)

NAME	ORGANIZATION	ADDRESS	PHONE NUMBER / E-MAIL
Natalie Smith	AECOM		natalie.smith@aecom.com
Patrick Fuss	City of Healdsburg		pfuss@ci.healdsburg.ca.us
Petra Unger	AECOM		petra.unger@aecom.com
Diane Bucher			diane@bucher.wine
Mark Roddy	-		mroddy@scattheu.edu
JOHN BUCHER			BUCHERFARM@AOL.com
RICHARD HAY JR.			chip hay@mac.com
Cecile Isaacs			cecile.isaacs@gmail.com

HEALDSBURG RECYCLED WATER PROJECT
CEQA SCOPING MEETING 8-21-18
SUMMARY OF COMMENTS RECEVIED

RICHARD HAY

Monitoring drinking water from wells in the Russian River Valley

Alternative: upgrade wastewater treatment approach to be able to discharge to Russian River

LYNNE MURPHY

Soil study?

Study of wells?

Older wells cannot be sealed from groundwater and surface water intrusion

Leak mitigation for leak in area with wells and a shallow water table?

Will truck haulage result from this plan? Existing truck traffic on Foreman Lane is bad.

NANCY CITRO

Adding frost protection and impact of that and irrigation on her well.

Water quality monitoring for her well surrounded by parcels covered.

Trucked wastewater details

Request for a traffic study, including bicycle and marathon traffic, and noise study for trucks.

How is hauled water applied? Where, what type of soil, is there runoff?

Supplement to 2005 is not adequate because there are major additions and changes.

Study medical cannabis analysis.

Sonoma County General Plan consistency?

CECILE ISAACS

Road safety issues, effects of climate change, study osmosis alternative

Study fisheries effects related to hauling dust and siltation and migration of recycled water

Alternative: hauling only in extreme drought years and only from asphalt roads, pipe to City gardens

Study road degradation, dust and public health, automobile damage

Differences between steep Franciscan, gently rolling bench land and flat alluvial soil absorption and runoff

Differences in groundwater movement in locally fractured Franciscan hills and alluvial

Use USGS shallow aquifer assessment:
https://ca.water.usgs.gov/projects/gama/SU_shallow/snapa.htm

NORTH COAST REGIONAL WATER QUALITY CONTROL BOARD

Detailed project description requested

The frost protection use of recycled water should be addressed separately from irrigation uses, and in detail, as there are distinct differences between frost protection and agronomic irrigation use of recycled water (e.g. frost protection use typically occurs when soils may be saturated and at greater than agronomic rates)

Provide details on each water use site, total and irrigable acreage, crop, storage, etc.

Apply only at nutrient and hydraulic agronomic rates and no pollutants (salts, etc.)

Groundwater monitoring

WESTSIDE COMMUNITY ASSOCIATION

Cannabis use, rates, contamination of hillside aquifers

Water trucks and small roads, safety, sediment loads, enforcement

Subsequent EIR required

Analyze data from Santa Rosa's dairy irrigation programs

Growth inducing effects from opening up water scarce areas to vineyard development

RUSSIAN RIVERKEEPER

Subsequent EIR needed due to the lack of study of groundwater, uses, ESA listed Coho Salmonids

Frost control violates State anti-degradation policy

Bishop's Ranch irrigation and manure loading

Enforcement of hauling

Full-scale laboratory chemical evaluations throughout year with ESA listed exposure and effects assessment

SCOPING COMMENTS

SONOMA LOCAL AGENCY FORMATION COMMISSION
575 ADMINISTRATION DRIVE, ROOM 104A, SANTA ROSA, CA 95403
(707) 565-2577 FAX (707) 565-3778
www.sonomalafco.org

August 6, 2018

Mr. Patrick Fuss, Water/Wastewater Principal Engineer
City of Healdsburg
401 Grove Street
Healdsburg, CA 95448

Re: Preparation of Supplemental Environmental Impact Report, WWTP Upgrade Project

Mr. Fuss-

The Sonoma Local Agency Formation Commission ("LAFCO") received notice regarding the preparation of a supplemental EIR for the proposed City of Healdsburg wastewater treatment upgrade project.

Simply stated, LAFCO has no authority to govern the provision of nonpotable or nontreated water outside a city's boundaries, per Government Code §56133, so no approval for the expansion of territory that may be served with treated water from the proposed project is required.

Thank you for the opportunity to comment.

Sincerely-

Mark Bramfitt

Mark Bramfitt, Executive Officer

Middletown Rancheria
Tribal Historic Preservation Department
P.O. Box 1035
Middletown, CA 95461

August 8, 2018 Via Electronic Mail

Mr. Patrick Fuss
City of Healdsburg
401 Grove Street
Healdsburg, CA 95448

Re: **City of Healdsburg Wastewater Treatment Upgrade Project Supplemental Environmental Impact Report**

Dear Mr. Fuss:

The Middletown Rancheria (Tribe) is in receipt of your letter dated August 1, 2018 regarding the SEIR for the proposed Wastewater Reuse Project located in Healdsburg, Sonoma County, California.

Though we have no specific comments at this time, should any new information or evidence of human habitation be found as the project progresses, we request that all work cease and that you contract us immediately. We do have a process to protect such important and sacred resources.

Thank you for the opportunity to provide comments to the above referenced project. The Tribe looks forward to continuing to be a part of the City's process.

Nothing herein should be construed to be a waiver of or limitation of any of the Tribe's rights in law, in equity, or otherwise. All rights, claims and remedies are specifically reserved.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Sally Peterson
Tribal Vice-Chairwoman

Phone (707) 987-3670 ext 1307 *Fax (707) 987-9091*

From:	Maya DeRosa
To:	Patrick Fuss
Subject:	FW: Healdsburg Wastewater Treatment Upgrade Project Supplemental Environmental Impact Report
Date:	Thursday, August 16, 2018 2:48:31 PM

MAYA DEROSA, AICP | Planning and Building Director
City of Healdsburg
401 Grove Street Healdsburg, CA 95448
707.473-4463 | cityofhealdsburg.org.

From: THPO@gratonrancheria.com <THPO@gratonrancheria.com>
Sent: Thursday, August 16, 2018 12:42 PM
To: Maya DeRosa <mderosa@ci.healdsburg.ca.us>
Subject: Healdsburg Wastewater Treatment Upgrade Project Supplemental Environmental Impact Report

Dear Maya DeRosa,

The Federated Indians of Graton Rancheria, a federally recognized Tribe and sovereign government has received your correspondence requesting information on a project located at Healdsburg Wastewater Treatment Upgrade Project Supplemental Environmental Impact Report. The Tribe has reviewed the location of the project and we have determined it is not in our traditional ancestral territory, therefore have no comments on this project, at this time. We appreciate the opportunity to review the project proposal. If you have any additional questions regarding this letter please feel free to email my office at thpo@gratonrancheria.com or call the office at (707) 566-2288.

Sincerely,

Buffy McQuillen
Tribal Heritage Preservation Officer (THPO)
Native American Graves Protection and Repatriation Act (NAGPRA)
Office: 707.566.2288; ext. 137
Cell: 707.318.0485
FAX: 707.566.2291

Antonette Tomic
THPO Administrative Assistant
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928
Office: 707.566.2288, ext. 143
Fax: 707.566.2291
atomic@gratonrancheria.com

please consider our environment before printing this email.

Federated Indians of Graton Rancheria and Tribal TANF of Sonoma & Marin - Proprietary and Confidential
CONFIDENTIALITY NOTICE: This transmittal is a confidential communication or may otherwise be privileged. If you are not the intended recipient, you are hereby notified that you have received this transmittal in error and that any review, dissemination, distribution or copying of this transmittal is strictly prohibited. If you have received this communication in error, please notify this office at 707-566-2288, and immediately delete this message and all its attachments, if any. Thank you

Patrick Fuss

From: Terry Crowley
Sent: Friday, August 17, 2018 1:27 PM
To: Patrick Fuss
Subject: FW: Healdsburg Wastewater Treatment

Patrick,

On the other side of the issue….. Importantly there are some good questions imbedded in the comments below that we will need to answer. The scoping meeting on the 21st should be prepared to answer these questions in plain language.

We should meet and discuss Monday morning. Are you available at 11:00pm?

Terry

From: David Hagele
Sent: Friday, August 17, 2018 1:12 PM
To: Terry Crowley
Subject: FW: Healdsburg Wastewater Treatment

Hey Terry,
I forwarded this to Dave as well…just an FYI…

David L. Hagele
Vice Mayor,
City of Healdsburg
401 Grove Street, Healdsburg, CA 95448
(707) 578-7800 • DHagele@ci.healdsburg.ca.us

Note: All e-mail communications through this e-mail account are public documents.

From: Richard Hay Jr <chiphay@icloud.com>
Date: Friday, August 17, 2018 at 12:52 PM
To: "bmanselle@ci.healdsburg.ca.us" <bmanselle@ci.healdsburg.ca.us>, David Hagele <dhagele@ci.healdsburg.ca.us>, Leah Gold <lgold@ci.healdsburg.ca.us>, Shaun McCafferey <sfmccaffery@yahoo.com>, Joe Naujokas <jnaujokas@ci.healdsburg.ca.us>
Subject: Healdsburg Wastewater Treatment

Dear Healdsburg City Council Person,

I am writing to express my concern and disappointment with the lack of transparency, openness and accountability associated with Healdsburg's decision to dump it's urban wastewater via pipelines into the Russian River Valley. I'm a resident of 2820 Westside Road and we get our drinking water from a well in this valley as do many other residents.

Healdsburg could have publicized this program (using language and terminology that a non-scientist could understand) and documented the science (if there is any) that supports why these waters won't contaminate the high water table and hydrology of the Russian River Valley. It could have provided information about the cost of this piping program and who was paying for it. It could have indicated how it would monitor drinking water from wells in the Valley to ensure that they weren't being contaminated with chemicals and other substances from urban waste. More importantly, it could have documented why it chose this path to meeting its obligations to treat wastewater rather than the alternative path of upgrading its water treatment technology so it could meet State standards for continuing to discharge water into the Russian River. It could have held town meetings with the affected landowners, residents and rate payers to discuss the program and the decision-making process and criteria.

As near as I can determine, it has done none of the above. It has totally failed to be a citizen-focused government and to inform affected citizens and involve them in a decision involving the very water that they consume to live a healthy life.

Here's how I understand the situation. Healdsburg has been told by the State that it can no longer discharge its treated wastewater into the river because it does not meet State quality standards. Healdsburg could have invested in water treatment technology that would enable it to meet State quality standards. Instead, it chose to invest a substantial amount of money to construct a pipeline system to dump this water into the Valley aquifer by delivering it to growers for use in irrigation. So, from my perspective, you are dumping urban waste water (including household, industrial and medical waste) into the water table adjacent to my well. The State of California has determined that this water is not fit to be discharged into a river because of its threat to aquatic life and to communities that pull their drinking water from the river. You have provided no scientific evidence that such wastewater will not pose a threat to my drinking water in the specific context of the hydrology of the Russian River Valley. I doubt if you have such evidence and I would be happy to see it if it does exist.

Instead, what I do see are warnings like this on your use permit for this water:

- “Recycled water users should apply hand sanitizer or wash their hands with soap and potable water after working with recycled water.”

- “Do not drink recycled water or use it for food preparation.”

- “Recycled water shall not be applied into State waters, within 25 feet of state waters containing standing or flowing water, not in a manner that could result in uncontrolled runoff into State water.”

These do not inspire a lot of confidence.

The essence of democracy is that governments provide easily-accessible and understandable information to citizens about the decisions that affect their lives and that elected officials are accountable for such decisions. Regrettably, I see little evidence of that in this situation. I intend to raise all of these issues at the forthcoming public hearing.

Again, if I am missing some information, I would be very interested in learning about it.

Sincerely,

Richard Hay Jr., Ph.D.

2820 Westside Rd.

chiphay@mac.com

Patrick Fuss

From: Maya DeRosa
Sent: Tuesday, August 21, 2018 7:51 PM
To: Cecile Isaacs
Cc: Patrick Fuss
Subject: RE: Meeting Notice Not on City Calendar

Hello Cecile,
I appreciate you contacting the City.

The Utilities Department, Patrick Fuss (copied) is actually the lead project manager for this project. We typically don't advertise other departments projects on our website. For future notifications of public meetings Patrick can consider if he wishes to add to the City website calendar and/or their department page. Please also note that there is no State law requirement for them to do so.

MAYA DEROSA, AICP | Planning and Building Director
City of Healdsburg
401 Grove Street Healdsburg, CA 95448
707.473-4463 | cityofhealdsburg.org.

From: Cecile Isaacs <cecile.isaacs@gmail.com>
Sent: Tuesday, August 21, 2018 10:30 AM
To: Maya DeRosa <mderosa@ci.healdsburg.ca.us>
Subject: Meeting Notice Not on City Calendar

There is no notice of this meeting on the City of Healdsburg website calendar. There is no mention of it in the Planning Department page either. Don't you think it should be there in order to give the public adequate notice?

According to:

City of Healdsburg

Notice of Preparation of

Supplemental Environmental Impact Report (SEIR)

To Governor's Office of Planning and Research
Responsible and trustee agencies
Adjacent property owners
Interested parties

From City of Healdsburg Planning & Building Department

Date August 1, 2018

The City will hold a public scoping meeting to obtain comments regarding the content and scope of the SEIR. Public agencies, organizations, and interested parties are encouraged to attend and participate at this meeting.

This scoping meeting will take place on August 21, 2018 at 6:00 PM at the following location:

City Council Chambers
Healdsburg City Hall
401 Grove Street
Healdsburg, CA 95448

Contact Patrick Fuss at 707.217.3218 or pfuss@ci.healdsburg.ca.us if you need further information regarding this notice.

Maya DiRosa, Director

Patrick Fuss

From: Terry Crowley
Sent: Wednesday, August 22, 2018 10:50 AM
To: Patrick Fuss
Subject: Fwd: Hard to find EIR information on City Website

Get Outlook for Android

From: Don McEnhill <don@russianriverkeeper.org>
Sent: Wednesday, August 22, 2018 10:08:39 AM
To: Brigette Mansell; Terry Crowley
Subject: Hard to find EIR information on City Website

Good Morning Brigette and Terry,

I wanted to bring to your attention that I just looked at every webpage menu and performed four searches on City website for Wastewater SEIR and still have found no webpage for the SEIR scoping process.

In looking at main Gov't page there isn't a main link or sub-link to Env documents and starting from Utility Page and WW pages no links there…..this is not helpful and could be an issue for CEQA prices due to not making documents easily accessible so wanted to flag it for you both as solving it should take more than a few minutes to post up navigation link from a logical page or two to a Project SEIR landing page and post all docs. In meantime had to ask Patrick to get hands on simple regional map that somehow wasn't in Public Notice for SEIR Scoping comments.

Thank you,
Don

Don McEnhill
Executive Director
Russian Riverkeeper
PO Box 1335
Healdsburg, CA 95448
707-433-1958 Ext. 2

Inspiring the community to protect the Russian River since 1993!

"During the dry years, the people forgot about the rich years and when the wet years returned, they lost all memory of the dry years. It was always that way" John Steinbeck, East of Eden
…will we reduce our water use permanently or be unprepared for the next drought - RRK

From: Maya DeRosa
To: Patrick Fuss
Subject: Fwd: Wastewater Reuse Project Supplemental EIR Project
Date: Thursday, August 23, 2018 11:32:45 AM

Begin forwarded message:

From: <lorin@stewartspoint.org>
Date: August 23, 2018 at 11:20:14 AM PDT
To: <mderosa@ci.healdsburg.ca.us>
Subject: Wastewater Reuse Project Supplemental EIR Project

Maya;

The Proposed Project in the City of Healdsburg, Ca. is out of the Aboriginal Territory of the Stewarts Point Rancheria Kashia Band of Pomo Indians.

We do not have any concerns or comments at this time.

Thank You,

Lorin W. Smith, Jr.
Tribal Historic Preservation Officer
1420 Guerneville Road, Suite 1
Santa Rosa CA 95403
Email: lorin@stewartspoint.org
Office: 707-591-0580 x 105
Cell: 707-321-7064

RECEIVED
AUG 30 2018
CITY OF HEALDSBURG
PUBLIC WORKS DEPARTMENT

August 25, 2018

Patrick Fuss, Water/Wastewater Principal Engineer
City of Healdsburg
401 Grove Street
Healdsburg, CA 95448

REF: COMMENTS ON HEALDSBURG WASTEWATER TREATMENT UPGRADE PROJECT SUPPLEMENTAL EIR, DURING PUBLIC COMMENT PERIOD

Mr. Fuss:

1) **Scope of "public" for public comment period**: I have spoken with at least 4 neighbors whose residential wells are in the Russian River Valley where the expansion of dispersal of wastewater would occur. They have not been asked for input, nor have they received any information about the expansion plans. Several years ago we were all asked by the State of California for the latitude and longitude of our wells. Surely this information should have been gathered well before the public comment period opened so that the whole population of affected residents could have been notified. This appears to be a grave oversight, or an intentional effort to limit input. I would like to know what plans have been made to reach the full population of agricultural and residential well owners in the proposed area of disposal.
2) **Public Health:** If the water is unfit for the ecology of the Russian River, it is of concern for us with the specific soil conditions on the Russian River valley floor. As part of the EIR, data should be gathered regarding the number of residential (as well as commercial) wells that are on the valley floor. Those of us with older wells lack the ability to seal them from both groundwater and surface water intrusion. New wells are upwards of $30,000. In addition, I understand the proposed irrigation rates are many times higher than what the vines can actually take up. Given the specific geophysical properties of the water table in the Russian River Valley, I fail to see how the City of Healdsburg can assure us that wastewater contamination will not become an issue both for drinking water from wells and for the water table overall. What studies has the City of Healdsburg undertaken in the Russian River valley to assure the public safety of residential drinking water?
3) **Leak mitigation:** What are the implications of a major leak in an area with wells and a shallow water table?
4) **Water treatment technology:** This appears to be a classic case of short-term interest creating long-term problems. Why doesn't the City of Healdsburg bite the budget bullet and put in place the available technology successfully employed in other water districts to clean its wastewater for Russian River discharge? The costs of previous piping, this proposed expansion, and potential future expansions would mitigate the cost of the treatment upgrade. Adding increments to the ag irrigation plans hides the true cost of the project. The City should clean up its wastewater and sell it to offset the costs of upgrading the technology for treatment rather than giving away minimally treated water away and risking contamination.
5) **Increased haulage**: Will increased truck haulage result from this plan? The existing truck traffic on Foreman Lane is bad enough. And, what follow-up does the City propose to ensure that trucks are using water in appropriate areas for appropriate purposes?

Sincerely,

Lynne Murphy

Lynne Murphy
2820 Westside Road (fronting on Foreman Lane), Healdsburg, CA 95448

Patrick Fuss, Waster/Wastewater Principal Engineer August 20, 2018
City of Healdsburg
401 Grove Street
Healdsburg, Ca 95448

I am writing in response to a letter received regarding project: City of Healdsburg Wastewater Treatment Upgrade Project Supplemental Environmental Impact Report

I have five general concerns regarding the project and believe there will be more extensive impacts associated with ground water quality, traffic, noise and the long term effects of treated wastewater on crops intended for human consumption such as orchards, cannabis and other ag uses. I also am concerned regarding the added increase use of using the wastewater for frost protection and if our current General Plan adequately addresses the uses proposed in the project.

1. Water Quality: What will be the effect of the project on the ground water quality of my well and the water source of many downstream and ultimately at the SCWA and their 600,000+ customers? With the additional use of frost protection in the spring, I am concerned of the effect of that practice along with irrigation will have on my well. My property seems surrounded on all sides by parcels in the plan. I would like to have my well monitored for possible exposures to the wastewater. A current baseline would be a good idea with annual tests in the future.
2. Traffic: Your notice does not give an exact number of acres currently used for trucked wastewater. How many acres are currently using trucked wastewater, where is it going, does the city truck it to sites or do you rely on private owners to come just take it away? A traffic study needs to be done regarding the increased uses of traffic on Westside and surrounding roads since 2005. Please include bicycle and marathon traffic in the study. Once it is hauled away, how do you know it is being applied safety, what kind of soil it is going on, if there is run off into nearby waterways? Where are the 25,000 acres of ag land being irrigated via trucks? Could you be more specific regarding the other agricultural uses nearby that would use the WWTP? I do not think hauling water to remote cannabis sites in the nearby mountain areas makes sense at all. Are you proposing trucking up Mill Creek, Sweetwater, West Dry Creek etc? If so, I certainly hope you have notified all the landowners of your intentions. Or would be hauled all over the county and beyond?
3. Noise. The increased noise and air quality from the truck traffic should be considered in the traffic study.
4. Minor additions: I believe a supplement to the 2005 EIR is not sufficient because these are major additions and changes being proposed. Adding uses considering the current and future unknown long term effects of treated wastewater on crops intended for human consumption were not considered in the 2005 EIR. This isn't a minor change. Also I believe if you are going to add cannabis as a user, the effects on medical cannabis should be studied along with the long term efforts of using wastewater on crops consumed by humans and animals.
5. SC General Plan: Was the use of treated wastewater for irrigation and frost protection on LIA zoned lands considered in our current General Plan? Findings? What zones do you consider ag land in this project? How is this addressed in our county General Plan?

Thank you for your consideration,

Nancy Citro
4160 Westside Road
Healdsburg, CA 95448

City of Healdsburg Wastewater Treatment Upgrade Project
Supplemental Environmental Impact Report

Comment Card

August 30, 2018

Please write clearly and note that all comments received become a part of the public record. If you'd like to provide your name or contact information, please do so:

Email: Cloud10@pacbell.net

Organization: Cecile Isaacs

Address: 12888 Cloud Ridge Rd

Healdsburg 95448

[X] Please add me to the mailing list for this

☐

Preliminarily the City determined that the Supplemental Environmental Impact Report (SEIR) will focus on the following areas:

- . Air Quality
- . Cultural Resources
- . Energy
- . Fisheries and Terrestrial Biological Resources
- Geology and Soils
- . Greenhouse Gas Emissions
- . Land Use and Agriculture
- . Population and Housing
- . Transportation
- . Tribal Cultural Resources
- . Water Quality

Q: Have we missed any important topics? If so, which ones and why? Should any topics be dismissed from further consideration? If so, which ones and why?

Effects of climate change. Road Safety. Implementation Failures. Human Error. Alternatives that could make expansion unnecessary like reverse osmosis.

Effect of City governance culture on efficacy of PROPOSED MITIGATION MEASURES.

Q: Should any topics be broken out separately or combined? Why?

Fisheries should be broken into

1. Effects stemming from increased road transportation such as dust and siltation, and
2. Effects stemming from migration of recycled water from irrigation.

Q: Should the SEIR place particular focus on certain topics? If so, which ones?

Cost/benefit of water hauling. Look at employee cost projections.

Difficulty of ensuring water will be used within allowed map for allowed crops.

What sort of ongoing sampling program is needed to ensure estimates used in studies are borne out in future implementation.

Mitigation Measures

Q: Mitigation measures are changes that would reduce or avoid environmental impacts. Please suggest mitigation measures that could address potential impacts of the expansion of the City's seasonal irrigation reuse program.

Use reverse osmosis so you don't need to monitor excessive runoff.

Allow piped connections only so you don't need to monitor location of use.

Allow hauling only during defined extreme drought years and only on properties accessible from asphalt roadways.

Alternatives

Q: The City will consider alternatives that meet the basic objectives for the project that could potentially reduce or avoid environmental impacts. Do you have ideas for alternatives that would reduce or avoid environmental impacts?

Grow hay on City property using recycled water. Advertise for dormant property; lease fields from other owners to grow hay for sale.

Pipe City neighborhoods with recycled water to use on private gardens.

Interested Parties

Q: Do you know of public agencies, public and private groups, or individuals that the City should contact regarding this project and the accompanying SEIR? If so, please list them

Palmer Creek Association, PO Box 2302, Healdsburg, CA 95448

Dry Creek Valley Association, PO Box 1221, Healdsburg, CA 95448

Trout Unlimited, NOAA, CDFW, re: Coho Monitoring Program

If you would prefer to take this card with you and provide comments later. please send them by 5 p.m. on August 31, 2018 to:

Patrick Fuss. P.E.
Water/Wastewater Principal Engineer
City of Healdsburg, Municipal Utility Department
401 Grove Street
Healdsburg, CA 95448
E-mail: pfuss@ci.healdsburg.ca.us

ADDENDUM

Q: Should any topics be broken out separately or combined? Why?

1. Transportation should be broken out into:
   a. Road Safety including water weight, stopping distances, substandard road width, curve and grade.
   b. Road Degradation including who bears the cost for repairs.
   c. Health issues of increased dust on unpaved roads
   d. Automobile damage to vehicles of other road users including maintenance and collision.

2. Geology and Soils should be broken out into:
   a. Differences between steep Franciscan, gently rolling benchland, and flat alluvial soil absorption and runoff.
   b. Differences in ground water movement in locally fractured Franciscan hills and alluvial river plains.
   c. Use of USGS https://ca.water.usgs.gov/projects/gama/SU_shallow/snapa.htm; North San Francisco Bay Study Unit - Shallow Aquifer Assessment

Patrick Fuss

From: Goodwin, Cathleen@Waterboards <Cathleen.Goodwin@waterboards.ca.gov>
Sent: Thursday, August 30, 2018 11:42 AM
To: Patrick Fuss
Cc: state.clearinghouse@opr.ca.gov
Subject: Regional Board comments on City of Healdsburg Wastewater Treatment Upgrade Project SEIR - SCH# 2002072083

Dear Mr. Fuss:

Thank you for the opportunity to comment on the August 1, 2018 Notice of Preparation (NOP) for the City of Healdsburg Wastewater Treatment Upgrade Project Supplemental Environmental Impact Report. The North Coast Regional Water Quality Control Board (Regional Water Board) is a responsible agency for this project, as defined by the California Environmental Quality Act (CEQA) having jurisdiction over the quality of ground and surface waters (including wetlands) and the protection of the beneficial uses of such waters. We appreciate the opportunity to respond and express concerns early in the environmental review process relating to our own statutory responsibility.

According to the NOP, the Proposed Project includes the addition of approximately 2,100 acres of land to receive recycled water through new pipelines and another 2,630 acres of land "that potentially could receive recycled water at a future date". The NOP further states that the City wishes to expand the types of recycled water use to include, orchards (apple, peach, plum/prune), cannabis, irrigated pasture, direct livestock watering (not including dairy cows), frost protection, and other agricultural uses occurring in the vicinity of the WWTP.

The Regional Water Board supports the use of recycled water that meets all state requirements, including, but not limited to, California Code of Regulations recycled water requirements at Title 22, Division 4, Chapter 3; the California Water Code, State Water Resources Control Board Policy for Water Quality Control for Recycled Water; and SWRCB Order WQ 2016-0068-DDW, Water Reclamation Requirements for Recycled Water Use. The following comments should be addressed the in the SEIR:

1. The SEIR should provide a complete project description and include sufficient detail about each project component to allow responsible agencies and the public to realistically determine the significance of any impacts and the adequacy of proposed mitigations. Please be clear on whether or not the Proposed Project includes expansion of the current pipeline and/or hauling boundary. Additional project information that is needed is identified in other comments, below.

2. The SEIR must define the full extent of the recycled water project and analyze the potential impacts to ground and surface water of the entire project, including construction aspects, operation of the recycled water system, and operation of any recycled water storage ponds if off-site storage is proposed. The frost protection use of recycled water should be addressed separately from irrigation uses, and in detail, as there are distinct differences between frost protection and agronomic irrigation use of recycled water (e.g. frost protection use typically occurs when soils may be saturated and at greater than agronomic rates).

3. The SEIR should provide sufficient detail about each newly proposed recycled water use type to demonstrate that the use complies with state regulations and that the use of recycled water will be protective of groundwater and surface water quality. Several of the proposed uses are explicitly allowed in Title 22, while others, such as direct livestock watering and frost protection, and perhaps cannabis cultivation, are not. Uses not explicitly identified in Title 22 must be approved on a case-by-case basis by State Water Board, Division of Drinking Water staff.

4. The SEIR should include a summary of each proposed recycled water use site, including, but not limited to, the site characteristics (e.g., flat, sloped), total and irrigable acreage, crop, type of irrigation system, on-site storage (if proposed), and proximity of the proposed irrigation area to surface water features. The Regional Water Board views the activities that occur on each proposed use site as being an integral part of the Proposed Project.

5. The SEIR must provide sufficient analysis to demonstrate that impacts to ground and surface water quality are less than significant or will be reduced to less than significant with mitigation. It is crucial that the project-specific details and localized impacts be evaluated and demonstrate that recycled water will be applied at nutrient and hydraulic agronomic rates and will not contain other pollutants of concern (e.g., salts, etc.) at levels that could degrade groundwater or surface water.

6. Prior to any permitting action for the proposed recycled water system expansion, the City will need to submit the following to the Regional Water Board:

    a. The Regional Water Board requires the submittal of an antidegradation analysis that demonstrates that the storage and irrigation of recycled water will not result in degradation of groundwater or surface water. The analysis must identify the fate and transport of pollutants of concern, and should address salts, nutrients, and any other pollutants that could be present in the recycled water at concentrations that could affect groundwater quality. For the pond(s), the analysis will need to determine the leakage rate through the pond liner and the impact of pond leakage on groundwater and nearby surface water. The analysis must determine whether there are any anticipated increases in pollutant concentrations over background groundwater quality. If any potential degradation is identified, the analysis must demonstrate that any degradation is in the best interest of the people of the state and that it will not result in the exceedance of any groundwater quality objectives. This antidegradation analysis must be prepared and submitted prior to or as part of the City's permit application.; and

    b. Revised NOI, including identification of best management practices for protection of groundwater and surface water and Title 22 Recycled Water Engineering report addressing the expanded recycled water uses. The Title 22 Recycled Water Engineering Report must also be submitted to the State Water Board, Division of Drinking Water, for review and approval.

7. Permitting may include a requirement for groundwater monitoring for each significant use type.

8. The SEIR must identify all regulatory requirements, permits and authorizations that will be required to ensure full compliance, including other State requirements (e.g., 401 permits/waivers, storm water permitting for construction, low threat discharge permit, enrollments completed under applicable general orders such as the SWRCB General Order for Cannabis Cultivation and Similar Activities, etc.), as well as County or City permitting requirements (e.g., use permits, etc.). Each use and use site must be compliant with all state and local regulations and requirements.

9. The proposed project area drains to the Russian River. The Russian River watershed (which includes all tributaries to the Russian River) is listed on the Regional Water Board's 303(d) list as impaired due to sedimentation and siltation, and water

temperature. Sources of sedimentation and siltation to the Russian River include road construction, land development, urban runoff from storm sewers, other urban runoff, removal of riparian vegetation, and drainage and filling of wetlands. Sources of temperature impairment include hydromodification, streambank destabilization, and removal of riparian vegetation. The SEIR must identify erosion control measures to prevent the release of sediment to the ephemeral streams and drainages and the Russian River, and whether or not activities related to the Proposed Project could have impacts on temperature in the Russian River or its tributaries and identify any mitigation measures necessary to ensure that any potential impacts are reduced to less than significant levels.

If you have any questions, please contact me at (707) 576-2687 or Cathleen.Goodwin@waterboards.ca.gov .

Sincerely,

Cathleen Goodwin
Water Resources Control Engineer

Cathleen Goodwin | Water Resources Control Engineer
North Coast Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403
(707)- 576-2687 | Cathleen.Goodwin@waterboards.ca.gov
Document Submittals | NorthCoast@waterboards.ca.gov

Westside Community Association

Formed for the purpose of furthering the welfare of the Mill Creek and Westside Communities

August 30, 2018

Patrick Fuss, Wastewater Principal Engineer
City of Healdsburg, 401 Grove Street Healdsburg, CA 95448

RE: Wastewater Irrigation Expansion Program

The Westside Community Association (WCA) is a membership organization, and our members reside both on aquifer lands along the Russian River and Dry Creek, as well as in the watershed lands west of Westside Road.

The WCA Board respectfully requests that the City of Healdsburg hold public hearings to review the Wastewater Irrigation Plan. The August 21st meeting was poorly noticed, and attended by only a half-dozen people. It is imperative that:

- Recycled water users fully understand their responsibilities and liabilities; and that all residents are aware of the User Agreement terms;
- Landowners adjacent to or downstream from Users understand wastewater irrigation mitigations/protective measures and restrictions on application near residential and irrigation wells;
- Healdsburg officials put controls in place to ensure trucking of wastewater remains within the boundaries of the disposal map, and that truckers understand the limits and other precautions for wastewater use;
- All landowners understand the City of Healdsburg's responsibilities and liability for damage to the drinking water aquifer or contamination of individual groundwater supplies; and
- Landowners understand the City of Healdsburg's groundwater monitoring program, and resident well testing responsibilities and rights to drinking water replacement should their well become contaminated.

RECEIVED
AUG 30 2018
PLANNING & BUILDING DEPT.
CITY OF HEALDSBURG

WCA members have documented that cannabis growers are receiving Healdsburg wastewater and disposing of it outside the current boundaries, and outside the 2018 Expansion Area. Cannabis use must be thoroughly studied as to agronomic rates, potential groundwater contamination of hillside aquifers given high application rates, and other unstudied impacts. For example, water trucks on one-lane roads create public safety issues given the stopping distances for such heavy trucks and inability to safely back up hill. In addition, truck traffic on dirt roads increase sediment loads in salmon spawning creeks, and unauthorized trespass issues on private roads and driveways.

The WCA supports our members in watershed area's request that the City of Healdsburg set new procedures to ensure that trucked water is not taken outside the current boundaries:

- Inform the Recycled Water Operations Manager that cannabis operations and agriculture outside the Map boundaries are not to be granted permits.

- Develop a City Recycled Wastewater Permit procedure requiring the location of each property the Permit Holder or water trucker plans to irrigate, with requirements that the irrigation site be accessible via paved roadways; and

- Require Certification from the recipient that the Healdsburg source recycled water will only be used within the current boundaries on the Recycled Water Program Map.

A Subsequent EIR is Required: The WCA Board is concerned about the significant 2018 project additions and the 5-year increases in disposal rates. These are not minor changes to the studies including in the 2005 FEIR; thus, a new, subsequent EIR is required.

Per California State rules, expanding the disposal area by 4,700 additional unstudied acres, new uses in unstudied watershed areas, and significant increases in disposal rates over a 5-year period, are not "minor additions and changes":

> *"CEQA Guidelines Section 15163 states that a lead agency may choose to prepare a supplement to an EIR rather than a subsequent EIR if proposed changes meet the conditions described in CEQA Guidelines Section 15162 and if only minor additions and changes would be necessary to make the previous EIR adequate."*

The City of Healdsburg needs to thoroughly study fragile watershed lands, especially contained hillside aquifers providing residential well water, and define surface water mitigation for increased traffic on highly erosive roads.

In the drinking water aquifer for 700,000 people, the City of Healdsburg must thoroughly study the potential for groundwater contamination, develop a groundwater monitoring and reporting system, analyze data from the City of Santa Rosa's dairy irrigation programs, and report results to the public.

As noted in the August 21st comment card, virtually all categories of environmental impact need analyses. Technical studies must cover the impacts during the construction period, the agronomic rates for all proposed uses, and traffic and road safety impacts on roads in the Westside Area.

The increased growth potential from opening up current water scarce areas to vineyard development and on-going maintenance and the loss of open space and its water holding capacity must be addressed.

As to concerns and alternatives, the WCA re-submits the Clean Water Coalition of Northern Sonoma County's 2014 and 2015 letters, which advocated for urban irrigation with potable water offsets and potential revenue from sale of wastewater treated by reverse osmosis as preferable alternatives to disposal in a sensitive drinking water aquifer with high groundwater tables.

Conditions have changed over the past 13 years, both in terms of the value of water and the economics of advanced treatment technologies. Healdsburg must stop writing supplements to its out-of-date 2005 Final Environmental Impact Report (FEIR), such as the inadequate 2014 Addendum, and prepare an up to date new EIR, with a complete alternatives analysis and accurate studies of potential short and long-term impacts for all alternatives, new uses and new areas and types of land.

Sincerely,

Westside Community Association Board

Attachments: 2014 and 2015 Letters, with Alternatives defined, from Clean Water Coalition of Northern California

Clean Water Coalition

January 29, 2014

Terry Crowley
City of Healdsburg Department of Public Works
401 Grove Street Healdsburg, CA 95448

RE: Follow up on the January 13, 2014 Clean Water Coalition Meeting

Thank you for your presentation to the Clean Water Coalition of Northern Sonoma County (CWC), and we look forward to working constructively with the City of Healdsburg and its consultants. This letter represents our preliminary analyses of concerns and questions raised at the meeting. Based on the information presented and subsequent research, the CWC believes that Healdsburg has underestimated the costs, scope and required acreage required for Ag-Irrigation alternative in its comparison of options for complying with its discharge permit requirements. (See pages 2)

In addition, since the meeting CWC members have done preliminary research on reverse osmosis (RO) and we believe RO could be very competitive in price with a revised Ag-Irrigation cost estimate.

Given our mutual desire to preserve the high quality groundwater in our drinking water aquifer, the CWC requests that Healdsburg prepare a new cost comparison of the ag-reuse project, that includes all cost elements and with a design that more accurately reflects the application rates concluded in the Middle Reach Russian River Vineyard Irrigation Demonstration Project Study (Ag Agronomic Rate Study). The CWC also requests that Healdsburg include the costs and feasibility of the reverse osmosis alternative described below in its analysis of options for complying with its discharge requirements.

Reverse Osmosis (RO) Plant option: Healdsburg's wastewater pre-treatment technology makes it a perfect candidate for a 1 million gallon/day RO plant. The Clean Water Coalition encourages Healdsburg to carefully research the viability of an RO plant, as potable water offset options are preferable to an Ag Irrigation alternative for the following reasons:

- Preserves the best opportunity for urban re-use and for charging other customers for the treated water which could reduce long-term costs;
- Recaptures some costs for ratepayers in future;
- Creates high quality water opening up other potable water offset options vs. Ag Irrigation which may lose up to 50% of the water to transpiration and evaporation;

- New RO technologies with higher efficiency rates and lower energy costs exist;
- On-going O&M of an RO plant is handled on-site by the plant staff vs. extensive and complex monitoring and maintenance of varied vineyard irrigation systems across large acreages, not in the City's control;
- Recharges and directly benefits the Russian River system;
- RO has stronger public relations benefits than Ag Irrigation

Our research, based on conversations with City of San Diego staff and RO equipment suppliers in addition to review of the project reports, lead us to believe that reverse osmosis may be a viable and competitive recycled water alternative to the Ag Irrigation option. The City of San Diego has successfully operated a 1 million/gallon/day RO plant, and we urge Healdsburg's public works staff to discuss the economics and operating considerations with their staff and suppliers, now Evoquo Water Technologies.

We provide the links below as a starting point for consideration and full engineering analysis of an RO project alternative:

- San Diego Water Purification Demonstration project – read project reports http://www.sandiego.gov/water/waterreuse/demo/
- Santa Clara Valley Advanced Water Purification System http://www.valleywater.org/SVAWPC.aspx
- Evoqua Water Technologies technical and marketing reports http://www.water.siemens.com/en/wastewater/Pages/default.aspx

We also encourage Healdsburg to work with the NCRWQCB staff in the review of San Diego's technical memoranda and compliance memos from their water quality control board. After pH adjustment, Healdsburg may have a viable recharge option in Basalt pond or via indirect discharge methodologies studied by Santa Rosa.

Healdsburg indicated they have an existing 30 million gallon storage pond that was planned to be used as part of the Ag-Irrigation project. This pond could be retrofitted for brine evaporation with trucking to a disposal site. Alternatively, Healdsburg may have a unique brine disposal option as the bridge across Dry Creek is a sunk cost. The Geyser's pipeline could be considered for brine disposal, given CalPine's previous indication of willingness to take brine from a proposed Healdsburg RO plant. Our preliminary analysis indicates generation up to 140,000 gallons/day of brine which may only need a small pipeline to transport the brine to the Geyser's pipeline, and a relatively small pumping plant to develop the matching pressure of the pipeline.

Request for new Ag Irrigation Cost Estimates: On January 13th, Healdsburg provided a preliminary estimate of the Vineyard Transmission System (piping plant to Foreman, Westside and Magnolia plus a pump station) at a cost of $4,753,500. It was clarified that the engineering plan estimate above is for the about 600 acre project defined in Healdsburg's environmental documents.

As discussed at the meeting, the Ag Irrigation project costs must also include:

- **Vineyard transmission**: As outlined below, transmission estimates may not include total cost for transmission to the full required vineyard acreage.
- **Additional Storage**: Given discharge to Basalt must cease on May 15th, and vineyard irrigation may not commence until late June or July, an additional 30+ million gallon reservoir lined with clay and fabric liners, may be needed.
- **Vineyard distribution systems/ equipment**: Healdsburg's cost to retrofit grower's distribution systems to accept recycled water, including monitoring and agronomic rate measurement equipment and ongoing compliance costs.
- **Operations and Maintenance costs**: Calculate the on-going costs of monitoring/ reporting compliance with User Agreements, repairing systems and mitigating wastewater spills.
- **Well protection mechanisms**: Plumbing or vineyard removal/ grape revenue replacement options for protection of residential wells.

Recalculation of Agronomic Rate and Reassessment of Participation Rate: The Clean Water Coalition is pleased that Healdsburg and the Regional Board agree to follow the Ag Agronomic Rate Study methodology, including use of the recommended equipment to determine water delivery rates and the agronomic rate of irrigation based on measurements of soil moisture and plant water status.

We, however, call into question Healdsburg's interpretation of the findings in the Ag Agronomic Rate Study, resulting in application of wastewater at much higher rates than the agronomic rates indicated in the study. The CWC therefore requests that the Technical Studies assess an Ag Re-Use project at true agronomic rates of delivery (1.7 – 2 inches/acre), not disposal rates of 3 inches/acre.

Furthermore, Healdsburg has assumed a 100 percent participation rate for growers within the proposed Ag Irrigation area. Given the apparent level of interest demonstrated to date, it would be prudent to assume a more realistic (i.e. lower) participation rate to ensure an accurate assessment of the Ag Irrigation project costs compared with other alternatives. As discussed below, using a correct agronomic rate and a more realistic grower participation rate will significantly increase the required acreage for the Ag Irrigation option. This larger area will result in higher project costs for the Ag Irrigation option than currently assumed in the presentation made on January 13th.

Calculation of gallons/vine: The Ag Agronomic Rate Study calculated water application rates in inches to correlate with the seasonal crop Evapotranspiration (ETc) model developed by University of California at Davis, and used as a "rule of thumb" for many growers. The study also showed that in the Russian River valleys, the ET model may not be that useful for irrigation scheduling or for estimating amounts. The field study, measuring soil moisture and plant stress, demonstrated that the Middle Reach agronomic rate of irrigation is at 20% of full ETc, and a similar study in the hotter Alexander Valley demonstrated an agronomic rate at 25-30% full ETc. (Areas with relatively high water tables allow for later and reduced irrigation relative to ETc.)

Also, growers have differing trellis systems, and the number of vines/acre can vary significantly based on spacing for hand picked vs. machine picked vineyards (e.g. spacing for 8ft x 6ft = 918 vines/acre and 6ft x 6ft = 1,225 vines/acre). Therefore, measurements in gallons/vine may be more useful; in general, the formula is:
X inches of water x 27,167 gallons/inch of water x 1 acre/Y vines = gallons/ vine

Agronomic Rate: The Ag Agronomic Rate Study found that the agronomic rate for most sites was 1.7 to 2 inches, with only the few sites with high gravel content requiring 3.0 to 3.5 inches. Assuming about 1,100 vines/acre, the average applied irrigation was 1.7 inches or 42 gallons/ vine to 2.0 inches or 50 gallons/vine.

Healdsburg's analysis assumes 3 inches/acre on 1,200 acres; completing the calculations at 1,100 vines/acre results in disposal of 98 million gallons of water and an application rate of 74 gallons/vine. We believe this is significantly more water than these vines will require in the project location given relatively high water tables allow for late and a reduced irrigation season. It is also noted that this high application rate will be detrimental to the vines and fruit.

In addition, we calculate that at 0.93 million gallons per day rate Healdsburg quoted in the meeting, delivered over the 138 day dry season (May 15 – September 30), Healdsburg will actually generate over 128 million gallons of treated wastewater. At the agronomic rate of application identified in the Ag Agronomic Rate Study of 1.7 to 2.0 inches (range of 42 to 50 gallons/vine) Healdsburg will need 2,227 to 2,770 acres of vineyard to dispose of all of the summer effluent (e.g. 128,000,000/1100/42=2,770 acres).

Grower Participation Rate: Finally, assuming a more realistic grower participation rate of 50% vs. the 100% assumption, the total area required for ag-reuse is over 5,000 acres, far more than the 1200 acres assumed by the Healdsburg project alternative comparison (Again note that Healdsburg indicated that the Ag Irrigation transmission costs were based on only the 600 acres assumed in their original estimates).

Vineyard Specific Design and Monitoring: Healdsburg needs to address the cost and effectiveness of a true Ag-Reuse project considering the specific characteristics of the vineyards participating. Each vineyard has different water need depending on the location and soil type, grape varietal, plant spacing and trellis system. Each of these factors can have a significant impact on the amount and timing of waste water application required to properly match the agronomic rate. Furthermore, the costs of ongoing monitoring, maintenance and compliance of the distribution systems for the participating vineyards needs to be included in the cost estimates.

Ratepayer Considerations – Potable Water Offsets: The CWC requests Healdsburg prepare a new analysis of the Ag Irrigation project that includes costs than have been omitted such as storage, and distribution piping, and additional transmission and distribution facilities for a project area that reflects a properly sized ag-reuse area. Based on such a new, accurate cost estimate, the CWC believes that a reverse osmosis

alternative will be very competitive with Ag Reuse and the other options being considers by the City.

The Healdsburg presentation indicated that the urban water reuse was prohibitively expensive. The CWC requests, however, that Healdsburg continue to explore options with potable water offsets – as these offsets have the benefit of paying back every year to the ratepayers.

Thank you again for consideration of our concerns and requests for consideration of long-term preferable options. We understand the Technical Reports by Larry Walker and Associates are currently underway. And, representatives from the Clean Water Coalition would like to meet with Larry Walker Associates to discuss the scope of Healdsburg's technical studies including well and nutrient management mitigations to ensure any Ag Irrigation projects, if pursued, are designed, built, and operated in a manner that fully protect the aquifer and residential wells in the irrigation area.

Sincerely,

Judith Olney for the Board
Clean Water Coalition of Northern Sonoma County

Cc: NCRWQCB – Cathleen Goodwin
Healdsburg City Council - Jim Wood

Clean Water Coalition

OF NORTHERN SONOMA COUNTY

January 12, 2015

Matthias St. John, Executive Officer
North Coast Regional Water Quality Control Board
5550 Skylane Blvd. Santa Rosa, CA 95403

File: Healdsburg Wastewater Treatment, Reclamation and Disposal Facility, WDID No. 1B82046OSON, Waste Discharge Requirements Order No. R1-2010-0034

Subject: Long-term Use of Tertiary Recycled Water for Vineyard Irrigation

Dear Mr. St. John,

As stated in previous written comments and the comments below, the Clean Water Coalition of North Sonoma County (CWC) has serious concerns with the timing, volume and terms for treated wastewater application to vineyards with alluvial soils in close proximity to ground water. We are concerned that application of wastewater in the areas identified in the Addendum to Healdsburg's 2005 Final Environmental Impact Report (FEIR), including the Middle Reach of the Russian River (Middle Reach), at rates seriously in excess of actual hydraulic agronomic rates could lead to irreversible degradation of ground water quality.

The CWC submits the attached October 8, 2014 Technical Study into the record: "*Response to Walker Report entitled Programmatic Operation and Management Technical Report for Micro-Irrigation on Vineyards in the Healdsburg Area.*" And, all of the previous technical studies submitted by the CWC and Healdsburg, as listed in the Addendum, are incorporated into this letter by reference.

The CWC has issues with long-term delivery of treated wastewater for drip irrigation in vineyard areas covered in Healdsburg's "*Addendum to Final Environmental Impact Report, City of Healdsburg Wastewater Treatment Plant Upgrade/Seasonal Irrigation Reuse Project*" approved on April 14, 2014. And, we request that the North Coast Regional Water Quality Control Board (NCRWQCB) staff's May 1, 2014 letter granting Healdsburg permission to proceed with short-term wastewater irrigation not be continued at the end of the period covered by the General Order until the issues raised

for the project are resolved.

The NCRWQCB's decision granting permission to provide treated wastewater to vineyards in the short-term areas identified by Healdsburg should not set a precedent for any future decision by the NCRWQCB to grant permission for long-term use of treated wastewater. The Technical Studies, User Agreements and other documents that were relied on by the NCRWQCB staff in making its short-term drought emergency determination have significant errors in methodology and assumptions that were not subject to public review and comment as required by the Master Use Permit.

As there was no notification or timelines for public comment in the short-term decision process, the CWC may submit additional comments into the record. Our current comments cover four subject areas relative to long-term wastewater irrigation:

1. HEALDSBURG'S WALKER TECHNICAL REPORT SERIOUSLY OVERSTATES THE HYDRAULIC AGRONOMIC RATE FOR MIDDLE REACH VINEYARDS

The Walker Report grossly overstates the hydraulic agronomic rate, and is in serious conflict with results from the *2012 Middle Reach Russian River Vineyard Irrigation Demonstration Study*, Mark Greenspan (Field Study), attached as Appendix A of Healdsburg's report, yet totally disregarded.

The Walker Technical Report concludes that the hydraulic agronomic rate threshold necessary to minimize ground water degradation is 75% of Full Crop Evapotranspiration Rate (ETc). However, use of the 75% ETc threshold would allow significantly more wastewater irrigation than is required by these vineyards. Thus, the proposed rate of irrigation will not provide protection of the underlying, high quality groundwater aquifer.

Fall and winter rains, which in this region are 35-40 inches per season, will move residues of leachable contaminants present in the soil below the root zone and into the groundwater. After the vines enter dormancy, leaching from typical rainfall may threaten groundwater quality if high residues of leachable materials are present in the soil.

The deficiencies and flaws of Healdsburg's Technical Report with respect to the determination of the proper agronomic rate are discussed fully in the attached document: *Response to Walker Report entitled "Programmatic Operation and Management Technical Report for Micro-Irrigation on Vineyards in the Healdsburg Area"* from Mark Greenspan dated October 8, 2014. The significant flaws are in two categories:

1. Timing: Seasonal initiation of the irrigation cycle; and
2. Over Irrigation: Percentage of ETc applied.

Walker Methodology is Theoretical and Flawed: The stated objectives of the methodology used in the Walker Technical Report to define application of water at agronomic rates, as required, were to define through use of theoretical models: 1) the amount of water required to prevent excessive vine stress, and 2) the amount of nitrogen that could be applied to provide for grape quality and yield but not damage

vines. The report also relied on the Yates theoretical model to define the amount of salinity that could be applied to prevent the Total Dissolved Solids (TDS) in wastewater percolating to groundwater exceeding the drinking water standard.

These definitions, devoid of full explanation and analysis, were then used to establish hydraulic, nitrogen, and salinity agronomic rate thresholds. The Technical Report stated, "Compliance with agronomic rates will be assessed by comparing actual rates on each use site with the lowest of the thresholds presented in Table 4".

Based on Healdsburg's water quality and the geology and hydrology of the Middle Reach, the most sensitive of these three thresholds for each site will certainly be the hydraulic agronomic rate. Therefore, the CWC comments focus on the inadequacy of the Technical Report methodology, which discussed two methods for defining the hydraulic agronomic rate for each use site:

1. Actual field data with reference to the Middle Reach Field Study, and the
2. Theoretical evapotranspiration model derived by University of California Extension Service.

Field Study Methodology: The Field Study aimed to demonstrate an effective range of irrigation application rates and management practices using a set of measurement tools that provide information on soil moisture reserves and vine water status. Resulting data approximates agronomic irrigation rates designed to avoid undesirable levels of vine stress and deep percolation beyond the root zone. Use of soil moisture and vine water status measurement equipment provides a solid basis for interactive irrigation scheduling that avoids both over-irrigation and undesirable levels of vine stress.

Results of the Field Study were described and summarized in the Walker Report, Table 1, page 6, however these results were not utilized. The Field Study demonstrated through actual measurements that irrigation requirements on different soil types to prevent vine stress ranged from less than 1 in/acre/year to about 3-4 in/acre/year. These experimentally determined irrigation requirements ranged from 5 to 40% of theoretically calculated full crop evapotranspiration rates (Full ETc).

Theoretical Model Methodology: The Walker Report described the theoretical calculation of irrigation requirement defined by the University of California Extension Service on pages 7 and 8, with a reference evapotranspiration rate obtained from the closest CIMIS station (Windsor). The reference evapotranspiration rate is factored using a crop coefficient for a specific vineyard, considering canopy growth, amount of shaded ground and vine and row spacing. This provides the Full ETc.

After discussion of the Field Study and theoretical irrigation requirement methods and results, the Walker Technical Report defaulted to a hydraulic agronomic rate threshold of 75% of Full ETc for ALL vineyards in the expanded region proposed for wastewater irrigation by the Addendum to the FEIR.

There is absolutely no discussion of the reason for or justification for what appears to been arbitrary default choice to 75% of Full ETc. There is also no discussion of why a theoretical methodology was used when actual Field Studies for irrigation requirements in the actual vineyards in question was available and disregarded.

Calculating irrigation requirements based on 75% of Full ETc would result in about 8 to 12-in/acre/year application of treated wastewater, when actual irrigation requirements determined in the Field Study ranged from about 1 up to 3- 4 in/acre/year.

CWC Concerns and Request: The theoretical methodology results in irrigation requirements that appear to be disposal rates, far in excess of the agronomic rate. A likely reason the theoretical ETc provides hydraulic agronomic rates significantly in excess of actual irrigation requirement is that the methodology ignores the significant soil moisture storage that occurs in these alluvial soils after winter rains.

Based on the results of the Field Study and further analysis by Mark Greenspan PhD attached, it is clear to the CWC that use of 75% of ETc to determine hydraulic agronomic rates for these vineyards would result in application of wastewater seriously in excess of actual irrigation requirements and could lead to irreversible degradation of ground water quality.

The unsupported default to 75% of ETc used in the Walker Technical Report must not be allowed to carry forward into the long-term permitting process.

The CWC requests that any permit to allow long term irrigation of these vineyards soils, which overlay a large, shallow, high quality groundwater aquifer require vineyard specific determination of actual irrigation requirements using appropriate field studies. Given the proposed irrigation area is the Sonoma County Water Agency's drinking water aquifer, it is prudent to provide maximum protection of this aquifer and adjacent surfaces waters for beneficial uses as required by the Clean Water Act.

2. THE MONITORING PROVISIONS IN THE SHORT-TERM USER AGREEMENTS ARE NOT SUFFICIENTLY SPECIFIC AND VERIFIABLE TO ENSURE THAT AGRONOMIC RATES ARE NOT EXCEEDED.

To ensure application of treated wastewater protects against exceeding agronomic rates, it is necessary to know the date, duration, and rate of application for each vineyard block. And, it is important to independently verify that treated wastewater is not applied at greater than the agronomic rate.

The currently proposed User Agreements and the self monitoring report form contained in Appendix D of the May 2014 *Programmatic Operations Management and Technical Report* do not require the user to provide sufficient information to determine if agronomic rates are exceeded and should not set a precedent for long-term User Agreements.

Any long-term agreement and monitoring report must provide verifiable data for the amount of water applied to each vineyard block, including the date and hours of application, and the number of vines in each block.

Monitoring Devices Required: The NCRWQCB should require monitoring devices to provide sufficient data to verify application at agronomic rates and reports of such data to allow independent verification. From this data, along with corresponding weather and other data from vineyards in the vicinity, it will be possible to determine if wastewater is

being applied at agronomic rates reasonably associated with the water needs of vines in the area in question at specific points in time.

Site Specific Plans Required: Since soil types vary significantly within the areas proposed for wastewater irrigation, it is necessary to have site-specific plans. As demonstrated in the Field Study, use in vineyards varied from 1 to 3-4 inches depending on the location and soil type. Therefore, in order for the public to be assured that treated wastewater is not applied in excess of agronomic rates, such site-specific technical studies are necessary and should be required prior to any long-term use.

3. HEALDSBURG'S APRIL 2014 ADDENDUM TO THE 2005 FEIR IS INACCURATE AND INADEQUATE FOR CEQA ANALYSIS

Healdsburg's 2014 Addendum to its 2005 FEIR should not be considered adequate CEQA analysis for potential expansion of vineyard wastewater irrigation beyond the geography considered in the 2005 FEIR and the 2009 Mitigated Negative Declaration. And, provided there is site specific analysis and monitoring as discussed above in the areas covered in the certified documents.

The Addendum totally disregards major differences in geology and hydrology between the Middle Reach and the Dry Creek or Alexander valleys. Thus, we assume that the time pressures for short-term drought relief resulted in the NCRWQCB staff's May 6, 2014 letter to Healdsburg concurring with the determinations in this Addendum.

It also totally disregards significant new information available since 2005. For example, the Addendum, page 2, claims that the additional areas covered by the proposal are essentially identical in character to the areas covered in the 2005 FEIR because the USDA Soil Survey indicates consistent soil conditions. To then assume drainage characteristics will also be consistent is clearly a gross generalization that totally ignores other geological differences and most importantly major hydrological and water balances differences among the various areas.

The Addendum, page 15, states that there is no new information before Healdsburg regarding the project that was not known at the time the 2005 FEIR was certified. This statement disregards the extensive work of Johnson and Yates in the Dry Creek and Alexander Valleys, published in 2008 and 2009 and submitted into the City of Healdsburg record commenting on the Mitigated Negative Declaration for the Syar Irrigation Project. It also disregards the conclusions of the Yates September 21, 2012 letter to Healdsburg, and the Field Study which are included in Appendix A of the Walker Technical Report.

The Johnson and Yates reports clearly point out major differences in the geology and hydrology of the Alexander and Dry Creek valleys versus that in the Middle Reach, and also show hydrologic differences between the upper and lower portions of the Middle Reach. These reports provide considerable evidence that the Dry Creek and Alexander valleys are more susceptible to surface water contamination from vineyard irrigation with wastewater.

The Yates September 21, 2010 letter has an entire section describing the major hydraulic, water balance, and surface water/ groundwater interaction differences

between the Dry Creek Valley and the Middle Reach. And, the Yates letter, contracted by Healdsburg, assumed irrigation rate of 6 in/acre/year was based on undocumented verbal information. The Yates letter states "My recent evaluation of the Syar vineyard project considered only conditions at that site. The types of impacts evaluated were the same ones covered in a prior evaluation of the Northern Sonoma County Agricultural Reuse Project, but the conclusions were different for all of the impacts."

The references to demonstrate the differences among various areas are all in the City's records. Healdsburg's assertion that the there is no new information in certifying the Addendum for expansion wastewater irrigation areas also completely ignores the information provided in the Field Study. This study, done in 2012, was included in the Appendix to the Walker Technical Study, and in 2013 the CWC and Mark Greenspan briefed Healdsburg officials on the methodology and conclusions, thus, Healdsburg knew the results prior to certifying the Addendum.

The Field Study clearly demonstrates the required timing for irrigation based on soil moisture with actual hydraulic agronomic rates significantly lower than those used in the previous studies based on theoretical models, not field measurements. The Field Study, which the Water Board encouraged the Westside Association to Save Agriculture (WASA) to complete, provides actual field data that challenges some of the conclusions of the earlier documents.

Clearly, Healdsburg's assertion that it has no new information pertinent to its environmental review of the irrigation project is simply incorrect. And, to conclude that moving a million gallons per day of recycled water to vineyard irrigation from the 2005 FEIR Middle Reach Area to areas in Dry Creek or Alexander valleys will have no potential to create new or more severe impacts is inaccurate.

The Addendum's conclusions are clearly inadequate and incorrect and it cannot make the findings necessary to certify its compliance with CEQA. Findings can only be made once Healdsburg conducts hydrologic studies in each valley considered for use of treated wastewater.

4. PROVISIONS OF THE TWO-YEAR SAMPLE RECYCLED WATER USER AGREEMENTS SHOULD NOT SET A PRECEDENT FOR FUTURE, LONGER TERM USER AGREEMENTS

The authorization to provide treated wastewater during the 2014 and 2015 irrigation seasons was given in response to the General Order for emergency drought relief, and was not subject to normal public review and comment protocols. While it may have been necessary to initiate deliveries of wastewater to alleviate the impacts of the severe drought conditions on farmers in the short-term, this flawed FEIR, MND and Addendum should not be considered as meeting CEQA requirements for approval of long-term irrigation plans.

As pointed out in this letter and in previous correspondence to the NCRWQCB and Healdsburg, the CWC believes there are serious deficiencies in these documents and the public should have a right to review and comment on such documents prior to any NCRWQCB action regarding use of treated wastewater beyond the 2014 and 2015 irrigation seasons as a response to severe drought conditions in California.

Since the NCRWQCB has now granted Healdsburg a 5-year extension of time to meet the requirements of Cease and Desist Order R1-2010-0034, there is no reason for the short-term arrangement to be the basis for long-term wastewater delivery to comply with the Order. For the longer-term use, such time pressures do not exist, and we request that the NCRWQCB engage in its normal processes and procedures for consideration of such impactful decisions.

The provision of treated wastewater under the short-term User Agreements should terminate when the General Order is rescinded or the end of the 2015 irrigation season, whichever occurs first.

For the reasons stated above, the CWC respectfully requests that wastewater drip irrigation not be commenced under any long-term authorization or User Agreement under Order No.R1-2010-0034 until the above issues, errors and deficiencies as well as issues and deficiencies raised in the CWC's previous letters have been addressed.

Thank you considering both these comments and the findings of the October 2014 Technical Report; and we look forward to pro-actively working with Healdsburg and the NCRWQCB on this matter.

Sincerely,

Judith Olney
Chair, Clean Water Coalition of Northern Sonoma County

CC: Catherine Goodwin, North Coast Regional Water Quality Control Board

Terry Crowley, City of Healdsburg Department of Public Works

Addendum and Attachment titled: Response to Walker Report entitled "Programmatic Operations and Management Technical Report for Micro-Irrigation of Vineyards in the Healdsburg Area"

Addendum to CWC Letter: Reports and Technical Analyses incorporated by Reference and previously submitted into Healdsburg's and/or NCRWQCB Records

1. *Response to Walker Report entitled "Programmatic Operation and Management Technical Report for Micro-Irrigation on Vineyards in the Healdsburg Area"* Mark Greenspan, PhD, CPAg, CCA dated October 8, 2014. (Attached)

2. *2012 Middle Reach Russian River Vineyard Irrigation Demonstration Project*, Mark Greenspan, PhD, CPAg, CCA for Syar Industries and the Westside Association to Save Agriculture, dated February 8, 2013.

3. *Impacts of Recycled Water Irrigation on Groundwater and Surface Water Flow and Quality near Healdsburg: a Generalized Approach*, Gus Yates for Healdsburg, dated September 21, 2010

4. *Syar Property Recycled Wastewater Agricultural Irrigation Project (NSCARP) – Additional Analysis of Potential Groundwater and Russian River Impacts*, Gus Yates for Healdsburg, dated June 28, 2010

5. *Northern Sonoma County Agricultural Reuse Project, FEIR: Technical Review of Hydrology and Water Quality Issues, with Technical Memorandum dated March 9, 2009 reviewing Johnson 2008 Dry Creek Valley report and revising Johnson's Water and Salt Balance Tables*, Gus Yates for CWC, dated April 22, 2009

6. *Potential Water Supply Impacts to Dry Creek Valley from NSCARP and a Bypass Pipeline*, N.M. Johnson for Dry Creek Valley Association, dated December 2008

7. *Potential Water Quality Impacts of NSCARP in the Alexander Valley*, N.M. Johnson for the Alexander Valley Association and the SRNA, dated May 2007

WESTSIDE ASSOCIATION TO SAVE AGRICULTURE
PO BOX 1411
HEALDSBURG, CA 95448

AUGUST 31, 2018

Mr. Patrick Fuss
Wastewater Principal Engineer
City of Healdsburg
401 Grove Street
Healdsburg, Ca 95448

RE: Wastewater Irrigation Expansion Program

The Westside Association to Save Agriculture has been monitoring and commenting on land use issues that could affect the sustainability of agriculture in the middle reach area of the Russian River Valley for over 30 years. Our membership wholly supports helping the City of Healdsburg find a solution to its waste water disposal problem.

The disposal area now proposed is significantly larger than the original studies and the FEIR of 2005 illustrated. We believe that this should require a new subsequent EIR.

We also wish to point out that in a settlement agreement of 2010, between the Westside Association to Save Agriculture, The North Coast Rivers Alliance, the Russian Riverkeepper and certain individuals, along with The Board of Supervisors of Sonoma County and Syar Industries, contained a condition that conservation easements will be placed on the gravel pit ponds and an "Effluent Limitation Area" will be established. In the Effluent Limitation Area and the perimeter of the ponds, no recycled waste water may be deposited unless it has been treated to a level of reverse osmosis. A map of the effluent limitation area is submitted with this letter. This should be noted in any further discussion of the expansion area.

Furthermore, our membership feels that reverse osmosis is the best, the least complicated and the least expensive solution to Healdsburg's waste water disposal issues.

Sincerely,

Dennis Hill
Treasurer and Secretary
Westside Association to Save Agriculture

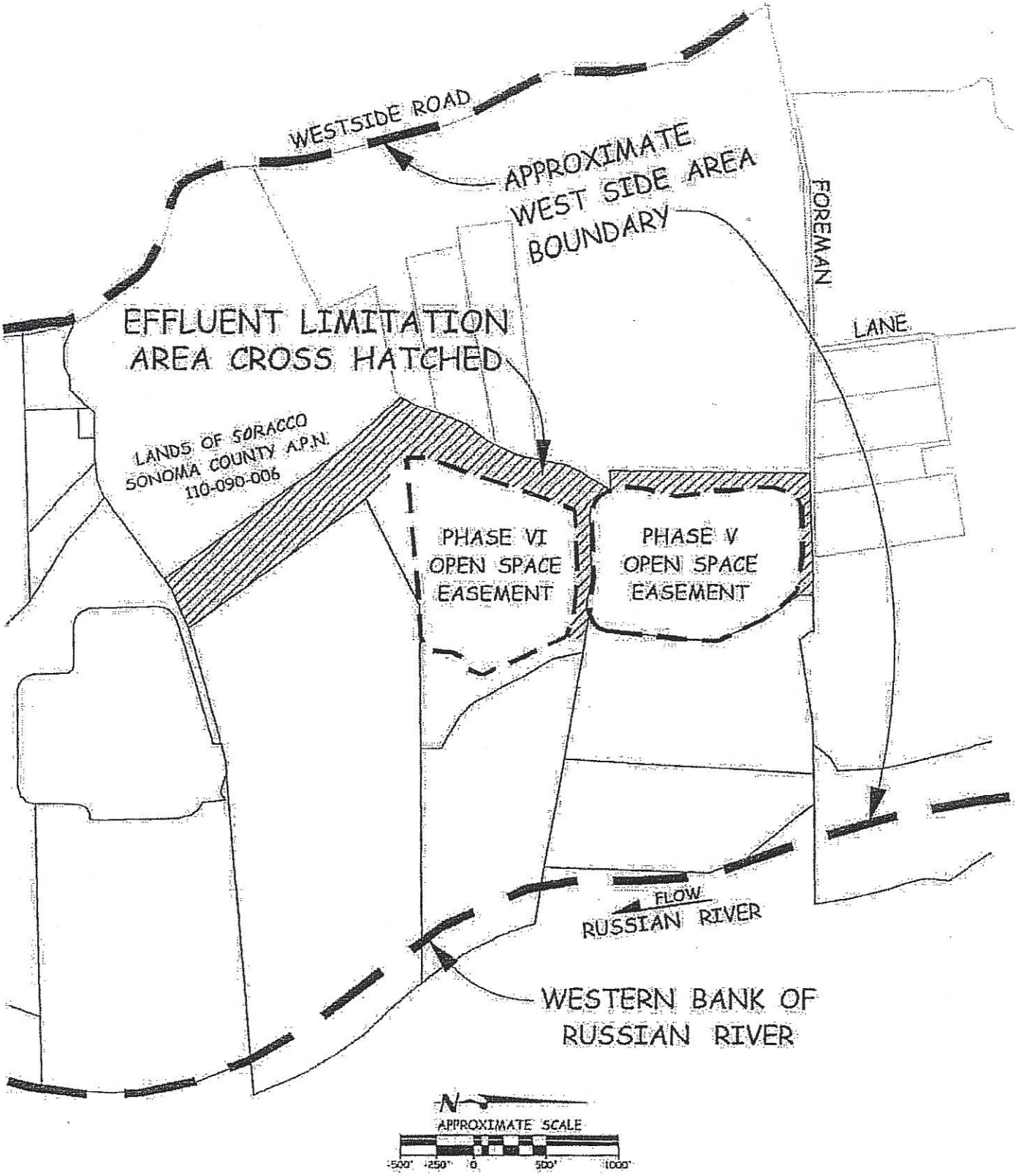


EXHIBIT B

EFFLUENT LIMITATION AREA

EASEMENT EXHIBIT B 10-DEC-2010, 11:40 A.M.

From: Jim Jordan
To: Patrick Fuss
Subject: Healdsburg wastewater expansion and compliance with the California Environmental Quality Act (CEQA)
Date: Friday, August 31, 2018 8:46:59 AM

Greetings Mr. Fuss,

I would like to get information about the staff analysis addressing the proposed expansion of the City's treated wastewater distribution expansion and its compliance with CEQA. As I understand, the City approved a Final Environmental Impact Report (FEIR) for the original project in 2005. Since that time, when changes to the original project have been proposed supplements to the FEIS have been prepared.

One of the purposes of CEQA is to provide full disclosure of proposed actions and to offer the public opportunities to review and comment on the analysis of potentially significant environmental impacts of the new proposed action including mitigation measures to be implemented and monitoring and reporting commitments. There must be a solid rationale when a Supplemental EIR or a Subsequent EIR is to be used by a lead agency for an action it proposes.

I would appreciate receiving a copy of the staff summary that has resulted in the proposed use of a Supplemental EIR to address the intended 2018 additions that would expand the size and location of the treated wastewater disposal program. I would also appreciate reviewing any analysis of the proposed use of a Supplemental EIR that has been performed by your office, counsel to the City, or the City Manager. Recognizing that this request, which I believe is totally appropriate under the CEQA Guidelines, will require staff time to address I am more than happy to meet in person, discuss over the phone, or to be provided written documents to review – whatever is easiest. Please contact me by return email or by phone at (707) 433-3756 at your earliest convenience. Thank you for your attention to this request.

Jim Jordan

August 31, 2018

Mr. Patrick Fuss
Water/ Wastewater Principal Engineer
City of Healdsburg
401 Grove Street
Healdsburg, CA 95448

Re: Scoping comments 2018 Healdsburg Wastewater Treatment Upgrade Project SEIR

Russian Riverkeeper (RRK) is submitting the comments below and attachments for the "Scoping process for the proposed 2018 Healdsburg Wastewater Upgrade Project SEIR" (Project) that is outlined in the August 1, 2018 Notice of Preparation of Supplemental Environmental Impact Report (NOP). RRK supports the regulated application of treated wastewater (also known as recycled water, RW) provided it does not reduce ground or surface water quality. However, the proposed Project will create significant new impacts that are not studied, analyzed or mitigated and therefore we believe a full EIR must be prepared to comply with the California Environmental Quality Act (CEQA). We believe that continuing to tier off the 2005 FEIR and 2014 and 2016 Addendums is a violation of CEQA requirements for the reasons outlined below.

Potential New Impacts that Require Preparation of an EIR rather than SEIR

1) **Proposed Expansion area has significant differences from areas studied in prior CEQA documents and thus does not meet the conditions described in CEQA guidelines Section 15162**

The assertion that geology, hydrology, drainage, slopes and sensitive natural resources between the Middle Reach valley and higher elevations in the Mill Creek, Palmer Creek and Story Creek sub-watersheds are only "minor" in nature and thus "only minor additions and changes would be necessary to make the previous EIR adequate" is completely unsupported by any specific studies or evidence. Before such conclusions can be reached, additional studies and analysis must be conducted. It is currently unknown how pollutants contained within Healdsburg's Recycled Water will migrate through groundwater given the differing topography, microclimates, and soil profiles in these projected expansion areas. The impact this will have upon drinking water and the

catastrophic effects when contaminants such as metals, organic compounds or other currently unregulated "emerging contaminants " become concentrated in nearby wells, will most certainly adversely affect land owners health, their properties and their land uses. These contaminants, possible concentration levels, and adverse effects must be fully evaluated and understood.

2) **The expansion of recycled water uses beyond those inadequately addressed in the 2005 FEIR and subsequent addendums**

Orchards, cannabis, irrigated pasture, direct livestock watering, frost protection and other agricultural uses occurring in the vicinity of the WWTP demand that a full scale EIR be undertaken. Current projections (2046: Healdsburg Recycled Water Feasibility Study) show that within 3 years an additional 100 million gallons a year of recycled water will flow out of the treatment plant and be dispersed upon terrestrial and inadvertently aquatic ecosystems. It is imperative that all new agricultural uses outside of the 2005 FEIR be studied and evaluated in order to establish hydraulic, nitrogen and salinity agronomic rate thresholds particularly in light of groundwater/surface water interactions. All studies must evaluate agronomic rates under the proposed expansion areas various landscape/ hydrologic conditions such as site specific geology, slopes, soil types, soil permeability and moisture retention abilities (under various weather conditions).

As an example, consider a Cannabis operation. The application of RW on Cannabis is not currently allowed. Usage thresholds for cannabis have yet to be determined and established. Recent investigations on Cannabis growing on a Mill Creek Watershed farm estimated water use from 2,000 – 4,500 gals per day. Currently, this amount of RW is self-hauled and results in numerous daily deliveries over a private dirt road causing increased damage, potential for erosion, and dust. With no best management practices (BMP) established for cannabis cultivation irrigated with RW, ground water supply and surface water sources for both residents and habitat are at immediate risk to contamination with the uncontrolled recycled water use. These and many other issues associated with the various new RW uses require that a full EIR be conducted.

RUSSIAN RIVERKEEPER

3) ESA issues -Water Quality and Habitat Impacts to ESA listed Coho Salmonids

The proposed expansion area has far more sensitive natural resources. A prime example is Endangered Coho Salmon that over-summer in low flow conditions with low dilution in the proposed expansion area. The information we are submitting to support this fact is focused on Dry Creek which averages 90 cubic feet per second of flow during the summer months. Mill Creek has an average flow of less than 10cfs demonstrating that impacts cited in the attached reports would be even higher due to the much lower base flow of Mill Creek and its tributaries. In addition Dry Creek is a wide alluvial valley with more opportunity for residual pollutant attenuation, however, Mill Creek is a steep narrow canyon landscape with an often rocky stream impervious bed which would more efficiently send any excess irrigation water or spills or leaks directly to Mill Creek compared to Dry Creek, thus impacts cited in the Dry Creek reports would be much more significant. Consider the effects of minute changes in salinity and the high probability that this would occur as a result of over irrigation with treated wastewater. This would have a significant effect on the Coho's habitat and thus would result in a "significant impact". It should be noted that Mill Creek watershed is defined a "Critical Habitat Area" by State Water Resources Control Board Emergency Regulations and noted as such on Sonoma County's Ground Water Availability map.

The attached study by UC Davis professor Swee Teh focused on Dry Creek, which has far higher flows and therefore higher dilution than Mill Creek-currently one of the most critical streams for reestablishing a wild population of native Coho Salmon…while there could be a beneficial effect to stream flows by replacing summer well pumping with treated water as proposed, a larger potential negative impact could occur and must be analyzed accordingly to determine whether and what mitigations are required to ensure protection of water quality to protect sensitive Coho habitat. Given that there are links between food web complexity and ecosystem stability and that various tropic levels are affected by chemical contaminants beginning at the base of the food chain during uptake of specific contaminants by phytoplankton with subsequent uptake by grazers (e.g. zooplankton), it is imperative that studies evaluate how sensitive these Coho prey are to changes in salinity and exposure to other RW contaminants which would occur as a result of over-irrigation, spills or leaks.

Biologically active concentrations of some compounds have been observed in RW following advanced tertiary treatment. Consequently, if RW is to be applied near critical salmonid habitat "it is recommended that a subset of "emerging" contaminants be considered as chemicals of concern. Possible candidates that have demonstrated effects in wildlife at or near predicted environmental concentrations would include steroid hormones (estrone, testosterone, progesterone, E2 and EE2), alkylphenolethoxylates, antilipidemic agents (diclofenac-like compound), ◎-adrenergic antagonists (propranolol), UV sunscreen agents (2-benzophenone), and fluoxetine. Seasonal (at least wet/dry season) evaluation should be considered for analytical chemistry (at least for steroid estrogens) to identify a worst-case exposure scenario. In addition, biological evaluation (at least in vivo estrogenic screening with environmentally relevant detection limits) of effluent should also be considered. For Risk Characterization analyses, it is recommended that deterministic screening for ecological risk be carried out using salmonid threshold or "No Observed Effect Concentration" values for priority "legacy" pollutants as well as the "emerging" contaminants"(Schlenk, Daniel. Evaluation of Santa Rosa Draft EIR. April 2008)

4) Use for Frost Control would violate state Anti-Degradation Policy

Other significant new information and potential impacts from use of recycled water for frost control which clearly is not used for meeting irrigation needs and therefore by definition and time of use (when soil is often saturated) fails to meet the agronomic rate requirement that equates to complying with the state's Anti-Degradation Policy.

Frost Control is not an irrigation use and thus RW cannot be applied at required agronomic rates to meet the legal requirements of the State Recycled Water Irrigation General Permit (State RW Permit). The State RW Permit requires water only be applied to agricultural lands at agronomic rates for the crop being irrigated in order to comply with California's Anti-degradation Policy as a way to protect high quality groundwater that provides water to residential wells. The residual pollutants that remain in Healdsburg's treated water such as Nitrates, Total Dissolved Solids and Constituents of Emerging Concern (CEC's) are a threat to polluting our neighbor's wells if recycled water is used. The use of water for frost control is not intended for irrigating crops and only used to protect crops from freezing so it is not an irrigation use nor is it applied at agronomic rates. In essence, it fails to comply with the State RW Permit and therefore must be prohibited and removed from consideration unless

Healdsburg intends to seek permit coverage under a Master RW Permit which the City had prior to enrolling in the State RW Permit. The substantial risk for groundwater contamination is the reason that agronomic rates are used as the main protective element of the State Recycled Water General Permit.

5) **Proposed pasture irrigation combined with manure loading will exceed WQ Standards**

Russian Riverkeeper with trained staff from Bishop's Ranch collected several years of water quality monitoring data with laboratory analysis by University of North Carolina at Ashville's VWIN program that conducted analysis according to a Quality Assurance Project Plan to ensure high quality data. As you can see from the results of that survey, the sampling station KC30 received the majority of its runoff from dairy pasture and pastures irrigated with liquid manure. Most of the results exceed the Water Quality criteria used by USEPA of 0.01mg/L of orthophosphate showing that excess nutrients on the pasture lands are already causing significant negative water quality impacts. The proposed use of RW that contains between 1-3mg/L of Phosphorus on pasture Dairy pasture would increase water quality criteria exceedances and negatively affect aquatic life. This new impact must be analyzed in a full EIR should this use remain part of the Project description.

6) **Current violations to end user agreements show oversight and compliance inadequate**

Recent documentation and complaints show that some current users of Healdsburg's treated wastewater licensed under the self-haul trucking program have been hauling water outside approved use areas. Russian Riverkeeper is aware of substantial volumes that are being used outside approved use areas and either the City of Healdsburg is unaware of this or the City is allowing this to occur. This fact demonstrates that adequate controls are not being used to ensure end users comply with user agreements in order to ensure mitigations and requirements are followed. Further study is needed to determine what extra measures are needed to ensure compliance with regulatory requirements to protect water quality. It is clear that user agreement changes, audits of use and some spot checking should be required to ensure all users are in compliance.

Supplemental

- Please provide all water quality test data on RW effluent quality during storage as well as irrigation season over the last two years by "testing event"…do not combine results into averages over periods of time. Providing the public this information will enable us to confirm where actual spikes in pollution loads are occurring and thus allow these spikes to be further evaluated.

- Provide the basis for estimates on future treatment plant effluent volumes and daily flow rates in order to evaluate potential project impacts

- As irrigated RW use is projected to increase from 47MG to 151MG over the next 3 years, several full scale laboratory chemical evaluations should be conducted at various times of the year along with an ESA listed species exposure and effects assessment which should be conducted during critical life stage periods.

- Flooding vineyards with RW as a means for frost protection does in no way, shape or form equate to "agronomic rates" and should be prohibited.

- As RW is projected to be applied in significant amounts on pasture lands it is imperative that the City conducts site specific studies on all pasture lands so as to determine rates of attenuation for nutrients at each specific site as all sites differ according to grazing practices, animals, proximity to waterways, soil profiles, compaction of soils, etc.

Conclusion

Currently the only acceptable uses for Healdsburg recycled water are applications to vineyards and residential/commercial landscaping. As orchards, cannabis, irrigated pasture, direct livestock watering, frost protection and other agricultural uses occurring in the vicinity of the WWTP are being considered as future uses for recycled water, RRK implores the City to conduct a full scale EIR. There is no substantial evidence or analysis in past environmental reviews referenced in the NOP to support preparing a SEIR as opposed to a full EIR. The City is tasked with protecting and serving those whom live here. We live and work in Healdsburg. We demand that our quality of life and our environment be

protected. An SEIR as you have proposed will fail to meet the conditions described in CEQA guidelines Section 15162.

Thank you for considering our comments and the attachments. Russian Riverkeeper looks forward to working with the City of Healdsburg in the future

Sincerely,

Bob Legge

Bob Legge
Policy Director
Russian Riverkeeper
PO Box 1335
Healdsburg, CA 95448
707-433-1958
www.russianriverkeeper.org

Attachments:
Jan 12, 2015 CWC Comments to NCRWQCB
Fishery Impacts NSCARP Final (Swee Teh's toxicology report)
Bishop's Ranch VWIN All Data (WQ Excel Sheet)
Bishop's Ranch VWIN Stations Map
Current Users 2018 (2046: Healdsburg Recycled Water Feasibility Study)
Report Middle Reach Irrigation (Greenspan 1st report)
Greenspan on Walker Report

Clean Water Coalition

OF NORTHERN SONOMA COUNTY

January 12, 2015

Matthias St. John, Executive Officer
North Coast Regional Water Quality Control Board
5550 Skylane Blvd. Santa Rosa, CA 95403

File: Healdsburg Wastewater Treatment, Reclamation and Disposal Facility, WDID No. 1B82046OSON, Waste Discharge Requirements Order No. R1-2010-0034

Subject: Long-term Use of Tertiary Recycled Water for Vineyard Irrigation

Dear Mr. St. John,

As stated in previous written comments and the comments below, the Clean Water Coalition of North Sonoma County (CWC) has serious concerns with the timing, volume and terms for treated wastewater application to vineyards with alluvial soils in close proximity to ground water. We are concerned that application of wastewater in the areas identified in the Addendum to Healdsburg's 2005 Final Environmental Impact Report (FEIR), including the Middle Reach of the Russian River (Middle Reach), at rates seriously in excess of actual hydraulic agronomic rates could lead to irreversible degradation of ground water quality.

The CWC submits the attached October 8, 2014 Technical Study into the record: "*Response to Walker Report entitled Programmatic Operation and Management Technical Report for Micro-Irrigation on Vineyards in the Healdsburg Area.*" And, all of the previous technical studies submitted by the CWC and Healdsburg, as listed in the Addendum, are incorporated into this letter by reference.

The CWC has issues with long-term delivery of treated wastewater for drip irrigation in vineyard areas covered in Healdsburg's "*Addendum to Final Environmental Impact Report, City of Healdsburg Wastewater Treatment Plant Upgrade/Seasonal Irrigation Reuse Project"* approved on April 14, 2014. And, we request that the North Coast Regional Water Quality Control Board (NCRWQCB) staff's May 1, 2014 letter granting Healdsburg permission to proceed with short-term wastewater irrigation not be continued at the end of the period covered by the General Order until the issues raised

for the project are resolved.

The NCRWQCB's decision granting permission to provide treated wastewater to vineyards in the short-term areas identified by Healdsburg should not set a precedent for any future decision by the NCRWQCB to grant permission for long-term use of treated wastewater. The Technical Studies, User Agreements and other documents that were relied on by the NCRWQCB staff in making its short-term drought emergency determination have significant errors in methodology and assumptions that were not subject to public review and comment as required by the Master Use Permit.

As there was no notification or timelines for public comment in the short-term decision process, the CWC may submit additional comments into the record. Our current comments cover four subject areas relative to long-term wastewater irrigation:

1. HEALDSBURG'S WALKER TECHNICAL REPORT SERIOUSLY OVERSTATES THE HYDRAULIC AGRONOMIC RATE FOR MIDDLE REACH VINEYARDS

The Walker Report grossly overstates the hydraulic agronomic rate, and is in serious conflict with results from the *2012 Middle Reach Russian River Vineyard Irrigation Demonstration Study*, Mark Greenspan (Field Study), attached as Appendix A of Healdsburg's report, yet totally disregarded.

The Walker Technical Report concludes that the hydraulic agronomic rate threshold necessary to minimize ground water degradation is 75% of Full Crop Evapotranspiration Rate (ETc). However, use of the 75% ETc threshold would allow significantly more wastewater irrigation than is required by these vineyards. Thus, the proposed rate of irrigation will not provide protection of the underlying, high quality groundwater aquifer.

Fall and winter rains, which in this region are 35-40 inches per season, will move residues of leachable contaminants present in the soil below the root zone and into the groundwater. After the vines enter dormancy, leaching from typical rainfall may threaten groundwater quality if high residues of leachable materials are present in the soil.

The deficiencies and flaws of Healdsburg's Technical Report with respect to the determination of the proper agronomic rate are discussed fully in the attached document: *Response to Walker Report entitled "Programmatic Operation and Management Technical Report for Micro-Irrigation on Vineyards in the Healdsburg Area"* from Mark Greenspan dated October 8, 2014. The significant flaws are in two categories:

1. Timing: Seasonal initiation of the irrigation cycle; and
2. Over Irrigation: Percentage of ETc applied.

Walker Methodology is Theoretical and Flawed: The stated objectives of the methodology used in the Walker Technical Report to define application of water at agronomic rates, as required, were to define through use of theoretical models: 1) the amount of water required to prevent excessive vine stress, and 2) the amount of nitrogen that could be applied to provide for grape quality and yield but not damage

vines. The report also relied on the Yates theoretical model to define the amount of salinity that could be applied to prevent the Total Dissolved Solids (TDS) in wastewater percolating to groundwater exceeding the drinking water standard.

These definitions, devoid of full explanation and analysis, were then used to establish hydraulic, nitrogen, and salinity agronomic rate thresholds. The Technical Report stated, "Compliance with agronomic rates will be assessed by comparing actual rates on each use site with the lowest of the thresholds presented in Table 4".

Based on Healdsburg's water quality and the geology and hydrology of the Middle Reach, the most sensitive of these three thresholds for each site will certainly be the hydraulic agronomic rate. Therefore, the CWC comments focus on the inadequacy of the Technical Report methodology, which discussed two methods for defining the hydraulic agronomic rate for each use site:

1. Actual field data with reference to the Middle Reach Field Study, and the
2. Theoretical evapotranspiration model derived by University of California Extension Service.

Field Study Methodology: The Field Study aimed to demonstrate an effective range of irrigation application rates and management practices using a set of measurement tools that provide information on soil moisture reserves and vine water status. Resulting data approximates agronomic irrigation rates designed to avoid undesirable levels of vine stress and deep percolation beyond the root zone. Use of soil moisture and vine water status measurement equipment provides a solid basis for interactive irrigation scheduling that avoids both over-irrigation and undesirable levels of vine stress.

Results of the Field Study were described and summarized in the Walker Report, Table 1, page 6, however these results were not utilized. The Field Study demonstrated through actual measurements that irrigation requirements on different soil types to prevent vine stress ranged from less than 1 in/acre/year to about 3-4 in/acre/year. These experimentally determined irrigation requirements ranged from 5 to 40% of theoretically calculated full crop evapotranspiration rates (Full ETc).

Theoretical Model Methodology: The Walker Report described the theoretical calculation of irrigation requirement defined by the University of California Extension Service on pages 7 and 8, with a reference evapotranspiration rate obtained from the closest CIMIS station (Windsor). The reference evapotranspiration rate is factored using a crop coefficient for a specific vineyard, considering canopy growth, amount of shaded ground and vine and row spacing. This provides the Full ETc.

After discussion of the Field Study and theoretical irrigation requirement methods and results, the Walker Technical Report defaulted to a hydraulic agronomic rate threshold of 75% of Full ETc for ALL vineyards in the expanded region proposed for wastewater irrigation by the Addendum to the FEIR.

There is absolutely no discussion of the reason for or justification for what appears to been arbitrary default choice to 75% of Full ETc. There is also no discussion of why a theoretical methodology was used when actual Field Studies for irrigation requirements in the actual vineyards in question was available and disregarded.

Calculating irrigation requirements based on 75% of Full ETc would result in about 8 to 12-in/acre/year application of treated wastewater, when actual irrigation requirements determined in the Field Study ranged from about 1 up to 3- 4 in/acre/year.

CWC Concerns and Request: The theoretical methodology results in irrigation requirements that appear to be disposal rates, far in excess of the agronomic rate. A likely reason the theoretical ETc provides hydraulic agronomic rates significantly in excess of actual irrigation requirement is that the methodology ignores the significant soil moisture storage that occurs in these alluvial soils after winter rains.

Based on the results of the Field Study and further analysis by Mark Greenspan PhD attached, it is clear to the CWC that use of 75% of ETc to determine hydraulic agronomic rates for these vineyards would result in application of wastewater seriously in excess of actual irrigation requirements and could lead to irreversible degradation of ground water quality.

The unsupported default to 75% of ETc used in the Walker Technical Report must not be allowed to carry forward into the long-term permitting process.

The CWC requests that any permit to allow long term irrigation of these vineyards soils, which overlay a large, shallow, high quality groundwater aquifer require vineyard specific determination of actual irrigation requirements using appropriate field studies. Given the proposed irrigation area is the Sonoma County Water Agency's drinking water aquifer, it is prudent to provide maximum protection of this aquifer and adjacent surfaces waters for beneficial uses as required by the Clean Water Act.

2. THE MONITORING PROVISIONS IN THE SHORT-TERM USER AGREEMENTS ARE NOT SUFFICIENTLY SPECIFIC AND VERIFIABLE TO ENSURE THAT AGRONOMIC RATES ARE NOT EXCEEDED.

To ensure application of treated wastewater protects against exceeding agronomic rates, it is necessary to know the date, duration, and rate of application for each vineyard block. And, it is important to independently verify that treated wastewater is not applied at greater than the agronomic rate.

The currently proposed User Agreements and the self monitoring report form contained in Appendix D of the May 2014 *Programmatic Operations Management and Technical Report* do not require the user to provide sufficient information to determine if agronomic rates are exceeded and should not set a precedent for long-term User Agreements.

Any long-term agreement and monitoring report must provide verifiable data for the amount of water applied to each vineyard block, including the date and hours of application, and the number of vines in each block.

Monitoring Devices Required: The NCRWQCB should require monitoring devices to provide sufficient data to verify application at agronomic rates and reports of such data to allow independent verification. From this data, along with corresponding weather and other data from vineyards in the vicinity, it will be possible to determine if wastewater is

being applied at agronomic rates reasonably associated with the water needs of vines in the area in question at specific points in time.

Site Specific Plans Required: Since soil types vary significantly within the areas proposed for wastewater irrigation, it is necessary to have site-specific plans. As demonstrated in the Field Study, use in vineyards varied from 1 to 3-4 inches depending on the location and soil type. Therefore, in order for the public to be assured that treated wastewater is not applied in excess of agronomic rates, such site-specific technical studies are necessary and should be required prior to any long-term use.

3. HEALDSBURG'S APRIL 2014 ADDENDUM TO THE 2005 FEIR IS INACCURATE AND INADEQUATE FOR CEQA ANALYSIS

Healdsburg's 2014 Addendum to its 2005 FEIR should not be considered adequate CEQA analysis for potential expansion of vineyard wastewater irrigation beyond the geography considered in the 2005 FEIR and the 2009 Mitigated Negative Declaration. And, provided there is site specific analysis and monitoring as discussed above in the areas covered in the certified documents.

The Addendum totally disregards major differences in geology and hydrology between the Middle Reach and the Dry Creek or Alexander valleys. Thus, we assume that the time pressures for short-term drought relief resulted in the NCRWQCB staff's May 6, 2014 letter to Healdsburg concurring with the determinations in this Addendum.

It also totally disregards significant new information available since 2005. For example, the Addendum, page 2, claims that the additional areas covered by the proposal are essentially identical in character to the areas covered in the 2005 FEIR because the USDA Soil Survey indicates consistent soil conditions. To then assume drainage characteristics will also be consistent is clearly a gross generalization that totally ignores other geological differences and most importantly major hydrological and water balances differences among the various areas.

The Addendum, page 15, states that there is no new information before Healdsburg regarding the project that was not known at the time the 2005 FEIR was certified. This statement disregards the extensive work of Johnson and Yates in the Dry Creek and Alexander Valleys, published in 2008 and 2009 and submitted into the City of Healdsburg record commenting on the Mitigated Negative Declaration for the Syar Irrigation Project. It also disregards the conclusions of the Yates September 21, 2012 letter to Healdsburg, and the Field Study which are included in Appendix A of the Walker Technical Report.

The Johnson and Yates reports clearly point out major differences in the geology and hydrology of the Alexander and Dry Creek valleys versus that in the Middle Reach, and also show hydrologic differences between the upper and lower portions of the Middle Reach. These reports provide considerable evidence that the Dry Creek and Alexander valleys are more susceptible to surface water contamination from vineyard irrigation with wastewater.

The Yates September 21, 2010 letter has an entire section describing the major hydraulic, water balance, and surface water/ groundwater interaction differences

between the Dry Creek Valley and the Middle Reach. And, the Yates letter, contracted by Healdsburg, assumed irrigation rate of 6 in/acre/year was based on undocumented verbal information. The Yates letter states "My recent evaluation of the Syar vineyard project considered only conditions at that site. The types of impacts evaluated were the same ones covered in a prior evaluation of the Northern Sonoma County Agricultural Reuse Project, but the conclusions were different for all of the impacts."

The references to demonstrate the differences among various areas are all in the City's records. Healdsburg's assertion that the there is no new information in certifying the Addendum for expansion wastewater irrigation areas also completely ignores the information provided in the Field Study. This study, done in 2012, was included in the Appendix to the Walker Technical Study, and in 2013 the CWC and Mark Greenspan briefed Healdsburg officials on the methodology and conclusions, thus, Healdsburg knew the results prior to certifying the Addendum.

The Field Study clearly demonstrates the required timing for irrigation based on soil moisture with actual hydraulic agronomic rates significantly lower than those used in the previous studies based on theoretical models, not field measurements. The Field Study, which the Water Board encouraged the Westside Association to Save Agriculture (WASA) to complete, provides actual field data that challenges some of the conclusions of the earlier documents.

Clearly, Healdsburg's assertion that it has no new information pertinent to its environmental review of the irrigation project is simply incorrect. And, to conclude that moving a million gallons per day of recycled water to vineyard irrigation from the 2005 FEIR Middle Reach Area to areas in Dry Creek or Alexander valleys will have no potential to create new or more severe impacts is inaccurate.

The Addendum's conclusions are clearly inadequate and incorrect and it cannot make the findings necessary to certify its compliance with CEQA. Findings can only be made once Healdsburg conducts hydrologic studies in each valley considered for use of treated wastewater.

4. PROVISIONS OF THE TWO-YEAR SAMPLE RECYCLED WATER USER AGREEMENTS SHOULD NOT SET A PRECEDENT FOR FUTURE, LONGER TERM USER AGREEMENTS

The authorization to provide treated wastewater during the 2014 and 2015 irrigation seasons was given in response to the General Order for emergency drought relief, and was not subject to normal public review and comment protocols. While it may have been necessary to initiate deliveries of wastewater to alleviate the impacts of the severe drought conditions on farmers in the short-term, this flawed FEIR, MND and Addendum should not be considered as meeting CEQA requirements for approval of long-term irrigation plans.

As pointed out in this letter and in previous correspondence to the NCRWQCB and Healdsburg, the CWC believes there are serious deficiencies in these documents and the public should have a right to review and comment on such documents prior to any NCRWQCB action regarding use of treated wastewater beyond the 2014 and 2015 irrigation seasons as a response to severe drought conditions in California.

Since the NCRWQCB has now granted Healdsburg a 5-year extension of time to meet the requirements of Cease and Desist Order R1-2010-0034, there is no reason for the short-term arrangement to be the basis for long-term wastewater delivery to comply with the Order. For the longer-term use, such time pressures do not exist, and we request that the NCRWQCB engage in its normal processes and procedures for consideration of such impactful decisions.

The provision of treated wastewater under the short-term User Agreements should terminate when the General Order is rescinded or the end of the 2015 irrigation season, whichever occurs first.

For the reasons stated above, the CWC respectfully requests that wastewater drip irrigation not be commenced under any long-term authorization or User Agreement under Order No.R1-2010-0034 until the above issues, errors and deficiencies as well as issues and deficiencies raised in the CWC's previous letters have been addressed.

Thank you considering both these comments and the findings of the October 2014 Technical Report; and we look forward to pro-actively working with Healdsburg and the NCRWQCB on this matter.

Sincerely,

Judith Olney
Chair, Clean Water Coalition of Northern Sonoma County

CC: Catherine Goodwin, North Coast Regional Water Quality Control Board

Terry Crowley, City of Healdsburg Department of Public Works

Addendum and Attachment titled: Response to Walker Report entitled "Programmatic Operations and Management Technical Report for Micro-Irrigation of Vineyards in the Healdsburg Area"

Addendum to CWC Letter: Reports and Technical Analyses incorporated by Reference and previously submitted into Healdsburg's and/or NCRWQCB Records

1. Response to Walker Report entitled "Programmatic Operation and Management Technical Report for Micro-Irrigation on Vineyards in the Healdsburg Area" Mark Greenspan, PhD, CPAg, CCA dated October 8, 2014. (Attached)

2. *2012 Middle Reach Russian River Vineyard Irrigation Demonstration Project*, Mark Greenspan, PhD, CPAg, CCA for Syar Industries and the Westside Association to Save Agriculture, dated February 8, 2013.

3. *Impacts of Recycled Water Irrigation on Groundwater and Surface Water Flow and Quality near Healdsburg: a Generalized Approach*, Gus Yates for Healdsburg, dated September 21, 2010

4. Syar Property Recycled Wastewater Agricultural Irrigation Project (NSCARP) – Additional Analysis of Potential Groundwater and Russian River Impacts, Gus Yates for Healdsburg, dated June 28, 2010

5. *Northern Sonoma County Agricultural Reuse Project, FEIR: Technical Review of Hydrology and Water Quality Issues, with Technical Memorandum dated March 9, 2009 reviewing Johnson 2008 Dry Creek Valley report and revising Johnson's Water and Salt Balance Tables*, Gus Yates for CWC, dated April 22, 2009

6. *Potential Water Supply Impacts to Dry Creek Valley from NSCARP and a Bypass Pipeline*, N.M. Johnson for Dry Creek Valley Association, dated December 2008

7. *Potential Water Quality Impacts of NSCARP in the Alexander Valley*, N.M. Johnson for the Alexander Valley Association and the SRNA, dated May 2007

Dry Creek Watershed: Potential Effects of Contaminants and Emerging Pollutants to Food Web and Salmonids

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Geologic reports by Wilshire 2009 (NSCARP FEIS/EIR made on behalf of the Clean Water Coalition of Northern Sonoma County) and by Yates 2009 suggested that *"Use of the reservoirs proposed by NSCARP is likely to cause contamination of both surface water and groundwater. Because they are interconnected, surface water contamination, for example by frost-protection spraying and leakage of reservoirs, inevitably leads to groundwater contamination. In addition, if recycled water is used for frost protection, there will be discharges of recycled water runoff along most of the length of Dry Creek and the Russian River where they cross the proposed NSCARP service area. This runoff—including all of the salts, nitrate, dissolved organic carbon, metals and other pollutants contained in the water—flows without dilution to local creeks and the Russian River"*. Furthermore, reports by Johnson 2008 and Yates 2009 further suggested that "*Groundwater salinity in some domestic wells could increase to exceed the drinking water standard or other contaminants present in recycled waste water, including metals, organic compounds, and other currently unregulated "emerging contaminants" would become similarly concentrated and impact local groundwater*".

Based upon these evaluations, the objective of this document is to describe the potential long-term effects of surface and groundwater contamination by NSCARP on the aquatic ecosystems in the Dry Creek Valley. The implications of these effects are presented in this report by briefly describing several studies on the potential impacts of emerging or legacy contaminants to the food web and to targeted fish resources in the Russian River-Dry Creek watershed ecosystem. The role of water chemistry parameters, importantly salinity, is outlined briefly as related to contaminant bioavailability, toxicity to aquatic organisms and ecosystem effects. Emphasis on these factors are presented in a context of potential drivers of structure and function of the Dry Creek ecosystem that may be altered or remain stable in the future and how this will essentially relate to its capability to support important fish resources such as the salmonids Coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*Oncorhynchus tschawytscha*) and steelhead trout (*Oncorhynchus mykiss*).

Water Quality

Salmonids are very sensitive to water pollution and sensitivity may vary during the different life stages. As water quality deteriorates, diminished flows may cause crowding and stress that may lead to disease outbreaks (Spence et al. 1996, Nichols and Foott, 2005). In the Klamath River, water quality conditions are highly stressful to salmonids

due to increased stream temperatures, decreased dissolved oxygen, high pH and unionized ammonia formation due to nutrient flow dynamics (http://www.klamathwaterquality.com/fish_health.html). Fish are also exposed to other stressors including climate changes and disease agents (i.e. microbial pathogens) throughout their life stages. In wild habitats, climate change can influence global impacts of microbial pathogens and endemic diseases to fish populations (Gozlan et al. 2006) and water temperature may affect the pathogenesis of many important infectious diseases (Snieszko 1974). Environmental stressors including culture conditions, water quality and pollutants affect fish at all life stages and their susceptibility to disease can be overwhelmed with a variety of environmental and internal factors (Schreck 1981, Schreck et al. 1993). Larval fish are generally more sensitive to contaminant and disease stressors compared to adults (Arkoosh et al. 1998, Rolland 2000, Teh et al. 2003, Varsamos et al. 2006) and that stress during early life stages may trigger stress and consequential effects as juveniles (Varsamos et al. 2006).

Water temperature is the most important factor affecting biochemical and physiological processes of individual organisms which also affects contaminant transformation and excretion. Within normal physiological ranges, temperature increases may enhance bioaccumulation and toxicity of metals with more complex effects to organic contaminants (Newman and Unger 2003). Other water chemistry parameters including salinity, pH, hardness, organic carbon concentration and redox potential (for sediments) are important factors affecting complexation and speciation of chemicals and metals such as mercury, copper and selenium (Alpers et al. 2008). For instance, ammonia toxicity is reduced at low pH as the ionized form (NH4+) which is produced at low pH, is less toxic than the unionized NH3 form. Studies to address the potential adverse effects of ammonia/ammonium on the Bay-Delta ecosystem, including effects to POD populations or pelagic organisms in decline, have been recently formulated.

Food Web

Links between food web complexity and ecosystem stability have been an emerging challenge in research of aquatic organisms that has focused from phytoplankton to zooplankton to fish. Various trophic levels are affected by chemical contaminants beginning at the base of the food chain during uptake of specific contaminants by phytoplankton with subsequent uptake by grazers (e.g. zooplankton). Extrapolating how toxic compounds move through the food web is a challenge since quantitative information on transfers is limited. Because of the complexity of ecosystems, there is an enormous potential for interaction among different levels of the food web under varying environmental conditions (http://www.mdsg.umd.edu/programs/gateway/contaminants/toxicsrpt/bioleffects/).

Fish rely for food from other organisms across the food web and are exposed to a bewildering array of natural stressors and low-levels of complex toxicants throughout their life history. As fish can accumulate pollutants in body tissues as they grow, deleterious effects may become apparent only when concentrations in tissues reach a threshold level after several months or years. Alternately, a toxicant present at low levels

may be lethal only to very early life history stages. A decline in population due to contaminants may therefore become apparent only several years after a pollution incident when low numbers of a particular year-class is recorded. As suggested by Johnson, Yates, and Wilshire, contaminants will continue to be introduced into the Dry Creek watershed at high concentrations over the years. The cumulative impacts of contaminants to key organisms and to food web species in the environment or through contaminant-induced changes in nutrient and oxygen dynamics will significantly alter the ecosystem function. Pollutants may directly and/or indirectly affect populations and communities and indirect impacts may either reduce or increase population abundance (Fleeger et al. 2003). Indirect contaminant effects have profound implications in environments with strong trophic cascades (indirect effects mediated through consumer resource interactions) such as the freshwater pelagic system with competitive interactions between 'top–down' (predator influence on lower trophic levels) and 'bottom–up' (nutrient/food/prey influence on higher trophic levels) components. The indirect effects of contaminants across trophic levels in the Russian River-Dry Creek watershed may have profound implications as suggested in an excellent review in Fleeger et al. (2003). As the magnitude of systemic effects of contaminants to the ecosystem and to resident aquatic organisms is broad, complex and difficult to assess, contaminant effects may focus on food webs affecting the species of concern in this water system, i.e. the salmonids Coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*Oncorhynchus tschawytscha*) and steelhead trout (*Oncorhynchus mykiss*). Ideally, a coordinated research program with integrated field and laboratory experiments using a variety of methods and endpoints will address the cause and effects of priority contaminants of concern to these key organisms by testing a series of hypotheses.

Emerging Pollutants

Effluents from wastewater treatment plants are significant sources of ammonium including complex mixtures of contaminants that affect reproductive endocrine function (Kidd et al. 2007). As reviewed in Hoenicke et al. 2007, a growing list of emerging contaminants including flame retardant compounds, pesticide and insecticide synergists, insect repellants, pharmaceuticals, personal care product ingredients, plasticizers, non-ionic surfactants and other manufacturing ingredients have not been previously targeted for analysis but polybrominated diphenyl ether (PBDEs) have been detected in water, sediments or biological tissue samples (clams, striped bass, halibut) from the Sacramento and San Joaquin Rivers. Several of these compounds, particularly PBDEs showed concentrations of environmental implications. Although waterborne concentrations are about two orders of magnitude greater than the thresholds for effects observed in laboratory trials (Fent et al. 2006), these compounds may pose a hazard from synergistic effects of multiple contaminants as found in the San Francisco Estuary (Laville et al. 2004). There is a considerable data gap on the cause and effects of emerging contaminants particularly in fish and other aquatic organisms in the Sacramento delta (Thompson et al. 2007).

Endocrine disrupting chemicals (EDCs) are significantly present in wastewater treatment plants that can interfere with the hormonal systems in humans and wildlife that even

extremely low concentrations can cause adverse effects on reproduction and development (Kidd et al. 2007). Chronic exposure of fathead minnow to 5-6 ng/l of 17α-ethynylestradiol (EE2, synthetic estrogen used in birth control pills) resulted to near extinction of this species (Kidd et al. 2007). Even after secondary treatments (chlorination), concentrations of up to 4.05 ng/l of 17ß-estradiol (E2, the natural estrogen) and 2.45 ng/l EE2 in the treatment plant effluent were detected (Huang and Sedlack 2001). Most importantly, subsurface transport of EDCs has been demonstrated as a result of landscape irrigation with treated wastewater (Hudson et al. 2005).

Effects of other contaminants to salmonids

As chinook salmon are obligate pelagic (midwater) feeders, they feed almost exclusively in the midwater zone hence are probably more susceptible to contaminants linked to the food web. As top predators, the Chinook salmon are more affected by pollutants even when the contaminant is toxic only to lower trophic levels (Bacelar et al. 2008).
Among five species of Pacific salmon (chinook, coho, sockeye, chum, pink) collected from the Sacramento River, Skeena River in British Columbia and Puget Sound, the highest levels of all types of contaminants were found in chinook salmon which generally feed higher in the food web than other types of salmon (http://wdfw.wa.gov/science/articles/pcb/index.html). Magnification of polychlorinated biphenyls (PCBs) and major organochlorine pesticides (OCPs) were found in lake trout (*Salvelinus namaycush*) and other food web organisms collected from 17 lakes in Canada and the northeastern United States between 1998 and 2001 (Houde et al. 2008).

Chemical contaminants have been associated with salmon declines in the Pacific Northwest. High levels of PCBs (1300 to 14,000 ng/g lipid, in some cases exceeding the threshold for adverse health effects in juvenile salmonids of 2400 ng/g lipid), dichlorodiphenyltrichloroethanes, DDTs (1800 to 27,000 ng/g lipid), and polycyclic aromatic hydrocarbons, PAHs were found in whole bodies of Chinook salmon in the Lower Columbia River. The stomach contents also showed high contaminant levels indicating that the prey is a significant source of exposure (Johnson et al. 2007a, 2007b).

Low concentrations of anthropogenic chemicals such as insecticides (malathion, carbaryl, chlorpyrifos, diazinon, and endosulfan) and herbicides (glyphosate, atrazine, acetochlor, metolachlor, and 2,4-D) separate or combined in low concentrations (2-16 ppb), can affect aquatic communities composed of zooplankton, phytoplankton, periphyton, and larval amphibians (Relyea 2009). Juvenile chinook salmon exposed to sublethal levels of esfenvalerate or chlorpyrifos either alone or concurrently with infectious hematopoietic necrosis virus (IHNV) showed synergistic effects with endemic pathogens to compromise the survival of wild fish populations through immunologic or physiologic disruption (Clifford et al. 2005).

While copper is a necessary trace element for all living organisms, many studies show that copper in small amounts can be lethal and have many sub-lethal effects in fish and zooplankton. In particular, salmonids and their food sources have very low tolerance for

copper and sub-lethal effects may include decreased fish survival, production and increased mortality rates. Furthermore, copper can impair salmon's sense of smell that may interfere with normal salmon migration, and since copper is a biological stress agent; it depresses immune system function and compromises fish ability to fight disease (Woody 2007, http://www.fish4thefuture.com/pdfs/Summary%20WoodyReview%20-%20Copper%20Effects%20to%20Fish%20092107.pdf).

Effects of Salinity

Although recent studies confirm that elevated salinities can cause substantial changes to the biological communities of aquatic ecosystems, impacts of irrigation-induced salinity in freshwater ecosystems have not been extensively investigated. As the Dry Creek habitats may be altered with future water movements and hydrologic modifications, the freshwater ecosystem in the Dry Creek may be threatened by the effects of salinity changes because of potential rising saline groundwater (as a result of NSCARP) and reduced frequency of high-flow events (as a result of Dry Creek bypass pipeline). Salinity changes may affect ecosystem function through alteration of abiotic and biotic processes (Nielsen et al. 2003). It is beyond my ability to stress the underlying effects of salinity and would encourage reviewers to refer to Nielsen et al. 2003 for more information on how salinity may impact not only the aquatic biota but also the physical components of aquatic ecosystems. The CUWA 1994 literature review indicated salinity tolerance of Chinook salmon from spawning → eggs → larval stages in the ranges of 0 to 0.5 ppt. The potential significant effects of increasing salinity due to the NSCARP and Dry Creek bypass pipelines remain to be determined.

Summary

In is undoubtedly consequential that the SCWA's proposed NSCARP and Dry Creek bypass pipeline will result in the contamination of both surface water and groundwater. This contamination will have long-term effects on the Dry Creek aquatic ecosystems. Author of Santa Rosa DCP FEIR, Volume 3, Appendix G.3-Ecological Risk Assessment stated "*Regulatory agencies have not developed standards or adjusted existing standards to address nonregulated chemicals due to insufficient data to evaluate potential effects of exposure to the environment. Any regulation of these chemicals will likely not occur for several years, if at all. Given that many xenobiotics are neither regulated nor monitored in recycled water, it is unknown what, if any, contribution recycled water discharges may contribute to the Laguna or Russian River. Available data suggest that accurate measurements of hormones at levels that may adversely affect fish are difficult to attain, but would be necessary to fully evaluate these chemicals"* is encouraged to review the Technical Report submitted by Hudson et al. 2005 demonstrating subsurface transport of EDCs as a result of landscape irrigation with treated wastewater (Hudson et al. 2005; www.llnl.gov/tid/lof/documents/pdf/327864.pdf).

It is important that NSCARP FEIS/EIR take into consideration the long-term effects of the contamination of ground and surface waters of the aquatic ecosystem in the Dry Creek Watershed. Of importance is investigating the potential relationships among

contaminant levels and other relevant factors such as: 1) recruitment potential of aquatic organisms, 2) primary and secondary production, 3) nutrient dynamics, and 4) food web structure. Linking these factors to variabilities in contaminants and hydrology may elucidate their effects to biota and ecosystem integrity. Once these relationships are assessed, water allocation may be used as a strategy to manage salinity impacts to the ecosystem and to the species of concern. Disposal and replacement of contaminated salt waters however, should be regulated to minimize potential contaminant distribution in the system.

Literature Cited:

Alpers C, C Eagles-Smith, C Foe, S Klasing, MC Marvin-DiPasquale, DG Slotton, L Windham-Myers. 2008. Mercury Conceptual Model, Delta Regional Ecosystem Restoration Implementation Plan.

Arkoosh MR, E Casillas, P Huffman, E Clemons, J Evered, JE Stein, U Varanasi. 1998. Increased susceptibility of juvenile Chinook salmon from a contaminated estuary to *Vibrio anguillarum*. Transactions of the American Fisheries Society 127: 360-374

Bacelar FS, S Dueri, E Hernández-García, JM Zaldívar JM. 2009. Joint effects of nutrients and contaminants on the dynamics of a food chain in marine ecosystems. Math Biosci 218:24 - 32

California Urban Water Agencies (CUWA). 1994. Evaluation of potential effects of the proposed EPA salinity standard on the biological resources of the San Francisco Bay/Sacramento-San Joaquin Estuary (Draft). Prepared by R2 Resource Consultants, Inc. for The California Urban Water Agencies, Sacramento, CA, March 7, 1994. Reference No. 5. 65 pp. plus appendices.

Clifford MA, KJ Eder, I Werner, RP Hedrick. 2005. Synergistic effects of esfenvalerate and infectious hematopoietic necrosis virus on juvenile Chinook salmon mortality. Environmental Toxicology and Chemistry 24(7):1766-1772.

Fent K, AA Weston, D Camminada, 2006. Ecotoxicology of human pharmaceuticals. Aquat Toxicol 76: 122–159

Fleeger JW, KR Carman, RM Nisbet. 2003. Indirect effects of contaminants in aquatic ecosystems. The Science of the Total Environment 317: 207 – 233

Gozlan RE, EJ Peeler, M Longshaw, S St-Hilaire, SW Feist. 2006. Effect of microbial pathogens on the diversity of aquatic populations, notably in Europe. Microbes and Infection 8:1358 – 1364

Hoenicke R, DR Oros, JJ Oram, KM Taberski. 2007. Adapting an ambient monitoring program to the challenge of managing emerging pollutants in the San Francisco Estuary. Environmental Research 105: 132-144

Houde M, DC Muir, KA Kidd, S Guildford, K Drouillard, MS Evans, X Wang, DM Whittle, D Haffner, H Kling. 2008. Influence of lake characteristics on the biomagnifications of persistent organic pollutants in lake trout food webs. Environ Toxicol Chem 10:2169 – 2178

Huang CH, DL Sedlak DL. 2001. Analysis of estrogenic hormones in municipal wastewater effluent and surface water using enzyme-linked immunosorbent assay and gas chromatography/tandem mass spectrometry. Environ. Toxicol. Chem. 20(1):133-139.

Hudson B, H Beller, CM Bartel1, S Kane, C Campbell, A Grayson, N Liu, S Burastero. 2005. Environmental transport and fate of endocrine disruptors from non-potable reuse of municipal wastewater Final Report for 03-ERD-065. U.S. Department of Energy, University of California, Lawrence Livermore National Laboratory Contract W-7405-Eng-48.

Johnson LL, GM Ylitalo, CA Sloan, BF Anulacion, AN Kagley, MR Arkoosh, TA Lundrigan, K Larson, M Siipola, TK Collier. 2007a. Persistent organic pollutants in outmigrant juvenile chinook salmon from the Lower Columbia Estuary, USA. Sci Total Environ 374:342 – 366

Johnson LL, GM Ylitalo, MR Arkoosh, AN Kagley C. Stafford, JL Bolton, J Buzitis, BF Anulacion, TK Collier. 2007b. Contaminant exposure in outmigrant juvenile salmon from Pacific Northwest estuaries of the United States. Environ Monit Assess 124:167 – 194

Johnson, Nicholas M., Water Resources Consultant, Potential Water-Supply Impacts to Dry Creek Valley from NSCARP and a Bypass Pipeline, Prepared for Dry Creek Valley Association, December 2008

Kidd KA, PJ Blanchfield, KH Mills, VP Palace, RE Evans, JM Lazorchak, RW Flick. 2007. Collapse of a fish population after exposure to a synthetic estrogen. Proceed. Nat. Acad. Sci. 104:8897-8901

Laville N, S Ait-Assima, F Gomez, C Casellas, M Porcher. 2004. Effects of human pharmaceuticals on cytotoxicity, EROD activity and ROS production in fish hepatocytes. Toxicology 196: 41–55

Newman MC, MA Unger. 2003. Fundamentals of Ecotoxicology. CRC Press, Boca Raton, FL, pp 458.

Nichols K, JS Foott. 2005. Health monitoring of juvenile Klamath River Chinook salmon, FY 2004 investigational report. USFWS California-Nevada Fish Health Center, Red Bluff, CA.

Nielsen DL, MA Brock, GN Rees, DS Baldwin. 2003. Effects of increasing salinity on freshwater ecosystems in Australia. Austalian Journal of Botany 51: 655 – 665

Relyea RA. 2009. A cocktail of contaminants: how mixtures of pesticides at low concentrations affect aquatic communities. Oecologia 159:363 – 376

Rolland RM. 2000. Ecoepidemiology of the effects of pollution on reproduction and survival of early life stages in teleosts. Fish and Fisheries 1: 41-72

Santa Rosa Discharge Compliance Report EIR, Volume 3--Appendix G-3, Ecological Risk Assessment, available at http://ci.santa-rosa.ca.us/departments/utilities/irwp/discharge/Pages/studies_reports.aspx#Final_EIR.

Schreck CB. 1981. Stress and compensation in teleost fishes: response to social and physical factors. Stress and Fish. A. Pickering. London, Academic Press**:** 295-321

Schreck CB, AG Maule, SL Kaattari. 1993. Stress and disease. Recent Advances in Aquaculture. J. F. Muir, Roberts, R.J. Oxford, Blackwell Scientific Publishing**:** 170-175

Spence BC, GA Lomnicky, RM Hughes, RP Novitzki. 1996. An ecosystem approach to salmonid conservation. Funded jointly by the U.S. EPA, U.S. Fish and Wildlife Service and National Marine Fisheries Service. TR-4501-96-6057. Man Tech Environmental Research Services Corp., Corvallis, OR.

Snieszko SF. 1974. The effects of environmental stress on outbreaks of infectious diseases of fishes. Journal of Fish Biolology 6:197-208

Teh SJ, C Wong, V Furtula, FC Teh. 2003. Lethal and sublethal toxicity of didecyldimethylammonium chloride (DDAC) in early life stages of white sturgeon (*Acipenser transmontanus*). Environmental Toxicology and Chemistry 22: 2152-2158

Thompson B, T Adelsbach, C Brown, J Hunta, J Kuwabara, J Neale, H Ohlendorf, S Schwarzbach, R Spies, K Taberski. 2007. Biological effects of anthropogenic contaminants in the San Francisco Estuary. Environmental Research 105:156–174

Varsamos S, G Flik, JF Pepin, SE Wendelaar Bonga, G Breuil. 2006. Husbandry stress during early life stages affects the stress response and health status of juvenile sea bass, *Dicentrarchus labrax*. Fish and Shellfish Immunology 20:83 – 96

Wilshire, Howard; Letter to David Cuneo, SCWA, April 2009

Woody CA. 2007. Summary of copper: Effects on freshwater food chains and salmon - summary prepared by Trout Unlimited for the Alaska State Legislature, September 2007. http://www.fish4thefuture.com/pdfs/Summary%20WoodyReview%20-%20Copper%20Effects%20to%20Fish%20092107.pdf

Yates, Gus; Northern Sonoma County Agricultural Reuse Project, Final Environmental Impact Report: Technical Review of Hydrology and Water Quality Issues, Letter to CWCNSC, April 2009

ALL Stations

site	location	month	day	year	Flow CFS	rain type	24-rain inches	48hr rain inches	Previous 30 days	water temp Celsius	NH3 mg/L 0.02*	NO3 mg/L 0.1*	OrthoP mg/L 0.02*	rbidity NTU 1.0*	TSS mg/L 4.0*	Cond mhos/cm 10.0*	Alkalinity mg/L 1.0*	pH	opper ug/L 2.0*	zinc ug/L 20.0*	lead ug/L 1.0*	BacT -Tot pn/100ml	BacT E. Coli	Lab	other notes
2001-2002	**rain season**																								
2	**TUR60-Turtle Creek**	**10**	**25**	**2002**		**1**	**0**	**0**	**0**	**12**	**<0.2**	**<0.2**	**<0.06**	**0.8**	**<1.0**	**250.0**		**7.0**	**<0.5**	**<0.05**	**<0.005**			**B&R**	**s, EC- Oakton mtr frm EPA**
2002-2003																									
1	**KC30-Keepo Creek**	**11**	**11**	**2002**		**1**	**0**	**8**	**6.6**		**0.20**	**40.0**													
1	KC30-Keepo Creek	12	16	2002		2	3.21	8	17.44	13	0.49	53.8	8.00	40.0	49.2	737.0	84.0	7.4	11.5	<20	1.0				
2	TUR60-Turtle Creek	12	16	2002		2	3.21	8	17.44	10.5	0.14	3.0	0.43	160.0	69.6	99.3	47.6	7.2	12.0	<20	1.4				
3	TUR40-Turtle Creek	12	16	2002		2	3.21	8	17.44	14	0.14	2.6	0.45	170.0	119.6	98.7	51.8	7.1	11.6	<20	1.5				
4	TUR20-Turtle Creek	12	16	2002		2	3.21	8	17.44	11	0.25	12.5	1.13	140.0	92.5	164.5	55.6	7.2	11.0	<20	1.7				
1	KC30-Keepo Creek	1	15	2003	1.08		0.2	1.56	15	12	0.20	23.8	1.16	6.5	3.2	596.4	64.0	7.4	3.4	<20	<1	>2419.2	126.7		
2	TUR60-Turtle Creek	1	15	2003	34.2		0.2	1.56	15	12	0.23	1.5	0.08	16.0	4.0	129.2	53.0	7.3	2.3	<20	<1				
3	TUR40-Turtle Creek	1	15	2003	37		0.2	1.56	15	10	0.21	1.1	0.33	15.0	1.6	127.1	53.0	7.3	2.0	<20	<1				
4	TUR20-Turtle Creek	1	15	2003			0.2	1.56	15	12	0.20	4.2	0.14	14.0	3.2	179.9	54.2	7.3	2.2	<20	<1				
1	KC30-Keepo Creek	2	10	2003	0.15	1	0	0	0.24	7	0.10	27.5	0.64	4.2	0.0	643.8	86.6	7.5	<2	<20	<1	<2419.2	18.9		
2	TUR60-Turtle Creek	2	10	2003	1.52	1	0	0	0.24	9.5	0.03	0.5	0.02	5.3	0.0	170.8	78.4	7.3	<2	<20	<1				
3	TUR40-Turtle Creek	2	10	2003		1	0	0	0.24	8.75	0.03	0.3	0.06	8.3	0.0	165.9	76.2	7.1	<2	<20	<1				
4	TUR20-Turtle Creek	2	10	2003		1	0	0	0.24	8.25	0.04	2.0	0.12	2.9	0.8	208.0	75.8	7.3	<2	<20	<1				
1	KC30-Keepo Creek	3	17	2003	1.22	3	0.25	2.5	8.84	12	0.18	25.0	0.73	12.0	7.2	627.9	96.2	7.6	3.1	<20	<1	>2419.2	>2419.2		
2	TUR60-Turtle Creek	3	17	2003	13.2	3	0.25	2.5	8.84	10.75	0.43	1.1	0.06	39.0	8.8	155.9	75.4	7.4	3.7	<20	<1				
3	TUR40-Turtle Creek	3	17	2003	19.4	3	0.25	2.5	8.84	10.5	0.40	1.0	0.11	31.0	5.6	153.5	80.6	7.4	3.0	<20	<1				
4	TUR20-Turtle Creek	3	17	2003		3	0.25	2.5	8.84	10	0.34	3.4	0.36	29.0	5.8	207.9	80.2	7.5	2.7	<20	<1				
1	KC30-Keepo Creek	4	14	2003		3	0.75	3	3.92	10	0.20	17.5	0.79	6.8	9.2	478.0	124.7	7.7	2.2	<20	<1	>2419.2	>2419.2		
2	TUR60-Turtle Creek	4	14	2003		3	0.75	3	3.92	11.4	0.14	0.6	0.15	5.2	<4	186.0	100.0	7.5	<2	<20	<1				
3	TUR40-Turtle Creek	4	14	2003		3	0.75	3	3.92	10	0.16	0.5	0.10	6.3	<4	179.4	95.6	7.4	<2	<20	<1				
4	TUR20-Turtle Creek	4	14	2003		3	0.75	3	3.92	10.5	0.16	1.5	0.14	5.3	<4	202.9	102.4	7.4	<2	<20	<1				
1	KC30-Keepo Creek	5	12	2003	0.17	4	0	0	4.72	12	0.07	22.0	0.56	1.2	<4	616.0	119.6	7.7	<2.0	<20.0	<1.0	533.5	135.4		
2	Tur60-Turtle Creek	5	12	2003		4	0	0	4.72	12	0.07	0.4	0.07	1.7	<4	199.0	107.8	7.4	<2.0	<20.0	<1.0				
3	Tur40-Turtle Creek	5	12	2003	2	4	0	0	4.72	13	0.05	0.3	0.07	1.3	<4	187.0	103.0	7.2	<2.0	<20.0	<1.0				
4	Tur20-Turtle Creek	5	12	2003		4	0	0	4.72	11.5	0.04	2.1	0.08	1.6	<4	230.0	98.6	7.4	<2.0	<20.0	<1.0				
1	KC30-Keepo Creek	6	9	2003		1	0	0	0	13	0.08	30.0	0.74	1.1	<4	758.2	154.0	8.0	<2.0	<20.0	<1.0				
2	Tur60-Turtle Creek	6	9	2003		1	0	0	0	13.5	0.19	0.3	0.06	1.0	<4	233.3	144.0	7.6	<2.0	<20.0	<1.0				
3	Tur40-Turtle Creek	6	9	2003		1	0	0	0	12.5	0.06	0.2	0.14	<1	<4	219.2	132.0	7.6	<2.0	<20.0	<1.0				
4	Tur20-Turtle Creek	6	9	2003		1	0	0	0		0.05	0.3	0.21	<1	<4	222.5	130.0	7.7	<2.0	<20.0	<1.0				
2	Tur60-Turtle Creek	7	14	2003		1	0	0	0	15	0.08	0.1	0.23	1.3	<4	267.5	151.2	7.0	<2.0	<20.0	<1.0				
4	Tur20-Turtle Creek	7	14	2003		1	0	0	0	15	0.08	0.1	0.34	1.6	<4	303.9	155.2	6.7	<2.0	<20.0	<1.0				
2003-2004																									
1	KC30-Keepo Creek	11	12	2003		1	0	0	4.68	10.3	0.19	34.0	0.43	1.1	<4	1031.9	176.6	7.5	2.1	<20	<1				
2	Tur60-Turtle Creek	11	12	2003		1	0	0	4.68	12.2	0.13	0.1	0.04	1.9	<4	283.4	133.8	6.8	<2	<20	<1				
1	KC30-Keepo Creek	12	17	2003		1	0	0	4.8	9.78	0.17	60	1.05	2	<4	1020	52	7.6	3.3	<20	<1				
2	Tur60-Turtle Creek	12	17	2003		1	0	0	4.8	9.5	0.21	2.7	0.08	45	9.2	170.4	54	7.6	2.7	<20	<1				
3	Tur40-Turtle Creek	12	17	2003		1	0	0	4.8	8	0.14	2.3	0.17	30	4	176.9	62	7.5	2.0	<20	<1				
4	Tur20-Turtle Creek	12	17	2003		1	0	0	4.8		0.17	8.8	0.26	19	<4	274.5	62	7.6	2.0	<20	<1				
1	KC30-Keepo Creek	2	9	2004		1	0	0.25	5.2	9.0	0.12	35.0	0.64	4.4	<4	768.9	86.0	7.5	<2.0	<20.0	<1.0				
2	Tur60-Turtle Creek	2	9	2004		1	0	0.25	5.2	8.0	0.14	1.2	0.09	8.7	<4	174.4	82.0	7.6	<2.0	<20.0	<1.0				
3	Tur40-Turtle Creek	2	9	2004		1	0	0.25	5.2	8.5	0.09	1.2	0.09	5.9	<4	172.6	82.0	7.4	<2.0	<20.0	<1.0				

4	Tur20-Turtle Creek	2	9	2004		1	0	0.25	5.2	10.0	0.09	4.5	0.10	10.0	<4	235.1	83.0	7.5	<2.0	<20.0	<1.0
1	KC30-Keepo Creek	3	8	2004		1	0		20.84	10.8	0.10	24.2	0.88	3.7	<4	622.2	86.0	7.6	<2.0	<20.0	<1.0
2	Tur60-Turtle Creek	3	8	2004		1	0		20.84	11.5	0.19	0.7	0.23	13.0	<4	169.9	72.0	7.6	<2.0	<20.0	<1.0
3	Tur40-Turtle Creek	3	8	2004		1	0		20.84	14.0	0.15	0.7	0.22	7.4	<4	167.9	54.0	7.4	<2.0	<20.0	<1.0
4	Tur20-Turtle Creek	3	8	2004		1	0		20.84	12.1	0.10	2.3	0.28	5.2	<4	104.7	72.0	7.5	<2.0	<20.0	<1.0
1	KC30-Keepo Creek	4	7	2004		1	0	0		10.0	0.08	33.8	0.61	<1	<4	758.8	106.0	7.8			
2	Tur60-Turtle Creek	4	7	2004		1	0	0		10.0	0.05	0.1	0.15	3.0	<4	197.7	90.0	7.4			
3	Tur40-Turtle Creek	4	7	2004		1	0	0		11.0	0.03	0.2	0.20	1.8	<4	188.5	88.0	7.3			
4	Tur20-Turtle Creek	4	7	2004		1	0	0		11.1	0.05	1.3	0.11	1.3	<4	228.6	98.0	7.2			
1	KC30-Keepo Creek	5	10	2004	1		1	12.0	0.08	31.7	0.61	1.0	<4	751.4	132.0	7.8	<2	<20	<1		
3	Tur40-Turtle Creek	5	10	2004	1		1	13.0	0.04	0.1	0.23	<1	<4	183.2	96.0	7.0	<2	<20	<1		
4	Tur20-Turtle Creek	5	10	2004	1		1	13.9	0.04	0.1	0.10	1.1	<4	245.5	106.0	7.0	<2	<20	<1		
1	KC30-Keepo Creek	6	14	2004				15.0	0.10	50.0	0.36	1.1	<4	985.1	146.0	7.6	<2	<20	<1		
2	Tur60-Turtle Creek	6	14	2004				14.0	0.08	0.1	0.04	1.0	<4	233.6	104.0	7.1	<2	<20	<1		
2004-2005																					
1	KC30-Keepo Creek	12	14	2004	2		0.05	11.0	0.25	53.8	1.43	3.4	4.8	1024.2	84.0	7.6	3.8	<20	<2		
3	Tur40-Turtle Creek	12	14	2004	2		0.05	11.5	0.19	1.5	0.09	28.0	5.2	159.1	66.0	7.4	2.7	<20	<2		
6	Tur65-Turtle Creek	12	14	2004	2		0.05	13.0	0.22	1.7	0.11	31.0	7.2	161.7	63.0	7.6	2.8	<20	<2		
5	Tur25-Turtle Creek	12	14	2004	2		0.05	13.0	0.23	11.8	0.33	22.0	<4	324.9	68.0	7.4	10.9	<20	<2		
1	KC30-Keepo Creek	1	10	2005	2	0.5		11.0	0.23	45.0	0.98	15.0	39.6	723.4	55.0	8.2	3.0	<20	<2		
3	Tur40-Turtle Creek	1	10	2005	2	0.5		9.0	0.26	1.0	0.08	19.0	<4	138.5	53.0	7.6	<2	<20	<2		
5	Tur25-Turtle Creek	1	10	2005	2	0.5		9.5	0.25	5.7	0.28	23.0	10.0	211.0	54.0	7.4	<2	<20	<2		
6	Tur65-Turtle Creek	1	10	2005	2	0.5		9.5	0.31	1.1	0.11	26.0	4.4	145.1	56.0	7.5	<2	<20	<2		
1	KC30-Keepo Creek	2	14	2005	2	0.05		11.0	0.08	42.5	0.59	2.8	<4	806.0	114.0	7.7	2.4	<20	<2		
3	Tur40-Turtle Creek	2	14	2005	2	0.05		10.0	0.04	0.3	<0.02	1.3	<4	190.6	90.0	7.4	<2	<20	<2		
5	Tur25-Turtle Creek	2	14	2005	2	0.05		10.5	0.05	2.0	<0.02	1.1	<4	199.0	84.0	7.3	<2	<20	<2		
6	Tur65-Turtle Creek	2	14	2005	2	0.05		10.0	0.06	0.4	<0.02	1.6	<4	218.0	83.0	7.5	<2	<20	<2		
1	KC30-Keepo Creek	3	14	2005	1				0.10	37.5	0.56	1.3	<4	660.0	108.0	7.7	<2	<20	<2		
3	Tur40-Turtle Creek	3	14	2005	1				0.05	0.3	0.04	1.3	<4	188.0	88.0	7.5	<2	<20	<2		
5	Tur25-Turtle Creek	3	14	2005	1				0.05	2.7	0.10	1.5	<4	224.0	86.0	7.5	<2	<20	<2		
6	Tur65-Turtle Creek	3	14	2005	1				0.07	0.4	0.04	1.4	<4	200.0	91.0	7.6	<2	<20	<2		
1	KC30-Keepo Creek	4	11	2005	1	0		13.5	0.12	33.8	0.17	2.6	<4	592.3	103.0	7.7	2.0	<20	<2		
3	Tur40-Turtle Creek	4	11	2005	1	0		13.0	0.13	0.7	0.08	4.5	<4	191.2	83.0	7.4	2.2	28.9	<2		
5	Tur25-Turtle Creek	4	11	2005	1	0		13.0	0.13	2.8	0.18	4.4	<4	230.6	86.0	7.5	<2	<20	<2		
6	Tur65-Turtle Creek	4	11	2005	1	0		11.0	0.16	0.6	0.15	5.6	<4	199.1	90.0	7.6	<2	<20	<2		
1	KC30-Keepo Creek	5	9	2005	4	1.25		14.0	0.30	9.5	0.87	16.0	<4	407.2	104.6	7.9	3.9	<20	<2		
3	Tur40-Turtle Creek	5	9	2005	4	1.25		16.0	0.25	0.4	0.13	17.0	<4	193.8	83.0	7.6	2.5	<20	<2		
5	Tur25-Turtle Creek	5	9	2005	4	1.25		15.0	0.21	1.1	0.15	17.0	<4	199.6	86.6	7.7	2.2	<20	<2		
6	Tur65-Turtle Creek	5	9	2005	4	1.25		16.0	0.19	0.4	0.11	16.0	<4	197.2	86.5	7.8	2.1	<20	<2		
1	KC30-Keepo Creek	6	13	2005	1	0		15.0	0.09	32.2	0.69	4.6	<4	675.0	112.0	7.9					
3	Tur40-Turtle Creek	6	13	2005	1	0		16.0	0.04	0.1	0.14	1.5	<4	200.0	95.0	7.1					
5	Tur25-Turtle Creek	6	13	2005	1	0		15.5	0.06	0.1	0.22	2.6	<4	202.0	89.0	7.3					
6	Tur65-Turtle Creek	6	13	2005	1	0		16.5	0.07	0.1	0.16	1.8	<4	233.0	105.0	7.2					
1	KC30-Keepo Creek	7	18	2005					0.11	33.8	0.46	31.0	79.7	764.0	132.0	8.0					
3	Tur40-Turtle Creek	7	18	2005					0.04	<0.1	0.02	2.5	<4	206.0	98.0	6.9					

6	Tur65-Turtle Creek	7	18	2005				0.06	0.1	0.08	<1	<4	293.0	133.0	7.7			
2005-2006																		
1	KC30-Keepo Creek	12	1	2005			12.7	0.33	19.0	1.74	43.0	44.4	394.0	33.6	7.5	5.1	<20	<2
3	Tur40-Turtle Creek	12	1	2005			10.9	0.26	3.7	0.08	120.0	126.4	175.5	56.0	7.7	9.4	<20	<2
6	Tur65-Turtle Creek	12	1	2005			11.0	0.23	2.0	0.07	140.0	126.0	162.1	57.8	7.7	10.2	<20	2.0
1	KC30-Keepo Creek	1	16	2006	1	0	11.0	0.09	45.0	0.91	2.8	<4	709.5	125.0	7.6	3.3	<20	<2
3	Tur40-Turtle Creek	1	16	2006	1	0	9.5	0.15	1.2	0.08	23.0	<4	152.4	101.0	7.3	2.3	<20	<2
5	Tur25-Turtle Creek	1	16	2006	1	0	9.5	0.15	8.5	0.18	19.0	<4	233.2	104.0	7.5	2.3	<20	<2
6	Tur65-Turtle Creek	1	16	2006	1	0	9.0	0.18	1.4	0.13	34.0	<4	153.2	105.0	7.5	2.8	<20	<2
1	KC30-Keepo Creek	2	13	2006	1	0	11.0	0.06	42.5	0.58	2.1	<4	641.5	89.2	7.7	2.1	<20	<2
3	Tur40-Turtle Creek	2	13	2006	1	0	14.0	0.07	0.4	0.04	4.0	<4	182.8	81.2	7.5	<2	<20	<2
5	Tur25-Turtle Creek	2	13	2006	1	0	9.5	0.06	1.5	0.06	5.4	<4	198.6	83.0	7.5	<2	<20	<2
6	Tur65-Turtle Creek	2	13	2006	1	0	9.0	0.11	0.5	<0.02	8.1	<4	187.5	81.8	7.7	<2	<20	<2
1	KC30-Keepo Creek	3	14	2006	2	0.2	9.0	0.31	32.5	0.76	5.9	<4	553.0	91.8	7.7	2.6	<20	<2
3	Tur40-Turtle Creek	3	14	2006	2	0.2	7.0	0.13	0.9	0.08	16.0	<4	149.1	65.8	7.4	<2	<20	<2
5	Tur25-Turtle Creek	3	14	2006	2	0.2	8.0	0.16	2.5	0.15	16.0	<4	173.0	70.8	7.4	<2	<20	<2
6	Tur65-Turtle Creek	3	14	2006	2	0.2	8.0	0.13	1.2	0.06	23.0	<4	152.1	68.9	7.5	<2	<20	<2
1	KC30-Keepo Creek	4	10	2006	2	0.3	13.0	0.46	20.0	2.34	190.0	200.0	430.7	57.4	7.6	9.8	28.8	2.5
3	Tur40-Turtle Creek	4	10	2006	2	0.3	11.0	0.14	0.7	0.08	19.0	4.8	149.8	60.0	7.5	<2	<20	<2
5	Tur25-Turtle Creek	4	10	2006	2	0.3	11.0	0.18	1.6	0.17	22.0	8.0	160.3	69.0	7.4	<2	<20	<2
6	Tur65-Turtle Creek	4	10	2006	2	0.3	13.0	0.16	0.7	0.09	18.0	4.4	154.8	68.2	7.4	<2	<20	<2
1	KC30-Keepo Creek	5	8	2006	1	0	12.0	0.08	25.0	0.82	4.1	<4	569.0	107.2	7.7	2.2	<20	<2
3	Tur40-Turtle Creek	5	8	2006	1	0	14.0	0.03	0.1	0.07	3.2	<4	176.3	81.4	7.3	<2	<20	<2
5	Tur25-Turtle Creek	5	8	2006	1	0	14.0	0.05	0.9	0.16	6.5	<4	187.5	80.4	7.3	<2	<20	<2
6	Tur65-Turtle Creek	5	8	2006	1	0	13.0	0.04	0.1	0.11	4.2	<4	1901.0	88.0	7.4	<2	<20	<2
1	KC30-Keepo Creek	6	12	2006	1	0		0.07	27.5	0.66	2.8	<4	629.0	115.0	7.9	<2	<20	<2
3	Tur40-Turtle Creek	6	12	2006	1	0	14.5	0.05	0.1	0.11	1.2	<4	207.0	98.0	7.0	<2	<20	<2
5	Tur25-Turtle Creek	6	12	2006	1	0	14.5	0.04	0.1	0.20	1.1	<4	207.0	92.0	7.1	<2	<20	<2
6	Tur65-Turtle Creek	6	12	2006	1	0	14.0	0.03	<0.1	0.19	1.4	<4	232.0	107.0	6.8	<2	<20	<2
2006-2007	No flow until Jan07																	
1	KC30-Keepo Creek	1	16	2007	0		5.0	0.08	52.5	0.64	7.3	<4	931.9	104.0	7.8	<2	<20	<2
3	Tur40-Turtle Creek	1	16	2007	0		7.0	0.03	0.6	0.09	2.6	<4	208.4	87.0	6.9	<2	<20	<2
5	Tur25-Turtle Creek	1	16	2007	0		4.0	0.03	0.5	0.07	1.7	<4	207.4	87.0	7.2	<2	<20	<2
6	Tur65-Turtle Creek	1	16	2007	0		4.0	0.04	0.5	0.02	2.0	<4	205.9	85.0	7.3	<2	<20	<2
1	KC30-Keepo Creek	2	13	2007		0.5	11.0	0.18	50.0	1.12	8.1	4.0	737.8	86.0	7.8	4.0	<20	<2
3	Tur40-Turtle Creek	2	13	2007		0.5	11.0	0.13	1.5	0.07	30.0	<4	134.0	62.0	7.5	2.7	<20	<2
5	Tur25-Turtle Creek	2	13	2007		0.5	10.0	0.14	5.3	0.12	29.0	6.0	152.2	63.0	7.4	2.7	<20	<2
6	Tur65-Turtle Creek	2	13	2007		0.5	10.0	0.15	1.8	0.07	33.0	5.6	130.6	60.0	7.5	2.7	<20	<2
1	KC30-Keepo Creek	3	13	2007	0	0	12.0	0.09	40.0	0.63	4.0	<4	696.2	161.0	7.6	<2	<20	<2
3	Tur40-Turtle Creek	3	13	2007	0	0	12.0	0.15	0.4	0.06	3.0	<4	177.1	123.0	6.9	<2	<20	<2
5	Tur25-Turtle Creek	3	13	2007	0	0	12.0	0.09	2.1	0.06	3.8	<4	200.2	124.0	7.3	<2	<20	<2
6	Tur65-Turtle Creek	3	13	2007	0	0	12.0	0.09	0.6	0.05	4.0	<4	183.2	126.5	7.3	<2	<20	<2
1	KC30-Keepo Creek	4	10	2007	0	0	11.0	0.12	37.5	0.67	6.3	6.4	710.2	174.0	7.9	<2	<20	<2
3	Tur40-Turtle Creek	4	10	2007	0	0	14.0	0.06	0.1	0.10	1.4	<4	193.9	128.0	7.1	<2	<20	<2
5	Tur25-Turtle Creek	4	10	2007	0	0	12.0	0.06	<0.1	0.05	2.4	<4	200.8	130.0	7.2	<2	<20	<2
6	Tur65-Turtle Creek	4	10	2007	0	0	11.0	0.07	0.1	0.04	2.2	<4	190.3	124.0	7.2	<2	<20	<2

Site #1 - KC30
Keepo Creek

site	location	month	day	year	Flow CFS	rain type	24-rain inches	48-rain inches	Previous 30-day rain	water temp Celsius	*reporting limit NH3 mg/L 0.02*	NO3 mg/L 0.1*	OrthoP mg/L 0.02*	rbidity NTU 1.0*	TSS mg/L 4.0*	Cond umhos/cm 10.0*
2001-2002	**Rain Season**															
1	**KC30-Keepo Cree**	**11**	**11**	**2002**		**1**	**0**	**0**	**6.6**		**0.20**	**40.0**				
2002-2003	**Rain Season**															
1	KC30-Keepo Creek	12	16	2002		2	3.21	8	17.44	13	0.49	53.8	8.00	40.0	49.2	737.0
1	KC30-Keepo Creek	1	15	2003	1.08		0.2		15	12	0.20	23.8	1.16	6.5	3.2	596.4
1	KC30-Keepo Creek	2	10	2003	0.15	1	0		0.24	7	0.10	27.5	0.64	4.2	0.0	643.8
1	KC30-Keepo Creek	3	17	2003	1.22	3	0.25	2.5	8.84	12	0.18	25.0	0.73	12.0	7.2	627.9
1	KC30-Keepo Creek	4	14	2003		3	0.75	3	3.92	10	0.20	17.5	0.79	6.8	9.2	478.0
1	KC30-Keepo Creek	5	12	2003	0.17	4	0	0	4.72	12	0.07	22.0	0.56	1.2	<4	616.0
1	KC30-Keepo Creek	6	9	2003		1	0	0	0	13	0.08	30.0	0.74	1.1	<4	758.2
2003-2004	**Rain Season**															
1	KC30-Keepo Creek	11	12	2003		1	0	0	4.68	10.3	0.19	34.0	0.43	1.1	<4	1031.9
1	KC30-Keepo Cree	12	17	2003		1	0		4.8	9.78	0.17	60	1.05	2	<4	1020
1	KC30-Keepo Creek	2	9	2004		1	0	0.25	5.2	9.0	0.12	35.0	0.64	4.4	<4	768.9
									20.84							

Nitrate on Turtle Cre	KC30	TUR(	TUR2(	Ideal	Legal
Dec-02	53.8	3	12.5	1	45
Jan-03	23.8	1.5	4.2	1	45
Feb-03	27.5	0.5	2	1	45
Mar-03	25.0	1.1	3.4	1	45
Jan-03	17.5	0.6	1.5	1	45
May-03	22.0	0.4	2.1	1	45
Jun-03	30.0	0.3	0.3	1	45
Nov-03	34.0	0.1	0.1	1	45
Dec-03	60	2.7	8.8	1	45
Feb-04	35.0	1.2	4.5	1	45

alinity mg/L 1.0*	pH	opper ug/L 2.0*	zinc ug/L 20.0*	lead ug/L 1.0*	BacT -Tot mpn/100ml	BacT-ecoli	Lab other notes all UNCA except as noted
84.0	7.4	11.5	<20	1.0			
64.0	7.4	3.4	0.0	0.0	>2419.2	126.7	
86.6	7.5	<2	<20	<1	<2419.2	18.9	
96.2	7.6	3.1	<20	<1	>2419.2	>2419.2	
124.7	7.7				>2419.2	>2419.2	
119.6	7.7	<2.0	<20.0	<1.0	533.5	135.4	
154.0	8.0	<2.0	<20.0	<1.0			
176.6	7.5	2.1	<20	<1			
52	7.6						
86.0	7.5						

Site #2 - TUR60
Upper Turtle Creek

site	location	month	day	year	Flow CFS	rain type	24-rain inches	48-rain inches	Previous 30-day rain	water temp Celsius	NH3 mg/L 0.02*	NO3 mg/L 0.1*	OrthoP mg/L 0.02*	urbidity NTU 1.0*	TSS mg/L 4.0*	Cond mhos/cm 10.0*	lkalinity mg/L 1.0*	pH
2001-2002	**Rain Season**																	
2	**TUR60-Tur**	**10**	**25**	**2002**		**1**	**0**	**0**	**0**	**12**	**<0.2**	**<0.2**	**<0.06**	**0.8**	**<1.0**	**250.0**		**7.0**
2002-2003	**Rain Season**																	
2	TUR60-Turtle	12	16	2002		2	3.21	8	17.44	10.5	0.14	3.0	0.43	160.0	69.6	99.3	47.6	7.2
2	TUR60-Turtle	1	15	2003	34.2		0.2		15	12	0.23	1.5	0.08	16.0	4.0	129.2	53.0	7.3
2	TUR60-Turtle	2	10	2003	1.52	1	0		0.24	9.5	0.03	0.5	0.02	5.3	0.0	170.8	78.4	7.3
2	TUR60-Turtle	3	17	2003	13.2	3	0.25	2.5	8.84	10.75	0.43	1.1	0.06	39.0	8.8	155.9	75.4	7.4
2	TUR60-Turtle	4	14	2003		3	0.75	3	3.92	11.4	0.14	0.6	0.15	5.2	<4	186.0	100.0	7.5
2	Tur60-Turtle	5	12	2003		4	0	0	4.72	12	0.07	0.4	0.07	1.7	<4	199.0	107.8	7.4
2	Tur60-Turtle	6	9	2003		1	0	0	0	13.5	0.19	0.3	0.06	1.0	<4	233.3	144.0	7.6
2	Tur60-Turtle	7	14	2003		1	0	0	0	15	0.08	0.1	0.23	1.3	<4	267.5	151.2	7.0
2003-2004	**Rain Season**																	
2	Tur60-Turtle	11	12	2003		1	0	0	4.68	12.2	0.13	0.1	0.04	1.9	<4	283.4	133.8	6.8
2	Tur60-Turtle	12	17	2003		1	0		4.8	9.5	0.21	2.7	0.08	45	9.2	170.4	54	7.6
2	Tur60-Turtle	2	9	2004		1	0	0.25	5.2	8.0	0.14	1.2	0.09	8.7	<4	174.4	82.0	7.6
									20.84									

copper ug/L 2.0*	zinc ug/L 20.0*	lead ug/L 1.0*	Lab	other notes
<0.5	**<0.05**	**<0.005**	**B&R**	**ips, EC- Oakton mtr frm EPA**
12.0	<20	1.4		
2.3	0.0	0.0		
<2	<20	<1		
3.7	<20	<1		
<2.0	<20.0	<1.0		
<2.0	<20.0	<1.0		
<2.0	<20.0	<1.0		
<2	<20	<1		

Site #3 - TUR40
Turtle Creek by Westside Rd

site	location	month	day	year	Flow CFS	rain type	24-rain inches	48-rain inches	Previous 30-day rain	water temp	NH3 mg/L	NO3 mg/L	rthoP mg/L	urbidity NTU	TSS mg/L	Cond ios/cm	kalinity mg/L	pH
2002-2003	**Rain Season**									**Celsius**	**0.02***	**0.1***	**0.02***	**1.0***	**4.0***	**10.0***	**1.0***	
3	TUR40-Turtle	12	16	2002		2	3.21	8	17.44	14	0.14	2.6	0.45	170.0	119.6	98.7	51.8	7.1
3	TUR40-Turtle	1	15	2003	37		0.2		15	10	0.21	1.1	0.33	15.0	1.6	127.1	53.0	7.3
3	TUR40-Turtle	2	10	2003		1	0		0.24	8.75	0.03	0.3	0.06	8.3	0.0	165.9	76.2	7.1
3	TUR40-Turtle	3	17	2003	19.4	3	0.25	2.5	8.84	10.5	0.40	1.0	0.11	31.0	5.6	153.5	80.6	7.4
3	TUR40-Turtle	4	14	2003		3	0.75	3	3.92	10	0.16	0.5	0.10	6.3	<4	179.4	95.6	7.4
3	Tur40-Turtle	5	12	2003	2	4	0	0	4.72	13	0.05	0.3	0.07	1.3	<4	187.0	103.0	7.2
3	Tur40-Turtle	6	9	2003		1	0	0	0	12.5	0.06	0.2	0.14	<1	<4	219.2	132.0	7.6
2003-2004	Rain Season																	
3	Tur40-Turtle	12	17	2003		1	0		4.8	8	0.14	2.3	0.17	30	4	176.9	62	7.5
3	Tur40-Turtle	2	9	2004		1	0	0.25	5.2	8.5	0.09	1.2	0.09	5.9	<4	172.6	82.0	7.4
									20.84									

opper ug/L	zinc ug/L	lead ug/L	BacT -Tot ıpn/100ml	BacT-ecoli	Lab	other notes
2.0*	**20.0***	**1.0***				
11.6	<20	1.5				
2.0	0.0	0.0				
<2	<20	<1				
3.0	<20	<1				
<2.0	<20.0	<1.0				
<2.0	<20.0	<1.0				

Site#4 - TUR20
Turtle Creek at Hop Kiln Bridge

site	location	month	day	year	Flow-CFS	rain type	24-rain inches	48hr rain inches	Rainfall Previous 30 days	water temp	NH3 mg/L	NO3 mg/L	OrthoP mg/L	Turbidity NTU	TSS mg/L	Cond umhos/cm	Alkalinity mg/L
2002 - 2003	**Rain Season**									**Celsius**	**0.02***	**0.1***	**0.02***	**1.0***	**4.0***	**10.0***	**1.0***
4	TUR20-Turtle	12	16	2002		2	3.21	8	17.44	11	0.25	12.5	1.13	140.0	92.5	164.5	55.6
4	TUR20-Turtle	1	15	2003			0.2	1.56	15	12	0.20	4.2	0.14	14.0	3.2	179.9	54.2
4	TUR20-Turtle	2	10	2003		1	0	0	0.24	8.25	0.04	2.0	0.12	2.9	0.8	208.0	75.8
4	TUR20-Turtle	3	17	2003		3	0.25	2.5	8.84	10	0.34	3.4	0.36	29.0	5.8	207.9	80.2
4	TUR20-Turtle	4	14	2003		3	0.75	3	3.92	10.5	0.16	1.5	0.14	5.3	<4	202.9	102.4
4	Tur20-Turtle	5	12	2003		4	0	0	4.72	11.5	0.04	2.1	0.08	1.6	<4	230.0	98.6
4	Tur20-Turtle	6	9	2003		1	0	0	0		0.05	0.3	0.21	<1	<4	222.5	130.0
4	Tur20-Turtle	7	14	2003		1	0	0	0	15	0.08	0.1	0.34	1.6	<4	303.9	155.2
2003-2004	Rain Season																
4	Tur20-Turtle	12	17	2003		1	0	0	4.8		0.17	8.8	0.26	19	<4	274.5	62
4	Tur20-Turtle	2	9	2004		1	0	0.25	5.2	10.0	0.09	4.5	0.10	10.0	<4	235.1	83.0
									20.84								

pH	copper ug/L	zinc ug/L	lead ug/L
	2.0*	**20.0***	**1.0***
7.2	11.0	<20	1.7
7.3	2.2	0.0	0.0
7.3	<2	<20	<1
7.5	2.7	<20	<1
7.4			
7.4	<2.0	<20.0	<1.0
7.7	<2.0	<20.0	<1.0
6.7	<2.0	<20.0	<1.0
7.6			
7.5			

Draft Flow Calculator

Upstrm

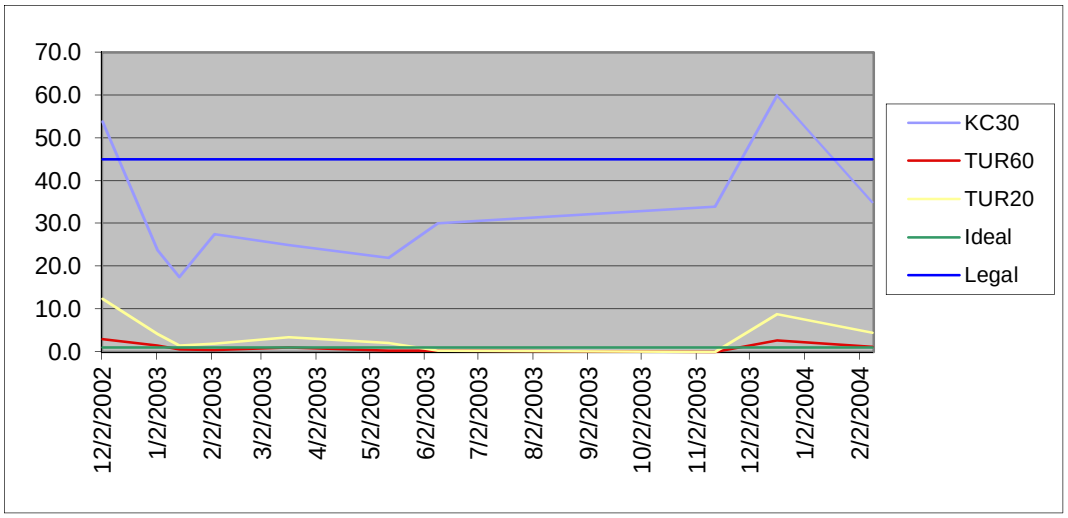
Intervals	0	1	2	3	4	5	6	7	8	9	10	11
depth-inches	0	1	2	4	0	0	0	5	0			
depth 1/10's	0	0.083333	0.1666667	0.333333	0	0	0	0.416667	0	0	0	0

Dwnstrm

Intervals	0	1	2	3	4	5	6	7	8	9	10	11
depth inches	0	1	3.75	6.5	1.75	0.75	1	0				
depth 1/10's	0	0.083333	0.3125	0.541667	0.145833	0.0625	0.083333	0	0	0	0	0

Upstrm		**Dwnstrm**				**Float Trials**	
Total Depth	1	Total Depth	1.229167	Upstrm Area	2		
+		+		+		#1	26
#intervals	8	#intervals	7	Dwnstrm area	2.458333	#2	39
=		=		div'd by 2		#3	39
Avg Depth	0.125	Avg Depth	0.175595	=		AVG	34.66667
X		X		Avg cross	2.229167		
Stream width	16	Stream width	14	sectional area			
=		=					
Sq Feet area	2	Sq Feet area	2.458333				

Area	X	Length	X	Correction	div'd by	Time	=	CFS
2.229167		20		0.8		34.66667		1.028846


70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
12/2/2002
1/2/2003
2/2/2003
3/2/2003
4/2/2003
5/2/2003
6/2/2003
7/2/2003
8/2/2003
9/2/2003
10/2/2003
11/2/2003
12/2/2003
1/2/2004
2/2/2004
KC30
TUR60
TUR20
Ideal
Legal

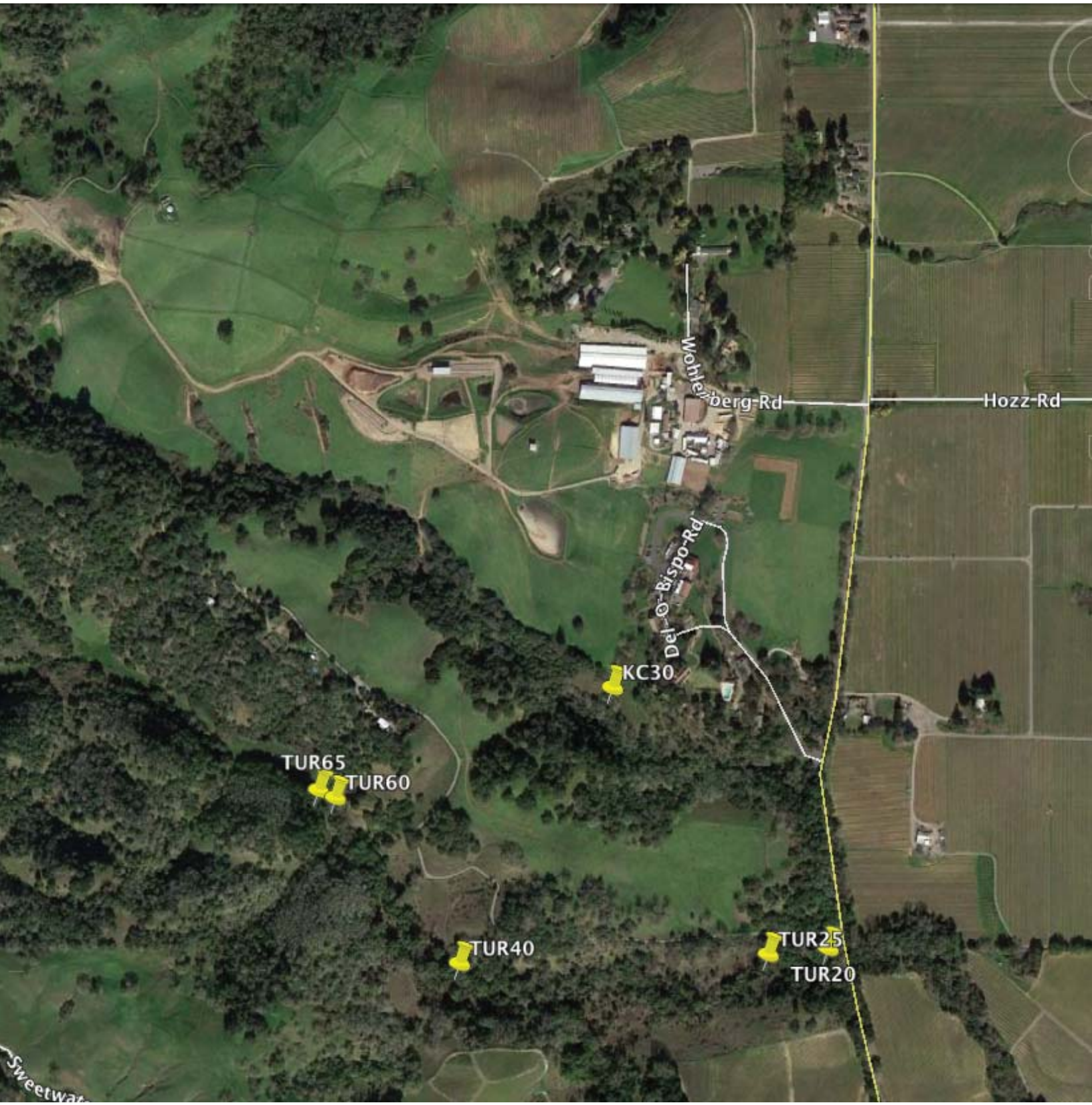

Wohlenberg-Rd
Hozz-Rd
Del-O-Bispo-Rd
KC30
TUR65
TUR60
TUR40
TUR25
TUR20

Table 5.1 – City of Healdsburg – Recycled Water Diversions Projections Timeline

Location	2017 Diversion, MG	2018 Diversion, MG	2019 Diversion, MG	2020 Diversion, MG	2021 Diversion, MG	Beyond 2023 Diversion, MG
Portola Properties	1.1	1	2	3.2	3.2	3.2
Ferrari Carano Kinley	1.0	1	1.2	1.9	1.9	1.9
Ferrari Carano Storrey	0.1	1.8	3.6	5.4	5.4	5.4
RFS	3.5	3.5	3.5	3.5	3.5	3.5
Delamontanya	0.3	0.07	0.14	0.2	0.2	0.2
Frank Johnson	0.6	0.7	1.4	2.1	2.1	2.1
Gallo Bowtie	0	0.8	1.6	2.4	2.4	2.4
Gallo Del Rio	0	3.6	7.2	10.9	10.9	10.9
diBenedetti	0	0.1	0.2	0.2	0.2	0.2
Syar Vineyards	0	6.3	12.6	19	19	19
Rawah	0	0.4	0.8	1.3	1.3	1.3
Pine Ridge (Seghesio)	0	1.1	2.2	3.2	3.2	3.2
Hauled	1.3	1.3	1.3	1.3	1.3	1.3
VanAcker (hay)	0	0	2.8	5.2	5.2	5.2
Syar Industries	0	0	3.5	7	7	7
Bucher Farm (pasture and vineyards)	0	0	0	20	40	61
Palmer (vineyards)	0	0	0	2.2	4.4	6.5
Storage at WRF	25	25	25	40	40	40
Urban Reuse – Golf Course	0	0	0	0	0	23
Estimated Total	33	47	74	129	151	197

Additionally, the above recycled water program addresses the City's near-term needs. To achieve full compliance through build-out, the recycled water program will need to expand as the City grows. City staff is cognizant that bringing the recycled water into the City will aid in long term compliance but comes at a cost. Adding urban reuse to the recycled water program also diversifies the user base and makes the program more resilient. Since urban reuse is decoupled

Attachment: Draft Report (2046 : Recycled Water Feasibility Study)

2012 Middle Reach Russian River Vineyard Irrigation Demonstration Project

Mark Greenspan, Ph.D., CPAg, CCA

Advanced Viticulture, Inc.

Windsor, CA

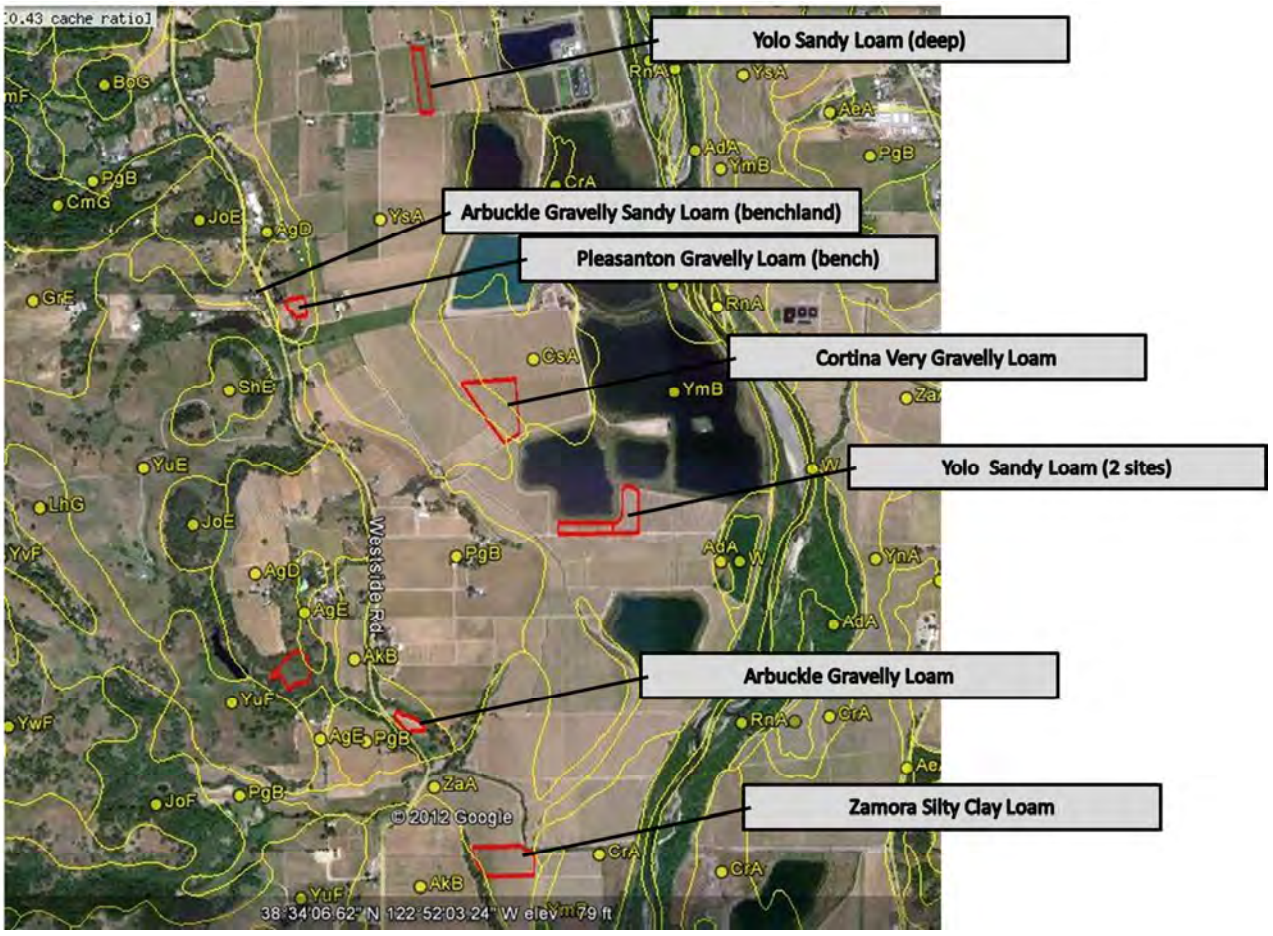
2012 Middle Reach Russian River Vineyard Irrigation Demonstration Project

Project Objectives:

- Determine and demonstrate a methodical, yet relatively simple approach to vineyard irrigation management that achieves good viticultural results with sustainable use of a scarce resource.
- Make general recommendations regarding irrigation volume and intervals for these soils that avoid excessive vine stress and avoid deep percolation of water, thereby reducing potential groundwater contamination.
- Demonstrate a set of tools to growers to provide information and assurance about moisture reserves in the soil so that irrigation can be applied when needed and in an efficient and non-wasteful manner.

Project Methods

A demonstration project was conducted during the 2012 growing season at eight locations in the middle reach region of the Russian River basin. The eight sites were chosen to provide representation from the major soil series in the region and to capture a spectrum of soils from gravelly loams to clay loams.



At each site, continuous-monitoring soil moisture profile sensors were installed that measured soil moisture at 6 depths (from 8" to 48" at 8" intervals) every 30 minutes (see appendix for photographs of equipment). Also, pressure switches were installed in the irrigation lines and connected to data loggers to capture irrigation events. Weekly visits to each site were made during early afternoons, during which vine water status was measured. Leaf water potential was measured with a pressure chamber and stomatal conductance was measured with a leaf porometer. Soil and plant water status were provided to growers on a weekly basis for feedback.

All sites chosen had white winegrape varieties grown, which do not benefit from water stress the way that red varieties do. Nevertheless, very mild stress on grapevines controls vegetative vigor and improves the water use efficiency of the vines.

Soil pits were dug in early August after irrigation had begun in most of the sites. Observations of rooting depths, soil stratifications and irrigation wetting patterns (if applicable) were noted.

Irrigation scheduling was determined by growers, and suggestions were provided weekly by Advanced Viticulture. To extrapolate the total irrigation volume to other growers and to other seasons, a comparison of irrigation volume used at each site to CIMIS evapotranspiration (ET) values was made. The Windsor CIMIS weather station was used as a reference site. Crop ET (ETc) was estimated from reference ET (ETo) using crop coefficients taken from Larry Williams[1] of 0.6 for VSP trellis (at all sites other than Yolo Silt Loam) and 0.8 for the Lyre trellis (at the Yolo Silt Loam site).

To provide an indication about whether minerals (primarily nitrate) may be moving below the vines' root zone, soil pore water samples (a.k.a. suction lysimeters) were installed at two of the sites. A company, AGQ laboratories, was contracted to perform the measurements and analysis. Unfortunately, their performance was poor, and very little information was gained from their participation. For one, their deepest sampling depth was 24". We observed that essentially all of the vineyard sites had root systems below 24". To produce some meaningful results, we installed our own soil pore water samplers at depths of 24" and 48" in triplicate replications. This was done at the end of the season to capture soil pore water after the first rainfall events had occurred. Note that we had installed them at different locations prior to that, and while the data are shown, the water capture rate was poor, as the devices do not work well when soils are too dry.

Participating entities included the Sotoyome Resource Conservation District (RCD), Syar Industries, the Westside Association to Save Agriculture and Advanced Viticulture, Inc. Participating growers are acknowledged for their participation: Dennis Hill, Judith Olney / Marc Bommersbach, Bob Salisbury, an anonymous grower and Syar Vineyards.

[1] Larry Williams. Irrigation of Winegrapes in California. Practical Winery and Vineyard. November/December 2001.

Results

The following pages are site-by site descriptions of measurements and observations at each site. One or more soil profile photo is shown. In those photos, a blue curve was drawn to indicate the approximate wetted zone from the most recent irrigation. Not all vineyards had been irrigated, at least in close time proximity to the observation, so those photos do not have indications of wetting patterns. Red lines on the photos indicate strongly-defined boundaries between soil strata. This is a key feature of the findings of this project with regard to moisture percolation through the soil profile. Note that we found that many of these profiles did not match the ones described by the NRCS soil survey. This was not unexpected as it is often the case that the soil survey is only an approximation of the actual soils of the region and boundaries between soil series are only approximate.

Following the photos and comments are charts of soil moisture for the site. The first chart has six lines, which indicate soil moisture at the six measured depths. This chart may be used to illustrate the depth to which irrigation percolated. Abrupt rises in soil moisture indicate that the wetting front passed by that particular level. On the other hand, a more gradual rise, usually delayed in time relative to the abrupt rise in upper layers, indicates that the wetting front did not reach that level, but redistribution during and after the irrigation application allowed moisture to wick into that soil depth by soil matrix forces.

The second soil moisture chart shows the summation of all six sensors, and provides a good picture of total soil moisture in the profile (to 4 feet). A declining long-term trend indicates deficit irrigation, where the irrigation is insufficient to keep up with demand by the vines as they extract soil moisture. This can be used as a benefit for wine quality, but mainly for red varieties, and most white varieties are best managed with only minimal water stress. The total soil moisture “signal” may be used as an indicator for irrigation scheduling. A “full point” may be designated by a reference line and a “refill point” may be designated as well. The reference lines are determined iteratively, using plant water status levels as a guideline as to how much stress to allow for the refill point and the practicality of irrigation depth needs to be taken into consideration in determining the full point. This interactive irrigation scheduling method takes much of the guesswork out of irrigation, provides the grower with assurances of adequate soil moisture conditions as well as warnings of low soil moisture conditions.

The vine water status measurements are shown in groups of four sites each after the discussions of the individual sites. Note that the green shaded areas represent the ideal target levels of those measurements.

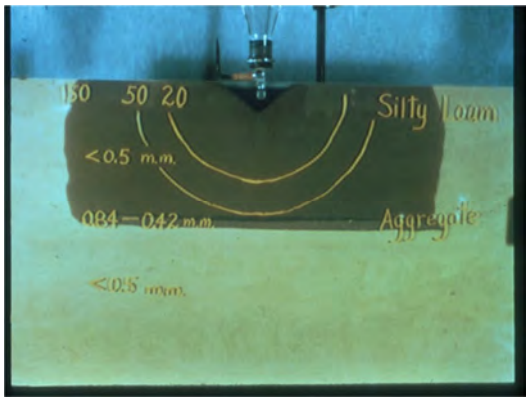
The irrigations were made by the vineyard manager, with suggestions from the consultant. In most cases, other factors (e.g. water supply challenges, operator error, etc.) were involved in the irrigation applications and irrigations did not usually match the ideal applications being

recommended. Nevertheless, the actual irrigations and consequences thereof were documented for reference to allow for guidelines of irrigation in this region.

One important result should be discussed at this point, since it applied to several of the sites. It is often assumed that irrigation in gravelly or sandy soils will cause water to percolate downward quickly through the profile with the possible consequence of deep leaching. On the other hand, heavier soils are thought to resist percolation, with their wetting zones developing more horizontally than vertically. In fact, this is not the case for low rate drip irrigation, as is practiced here, and the results were very illustrative of that effect.

With more conventional forms of irrigation, such as flood and furrow, the wetting front (moist zone that moves downward (and perhaps horizontally) into the soil profile is largely saturated at the edge because of the high rate of water application to the surface. With drip irrigation, however, this is not the case, as water is applied at a very low rate to a point on the soil surface. Within the first few inches (varies with soil texture and structure), the wetting zone is saturated, but as the moisture travels deeper and the wetted bulb expands, the fringe of the wetting zone is no longer saturated, but is pulled outwared by matrix forces and downward by both matrix and gravitational forces. Matrix forces are strong, as the adhesive property of water is strong. At the interface of a discontinuity in soil texture, as was seen in many of the soils in this study, water percolation is often disrupted in the vertical dimension. This can occur with a lighter soil layer overlying a heavy, clayey soil. In that case, the low hydraulic conductivity of the clay may prevent percolation of water downward. More commonly in the soils studied here, a heavier soil overlies a coarser-textured soil (see discussions below). In that case, the matrix forces within the heavier soil are stronger than the matrix plus gravitational forces in the underlying layer and moisture tends to spread laterally when that interface is reached. Hence, it becomes difficult to practically impossible to force water to deeper depths when a strong stratification of this type exists.

An illustration can be seen in the following laboratory photo (provided by Rhonda Smith of UC Cooperative Extension), where a coarse layer of “soil” was placed between two finer-textured “soils”. The moisture clearly hits the discontinuity and spreads laterally instead of vertically. Soils in the Russian River Basin frequently feature such



stratifications in soil texture, and many situations are illustrated below. The soil profile above was not part of this study, but is from an alluvial soil in Alexander Valley and represents a strongly-stratified soil. The discontinuities in the soil tends to cause higher root densities at the boundaries of the interfaces (as can be seen at about 14 inches and 36 inches in the profile. That is because roots cannot easily grow through these interfaces and tend to turn horizontally when encountering these boundaries.

The restriction of water percolation across soil strata does not apply to rainfall. Rainfall or sprinkler irrigation wets soil as point sources from droplets, but over time, the soil becomes wetted uniformly in the horizontal dimension. That prevents gradients of soil matrix potential from developing in the horizontal dimensions and water is allowed to saturate at the interface between soil layers. Hence, soil profiles are filled back up sometime during the rainy season, thereby allowing roots to take up moisture from all levels during the springtime.

Coarse soils without strong stratification will not hamper moisture percolation, but the coarse particles (rocks, gravel, sand), tend to cause water to fan out from the point of water application. In non-saturated flow, water moves in films along these particles and does not fill the soil pores. The coarse particles cause water to be diverted horizontally, which tends to form a wider wetted bulb than would occur under a high-rate water application in the same soil. Hence, moisture does not simply “run through” a light-textured soil as many believe.

On the contrary, water moves much more readily in the vertical dimension in heavier, more uniform soils. As will be seen in the results, the only site where a normal irrigation reached 48 inches depth was the heavier, more uniform Zamora Silty Clay Loam soil.

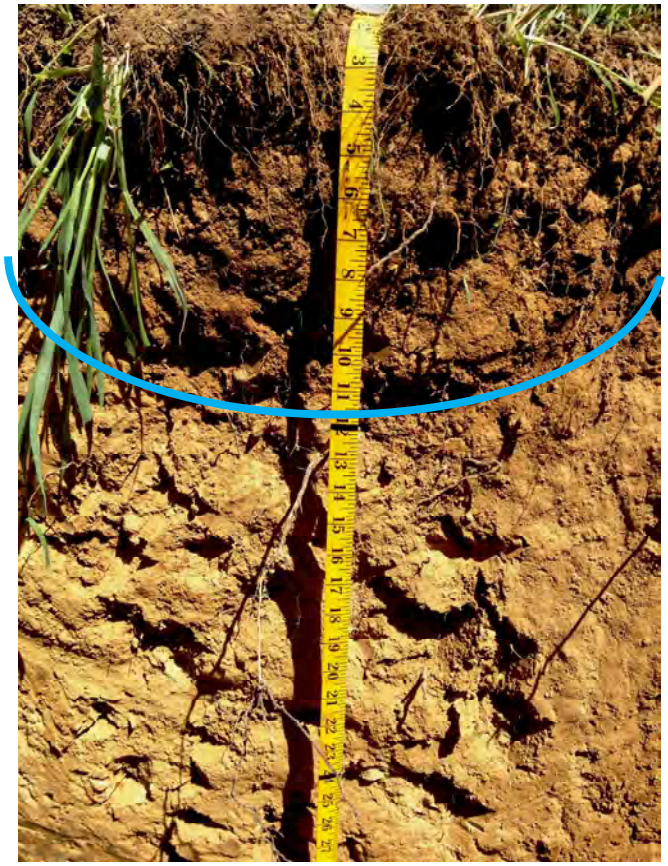
What are the consequences of these findings and theory? It was feared that excessive irrigation could cause deep percolation of moisture below the root zone, potentially below the depth at which roots could extract moisture. This could cause contamination of the groundwater by leaching of contaminants within the irrigation water or by fertilizers or possibly pesticides that have been applied with the irrigation water. However, this is unlikely to be the case in many of these soils, at least those of coarse texture and/or those with strong soil stratification. Nevertheless, even though the leaching is unlikely to occur in those soils due to drip irrigation, rainfall, typically on the order of 35 to 40 inches per season, that occurs following the season may leach out any leachable contaminants (such as nitrate), if present in the soil after the vines enter dormancy. Hence, though leaching does not appear to be an immediate concern from irrigation alone, leaching from the high amounts of rainfall typically experienced in this region may threaten groundwater and possibly streams if high residues of leachable materials are present in the soil.

Land stewardship to maintain soil and water quality would indicate that residues of potential mineral contaminants should not be present in the soils after vines become dormant in the fall and can no longer extract such minerals.

Summary of observations and conclusions by site:

Arbuckle Gravelly Sandy Loam

Sandy loam to 24" over decomposed sandstone PM. Wetted soil to 13" deep and 20" wide about 10" from emitter. Few gravels only at surface. Very porous and little stratification. Downhill runoff from emitter. Mottling at 36" and below.

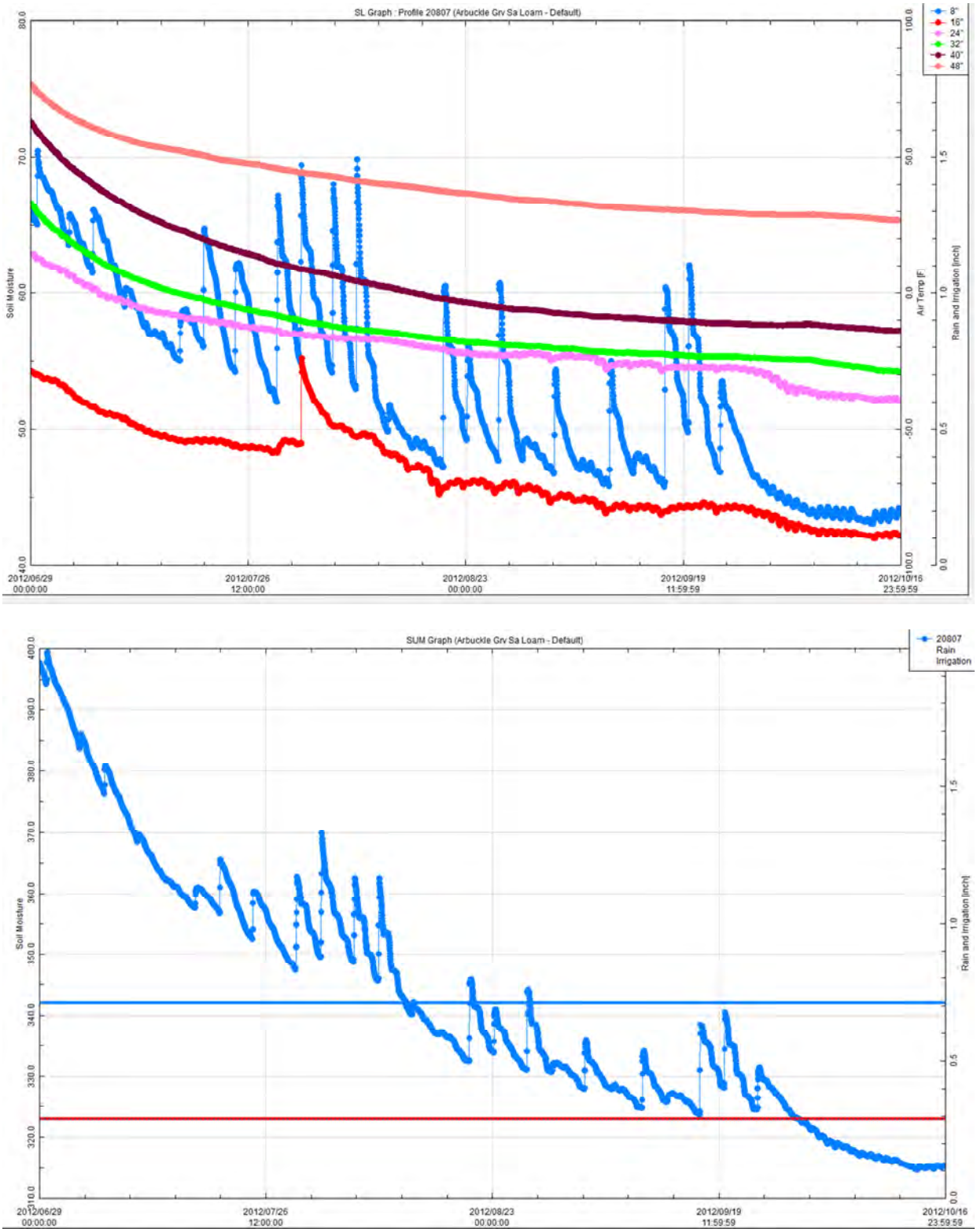


- Viognier
- 1.6 inches total irrigation
- 13% of full ETc (June 29 – Oct. 15)
- Runoff was a problem, so short irrigations best
- Vines were not stressed during the season

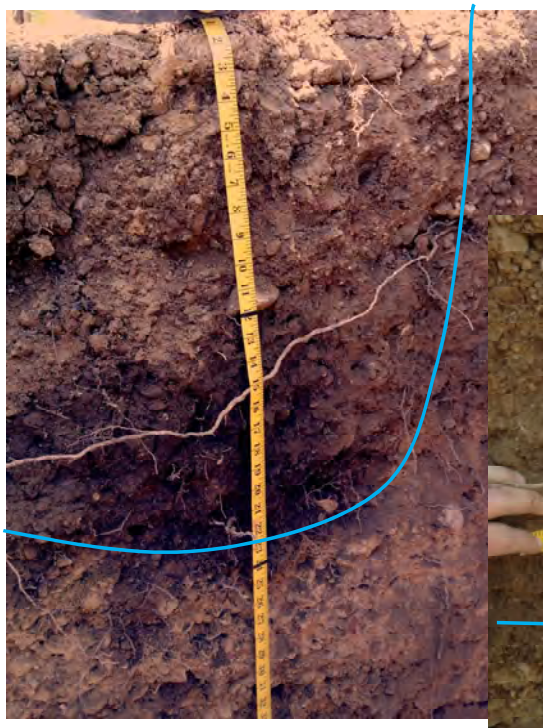
This site featured a soil profile that was fairly uniform. If this vineyard was on relatively level ground, percolation of water to deep levels would have likely been possible. However, the vineyard is slightly sloped with partial terraces. Water ran off the surface into the wheel tracks during irrigations. Hence, a low-volume irrigation application was necessary, which necessitated frequent applications of water. The soil moisture chart illustrates how moisture did not usually percolate past the 8" level, only moving to 16" on one occasion. Water supply was limiting at this site, so irrigations, which should have been applied twice per week, did not always get applied at that frequency. As a result, the total soil moisture trended downward during most of the season, though some irrigations at the end of the season

(September) arrested the decline temporarily. Nevertheless, vines were able to extract moisture from deeper soil levels and by doing so, did not reach high levels of water stress.

A total of 1.6 inches were applied to the vineyard until October 15, amounting to only 13% of full ETc.



Soil moisture information collected during the irrigation season of 2012 at the Arbuckle Gravelly Sandy Loam site. The upper chart shows relative soil moisture content at 6 depths, from 8" to 48" in 8" increments. The lower chart shows a summation of the soil moisture from each level, to indicate the relative water content of the entire profile. The blue line indicates an ideal "full point" and the red an ideal "refill point", as referenced in the text.



Pleasanton Gravelly Loam

Very gravelly. Loosely consolidated loam with large pores. Strong stratification to coarse gravel at 23". Wetted bulb down to 23" deep and 21" wide at 10" from emitter drop. Gravel to at least 48". Prolific rooting in mid row to 34".

- Chardonnay
- Erratic irrigation due to system problems
- 2.6 inches total irrigation
- 22% of full ETc (June 29 – Oct. 15)
- Irrigation did not percolate below 22” due to soil stratification
- Vines were very slightly water stressed late in the season

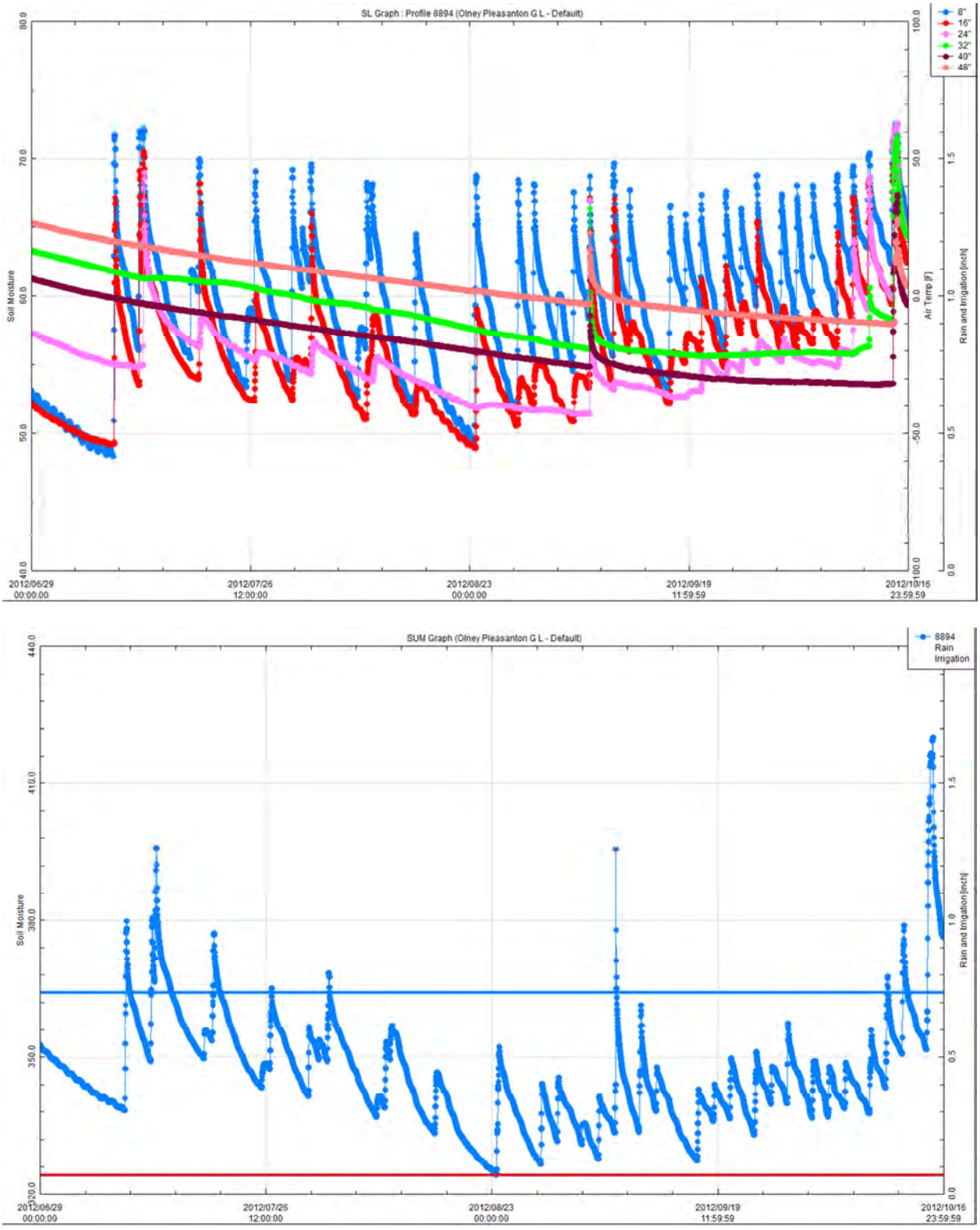
This site, although on a toe slope above the river basin, had some strong soil strata that limited water percolation. The major stratification is at 23 inches depth, where coarse gravel underlies a loam textured soil. That interface was wavy, probably due to soil preparation before vineyard planting. The soil excavation revealed that moisture reached to 22 inches, approximately, from which it appeared to spread horizontally. Note in the soil moisture graph below that the 32 inch level was never affected by irrigations, only rising at the end of the period because of rainfall.

Irrigation at this site was erratic due to an unknown problem with the irrigation system hydraulics. Irrigation was slightly more frequent than necessary during most of the season

and transitioned to daily irrigations towards the end of the season (due to the system problem), where daily irrigation applications were made. Nevertheless, looking at the soil moisture summation curve, the overall soil moisture pattern showed that the applied irrigation did not result in a deficit of soil moisture during August and September and the daily irrigations in October resulted in overall moisture level increases.

Vines were at a good stress level for much of the season, at least with regard to stomatal conductance. However, stomatal conductance did dip slightly below the target levels on a few occasions indicating that a slightly higher refill point is needed. However, taking in to account the excess irrigation at the end of the season, the amount applied is probably a reasonable quantity. 2.6 inches were applied, which constitutes only 22% of full ETc.

Vineyard close to harvest



Soil moisture information collected during the irrigation season of 2012 at the Pleasanton Gravelly Loam site. The upper chart shows relative soil moisture content at 6 depths, from 8" to 48" in 8" increments. The lower chart shows a summation of the soil moisture from each level, to indicate the relative water content of the entire profile. The blue line indicates an ideal "full point" and the red an ideal "refill point", as referenced in the text.

Yolo Silt Loam (deep)

Uniform texture to at least 3'. Wetting bulb to about 15" deep and same width at 14" from emitter drop. Loose soil top 6" then uniform soil to 32" over more compact soil to bottom and below. Prolific large roots at bottom of pit. Many roots under dripper.

- Gewürztraminer, Lyre Trellis
- Very little irrigation needed. Extra given.
- 1.7 inches total irrigation
- 11% of full ETc (June 29 – Oct. 15)
- Irrigation did not percolate below 32” though some movement to 40”
- Vines attained healthy stress level late in the season. Leaf scorch not due to water stress.

This soil was very deep, though only observed to about 4 feet. Soil was very uniform without strong stratification of soil textures. The recent irrigation had only penetrated to about 15 inches, but was rather wide, with a radius of about 14 inches. While this soil did not exhibit stratification, the coarse texture of the soil (due to silt content) caused the wetted bulb to be wide and not deep. If the irrigation volume had been larger, it would probably have gone deeper, but that large an application may have over-stimulated vegetative growth of the vines. This site did not require much irrigation at all, though some preventative irrigation applications were applied prior to heat events. Roots were found deep in the profile and it

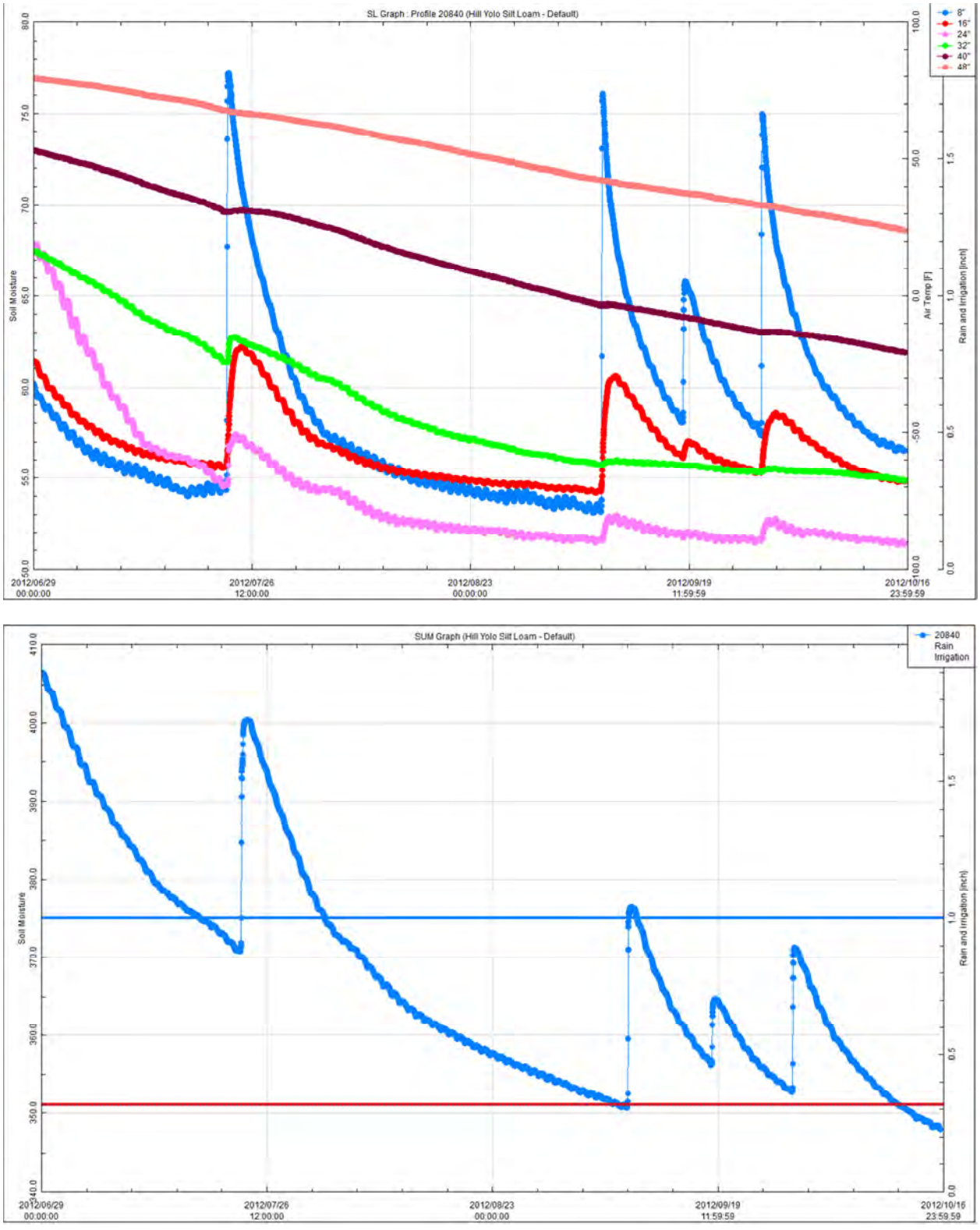
can be assumed that the root system extends further than we measured, as there did not appear to be a limiting factor for root penetration in this soil.

The first irrigation did not reach the 32 inch depth, but did redistribute to that depth, but only slightly raised the soil moisture down there. Subsequent smaller irrigations did not reach the 24 inch depth to a great degree.

Steady moisture depletions can be seen at both 40 and 48 inch depth, indicating an ample water supply to the vines down deep, suggesting that irrigation could have been reduced from the actual applied amount. However, the deficit in soil moisture was halted by late August, which may have been desirable, as water stress is not beneficial for a white variety, even with slight pigmentation such as with Gewürztraminer. Leaf water potential levels were well below stressed levels, though stomatal conductance levels indicated a very good moderate stress level in the vines, which would have improved the water use efficiency of this vineyard.

Overall, the vineyard had 1.7 inches of irrigation, which equated to 11% of full ETc. Note that this was the only vineyard with a divided, Lyre type, trellis, which employed a higher crop coefficient in the ETc model than the other VSP trellis systems.

Vineyard close to harvest.



Soil moisture information collected during the irrigation season of 2012 at the Yolo Silt Loam (deep) site. The upper chart shows relative soil moisture content at 6 depths, from 8" to 48" in 8" increments. The lower chart shows a summation of the soil moisture from each level, to indicate the relative water content of the entire profile. The blue line indicates an ideal "full point" and the red an ideal "refill point", as referenced in the text.

Zamora Silty Clay Loam

14 inches of brown clay loam over darker clay loam to 31“ over matrix of clay and gravel. Roots primarily to 31". Root system extends into vine row to 26". No irrigation yet. Weak stratification at 14" unlikely to affect percolation because similarly textured.

- Chardonnay
- Very little, if any irrigation needed. Irrigated twice.
- 0.6 inches total irrigation
- 5% of full ETc (June 29 – Oct. 15)
- Uniform, heavy soil allowed water to percolate to 48” depth – only soil in this study that did
- Vines were not stressed at all, suggesting that vines may have been fine without irrigation

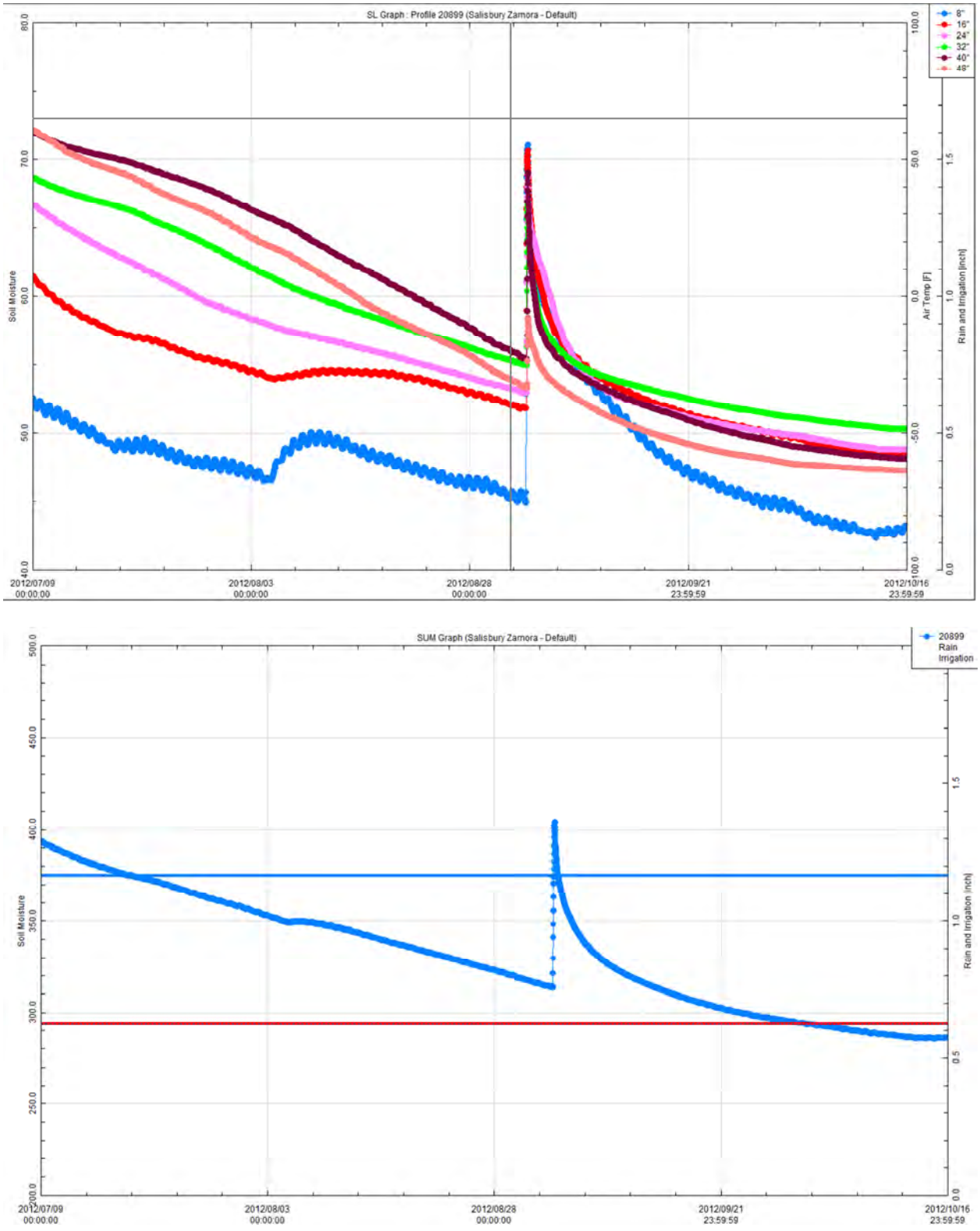
This site was chosen to represent one of the heaviest soils of the region. The soil was heavy, but quite uniform without any strong stratifications, except for a change from the loam texture to a clay/gravel matrix at 31 inches.. Soil was fairly moist at the time of observation and the block had not yet been irrigated (so no visible wetting patter could be identified. This vineyard required very little irrigation, but the grower decided to make two irrigation applications. The first one did not get sensed by the soil probe because water had run down the drip hose away from the soil moisture sensor (this vineyard had embedded emitters unlike all of the others). This points out the importance of proper sensor placement.

Because this soil is heavy, the wetted plume was not wide, so irrigation about 18 inches away from the drip point did not reach to within the sensing zone of the probe (which only has a radius of influence of about 2-3 inches). The problem was fixed and the subsequent irrigation was sensed clearly by the probe. In fact, this was the only site where the irrigation clearly reached the 48" depth during a normal irrigation. Refer to the discussion above for an explanation of this phenomenon.

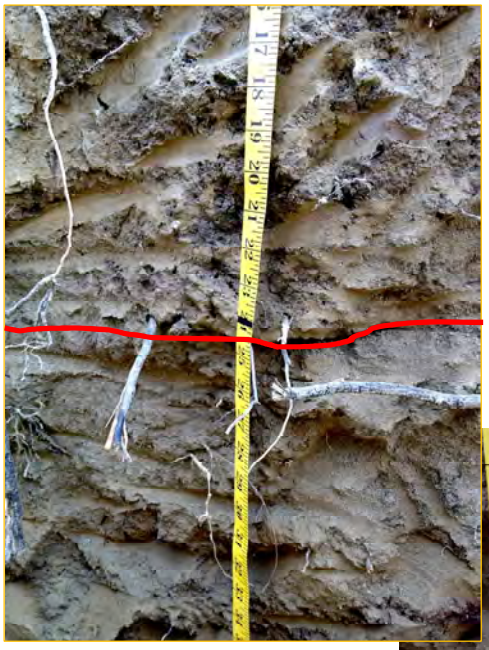
Note that the depletion patterns indicate that moisture was steadily being depleted throughout the profile at all levels until late in the season, where the shapes of the curves indicate that depletion had slowed. Vines were not stressed during the season, and leaf water potential was high (less negative), suggesting ample water supply. Likewise, stomatal conductance was high throughout the season. This vineyard appears to be able to get by (at least in a mild year such as this one) on only one or two irrigation applications. There is no incentive to do so, but it could possibly be dry-farmed in mild seasons.

The vineyard had only 0.6 inches of water applied, comprising 5% of full ETc.

Vineyard close to harvest



Soil moisture information collected during the irrigation season of 2012 at the Zamora Silty Clay Loam site. The upper chart shows relative soil moisture content at 6 depths, from 8" to 48" in 8" increments. The lower chart shows a summation of the soil moisture from each level, to indicate the relative water content of the entire profile. The blue line indicates an ideal "full point" and the red an ideal "refill point", as referenced in the text.



Cortina Very Gravelly Loam

Sandy loam to 21" over abrupt boundary change to sand to 41" over abrupt coarser unconsolidated sand and gravel.

Wetting zone is not well-defined, but width of wetting zone is 26" deep observed 12" from dripper. Roots to 40".

- Chardonnay
- Irrigation necessary. More erratic scheduling than ideal. Excess application made late in season resulted in second-highest water application of all sites
- 4.1 inches total irrigation
- 34% of full ETc (June 29 – Oct. 15)
- Stratification at 24” depth. Percolation below 24 inches not possible until excessive irrigation was made.
- Vines got a bit moisture stressed late in the season. More regular irrigation applications may have reduced water stress.

This vineyard was chosen because it was on the coarsest soil in the region, according to the NRCS soil survey. The concern for this site was that heavy irrigation would drive moisture through and below the profile, potentially contaminating groundwater. We did not find this to be the case. There was a stratification at about 21 inches depth, with a sandy loam textured soil overlying a coarse sand/gravel layer. Another stratification occurred at about 41 inches, where an unconsolidated layer of sand and gravel laid under a sandy loam soil. Roots

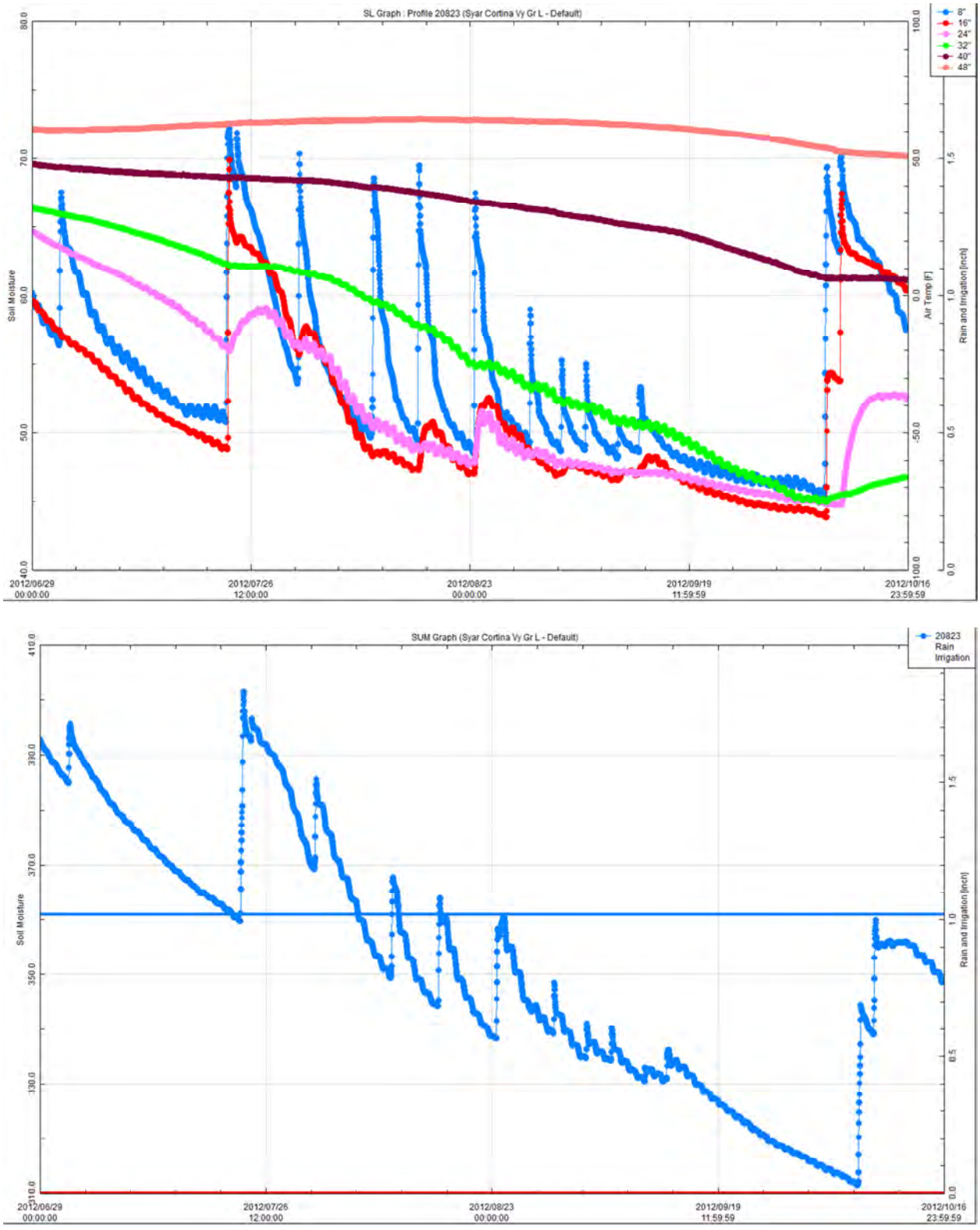
tended to proliferate at those interfaces, suggesting their importance. In fact, we did find that moisture did not readily percolate to the 24 inch depth. Some of the irrigations did redistribute moisture to that depth early in the season, but most of the irrigations wetted only to the 16 inch sensor depth.

The relatively flat soil moisture curves at 48 inches and to a lesser extent 40 inches indicates that deep soil moisture was not being utilized by the vines.

The irrigation regime was insufficient to prevent a marked soil moisture deficit. Vines became water stressed throughout much of the month of August. After a long period without irrigation (which was not advised), a large irrigation application was made on October 6 (11 hours followed by 8 hours two days later). This amount of moisture was sufficient to raise soil moisture at 24 inches and only slightly at 32 inches – but not any further. There was visible water ponding at the surface which persisted for days following the second irrigation.

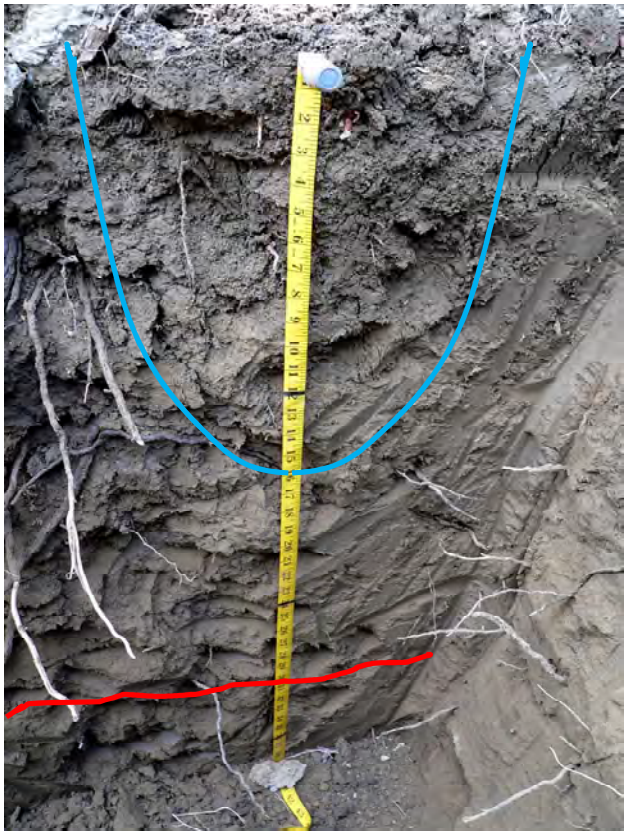
Including the large irrigations in early October, total amount of water applied was 4.1 inches, or 34% of full ETc.

Block at the end of the growing season



Soil moisture information collected during the irrigation season of 2012 at the Cortina Very Gravelly Loam site. The upper chart shows relative soil moisture content at 6 depths, from 8" to 48" in 8" increments. The lower chart shows a summation of the soil moisture from each level, to indicate the relative water content of the entire profile. The blue line indicates an ideal "full point" and the red an ideal "refill point", as referenced in the text.

Yolo Sandy Loam ("gravelly")



Uniform silt loam to 30" over weakly structured sand/gravel. Few small gravels at surface primarily. Water has run off into edge of tillage in row. Wetting bulb to 16" depth 12" wide as seen 8" from dripper. Roots to 30" where gravel starts.

- Chardonnay
- Not as gravelly a soil as expected – gravel primarily on surface.
- Vines needed irrigation, but irrigation scheduling was erratic. Excess application late produced highest irrigation application of the study sites.
- 4.7 inches total irrigation
- 40% of full ETc (June 29 – Oct. 15)
- Stratification at 30" depth, but percolation to 24" was difficult during normal irrigation. Large, application late in the season allowed for deep percolation and ponding on surface indicated excess irrigation.
- Vines were not moisture stressed at all, suggesting that irrigation volume could have been reduced.

This site was noted to be a gravelly site. However, we observed very little gravel within the profile, except for some at the surface and relatively deep in the profile. There was a strong stratification of finer to coarser textured soil at about 30 inches. Roots did not grow into the coarse layer below 30 inches. However, depletions of soil moisture at 40 and 48 inches,

suggest that there are either roots down at those levels or moisture is being utilized by roots above them by capillary action (matrix forces) within the soil. A closer look at the soil moisture dynamics (not shown) indicates that the diurnal uptake pattern is seen at 40 inches, but not at 48 inches. This indicates that there are roots nearby the sensor at 40 inches, but not at 48 inches.

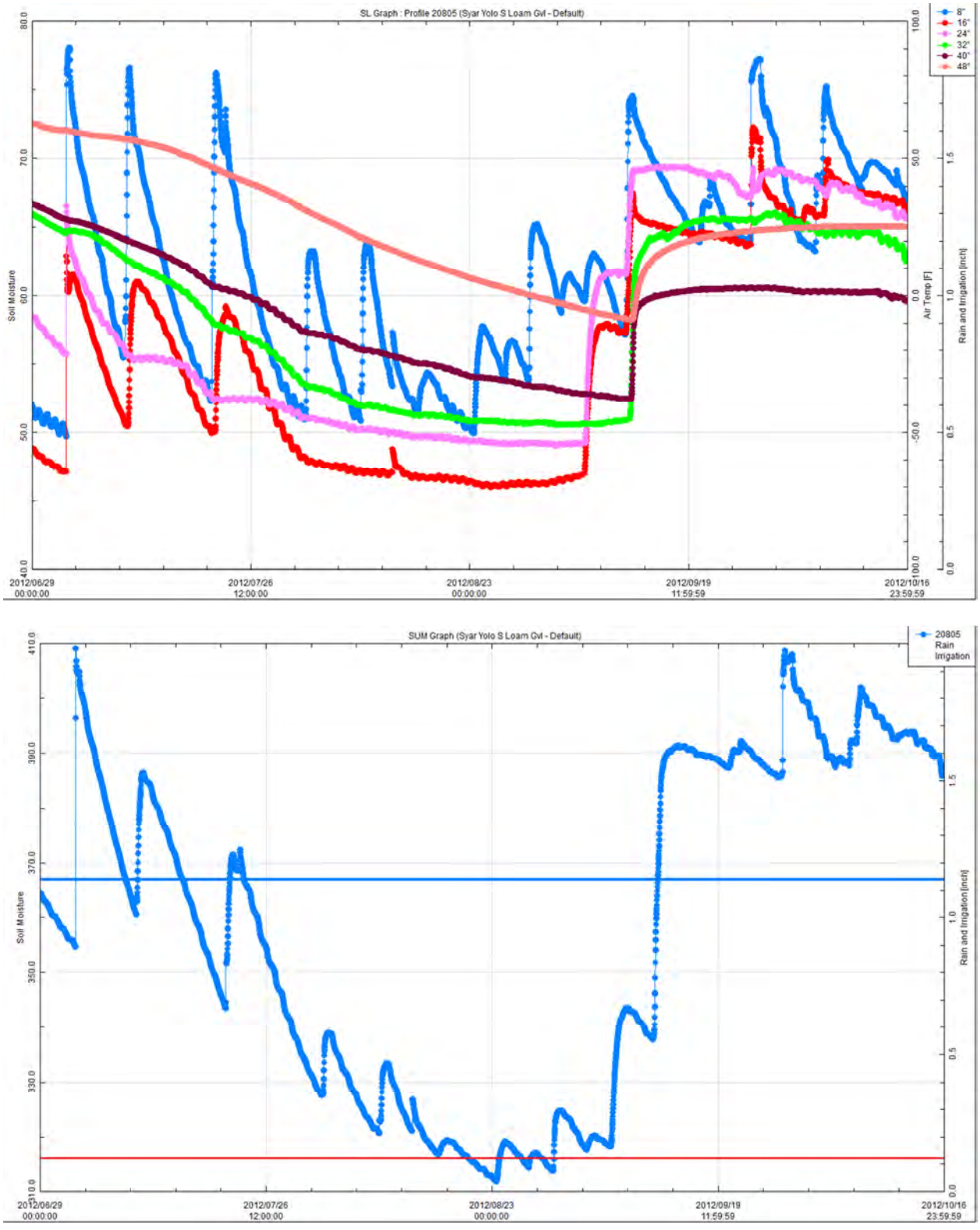
The soil was a sandy loam without any other clear stratification. Nevertheless, moisture was seen to only 16 inches depth during the observation, even though water had ponded at the surface, indicating poor infiltration. Irrigations were not able to raise soil moisture below the 16 inch depth during most of the season. An inadvertently-long irrigation (27.5 hours, 27.5 gallons per vine) was made beginning on September 11. This was accidental. However, it did show that the extra-large volume of irrigation application allowed moisture to reach all levels, apparently to 40 inches and redistributing to 48 inches. While this was an accidental irrigation, it is illustrative of how resistant these soils are to deep percolation using drip irrigation as it took a very high volume of water to reach deep levels (and soil was far from saturated at those levels).

Vines did not reach any level of stress during the season, likely due to the large accidental irrigation. But, early irrigation applications were insufficient to prevent soil moisture deficit and vines may have gotten stressed. However, a more regular pattern of shorter (about 5 hour) irrigations spaced at about 5 day intervals may have resulted in more steady soil moisture without the ponding of water at the surface.

In total, 4.7 inches of water were applied to the block (though over an inch of that was the large irrigation in early September). That quantity equates to 40% of full ETc.

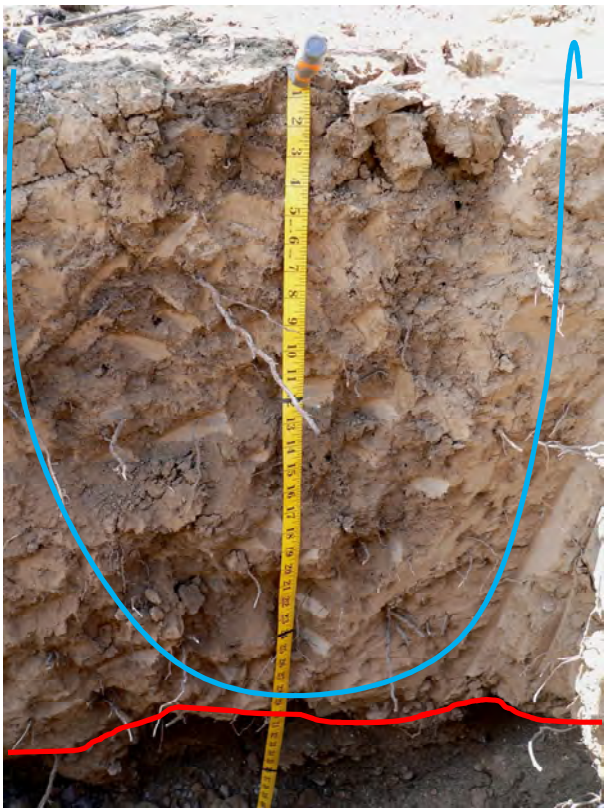
Block at the end of the growing season.

Surface ponding.



Soil moisture information collected during the irrigation season of 2012 at the Yolo Sandy Loam (“gravelly”) site. The upper chart shows relative soil moisture content at 6 depths, from 8” to 48” in 8” increments. The lower chart shows a summation of the soil moisture from each level, to indicate the relative water content of the entire profile. The blue line indicates an ideal “full point” and the red an ideal “refill point”, as referenced in the text.

Yolo Sandy Loam (non-gravelly)



Extremely uniform silt loam throughout profile. Roots to 36". Wetting from irrigation is widespread to at least 36" deep and 22" away from emitter (radius not diam). Evidence of water channeling along roots and profuse root exudate.

- Chardonnay
- No rocks or gravel at all in the profile
- Vines needed irrigation; single emitter per vine not ideal
- 2.1 inches total irrigation
- 18% of full ETc (June 29 – Oct. 15)
- No visible soil stratification, but percolation to 32” was observed – not to 40”.
- Vines experienced moisture stress but did not exhibit stress symptoms. More regular irrigation applications with two emitters per vine would be improvement.

This block was the same blocks at the other Yolo Sandy Loam site, though the soil was considered to be non-gravelly. Indeed, there was little gravel in the profile, except for a transition to unconsolidated gravel at about 32 inches depth. Roots were found to about 36 inches. Like the other Yolo Sandy Loam site, very little uptake occurred at 40 and 48 inches, though there was some root uptake activity apparent at the 40 inch level, beginning in early August. The coarse texture of the soil apparently prevented deep percolation of soil moisture during routine irrigation, as most irrigations were not sensed by the 16 inch sensor. We

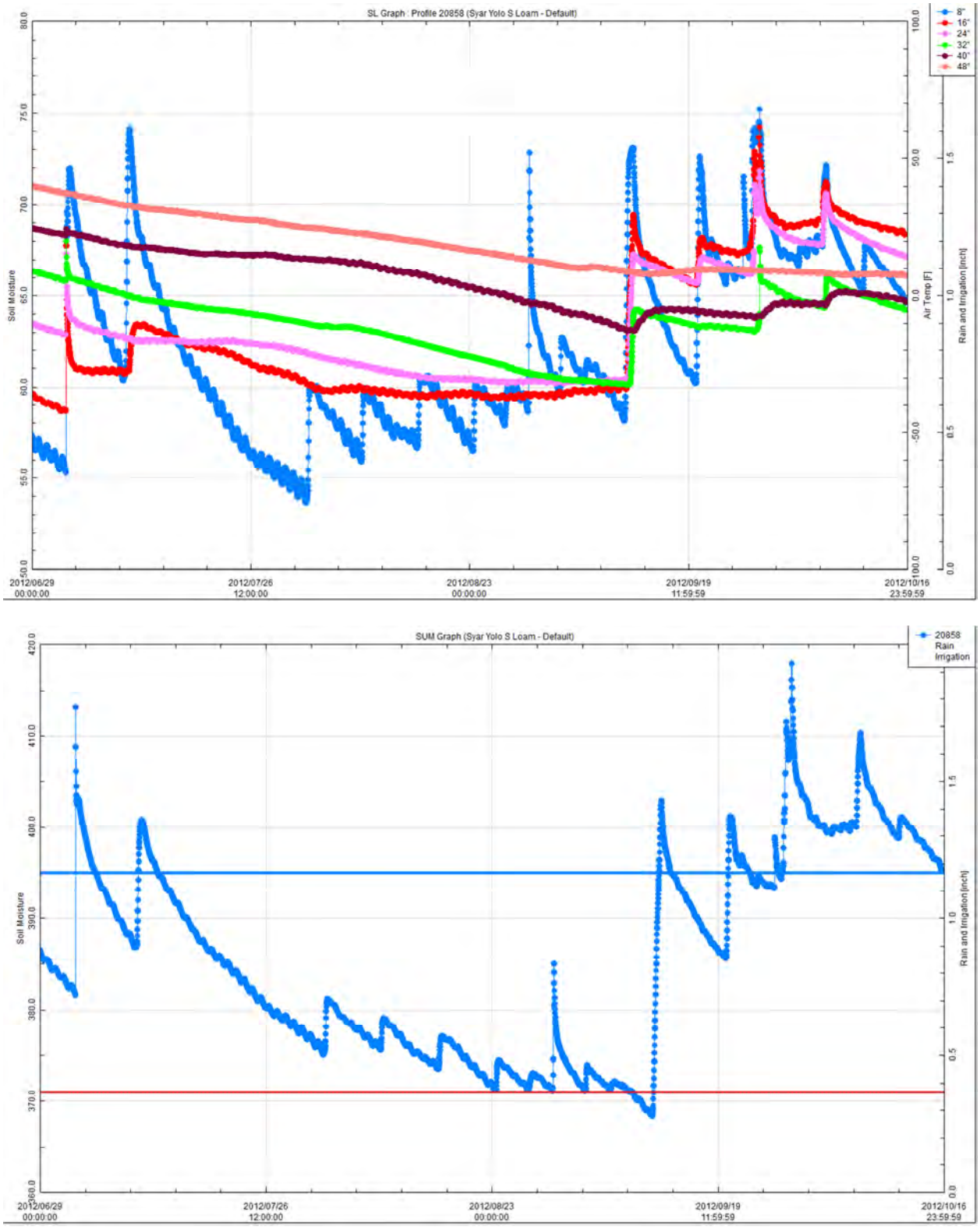
found, however, that the profile was quite moist throughout the profile, not even having a pronounced wetting pattern. The lack of activity in the soil probe suggests that moisture may have been channeling away from the probe, which can occur with new probe installations. Often, this issue goes away after the probe “settles in” after the first rainy season.

Nevertheless, the accidentally-long irrigation that occurred in the other Yolo Sandy Loam site occurred here as well, as they are the same block. However, this side of the block has only one emitter per vine, so the volume applied was half of that of the other side. The large irrigation was effective at wetting to almost the 32 inch sensor depth, with redistribution occurring to 40 inches.

Like the other side of the block, shorter, more frequent and certainly regular irrigations would have been better than the applications made there this season. However, the vines did not get stressed during the growing season.

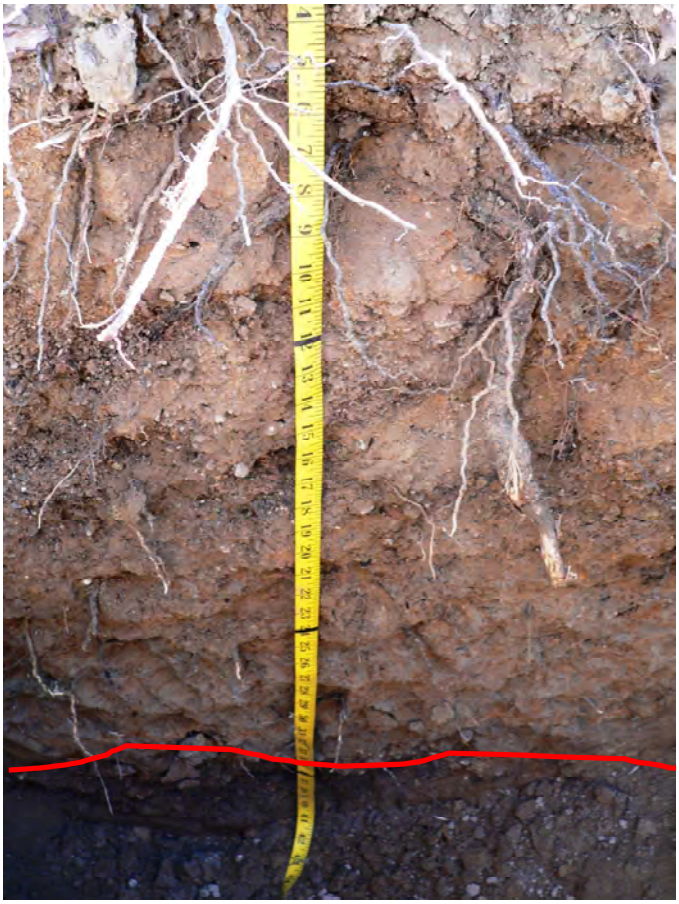
Total amount applied to this portion of the block was 2.1 inches, or 18% of full ETc.

Block at the end of the growing season



Soil moisture information collected during the irrigation season of 2012 at the Yolo Sandy Loam (“non-gravelly”) site. The upper chart shows relative soil moisture content at 6 depths, from 8” to 48” in 8” increments. The lower chart shows a summation of the soil moisture from each level, to indicate the relative water content of the entire profile. The blue line indicates an ideal “full point” and the red an ideal “refill point”, as referenced in the text.

Arbuckle Gravelly Loam



Loam to 12" then discontinuous layer of gravel to 20" over sandy loam with strong mottles to 37" over gravelly sand that is saturated with water. Roots to 35". Not irrigated yet at time of observation.

- Chardonnay
- Gravel throughout profile. Rust mottles indicative of seasonally-waterlogged soils. Vines did not require irrigation due to moist soil/high water table. Irrigation applied for fertigation only
- 0.8 inches total irrigation
- 7% of full ETc (June 29 – Oct. 15)
- Abrupt stratification at 37" would impede water percolation with drip
- Vines did not experience water stress at all despite lack of irrigation.

This site was known to require very little moisture, but was chosen because it was an Arbuckle soil on flat ground, as opposed to the other site, which was on a slight hillside on a benchland.

At the time of observation, the soil was waterlogged at about 4 feet depth. There are strong rust mottles, indicative of periodic waterlogging between about 20 inches to the point of soil discontinuity at 37 inches. Below 37 inches, soil transitions to an unconsolidated gravel. Roots were present to only 35 inches, though there are likely deeper roots considering that

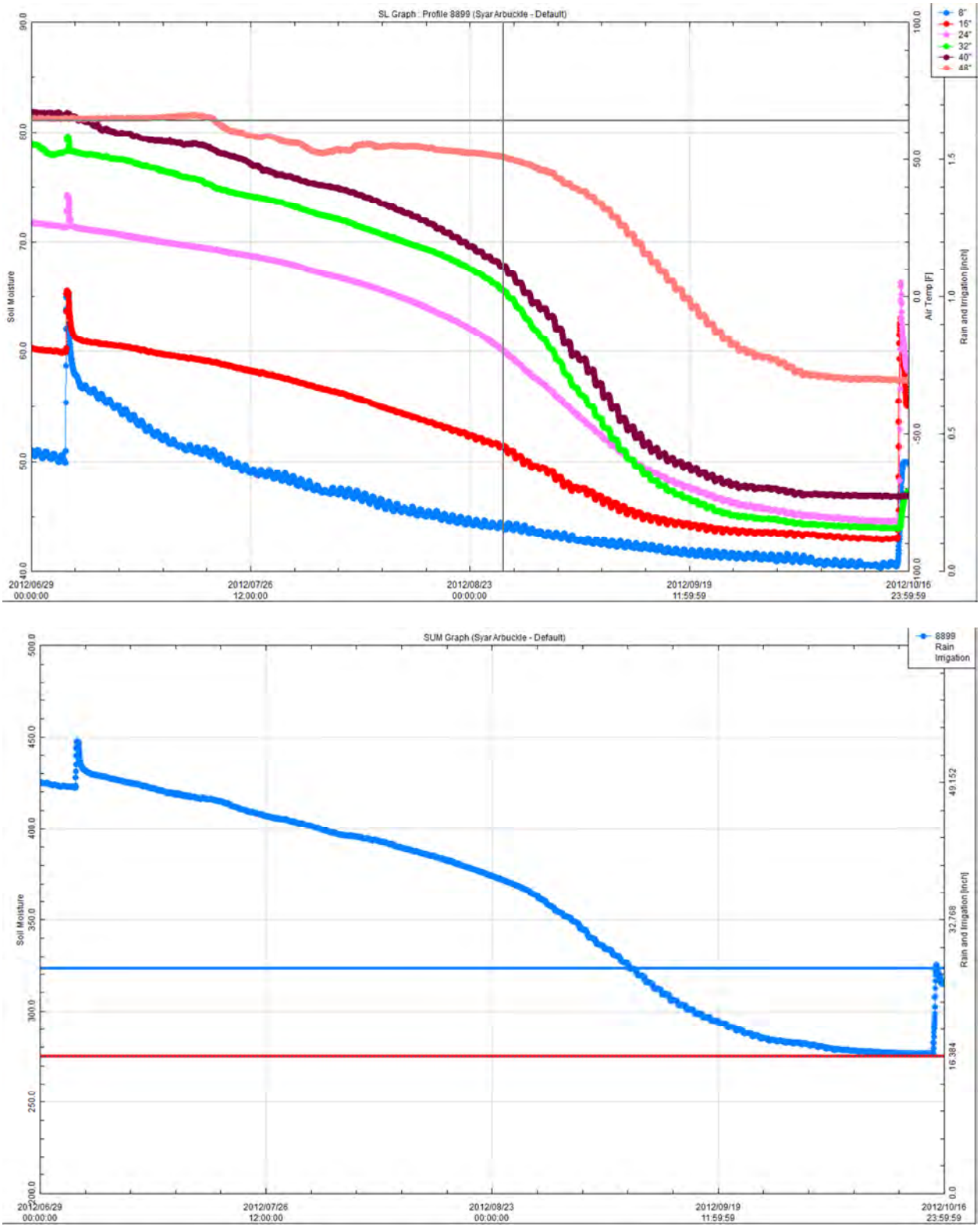
the “ripples” in the moisture depletion patterns at 48 inches indicates roots in the proximity of the soil moisture sensor.

The soil moisture is high in this profile, relieving the vineyard of the need for irrigation. One 8 gallon per vine irrigation was applied on July 3 for the purpose of fertilizer application. No additional irrigation was applied to this site.

Vines did not experience stress at this site, though they became progressively lower in water status as the season progressed due to lack of irrigation. Note that the soil moisture levels “flatten out” towards the end of the season, indicating that vine stress level was increasing. Nevertheless, the vines were not stressed enough to require irrigation.

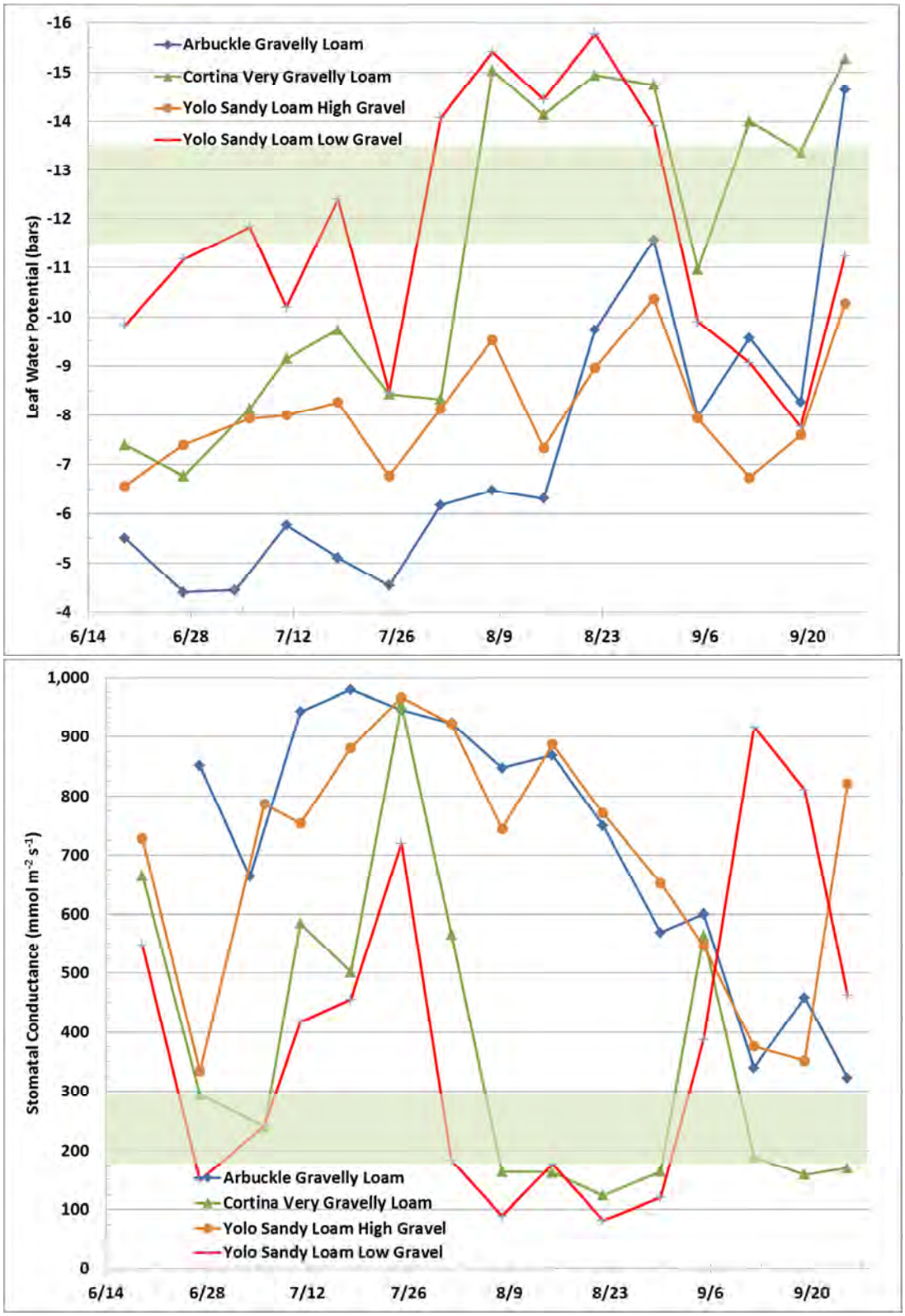
This site received 0.8 inches of irrigation or 7% of full ETc.

Block close to harvest

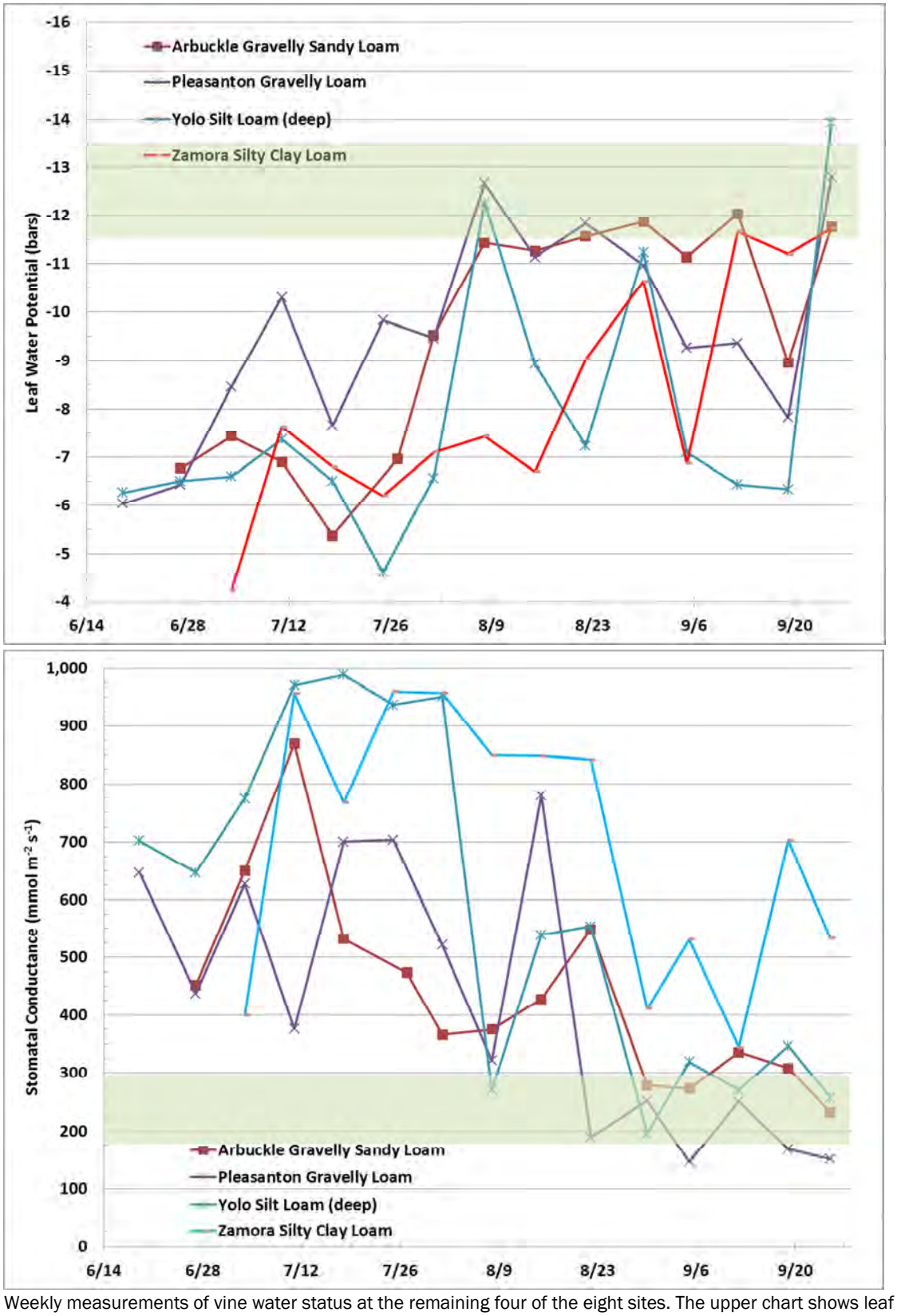


Soil moisture information collected during the irrigation season of 2012 at the Arbuckle Gravelly Loam site. The upper chart shows relative soil moisture content at 6 depths, from 8" to 48" in 8" increments. The lower chart shows a summation of the soil moisture from each level, to indicate the relative water content of the entire profile. The blue line indicates an ideal "full point" and the red an ideal "refill point", as referenced in the text.

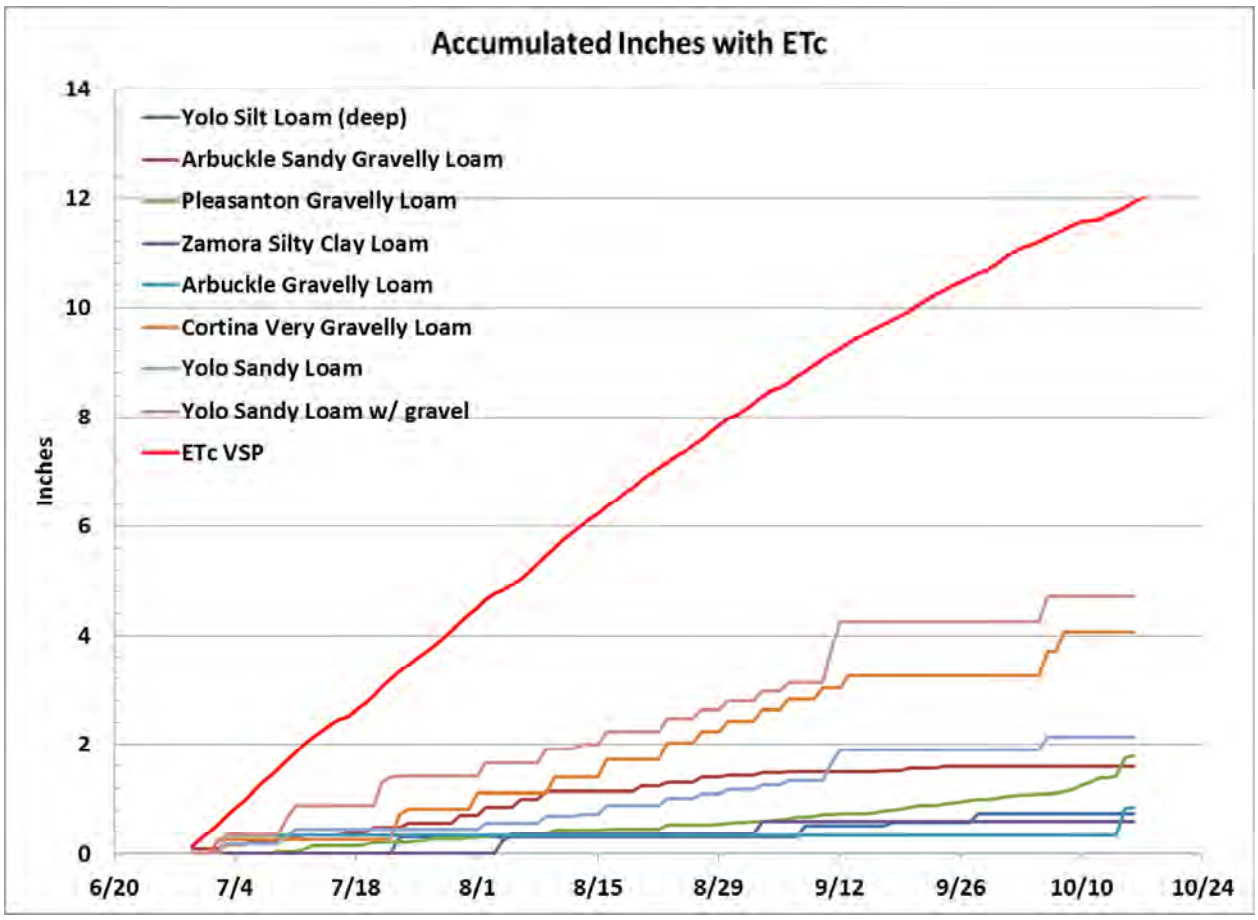
Combined Site Information



Weekly measurements of vine water status at four of the eight sites. The upper chart shows leaf water potential (pressure chamber measurement) and the lower chart shows stomatal conductance (porometer measurement). Target levels of each measurement are shown by the green shaded areas.



Weekly measurements of vine water status at the remaining four of the eight sites. The upper chart shows leaf water potential (pressure chamber measurement) and the lower chart shows stomatal conductance (porometer measurement). Target levels of each measurement are shown by the green shaded areas.

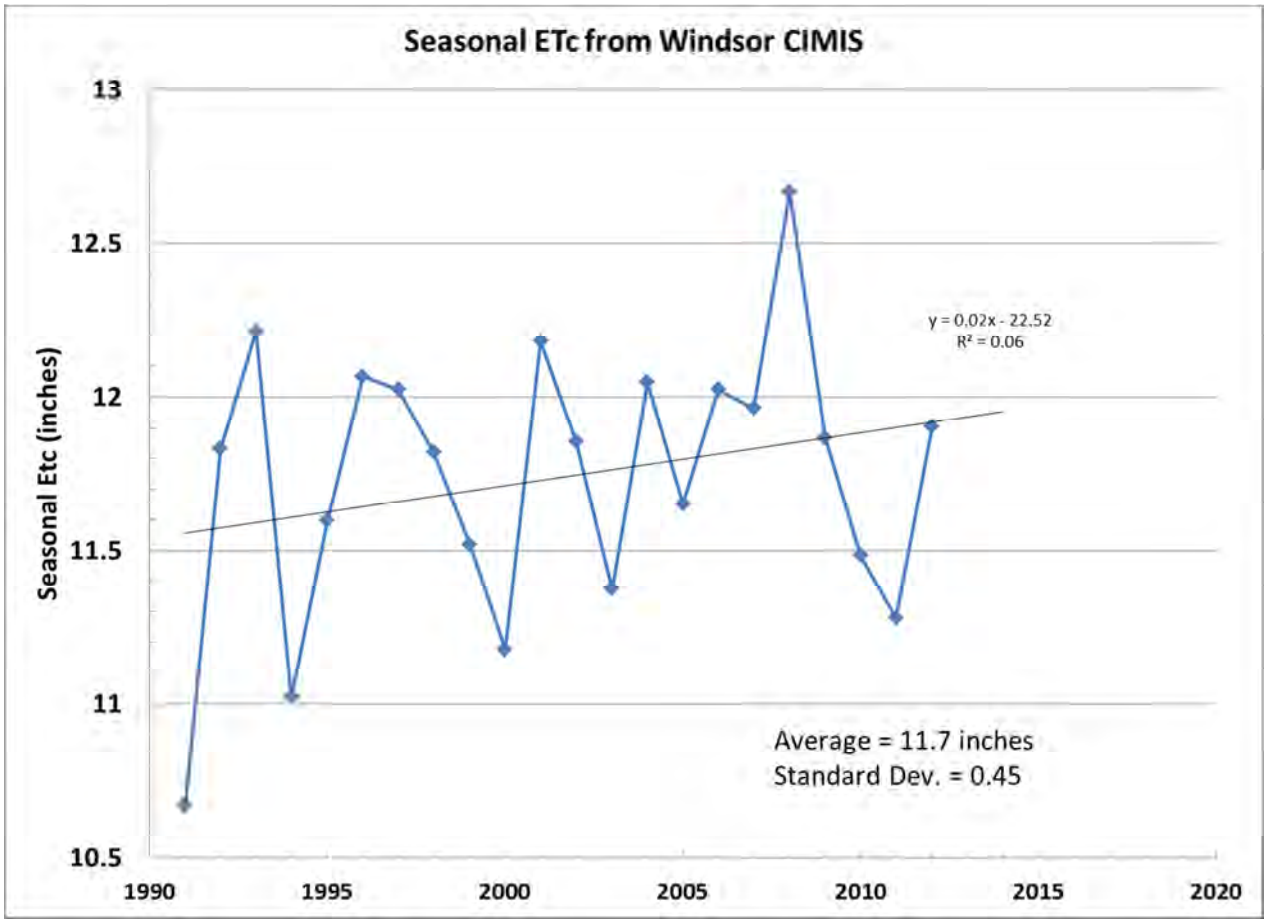


	Yolo Silt Loam (deep)	Arbuckle Gravelly Sandy Loam	Pleasanton Gravelly Loam	Zamora Silty Clay Loam	Arbuckle Gravelly Loam	Cortina Very Gravelly Loam	Yolo Sandy Loam	Yolo Sandy Loam w/ gravel
Gallons/Vine	19	40	44	15	21	101	53	118
Inches	**0.7**	**1.6**	**1.8**	**0.6**	**0.8**	**4.1**	**2.1**	**4.7**
ETc Inches	15.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
% ETc	**5%**	**13%**	**15%**	**5%**	**7%**	**34%**	**18%**	**40%**

Above: Chart of accumulated irrigation inches at the eight sites along with CIMIS crop evapotranspiration (for VSP trellis). Below: Summary chart of applied irrigation for the season from June 29 through October 15.

The chart and table above summarize the water applications made to all eight sites relative to ETc. This was a relatively cool year, so irrigation requirements in warmer growing seasons may be higher. The chart below shows the history of seasonal crop ET from the Windsor CIMIS station. ETc is indeed variable, with an average of 11.7 inches (very similar to 2012, which had 11.8 inches). Hence, the relatively cool season of 2012 was not unusual with regard to ET, as ET is only somewhat sensitive to temperatures (it also includes wind speed, solar radiation and humidity in its computation). ETc may vary +/- 0.9 inches from the mean (+/- 2*sd), so the maximum expected ETc would be about 12.6 inches, which would be 7% more than 2012's levels. Therefore, the difference in expected irrigation would not be that much higher.

From this study, it appears that about 1.7 to 2 inches can be considered a normal agronomic irrigation need for this region. It is unlikely that 4 inches would ever be needed, despite the sites that did receive that much, but gravelly sites may indeed require 3 to 3.5 inches of irrigation per year.



Plot of seasonal crop evapotranspiration (ETc) from the Windsor CIMIS weather station (June 29 through October 15 of each year). Note that the trendline is not significant, so an upward trend is not necessarily indicated.

More important in determining seasonal irrigation needs would be the amount of spring rainfall that occurs after budbreak. ET does not vary greatly from year to year, but spring

rainfall does. Drier springs will require earlier initiation of irrigation while substantial rainfall, which may occur until June in this region, will allow growers to delay irrigation much longer. The use of soil moisture monitoring devices in addition to plant water status measurement equipment (pressure chamber and porometer) eliminates the guesswork of deciding when to initiate irrigation. Estimates of water balance and storage may be made using soil properties coupled with an ET model, but those would be only approximations of the true situation.

Soil Pore Water:

Some measurements of soil pore water were made, both by AGQ and by Advanced Viticulture. We feel that the results from AGQ are not useful, as they did not install their tubes very deeply (the deepest one was at 24 inches). Knowing that the root zones of these vines extends 3 feet or greater at all sites, measuring soil pore water at those shallow depths appears to be meaningless. Additionally, the service provided by AGQ according to their contract fell far short of expectations. These opinions were expressed to the contractor, but they did not agree to relieve us of our payment obligations and we followed through on the payments regardless. Nevertheless, we were disappointed in their contribution to the project.

AGQ samples were taken in early July and again (by us and sent to them) in mid-December, after a substantial rainfall. The grower applied 15 gallons per acre of fertilizer to the vineyard after harvest, but the fertilizer contained only 1% N and the total N applied was approximately 1.5 lb. per acre, which is not high or excessive.

The results do not consistently indicate an accumulation of minerals at deeper depths (see tables to follow). There was a slight accumulation of phosphate at 24 inches at the Cortina site in July, but that was not the case in December. The Yolo site exhibited an elevated nitrate level at 24 inches in December, which had not been seen in July. It is possible that this was due to the post-harvest fertilizer application, as the EC (salinity) was slightly elevated at that same depth.

The Advanced Viticulture installed samplers were sampled in early August and again in mid-December after a substantial rainfall. The soil pore water collected by Advanced Viticulture in August showed elevated nitrate-N levels at 36 inches. Levels were lower at the Yolo site (the other Cortina samples were not extracted because the soil was not moist enough). Nitrate concentration at 36 inches was similar to that at 18 inches at the Yolo Sandy Loam site, though slightly lower.

In December, the soil moisture levels were higher and samples were collected from three samplers at 2 feet depth and from two samplers at 4 feet depth. None of the samples at 2 feet had high levels of nitrate and only one of two samples at 4 feet had elevated levels of nitrate. The variability in the measurements indicates that while these data suggest that

nitrate is being leached below the root zone, a more extensive sampling project needs to be done in order to draw any conclusions about leaching of applied fertilizers below the root zone.

The soil pore water sampling method has limitations in that suction can only be provided to about 90 centibars maximum suction. Soil moisture is often at a higher suction (i.e. drier and at lower matric potential), so the pore sampling method is limited during much of the growing season. In fact, we were largely unsuccessful in extracting soil pore water during the growing season, but were successful after the substantial rainfall in December. This points to the need to augment or replace soil pore water sampling with soil sampling, which may be done with a bucket auger and will not be influenced by soil moisture content at the time of sampling.

Note that the results of this study do not suggest that irrigation itself is likely to leach nutrients into the ground water. However, the deep placement of nutrients into the soil, may cause problems with deep leaching due to rainfall events that occur in the fall, winter and spring. Because this region receives high rainfall, it is important that high levels of potentially contaminating, leachable minerals and other toxins are not left to reside in the soil profile after leaf fall in vines because vines will be unable to extract them from the soil profile where they may travel to deeper depths beyond the reach of vines or cover crop roots. This issue requires greater study than this preliminary project covered.

8/6/2012							
			EC (dS/m)	**Ca (meq/L)**	**Mg (meq/L)**	**Na (meq/L)**	**NO3-N (mg/L)**
Yolo No Gravel at 18"			0.67	3.01	1.93	0.6	**23.2**
Yolo with Gravel at 36"							**17.8**
Cortina at 36"			**2.05**	7.52	9.38	1.7	**191.0**
12/13/2012	Cortina		**EC (dS/m)**	**Ca (meq/L)**	**Mg (meq/L)**	**Na (meq/L)**	**NO3-N (mg/L)**
2' depth (a)			0.27	0.85	1.16	0.5	0
2' depth (b)			0.19	0.54	0.79	0.3	0.3
2' depth (c)			0.4	1.15	1.62	0.5	0.6
4' depth (a)			0.59	1.8	2.43	0.5	36
4' depth (b)			0.15	0.39	0.71	0.2	0.3
2' depth average			0.29	0.85	1.19	0.43	0.3
4' depth average			0.37	1.10	1.57	0.35	**18.2**

Soil pore water sampling results for various minerals. Measurements were made at two times during the season. Some samples did not collect due to insufficient soil moisture content. The second measurement period occurred during the first heavy rainfall event of the season.

AGQ Agroalimentaria y Medio ambiente

ANALYTICAL REPORT FOR NUTRITIONAL ASSESSMENT

Client: ADVANCED VITICULTURE 930 SHILOH RDBUILDING 38, SUITE B 95492 WINDSOR CA	**Farm:** **Control Unit:** CORTINA	Jesse Calvillo Laboratory Manager 24-dic-12

Watery Solutions ***Sampling Date:*** ***29-ago-2012***

Description	pH	E.C. mS/cm 25° C	HCO3- (meq/l)	H2PO4- (mg/l)	Cl- (meq/l)	SO4= (meq/l)	NO3- (meq/l)	NH4+ (meq/l)	Ca++ (meq/l)	Mg++ (meq/l)	Na+ (meq/l)	K+ (meq/	B (mg/l)	Fe (mg/l)	Mn (mg/l)	Cu (mg/l)	Zn (mg/l)
TUBE 20 cm	7,64	0,48	1,27	<0,92	0,41	2,47	1,02	<0,28	1,23	1,86	1,00	0,57	0,14	<0,05	<0,05	0,10	0,36
TUBE 40 cm	7,62	0,70	0,51	<0,92	0,79	5,31	<0,16	<0,28	2,21	3,59	1,42	0,45	0,17	<0,05	<0,05	<0,05	0,20
TUBE 60 cm	7,18	0,34	0,44	2,4	0,34	1,43	0,20	<0,28	0,60	1,12	0,81	0,59	0,10	<0,05	<0,05	<0,05	<0,05

Watery Solutions ***Sampling Date:*** ***20-dic-2012***

Description	pH	E.C. mS/cm 25° C	HCO3- (meq/l)	H2PO4- (mg/l)	Cl- (meq/l)	SO4= (meq/l)	NO3- (meq/l)	NH4+ (meq/l)	Ca++ (meq/l)	Mg++ (meq/l)	Na+ (meq/l)	K+ (meq/	B (mg/l)	Fe (mg/l)	Mn (mg/l)	Cu (mg/l)	Zn (mg/l)
TUBE 20 cm	6,94	0,38	2,49	<0,92	<0,28	0,78	<0,16	<0,28	0,94	1,52	0,87	0,44	0,06	<0,05	<0,05	<0,05	<0,05
TUBE 40 cm	6,95	0,26	1,63	<0,92	<0,28	0,43	<0,16	<0,28	0,56	1,07	0,62	0,17	<0,05	<0,05	<0,05	<0,05	<0,05
TUBE 60 cm	6,75	0,20	1,53	<0,92	<0,28	<0,21	<0,16	<0,28	0,41	0,79	0,27	0,33	<0,05	<0,05	<0,05	<0,05	<0,05

Laboratory results from AGQ labs for three sampling tubes at the Cortina Very Gravelly Loam Site.

AGQ Agroalimentaria y Medio ambiente

ANALYTICAL REPORT FOR NUTRITIONAL ASSESSMENT

Client: ADVANCED VITICULTURE 930 SHILOH RDBUILDING 38, SUITE B 95492 WINDSOR CA	**Farm:** - **Control Unit:** YOLO SANDY LOAM	Jesse Calvillo Laboratory Manager 24-dic-12

Watery Solutions ***Sampling Date:*** ***31-jul-2012***

Description	pH	E.C. mS/cm 25º C	HCO3- (meq/l)	H2PO4- (mg/l)	Cl- (meq/l)	SO4= (meq/l)	NO3- (meq/l)	NH4+ (meq/l)	Ca++ (meq/l)	Mg++ (meq/l)	Na+ (meq/l)	K+ (meq/	B (mg/l)	Fe (mg/l)	Mn (mg/l)	Cu (mg/l)	Zn (mg/l)
TUBE 20 cm	6,56	0,38	<0,16	<2,92	0,40	1,77	0,20	<0,28	1,41	1,08	1,55	0,34	0,37	15,5	0,28	0,08	0,08
TUBE 40 cm	6,32	0,56	<0,16	<2,92	0,42	4,34	<0,16	<0,28	2,97	1,18	1,48	0,27	0,33	5,07	0,11	<0,05	<0,05
TUBE 60 cm	6,52	0,21	<0,16	3,4	<0,28	0,72	<0,16	<0,28	0,44	2,04	1,04	0,30	0,41	47,2	0,65	0,06	0,07

Watery Solutions ***Sampling Date:*** ***20-dic-2012***

Description	pH	E.C. mS/cm 25º C	HCO3- (meq/l)	H2PO4- (mg/l)	Cl- (meq/l)	SO4= (meq/l)	NO3- (meq/l)	NH4+ (meq/l)	Ca++ (meq/l)	Mg++ (meq/l)	Na+ (meq/l)	K+ (meq/	B (mg/l)	Fe (mg/l)	Mn (mg/l)	Cu (mg/l)	Zn (mg/l)
TUBE 20 cm	6,79	0,29	1,80	<0,92	<0,28	0,60	<0,16	<0,28	1,37	0,77	0,39	0,12	<0,05	<0,05	<0,05	<0,05	0,07
TUBE 40 cm	6,90	0,38	2,64	<0,92	<0,28	0,80	<0,16	<0,28	2,07	0,73	0,86	0,08	<0,05	<0,05	<0,05	<0,05	0,25
TUBE 60 cm	6,86	0,46	2,40	<0,92	<0,28	1,24	0,53	<0,28	1,44	2,23	0,81	<0,05	0,05	<0,05	<0,05	<0,05	0,05

Laboratory results from AGQ labs for three sampling tubes at the Yolo Sandy Loam (“Gravelly”) site.

Project Conclusions

- Irrigation amounts varied widely, but some irrigations were not necessary and/or were excessive.
- Nominal irrigation amount was 2.1 inches (51 gal/vine), or 17% of ETc between June 29 and October 15.
- Excluding outliers (accidental irrigations and faulty irrigation systems), average applied irrigation was 1.7 inches (42 gal/vine), or 14% ETc.
- Deep soils and high water tables commonly found in this region allow for late and reduced irrigation relative to ETc in this region.
- Deep percolation of drip irrigation is unlikely in gravelly and especially stratified soils. Deep percolation is more likely in heavier, more uniform soils.
- Rainfall will allow any leachable mineral residue to move deep and potentially below the root zone. It is important that high levels of nitrate, salts or other leachable toxins do not remain in the soil at the end of the growing season.

A

B

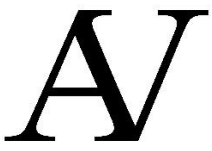
C

Equipment used for the project. A) 48” soil moisture probe with internal data logger. B) Soil moisture probe installed near drip emitter. C) Pressure switch installed in an irrigation line, which activates during irrigation applications and events logged in a data logger.

Equipment used for soil pore water sampling. Left, suction lysimeter used to sample at 2 foot and 4 foot depths. Right, suction lysimeter used by AGQ to sample at 20, 40 and 60 centimeters (approx.. 8, 16, and 24 inches).

Response to Walker Report entitled “Programmatic Operations and Management Technical Report for Micro-Irrigation of Vineyards in the Healdsburg Area”

Mark Greenspan, Ph.D., CPAg, CCA
Viticulturist
Advanced Viticulture, Inc.
P.O. Box 2236
Windsor, CA 95492



The Walker report states a generalized agronomic rate for irrigation in the Healdsburg-Windsor Russian River Middle Reach region. The values stated in the report refer to works based on sound science from, amongst others, a report from Hydrologist Gus Yates in 2010[i] and Viticulturist Mark Greenspan in 2013[ii]. There are some interpretations of those reports, especially with regard to the actual agronomic rates that are needed and commonly used by wine grape growers in much of the region. However, as the author of the 2013 document, I find that the agronomic rate for vineyards stated in the Walker report ignores values determined under actual field conditions in the Middle Reach Russian River region and overstates the actual amount of irrigation that may be used by vineyards. While the agronomic rate specified may have been purposely liberal for purposes of demonstrating a worst-case scenario for nitrogen, salinity and groundwater issues, it presents an overestimate of what will actually be needed by growers, and points to a potential imbalance of recycled water production and its use for irrigation.

There are really two issues at hand: one is when irrigation typically commences during the growing season and the other is how much irrigation water is applied during the portion of the growing season relative to common ways of quantifying irrigation requirements.

Seasonal initiation of the irrigation cycle:

It would be a serious mistake to assume that irrigation of vineyards occurs throughout the growing season. In fact, the amount of winter and spring rainfall that fall in this region almost always (including drought years) fills the soil to field capacity at the time of the early stages of vine vegetative development, allowing growers to hold off on their irrigation applications until quite late into the growing season. It is estimated, based on anecdotal discussions as well as firsthand experience, that most growers in this region begin their irrigations during late June through mid-July, and then irrigate up to the time of harvest. With current monitoring technologies, including the soil moisture devices and plant moisture devices demonstrated in the 2012 Middle Reach study, the commencement of irrigation was shown to be able to be delayed until very late July in all sites evaluated and some sites were not irrigated at all.

The actual starting time for irrigation depends on spring rainfall patterns as well as a site's water holding capacity (WHC) within the root zone. Soils in this region vary in their depths and their overall water holding capacities. A survey using the NRCS soil survey (soil web online) indicated that within the region of interest, WHC ranges from 1.8 inches to 10.6 inches. Of the area surveyed, 21.3% was in the range of 6.6 to 9.0 inches of storage while 68.3% was in the range of 9.1 to 10.6 inches of storage. In our experience, vineyards with WHC of 6.0 inches or greater of WHC require very little or no irrigation and irrigation may be delayed until very late into the season (often into September) and many vineyards may be dry-farmed. Many vineyards are on Yolo loam and Yolo silt loam soils, which have the highest WHC of all soils in the region, because of their soil texture and extreme depth.

It is understood that the majority of growers in the region do not dry-farm and irrigation is practiced in most of them. However, the actual application of irrigation water is likely to be far less than what was used as a basis of computation for the Yates report, in part because of the allowable delay in the commencement of irrigation to many vineyards in this region, who draw upon stored soil moisture reserves prior to applying their first irrigation. The viticultural motivation for waiting for depletion of stored moisture reserves cannot be overstated. Irrigating before stored reserves are mostly depleted will result in excessive vegetative vigor, which is highly detrimental to wine quality and adds costs to the grower with regard to canopy management (i.e. trimming and shoot positioning).

The subject vineyard used in the Yates report was Syar, which has some soils that are very gravelly and highly stratified and represent some of the lowest WHC soils in the region. Hence, Syar's irrigation application volume per season is very likely to be substantially higher than in the surrounding vineyards in the same region due largely to earlier commencement of irrigation. The estimate of 4 to 6 inches stated in the Yates report was based on verbal communication with the vineyard manager, and was likely due to a crude estimate. The Greenspan study reported that the actual application rate was between 0.8 and 4.7 inches, with the highest irrigation amount being a block that had accidentally been left running overnight. For the Yolo Sandy Loam and the Cortina Very Gravelly Loam sites, the seasonal application was 2.1 and 4.1 inches, respectively. Hence, the actual agronomic rates for the vineyard blocks at Syar are likely much less than the 4 to 6 inches stated in the Yates report. It can be assumed that much of this discrepancy can be attributed to the delay in the actual irrigation start date.

Walker states an equation on page 8, indicating that irrigation requirement is equal to full crop evapotranspiration minus effective precipitation. His equation is incomplete and must include soil moisture storage (from winter and spring rainfall) to be complete. This is not a trivial omission and accounts for a much more significant proportion of this relationship than effective precipitation does in this climate, which is mostly arid during June through September.

Walker discusses on page 11 that the 75% of full ETc will be distributed over the March to October growing season. This is clearly not true, as the replacement of vineyard ETc will be replaced only after the storage reserves are depleted, which will be much later than March.

Percentage of ETc applied:

The application of reference Evapotranspiration (ETo) is a commonly-used approach to agricultural irrigation scheduling as well as determination of vineyard irrigation requirements. The model is useful, but subject to many assumptions and as a result, is error-prone. The model relies on an estimated water use based on weather data and estimates the water use of a reference crop of mixed grasses mowed to a moderate height. This daily estimate of water use for the reference crop must be "corrected" to reflect water use of the subject crop. This uses

the “crop coefficient”, which is the primary source of potential error in this method. The crop coefficient corrects the reference ET to reflect the “true” crop ET. Both Yates and Walker cite the Larry Williams work[iii] that relates % shaded area at solar noon to the crop coefficient using a multiplying factor of 0.017 to convert from % shaded area to fractional crop coefficient. The Williams work is sound, based on the measurements stated, but the shaded area from a vineyard canopy is not necessarily consistent enough to employ this function universally. For instance, actual shaded area at solar noon depends not only on solar elevation, but also on row orientation, as shadows cast on the ground will differ based on these factors. Williams also reported, in an industry trade publication[iv], that values may be used for different types of canopies. For VSP trellises at 8 feet between rows, the maximum crop coefficient is 0.62. That value is lower for wider row spacing and higher for closer row spacing. Walker estimated this value to be 0.68 for their sample calculation, which was not too far off of the published recommended value to be of tremendous concern.

However, the percentage of full ETc used by Walker in their agronomic rate determination was 75% of full ETc. It was found in the Greenspan project that much lower fractions of full ETc may be used in practice in vineyards in this same region. Greenspan found that between 5% and 40% could be applied to vineyards without inducing excessive vine stress, including vineyards at the Syar site. Hence, the use of 75% of full ETc is clearly a substantial over-estimate relative to what is likely to be applied in practice. In fact, the estimate of agronomic rate determined by Yates of 4.7 inches is seemingly much higher than is actually needed by most vineyards, though the estimate of Yates is in agreement of what Greenspan found only one site at Syar, which was the site with the accidental excessive irrigation application that biased the result. Yet in other soils in the middle reach, the agronomic rate was found to be much lower – between 0.6 and 2.1 inches. This corresponds to application percentages of ETc between 5% and 18%. Higher percentages, up to 40%, were needed only in the most gravelly soils, which was still far less than the 75% suggested by the Walker document.

The reduction of fraction of full ETc is due, in part, to intentional imposition of mild water stress on vines before irrigation commences, for purposes of controlling canopy growth as well as stimulation of the fruit’s biochemical ripening processes. In so doing, the vines limit their water use via stomatal (leaf pore) closure, which puts them in a state of higher water use efficiency than they would be if non-stressed. This water use efficiency component is not accounted for by the ET-based model, and this is reflected in the much lower-than-expected percentages of full ETc seen during the 2012 study and in general practice for high-end vineyards.

Walker referred to the Greenspan document and created a table of the results. He states “the sites evaluated used far less irrigation water than required and could have used more water without adverse effects on the vines”. This statement is incorrect from a viticultural standpoint. The rate of irrigation applied during that study was a reasonable amount and any additional

water should be considered as an excessive amount that may well have adverse effects on the vines, insofar as wine quality and possibly farming costs are concerned.

Nitrogen relations:

Finally, the nitrogen requirements by vineyards was discussed as a matter of determining the application of waste water containing nitrogen relative to the needs of the vines. There is a complicating factor not discussed in the Walker report, where the actual irrigation applications in vineyards is applied late in the growing season (usually after veraison through harvest and post-harvest) when the vine requirement for nitrogen declines from veraison onward. So, the delivery of nitrogen to vineyards by way of recycled water will not supply the nitrogen needed by the vines during the time of greatest need (early in the growing season and up through veraison). Hence, application of irrigation water containing nitrogen will not deliver the nutrient at the most optimal time. Walker indicates that 7.5 pounds of nitrogen per acre may be applied using recycled water, but that amount is a large proportion of the total needs for each season. However, applying this much nitrogen late into the season may induce vegetative re-growth, which would be undesirable for winegrape growers. Post-harvest irrigations may typically be accompanied by a small application of nitrogen-containing fertilizers, but vines are typically irrigated after the post-harvest fertilization. When leaves fall, demand for water and nutrients falls off steeply. Any nitrogen not taken up will be leached below the root zone by winter rainfall, eventually ending up in the ground water.

Overall, the report presents a good set of best management practices, but grossly overstates the agronomic rate of irrigation for vineyards in the Middle Reach of the Russian River region. The demands of the region's vineyards is likely to be far less, which suggests that the design of the system needs to be re-worked based on a much lower agronomic rate.

---

[i] Yates, Gus. Impacts of Recycled Water Irrigation on Groundwater and Surface Water Flow and Quality near Healdsburg: a Generalized Approach. September 21, 2010

[ii] Greenspan, Mark. 2012 Middle Reach Russian River Irrigation Demonstration Project. February 8, 2013.

[iii] Williams, L.E. and J.E. Ayars. Grapevine water use and the crop coefficient are linear functions of the shaded area measured beneath the canopy. Agricultural and forest meteorology 2005 Oct. 3, v. 132, issue 3-4

[iv] Williams, L.E. Irrigation of Winegrapes in California. Practical Winery and Vineyard. November/December 2001.

AUG 31 2018

Mr. Patrick Fuss, Principal Water/Wastewater Engineer
City of Healdsburg
401 Grove Street
Healdsburg, CA 95448
pfuss@ci.healdsburg.ca.us

Dear Mr. Fuss:

CITY OF HEALDSBURG WASTEWATER TREATMENT PLANT UPGRADE PROJECT SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT (SEIR) NOTICE OF PREPARATION (NOP)

The State Water Resources Control Board (State Water Board) Division of Water Rights (Division) appreciates the opportunity to review the NOP of SEIR for the above-mentioned project and has the following comments:

The NOP indicates that the City of Healdsburg Wastewater Treatment Plant Upgrade Project (Project) will reduce the treated wastewater discharge to the Russian River, in part due to an order from the North Coast Regional Water Quality Control Board to eliminate discharges. We further understand that the means by which the City of Healdsburg proposes to reduce discharges is through expansion of a recycled water program, which will require a change the place of use, or purpose of use of treated wastewater that will result in reduced flow discharges, to the Russian River. It appears that a wastewater change petition is required to be submitted to the Division and approved pursuant to Water Code section 1211, prior to reducing discharges associated with the Project.

Water Code section 1211 states the following:

(a) Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater, the owner of any wastewater treatment plant shall obtain approval of the board for that change. The board shall review the changes pursuant to the provisions of Chapter 10 (commencing with Section 1700) of Part 2 of Division 2.

(b) Subdivision (a) does not apply to changes in the discharge of use of treated wastewater that do not result in decreasing the flow in any portion of a watercourse.

Information regarding the process for filing a wastewater change petition can be found here:

https://www.waterboards.ca.gov/waterrights/water_issues/programs/petitions/#wastewater

As part of the California Environmental Quality Act (CEQA) process, please continue to coordinate your review with the Division, the North Coast Regional Water Quality Board, and the California Department of Fish and Wildlife. The SEIR should include an evaluation of the impacts of reduced discharges to other beneficial uses of the water, including fish and wildlife resources and the environment.

If you have any questions regarding this matter, please contact Patricia Fernandez at (916) 319-9141 or by email at patricia.fernandez@waterboards.ca.gov. Written correspondence or inquiries should be addressed as follows: State Water Resources Control Board, Division of Water Rights, Attn: Patricia D. Fernandez, P.O, Box 2000, Sacramento, CA 95812-2000.

Sincerely,

ORIGINAL SIGNED BY:

Sean Maguire, Program Manager
Petition, Licensing, and Registrations Section
Division of Water Rights

ec: North Coast Regional Water Quality Control Board
Ms. Cathleen Goodwin
cathleen.goodwin@waterboards.ca.gov

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Mayor
Bruce Okrepkie

Vice Mayor
Dominic Foppoli

Councilmembers
Debora Fudge
Mark Millan
Sam Salmon

Town Manager
John Jansons

August 31, 2018

Patrick Fuss, Water/Wastewater Principal Engineer
City of Healdsburg
401 Grove Street
Healdsburg, CA 95448

Subject: City of Healdsburg Wastewater Treatment Upgrade Project Supplemental Environmental Impact Report

Dear Mr. Fuss:

The Town of Windsor (Town) has reviewed the Notice of Preparation of a Supplemental Environmental Impact Report (SEIR) for the City of Healdsburg's Wastewater Treatment Upgrade Project (Project).

The Town recognized that the Project would reduce use of groundwater in the Healdsburg Area groundwater subbasin resulting in potential benefits to groundwater sustainability. The SEIR should quantify the volume of groundwater that is currently used for irrigation that will be offset by the use of recycled water. The Town requests that the SEIR scope include a review of how the proposed increase use of recycled water for agricultural irrigation could potentially impact groundwater quality, particularly relative to salt and nutrients and describe management practices that could mitigate potential impacts.

The Town looks forward to reviewing the SEIR when it is completed. Please continue to keep the Town on your distribution list for copies of future documents pertaining to this project.

Thank you for the opportunity to comment. Please feel free to contact me at vastells@townofwindsor.com or 707-838-1218 or Sandi Potter at spotter@townofwindsor.com or 707-838-5329.

Thank you,

Veronica Astells
Environmental Program Manager

e-cc:
Toni Bertolero, Public Works Director/Town Engineer
Sandi Potter, Deputy Director of Water and Environmental Management
Elizabeth Cargay, Environmental Program Manager

I:\80 - Public Works\Environmental Programs\2018.8.27 SEIR Comment Letter.docx

Printed on recycled paper

From: Patrick Fuss <pfuss@ci.healdsburg.ca.us>
Sent: Wednesday, September 05, 2018 5:07 PM
To: Smith, Natalie
Subject: Comments to the NOP for Healdsburg Recycled Water Expansion
Attachments: Re Hbg WW SEIR Regional Map not in PN.zip

We also received a call from
Zack at Opperman and Son's on 08/21/2018, 707-433-4421, expressing concerns that there may be an accident at the hauling fill station.

Mike Prinz at City of Santa Rosa on 08/21/2018, 707-543-3357, encouraging the City of Healdsburg to consider connection to the Geysers Pipeline.

Luke Higgins at McRostie Vineyards on 08/08/2018, 646-299-7681, interested in getting water to his 12 to 20 Ac.

Patrick Fuss, P.E.
Water/Wastewater Principal Engineer
City of Healdsburg, Municipal Utility Dept.
401 Grove St. Healdsburg, CA 95448
707-217-3218 | CityofHealdsburg.org

From: Windell, Sean@Wildlife <Sean.Windell@wildlife.ca.gov>
Sent: Tuesday, September 18, 2018 3:25 PM
To: Patrick Fuss
Subject: Healdsburg Wastewater Treatment Upgrade Project SEIR

Hi Patrick,

I'm with the CA Department of Fish and Wildlife and was looking over the NOP for the Healdsburg Wastewater Treatment Upgrade Project SEIR. I was wondering if you were intending on submitting a wastewater change petition (Water Code 1211) to the State Water Board due to reducing discharge of the treatment plant.

Thank you,
Sean

From: Patrick Fuss <pfuss@ci.healdsburg.ca.us>
Sent: Tuesday, May 28, 2019 8:29 AM
To: Smith, Steven (Oakland)
Cc: Rosa Gutierrez
Subject: Comments re: the SEIR and other related matters.

Steve – For your information and use in the administrative record.

Rose – For files.

Patrick Fuss, P.E.
Water/Wastewater Principal Engineer
City of Healdsburg, Municipal Utility Dept.
401 Grove St. Healdsburg, CA 95448
707-217-3218 | CityofHealdsburg.org

From: Judith Olney [mailto:judith.olney@att.net]
Sent: Monday, May 27, 2019 3:09 AM
To: Patrick Fuss; Terry Crowley
Cc: Olney Judith; Chip Hay; Aaron Wright; Marc Bommersbach; Diane Bucher; M Fumich JR William; Jim Dreisback
Subject: Update on Treatment Plant and Basalt Breach

Healdsburg Utility Department - Please enter these concerns into your technical analyses for the new EIR.

After the February 2019 floods, the Westside Community Association (WCA) requested information a to potential groundwater contamination - many of our members have domestic wells in the area of inundation. The City's response did not answer our question: Granted the impacted properties are not in your service area; however, overtopped wastewater ponds as well as treated wastewater irrigation ir proximity to our wells confers stakeholder status.

Background:

The areas of concern correspond to the western portion of the Middle Reach of the Russian River and our western hillsides with protected salmon spawning creeks. The alluvial valley and our watersheds are of critical importance to Westside Area residents, water users in the City of Healdsburg and water users throughout Sonoma and Marin Counties, as this alluvial valley overlays the drinking water aquifer for over 700,000 people. It is both the source of Healdsburg's drinking water wells and the site of Healdsburg's tertiary treatment plant.

The alluvial soils are now disposal sites for Healdsburg treated wastewater through an expanding agricultural irrigation system. Treatment Plant incidents and the wastewater irrigation program have an impact on WCA members including those located in the western hills, as many properties domestic wel are located on the valley floor. The WCA provides information to our members so people can take appropriate action - such as testing the water quality of their wells.

1. Noticing and stakeholder consideration in the EIR process. In a letter dated February 5, 2019, Healdsburg notified adjacent landowners and interested parties of its preparation of an EIR for expansion of wastewater irrigation in the Westside area, including the hillsides and potential use for cannabis cultivation. Since 2007, environmental and community groups have raised concerns about excess application of such treated effluent in the drinking water aquifer for the Sonoma County Water Agency (SCWA). Alluvial soils and high groundwater tables increase the risks and potential for groundwater contamination; in the hillsides, confided aquifers are at risk.
2. February flooding of the Healdsburg wastewater treatment plant during the storms. On March 3, the WCA contacted Patrick Fuss, Healdsburg Wastewater Engineer, with questions regarding the nature o the flooding problems at the plant. WCA was trying to determine potential impacts from the plant's discharge on neighboring domestic wells, and what actions residents should take to protect their health. Mr. Fuss stated that since the WCA members resided outside of Healdsburg it was the County's responsibility to provide information regarding impacts to wells. This is a rather incredible statement given the reason for the inquiry was related solely to Healdsburg treatment plant flooding, and had nothing to do with the County.
3. Russian River breach of Basalt Pond: In addition to flood impacts and future contingency plans, an additional concern is the breach of Basalt Pond, and resultant inflows/ outflows. What are the plans relative to repairing the breach? What action is the City taking to address post May 15 discharges?
Next Steps: The WCA will send a request for information from the North Coast Regional Water Quality Control Board: A Santa Rosa's treatment plant employee stated that Healdsburg is required to file a report with the California Water Quality Control Board, and this report may be a source of information regarding the extent of any possible unintended discharges from the Healdsburg plant.

Of course, our preferred next step is to work directly with the City of Healdsburg. We trust the City wi respond to this email, set up a meeting with the WCA Board, and provide the information we've requested.

Sincerely,
Judith Olney, WCA Director

On Mar 4, 2019, at 10:17 PM, Patrick Fuss <pfuss@ci.healdsburg.ca.us> wrote:

Greetings, Ms. Olney –

I think the members of your association on Westside Road are in the unincorporated County, an fall under that jurisdiction. The flood waters can have an impact not only on your wells, but also your septic systems. The County will have guidance on testing and remediation of your wells, if needed, as well as getting your septic system back into working order. Here are some links that may be useful.

https://sonomacounty.ca.gov/PRMD/Eng-and-Constr/Well-and-Septic/
https://www.epa.gov/privatewells/what-do-your-private-well-after-flood
https://www.epa.gov/ground-water-and-drinking-water/septic-systems-what-do-after-flood

Patrick

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From: Judith Olney [mailto:judith.olney@att.net]
Sent: Sunday, March 03, 2019 12:45 PM
To: Patrick Fuss; Judith Olney
Subject: Updates on Treatment Plants during Flood

Patrick: Does the Healdsburg Treatment Plant have any information for people with wells downstream from your plant? The Westside Community Association would like to communicate with our members. Thank you in advance -

Judith Olney WCA Board
415-860-4104

Begin forwarded message:

From: Sean McNeil <seanmcneil0@gmail.com>
Subject: Re: Did Sebastopol's sewage pump station release sewage to the Laguna?
Date: March 3, 2019 at 11:23:26 AM PST
To: Jane Nielson <jenielson@comcast.net>
Cc: John Rosenblum <roseenveng@sbcglobal.net>, Nan Waters <nanwaters@hotmail.com>, David Noren <dnoren@ebagroup.com>, Rue Furch <pqrst@sonic.net>, Janus Matthes <bjmatthes@comcast.net>, Paul-Andre Schabracq <pas8@comcast.net>, SCWC <sonoma-county-water-coalition@googlegroups.com>

I am happy to report that the Laguna Treatment Plant made it through the storms. We saw record flows to the treatment plant. I cannot help to wonder if we are seeing higher inflow from the fire damaged areas. Not a lot of sleep last week as we were all working to keep the operation moving throughout the event. I have been working on recovering my sleep over the weekend. There is another atmospheric river, but it looks to be headed to the South Bay.

Best,

Sean

I will follow up with these questions. Jane

> On Feb 28, 2019, at 2:30 PM, John Rosenblum <roseenveng@sbcglobal.net> wrote:
>
> What reports?
>
> (a) how many sewer covers "popped" all over Sebastopol?
> (b) did the pump station sump overflow?
> (c) have samples been taken to confirm that there are no Fecal Coliform (tests require 48-72 hours)?
>
> JohnR
> John Rosenblum, PhD
> Rosenblum Environmental Engineering
> 900 Dorthel St, Sebastopol CA 95472
> (707) 824-8070
> On 2/28/2019 11:32 AM, Jane Nielson wrote:
>
> > Sarah Gurney sent me a similar response.
> >
> > Jane
> >
> > Begin forwarded message:
> >
> > **From:** Patrick Slayter <ps.sebcc@gmail.com>
> > **Subject: Re: Did Sebastopol's sewage pump station release sewage to the Laguna?**
> > **Date:** February 28, 2019 at 9:36:25 AM PST
> > **To:** Jane Nielson <jenielson@comcast.net>
> > **Cc:** Una Glass <unajmglass@gmail.com>, Sarah Gurney <sarahgurney.seb@gmail.com>
> >
> > The Sebastopol lift station has continued to operate properly with 24 hour on-site staffing to monitor the equipment.
> >
> > The latest report is that everything is fine.
> >
> > Our City employees, public safety and fire department folks have done amazing work this week!

Cloverdale and Healdsburg have significant problems with their waste systems.

Patrick Slayter
Vice Mayor
City of Sebastopol

APPENDIX B

AGRONOMIC RATE CALCULATIONS

Estimated Apple Agronomic Rates for Healdsburg Area

Month	ETo (in./mo)	Crop Coefficient	ETc (in./mo)	Precipitation (in./mo)	ETc-P (in./mo)	Sprinkler Efficiency	Hydraulic Agronomic Rate (in./mo)	Hydraulic Agronomic Rate (ft/mo)	Recycled Water Nitrogen (mg/L)	Applied Nitrogen (lb N/acre)	Application Limited by Hydraulic or Nitrogen Agronomic Rate?
January	1.15	0.00	0.00	5.03	0.00	0.88	0.00	0.00	2.28	0.00	
February	1.94	0.00	0.00	4.17	0.00	0.88	0.00	0.00	4.32	0.00	
March	2.58	0.00	0.00	5.10	0.00	0.88	0.00	0.00	7.36	0.00	
April	4.21	0.00	0.00	2.07	0.00	0.88	0.00	0.00	3.25	0.00	
May 1 to 15	2.92	0.59	1.72	0.10	1.62	0.88	1.84	0.15	4.20	1.75	
May 16 to 31	2.91	0.67	1.95	0.37	1.58	0.88	1.80	0.15	4.20	1.71	
June 1 to 15	3.27	0.76	2.49	0.20	2.28	0.88	2.60	0.22	6.20	3.65	
June 16 to 30	3.49	0.84	2.93	0.10	2.83	0.88	3.21	0.27	6.20	4.51	
July 1 to 15	3.48	0.92	3.20	0.06	3.14	0.88	3.57	0.30	2.42	1.96	
July 16 to 31	3.35	1.00	3.35	0.06	3.29	0.88	3.74	0.31	2.42	2.05	**Hydraulic Rate**
August 1 to 15	2.88	1.00	2.88	0.00	2.88	0.88	3.27	0.27	5.11	3.79	
August 16 to 31	2.90	1.00	2.90	0.00	2.89	0.88	3.29	0.27	5.11	3.81	
September 1 to 15	2.44	1.00	2.44	0.01	2.42	0.88	2.75	0.23	2.71	1.69	
September 16 to 30	2.24	1.00	2.24	0.15	2.10	0.88	2.38	0.20	2.71	1.46	
October 1 to 15	1.82	1.00	1.82	0.25	1.57	0.88	1.79	0.15	1.43	0.58	
October 16 to 31	1.31	0.91	1.19	1.88	0.00	0.88	0.00	0.00	1.43	0.00	
November 1 to 15	0.80	0.59	0.47	1.90	0.00	0.88	0.00	0.00	2.84	0.00	
November 16 to 30	0.70	0.00	0.00	1.67	0.00	0.88	0.00	0.00	2.84	0.00	
December	1.22	0.00	0.00	6.00	0.00	0.88	0.00	0.00	3.46	0.00	
Total (year)	**45.59**	**0.59**	**29.57**	**29.12**	**26.60**		**30.23**	**2.52**		**26.95**	
Total (ft/year)	**3.80**	**average**	**2.46**	**2.43**	**2.22**		**2.52**				

Eto and precipitation, Monthly average from CIMIS Windsor Station #103 (Jan 2010 to July 2017)

Crop coefficients: "Understanding your Orchard's Water Requirements," UCANR Publication 8212.

Irrigation system uniformity from Characterization of the Ukiah Valley Groundwater Basin, Final Report, prepared by UCD Land, Air, and Water Resources Dept (June 2017) and Lewis et al 2008.

Total N is the sum of ammonia-N, nitrate-N, nitrite-N and organic N. Values represent monthly averages of tertiary effluent data from January 2015- March 2018. Total N was considered only when both Organic N and Nitrate-N were sampled.

Total Irrigation Requirement does not include a leaching factor.

Represents the estimated nitrogen load from meeting irrigation needs with 100% recycled water. The agronomic rate for nitrogen is estimated at 70 lbs N/acre/year for apple considered as the average rate for 6-7 year age trees from "Nitrogen Management Guide for Apples" (https://cals.arizona.edu/crop/soils/aznapples.pdf).

Estimated Cannabis Agronomic Rates for Healdsburg Area (Growing Outdoors)

Month	ETo (in./mo)	Crop Coefficient	ETc (in./mo)	Precipitation (in./mo)	ETc-P (in./mo)	Irrigation Efficiency	Hydraulic Agronomic Rate (in./mo)	Hydraulic Agronomic Rate (ft/mo)	Recycled Water Nitrogen (mg/L)	Applied Nitrogen (lb N/acre)	Application Limited by Hydraulic or Nitrogen Agronomic Rate?
January	1.15	0	0.00	5.03	0.00	0.7	0.00	0.00	2.28	0.00	Hydraulic Rate
February	1.94	0	0.00	4.17	0.00	0.7	0.00	0.00	4.32	0.00	
March (1-16)	1.08	0.25	0.27	3.09	0.00	0.7	0.00	0.00	7.36	0.00	
March (16-31)	1.50	0.4	0.60	2.06	0.00	0.7	0.00	0.00	7.36	0.00	
April (1-15)	1.83	0.45	0.82	1.63	0.00	0.7	0.00	0.00	3.25	0.00	
April (16-30)	2.38	0.85	2.03	0.42	1.60	0.7	2.29	0.19	3.25	1.68	
May (1-15)	2.92	1.12	3.27	0.10	3.16	0.7	4.52	0.38	4.20	4.30	
May (16-30)	2.91	1.2	3.50	0.37	3.13	0.7	4.47	0.37	4.20	4.25	
June (1-15)	3.27	1.3	4.25	0.20	4.05	0.7	5.79	0.48	6.20	8.13	
June (16-30)	3.49	1.3	4.53	0.10	4.43	0.7	6.33	0.53	6.20	8.89	
July (1-15)	3.48	1.1	3.82	0.06	3.77	0.7	5.38	0.45	2.42	2.95	
July (16-31)	3.35	0.8	2.68	0.06	2.62	0.7	3.74	0.31	2.42	2.05	
August (1-15)	2.88	0	0.00	0.00	0.00	0.7	0.00	0.00	5.11	0.00	
August (16-31)	2.90	0	0.00	0.00	0.00	0.7	0.00	0.00	5.11	0.00	
September (1-15)	2.44	0	0.00	0.01	0.00	0.7	0.00	0.00	2.71	0.00	
September (16-30)	2.24	0	0.00	0.15	0.00	0.7	0.00	0.00	2.71	0.00	
October (1-15)	1.82	0	0.00	0.25	0.00	0.7	0.00	0.00	1.43	0.00	
October (16-31)	1.31	0	0.00	1.88	0.00	0.7	0.00	0.00	1.43	0.00	
November	1.50	0	0.00	3.57	0.00	0.7	0.00	0.00	2.84	0.00	
December	1.22	0	0.00	6.00	0.00	0.7	0.00	0.00	3.46	0.00	
Total (year)	**45.59**	**0.49**	**25.77**	**29.15**	**22.76**		**32.51**	**2.71**		**32.25**	
Total (ft/year)	**3.80**	**average**	**2.15**	**2.43**	**1.90**		**2.71**				

Eto and precipitation, Monthly average from CIMIS Windsor Station #103 (Jan 2010 to July 2017)

Crop coefficients: Crop coefficients (Kc) of Corn is used for Cannabis based on M. O'Hare et al. (2013), "Environmental Risks and Opportunities in Cannabis Cultivation", BOTEC Analysis Corporation.

Crop coefficients: Crop coefficients (Kc) for corn from Texas A&M Univeristy Grower's Guide report titled: "Using PET for Determining Crop Water Requirements and Irrigation Scheduling". (http://texaset.tamu.edu/Resources/Documents/Grower's%20Guide.pdf)

Irrigation system efficiency approximately 70% for furrow irrigation.

Total N is the sum of ammonia-N, nitrate-N, nitrite-N and organic N. Values represent monthly averages of tertiary effluent data from January 2015- March 2018. Total N was considered only when both Organic N and Nitrate-N were sampled.

Total Irrigation Requirement does not include a leaching factor.

Represents the estimated nitrogen load from meeting irrigation needs with 100% recycled water. The agronomic rate for nitrogen is estimated at 48.6 lbs N/acre/year for corn (substitued for Cannabis) per: M. O'Hare et al. (2013), "Environmental Risks and Opportunities in Cannabis Cultivation", BOTEC Analysis Corporation.

Estimated Cut Hay (Ryegrass) Agronomic Rates for Healdsburg Area

Month	ETo (in./mo)	Crop Coefficient (grass)	ETc, (in./mo)	Precipitation (in./mo)	ETc-P (in./mo)	Sprinkler Efficiency	Hydraulic Agronomic Rate (in./mo)	Hydraulic Agronomic Rate (ft/mo)	Recycled Water Nitrogen (mg/L)	Applied Nitrogen (lb N/acre)	Application Limited by Hydraulic or Nitrogen Agronomic Rate?
January	1.15	0.61	0.70	5.03	0.00	0.8	0.00	0.00	2.28	0.00	Hydraulic Rate
February	1.94	0.64	1.24	4.17	0.00	0.8	0.00	0.00	4.32	0.00	
March	2.58	0.75	1.93	5.10	0.00	0.8	0.00	0.00	7.36	0.00	
April	4.21	1.04	4.38	2.07	2.32	0.8	2.89	0.24	3.25	2.13	
May	5.83	0.95	5.54	0.48	5.06	0.8	6.32	0.53	4.20	6.01	
June	6.75	0.88	5.94	0.30	5.64	0.8	7.05	0.59	6.20	9.90	
July	6.84	0.94	6.42	0.12	6.31	0.8	7.89	0.66	2.42	4.32	
August	5.79	0.86	4.98	0.01	4.97	0.8	6.21	0.52	5.11	7.19	
September	4.67	0.74	3.46	0.17	3.29	0.8	4.11	0.34	2.71	2.52	
October	3.12	0.75	2.34	2.14	0.21	0.8	0.26	0.02	1.43	0.08	
November	1.50	0.69	1.03	3.57	0.00	0.8	0.00	0.00	2.84	0.00	
December	1.22	0.60	0.73	6.00	0.00	0.8	0.00	0.00	3.46	0.00	
Total (year)	**45.59**	**0.80**	**38.70**	**29.15**	**27.78**		**34.72**	**2.89**	**3.80**	**32.16**	
Total (ft/year)	**3.80**	**average**		**2.43**	**2.31**						

Eto and precipitation, Monthly average from CIMIS Windsor Station #103 (Jan 2010 to July 2017)

Crop coefficients for cool season grasses that include tall fescue, rye grass, bentgrass, and Kentucky bluegrass (http://ucanr.edu/sites/UrbanHort/Water_Use_of_Turfgrass_and_Landscape_Plant_Materials/Turfgrass_Crop_Coefficients_Kc/)
Green, R.L. (2005). Golf Course Water Use and Regulation in California. Golf Course Management, October 2005.Efficient golf course rotary sprinkler operation is 80%.

Total N is the sum of ammonia-N, nitrate-N, nitrite-N and organic N. Values represent monthly averages of tertiary effluent data from January 2015- March 2018. Total N was considered only when both Organic N and Nitrate-N were sampled.

Total Irrigation Requirement does not include a leaching factor.

Represents the estimated nitrogen load from meeting irrigation needs with 100% recycled water. The agronomic rate for nitrogen is estimated at 192 lbs N/acre/year for ryegrass.

Ryegrass nitrogen requirement from "Crop Nutrient Harvest Removal," (2009), University of California Cooperative Extension.

Estimated Pasture Agronomic Rates for Healdsburg Area

Month	ETo (in./mo)	Crop Coefficient (pasture)	ETc (in./mo)	Precipitation (in./mo)	ETc-P (in./mo)	Sprinkler Efficiency	Hydraulic Agronomic Rate (in./mo)	Hydraulic Agronomic Rate (ft/mo)	Recycled Water Nitrogen (mg/L)	Applied Nitrogen (lb N/acre)	Application Limited by Hydraulic or Nitrogen Agronomic Rate?
January	1.15	0.61	0.70	5.03	0.00	0.69	0.00	0.00	2.28	0.00	Hydraulic Rate
February	1.94	0.64	1.24	4.17	0.00	0.69	0.00	0.00	4.32	0.00	
March	2.58	0.75	1.93	5.10	0.00	0.69	0.00	0.00	7.36	0.00	
April	4.21	1.04	4.38	2.07	2.32	0.69	0.00	0.00	3.25	0.00	
May	5.83	0.95	5.54	0.48	5.06	0.69	7.33	0.61	4.20	6.97	
June	6.75	0.88	5.94	0.30	5.64	0.69	8.17	0.68	6.20	11.48	
July	6.84	0.94	6.42	0.12	6.31	0.69	9.14	0.76	2.42	5.01	
August	5.79	0.86	4.98	0.01	4.97	0.69	7.20	0.60	5.11	8.33	
September	4.67	0.74	3.46	0.17	3.29	0.69	4.76	0.40	2.71	2.92	
October	3.12	0.75	2.34	2.14	0.21	0.69	0.30	0.02	1.43	0.10	
November	1.50	0.69	1.03	3.57	0.00	0.69	0.00	0.00	2.84	0.00	
December	1.22	0.6	0.73	6.00	0.00	0.69	0.00	0.00	3.46	0.00	
Total (year)	**45.59**		**38.70**	**29.15**	**27.78**		**36.90**	**3.08**		**34.81**	
Total (ft/year)	**3.80**			**2.43**	**2.31**		**3.08**				

Eto and precipitation, Monthly average from CIMIS Windsor Station #103 (Jan 2010 to July 2017)

Crop coefficient from http://ucanr.edu/sites/UrbanHort/Water_Use_of_Turfgrass_and_Landscape_Plant_Materials/Turfgrass_Crop_Coefficients_Kc/. Species include tall fescue, ryegrass, bentgrass, and Kentucky bluegrass.

Application Efficiency from Characterization of the Ukiah Valley Groundwater Basin, Final Report, prepared by UCD Land, Air, and Water Resources Dept (June 2017)

Total N is the sum of ammonia-N, nitrate-N, nitrite-N and organic N. Values represent monthly averages of tertiary effluent data from January 2015- March 2018. Total N was considered only when both Organic N and Nitrate-N were sampled.

Total Irrigation Requirement does not include a leaching factor.

Represents the estimated nitrogen load from meeting irrigation needs with 100% recycled water. The agronomic rate for nitrogen is estimated at 206 lbs N/acre/year for pasture.

Pasture nitrogen requirement is an average of five different pasture crop requirements in "Crop Nutrient Harvest Removal," (2009), University of California Cooperative Extension.

Pasture Grasses: Clover, Orchardgrass, Rye, Tall Fescue, Timothy

Estimated Peach Agronomic Rates for Healdsburg Area

Month	ETo (in./mo)	Crop Coefficient	ETc (in./mo)	Precipitation (in./mo)	ETc-P (in./mo)	Sprinkler Efficiency	Hydraulic Agronomic Rate (in./mo)	Hydraulic Agronomic Rate (ft/mo)	Recycled Water Nitrogen (mg/L)	Applied Nitrogen (lb N/acre)	Application Limited by Hydraulic or Nitrogen Agronomic Rate?
January	1.15	0	0.00	5.03	0.00	0.88	0.00	0.00	2.28	0.00	Hydraulic Rate
February	1.94	0	0.00	4.17	0.00	0.88	0.00	0.00	4.32	0.00	
March (1-16)	1.08	0	0.00	3.09	0.00	0.88	0.00	0.00	7.36	0.00	
March (16-31)	1.50	0.1	0.15	2.06	0.00	0.88	0.00	0.00	7.36	0.00	
April (1-15)	1.83	0.25	0.46	1.63	0.00	0.88	0.00	0.00	3.25	0.00	
April (16-30)	2.38	0.35	0.83	0.42	0.41	0.88	0.47	0.04	3.25	0.34	
May (1-15)	2.92	0.42	1.22	0.10	1.12	0.88	1.27	0.11	4.20	1.21	
May (16-30)	2.91	0.5	1.46	0.37	1.09	0.88	1.23	0.10	4.20	1.17	
June (1-15)	3.27	0.52	1.70	0.20	1.50	0.88	1.70	0.14	6.20	2.39	
June (16-30)	3.49	0.57	1.99	0.10	1.89	0.88	2.14	0.18	6.20	3.01	
July (1-15)	3.48	0.6	2.09	0.06	2.03	0.88	2.31	0.19	2.42	1.26	
July (16-31)	3.35	0.62	2.08	0.06	2.02	0.88	2.29	0.19	2.42	1.26	
August (1-15)	2.88	0.66	1.90	0.00	1.90	0.88	2.16	0.18	5.11	2.50	
August (16-31)	2.90	0.7	2.03	0.00	2.02	0.88	2.30	0.19	5.11	2.66	
September (1-15)	2.44	0.7	1.70	0.01	1.69	0.88	1.92	0.16	2.71	1.18	
September (16-30)	2.24	0.7	1.57	0.15	1.42	0.88	1.62	0.13	2.71	0.99	
October (1-15)	1.82	0.7	1.27	0.25	1.03	0.88	1.17	0.10	1.43	0.38	
October (16-31)	1.31	0	0.00	1.88	0.00	0.88	0.00	0.00	1.43	0.00	
November	1.50	0	0.00	3.57	0.00	0.88	0.00	0.00	2.84	0.00	
December	1.22	0	0.00	6.00	0.00	0.88	0.00	0.00	3.46	0.00	
Total (year)	**45.59**	**0.48**	**20.45**	**29.15**	**18.11**		**20.58**	**1.72**		**18.37**	
Total (ft/year)	**3.80**	**average**	**1.70**	**2.43**	**1.51**		**1.72**				

Eto and precipitation, Monthly average from CIMIS Windsor Station #103 (Jan 2010 to July 2017)

Crop coefficients: Crop coefficients (Kc) for mature peach trees derived from O'Henry and Crimson Lady trees planted in the Kearney weighing lysimeter (http://ucanr.edu/sites/fruitreport/Irrigation/Peach_Water_Use/Yearly_Crop_Coefficient_Plots/?repository=40855&a=90050)

Irrigation system uniformity from Characterization of the Ukiah Valley Groundwater Basin, Final Report, prepared by UCD Land, Air, and Water Resources Dept (June 2017) and Lewis et al 2008.

Total N is the sum of ammonia-N, nitrate-N, nitrite-N and organic N. Values represent monthly averages of tertiary effluent data from January 2015- March 2018. Total N was considered only when both Organic N and Nitrate-N were sampled.

Total Irrigation Requirement does not include a leaching factor.

Represents the estimated nitrogen load from meeting irrigation needs with 100% recycled water. The agronomic rate for nitrogen is estimated at 65 lbs N/acre/year for typical peach trees per: "NUTRIENT MANAGEMENT FOR TREE FRUITS AND SMALL FRUI of Maryland Extension (http://extension.umd.edu/sites/extension.umd.edu/files/_images/programs/anmp/NM-5.pdf).

Estimated Plums & Prunes Agronomic Rates for Healdsburg Area

Month	ETo (in./mo)	Crop Coefficient	ETc (in./mo)	Precipitation (in./mo)	ETc-P (in./mo)	Sprinkler Efficiency	Hydraulic Agronomic Rate (in./mo)	Hydraulic Agronomic Rate (ft/mo)	Recycled Water Nitrogen (mg/L)	Applied Nitrogen (lb N/acre)	Application Limited by Hydraulic or Nitrogen Agronomic Rate?
January	1.15	0	0.00	5.03	0.00	0.88	0.00	0.00	2.28	0.00	Hydraulic Rate
February	1.94	0	0.00	4.17	0.00	0.88	0.00	0.00	4.32	0.00	
March (1-16)	1.08	0	0.00	3.09	0.00	0.88	0.00	0.00	7.36	0.00	
March (16-31)	1.50	0.45	0.68	2.06	0.00	0.88	0.00	0.00	7.36	0.00	
April (1-15)	1.83	0.62	1.13	1.63	0.00	0.88	0.00	0.00	3.25	0.00	
April (16-30)	2.38	0.84	2.00	0.42	1.58	0.88	1.79	0.15	3.25	1.32	
May (1-15)	2.92	0.96	2.80	0.10	2.70	0.88	3.06	0.26	4.20	2.92	
May (16-30)	2.91	0.96	2.80	0.37	2.43	0.88	2.76	0.23	4.20	2.62	
June (1-15)	3.27	0.96	3.14	0.20	2.94	0.88	3.34	0.28	6.20	4.69	
June (16-30)	3.49	0.96	3.35	0.10	3.25	0.88	3.69	0.31	6.20	5.18	
July (1-15)	3.48	0.96	3.34	0.06	3.28	0.88	3.73	0.31	2.42	2.04	
July (16-31)	3.35	0.96	3.22	0.06	3.16	0.88	3.59	0.30	2.42	1.97	
August (1-15)	2.88	0.95	2.74	0.00	2.74	0.88	3.11	0.26	5.11	3.60	
August (16-31)	2.90	0.92	2.66	0.00	2.66	0.88	3.02	0.25	5.11	3.50	
September (1-15)	2.44	0.84	2.05	0.01	2.03	0.88	2.31	0.19	2.71	1.42	
September (16-30)	2.24	0.78	1.75	0.15	1.60	0.88	1.82	0.15	2.71	1.12	
October (1-15)	1.82	0.69	1.26	0.25	1.01	0.88	1.14	0.10	1.43	0.37	
October (16-31)	1.31	0.57	0.75	1.88	0.00	0.88	0.00	0.00	1.43	0.00	
November	1.50	0	0.00	3.57	0.00	0.88	0.00	0.00	2.84	0.00	
December	1.22	0	0.00	6.00	0.00	0.88	0.00	0.00	3.46	0.00	
Total (year)	**45.59**	**0.75**	**33.64**	**29.15**	**29.36**		**33.36**	**2.78**		**30.74**	
Total (ft/year)	**3.80**	**average**	**2.80**	**2.43**	**2.45**		**2.78**				

Eto and precipitation, Monthly average from CIMIS Windsor Station #103 (Jan 2010 to July 2017)

Crop coefficients: Crop coefficients (Kc) for from: K. A. Shackel et al., "Irrigation Scheduling and Tree Stress" (http://fruitandnuteducation.ucdavis.edu/files/161881.pdf)

Irrigation system uniformity from Characterization of the Ukiah Valley Groundwater Basin, Final Report, prepared by UCD Land, Air, and Water Resources Dept (June 2017) and Lewis et al 2008.

Total N is the sum of ammonia-N, nitrate-N, nitrite-N and organic N. Values represent monthly averages of tertiary effluent data from January 2015- March 2018. Total N was considered only when both Organic N and Nitrate-N were sampled.

Total Irrigation Requirement does not include a leaching factor.

Represents the estimated nitrogen load from meeting irrigation needs with 100% recycled water. The agronomic rate for nitrogen is estimated at 35 lbs N/acre/year for typical plum trees per: "NUTRIENT MANAGEMENT FOR TREE FRUITS AND SMALL FRUITS", University of Maryland Extension (http://extension.umd.edu/sites/extension.umd.edu/files/_images/programs/anmp/NM-5.pdf).

Estimated Vineyard Agronomic Rates for Healdsburg Area

Month	ETo (in./mo)	Crop Coefficient	ETc (in./mo)	Precipitation (in./mo)	ETc-P (in./mo)	Irrigation Efficiency	Hydraulic Agronomic Rate (in./mo)	Hydraulic Agronomic Rate (ft/mo)	Recycled Water Nitrogen (mg/L)	Applied Nitrogen (lb N/acre)	Application Limited by Hydraulic or Nitrogen Agronomic Rate?
January	1.15	0	0.00	5.03	0.00	0.88	0.00	0.00	2.28	0.00	Hydraulic Rate
February	1.94	0	0.00	4.17	0.00	0.88	0.00	0.00	4.32	0.00	
March	2.58	0	0.00	5.10	0.00	0.88	0.00	0.00	7.36	0.00	
April	4.21	0.68	2.87	2.07	0.80	0.88	0.36	0.03	3.25	0.27	
May	5.83	0.68	3.96	0.48	3.48	0.88	1.58	0.13	4.20	1.50	
June	6.75	0.68	4.59	0.30	4.29	0.88	1.94	0.16	6.20	2.73	
July	6.84	0.51	3.49	0.12	3.37	0.88	1.53	0.13	2.42	0.84	
August	5.79	0.85	4.92	0.01	4.91	0.88	2.23	0.19	5.11	2.58	
September	4.67	0.68	3.18	0.17	3.01	0.88	1.36	0.11	2.71	0.84	
October	3.12	0.68	2.12	2.14	0.00	0.88	0.00	0.00	1.43	0.00	
November	1.50	0	0.00	3.57	0.00	0.88	0.00	0.00	2.84	0.00	
December	1.22	0	0.00	6.00	0.00	0.88	0.00	0.00	3.46	0.00	
Total (year)	**45.59**	**0.16**	**25.12**	**29.15**	**19.85**		**9.00**	**0.75**		**8.75**	
Total (ft/year)	**3.80**	**average**		**2.43**	**1.65**		**0.75**				

Eto and precipitation, Monthly average from CIMIS Windsor Station #103 (Jan 2010 to July 2017)

Crop coefficients are estimates based on the methodology established by the University of California Cooperative Extension (UCCE), Sonoma County: http://cesonoma.ucanr.edu/viticulture717/Vineyard_Irrigation/Using_Evapotranspiration_Data_to_Determine_Irrigation_Time/

Drip irrigation design efficiency, from (http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex13729).

Total N is the sum of ammonia-N, nitrate-N, nitrite-N and organic N. Values represent monthly averages of tertiary effluent data from January 2015- March 2018. Total N was considered only when both Organic N and Nitrate-N were sampled.

Total Irrigation Requirement does not include a leaching factor.

Represents the estimated nitrogen load from meeting irrigation needs with 100% recycled water. The agronomic rate for nitrogen is estimated at 30 lbs N/acre/year for vineyards per 2016 NOA of which only 15 lbs/acre/year should be supplied by recycled water.

Estimated Vineyard and Frost Agronomic Rates for Healdsburg Area

Month	ETo (in./mo)	Crop Coefficient	ETc (in./mo)	Precipitation (in./mo)	ETc-P (in./mo)	Irrigation Efficiency	Hydraulic Agronomic Rate (in./mo)	Hydraulic Agronomic Rate (ft/mo)	Recycled Water Nitrogen (mg/L)	Applied Nitrogen (lb N/acre)	Irrigation Application Limited by Hydraulic or Nitrogen Agronomic Rate?	Water Applied for Frost Protection (ft/mo)	Total Water Applied for Irrig and Frost (ft/mo)	Additional Nitrogen Applied with Frost Protection (lb N/acre)
January	1.15	0	0.00	5.03	0.00	0.89	0.00	0.00	2.28	0.00	Hydraulic Rate	0.00	0.00	0.00
February	1.94	0	0.00	4.17	0.00	0.89	0.00	0.00	4.32	0.00		0.00	0.00	0.00
March	2.58	0	0.00	5.10	0.00	0.89	0.00	0.00	7.36	0.00		0.13	0.13	2.67
April	4.21	0.68	2.87	2.07	0.80	0.89	0.36	0.03	3.25	0.27		0.13	0.16	1.18
May	5.83	0.68	3.96	0.48	3.48	0.89	1.58	0.13	4.20	1.50		0.07	0.20	0.76
June	6.75	0.68	4.59	0.30	4.29	0.89	1.94	0.16	6.20	2.73		0.00	0.16	0.00
July	6.84	0.51	3.49	0.12	3.37	0.89	1.53	0.13	2.42	0.84		0.00	0.13	0.00
August	5.79	0.85	4.92	0.01	4.91	0.89	2.23	0.19	5.11	2.58		0.00	0.19	0.00
September	4.67	0.68	3.18	0.17	3.01	0.89	1.36	0.11	2.71	0.84		0.00	0.11	0.00
October	3.12	0.68	2.12	2.14	0.00	0.89	0.00	0.00	1.43	0.00		0.00	0.00	0.00
November	1.50	0	0.00	3.57	0.00	0.89	0.00	0.00	2.84	0.00		0.00	0.00	0.00
December	1.22	0	0.00	6.00	0.00	0.89	0.00	0.00	3.46	0.00		0.00	0.00	0.00
Total (year)	**45.59**	**0.16**	**25.12**	**29.15**	**19.85**		**9.00**	**0.75**		**8.75**		**0.33**	**1.08**	**4.61**
Total (ft/year)	**3.80**	**average**		**2.43**	**1.65**		**0.75**							

Eto and precipitation, Monthly average from CIMIS Windsor Station #103 (Jan 2010 to July 2017)

Crop coefficients are estimates based on the methodology established by the University of California Cooperative Extension (UCCE), Sonoma County: http://cesonoma.ucanr.edu/viticulture717/Vineyard_Irrigation/Using_Evapotranspiration_Data_to_Determine_Irrigation_Time/

Drip irrigation design efficiency, from (http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex13729).

Total N is the sum of ammonia-N, nitrate-N, nitrite-N and organic N. Values represent monthly averages of tertiary effluent data from January 2015- March 2018. Total N was considered only when both Organic N and Nitrate-N were sampled.

Total Irrigation Requirement does not include a leaching factor.

Represents the estimated nitrogen load from meeting irrigation needs with 100% recycled water. The agronomic rate for nitrogen is estimated at 30 lbs N/acre/year for vineyards per 2016 NOA of which only 15 lbs/acre/year should be supplied by recycled water.

Based on 5 frost events/year and 1 day of frost/event. Application of recycled water for 8 hours at 0.1 in/hr. Santa Rosa Frost period is from December 7th to February 21st per: (http://ucanr.edu/blogs/mbmg/blogfiles/40600.pdf)

APPENDIX C

WATER QUALITY DATA

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
02/21/18	Effluent	acute whole effluent toxicity (awet) 24-hr comp.	Unknown	pass/fail	pass	pass
08/09/18	Effluent	acute whole effluent toxicity (awet) 24-hr comp.	Unknown	pass/fail	pass	pass
11/26/18	Effluent	acute whole effluent toxicity (awet) 24-hr comp.	Unknown	pass/fail	Pass	Pass
01/24/18	Effluent	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
02/21/18	Effluent	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
03/14/18	Effluent	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
04/19/18	Effluent	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
05/23/18	Effluent	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
06/14/18	Effluent	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
07/18/18	Effluent	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
08/09/18	Effluent	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
09/06/18	Effluent	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
10/04/18	Effluent	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
11/14/18	Effluent	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
12/12/18	Effluent	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
01/24/18	Effluent	ammonia nitrogen un-ionized (as n) grab	Unknown	mg/L	<0.0004	<0.0004
02/21/18	Effluent	ammonia nitrogen un-ionized (as n) grab	Unknown	mg/L	<0.0003	<0.0003
03/14/18	Effluent	ammonia nitrogen un-ionized (as n) grab	Unknown	mg/L	<0.0004	<0.0004
04/19/18	Effluent	ammonia nitrogen un-ionized (as n) grab	Unknown	mg/L	<0.0005	<0.0005
05/23/18	Effluent	ammonia nitrogen un-ionized (as n) grab	Unknown	mg/L	<0.0008	<0.0008
06/14/18	Effluent	ammonia nitrogen un-ionized (as n) grab	Unknown	mg/L	<0.0008	<0.0008
07/18/18	Effluent	ammonia nitrogen un-ionized (as n) grab	Unknown	mg/L	<0.0007	<0.0007
08/09/18	Effluent	ammonia nitrogen un-ionized (as n) grab	Unknown	mg/L	<0.0013	<0.0013
09/06/18	Effluent	ammonia nitrogen un-ionized (as n) grab	Unknown	mg/L	0.0015	0.0015
10/04/18	Effluent	ammonia nitrogen un-ionized (as n) grab	Unknown	mg/L	<0.0013	<0.0013
11/14/18	Effluent	ammonia nitrogen un-ionized (as n) grab	Unknown	mg/L	<0.0008	<0.0008
12/12/18	Effluent	ammonia nitrogen un-ionized (as n) grab	Unknown	mg/L	<0.0004	<0.0004
01/01/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.6	113.6
01/02/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	121.7	121.7
01/03/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	114.5	114.5
01/04/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.4	111.4
01/05/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.6	122.6
01/06/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110	110
01/07/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111	111
01/08/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.5	122.5
01/09/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	127.4	127.4
01/10/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	135.8	135.8
01/11/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	114.1	114.1
01/12/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	117.1	117.1
01/13/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	118.9	118.9
01/14/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	107.8	107.8
01/15/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.4	108.4
01/16/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	107.5	107.5
01/17/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.2	109.2
01/18/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	118.5	118.5
01/19/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.8	111.8
01/20/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.4	109.4
01/21/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.4	110.4
01/22/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	103.9	103.9
01/23/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	104.7	104.7
01/24/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.8	115.8
01/25/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115	115
01/26/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	106.8	106.8
01/27/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.8	112.8

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
01/28/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.8	111.8
01/29/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.9	111.9
01/30/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.3	108.3
01/31/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.6	109.6
02/01/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.1	110.1
02/02/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.7	111.7
02/03/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.9	111.9
02/04/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109	109
02/05/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.9	115.9
02/06/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.5	115.5
02/07/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.6	111.6
02/08/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	107.4	107.4
02/09/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110	110
02/10/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.6	111.6
02/11/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	114	114
02/12/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.6	115.6
02/13/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	114.2	114.2
02/14/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.4	108.4
02/15/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.7	111.7
02/16/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.8	110.8
02/17/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.8	110.8
02/18/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.9	111.9
02/19/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.9	111.9
02/20/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.1	109.1
02/21/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.5	116.5
02/22/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	114.1	114.1
02/23/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.4	108.4
02/24/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.8	109.8
02/25/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.6	112.6
02/26/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.1	112.1
02/27/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.8	111.8
02/28/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.8	109.8
03/01/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	117.8	117.8
03/02/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	120.5	120.5
03/03/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	120.7	120.7
03/04/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.7	119.7
03/05/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	107.8	107.8
03/06/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	117.5	117.5
03/07/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.1	119.1
03/08/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.3	113.3
03/09/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.7	111.7
03/10/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.9	109.9
03/11/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113	113
03/12/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.6	119.6
03/13/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.3	119.3
03/14/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.8	109.8
03/15/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	106	106
03/16/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108	108
03/17/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	106.3	106.3
03/18/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	107.8	107.8
03/19/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.5	112.5
03/20/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.8	109.8
03/21/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	131.6	131.6
03/22/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	130.7	130.7

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
03/23/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	120.6	120.6
03/24/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.3	108.3
03/25/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.7	108.7
03/26/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	117.6	117.6
03/27/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.5	109.5
03/28/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	107.6	107.6
03/29/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	120.1	120.1
03/30/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.1	108.1
03/31/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.1	109.1
04/01/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.9	109.9
04/02/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.6	108.6
04/03/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.4	111.4
04/04/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.1	111.1
04/05/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.6	112.6
04/06/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	121.9	121.9
04/07/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	137	137
04/08/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.3	122.3
04/09/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.8	116.8
04/10/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	106.8	106.8
04/11/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.8	113.8
04/12/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.6	111.6
04/13/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.7	112.7
04/14/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.2	112.2
04/15/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	114.8	114.8
04/16/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.6	113.6
04/17/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	106.4	106.4
04/18/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	107.4	107.4
04/19/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	121.3	121.3
04/20/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.7	109.7
04/21/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	105.3	105.3
04/22/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	106.4	106.4
04/23/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.7	110.7
04/24/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.8	112.8
04/25/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	105.8	105.8
04/26/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	102.1	102.1
04/27/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	105.4	105.4
04/28/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.6	108.6
04/29/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	105.5	105.5
04/30/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	105.9	105.9
05/01/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	105.4	105.4
05/02/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.2	108.2
05/03/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	102	102
05/04/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	107.1	107.1
05/05/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	105.9	105.9
05/06/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.9	109.9
05/07/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	106.8	106.8
05/08/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.8	108.8
05/09/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.6	110.6
05/10/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	118.3	118.3
05/11/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	118.2	118.2
05/12/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.1	111.1
05/13/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	103.4	103.4
05/14/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.5	110.5
05/15/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.8	108.8

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
05/16/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.7	110.7
05/17/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	129.2	129.2
05/18/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	129.4	129.4
05/19/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	120.7	120.7
05/20/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	133.8	133.8
05/21/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.5	116.5
05/22/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.5	111.5
05/23/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.6	111.6
05/24/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	117.4	117.4
05/25/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	120	120
05/26/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	124	124
05/27/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	125.8	125.8
05/28/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	118.8	118.8
05/29/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.9	119.9
05/30/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.6	116.6
05/31/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	121.8	121.8
06/01/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.3	111.3
06/02/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	120.8	120.8
06/03/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	127.4	127.4
06/04/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	97.9	97.9
06/05/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	124.2	124.2
06/06/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	105	105
06/07/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	114.9	114.9
06/08/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	105.5	105.5
06/09/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	107.1	107.1
06/10/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	106.4	106.4
06/11/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.4	116.4
06/12/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.4	116.4
06/13/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	118.2	118.2
06/14/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.6	122.6
06/15/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	105.1	105.1
06/16/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.4	109.4
06/17/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.8	109.8
06/18/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116	116
06/19/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.9	109.9
06/20/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.1	110.1
06/21/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.5	115.5
06/22/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.1	116.1
06/23/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.7	111.7
06/24/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	103.8	103.8
06/25/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.8	115.8
06/26/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.2	122.2
06/27/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.4	119.4
06/28/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	123.6	123.6
06/29/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.3	119.3
06/30/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	85.9	85.9
07/01/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.3	116.3
07/02/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	124	124
07/03/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	131.8	131.8
07/04/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.8	111.8
07/05/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.5	113.5
07/06/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.8	115.8
07/07/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.6	111.6
07/08/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	85	85

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
07/09/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	117.9	117.9
07/10/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.8	110.8
07/11/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.4	119.4
07/12/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	117.7	117.7
07/13/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	128.9	128.9
07/14/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.2	110.2
07/15/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	107.1	107.1
07/16/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	118.6	118.6
07/17/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.8	111.8
07/18/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.6	111.6
07/19/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.2	111.2
07/20/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.2	113.2
07/21/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.1	113.1
07/22/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110	110
07/23/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.7	115.7
07/24/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.9	115.9
07/25/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.7	115.7
07/26/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.5	110.5
07/27/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	114.6	114.6
07/28/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.3	112.3
07/29/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108	108
07/30/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	125.6	125.6
07/31/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.2	112.2
08/01/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.3	122.3
08/02/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	114.3	114.3
08/03/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.3	110.3
08/04/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	107.8	107.8
08/05/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.3	113.3
08/06/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	126.6	126.6
08/07/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	121.8	121.8
08/08/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.6	111.6
08/09/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	107.8	107.8
08/10/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.4	111.4
08/11/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.2	110.2
08/12/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.2	108.2
08/13/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.6	119.6
08/14/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.6	115.6
08/15/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.2	109.2
08/16/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	117.3	117.3
08/17/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.9	113.9
08/18/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	117.2	117.2
08/19/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.7	110.7
08/20/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.5	119.5
08/21/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.2	116.2
08/22/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	117.3	117.3
08/23/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.1	122.1
08/24/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.5	111.5
08/25/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	120.7	120.7
08/26/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113	113
08/27/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.7	122.7
08/28/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.8	119.8
08/29/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.6	119.6
08/30/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.1	112.1
08/31/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.7	111.7

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
09/01/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.1	109.1
09/02/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.7	109.7
09/03/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.8	112.8
09/04/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	114.1	114.1
09/05/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.5	109.5
09/06/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.5	122.5
09/07/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.9	110.9
09/08/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112	112
09/09/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	118.2	118.2
09/10/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122	122
09/11/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.5	116.5
09/12/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	121.8	121.8
09/13/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	118.3	118.3
09/14/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	120.4	120.4
09/15/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	117.9	117.9
09/16/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.1	116.1
09/17/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.9	119.9
09/18/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.4	122.4
09/19/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.8	115.8
09/20/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.4	113.4
09/21/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.1	108.1
09/22/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	106.5	106.5
09/23/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.4	112.4
09/24/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	120.2	120.2
09/25/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.2	113.2
09/26/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.1	111.1
09/27/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.7	113.7
09/28/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.2	119.2
09/29/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	114.1	114.1
09/30/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	128.8	128.8
10/01/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122	122
10/02/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.9	122.9
10/03/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	121.9	121.9
10/04/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	117.4	117.4
10/05/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	121.1	121.1
10/06/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.9	113.9
10/07/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.6	116.6
10/08/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119	119
10/09/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.3	110.3
10/10/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.5	112.5
10/11/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.6	122.6
10/12/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	121.1	121.1
10/13/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.9	109.9
10/14/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	107.7	107.7
10/15/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.8	115.8
10/16/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	114.9	114.9
10/17/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.8	108.8
10/18/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.3	109.3
10/19/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.4	119.4
10/20/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.3	112.3
10/21/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.4	112.4
10/22/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	120.1	120.1
10/23/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	125	125
10/24/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	114.4	114.4

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
10/25/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.2	115.2
10/26/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.6	111.6
10/27/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.8	113.8
10/28/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.7	108.7
10/29/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.1	110.1
10/30/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	114.1	114.1
10/31/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	126.3	126.3
11/01/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.9	112.9
11/02/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.5	115.5
11/03/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	108.8	108.8
11/04/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.1	113.1
11/05/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	125.8	125.8
11/06/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	137.8	137.8
11/07/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	118.9	118.9
11/08/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	120.7	120.7
11/09/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	103.3	103.3
11/10/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	99.9	99.9
11/11/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	130	130
11/12/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.3	115.3
11/13/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	128.8	128.8
11/14/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	132.3	132.3
11/15/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	138	138
11/16/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	130.6	130.6
11/17/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112	112
11/18/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109	109
11/19/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	132.4	132.4
11/20/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	123.5	123.5
11/21/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	117.9	117.9
11/22/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	119.4	119.4
11/23/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	110.9	110.9
11/24/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.1	112.1
11/25/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	121.8	121.8
11/26/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	130.6	130.6
11/27/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	115.9	115.9
11/28/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	120.9	120.9
11/29/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	121.2	121.2
11/30/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	121.3	121.3
12/01/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	126.2	126.2
12/02/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	125.3	125.3
12/03/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.7	122.7
12/04/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.9	122.9
12/05/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	117.8	117.8
12/06/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.4	116.4
12/07/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.7	111.7
12/08/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.6	111.6
12/09/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.3	112.3
12/10/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.1	112.1
12/11/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112	112
12/12/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	107.3	107.3
12/13/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	114.8	114.8
12/14/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.3	109.3
12/15/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.3	112.3
12/16/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.5	116.5
12/17/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	138.7	138.7

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
12/18/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	121.2	121.2
12/19/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.8	112.8
12/20/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.3	122.3
12/21/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.6	116.6
12/22/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	111.8	111.8
12/23/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	117.3	117.3
12/24/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	122.5	122.5
12/25/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113	113
12/26/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	116.2	116.2
12/27/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	112.1	112.1
12/28/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113.5	113.5
12/29/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.9	109.9
12/30/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	113	113
12/31/18	Effluent	average operational ultraviolet dose	Unknown	mj/cm2	109.3	109.3
01/01/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
01/02/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
01/03/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
01/04/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
01/05/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
01/06/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
01/07/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
01/08/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
01/09/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
01/10/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
01/11/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
01/12/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
01/13/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
01/14/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
01/15/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
01/16/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
01/17/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
01/18/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
01/19/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
01/20/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
01/21/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
01/22/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
01/23/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
01/24/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
01/25/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
01/26/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
01/27/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
01/28/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
01/29/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
01/30/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
01/31/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
02/01/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
02/02/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
02/03/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
02/04/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
02/05/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
02/06/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
02/07/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
02/08/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
02/09/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
02/10/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
02/11/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
02/12/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
02/13/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
02/14/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
02/15/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
02/16/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
02/17/18	Effluent	avg. daily turbidity	Unknown	ntu	1	1
02/18/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
02/19/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
02/20/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
02/21/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
02/22/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
02/23/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
02/24/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
02/25/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
02/26/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
02/27/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
02/28/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
03/01/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
03/02/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
03/03/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
03/04/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
03/05/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
03/06/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
03/07/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
03/08/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
03/09/18	Effluent	avg. daily turbidity	Unknown	ntu	0.17	0.17
03/10/18	Effluent	avg. daily turbidity	Unknown	ntu	0.16	0.16
03/11/18	Effluent	avg. daily turbidity	Unknown	ntu	0.15	0.15
03/12/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
03/13/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
03/14/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
03/15/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
03/16/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
03/17/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
03/18/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
03/19/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
03/20/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
03/21/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
03/22/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
03/23/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
03/24/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
03/25/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
03/26/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
03/27/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
03/28/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
03/29/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
03/30/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
03/31/18	Effluent	avg. daily turbidity	Unknown	ntu	0.13	0.13
04/01/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
04/02/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
04/03/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
04/04/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
04/05/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
04/06/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
04/07/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
04/08/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
04/09/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
04/10/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
04/11/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
04/12/18	Effluent	avg. daily turbidity	Unknown	ntu	0.19	0.19
04/13/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
04/14/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
04/15/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
04/16/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
04/17/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
04/18/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
04/19/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
04/20/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
04/21/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
04/22/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
04/23/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
04/24/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
04/25/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
04/26/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
04/27/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
04/28/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
04/29/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
04/30/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/01/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
05/02/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
05/03/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/04/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
05/05/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
05/06/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
05/07/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
05/08/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
05/09/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
05/10/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/11/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/12/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/13/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/14/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/15/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/16/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/17/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/18/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/19/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/20/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/21/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/22/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/23/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
05/24/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/25/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/26/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/27/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/28/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
05/29/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/30/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
05/31/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
06/01/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
06/02/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
06/03/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
06/04/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
06/05/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
06/06/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
06/07/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
06/08/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
06/09/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
06/10/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
06/11/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
06/12/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
06/13/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
06/14/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
06/15/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
06/16/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
06/17/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
06/18/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
06/19/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
06/20/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
06/21/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
06/22/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
06/23/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
06/24/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
06/25/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
06/26/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
06/27/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
06/28/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
06/29/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
06/30/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
07/01/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
07/02/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
07/03/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
07/04/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
07/05/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
07/06/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
07/07/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
07/08/18	Effluent	avg. daily turbidity	Unknown	ntu	0.19	0.19
07/09/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
07/10/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
07/11/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
07/12/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
07/13/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
07/14/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
07/15/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
07/16/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
07/17/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
07/18/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
07/19/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
07/20/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
07/21/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
07/22/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
07/23/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
07/24/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
07/25/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
07/26/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
07/27/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
07/28/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
07/29/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
07/30/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
07/31/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
08/01/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
08/02/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
08/03/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
08/04/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
08/05/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
08/06/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
08/07/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
08/08/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
08/09/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
08/10/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
08/11/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
08/12/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
08/13/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
08/14/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
08/15/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
08/16/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
08/17/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
08/18/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
08/19/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
08/20/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
08/21/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
08/22/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
08/23/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
08/24/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
08/25/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
08/26/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
08/27/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
08/28/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
08/29/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
08/30/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
08/31/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/01/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/02/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/03/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/04/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
09/05/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
09/06/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
09/07/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/08/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/09/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/10/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/11/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/12/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/13/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
09/14/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/15/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/16/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/17/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/18/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/19/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/20/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
09/21/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
09/22/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
09/23/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
09/24/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/25/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/26/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/27/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/28/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/29/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
09/30/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
10/01/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
10/02/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
10/03/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
10/04/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
10/05/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
10/06/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
10/07/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
10/08/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
10/09/18	Effluent	avg. daily turbidity	Unknown	ntu	0.18	0.18
10/10/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
10/11/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
10/12/18	Effluent	avg. daily turbidity	Unknown	ntu	0.13	0.13
10/13/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
10/14/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
10/15/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
10/16/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
10/17/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
10/18/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
10/19/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
10/20/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
10/21/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
10/22/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
10/23/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
10/24/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
10/25/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
10/26/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
10/27/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
10/28/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
10/29/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
10/30/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
10/31/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12
11/01/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
11/02/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
11/03/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
11/04/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
11/05/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
11/06/18	Effluent	avg. daily turbidity	Unknown	ntu	0.12	0.12

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
11/07/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
11/08/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
11/09/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
11/10/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
11/11/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
11/12/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
11/13/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
11/14/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
11/15/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
11/16/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
11/17/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
11/18/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
11/19/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
11/20/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
11/21/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
11/22/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
11/23/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
11/24/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
11/25/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
11/26/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
11/27/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
11/28/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
11/29/18	Effluent	avg. daily turbidity	Unknown	ntu	0.07	0.07
11/30/18	Effluent	avg. daily turbidity	Unknown	ntu	0.07	0.07
12/01/18	Effluent	avg. daily turbidity	Unknown	ntu	0.07	0.07
12/02/18	Effluent	avg. daily turbidity	Unknown	ntu	0.07	0.07
12/03/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
12/04/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
12/05/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
12/06/18	Effluent	avg. daily turbidity	Unknown	ntu	0.11	0.11
12/07/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
12/08/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
12/09/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
12/10/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
12/11/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
12/12/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
12/13/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
12/14/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
12/15/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
12/16/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
12/17/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
12/18/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
12/19/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
12/20/18	Effluent	avg. daily turbidity	Unknown	ntu	0.07	0.07
12/21/18	Effluent	avg. daily turbidity	Unknown	ntu	0.07	0.07
12/22/18	Effluent	avg. daily turbidity	Unknown	ntu	0.07	0.07
12/23/18	Effluent	avg. daily turbidity	Unknown	ntu	0.07	0.07
12/24/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
12/25/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
12/26/18	Effluent	avg. daily turbidity	Unknown	ntu	0.08	0.08
12/27/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
12/28/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
12/29/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09
12/30/18	Effluent	avg. daily turbidity	Unknown	ntu	0.09	0.09

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
12/31/18	Effluent	avg. daily turbidity	Unknown	ntu	0.1	0.1
01/01/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.1	76.1
01/02/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.1	76.1
01/03/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.68	75.68
01/04/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.23	75.23
01/05/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.5	75.5
01/06/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.8	75.8
01/07/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.3	76.3
01/08/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.8	76.8
01/09/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.06	75.06
01/10/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.46	76.46
01/11/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.7	76.7
01/12/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.6	76.6
01/13/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.1	76.1
01/14/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.4	76.4
01/15/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.9	75.9
01/16/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.8	75.8
01/17/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	74.6	74.6
01/18/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.43	75.43
01/19/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.41	75.41
01/20/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.61	76.61
01/21/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.13	77.13
01/22/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.1	77.1
01/23/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.34	77.34
01/24/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.57	77.57
01/25/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	78.1	78.1
01/26/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.11	77.11
01/27/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.01	77.01
01/28/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.25	77.25
01/29/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.93	76.93
01/30/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.22	76.22
01/31/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.23	76.23
02/01/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.4	76.4
02/02/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.35	76.35
02/03/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.37	76.37
02/04/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.52	76.52
02/05/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.09	76.09
02/06/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.54	75.54
02/07/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.52	75.52
02/08/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.43	75.43
02/09/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.44	75.44
02/10/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.88	75.88
02/11/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.44	76.44
02/12/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.55	76.55
02/13/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.12	76.12
02/14/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.42	75.42
02/15/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.31	75.31
02/16/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.67	75.67
02/17/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.81	75.81
02/18/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.76	76.76
02/19/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.76	76.76
02/20/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.92	76.92
02/21/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.29	76.29
02/22/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.76	76.76

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
02/23/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.46	76.46
02/24/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.2	76.2
02/25/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.11	76.11
02/26/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.27	76.27
02/27/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.4	75.4
02/28/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.39	75.39
03/01/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.53	76.53
03/02/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.5	76.5
03/03/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.85	76.85
03/04/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.06	77.06
03/05/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.06	77.06
03/06/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.23	77.23
03/07/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.06	77.06
03/08/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.9	76.9
03/09/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.75	76.75
03/10/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.76	76.76
03/11/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.88	76.88
03/12/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.4	76.4
03/13/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.94	75.94
03/14/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.7	75.7
03/15/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.5	76.5
03/16/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.9	76.9
03/17/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.1	77.1
03/18/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.4	77.4
03/19/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.6	76.6
03/20/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.7	75.7
03/21/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.9	76.9
03/22/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.1	76.1
03/23/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77	77
03/24/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	78.3	78.3
03/25/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	78.7	78.7
03/26/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	78.4	78.4
03/27/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.6	77.6
03/28/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.6	77.6
03/29/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.42	77.42
03/30/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.1	77.1
03/31/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.2	77.2
04/01/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.6	77.6
04/02/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.04	77.04
04/03/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.78	76.78
04/04/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.77	76.77
04/05/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.1	77.1
04/06/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.9	76.9
04/07/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	76.47	76.47
04/08/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.43	77.43
04/09/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.87	77.87
04/10/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.9	77.9
04/11/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	78.17	78.17
04/12/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	78.3	78.3
04/13/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	78.1	78.1
04/14/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	78.3	78.3
04/15/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	78.4	78.4
04/16/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.5	77.5
04/17/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	77.1	77.1

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
04/18/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	75.8	75.8
04/19/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	74.2	74.2
04/20/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.64	72.64
04/21/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.55	72.55
04/22/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.83	72.83
04/23/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.66	72.66
04/24/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.23	72.23
04/25/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.1	72.1
04/26/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.27	72.27
04/27/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.22	72.22
04/28/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.1	72.1
04/29/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.43	72.43
04/30/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.17	72.17
05/01/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.64	71.64
05/02/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.71	71.71
05/03/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.6	71.6
05/04/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.83	70.83
05/05/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.01	70.01
05/06/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.45	70.45
05/07/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.2	70.2
05/08/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70	70
05/09/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70	70
05/10/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.86	69.86
05/11/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.27	69.27
05/12/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.82	69.82
05/13/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.52	70.52
05/14/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.35	70.35
05/15/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.74	69.74
05/16/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.2	70.2
05/17/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.6	70.6
05/18/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.88	69.88
05/19/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.02	70.02
05/20/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.1	70.1
05/21/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.39	70.39
05/22/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.14	70.14
05/23/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.99	69.99
05/24/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.45	69.45
05/25/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	68.3	68.3
05/26/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69	69
05/27/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.6	69.6
05/28/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70	70
05/29/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.6	70.6
05/30/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.4	70.4
05/31/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.4	70.4
06/01/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.4	70.4
06/02/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.6	70.6
06/03/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.7	70.7
06/04/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.5	70.5
06/05/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.8	69.8
06/06/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.3	73.3
06/07/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.62	72.62
06/08/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.83	71.83
06/09/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.37	72.37
06/10/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.77	72.77

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
06/11/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.88	72.88
06/12/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.88	72.88
06/13/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.71	72.71
06/14/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.36	72.36
06/15/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.45	72.45
06/16/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.36	72.36
06/17/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.62	72.62
06/18/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.35	72.35
06/19/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.8	71.8
06/20/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.26	72.26
06/21/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.25	72.25
06/22/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72	72
06/23/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.3	72.3
06/24/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.01	73.01
06/25/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.11	73.11
06/26/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.55	72.55
06/27/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.49	72.49
06/28/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.1	72.1
06/29/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70	70
06/30/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.3	70.3
07/01/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.7	70.7
07/02/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.8	71.8
07/03/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.6	71.6
07/04/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71	71
07/05/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.4	72.4
07/06/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.9	72.9
07/07/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.4	73.4
07/08/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	68	68
07/09/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.3	73.3
07/10/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.7	73.7
07/11/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.1	73.1
07/12/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.8	72.8
07/13/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.89	71.89
07/14/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.7	71.7
07/15/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.57	72.57
07/16/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.5	72.5
07/17/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.3	72.3
07/18/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.27	72.27
07/19/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.56	72.56
07/20/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.46	72.46
07/21/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.98	71.98
07/22/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.5	72.5
07/23/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.72	71.72
07/24/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.39	70.39
07/25/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.81	70.81
07/26/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.2	71.2
07/27/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.6	71.6
07/28/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.9	71.9
07/29/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.2	72.2
07/30/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.55	71.55
07/31/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.1	71.1
08/01/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.2	71.2
08/02/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.36	71.36
08/03/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.7	71.7

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
08/04/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.06	72.06
08/05/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.11	72.11
08/06/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.89	71.89
08/07/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.18	71.18
08/08/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.39	71.39
08/09/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.9	71.9
08/10/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.04	72.04
08/11/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.25	72.25
08/12/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.13	72.13
08/13/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.95	71.95
08/14/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.21	71.21
08/15/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.14	71.14
08/16/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.93	70.93
08/17/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.2	71.2
08/18/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.5	71.5
08/19/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.4	71.4
08/20/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.8	71.8
08/21/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.1	71.1
08/22/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70	70
08/23/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.6	70.6
08/24/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.97	70.97
08/25/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.79	70.79
08/26/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.16	71.16
08/27/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.03	71.03
08/28/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.69	70.69
08/29/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.95	70.95
08/30/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.85	70.85
08/31/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.08	71.08
09/01/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.18	71.18
09/02/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.64	71.64
09/03/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.75	70.75
09/04/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.72	70.72
09/05/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71	71
09/06/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.4	71.4
09/07/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.4	71.4
09/08/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.3	71.3
09/09/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.9	71.9
09/10/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.1	71.1
09/11/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.4	71.4
09/12/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.5	70.5
09/13/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.19	70.19
09/14/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.58	70.58
09/15/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.51	70.51
09/16/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.19	71.19
09/17/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.18	71.18
09/18/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.02	71.02
09/19/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.85	71.85
09/20/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.5	72.5
09/21/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.22	72.22
09/22/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.99	71.99
09/23/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.33	72.33
09/24/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.74	71.74
09/25/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.33	71.33
09/26/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.74	70.74

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
09/27/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.43	70.43
09/28/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.6	70.6
09/29/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.4	70.4
09/30/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.1	69.1
10/01/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.7	69.7
10/02/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	67.9	67.9
10/03/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.3	69.3
10/04/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.9	69.9
10/05/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.7	70.7
10/06/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.55	70.55
10/07/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.6	71.6
10/08/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.07	71.07
10/09/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.38	71.38
10/10/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.3	71.3
10/11/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.68	71.68
10/12/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.61	71.61
10/13/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.66	71.66
10/14/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.78	71.78
10/15/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.32	71.32
10/16/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.92	71.92
10/17/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.79	71.79
10/18/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.1	72.1
10/19/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.2	72.2
10/20/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.8	71.8
10/21/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.7	71.7
10/22/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.7	71.7
10/23/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.9	71.9
10/24/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.1	72.1
10/25/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.92	71.92
10/26/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.31	72.31
10/27/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.44	72.44
10/28/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.86	72.86
10/29/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.35	73.35
10/30/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.89	73.89
10/31/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.98	73.98
11/01/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.6	73.6
11/02/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.22	73.22
11/03/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.07	73.07
11/04/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.87	72.87
11/05/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.27	73.27
11/06/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.78	72.78
11/07/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.57	72.57
11/08/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.55	72.55
11/09/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.9	72.9
11/10/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.4	72.4
11/11/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.2	72.2
11/12/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.7	72.7
11/13/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.9	71.9
11/14/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.4	71.4
11/15/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70	70
11/16/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.96	69.96
11/17/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.99	69.99
11/18/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.51	70.51
11/19/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.24	70.24

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
11/20/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.87	70.87
11/21/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.82	69.82
11/22/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	69.79	69.79
11/23/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.25	71.25
11/24/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.67	70.67
11/25/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.44	70.44
11/26/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.04	71.04
11/27/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.52	70.52
11/28/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.54	70.54
11/29/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.9	70.9
11/30/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71	71
12/01/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.2	72.2
12/02/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.4	72.4
12/03/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.1	73.1
12/04/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.3	71.3
12/05/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	70.4	70.4
12/06/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.77	71.77
12/07/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.29	72.29
12/08/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.82	72.82
12/09/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.44	72.44
12/10/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.62	72.62
12/11/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.74	72.74
12/12/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.93	72.93
12/13/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.5	72.5
12/14/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.7	71.7
12/15/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.3	72.3
12/16/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.54	73.54
12/17/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.56	71.56
12/18/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	71.86	71.86
12/19/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.79	72.79
12/20/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.23	72.23
12/21/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.6	72.6
12/22/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.6	73.6
12/23/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	74.2	74.2
12/24/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.6	73.6
12/25/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	74.3	74.3
12/26/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	74.3	74.3
12/27/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	74.1	74.1
12/28/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	74.26	74.26
12/29/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.48	73.48
12/30/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	73.32	73.32
12/31/18	Effluent	avg. daily ultra-violet transmit.	Unknown	%	72.3	72.3
01/04/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.2 E	1.2 E
01/11/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.9 E	0.9 E
01/18/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.1 E	0.1 E
01/24/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1 E	1 E
02/01/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.3 E	1.3 E
02/07/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.9 E	1.9 E
02/15/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.8 E	1.8 E
02/21/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.5 E	0.5 E
03/01/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.6 E	1.6 E
03/08/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.6 E	0.6 E
03/14/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.8 E	0.8 E
03/23/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.7 E	0.7 E

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
03/29/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.8 E	0.8 E
04/05/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.8 E	0.8 E
04/12/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.8 E	0.8 E
04/19/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.7 E	0.7 E
04/26/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.8 E	0.8 E
05/03/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1 E	1 E
05/10/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.1 E	1.1 E
05/17/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1 E	1 E
05/23/18	Effluent	bod 24-hr comp.	Unknown	mg/L	<5	<5
05/31/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1 E	1 E
06/07/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1 E	1 E
06/14/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.9 E	0.9 E
06/21/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.9 E	0.9 E
06/28/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1 E	1 E
07/05/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1 E	1 E
07/11/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.2 E	1.2 E
07/18/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.2 E	1.2 E
07/26/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.2 E	1.2 E
08/02/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.3 E	1.3 E
08/09/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.6 E	0.6 E
08/16/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.5 E	1.5 E
08/23/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.6 E	1.6 E
08/30/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.8 E	1.8 E
09/06/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.8 E	1.8 E
09/13/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.9 E	1.9 E
09/20/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.1 E	1.1 E
09/26/18	Effluent	bod 24-hr comp.	Unknown	mg/L	2.2 E	2.2 E
10/04/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.1 E	1.1 E
10/11/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.1 E	1.1 E
10/18/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1 E	1 E
10/25/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.9 E	0.9 E
10/31/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1 E	1 E
11/08/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.1 E	1.1 E
11/14/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.9 E	0.9 E
11/21/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.1 E	1.1 E
11/29/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.2 E	1.2 E
12/06/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1.1 E	1.1 E
12/12/18	Effluent	bod 24-hr comp.	Unknown	mg/L	0.5 E	0.5 E
12/20/18	Effluent	bod 24-hr comp.	Unknown	mg/L	11 E	11 E
12/28/18	Effluent	bod 24-hr comp.	Unknown	mg/L	1 E	1 E
01/04/18	Effluent	bod calc value	Unknown	mg/L	1.2	1.2
01/11/18	Effluent	bod calc value	Unknown	mg/L	0.9	0.9
01/18/18	Effluent	bod calc value	Unknown	mg/L	0.1	0.1
01/24/18	Effluent	bod calc value	Unknown	mg/L	1	1
02/01/18	Effluent	bod calc value	Unknown	mg/L	1.3	1.3
02/07/18	Effluent	bod calc value	Unknown	mg/L	1.9	1.9
02/15/18	Effluent	bod calc value	Unknown	mg/L	1.8	1.8
02/21/18	Effluent	bod calc value	Unknown	mg/L	0.5	0.5
03/01/18	Effluent	bod calc value	Unknown	mg/L	1.6	1.6
03/08/18	Effluent	bod calc value	Unknown	mg/L	0.6	0.6
03/14/18	Effluent	bod calc value	Unknown	mg/L	0.8	0.8
03/23/18	Effluent	bod calc value	Unknown	mg/L	0.7	0.7
03/29/18	Effluent	bod calc value	Unknown	mg/L	0.8	0.8
04/05/18	Effluent	bod calc value	Unknown	mg/L	0.8	0.8

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
04/12/18	Effluent	bod calc value	Unknown	mg/L	0.8	0.8
04/19/18	Effluent	bod calc value	Unknown	mg/L	0.7	0.7
04/26/18	Effluent	bod calc value	Unknown	mg/L	0.8	0.8
05/03/18	Effluent	bod calc value	Unknown	mg/L	1	1
05/10/18	Effluent	bod calc value	Unknown	mg/L	1.1	1.1
05/17/18	Effluent	bod calc value	Unknown	mg/L	1	1
05/23/18	Effluent	bod calc value	Unknown	mg/L	2.5	2.5
05/31/18	Effluent	bod calc value	Unknown	mg/L	1	1
06/07/18	Effluent	bod calc value	Unknown	mg/L	1	1
06/14/18	Effluent	bod calc value	Unknown	mg/L	0.9	0.9
06/21/18	Effluent	bod calc value	Unknown	mg/L	0.9	0.9
06/28/18	Effluent	bod calc value	Unknown	mg/L	1	1
07/05/18	Effluent	bod calc value	Unknown	mg/L	1	1
07/11/18	Effluent	bod calc value	Unknown	mg/L	1.2	1.2
07/18/18	Effluent	bod calc value	Unknown	mg/L	1.2	1.2
07/26/18	Effluent	bod calc value	Unknown	mg/L	1.2	1.2
08/02/18	Effluent	bod calc value	Unknown	mg/L	1.3	1.3
08/09/18	Effluent	bod calc value	Unknown	mg/L	0.6	0.6
08/16/18	Effluent	bod calc value	Unknown	mg/L	1.5	1.5
08/23/18	Effluent	bod calc value	Unknown	mg/L	1.6	1.6
08/30/18	Effluent	bod calc value	Unknown	mg/L	1.8	1.8
09/06/18	Effluent	bod calc value	Unknown	mg/L	1.8	1.8
09/13/18	Effluent	bod calc value	Unknown	mg/L	1.9	1.9
09/20/18	Effluent	bod calc value	Unknown	mg/L	1.1	1.1
09/26/18	Effluent	bod calc value	Unknown	mg/L	2.2	2.2
10/04/18	Effluent	bod calc value	Unknown	mg/L	1.1	1.1
10/11/18	Effluent	bod calc value	Unknown	mg/L	1.1	1.1
10/18/18	Effluent	bod calc value	Unknown	mg/L	1	1
10/25/18	Effluent	bod calc value	Unknown	mg/L	0.9	0.9
10/31/18	Effluent	bod calc value	Unknown	mg/L	1	1
11/08/18	Effluent	bod calc value	Unknown	mg/L	1.1	1.1
11/14/18	Effluent	bod calc value	Unknown	mg/L	0.9	0.9
11/21/18	Effluent	bod calc value	Unknown	mg/L	1.1	1.1
11/29/18	Effluent	bod calc value	Unknown	mg/L	1.2	1.2
12/06/18	Effluent	bod calc value	Unknown	mg/L	1.1	1.1
12/12/18	Effluent	bod calc value	Unknown	mg/L	0.5	0.5
12/20/18	Effluent	bod calc value	Unknown	mg/L	11	11
12/28/18	Effluent	bod calc value	Unknown	mg/L	1	1
01/06/18	Effluent	bod mass limit	Unknown	lb/day	175	175
01/13/18	Effluent	bod mass limit	Unknown	lb/day	195.6921429	195.6921429
01/20/18	Effluent	bod mass limit	Unknown	lb/day	175	175
01/27/18	Effluent	bod mass limit	Unknown	lb/day	194.0837143	194.0837143
02/03/18	Effluent	bod mass limit	Unknown	lb/day	175	175
02/10/18	Effluent	bod mass limit	Unknown	lb/day	175	175
02/17/18	Effluent	bod mass limit	Unknown	lb/day	175	175
02/24/18	Effluent	bod mass limit	Unknown	lb/day	175	175
03/03/18	Effluent	bod mass limit	Unknown	lb/day	175	175
03/10/18	Effluent	bod mass limit	Unknown	lb/day	175	175
03/17/18	Effluent	bod mass limit	Unknown	lb/day	175	175
03/24/18	Effluent	bod mass limit	Unknown	lb/day	179.2504286	179.2504286
03/31/18	Effluent	bod mass limit	Unknown	lb/day	175	175
04/07/18	Effluent	bod mass limit	Unknown	lb/day	175	175
04/14/18	Effluent	bod mass limit	Unknown	lb/day	175	175
04/21/18	Effluent	bod mass limit	Unknown	lb/day	175	175

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
04/28/18	Effluent	bod mass limit	Unknown	lb/day	175	175
05/05/18	Effluent	bod mass limit	Unknown	lb/day	175	175
05/12/18	Effluent	bod mass limit	Unknown	lb/day	175	175
05/19/18	Effluent	bod mass limit	Unknown	lb/day	175	175
05/26/18	Effluent	bod mass limit	Unknown	lb/day	175	175
06/02/18	Effluent	bod mass limit	Unknown	lb/day	175	175
06/09/18	Effluent	bod mass limit	Unknown	lb/day	175	175
06/16/18	Effluent	bod mass limit	Unknown	lb/day	175	175
06/23/18	Effluent	bod mass limit	Unknown	lb/day	175	175
06/30/18	Effluent	bod mass limit	Unknown	lb/day	175	175
07/07/18	Effluent	bod mass limit	Unknown	lb/day	175	175
07/14/18	Effluent	bod mass limit	Unknown	lb/day	175	175
07/21/18	Effluent	bod mass limit	Unknown	lb/day	175	175
07/28/18	Effluent	bod mass limit	Unknown	lb/day	175	175
08/04/18	Effluent	bod mass limit	Unknown	lb/day	175	175
08/11/18	Effluent	bod mass limit	Unknown	lb/day	175	175
08/18/18	Effluent	bod mass limit	Unknown	lb/day	175	175
08/25/18	Effluent	bod mass limit	Unknown	lb/day	175	175
09/01/18	Effluent	bod mass limit	Unknown	lb/day	175	175
09/08/18	Effluent	bod mass limit	Unknown	lb/day	175	175
09/15/18	Effluent	bod mass limit	Unknown	lb/day	175	175
09/22/18	Effluent	bod mass limit	Unknown	lb/day	175	175
09/29/18	Effluent	bod mass limit	Unknown	lb/day	175	175
10/06/18	Effluent	bod mass limit	Unknown	lb/day	175	175
10/13/18	Effluent	bod mass limit	Unknown	lb/day	175	175
10/20/18	Effluent	bod mass limit	Unknown	lb/day	175	175
10/27/18	Effluent	bod mass limit	Unknown	lb/day	175	175
11/03/18	Effluent	bod mass limit	Unknown	lb/day	175	175
11/10/18	Effluent	bod mass limit	Unknown	lb/day	175	175
11/17/18	Effluent	bod mass limit	Unknown	lb/day	175	175
11/24/18	Effluent	bod mass limit	Unknown	lb/day	175	175
12/01/18	Effluent	bod mass limit	Unknown	lb/day	175	175
12/08/18	Effluent	bod mass limit	Unknown	lb/day	175	175
12/15/18	Effluent	bod mass limit	Unknown	lb/day	175	175
12/22/18	Effluent	bod mass limit	Unknown	lb/day	175	175
12/29/18	Effluent	bod mass limit	Unknown	lb/day	175	175
01/06/18	Effluent	bod mass loading	Unknown	lb/day	7.87296	7.87296
01/13/18	Effluent	bod mass loading	Unknown	lb/day	10.24032857	10.24032857
01/20/18	Effluent	bod mass loading	Unknown	lb/day	0.788725714	0.788725714
01/27/18	Effluent	bod mass loading	Unknown	lb/day	14.48777143	14.48777143
02/03/18	Effluent	bod mass loading	Unknown	lb/day	17.84283429	17.84283429
02/10/18	Effluent	bod mass loading	Unknown	lb/day	17.74752	17.74752
02/17/18	Effluent	bod mass loading	Unknown	lb/day	12.45996	12.45996
02/24/18	Effluent	bod mass loading	Unknown	lb/day	3.115585714	3.115585714
03/03/18	Effluent	bod mass loading	Unknown	lb/day	14.36704	14.36704
03/10/18	Effluent	bod mass loading	Unknown	lb/day	4.675165714	4.675165714
03/17/18	Effluent	bod mass loading	Unknown	lb/day	7.53936	7.53936
03/24/18	Effluent	bod mass loading	Unknown	lb/day	8.48178	8.48178
03/31/18	Effluent	bod mass loading	Unknown	lb/day	7.129508571	7.129508571
04/07/18	Effluent	bod mass loading	Unknown	lb/day	7.777645714	7.777645714
04/14/18	Effluent	bod mass loading	Unknown	lb/day	8.082651429	8.082651429
04/21/18	Effluent	bod mass loading	Unknown	lb/day	5.77128	5.77128
04/28/18	Effluent	bod mass loading	Unknown	lb/day	6.014331429	6.014331429
05/05/18	Effluent	bod mass loading	Unknown	lb/day	6.993685714	6.993685714

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
05/12/18	Effluent	bod mass loading	Unknown	lb/day	7.352305714	7.352305714
05/19/18	Effluent	bod mass loading	Unknown	lb/day	6.481371429	6.481371429
05/26/18	Effluent	bod mass loading	Unknown	lb/day	14.5689375	14.5689375
06/02/18	Effluent	bod mass loading	Unknown	lb/day	6.7554	6.7554
06/09/18	Effluent	bod mass loading	Unknown	lb/day	6.683914286	6.683914286
06/16/18	Effluent	bod mass loading	Unknown	lb/day	5.994077143	5.994077143
06/23/18	Effluent	bod mass loading	Unknown	lb/day	5.822511429	5.822511429
06/30/18	Effluent	bod mass loading	Unknown	lb/day	6.600514286	6.600514286
07/07/18	Effluent	bod mass loading	Unknown	lb/day	5.56695	5.56695
07/14/18	Effluent	bod mass loading	Unknown	lb/day	7.60608	7.60608
07/21/18	Effluent	bod mass loading	Unknown	lb/day	7.849131429	7.849131429
07/28/18	Effluent	bod mass loading	Unknown	lb/day	7.05008	7.05008
08/04/18	Effluent	bod mass loading	Unknown	lb/day	7.3861125	7.3861125
08/11/18	Effluent	bod mass loading	Unknown	lb/day	3.917417143	3.917417143
08/18/18	Effluent	bod mass loading	Unknown	lb/day	9.990128571	9.990128571
08/25/18	Effluent	bod mass loading	Unknown	lb/day	9.52428	9.52428
09/01/18	Effluent	bod mass loading	Unknown	lb/day	10.39581	10.39581
09/08/18	Effluent	bod mass loading	Unknown	lb/day	11.77369714	11.77369714
09/15/18	Effluent	bod mass loading	Unknown	lb/day	10.77528	10.77528
09/22/18	Effluent	bod mass loading	Unknown	lb/day	6.33006	6.33006
09/29/18	Effluent	bod mass loading	Unknown	lb/day	14.59976571	14.59976571
10/06/18	Effluent	bod mass loading	Unknown	lb/day	8.112437143	8.112437143
10/13/18	Effluent	bod mass loading	Unknown	lb/day	7.444045714	7.444045714
10/20/18	Effluent	bod mass loading	Unknown	lb/day	6.743485714	6.743485714
10/27/18	Effluent	bod mass loading	Unknown	lb/day	5.983354286	5.983354286
11/03/18	Effluent	bod mass loading	Unknown	lb/day	6.5886	6.5886
11/10/18	Effluent	bod mass loading	Unknown	lb/day	7.15572	7.15572
11/17/18	Effluent	bod mass loading	Unknown	lb/day	5.77962	5.77962
11/24/18	Effluent	bod mass loading	Unknown	lb/day	8.44008	8.44008
12/01/18	Effluent	bod mass loading	Unknown	lb/day	10.69426286	10.69426286
12/08/18	Effluent	bod mass loading	Unknown	lb/day	8.099331429	8.099331429
12/15/18	Effluent	bod mass loading	Unknown	lb/day	3.592157143	3.592157143
12/22/18	Effluent	bod mass loading	Unknown	lb/day	113.1023143	113.1023143
12/29/18	Effluent	bod mass loading	Unknown	lb/day	7.8396	7.8396
01/01/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/02/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/03/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/04/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/05/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/06/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/07/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/08/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/09/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/10/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/11/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/12/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/13/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/14/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/15/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/16/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/17/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/18/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/19/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/20/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
01/21/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/22/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/23/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/24/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/25/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/26/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/27/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/28/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/29/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/30/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
01/31/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/01/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/02/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/03/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/04/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/05/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/06/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/07/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/08/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/09/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/10/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/11/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/12/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/13/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/14/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/15/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/16/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/17/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/18/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/19/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/20/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/21/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/22/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/23/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/24/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/25/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/26/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/27/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
02/28/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/01/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/02/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/03/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/04/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/05/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/06/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/07/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/08/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/09/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/10/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/11/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/12/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/13/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/14/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/15/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
03/16/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/17/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/18/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/19/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/20/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/21/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/22/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/23/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/24/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/25/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/26/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/27/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/28/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/29/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/30/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
03/31/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/01/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/02/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/03/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/04/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/05/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/06/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/07/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/08/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/09/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/10/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/11/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/12/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/13/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/14/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/15/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/16/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/17/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/18/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/19/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/20/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/21/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/22/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/23/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/24/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/25/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/26/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/27/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/28/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/29/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
04/30/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/01/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/02/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/03/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/04/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/05/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/06/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/07/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/08/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
05/09/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/10/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/11/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/12/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/13/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/14/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/15/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/16/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/17/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/18/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/19/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/20/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/21/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/22/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/23/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/24/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/25/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/26/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/27/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/28/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/29/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/30/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
05/31/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/01/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/02/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/03/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/04/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/05/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/06/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/07/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/08/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/09/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/10/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/11/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/12/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/13/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/14/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/15/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/16/18	Effluent	coliform calc value	Unknown	MPN/100ML	2	2
06/17/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/18/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/19/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/20/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/21/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/22/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/23/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/24/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/25/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/26/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/27/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/28/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/29/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
06/30/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
07/01/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
07/02/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
07/03/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
07/04/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
07/05/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
07/06/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
07/09/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
07/16/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
07/24/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
07/25/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
07/26/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
07/27/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
07/28/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
07/29/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
07/30/18	Effluent	coliform calc value	Unknown	MPN/100ML	13	13
07/31/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
08/01/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
08/06/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
08/13/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
08/20/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
08/21/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
08/22/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
08/23/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
08/24/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
08/25/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
08/26/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
08/27/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
08/28/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
08/29/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
08/30/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
08/31/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
09/04/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
09/10/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
09/11/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
09/12/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
09/13/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
09/14/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
09/15/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
09/16/18	Effluent	coliform calc value	Unknown	MPN/100ML	2	2
09/17/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
09/18/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
09/24/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
10/01/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
10/09/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
10/15/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
10/22/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
10/29/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
11/07/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
11/15/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
11/21/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
11/29/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
12/05/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
12/12/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
12/19/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0
12/29/18	Effluent	coliform calc value	Unknown	MPN/100ML	0	0

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
01/01/18	Effluent	daily d.c. flow rate	Unknown	mgd	85.9	85.9
01/02/18	Effluent	daily d.c. flow rate	Unknown	mgd	85.29	85.29
01/03/18	Effluent	daily d.c. flow rate	Unknown	mgd	85.27	85.27
01/04/18	Effluent	daily d.c. flow rate	Unknown	mgd	85.9	85.9
01/05/18	Effluent	daily d.c. flow rate	Unknown	mgd	112.5	112.5
01/06/18	Effluent	daily d.c. flow rate	Unknown	mgd	93.1	93.1
01/07/18	Effluent	daily d.c. flow rate	Unknown	mgd	88.5	88.5
01/08/18	Effluent	daily d.c. flow rate	Unknown	mgd	193.9	193.9
01/09/18	Effluent	daily d.c. flow rate	Unknown	mgd	872.18	872.18
01/10/18	Effluent	daily d.c. flow rate	Unknown	mgd	239.02	239.02
01/11/18	Effluent	daily d.c. flow rate	Unknown	mgd	100.2	100.2
01/12/18	Effluent	daily d.c. flow rate	Unknown	mgd	73	73
01/13/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.5	57.5
01/14/18	Effluent	daily d.c. flow rate	Unknown	mgd	50.1	50.1
01/15/18	Effluent	daily d.c. flow rate	Unknown	mgd	47.2	47.2
01/16/18	Effluent	daily d.c. flow rate	Unknown	mgd	47.5	47.5
01/17/18	Effluent	daily d.c. flow rate	Unknown	mgd	45.87	45.87
01/18/18	Effluent	daily d.c. flow rate	Unknown	mgd	46.51	46.51
01/19/18	Effluent	daily d.c. flow rate	Unknown	mgd	47.2	47.2
01/20/18	Effluent	daily d.c. flow rate	Unknown	mgd	82.1	82.1
01/21/18	Effluent	daily d.c. flow rate	Unknown	mgd	77.5	77.5
01/22/18	Effluent	daily d.c. flow rate	Unknown	mgd	107.9	107.9
01/23/18	Effluent	daily d.c. flow rate	Unknown	mgd	283	283
01/24/18	Effluent	daily d.c. flow rate	Unknown	mgd	133	133
01/25/18	Effluent	daily d.c. flow rate	Unknown	mgd	161.6	161.6
01/26/18	Effluent	daily d.c. flow rate	Unknown	mgd	124	124
01/27/18	Effluent	daily d.c. flow rate	Unknown	mgd	96.25	96.25
01/28/18	Effluent	daily d.c. flow rate	Unknown	mgd	87.21	87.21
01/29/18	Effluent	daily d.c. flow rate	Unknown	mgd	82.37	82.37
01/30/18	Effluent	daily d.c. flow rate	Unknown	mgd	78.81	78.81
01/31/18	Effluent	daily d.c. flow rate	Unknown	mgd	77.54	77.54
02/01/18	Effluent	daily d.c. flow rate	Unknown	mgd	74.93	74.93
02/02/18	Effluent	daily d.c. flow rate	Unknown	mgd	69.8	69.8
02/03/18	Effluent	daily d.c. flow rate	Unknown	mgd	67.8	67.8
02/04/18	Effluent	daily d.c. flow rate	Unknown	mgd	65.9	65.9
02/05/18	Effluent	daily d.c. flow rate	Unknown	mgd	65.9	65.9
02/06/18	Effluent	daily d.c. flow rate	Unknown	mgd	64.62	64.62
02/07/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.74	60.74
02/08/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.72	60.72
02/09/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.07	60.07
02/10/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.07	60.07
02/11/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.78	58.78
02/12/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.79	58.79
02/13/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.78	58.78
02/14/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.14	58.14
02/15/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.78	58.78
02/16/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.5	57.5
02/17/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.5	57.5
02/18/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.5	57.5
02/19/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.8	56.8
02/20/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.9	56.9
02/21/18	Effluent	daily d.c. flow rate	Unknown	mgd	54.91	54.91
02/22/18	Effluent	daily d.c. flow rate	Unknown	mgd	63.95	63.95
02/23/18	Effluent	daily d.c. flow rate	Unknown	mgd	63.95	63.95

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
02/24/18	Effluent	daily d.c. flow rate	Unknown	mgd	54.26	54.26
02/25/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.2	56.2
02/26/18	Effluent	daily d.c. flow rate	Unknown	mgd	65.89	65.89
02/27/18	Effluent	daily d.c. flow rate	Unknown	mgd	63.95	63.95
02/28/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.02	62.02
03/01/18	Effluent	daily d.c. flow rate	Unknown	mgd	69.78	69.78
03/02/18	Effluent	daily d.c. flow rate	Unknown	mgd	87.23	87.23
03/03/18	Effluent	daily d.c. flow rate	Unknown	mgd	93.05	93.05
03/04/18	Effluent	daily d.c. flow rate	Unknown	mgd	93.05	93.05
03/05/18	Effluent	daily d.c. flow rate	Unknown	mgd	87.21	87.21
03/06/18	Effluent	daily d.c. flow rate	Unknown	mgd	85.27	85.27
03/07/18	Effluent	daily d.c. flow rate	Unknown	mgd	84.63	84.63
03/08/18	Effluent	daily d.c. flow rate	Unknown	mgd	84.3	84.3
03/09/18	Effluent	daily d.c. flow rate	Unknown	mgd	84	84
03/10/18	Effluent	daily d.c. flow rate	Unknown	mgd	78.8	78.8
03/11/18	Effluent	daily d.c. flow rate	Unknown	mgd	75.6	75.6
03/12/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.8	58.8
03/13/18	Effluent	daily d.c. flow rate	Unknown	mgd	84	84
03/14/18	Effluent	daily d.c. flow rate	Unknown	mgd	99.5	99.5
03/15/18	Effluent	daily d.c. flow rate	Unknown	mgd	93.7	93.7
03/16/18	Effluent	daily d.c. flow rate	Unknown	mgd	106.6	106.6
03/17/18	Effluent	daily d.c. flow rate	Unknown	mgd	138.9	138.9
03/18/18	Effluent	daily d.c. flow rate	Unknown	mgd	100.2	100.2
03/19/18	Effluent	daily d.c. flow rate	Unknown	mgd	95.3	95.3
03/20/18	Effluent	daily d.c. flow rate	Unknown	mgd	98.2	98.2
03/21/18	Effluent	daily d.c. flow rate	Unknown	mgd	96.9	96.9
03/22/18	Effluent	daily d.c. flow rate	Unknown	mgd	1163	1163
03/23/18	Effluent	daily d.c. flow rate	Unknown	mgd	500.9	500.9
03/24/18	Effluent	daily d.c. flow rate	Unknown	mgd	226.2	226.2
03/25/18	Effluent	daily d.c. flow rate	Unknown	mgd	146.1	146.1
03/26/18	Effluent	daily d.c. flow rate	Unknown	mgd	111.2	111.2
03/27/18	Effluent	daily d.c. flow rate	Unknown	mgd	135.7	135.7
03/28/18	Effluent	daily d.c. flow rate	Unknown	mgd	121.5	121.5
03/29/18	Effluent	daily d.c. flow rate	Unknown	mgd	112.4	112.4
03/30/18	Effluent	daily d.c. flow rate	Unknown	mgd	105.3	105.3
03/31/18	Effluent	daily d.c. flow rate	Unknown	mgd	100.8	100.8
04/01/18	Effluent	daily d.c. flow rate	Unknown	mgd	96.9	96.9
04/02/18	Effluent	daily d.c. flow rate	Unknown	mgd	94.32	94.32
04/03/18	Effluent	daily d.c. flow rate	Unknown	mgd	92.38	92.38
04/04/18	Effluent	daily d.c. flow rate	Unknown	mgd	90.44	90.44
04/05/18	Effluent	daily d.c. flow rate	Unknown	mgd	87.6	87.6
04/06/18	Effluent	daily d.c. flow rate	Unknown	mgd	85.3	85.3
04/07/18	Effluent	daily d.c. flow rate	Unknown	mgd	84.6	84.6
04/08/18	Effluent	daily d.c. flow rate	Unknown	mgd	84	84
04/09/18	Effluent	daily d.c. flow rate	Unknown	mgd	284	284
04/10/18	Effluent	daily d.c. flow rate	Unknown	mgd	120.2	120.2
04/11/18	Effluent	daily d.c. flow rate	Unknown	mgd	153.9	153.9
04/12/18	Effluent	daily d.c. flow rate	Unknown	mgd	116	116
04/13/18	Effluent	daily d.c. flow rate	Unknown	mgd	111.8	111.8
04/14/18	Effluent	daily d.c. flow rate	Unknown	mgd	102.1	102.1
04/15/18	Effluent	daily d.c. flow rate	Unknown	mgd	96.6	96.6
04/16/18	Effluent	daily d.c. flow rate	Unknown	mgd	97.9	97.9
04/17/18	Effluent	daily d.c. flow rate	Unknown	mgd	104.9	104.9
04/18/18	Effluent	daily d.c. flow rate	Unknown	mgd	97.9	97.9

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
04/19/18	Effluent	daily d.c. flow rate	Unknown	mgd	92.38	92.38
04/20/18	Effluent	daily d.c. flow rate	Unknown	mgd	88.5	88.5
04/21/18	Effluent	daily d.c. flow rate	Unknown	mgd	85.94	85.94
04/22/18	Effluent	daily d.c. flow rate	Unknown	mgd	83.33	83.33
04/23/18	Effluent	daily d.c. flow rate	Unknown	mgd	78.81	78.81
04/24/18	Effluent	daily d.c. flow rate	Unknown	mgd	72.68	72.68
04/25/18	Effluent	daily d.c. flow rate	Unknown	mgd	70.54	70.54
04/26/18	Effluent	daily d.c. flow rate	Unknown	mgd	68.48	68.48
04/27/18	Effluent	daily d.c. flow rate	Unknown	mgd	67.85	67.85
04/28/18	Effluent	daily d.c. flow rate	Unknown	mgd	65.91	65.91
04/29/18	Effluent	daily d.c. flow rate	Unknown	mgd	64.62	64.62
04/30/18	Effluent	daily d.c. flow rate	Unknown	mgd	63.3	63.3
05/01/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.7	62.7
05/02/18	Effluent	daily d.c. flow rate	Unknown	mgd	63.33	63.33
05/03/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.7	62.7
05/04/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.66	62.66
05/05/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.72	60.72
05/06/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.72	60.72
05/07/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.8	58.8
05/08/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.8	58.8
05/09/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.8	57.8
05/10/18	Effluent	daily d.c. flow rate	Unknown	mgd	59.45	59.45
05/11/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.08	60.08
05/12/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.08	60.08
05/13/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.08	60.08
05/14/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.08	60.08
05/15/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.08	60.08
05/16/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.8	57.8
05/17/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.8	57.8
05/18/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.51	57.51
05/19/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.87	56.87
05/20/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.87	56.87
05/21/18	Effluent	daily d.c. flow rate	Unknown	mgd	55.6	55.6
05/22/18	Effluent	daily d.c. flow rate	Unknown	mgd	55.6	55.6
05/23/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.9	56.9
05/24/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.9	56.9
05/25/18	Effluent	daily d.c. flow rate	Unknown	mgd	61.7	61.7
05/26/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.7	62.7
05/27/18	Effluent	daily d.c. flow rate	Unknown	mgd	61.7	61.7
05/28/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.8	60.8
05/29/18	Effluent	daily d.c. flow rate	Unknown	mgd	59.8	59.8
05/30/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.8	57.8
05/31/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.8	57.8
06/01/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.8	57.8
06/02/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.9	56.9
06/03/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.9	56.9
06/04/18	Effluent	daily d.c. flow rate	Unknown	mgd	55.9	55.9
06/05/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.9	56.9
06/06/18	Effluent	daily d.c. flow rate	Unknown	mgd	55.9	55.9
06/07/18	Effluent	daily d.c. flow rate	Unknown	mgd	55.6	55.6
06/08/18	Effluent	daily d.c. flow rate	Unknown	mgd	54.9	54.9
06/09/18	Effluent	daily d.c. flow rate	Unknown	mgd	54.9	54.9
06/10/18	Effluent	daily d.c. flow rate	Unknown	mgd	53.6	53.6
06/11/18	Effluent	daily d.c. flow rate	Unknown	mgd	52.9	52.9

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
06/12/18	Effluent	daily d.c. flow rate	Unknown	mgd	52.9	52.9
06/13/18	Effluent	daily d.c. flow rate	Unknown	mgd	52.3	52.3
06/14/18	Effluent	daily d.c. flow rate	Unknown	mgd	53.3	53.3
06/15/18	Effluent	daily d.c. flow rate	Unknown	mgd	53.94	53.94
06/16/18	Effluent	daily d.c. flow rate	Unknown	mgd	53.94	53.94
06/17/18	Effluent	daily d.c. flow rate	Unknown	mgd	54.26	54.26
06/18/18	Effluent	daily d.c. flow rate	Unknown	mgd	53.94	53.94
06/19/18	Effluent	daily d.c. flow rate	Unknown	mgd	53.94	53.94
06/20/18	Effluent	daily d.c. flow rate	Unknown	mgd	50.4	50.4
06/21/18	Effluent	daily d.c. flow rate	Unknown	mgd	52.34	52.34
06/22/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.74	60.74
06/23/18	Effluent	daily d.c. flow rate	Unknown	mgd	61.38	61.38
06/24/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.74	60.74
06/25/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.7	60.7
06/26/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.7	60.7
06/27/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.7	60.7
06/28/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.8	58.8
06/29/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.9	56.9
06/30/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.7	62.7
07/01/18	Effluent	daily d.c. flow rate	Unknown	mgd	67.2	67.2
07/02/18	Effluent	daily d.c. flow rate	Unknown	mgd	68.5	68.5
07/03/18	Effluent	daily d.c. flow rate	Unknown	mgd	68.5	68.5
07/04/18	Effluent	daily d.c. flow rate	Unknown	mgd	68.5	68.5
07/05/18	Effluent	daily d.c. flow rate	Unknown	mgd	67.9	67.9
07/06/18	Effluent	daily d.c. flow rate	Unknown	mgd	62	62
07/07/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.5	57.5
07/08/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.2	58.2
07/09/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.2	58.2
07/10/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.5	56.5
07/11/18	Effluent	daily d.c. flow rate	Unknown	mgd	54.9	54.9
07/12/18	Effluent	daily d.c. flow rate	Unknown	mgd	59.8	59.8
07/13/18	Effluent	daily d.c. flow rate	Unknown	mgd	64.6	64.6
07/14/18	Effluent	daily d.c. flow rate	Unknown	mgd	65.57	65.57
07/15/18	Effluent	daily d.c. flow rate	Unknown	mgd	65.89	65.89
07/16/18	Effluent	daily d.c. flow rate	Unknown	mgd	67.83	67.83
07/17/18	Effluent	daily d.c. flow rate	Unknown	mgd	66.54	66.54
07/18/18	Effluent	daily d.c. flow rate	Unknown	mgd	65.57	65.57
07/19/18	Effluent	daily d.c. flow rate	Unknown	mgd	65.57	65.57
07/20/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.8	58.8
07/21/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.5	57.5
07/22/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.8	58.8
07/23/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.5	57.5
07/24/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.5	57.5
07/25/18	Effluent	daily d.c. flow rate	Unknown	mgd	59.5	59.5
07/26/18	Effluent	daily d.c. flow rate	Unknown	mgd	61.7	61.7
07/27/18	Effluent	daily d.c. flow rate	Unknown	mgd	63.7	63.7
07/28/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.7	62.7
07/29/18	Effluent	daily d.c. flow rate	Unknown	mgd	64.6	64.6
07/30/18	Effluent	daily d.c. flow rate	Unknown	mgd	63.5	63.5
07/31/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.7	62.7
08/01/18	Effluent	daily d.c. flow rate	Unknown	mgd	61.7	61.7
08/02/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.72	60.72
08/03/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.7	60.7
08/04/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.8	58.8

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
08/05/18	Effluent	daily d.c. flow rate	Unknown	mgd	63.3	63.3
08/06/18	Effluent	daily d.c. flow rate	Unknown	mgd	64.6	64.6
08/07/18	Effluent	daily d.c. flow rate	Unknown	mgd	64.62	64.62
08/08/18	Effluent	daily d.c. flow rate	Unknown	mgd	55.6	55.6
08/09/18	Effluent	daily d.c. flow rate	Unknown	mgd	66.6	66.6
08/10/18	Effluent	daily d.c. flow rate	Unknown	mgd	65.9	65.9
08/11/18	Effluent	daily d.c. flow rate	Unknown	mgd	65.9	65.9
08/12/18	Effluent	daily d.c. flow rate	Unknown	mgd	65.9	65.9
08/13/18	Effluent	daily d.c. flow rate	Unknown	mgd	67.51	67.51
08/14/18	Effluent	daily d.c. flow rate	Unknown	mgd	67.83	67.83
08/15/18	Effluent	daily d.c. flow rate	Unknown	mgd	67.18	67.18
08/16/18	Effluent	daily d.c. flow rate	Unknown	mgd	66.54	66.54
08/17/18	Effluent	daily d.c. flow rate	Unknown	mgd	61.7	61.7
08/18/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.7	62.7
08/19/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.7	62.7
08/20/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.7	62.7
08/21/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.9	62.9
08/22/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.5	58.5
08/23/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.7	60.7
08/24/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.7	62.7
08/25/18	Effluent	daily d.c. flow rate	Unknown	mgd	61.4	61.4
08/26/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.7	62.7
08/27/18	Effluent	daily d.c. flow rate	Unknown	mgd	97	97
08/28/18	Effluent	daily d.c. flow rate	Unknown	mgd	65.9	65.9
08/29/18	Effluent	daily d.c. flow rate	Unknown	mgd	66.6	66.6
08/30/18	Effluent	daily d.c. flow rate	Unknown	mgd	66.5	66.5
08/31/18	Effluent	daily d.c. flow rate	Unknown	mgd	61.69	61.69
09/01/18	Effluent	daily d.c. flow rate	Unknown	mgd	61.69	61.69
09/02/18	Effluent	daily d.c. flow rate	Unknown	mgd	61.69	61.69
09/03/18	Effluent	daily d.c. flow rate	Unknown	mgd	61.69	61.69
09/04/18	Effluent	daily d.c. flow rate	Unknown	mgd	61.69	61.69
09/05/18	Effluent	daily d.c. flow rate	Unknown	mgd	61.7	61.7
09/06/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.7	60.7
09/07/18	Effluent	daily d.c. flow rate	Unknown	mgd	59.7	59.7
09/08/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.7	60.7
09/09/18	Effluent	daily d.c. flow rate	Unknown	mgd	59.7	59.7
09/10/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.7	60.7
09/11/18	Effluent	daily d.c. flow rate	Unknown	mgd	59.8	59.8
09/12/18	Effluent	daily d.c. flow rate	Unknown	mgd	61.5	61.5
09/13/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.74	60.74
09/14/18	Effluent	daily d.c. flow rate	Unknown	mgd	59.45	59.45
09/15/18	Effluent	daily d.c. flow rate	Unknown	mgd	59.45	59.45
09/16/18	Effluent	daily d.c. flow rate	Unknown	mgd	59.45	59.45
09/17/18	Effluent	daily d.c. flow rate	Unknown	mgd	61.4	61.4
09/18/18	Effluent	daily d.c. flow rate	Unknown	mgd	66.6	66.6
09/19/18	Effluent	daily d.c. flow rate	Unknown	mgd	64.62	64.62
09/20/18	Effluent	daily d.c. flow rate	Unknown	mgd	65.57	65.57
09/21/18	Effluent	daily d.c. flow rate	Unknown	mgd	65.57	65.57
09/22/18	Effluent	daily d.c. flow rate	Unknown	mgd	66.54	66.54
09/23/18	Effluent	daily d.c. flow rate	Unknown	mgd	68.84	68.84
09/24/18	Effluent	daily d.c. flow rate	Unknown	mgd	67.51	67.51
09/25/18	Effluent	daily d.c. flow rate	Unknown	mgd	67.51	67.51
09/26/18	Effluent	daily d.c. flow rate	Unknown	mgd	67.51	67.51
09/27/18	Effluent	daily d.c. flow rate	Unknown	mgd	67.83	67.83

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
09/28/18	Effluent	daily d.c. flow rate	Unknown	mgd	68.6	68.6
09/29/18	Effluent	daily d.c. flow rate	Unknown	mgd	68.5	68.5
09/30/18	Effluent	daily d.c. flow rate	Unknown	mgd	70.6	70.6
10/01/18	Effluent	daily d.c. flow rate	Unknown	mgd	68.6	68.6
10/02/18	Effluent	daily d.c. flow rate	Unknown	mgd	99.5	99.5
10/03/18	Effluent	daily d.c. flow rate	Unknown	mgd	65.6	65.6
10/04/18	Effluent	daily d.c. flow rate	Unknown	mgd	64.6	64.6
10/05/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.7	60.7
10/06/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.8	58.8
10/07/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.8	58.8
10/08/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.8	58.8
10/09/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.5	57.5
10/10/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.8	56.8
10/11/18	Effluent	daily d.c. flow rate	Unknown	mgd	59.76	59.76
10/12/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.79	58.79
10/13/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.82	57.82
10/14/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.79	58.79
10/15/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.82	57.82
10/16/18	Effluent	daily d.c. flow rate	Unknown	mgd	55.88	55.88
10/17/18	Effluent	daily d.c. flow rate	Unknown	mgd	55.88	55.88
10/18/18	Effluent	daily d.c. flow rate	Unknown	mgd	55.9	55.9
10/19/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.8	57.8
10/20/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.8	57.8
10/21/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.8	57.8
10/22/18	Effluent	daily d.c. flow rate	Unknown	mgd	59.7	59.7
10/23/18	Effluent	daily d.c. flow rate	Unknown	mgd	54	54
10/24/18	Effluent	daily d.c. flow rate	Unknown	mgd	53	53
10/25/18	Effluent	daily d.c. flow rate	Unknown	mgd	51	51
10/26/18	Effluent	daily d.c. flow rate	Unknown	mgd	55.57	55.57
10/27/18	Effluent	daily d.c. flow rate	Unknown	mgd	55.57	55.57
10/28/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.51	57.51
10/29/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.51	57.51
10/30/18	Effluent	daily d.c. flow rate	Unknown	mgd	55.6	55.6
10/31/18	Effluent	daily d.c. flow rate	Unknown	mgd	54.93	54.93
11/01/18	Effluent	daily d.c. flow rate	Unknown	mgd	54	54
11/02/18	Effluent	daily d.c. flow rate	Unknown	mgd	53.94	53.94
11/03/18	Effluent	daily d.c. flow rate	Unknown	mgd	54.91	54.91
11/04/18	Effluent	daily d.c. flow rate	Unknown	mgd	54.91	54.91
11/05/18	Effluent	daily d.c. flow rate	Unknown	mgd	53.94	53.94
11/06/18	Effluent	daily d.c. flow rate	Unknown	mgd	48.45	48.45
11/07/18	Effluent	daily d.c. flow rate	Unknown	mgd	49.42	49.42
11/08/18	Effluent	daily d.c. flow rate	Unknown	mgd	49.42	49.42
11/09/18	Effluent	daily d.c. flow rate	Unknown	mgd	51.2	51.2
11/10/18	Effluent	daily d.c. flow rate	Unknown	mgd	52.1	52.1
11/11/18	Effluent	daily d.c. flow rate	Unknown	mgd	52.1	52.1
11/12/18	Effluent	daily d.c. flow rate	Unknown	mgd	52.1	52.1
11/13/18	Effluent	daily d.c. flow rate	Unknown	mgd	52	52
11/14/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.9	56.9
11/15/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.9	56.9
11/16/18	Effluent	daily d.c. flow rate	Unknown	mgd	59.5	59.5
11/17/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.9	56.9
11/18/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.9	56.9
11/19/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.8	56.8
11/20/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.5	57.5

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
11/21/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.66	62.66
11/22/18	Effluent	daily d.c. flow rate	Unknown	mgd	60.08	60.08
11/23/18	Effluent	daily d.c. flow rate	Unknown	mgd	68.48	68.48
11/24/18	Effluent	daily d.c. flow rate	Unknown	mgd	54.91	54.91
11/25/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.85	56.85
11/26/18	Effluent	daily d.c. flow rate	Unknown	mgd	53.94	53.94
11/27/18	Effluent	daily d.c. flow rate	Unknown	mgd	55.56	55.56
11/28/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.14	58.14
11/29/18	Effluent	daily d.c. flow rate	Unknown	mgd	161.6	161.6
11/30/18	Effluent	daily d.c. flow rate	Unknown	mgd	107.9	107.9
12/01/18	Effluent	daily d.c. flow rate	Unknown	mgd	85.3	85.3
12/02/18	Effluent	daily d.c. flow rate	Unknown	mgd	71.1	71.1
12/03/18	Effluent	daily d.c. flow rate	Unknown	mgd	62.7	62.7
12/04/18	Effluent	daily d.c. flow rate	Unknown	mgd	50.1	50.1
12/05/18	Effluent	daily d.c. flow rate	Unknown	mgd	52.1	52.1
12/06/18	Effluent	daily d.c. flow rate	Unknown	mgd	48.5	48.5
12/07/18	Effluent	daily d.c. flow rate	Unknown	mgd	43.94	43.94
12/08/18	Effluent	daily d.c. flow rate	Unknown	mgd	43.9	43.9
12/09/18	Effluent	daily d.c. flow rate	Unknown	mgd	43.9	43.9
12/10/18	Effluent	daily d.c. flow rate	Unknown	mgd	42.64	42.64
12/11/18	Effluent	daily d.c. flow rate	Unknown	mgd	42.6	42.6
12/12/18	Effluent	daily d.c. flow rate	Unknown	mgd	42	42
12/13/18	Effluent	daily d.c. flow rate	Unknown	mgd	42.1	42.1
12/14/18	Effluent	daily d.c. flow rate	Unknown	mgd	41.4	41.4
12/15/18	Effluent	daily d.c. flow rate	Unknown	mgd	49.1	49.1
12/16/18	Effluent	daily d.c. flow rate	Unknown	mgd	87.21	87.21
12/17/18	Effluent	daily d.c. flow rate	Unknown	mgd	574.94	574.94
12/18/18	Effluent	daily d.c. flow rate	Unknown	mgd	156.33	156.33
12/19/18	Effluent	daily d.c. flow rate	Unknown	mgd	94.96	94.96
12/20/18	Effluent	daily d.c. flow rate	Unknown	mgd	64.6	64.6
12/21/18	Effluent	daily d.c. flow rate	Unknown	mgd	59.8	59.8
12/22/18	Effluent	daily d.c. flow rate	Unknown	mgd	58.2	58.2
12/23/18	Effluent	daily d.c. flow rate	Unknown	mgd	56.2	56.2
12/24/18	Effluent	daily d.c. flow rate	Unknown	mgd	56	56
12/25/18	Effluent	daily d.c. flow rate	Unknown	mgd	67.9	67.9
12/26/18	Effluent	daily d.c. flow rate	Unknown	mgd	86	86
12/27/18	Effluent	daily d.c. flow rate	Unknown	mgd	66.2	66.2
12/28/18	Effluent	daily d.c. flow rate	Unknown	mgd	97	97
12/29/18	Effluent	daily d.c. flow rate	Unknown	mgd	57.5	57.5
12/30/18	Effluent	daily d.c. flow rate	Unknown	mgd	55.6	55.6
12/31/18	Effluent	daily d.c. flow rate	Unknown	mgd	84	84
01/01/18	Effluent	daily r.r. flow rate	Unknown	mgd	124.4	124.4
01/02/18	Effluent	daily r.r. flow rate	Unknown	mgd	85.9	85.9
01/03/18	Effluent	daily r.r. flow rate	Unknown	mgd	129.75	129.75
01/04/18	Effluent	daily r.r. flow rate	Unknown	mgd	124.4	124.4
01/05/18	Effluent	daily r.r. flow rate	Unknown	mgd	144.1	144.1
01/06/18	Effluent	daily r.r. flow rate	Unknown	mgd	295.3	295.3
01/07/18	Effluent	daily r.r. flow rate	Unknown	mgd	216.5	216.5
01/08/18	Effluent	daily r.r. flow rate	Unknown	mgd	193.9	193.9
01/09/18	Effluent	daily r.r. flow rate	Unknown	mgd	3674.44	3674.44
01/10/18	Effluent	daily r.r. flow rate	Unknown	mgd	1130.5	1130.5
01/11/18	Effluent	daily r.r. flow rate	Unknown	mgd	588.1	588.1
01/12/18	Effluent	daily r.r. flow rate	Unknown	mgd	475	475
01/13/18	Effluent	daily r.r. flow rate	Unknown	mgd	381.3	381.3

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
01/14/18	Effluent	daily r.r. flow rate	Unknown	mgd	342.5	342.5
01/15/18	Effluent	daily r.r. flow rate	Unknown	mgd	310.2	310.2
01/16/18	Effluent	daily r.r. flow rate	Unknown	mgd	286.9	286.9
01/17/18	Effluent	daily r.r. flow rate	Unknown	mgd	284.24	284.24
01/18/18	Effluent	daily r.r. flow rate	Unknown	mgd	264.86	264.86
01/19/18	Effluent	daily r.r. flow rate	Unknown	mgd	361.2	361.2
01/20/18	Effluent	daily r.r. flow rate	Unknown	mgd	431	431
01/21/18	Effluent	daily r.r. flow rate	Unknown	mgd	359.3	359.3
01/22/18	Effluent	daily r.r. flow rate	Unknown	mgd	153.8	153.8
01/23/18	Effluent	daily r.r. flow rate	Unknown	mgd	2416.8	2416.8
01/24/18	Effluent	daily r.r. flow rate	Unknown	mgd	1456	1456
01/25/18	Effluent	daily r.r. flow rate	Unknown	mgd	1810	1810
01/26/18	Effluent	daily r.r. flow rate	Unknown	mgd	1615	1615
01/27/18	Effluent	daily r.r. flow rate	Unknown	mgd	1098.2	1098.2
01/28/18	Effluent	daily r.r. flow rate	Unknown	mgd	775.2	775.2
01/29/18	Effluent	daily r.r. flow rate	Unknown	mgd	613.7	613.7
01/30/18	Effluent	daily r.r. flow rate	Unknown	mgd	510.34	510.34
01/31/18	Effluent	daily r.r. flow rate	Unknown	mgd	469.8	469.8
02/01/18	Effluent	daily r.r. flow rate	Unknown	mgd	361.76	361.76
02/02/18	Effluent	daily r.r. flow rate	Unknown	mgd	355.1	355.1
02/03/18	Effluent	daily r.r. flow rate	Unknown	mgd	309.5	309.5
02/04/18	Effluent	daily r.r. flow rate	Unknown	mgd	288.2	288.2
02/05/18	Effluent	daily r.r. flow rate	Unknown	mgd	279.1	279.1
02/06/18	Effluent	daily r.r. flow rate	Unknown	mgd	254.6	254.6
02/07/18	Effluent	daily r.r. flow rate	Unknown	mgd	241.7	241.7
02/08/18	Effluent	daily r.r. flow rate	Unknown	mgd	224.16	224.16
02/09/18	Effluent	daily r.r. flow rate	Unknown	mgd	215.11	215.11
02/10/18	Effluent	daily r.r. flow rate	Unknown	mgd	206.07	206.07
02/11/18	Effluent	daily r.r. flow rate	Unknown	mgd	193.15	193.15
02/12/18	Effluent	daily r.r. flow rate	Unknown	mgd	189.28	189.28
02/13/18	Effluent	daily r.r. flow rate	Unknown	mgd	181.52	181.52
02/14/18	Effluent	daily r.r. flow rate	Unknown	mgd	173.12	173.12
02/15/18	Effluent	daily r.r. flow rate	Unknown	mgd	172.48	172.48
02/16/18	Effluent	daily r.r. flow rate	Unknown	mgd	158.3	158.3
02/17/18	Effluent	daily r.r. flow rate	Unknown	mgd	151.2	151.2
02/18/18	Effluent	daily r.r. flow rate	Unknown	mgd	151.2	151.2
02/19/18	Effluent	daily r.r. flow rate	Unknown	mgd	147.9	147.9
02/20/18	Effluent	daily r.r. flow rate	Unknown	mgd	144.7	144.7
02/21/18	Effluent	daily r.r. flow rate	Unknown	mgd	140.83	140.83
02/22/18	Effluent	daily r.r. flow rate	Unknown	mgd	131.13	131.13
02/23/18	Effluent	daily r.r. flow rate	Unknown	mgd	131.13	131.13
02/24/18	Effluent	daily r.r. flow rate	Unknown	mgd	134.37	134.37
02/25/18	Effluent	daily r.r. flow rate	Unknown	mgd	141.47	141.47
02/26/18	Effluent	daily r.r. flow rate	Unknown	mgd	134.37	134.37
02/27/18	Effluent	daily r.r. flow rate	Unknown	mgd	137.59	137.59
02/28/18	Effluent	daily r.r. flow rate	Unknown	mgd	135.01	135.01
03/01/18	Effluent	daily r.r. flow rate	Unknown	mgd	277.2	277.2
03/02/18	Effluent	daily r.r. flow rate	Unknown	mgd	646.2	646.2
03/03/18	Effluent	daily r.r. flow rate	Unknown	mgd	875.6	875.6
03/04/18	Effluent	daily r.r. flow rate	Unknown	mgd	729.5	729.5
03/05/18	Effluent	daily r.r. flow rate	Unknown	mgd	565.25	565.25
03/06/18	Effluent	daily r.r. flow rate	Unknown	mgd	467.06	467.06
03/07/18	Effluent	daily r.r. flow rate	Unknown	mgd	394.06	394.06
03/08/18	Effluent	daily r.r. flow rate	Unknown	mgd	361.9	361.9

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
03/09/18	Effluent	daily r.r. flow rate	Unknown	mgd	339.9	339.9
03/10/18	Effluent	daily r.r. flow rate	Unknown	mgd	310.8	310.8
03/11/18	Effluent	daily r.r. flow rate	Unknown	mgd	288.2	288.2
03/12/18	Effluent	daily r.r. flow rate	Unknown	mgd	270.11	270.11
03/13/18	Effluent	daily r.r. flow rate	Unknown	mgd	624.2	624.2
03/14/18	Effluent	daily r.r. flow rate	Unknown	mgd	1014.5	1014.5
03/15/18	Effluent	daily r.r. flow rate	Unknown	mgd	840.2	840.2
03/16/18	Effluent	daily r.r. flow rate	Unknown	mgd	1680	1680
03/17/18	Effluent	daily r.r. flow rate	Unknown	mgd	1745	1745
03/18/18	Effluent	daily r.r. flow rate	Unknown	mgd	1260	1260
03/19/18	Effluent	daily r.r. flow rate	Unknown	mgd	937.1	937.1
03/20/18	Effluent	daily r.r. flow rate	Unknown	mgd	749.7	749.7
03/21/18	Effluent	daily r.r. flow rate	Unknown	mgd	969.4	969.4
03/22/18	Effluent	daily r.r. flow rate	Unknown	mgd	6139	6139
03/23/18	Effluent	daily r.r. flow rate	Unknown	mgd	2843	2843
03/24/18	Effluent	daily r.r. flow rate	Unknown	mgd	1809	1809
03/25/18	Effluent	daily r.r. flow rate	Unknown	mgd	1538	1538
03/26/18	Effluent	daily r.r. flow rate	Unknown	mgd	1357	1357
03/27/18	Effluent	daily r.r. flow rate	Unknown	mgd	1050	1050
03/28/18	Effluent	daily r.r. flow rate	Unknown	mgd	888.6	888.6
03/29/18	Effluent	daily r.r. flow rate	Unknown	mgd	757.3	757.3
03/30/18	Effluent	daily r.r. flow rate	Unknown	mgd	652.7	652.7
03/31/18	Effluent	daily r.r. flow rate	Unknown	mgd	588.1	588.1
04/01/18	Effluent	daily r.r. flow rate	Unknown	mgd	517	517
04/02/18	Effluent	daily r.r. flow rate	Unknown	mgd	509.59	509.59
04/03/18	Effluent	daily r.r. flow rate	Unknown	mgd	434.76	434.76
04/04/18	Effluent	daily r.r. flow rate	Unknown	mgd	403.75	403.75
04/05/18	Effluent	daily r.r. flow rate	Unknown	mgd	358.7	358.7
04/06/18	Effluent	daily r.r. flow rate	Unknown	mgd	863.9	863.9
04/07/18	Effluent	daily r.r. flow rate	Unknown	mgd	5620.6	5620.6
04/08/18	Effluent	daily r.r. flow rate	Unknown	mgd	3747.9	3747.9
04/09/18	Effluent	daily r.r. flow rate	Unknown	mgd	1813.8	1813.8
04/10/18	Effluent	daily r.r. flow rate	Unknown	mgd	1299.5	1299.5
04/11/18	Effluent	daily r.r. flow rate	Unknown	mgd	1030	1030
04/12/18	Effluent	daily r.r. flow rate	Unknown	mgd	268.2	268.2
04/13/18	Effluent	daily r.r. flow rate	Unknown	mgd	888.6	888.6
04/14/18	Effluent	daily r.r. flow rate	Unknown	mgd	807.8	807.8
04/15/18	Effluent	daily r.r. flow rate	Unknown	mgd	662.4	662.4
04/16/18	Effluent	daily r.r. flow rate	Unknown	mgd	662.4	662.4
04/17/18	Effluent	daily r.r. flow rate	Unknown	mgd	814.3	814.3
04/18/18	Effluent	daily r.r. flow rate	Unknown	mgd	691.5	691.5
04/19/18	Effluent	daily r.r. flow rate	Unknown	mgd	611.11	611.11
04/20/18	Effluent	daily r.r. flow rate	Unknown	mgd	542.64	542.64
04/21/18	Effluent	daily r.r. flow rate	Unknown	mgd	486.43	486.43
04/22/18	Effluent	daily r.r. flow rate	Unknown	mgd	443.8	443.8
04/23/18	Effluent	daily r.r. flow rate	Unknown	mgd	412.79	412.79
04/24/18	Effluent	daily r.r. flow rate	Unknown	mgd	377.91	377.91
04/25/18	Effluent	daily r.r. flow rate	Unknown	mgd	352.07	352.07
04/26/18	Effluent	daily r.r. flow rate	Unknown	mgd	326.88	326.88
04/27/18	Effluent	daily r.r. flow rate	Unknown	mgd	308.8	308.8
04/28/18	Effluent	daily r.r. flow rate	Unknown	mgd	291.4	291.4
04/29/18	Effluent	daily r.r. flow rate	Unknown	mgd	279.8	279.8
04/30/18	Effluent	daily r.r. flow rate	Unknown	mgd	269.5	269.5
05/01/18	Effluent	daily r.r. flow rate	Unknown	mgd	261.1	261.1

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
05/02/18	Effluent	daily r.r. flow rate	Unknown	mgd	261.1	261.1
05/03/18	Effluent	daily r.r. flow rate	Unknown	mgd	256.6	256.6
05/04/18	Effluent	daily r.r. flow rate	Unknown	mgd	248.71	248.71
05/05/18	Effluent	daily r.r. flow rate	Unknown	mgd	242.89	242.89
05/06/18	Effluent	daily r.r. flow rate	Unknown	mgd	233.21	233.21
05/07/18	Effluent	daily r.r. flow rate	Unknown	mgd	224.6	224.6
05/08/18	Effluent	daily r.r. flow rate	Unknown	mgd	220.4	220.4
05/09/18	Effluent	daily r.r. flow rate	Unknown	mgd	212.6	212.6
05/10/18	Effluent	daily r.r. flow rate	Unknown	mgd	203.5	203.5
05/11/18	Effluent	daily r.r. flow rate	Unknown	mgd	197.68	197.68
05/12/18	Effluent	daily r.r. flow rate	Unknown	mgd	193.15	193.15
05/13/18	Effluent	daily r.r. flow rate	Unknown	mgd	186.04	186.04
05/14/18	Effluent	daily r.r. flow rate	Unknown	mgd	186.05	186.05
05/15/18	Effluent	daily r.r. flow rate	Unknown	mgd	186.69	186.69
05/16/18	Effluent	daily r.r. flow rate	Unknown	mgd	201	201
05/17/18	Effluent	daily r.r. flow rate	Unknown	mgd	193.9	193.9
05/18/18	Effluent	daily r.r. flow rate	Unknown	mgd	195.8	195.8
05/19/18	Effluent	daily r.r. flow rate	Unknown	mgd	178.4	178.4
05/20/18	Effluent	daily r.r. flow rate	Unknown	mgd	178.4	178.4
05/21/18	Effluent	daily r.r. flow rate	Unknown	mgd	179	179
05/22/18	Effluent	daily r.r. flow rate	Unknown	mgd	178.4	178.4
05/23/18	Effluent	daily r.r. flow rate	Unknown	mgd	177.7	177.7
05/24/18	Effluent	daily r.r. flow rate	Unknown	mgd	175.1	175.1
05/25/18	Effluent	daily r.r. flow rate	Unknown	mgd	175.5	175.5
05/26/18	Effluent	daily r.r. flow rate	Unknown	mgd	182.6	182.6
05/27/18	Effluent	daily r.r. flow rate	Unknown	mgd	179	179
05/28/18	Effluent	daily r.r. flow rate	Unknown	mgd	171.9	171.9
05/29/18	Effluent	daily r.r. flow rate	Unknown	mgd	168	168
05/30/18	Effluent	daily r.r. flow rate	Unknown	mgd	161.6	161.6
05/31/18	Effluent	daily r.r. flow rate	Unknown	mgd	158.3	158.3
06/01/18	Effluent	daily r.r. flow rate	Unknown	mgd	155.1	155.1
06/02/18	Effluent	daily r.r. flow rate	Unknown	mgd	145.4	145.4
06/03/18	Effluent	daily r.r. flow rate	Unknown	mgd	126	126
06/04/18	Effluent	daily r.r. flow rate	Unknown	mgd	106.6	106.6
06/05/18	Effluent	daily r.r. flow rate	Unknown	mgd	93.7	93.7
06/06/18	Effluent	daily r.r. flow rate	Unknown	mgd	88.9	88.9
06/07/18	Effluent	daily r.r. flow rate	Unknown	mgd	100.8	100.8
06/08/18	Effluent	daily r.r. flow rate	Unknown	mgd	94.9	94.9
06/09/18	Effluent	daily r.r. flow rate	Unknown	mgd	89.8	89.8
06/10/18	Effluent	daily r.r. flow rate	Unknown	mgd	82.1	82.1
06/11/18	Effluent	daily r.r. flow rate	Unknown	mgd	78.8	78.8
06/12/18	Effluent	daily r.r. flow rate	Unknown	mgd	78.8	78.8
06/13/18	Effluent	daily r.r. flow rate	Unknown	mgd	74.3	74.3
06/14/18	Effluent	daily r.r. flow rate	Unknown	mgd	73.22	73.22
06/15/18	Effluent	daily r.r. flow rate	Unknown	mgd	71.06	71.06
06/16/18	Effluent	daily r.r. flow rate	Unknown	mgd	68.8	68.8
06/17/18	Effluent	daily r.r. flow rate	Unknown	mgd	66.86	66.86
06/18/18	Effluent	daily r.r. flow rate	Unknown	mgd	64.92	64.92
06/19/18	Effluent	daily r.r. flow rate	Unknown	mgd	66.86	66.86
06/20/18	Effluent	daily r.r. flow rate	Unknown	mgd	65.2	65.2
06/21/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.7	62.7
06/22/18	Effluent	daily r.r. flow rate	Unknown	mgd	58.16	58.16
06/23/18	Effluent	daily r.r. flow rate	Unknown	mgd	52.34	52.34
06/24/18	Effluent	daily r.r. flow rate	Unknown	mgd	51.04	51.04

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
06/25/18	Effluent	daily r.r. flow rate	Unknown	mgd	49.1	49.1
06/26/18	Effluent	daily r.r. flow rate	Unknown	mgd	53.6	53.6
06/27/18	Effluent	daily r.r. flow rate	Unknown	mgd	53.6	53.6
06/28/18	Effluent	daily r.r. flow rate	Unknown	mgd	56.2	56.2
06/29/18	Effluent	daily r.r. flow rate	Unknown	mgd	180.3	180.3
06/30/18	Effluent	daily r.r. flow rate	Unknown	mgd	202.3	202.3
07/01/18	Effluent	daily r.r. flow rate	Unknown	mgd	206.2	206.2
07/02/18	Effluent	daily r.r. flow rate	Unknown	mgd	219.7	219.7
07/03/18	Effluent	daily r.r. flow rate	Unknown	mgd	84.3	84.3
07/04/18	Effluent	daily r.r. flow rate	Unknown	mgd	84.3	84.3
07/05/18	Effluent	daily r.r. flow rate	Unknown	mgd	89.2	89.2
07/06/18	Effluent	daily r.r. flow rate	Unknown	mgd	89.2	89.2
07/07/18	Effluent	daily r.r. flow rate	Unknown	mgd	84.7	84.7
07/08/18	Effluent	daily r.r. flow rate	Unknown	mgd	84.7	84.7
07/09/18	Effluent	daily r.r. flow rate	Unknown	mgd	86.6	86.6
07/10/18	Effluent	daily r.r. flow rate	Unknown	mgd	82.1	82.1
07/11/18	Effluent	daily r.r. flow rate	Unknown	mgd	84.3	84.3
07/12/18	Effluent	daily r.r. flow rate	Unknown	mgd	82.1	82.1
07/13/18	Effluent	daily r.r. flow rate	Unknown	mgd	94.32	94.32
07/14/18	Effluent	daily r.r. flow rate	Unknown	mgd	99.48	99.48
07/15/18	Effluent	daily r.r. flow rate	Unknown	mgd	94.32	94.32
07/16/18	Effluent	daily r.r. flow rate	Unknown	mgd	96.9	96.9
07/17/18	Effluent	daily r.r. flow rate	Unknown	mgd	94.32	94.32
07/18/18	Effluent	daily r.r. flow rate	Unknown	mgd	96.9	96.9
07/19/18	Effluent	daily r.r. flow rate	Unknown	mgd	61.37	61.37
07/20/18	Effluent	daily r.r. flow rate	Unknown	mgd	51.6	51.6
07/21/18	Effluent	daily r.r. flow rate	Unknown	mgd	46.5	46.5
07/22/18	Effluent	daily r.r. flow rate	Unknown	mgd	46.5	46.5
07/23/18	Effluent	daily r.r. flow rate	Unknown	mgd	55.6	55.6
07/24/18	Effluent	daily r.r. flow rate	Unknown	mgd	56.2	56.2
07/25/18	Effluent	daily r.r. flow rate	Unknown	mgd	58.8	58.8
07/26/18	Effluent	daily r.r. flow rate	Unknown	mgd	61.2	61.2
07/27/18	Effluent	daily r.r. flow rate	Unknown	mgd	61.4	61.4
07/28/18	Effluent	daily r.r. flow rate	Unknown	mgd	61.4	61.4
07/29/18	Effluent	daily r.r. flow rate	Unknown	mgd	67.9	67.9
07/30/18	Effluent	daily r.r. flow rate	Unknown	mgd	70.3	70.3
07/31/18	Effluent	daily r.r. flow rate	Unknown	mgd	70.3	70.3
08/01/18	Effluent	daily r.r. flow rate	Unknown	mgd	65.7	65.7
08/02/18	Effluent	daily r.r. flow rate	Unknown	mgd	61.37	61.37
08/03/18	Effluent	daily r.r. flow rate	Unknown	mgd	54.3	54.3
08/04/18	Effluent	daily r.r. flow rate	Unknown	mgd	51.01	51.01
08/05/18	Effluent	daily r.r. flow rate	Unknown	mgd	45.2	45.2
08/06/18	Effluent	daily r.r. flow rate	Unknown	mgd	48.5	48.5
08/07/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.68	62.68
08/08/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.3	62.3
08/09/18	Effluent	daily r.r. flow rate	Unknown	mgd	66.6	66.6
08/10/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.7	62.7
08/11/18	Effluent	daily r.r. flow rate	Unknown	mgd	68.5	68.5
08/12/18	Effluent	daily r.r. flow rate	Unknown	mgd	68.5	68.5
08/13/18	Effluent	daily r.r. flow rate	Unknown	mgd	74.29	74.29
08/14/18	Effluent	daily r.r. flow rate	Unknown	mgd	76.23	76.23
08/15/18	Effluent	daily r.r. flow rate	Unknown	mgd	80.1	80.1
08/16/18	Effluent	daily r.r. flow rate	Unknown	mgd	86.24	86.24
08/17/18	Effluent	daily r.r. flow rate	Unknown	mgd	84	84

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
08/18/18	Effluent	daily r.r. flow rate	Unknown	mgd	88.5	88.5
08/19/18	Effluent	daily r.r. flow rate	Unknown	mgd	88.52	88.52
08/20/18	Effluent	daily r.r. flow rate	Unknown	mgd	90.5	90.5
08/21/18	Effluent	daily r.r. flow rate	Unknown	mgd	92.4	92.4
08/22/18	Effluent	daily r.r. flow rate	Unknown	mgd	92.4	92.4
08/23/18	Effluent	daily r.r. flow rate	Unknown	mgd	92.4	92.4
08/24/18	Effluent	daily r.r. flow rate	Unknown	mgd	97	97
08/25/18	Effluent	daily r.r. flow rate	Unknown	mgd	95	95
08/26/18	Effluent	daily r.r. flow rate	Unknown	mgd	97	97
08/27/18	Effluent	daily r.r. flow rate	Unknown	mgd	63.97	63.97
08/28/18	Effluent	daily r.r. flow rate	Unknown	mgd	72.4	72.4
08/29/18	Effluent	daily r.r. flow rate	Unknown	mgd	78.2	78.2
08/30/18	Effluent	daily r.r. flow rate	Unknown	mgd	76.9	76.9
08/31/18	Effluent	daily r.r. flow rate	Unknown	mgd	76.23	76.23
09/01/18	Effluent	daily r.r. flow rate	Unknown	mgd	66.54	66.54
09/02/18	Effluent	daily r.r. flow rate	Unknown	mgd	61.05	61.05
09/03/18	Effluent	daily r.r. flow rate	Unknown	mgd	59.11	59.11
09/04/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.02	62.02
09/05/18	Effluent	daily r.r. flow rate	Unknown	mgd	64.6	64.6
09/06/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.8	62.8
09/07/18	Effluent	daily r.r. flow rate	Unknown	mgd	61	61
09/08/18	Effluent	daily r.r. flow rate	Unknown	mgd	59.1	59.1
09/09/18	Effluent	daily r.r. flow rate	Unknown	mgd	59.1	59.1
09/10/18	Effluent	daily r.r. flow rate	Unknown	mgd	59.1	59.1
09/11/18	Effluent	daily r.r. flow rate	Unknown	mgd	61	61
09/12/18	Effluent	daily r.r. flow rate	Unknown	mgd	59.1	59.1
09/13/18	Effluent	daily r.r. flow rate	Unknown	mgd	60.74	60.74
09/14/18	Effluent	daily r.r. flow rate	Unknown	mgd	60.74	60.74
09/15/18	Effluent	daily r.r. flow rate	Unknown	mgd	60.74	60.74
09/16/18	Effluent	daily r.r. flow rate	Unknown	mgd	60.74	60.74
09/17/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.7	62.7
09/18/18	Effluent	daily r.r. flow rate	Unknown	mgd	65.3	65.3
09/19/18	Effluent	daily r.r. flow rate	Unknown	mgd	66.5	66.5
09/20/18	Effluent	daily r.r. flow rate	Unknown	mgd	66.54	66.54
09/21/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.99	62.99
09/22/18	Effluent	daily r.r. flow rate	Unknown	mgd	59.11	59.11
09/23/18	Effluent	daily r.r. flow rate	Unknown	mgd	61.05	61.05
09/24/18	Effluent	daily r.r. flow rate	Unknown	mgd	61.05	61.05
09/25/18	Effluent	daily r.r. flow rate	Unknown	mgd	61.37	61.37
09/26/18	Effluent	daily r.r. flow rate	Unknown	mgd	59.11	59.11
09/27/18	Effluent	daily r.r. flow rate	Unknown	mgd	59.11	59.11
09/28/18	Effluent	daily r.r. flow rate	Unknown	mgd	59.1	59.1
09/29/18	Effluent	daily r.r. flow rate	Unknown	mgd	59.1	59.1
09/30/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.8	62.8
10/01/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.8	62.8
10/02/18	Effluent	daily r.r. flow rate	Unknown	mgd	78.2	78.2
10/03/18	Effluent	daily r.r. flow rate	Unknown	mgd	72.3	72.3
10/04/18	Effluent	daily r.r. flow rate	Unknown	mgd	74.2	74.2
10/05/18	Effluent	daily r.r. flow rate	Unknown	mgd	76.2	76.2
10/06/18	Effluent	daily r.r. flow rate	Unknown	mgd	71.72	71.72
10/07/18	Effluent	daily r.r. flow rate	Unknown	mgd	66.56	66.56
10/08/18	Effluent	daily r.r. flow rate	Unknown	mgd	64.62	64.62
10/09/18	Effluent	daily r.r. flow rate	Unknown	mgd	59.5	59.5
10/10/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.7	62.7

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
10/11/18	Effluent	daily r.r. flow rate	Unknown	mgd	61.05	61.05
10/12/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.66	62.66
10/13/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.66	62.66
10/14/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.66	62.66
10/15/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.66	62.66
10/16/18	Effluent	daily r.r. flow rate	Unknown	mgd	61.05	61.05
10/17/18	Effluent	daily r.r. flow rate	Unknown	mgd	61.05	61.05
10/18/18	Effluent	daily r.r. flow rate	Unknown	mgd	60.9	60.9
10/19/18	Effluent	daily r.r. flow rate	Unknown	mgd	60.9	60.9
10/20/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.8	62.8
10/21/18	Effluent	daily r.r. flow rate	Unknown	mgd	60.9	60.9
10/22/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.7	62.7
10/23/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.8	62.8
10/24/18	Effluent	daily r.r. flow rate	Unknown	mgd	62.8	62.8
10/25/18	Effluent	daily r.r. flow rate	Unknown	mgd	60.7	60.7
10/26/18	Effluent	daily r.r. flow rate	Unknown	mgd	54.93	54.93
10/27/18	Effluent	daily r.r. flow rate	Unknown	mgd	55.57	55.57
10/28/18	Effluent	daily r.r. flow rate	Unknown	mgd	55.57	55.57
10/29/18	Effluent	daily r.r. flow rate	Unknown	mgd	60.7	60.7
10/30/18	Effluent	daily r.r. flow rate	Unknown	mgd	55.6	55.6
10/31/18	Effluent	daily r.r. flow rate	Unknown	mgd	54.28	54.28
11/01/18	Effluent	daily r.r. flow rate	Unknown	mgd	55.6	55.6
11/02/18	Effluent	daily r.r. flow rate	Unknown	mgd	53.94	53.94
11/03/18	Effluent	daily r.r. flow rate	Unknown	mgd	53.94	53.94
11/04/18	Effluent	daily r.r. flow rate	Unknown	mgd	52	52
11/05/18	Effluent	daily r.r. flow rate	Unknown	mgd	52	52
11/06/18	Effluent	daily r.r. flow rate	Unknown	mgd	48.77	48.77
11/07/18	Effluent	daily r.r. flow rate	Unknown	mgd	48.77	48.77
11/08/18	Effluent	daily r.r. flow rate	Unknown	mgd	47.16	47.16
11/09/18	Effluent	daily r.r. flow rate	Unknown	mgd	52	52
11/10/18	Effluent	daily r.r. flow rate	Unknown	mgd	53.8	53.8
11/11/18	Effluent	daily r.r. flow rate	Unknown	mgd	58.2	58.2
11/12/18	Effluent	daily r.r. flow rate	Unknown	mgd	55.6	55.6
11/13/18	Effluent	daily r.r. flow rate	Unknown	mgd	55.6	55.6
11/14/18	Effluent	daily r.r. flow rate	Unknown	mgd	55.6	55.6
11/15/18	Effluent	daily r.r. flow rate	Unknown	mgd	57.3	57.3
11/16/18	Effluent	daily r.r. flow rate	Unknown	mgd	57.5	57.5
11/17/18	Effluent	daily r.r. flow rate	Unknown	mgd	58.8	58.8
11/18/18	Effluent	daily r.r. flow rate	Unknown	mgd	60.1	60.1
11/19/18	Effluent	daily r.r. flow rate	Unknown	mgd	60.74	60.74
11/20/18	Effluent	daily r.r. flow rate	Unknown	mgd	60.7	60.7
11/21/18	Effluent	daily r.r. flow rate	Unknown	mgd	69.12	69.12
11/22/18	Effluent	daily r.r. flow rate	Unknown	mgd	64.6	64.6
11/23/18	Effluent	daily r.r. flow rate	Unknown	mgd	84.63	84.63
11/24/18	Effluent	daily r.r. flow rate	Unknown	mgd	131.14	131.14
11/25/18	Effluent	daily r.r. flow rate	Unknown	mgd	147.93	147.93
11/26/18	Effluent	daily r.r. flow rate	Unknown	mgd	96.91	96.91
11/27/18	Effluent	daily r.r. flow rate	Unknown	mgd	85.92	85.92
11/28/18	Effluent	daily r.r. flow rate	Unknown	mgd	86.56	86.56
11/29/18	Effluent	daily r.r. flow rate	Unknown	mgd	193.9	193.9
11/30/18	Effluent	daily r.r. flow rate	Unknown	mgd	517	517
12/01/18	Effluent	daily r.r. flow rate	Unknown	mgd	287.6	287.6
12/02/18	Effluent	daily r.r. flow rate	Unknown	mgd	268.2	268.2
12/03/18	Effluent	daily r.r. flow rate	Unknown	mgd	232	232

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
12/04/18	Effluent	daily r.r. flow rate	Unknown	mgd	173.2	173.2
12/05/18	Effluent	daily r.r. flow rate	Unknown	mgd	147.4	147.4
12/06/18	Effluent	daily r.r. flow rate	Unknown	mgd	50.4	50.4
12/07/18	Effluent	daily r.r. flow rate	Unknown	mgd	124.7	124.7
12/08/18	Effluent	daily r.r. flow rate	Unknown	mgd	113.7	113.7
12/09/18	Effluent	daily r.r. flow rate	Unknown	mgd	105.3	105.3
12/10/18	Effluent	daily r.r. flow rate	Unknown	mgd	54.28	54.28
12/11/18	Effluent	daily r.r. flow rate	Unknown	mgd	96.9	96.9
12/12/18	Effluent	daily r.r. flow rate	Unknown	mgd	56.2	56.2
12/13/18	Effluent	daily r.r. flow rate	Unknown	mgd	88.4	88.4
12/14/18	Effluent	daily r.r. flow rate	Unknown	mgd	86.3	86.3
12/15/18	Effluent	daily r.r. flow rate	Unknown	mgd	87.9	87.9
12/16/18	Effluent	daily r.r. flow rate	Unknown	mgd	484.5	484.5
12/17/18	Effluent	daily r.r. flow rate	Unknown	mgd	2280.38	2280.38
12/18/18	Effluent	daily r.r. flow rate	Unknown	mgd	694.45	694.45
12/19/18	Effluent	daily r.r. flow rate	Unknown	mgd	436.05	436.05
12/20/18	Effluent	daily r.r. flow rate	Unknown	mgd	417.96	417.96
12/21/18	Effluent	daily r.r. flow rate	Unknown	mgd	337	337
12/22/18	Effluent	daily r.r. flow rate	Unknown	mgd	334	334
12/23/18	Effluent	daily r.r. flow rate	Unknown	mgd	288	288
12/24/18	Effluent	daily r.r. flow rate	Unknown	mgd	248	248
12/25/18	Effluent	daily r.r. flow rate	Unknown	mgd	459	459
12/26/18	Effluent	daily r.r. flow rate	Unknown	mgd	775	775
12/27/18	Effluent	daily r.r. flow rate	Unknown	mgd	485	485
12/28/18	Effluent	daily r.r. flow rate	Unknown	mgd	566	566
12/29/18	Effluent	daily r.r. flow rate	Unknown	mgd	300.5	300.5
12/30/18	Effluent	daily r.r. flow rate	Unknown	mgd	260.4	260.4
12/31/18	Effluent	daily r.r. flow rate	Unknown	mgd	234.6	234.6
01/01/18	Effluent	dilution rate % of flow stream	Unknown	%	0.332857822	0.332857822
01/02/18	Effluent	dilution rate % of flow stream	Unknown	%	0.408902389	0.408902389
01/03/18	Effluent	dilution rate % of flow stream	Unknown	%	0.334852572	0.334852572
01/04/18	Effluent	dilution rate % of flow stream	Unknown	%	0.304327152	0.304327152
01/05/18	Effluent	dilution rate % of flow stream	Unknown	%	0.424785659	0.424785659
01/06/18	Effluent	dilution rate % of flow stream	Unknown	%	0.223995881	0.223995881
01/07/18	Effluent	dilution rate % of flow stream	Unknown	%	0.255737705	0.255737705
01/08/18	Effluent	dilution rate % of flow stream	Unknown	%	0.451263538	0.451263538
01/09/18	Effluent	dilution rate % of flow stream	Unknown	%	0.047287875	0.047287875
01/10/18	Effluent	dilution rate % of flow stream	Unknown	%	0.135083825	0.135083825
01/11/18	Effluent	dilution rate % of flow stream	Unknown	%	0.15545547	0.15545547
01/12/18	Effluent	dilution rate % of flow stream	Unknown	%	0.184306569	0.184306569
01/13/18	Effluent	dilution rate % of flow stream	Unknown	%	0.214220602	0.214220602
01/14/18	Effluent	dilution rate % of flow stream	Unknown	%	0.226693836	0.226693836
01/15/18	Effluent	dilution rate % of flow stream	Unknown	%	0.257414661	0.257414661
01/16/18	Effluent	dilution rate % of flow stream	Unknown	%	0.278110048	0.278110048
01/17/18	Effluent	dilution rate % of flow stream	Unknown	%	0.29	0.29
01/18/18	Effluent	dilution rate % of flow stream	Unknown	%	0.317949706	0.317949706
01/19/18	Effluent	dilution rate % of flow stream	Unknown	%	0.242409403	0.242409403
01/20/18	Effluent	dilution rate % of flow stream	Unknown	%	0.183200156	0.183200156
01/21/18	Effluent	dilution rate % of flow stream	Unknown	%	0.238095238	0.238095238
01/22/18	Effluent	dilution rate % of flow stream	Unknown	%	0.596102407	0.596102407
01/23/18	Effluent	dilution rate % of flow stream	Unknown	%	0.061856434	0.061856434
01/24/18	Effluent	dilution rate % of flow stream	Unknown	%	0.125865324	0.125865324
01/25/18	Effluent	dilution rate % of flow stream	Unknown	%	0.110570095	0.110570095
01/26/18	Effluent	dilution rate % of flow stream	Unknown	%	0.109833237	0.109833237

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
01/27/18	Effluent	dilution rate % of flow stream	Unknown	%	0.150696974	0.150696974
01/28/18	Effluent	dilution rate % of flow stream	Unknown	%	0.202919725	0.202919725
01/29/18	Effluent	dilution rate % of flow stream	Unknown	%	0.245664947	0.245664947
01/30/18	Effluent	dilution rate % of flow stream	Unknown	%	0.278367139	0.278367139
01/31/18	Effluent	dilution rate % of flow stream	Unknown	%	0.285014799	0.285014799
02/01/18	Effluent	dilution rate % of flow stream	Unknown	%	0.380132359	0.380132359
02/02/18	Effluent	dilution rate % of flow stream	Unknown	%	0.378912685	0.378912685
02/03/18	Effluent	dilution rate % of flow stream	Unknown	%	0.421415319	0.421415319
02/04/18	Effluent	dilution rate % of flow stream	Unknown	%	0.471618187	0.471618187
02/05/18	Effluent	dilution rate % of flow stream	Unknown	%	0.466666667	0.466666667
02/06/18	Effluent	dilution rate % of flow stream	Unknown	%	0.382181568	0.382181568
02/07/18	Effluent	dilution rate % of flow stream	Unknown	%	0.27774104	0.27774104
02/08/18	Effluent	dilution rate % of flow stream	Unknown	%	0.287840494	0.287840494
02/09/18	Effluent	dilution rate % of flow stream	Unknown	%	0.301620757	0.301620757
02/10/18	Effluent	dilution rate % of flow stream	Unknown	%	0.319380777	0.319380777
02/11/18	Effluent	dilution rate % of flow stream	Unknown	%	0.329456595	0.329456595
02/12/18	Effluent	dilution rate % of flow stream	Unknown	%	0.33055186	0.33055186
02/13/18	Effluent	dilution rate % of flow stream	Unknown	%	0.362047441	0.362047441
02/14/18	Effluent	dilution rate % of flow stream	Unknown	%	0.376199948	0.376199948
02/15/18	Effluent	dilution rate % of flow stream	Unknown	%	0.337282712	0.337282712
02/16/18	Effluent	dilution rate % of flow stream	Unknown	%	0.379981464	0.379981464
02/17/18	Effluent	dilution rate % of flow stream	Unknown	%	0.392908481	0.392908481
02/18/18	Effluent	dilution rate % of flow stream	Unknown	%	0.392908481	0.392908481
02/19/18	Effluent	dilution rate % of flow stream	Unknown	%	0.400586224	0.400586224
02/20/18	Effluent	dilution rate % of flow stream	Unknown	%	0.302579365	0.302579365
02/21/18	Effluent	dilution rate % of flow stream	Unknown	%	0.296311434	0.296311434
02/22/18	Effluent	dilution rate % of flow stream	Unknown	%	0.415214271	0.415214271
02/23/18	Effluent	dilution rate % of flow stream	Unknown	%	0.415214271	0.415214271
02/24/18	Effluent	dilution rate % of flow stream	Unknown	%	0.413507926	0.413507926
02/25/18	Effluent	dilution rate % of flow stream	Unknown	%	0.389538119	0.389538119
02/26/18	Effluent	dilution rate % of flow stream	Unknown	%	0.454409268	0.454409268
02/27/18	Effluent	dilution rate % of flow stream	Unknown	%	0.391981741	0.391981741
02/28/18	Effluent	dilution rate % of flow stream	Unknown	%	0.400954169	0.400954169
03/01/18	Effluent	dilution rate % of flow stream	Unknown	%	0.429419563	0.429419563
03/02/18	Effluent	dilution rate % of flow stream	Unknown	%	0.169068623	0.169068623
03/03/18	Effluent	dilution rate % of flow stream	Unknown	%	0.128013214	0.128013214
03/04/18	Effluent	dilution rate % of flow stream	Unknown	%	0.134946204	0.134946204
03/05/18	Effluent	dilution rate % of flow stream	Unknown	%	0.128743525	0.128743525
03/06/18	Effluent	dilution rate % of flow stream	Unknown	%	0.159325041	0.159325041
03/07/18	Effluent	dilution rate % of flow stream	Unknown	%	0.185924084	0.185924084
03/08/18	Effluent	dilution rate % of flow stream	Unknown	%	0.226355894	0.226355894
03/09/18	Effluent	dilution rate % of flow stream	Unknown	%	0.212314225	0.212314225
03/10/18	Effluent	dilution rate % of flow stream	Unknown	%	0.233572895	0.233572895
03/11/18	Effluent	dilution rate % of flow stream	Unknown	%	0.236393623	0.236393623
03/12/18	Effluent	dilution rate % of flow stream	Unknown	%	0.27667143	0.27667143
03/13/18	Effluent	dilution rate % of flow stream	Unknown	%	0.187800056	0.187800056
03/14/18	Effluent	dilution rate % of flow stream	Unknown	%	0.112208259	0.112208259
03/15/18	Effluent	dilution rate % of flow stream	Unknown	%	0.124210301	0.124210301
03/16/18	Effluent	dilution rate % of flow stream	Unknown	%	0.072204187	0.072204187
03/17/18	Effluent	dilution rate % of flow stream	Unknown	%	0.058920325	0.058920325
03/18/18	Effluent	dilution rate % of flow stream	Unknown	%	0.074988972	0.074988972
03/19/18	Effluent	dilution rate % of flow stream	Unknown	%	0.098798915	0.098798915
03/20/18	Effluent	dilution rate % of flow stream	Unknown	%	0.11911782	0.11911782
03/21/18	Effluent	dilution rate % of flow stream	Unknown	%	0.167870205	0.167870205

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
03/22/18	Effluent	dilution rate % of flow stream	Unknown	%	0.029991783	0.029991783
03/23/18	Effluent	dilution rate % of flow stream	Unknown	%	0.051137893	0.051137893
03/24/18	Effluent	dilution rate % of flow stream	Unknown	%	0.070263365	0.070263365
03/25/18	Effluent	dilution rate % of flow stream	Unknown	%	0.075411199	0.075411199
03/26/18	Effluent	dilution rate % of flow stream	Unknown	%	0.068791718	0.068791718
03/27/18	Effluent	dilution rate % of flow stream	Unknown	%	0.102049422	0.102049422
03/28/18	Effluent	dilution rate % of flow stream	Unknown	%	0.099000099	0.099000099
03/29/18	Effluent	dilution rate % of flow stream	Unknown	%	0.118431643	0.118431643
03/30/18	Effluent	dilution rate % of flow stream	Unknown	%	0.13060686	0.13060686
03/31/18	Effluent	dilution rate % of flow stream	Unknown	%	0.140804181	0.140804181
04/01/18	Effluent	dilution rate % of flow stream	Unknown	%	0.149861541	0.149861541
04/02/18	Effluent	dilution rate % of flow stream	Unknown	%	0.142405325	0.142405325
04/03/18	Effluent	dilution rate % of flow stream	Unknown	%	0.166938574	0.166938574
04/04/18	Effluent	dilution rate % of flow stream	Unknown	%	0.171998624	0.171998624
04/05/18	Effluent	dilution rate % of flow stream	Unknown	%	0.199417432	0.199417432
04/06/18	Effluent	dilution rate % of flow stream	Unknown	%	0.182258744	0.182258744
04/07/18	Effluent	dilution rate % of flow stream	Unknown	%	0.035581575	0.035581575
04/08/18	Effluent	dilution rate % of flow stream	Unknown	%	0.037840236	0.037840236
04/09/18	Effluent	dilution rate % of flow stream	Unknown	%	0.082467347	0.082467347
04/10/18	Effluent	dilution rate % of flow stream	Unknown	%	0.083116151	0.083116151
04/11/18	Effluent	dilution rate % of flow stream	Unknown	%	0.087000591	0.087000591
04/12/18	Effluent	dilution rate % of flow stream	Unknown	%	0.270692348	0.270692348
04/13/18	Effluent	dilution rate % of flow stream	Unknown	%	0.101959216	0.101959216
04/14/18	Effluent	dilution rate % of flow stream	Unknown	%	0.113199253	0.113199253
04/15/18	Effluent	dilution rate % of flow stream	Unknown	%	0.134387352	0.134387352
04/16/18	Effluent	dilution rate % of flow stream	Unknown	%	0.13810338	0.13810338
04/17/18	Effluent	dilution rate % of flow stream	Unknown	%	0.10770235	0.10770235
04/18/18	Effluent	dilution rate % of flow stream	Unknown	%	0.122878135	0.122878135
04/19/18	Effluent	dilution rate % of flow stream	Unknown	%	0.123669135	0.123669135
04/20/18	Effluent	dilution rate % of flow stream	Unknown	%	0.166365624	0.166365624
04/21/18	Effluent	dilution rate % of flow stream	Unknown	%	0.169470797	0.169470797
04/22/18	Effluent	dilution rate % of flow stream	Unknown	%	0.182118263	0.182118263
04/23/18	Effluent	dilution rate % of flow stream	Unknown	%	0.185109845	0.185109845
04/24/18	Effluent	dilution rate % of flow stream	Unknown	%	0.197518809	0.197518809
04/25/18	Effluent	dilution rate % of flow stream	Unknown	%	0.205863562	0.205863562
04/26/18	Effluent	dilution rate % of flow stream	Unknown	%	0.225111291	0.225111291
04/27/18	Effluent	dilution rate % of flow stream	Unknown	%	0.236293641	0.236293641
04/28/18	Effluent	dilution rate % of flow stream	Unknown	%	0.251882119	0.251882119
04/29/18	Effluent	dilution rate % of flow stream	Unknown	%	0.267115731	0.267115731
04/30/18	Effluent	dilution rate % of flow stream	Unknown	%	0.249399038	0.249399038
05/01/18	Effluent	dilution rate % of flow stream	Unknown	%	0.253242742	0.253242742
05/02/18	Effluent	dilution rate % of flow stream	Unknown	%	0.24966865	0.24966865
05/03/18	Effluent	dilution rate % of flow stream	Unknown	%	0.259943627	0.259943627
05/04/18	Effluent	dilution rate % of flow stream	Unknown	%	0.256929055	0.256929055
05/05/18	Effluent	dilution rate % of flow stream	Unknown	%	0.283258127	0.283258127
05/06/18	Effluent	dilution rate % of flow stream	Unknown	%	0.295988841	0.295988841
05/07/18	Effluent	dilution rate % of flow stream	Unknown	%	0.299929428	0.299929428
05/08/18	Effluent	dilution rate % of flow stream	Unknown	%	0.286532951	0.286532951
05/09/18	Effluent	dilution rate % of flow stream	Unknown	%	0.292159763	0.292159763
05/10/18	Effluent	dilution rate % of flow stream	Unknown	%	0.289028332	0.289028332
05/11/18	Effluent	dilution rate % of flow stream	Unknown	%	0.31424581	0.31424581
05/12/18	Effluent	dilution rate % of flow stream	Unknown	%	0.288275481	0.288275481
05/13/18	Effluent	dilution rate % of flow stream	Unknown	%	0.341296928	0.341296928
05/14/18	Effluent	dilution rate % of flow stream	Unknown	%	0.320968594	0.320968594

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
05/15/18	Effluent	dilution rate % of flow stream	Unknown	%	0.336345585	0.336345585
05/16/18	Effluent	dilution rate % of flow stream	Unknown	%	0.289799073	0.289799073
05/17/18	Effluent	dilution rate % of flow stream	Unknown	%	0.301946762	0.301946762
05/18/18	Effluent	dilution rate % of flow stream	Unknown	%	0.29213217	0.29213217
05/19/18	Effluent	dilution rate % of flow stream	Unknown	%	0.310281804	0.310281804
05/20/18	Effluent	dilution rate % of flow stream	Unknown	%	0.399540953	0.399540953
05/21/18	Effluent	dilution rate % of flow stream	Unknown	%	0.349531117	0.349531117
05/22/18	Effluent	dilution rate % of flow stream	Unknown	%	0.329059829	0.329059829
05/23/18	Effluent	dilution rate % of flow stream	Unknown	%	0.059676044	0.059676044
05/24/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
05/25/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
05/26/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
05/27/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
05/28/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
05/29/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
05/30/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
05/31/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/01/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/02/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/03/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/04/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/05/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/06/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/07/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/08/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/09/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/10/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/11/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/12/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/13/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/14/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/15/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/16/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/17/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/18/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/19/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/20/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/21/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/22/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/23/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/24/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/25/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/26/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/27/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/28/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/29/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
06/30/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
07/01/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
07/02/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
07/03/18	Effluent	dilution rate % of flow stream	Unknown	%	0.222513089	0.222513089
07/04/18	Effluent	dilution rate % of flow stream	Unknown	%	0.523560209	0.523560209
07/05/18	Effluent	dilution rate % of flow stream	Unknown	%	0.439210694	0.439210694
07/06/18	Effluent	dilution rate % of flow stream	Unknown	%	0.509259259	0.509259259
07/07/18	Effluent	dilution rate % of flow stream	Unknown	%	0.506329114	0.506329114

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
07/08/18	Effluent	dilution rate % of flow stream	Unknown	%	0.538838348	0.538838348
07/09/18	Effluent	dilution rate % of flow stream	Unknown	%	0.407458564	0.407458564
07/10/18	Effluent	dilution rate % of flow stream	Unknown	%	0.577200577	0.577200577
07/11/18	Effluent	dilution rate % of flow stream	Unknown	%	0.531609195	0.531609195
07/12/18	Effluent	dilution rate % of flow stream	Unknown	%	0.486257928	0.486257928
07/13/18	Effluent	dilution rate % of flow stream	Unknown	%	0.585200101	0.585200101
07/14/18	Effluent	dilution rate % of flow stream	Unknown	%	0.484701606	0.484701606
07/15/18	Effluent	dilution rate % of flow stream	Unknown	%	0.511828225	0.511828225
07/16/18	Effluent	dilution rate % of flow stream	Unknown	%	0.473502094	0.473502094
07/17/18	Effluent	dilution rate % of flow stream	Unknown	%	0.484893696	0.484893696
07/18/18	Effluent	dilution rate % of flow stream	Unknown	%	0.467778667	0.467778667
07/19/18	Effluent	dilution rate % of flow stream	Unknown	%	0.606585789	0.606585789
07/20/18	Effluent	dilution rate % of flow stream	Unknown	%	0.706521739	0.706521739
07/21/18	Effluent	dilution rate % of flow stream	Unknown	%	0.769230769	0.769230769
07/22/18	Effluent	dilution rate % of flow stream	Unknown	%	0.740740741	0.740740741
07/23/18	Effluent	dilution rate % of flow stream	Unknown	%	0.733863837	0.733863837
07/24/18	Effluent	dilution rate % of flow stream	Unknown	%	0.131926121	0.131926121
07/25/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
07/26/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
07/27/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
07/28/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
07/29/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
07/30/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
07/31/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
08/01/18	Effluent	dilution rate % of flow stream	Unknown	%	0.313971743	0.313971743
08/02/18	Effluent	dilution rate % of flow stream	Unknown	%	0.638872963	0.638872963
08/03/18	Effluent	dilution rate % of flow stream	Unknown	%	0.67826087	0.67826087
08/04/18	Effluent	dilution rate % of flow stream	Unknown	%	0.701211183	0.701211183
08/05/18	Effluent	dilution rate % of flow stream	Unknown	%	0.709677419	0.709677419
08/06/18	Effluent	dilution rate % of flow stream	Unknown	%	0.680813439	0.680813439
08/07/18	Effluent	dilution rate % of flow stream	Unknown	%	0.612725844	0.612725844
08/08/18	Effluent	dilution rate % of flow stream	Unknown	%	0.687022901	0.687022901
08/09/18	Effluent	dilution rate % of flow stream	Unknown	%	0.585585586	0.585585586
08/10/18	Effluent	dilution rate % of flow stream	Unknown	%	0.614307932	0.614307932
08/11/18	Effluent	dilution rate % of flow stream	Unknown	%	0.580357143	0.580357143
08/12/18	Effluent	dilution rate % of flow stream	Unknown	%	0.572916667	0.572916667
08/13/18	Effluent	dilution rate % of flow stream	Unknown	%	0.564174894	0.564174894
08/14/18	Effluent	dilution rate % of flow stream	Unknown	%	0.527557962	0.527557962
08/15/18	Effluent	dilution rate % of flow stream	Unknown	%	0.570342205	0.570342205
08/16/18	Effluent	dilution rate % of flow stream	Unknown	%	0.543264825	0.543264825
08/17/18	Effluent	dilution rate % of flow stream	Unknown	%	0.535346603	0.535346603
08/18/18	Effluent	dilution rate % of flow stream	Unknown	%	0.535714286	0.535714286
08/19/18	Effluent	dilution rate % of flow stream	Unknown	%	0.535643433	0.535643433
08/20/18	Effluent	dilution rate % of flow stream	Unknown	%	0.091383812	0.091383812
08/21/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
08/22/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
08/23/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
08/24/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
08/25/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
08/26/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
08/27/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
08/28/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
08/29/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
08/30/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
08/31/18	Effluent	dilution rate % of flow stream	Unknown	%	0.261020882	0.261020882
09/01/18	Effluent	dilution rate % of flow stream	Unknown	%	0.631677455	0.631677455
09/02/18	Effluent	dilution rate % of flow stream	Unknown	%	0.651784259	0.651784259
09/03/18	Effluent	dilution rate % of flow stream	Unknown	%	0.678807947	0.678807947
09/04/18	Effluent	dilution rate % of flow stream	Unknown	%	0.62242341	0.62242341
09/05/18	Effluent	dilution rate % of flow stream	Unknown	%	0.609659541	0.609659541
09/06/18	Effluent	dilution rate % of flow stream	Unknown	%	0.631578947	0.631578947
09/07/18	Effluent	dilution rate % of flow stream	Unknown	%	0.637945319	0.637945319
09/08/18	Effluent	dilution rate % of flow stream	Unknown	%	0.651085142	0.651085142
09/09/18	Effluent	dilution rate % of flow stream	Unknown	%	0.664983165	0.664983165
09/10/18	Effluent	dilution rate % of flow stream	Unknown	%	0.158597663	0.158597663
09/11/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
09/12/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
09/13/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
09/14/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
09/15/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
09/16/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
09/17/18	Effluent	dilution rate % of flow stream	Unknown	%	0	0
09/18/18	Effluent	dilution rate % of flow stream	Unknown	%	0.500379075	0.500379075
09/19/18	Effluent	dilution rate % of flow stream	Unknown	%	0.587248322	0.587248322
09/20/18	Effluent	dilution rate % of flow stream	Unknown	%	0.567708728	0.567708728
09/21/18	Effluent	dilution rate % of flow stream	Unknown	%	0.622277536	0.622277536
09/22/18	Effluent	dilution rate % of flow stream	Unknown	%	0.636689216	0.636689216
09/23/18	Effluent	dilution rate % of flow stream	Unknown	%	0.623604588	0.623604588
09/24/18	Effluent	dilution rate % of flow stream	Unknown	%	0.58338519	0.58338519
09/25/18	Effluent	dilution rate % of flow stream	Unknown	%	0.605214153	0.605214153
09/26/18	Effluent	dilution rate % of flow stream	Unknown	%	0.63181172	0.63181172
09/27/18	Effluent	dilution rate % of flow stream	Unknown	%	0.614463526	0.614463526
09/28/18	Effluent	dilution rate % of flow stream	Unknown	%	0.618637431	0.618637431
09/29/18	Effluent	dilution rate % of flow stream	Unknown	%	0.673981191	0.673981191
09/30/18	Effluent	dilution rate % of flow stream	Unknown	%	0.614692654	0.614692654
10/01/18	Effluent	dilution rate % of flow stream	Unknown	%	0.631659056	0.631659056
10/02/18	Effluent	dilution rate % of flow stream	Unknown	%	0.64153067	0.64153067
10/03/18	Effluent	dilution rate % of flow stream	Unknown	%	0.623640319	0.623640319
10/04/18	Effluent	dilution rate % of flow stream	Unknown	%	0.590778098	0.590778098
10/05/18	Effluent	dilution rate % of flow stream	Unknown	%	0.635500365	0.635500365
10/06/18	Effluent	dilution rate % of flow stream	Unknown	%	0.651241189	0.651241189
10/07/18	Effluent	dilution rate % of flow stream	Unknown	%	0.638162093	0.638162093
10/08/18	Effluent	dilution rate % of flow stream	Unknown	%	0.68060282	0.68060282
10/09/18	Effluent	dilution rate % of flow stream	Unknown	%	0.709401709	0.709401709
10/10/18	Effluent	dilution rate % of flow stream	Unknown	%	0.669456067	0.669456067
10/11/18	Effluent	dilution rate % of flow stream	Unknown	%	0.662196838	0.662196838
10/12/18	Effluent	dilution rate % of flow stream	Unknown	%	0.650473446	0.650473446
10/13/18	Effluent	dilution rate % of flow stream	Unknown	%	0.68061089	0.68061089
10/14/18	Effluent	dilution rate % of flow stream	Unknown	%	0.666941128	0.666941128
10/15/18	Effluent	dilution rate % of flow stream	Unknown	%	0.730411687	0.730411687
10/16/18	Effluent	dilution rate % of flow stream	Unknown	%	0.649961515	0.649961515
10/17/18	Effluent	dilution rate % of flow stream	Unknown	%	0.701274267	0.701274267
10/18/18	Effluent	dilution rate % of flow stream	Unknown	%	0.676369863	0.676369863
10/19/18	Effluent	dilution rate % of flow stream	Unknown	%	0.665543387	0.665543387
10/20/18	Effluent	dilution rate % of flow stream	Unknown	%	0.671641791	0.671641791
10/21/18	Effluent	dilution rate % of flow stream	Unknown	%	0.682392586	0.682392586
10/22/18	Effluent	dilution rate % of flow stream	Unknown	%	0.661764706	0.661764706
10/23/18	Effluent	dilution rate % of flow stream	Unknown	%	0.676369863	0.676369863

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
10/24/18	Effluent	dilution rate % of flow stream	Unknown	%	0.656303972	0.656303972
10/25/18	Effluent	dilution rate % of flow stream	Unknown	%	0.707251567	0.707251567
10/26/18	Effluent	dilution rate % of flow stream	Unknown	%	0.714932127	0.714932127
10/27/18	Effluent	dilution rate % of flow stream	Unknown	%	0.74680583	0.74680583
10/28/18	Effluent	dilution rate % of flow stream	Unknown	%	0.725150336	0.725150336
10/29/18	Effluent	dilution rate % of flow stream	Unknown	%	0.651383132	0.651383132
10/30/18	Effluent	dilution rate % of flow stream	Unknown	%	0.710431655	0.710431655
10/31/18	Effluent	dilution rate % of flow stream	Unknown	%	0.695906968	0.695906968
11/01/18	Effluent	dilution rate % of flow stream	Unknown	%	0.729927007	0.729927007
11/02/18	Effluent	dilution rate % of flow stream	Unknown	%	0.713756025	0.713756025
11/03/18	Effluent	dilution rate % of flow stream	Unknown	%	0.753330271	0.753330271
11/04/18	Effluent	dilution rate % of flow stream	Unknown	%	0.776353943	0.776353943
11/05/18	Effluent	dilution rate % of flow stream	Unknown	%	0.745705116	0.745705116
11/06/18	Effluent	dilution rate % of flow stream	Unknown	%	0.761160255	0.761160255
11/07/18	Effluent	dilution rate % of flow stream	Unknown	%	0.774009573	0.774009573
11/08/18	Effluent	dilution rate % of flow stream	Unknown	%	0.797266515	0.797266515
11/09/18	Effluent	dilution rate % of flow stream	Unknown	%	0.755813953	0.755813953
11/10/18	Effluent	dilution rate % of flow stream	Unknown	%	0.74598678	0.74598678
11/11/18	Effluent	dilution rate % of flow stream	Unknown	%	0.707162285	0.707162285
11/12/18	Effluent	dilution rate % of flow stream	Unknown	%	0.733519034	0.733519034
11/13/18	Effluent	dilution rate % of flow stream	Unknown	%	0.724907063	0.724907063
11/14/18	Effluent	dilution rate % of flow stream	Unknown	%	0.72	0.72
11/15/18	Effluent	dilution rate % of flow stream	Unknown	%	0.639229422	0.639229422
11/16/18	Effluent	dilution rate % of flow stream	Unknown	%	0.632478632	0.632478632
11/17/18	Effluent	dilution rate % of flow stream	Unknown	%	0.656871219	0.656871219
11/18/18	Effluent	dilution rate % of flow stream	Unknown	%	0.632478632	0.632478632
11/19/18	Effluent	dilution rate % of flow stream	Unknown	%	0.655096137	0.655096137
11/20/18	Effluent	dilution rate % of flow stream	Unknown	%	0.685279188	0.685279188
11/21/18	Effluent	dilution rate % of flow stream	Unknown	%	0.736075277	0.736075277
11/22/18	Effluent	dilution rate % of flow stream	Unknown	%	0.882258582	0.882258582
11/23/18	Effluent	dilution rate % of flow stream	Unknown	%	0.770687741	0.770687741
11/24/18	Effluent	dilution rate % of flow stream	Unknown	%	0.467616232	0.467616232
11/25/18	Effluent	dilution rate % of flow stream	Unknown	%	0.463912491	0.463912491
11/26/18	Effluent	dilution rate % of flow stream	Unknown	%	0.536957242	0.536957242
11/27/18	Effluent	dilution rate % of flow stream	Unknown	%	0.657336726	0.657336726
11/28/18	Effluent	dilution rate % of flow stream	Unknown	%	0.677263303	0.677263303
11/29/18	Effluent	dilution rate % of flow stream	Unknown	%	0.441631505	0.441631505
11/30/18	Effluent	dilution rate % of flow stream	Unknown	%	0.16162586	0.16162586
12/01/18	Effluent	dilution rate % of flow stream	Unknown	%	0.329847144	0.329847144
12/02/18	Effluent	dilution rate % of flow stream	Unknown	%	0.291777188	0.291777188
12/03/18	Effluent	dilution rate % of flow stream	Unknown	%	0.302002036	0.302002036
12/04/18	Effluent	dilution rate % of flow stream	Unknown	%	0.385132109	0.385132109
12/05/18	Effluent	dilution rate % of flow stream	Unknown	%	0.461152882	0.461152882
12/06/18	Effluent	dilution rate % of flow stream	Unknown	%	0.889787664	0.889787664
12/07/18	Effluent	dilution rate % of flow stream	Unknown	%	0.504032258	0.504032258
12/08/18	Effluent	dilution rate % of flow stream	Unknown	%	0.501269036	0.501269036
12/09/18	Effluent	dilution rate % of flow stream	Unknown	%	0.623324397	0.623324397
12/10/18	Effluent	dilution rate % of flow stream	Unknown	%	0.825423029	0.825423029
12/11/18	Effluent	dilution rate % of flow stream	Unknown	%	0.594982079	0.594982079
12/12/18	Effluent	dilution rate % of flow stream	Unknown	%	0.824847251	0.824847251
12/13/18	Effluent	dilution rate % of flow stream	Unknown	%	0.62835249	0.62835249
12/14/18	Effluent	dilution rate % of flow stream	Unknown	%	0.665622553	0.665622553
12/15/18	Effluent	dilution rate % of flow stream	Unknown	%	0.722627737	0.722627737
12/16/18	Effluent	dilution rate % of flow stream	Unknown	%	0.330587186	0.330587186

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
12/17/18	Effluent	dilution rate % of flow stream	Unknown	%	0.05393441	0.05393441
12/18/18	Effluent	dilution rate % of flow stream	Unknown	%	0.135170079	0.135170079
12/19/18	Effluent	dilution rate % of flow stream	Unknown	%	0.193969982	0.193969982
12/20/18	Effluent	dilution rate % of flow stream	Unknown	%	0.19479443	0.19479443
12/21/18	Effluent	dilution rate % of flow stream	Unknown	%	0.284778226	0.284778226
12/22/18	Effluent	dilution rate % of flow stream	Unknown	%	0.242223355	0.242223355
12/23/18	Effluent	dilution rate % of flow stream	Unknown	%	0.252760023	0.252760023
12/24/18	Effluent	dilution rate % of flow stream	Unknown	%	0.342105263	0.342105263
12/25/18	Effluent	dilution rate % of flow stream	Unknown	%	0.195483014	0.195483014
12/26/18	Effluent	dilution rate % of flow stream	Unknown	%	0.110336818	0.110336818
12/27/18	Effluent	dilution rate % of flow stream	Unknown	%	0.172351234	0.172351234
12/28/18	Effluent	dilution rate % of flow stream	Unknown	%	0.135746606	0.135746606
12/29/18	Effluent	dilution rate % of flow stream	Unknown	%	0.234636872	0.234636872
12/30/18	Effluent	dilution rate % of flow stream	Unknown	%	0.268987342	0.268987342
12/31/18	Effluent	dilution rate % of flow stream	Unknown	%	0.244821092	0.244821092
01/04/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.5	4.5
01/11/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5.8	5.8
01/18/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5.3	5.3
01/24/18	Effluent	dissolved oxygen grab	Unknown	mg/L	6	6
02/01/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5.4	5.4
02/07/18	Effluent	dissolved oxygen grab	Unknown	mg/L	3.9	3.9
02/15/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.9	4.9
02/21/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.5	4.5
03/01/18	Effluent	dissolved oxygen grab	Unknown	mg/L	6.3	6.3
03/08/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5	5
03/14/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5.8	5.8
03/23/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.8	4.8
03/29/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5.1	5.1
04/05/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5.5	5.5
04/12/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.8	4.8
04/19/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.4	4.4
04/26/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.9	4.9
05/03/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.7	4.7
05/10/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4	4
05/17/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.8	4.8
05/23/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4	4
05/31/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5.3	5.3
06/07/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5.1	5.1
06/14/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5.7	5.7
06/21/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.7	4.7
06/28/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.8	4.8
07/05/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5	5
07/11/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5.1	5.1
07/18/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5.1	5.1
07/26/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.8	4.8
08/02/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.7	4.7
08/09/18	Effluent	dissolved oxygen grab	Unknown	mg/L	6.3	6.3
08/16/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.6	4.6
08/23/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.1	4.1
08/30/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.8	4.8
09/06/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5.1	5.1
09/13/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.5	4.5
09/20/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.8	4.8
09/26/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.5	4.5

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
10/04/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4	4
10/11/18	Effluent	dissolved oxygen grab	Unknown	mg/L	3.1	3.1
10/18/18	Effluent	dissolved oxygen grab	Unknown	mg/L	3.5	3.5
10/25/18	Effluent	dissolved oxygen grab	Unknown	mg/L	3.5	3.5
11/08/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5	5
11/14/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5.6	5.6
11/21/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5.5	5.5
11/30/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.5	4.5
12/06/18	Effluent	dissolved oxygen grab	Unknown	mg/L	6.3	6.3
12/12/18	Effluent	dissolved oxygen grab	Unknown	mg/L	4.7	4.7
12/18/18	Effluent	dissolved oxygen grab	Unknown	mg/L	5.9	5.9
12/28/18	Effluent	dissolved oxygen grab	Unknown	mg/L	6.6	6.6
01/01/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.7	0.7
01/02/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.7	0.7
01/03/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.72	0.72
01/04/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.64	0.64
01/05/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.09	1.09
01/06/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.87	0.87
01/07/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
01/08/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.75	1.75
01/09/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	2.15	2.15
01/10/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.85	1.85
01/11/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.07	1.07
01/12/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.01	1.01
01/13/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.94	0.94
01/14/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.89	0.89
01/15/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.92	0.92
01/16/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.93	0.93
01/17/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.96	0.96
01/18/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.99	0.99
01/19/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.99	0.99
01/20/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.94	0.94
01/21/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.04	1.04
01/22/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.56	1.56
01/23/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.67	1.67
01/24/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	2	2
01/25/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	2.18	2.18
01/26/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.91	1.91
01/27/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.8	1.8
01/28/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.75	1.75
01/29/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.71	1.71
01/30/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.64	1.64
01/31/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.56	1.56
02/01/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.66	1.66
02/02/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.61	1.61
02/03/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.59	1.59
02/04/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.67	1.67
02/05/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.61	1.61
02/06/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.22	1.22
02/07/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.84	0.84
02/08/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
02/09/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.83	0.83
02/10/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.85	0.85
02/11/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.83	0.83

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
02/12/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
02/13/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.87	0.87
02/14/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.87	0.87
02/15/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
02/16/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
02/17/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
02/18/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
02/19/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
02/20/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.61	0.61
02/21/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.58	0.58
02/22/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
02/23/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
02/24/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
02/25/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
02/26/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.91	0.91
02/27/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
02/28/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
03/01/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.49	1.49
03/02/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.24	1.24
03/03/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.24	1.24
03/04/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.11	1.11
03/05/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.84	0.84
03/06/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.88	0.88
03/07/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.89	0.89
03/08/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.01	1.01
03/09/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.9	0.9
03/10/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.91	0.91
03/11/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.86	0.86
03/12/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.91	0.91
03/13/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.33	1.33
03/14/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.25	1.25
03/15/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.16	1.16
03/16/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.29	1.29
03/17/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.11	1.11
03/18/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.02	1.02
03/19/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.02	1.02
03/20/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.01	1.01
03/21/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.79	1.79
03/22/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	2.19	2.19
03/23/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.71	1.71
03/24/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.43	1.43
03/25/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.27	1.27
03/26/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.01	1.01
03/27/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.21	1.21
03/28/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1	1
03/29/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.03	1.03
03/30/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.99	0.99
03/31/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.97	0.97
04/01/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.92	0.92
04/02/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.86	0.86
04/03/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.88	0.88
04/04/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.85	0.85
04/05/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.89	0.89
04/06/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.73	1.73

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
04/07/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	2.03	2.03
04/08/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.45	1.45
04/09/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.73	1.73
04/10/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.18	1.18
04/11/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.03	1.03
04/12/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.04	1.04
04/13/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.02	1.02
04/14/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.03	1.03
04/15/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.02	1.02
04/16/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.05	1.05
04/17/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.99	0.99
04/18/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.97	0.97
04/19/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.87	0.87
04/20/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.05	1.05
04/21/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.97	0.97
04/22/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.96	0.96
04/23/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.91	0.91
04/24/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.89	0.89
04/25/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.87	0.87
04/26/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.89	0.89
04/27/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.89	0.89
04/28/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.9	0.9
04/29/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.92	0.92
04/30/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.83	0.83
05/01/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
05/02/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
05/03/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.83	0.83
05/04/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
05/05/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.86	0.86
05/06/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.87	0.87
05/07/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.85	0.85
05/08/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
05/09/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
05/10/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.76	0.76
05/11/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
05/12/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.73	0.73
05/13/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.84	0.84
05/14/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
05/15/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.83	0.83
05/16/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.75	0.75
05/17/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.76	0.76
05/18/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.74	0.74
05/19/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.73	0.73
05/20/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.94	0.94
05/21/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
05/22/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
05/23/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.14	0.14
05/24/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
05/25/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
05/26/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
05/27/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
05/28/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
05/29/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
05/30/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
05/31/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/01/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/02/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/03/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/04/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/05/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/06/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/07/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/08/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/09/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/10/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/11/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/12/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/13/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/14/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/15/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/16/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/17/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/18/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/19/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/20/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/21/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/22/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/23/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/24/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/25/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/26/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/27/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/28/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/29/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
06/30/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
07/01/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
07/02/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
07/03/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.34	0.34
07/04/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
07/05/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.69	0.69
07/06/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
07/07/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.72	0.72
07/08/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
07/09/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.59	0.59
07/10/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
07/11/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.74	0.74
07/12/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.69	0.69
07/13/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.93	0.93
07/14/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
07/15/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
07/16/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
07/17/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
07/18/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.76	0.76
07/19/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
07/20/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
07/21/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
07/22/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
07/23/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.83	0.83

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
07/24/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.15	0.15
07/25/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
07/26/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
07/27/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
07/28/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
07/29/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
07/30/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
07/31/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
08/01/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.4	0.4
08/02/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
08/03/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
08/04/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
08/05/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
08/06/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
08/07/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
08/08/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
08/09/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
08/10/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
08/11/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
08/12/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
08/13/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
08/14/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.76	0.76
08/15/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.84	0.84
08/16/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.83	0.83
08/17/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
08/18/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
08/19/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
08/20/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.14	0.14
08/21/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
08/22/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
08/23/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
08/24/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
08/25/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
08/26/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
08/27/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
08/28/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
08/29/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
08/30/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
08/31/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.36	0.36
09/01/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
09/02/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
09/03/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
09/04/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
09/05/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
09/06/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
09/07/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
09/08/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
09/09/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
09/10/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.19	0.19
09/11/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
09/12/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
09/13/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
09/14/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
09/15/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
09/16/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
09/17/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0	0
09/18/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.66	0.66
09/19/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
09/20/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.75	0.75
09/21/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
09/22/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
09/23/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
09/24/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.75	0.75
09/25/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
09/26/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
09/27/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
09/28/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
09/29/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.86	0.86
09/30/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
10/01/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.83	0.83
10/02/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.14	1.14
10/03/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.86	0.86
10/04/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
10/05/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.87	0.87
10/06/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.85	0.85
10/07/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
10/08/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.84	0.84
10/09/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.83	0.83
10/10/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
10/11/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
10/12/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
10/13/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
10/14/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
10/15/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.88	0.88
10/16/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.76	0.76
10/17/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
10/18/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
10/19/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
10/20/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
10/21/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
10/22/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
10/23/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
10/24/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.76	0.76
10/25/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
10/26/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
10/27/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.83	0.83
10/28/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
10/29/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
10/30/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
10/31/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.76	0.76
11/01/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
11/02/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
11/03/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
11/04/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.83	0.83
11/05/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
11/06/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.74	0.74
11/07/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.76	0.76
11/08/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
11/09/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
11/10/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
11/11/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
11/12/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
11/13/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
11/14/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
11/15/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.73	0.73
11/16/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.74	0.74
11/17/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.76	0.76
11/18/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.74	0.74
11/19/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.77	0.77
11/20/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
11/21/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.97	0.97
11/22/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.1	1.1
11/23/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.18	1.18
11/24/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.87	0.87
11/25/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.95	0.95
11/26/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
11/27/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.93	0.93
11/28/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.98	0.98
11/29/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.57	1.57
11/30/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.01	1.01
12/01/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.23	1.23
12/02/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.99	0.99
12/03/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.89	0.89
12/04/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.86	0.86
12/05/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.92	0.92
12/06/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.88	0.88
12/07/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.85	0.85
12/08/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.79	0.79
12/09/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.93	0.93
12/10/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.8	0.8
12/11/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.83	0.83
12/12/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.81	0.81
12/13/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.82	0.82
12/14/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.85	0.85
12/15/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.99	0.99
12/16/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.89	1.89
12/17/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.54	1.54
12/18/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.15	1.15
12/19/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.03	1.03
12/20/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.94	0.94
12/21/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.13	1.13
12/22/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.95	0.95
12/23/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.87	0.87
12/24/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.04	1.04
12/25/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	1.03	1.03
12/26/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.95	0.95
12/27/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.95	0.95
12/28/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.9	0.9
12/29/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.84	0.84
12/30/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.85	0.85
12/31/18	Effluent	effluent flow rate (to basalt)	Unknown	mgd	0.78	0.78
01/01/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
01/02/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/03/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/04/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/05/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/06/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/07/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/08/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/09/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/10/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/11/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/12/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/13/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/14/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/15/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/16/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/17/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/18/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/19/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/20/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/21/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/22/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/23/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/24/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/25/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/26/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/27/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/28/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/29/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/30/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/31/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/01/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/02/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/03/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/04/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/05/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/06/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/07/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/08/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/09/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/10/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/11/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/12/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/13/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/14/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/15/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/16/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/17/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/18/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/19/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/20/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/21/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/22/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/23/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/24/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
02/25/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/26/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/27/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
02/28/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/01/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/02/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/03/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/04/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/05/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/06/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/07/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/08/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/09/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/10/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/11/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/12/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/13/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/14/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/15/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/16/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/17/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/18/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/19/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/20/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/21/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/22/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/23/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/24/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/25/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/26/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/27/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/28/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/29/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/30/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
03/31/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/01/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/02/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/03/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/04/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/05/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/06/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/07/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/08/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/09/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/10/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/11/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/12/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/13/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/14/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/15/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/16/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/17/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/18/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/19/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
04/20/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/21/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/22/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/23/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/24/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/25/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/26/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/27/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/28/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/29/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
04/30/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/01/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/02/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/03/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/04/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/05/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/06/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/07/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/08/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/09/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/10/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/11/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/12/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/13/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/14/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/15/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/16/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/17/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/18/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/19/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/20/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/21/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/22/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
05/23/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.61	0.61
05/24/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.78	0.78
05/25/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.8	0.8
05/26/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.73	0.73
05/27/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.82	0.82
05/28/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.83	0.83
05/29/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.83	0.83
05/30/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.81	0.81
05/31/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.8	0.8
06/01/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.78	0.78
06/02/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.8	0.8
06/03/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.8	0.8
06/04/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.77	0.77
06/05/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.8	0.8
06/06/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.82	0.82
06/07/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.85	0.85
06/08/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.76	0.76
06/09/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.81	0.81
06/10/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.78	0.78
06/11/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.82	0.82
06/12/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.82	0.82

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
06/13/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.84	0.84
06/14/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.79	0.79
06/15/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.77	0.77
06/16/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.77	0.77
06/17/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.75	0.75
06/18/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.77	0.77
06/19/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.79	0.79
06/20/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.78	0.78
06/21/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.78	0.78
06/22/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.78	0.78
06/23/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.78	0.78
06/24/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.87	0.87
06/25/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.74	0.74
06/26/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.74	0.74
06/27/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.77	0.77
06/28/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.92	0.92
06/29/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.66	0.66
06/30/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.84	0.84
07/01/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.78	0.78
07/02/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.76	0.76
07/03/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.48	0.48
07/04/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/05/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/06/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/07/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/08/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/09/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/10/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/11/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/12/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/13/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/14/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/15/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/16/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/17/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/18/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/19/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/20/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/21/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/22/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
07/23/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.83	0.83
07/24/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.64	0.64
07/25/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.78	0.78
07/26/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.77	0.77
07/27/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.79	0.79
07/28/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.77	0.77
07/29/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.77	0.77
07/30/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.78	0.78
07/31/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.78	0.78
08/01/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.39	0.39
08/02/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/03/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/04/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/05/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
08/06/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/07/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/08/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/09/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/10/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/11/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/12/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/13/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/14/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/15/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/16/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/17/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/18/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/19/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
08/20/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.71	0.71
08/21/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.83	0.83
08/22/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.79	0.79
08/23/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.85	0.85
08/24/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.77	0.77
08/25/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.81	0.81
08/26/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.83	0.83
08/27/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.79	0.79
08/28/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.77	0.77
08/29/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.77	0.77
08/30/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.78	0.78
08/31/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.43	0.43
09/01/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/02/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/03/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/04/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/05/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/06/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/07/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/08/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/09/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/10/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.56	0.56
09/11/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.76	0.76
09/12/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.78	0.78
09/13/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.76	0.76
09/14/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.8	0.8
09/15/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.8	0.8
09/16/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.82	0.82
09/17/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.79	0.79
09/18/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0.13	0.13
09/19/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/20/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/21/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/22/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/23/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/24/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/25/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/26/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/27/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/28/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
09/29/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
09/30/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/01/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/02/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/03/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/04/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/05/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/06/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/07/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/08/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/09/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/10/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/11/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/12/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/13/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/14/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/15/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/16/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/17/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/18/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/19/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/20/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/21/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/22/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/23/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/24/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/25/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/26/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/27/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/28/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/29/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/30/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
10/31/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/01/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/02/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/03/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/04/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/05/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/06/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/07/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/08/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/09/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/10/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/11/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/12/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/13/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/14/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/15/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/16/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/17/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/18/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/19/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/20/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/21/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
11/22/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/23/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/24/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/25/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/26/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/27/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/28/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/29/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
11/30/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/01/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/02/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/03/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/04/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/05/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/06/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/07/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/08/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/09/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/10/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/11/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/12/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/13/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/14/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/15/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/16/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/17/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/18/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/19/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/20/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/21/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/22/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/23/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/24/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/25/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/26/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/27/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/28/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/29/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/30/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
12/31/18	Effluent	effluent flow rate (to reclaim)	Unknown	mgd	0	0
01/01/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
01/02/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
01/03/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
01/04/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
01/05/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
01/06/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
01/07/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
01/08/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
01/09/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
01/10/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
01/11/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
01/12/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
01/13/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
01/14/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
01/15/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
01/16/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
01/17/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
01/18/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
01/19/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
01/20/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
01/21/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
01/22/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
01/23/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
01/24/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
01/25/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
01/26/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
01/27/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
01/28/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
01/29/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
01/30/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
01/31/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
02/01/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
02/02/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
02/03/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
02/04/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
02/05/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
02/06/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
02/07/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
02/08/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
02/09/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
02/10/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
02/11/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
02/12/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
02/13/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
02/14/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
02/15/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
02/16/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
02/17/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
02/18/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
02/19/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
02/20/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
02/21/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
02/22/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
02/23/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
02/24/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
02/25/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
02/26/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
02/27/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
02/28/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
03/01/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
03/02/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
03/03/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
03/04/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
03/05/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
03/06/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
03/07/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
03/08/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
03/09/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
03/10/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
03/11/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
03/12/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
03/13/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
03/14/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
03/15/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
03/16/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
03/17/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
03/18/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
03/19/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
03/20/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
03/21/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
03/22/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
03/23/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
03/24/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
03/25/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
03/26/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
03/27/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
03/28/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
03/29/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
03/30/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
03/31/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
04/01/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
04/02/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
04/03/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
04/04/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
04/05/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
04/06/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
04/07/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
04/08/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
04/09/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
04/10/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
04/11/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
04/12/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
04/13/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
04/14/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
04/15/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
04/16/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
04/17/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
04/18/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
04/19/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
04/20/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
04/21/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
04/22/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
04/23/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
04/24/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
04/25/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
04/26/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
04/27/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
04/28/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
04/29/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
04/30/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
05/01/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
05/02/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
05/03/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
05/04/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
05/05/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
05/06/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
05/07/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
05/08/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
05/09/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
05/10/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
05/11/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
05/12/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
05/13/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
05/14/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
05/15/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
05/16/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
05/17/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
05/18/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
05/19/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
05/20/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
05/21/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
05/22/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
05/23/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
05/24/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
05/25/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
05/26/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
05/27/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
05/28/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
05/29/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
05/30/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
05/31/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
06/01/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
06/02/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
06/03/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
06/04/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
06/05/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
06/06/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
06/07/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
06/08/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
06/09/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
06/10/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
06/11/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
06/12/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
06/13/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
06/14/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
06/15/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
06/16/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
06/17/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
06/18/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
06/19/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
06/20/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
06/21/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
06/22/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
06/23/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
06/24/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
06/25/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
06/26/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
06/27/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
06/28/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
06/29/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
06/30/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
07/01/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
07/02/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
07/03/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
07/04/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
07/05/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
07/06/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
07/07/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
07/08/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
07/09/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
07/10/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
07/11/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
07/12/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
07/13/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
07/14/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
07/15/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
07/16/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
07/17/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
07/18/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
07/19/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
07/20/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
07/21/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
07/22/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
07/23/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
07/24/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
07/25/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
07/26/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
07/27/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
07/28/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
07/29/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
07/30/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
07/31/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
08/01/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
08/02/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
08/03/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
08/04/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
08/05/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
08/06/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
08/07/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
08/08/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
08/09/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
08/10/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
08/11/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
08/12/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
08/13/18	Effluent	max. daily turbidity	Unknown	ntu	0.18	0.18
08/14/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
08/15/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
08/16/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
08/17/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
08/18/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
08/19/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
08/20/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
08/21/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
08/22/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
08/23/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
08/24/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
08/25/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
08/26/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
08/27/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
08/28/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
08/29/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
08/30/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
08/31/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
09/01/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
09/02/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
09/03/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
09/04/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
09/05/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
09/06/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
09/07/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
09/08/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
09/09/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
09/10/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
09/11/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
09/12/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
09/13/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
09/14/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
09/15/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
09/16/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
09/17/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
09/18/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
09/19/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
09/20/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
09/21/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
09/22/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
09/23/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
09/24/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
09/25/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
09/26/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
09/27/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
09/28/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
09/29/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
09/30/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
10/01/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
10/02/18	Effluent	max. daily turbidity	Unknown	ntu	0.2	0.2
10/03/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
10/04/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
10/05/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
10/06/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
10/07/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
10/08/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
10/09/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
10/10/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
10/11/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
10/12/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
10/13/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
10/14/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
10/15/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
10/16/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
10/17/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
10/18/18	Effluent	max. daily turbidity	Unknown	ntu	0.2	0.2
10/19/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
10/20/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
10/21/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
10/22/18	Effluent	max. daily turbidity	Unknown	ntu	0.2	0.2
10/23/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
10/24/18	Effluent	max. daily turbidity	Unknown	ntu	0.16	0.16
10/25/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
10/26/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
10/27/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
10/28/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
10/29/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
10/30/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
10/31/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
11/01/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
11/02/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
11/03/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
11/04/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
11/05/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
11/06/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
11/07/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
11/08/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
11/09/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
11/10/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
11/11/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
11/12/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
11/13/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
11/14/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
11/15/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
11/16/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
11/17/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
11/18/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
11/19/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
11/20/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
11/21/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
11/22/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
11/23/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
11/24/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
11/25/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
11/26/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
11/27/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
11/28/18	Effluent	max. daily turbidity	Unknown	ntu	0.15	0.15
11/29/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
11/30/18	Effluent	max. daily turbidity	Unknown	ntu	0.08	0.08
12/01/18	Effluent	max. daily turbidity	Unknown	ntu	0.08	0.08
12/02/18	Effluent	max. daily turbidity	Unknown	ntu	0.08	0.08
12/03/18	Effluent	max. daily turbidity	Unknown	ntu	0.09	0.09
12/04/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
12/05/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
12/06/18	Effluent	max. daily turbidity	Unknown	ntu	0.09	0.09
12/07/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
12/08/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
12/09/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
12/10/18	Effluent	max. daily turbidity	Unknown	ntu	0.17	0.17
12/11/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
12/12/18	Effluent	max. daily turbidity	Unknown	ntu	0.19	0.19
12/13/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
12/14/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
12/15/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
12/16/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
12/17/18	Effluent	max. daily turbidity	Unknown	ntu	0.1	0.1
12/18/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
12/19/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
12/20/18	Effluent	max. daily turbidity	Unknown	ntu	0.13	0.13
12/21/18	Effluent	max. daily turbidity	Unknown	ntu	0.08	0.08
12/22/18	Effluent	max. daily turbidity	Unknown	ntu	0.08	0.08
12/23/18	Effluent	max. daily turbidity	Unknown	ntu	0.08	0.08
12/24/18	Effluent	max. daily turbidity	Unknown	ntu	0.09	0.09
12/25/18	Effluent	max. daily turbidity	Unknown	ntu	0.09	0.09
12/26/18	Effluent	max. daily turbidity	Unknown	ntu	0.09	0.09
12/27/18	Effluent	max. daily turbidity	Unknown	ntu	0.12	0.12
12/28/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
12/29/18	Effluent	max. daily turbidity	Unknown	ntu	0.14	0.14
12/30/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
12/31/18	Effluent	max. daily turbidity	Unknown	ntu	0.11	0.11
01/01/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.5	75.5
01/02/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.3	75.3
01/03/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.1	75.1
01/04/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	73.6	73.6
01/05/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.6	74.6
01/06/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.2	75.2
01/07/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.7	75.7
01/08/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76	76
01/09/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74	74
01/10/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.3	75.3
01/11/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.8	75.8
01/12/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.7	75.7
01/13/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.2	75.2
01/14/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.8	75.8
01/15/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75	75
01/16/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.5	74.5
01/17/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.1	75.1
01/18/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.8	75.8
01/19/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.9	74.9
01/20/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.5	75.5
01/21/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.7	76.7
01/22/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	77.1	77.1
01/23/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.8	76.8
01/24/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.9	76.9
01/25/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.5	76.5
01/26/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.6	76.6
01/27/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.4	76.4

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
01/28/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.8	76.8
01/29/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.3	76.3
01/30/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.3	75.3
01/31/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.5	75.5
02/01/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.7	75.7
02/02/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76	76
02/03/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.9	75.9
02/04/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.9	75.9
02/05/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.4	74.4
02/06/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.9	74.9
02/07/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.9	74.9
02/08/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.5	74.5
02/09/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.5	74.5
02/10/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.3	75.3
02/11/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76	76
02/12/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.1	76.1
02/13/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.5	74.5
02/14/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.6	74.6
02/15/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.3	74.3
02/16/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.7	74.7
02/17/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.1	75.1
02/18/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.1	76.1
02/19/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.1	76.1
02/20/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.2	76.2
02/21/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.5	75.5
02/22/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.2	76.2
02/23/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.7	75.7
02/24/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.5	75.5
02/25/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.5	75.5
02/26/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.9	74.9
02/27/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.7	74.7
02/28/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.2	74.2
03/01/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.5	75.5
03/02/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75	75
03/03/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.2	76.2
03/04/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.2	76.2
03/05/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.1	76.1
03/06/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.7	76.7
03/07/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.9	75.9
03/08/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.1	76.1
03/09/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.3	76.3
03/10/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.4	76.4
03/11/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.3	76.3
03/12/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.4	75.4
03/13/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.9	74.9
03/14/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.9	74.9
03/15/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.8	75.8
03/16/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.1	76.1
03/17/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.5	76.5
03/18/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.7	76.7
03/19/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75	75
03/20/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.8	74.8
03/21/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.8	75.8
03/22/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	74.9	74.9

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
03/23/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.1	76.1
03/24/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	77.4	77.4
03/25/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	77.9	77.9
03/26/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	77.5	77.5
03/27/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.5	76.5
03/28/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	77	77
03/29/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.3	76.3
03/30/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.5	76.5
03/31/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.8	76.8
04/01/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	77.2	77.2
04/02/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76	76
04/03/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.3	76.3
04/04/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.9	75.9
04/05/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.4	76.4
04/06/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.9	75.9
04/07/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	75.6	75.6
04/08/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.7	76.7
04/09/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.5	76.5
04/10/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.8	76.8
04/11/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	77.6	77.6
04/12/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	77.5	77.5
04/13/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	77.7	77.7
04/14/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	77.9	77.9
04/15/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	77.9	77.9
04/16/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.2	76.2
04/17/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	76.4	76.4
04/18/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	73.9	73.9
04/19/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	73.4	73.4
04/20/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.3	71.3
04/21/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.7	71.7
04/22/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.3	72.3
04/23/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.8	71.8
04/24/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.5	71.5
04/25/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.9	70.9
04/26/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.5	71.5
04/27/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.3	71.3
04/28/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.3	71.3
04/29/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.9	71.9
04/30/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.4	71.4
05/01/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.7	70.7
05/02/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.1	71.1
05/03/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71	71
05/04/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.6	69.6
05/05/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.2	69.2
05/06/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70	70
05/07/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.2	69.2
05/08/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69	69
05/09/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.4	69.4
05/10/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.8	68.8
05/11/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.2	68.2
05/12/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69	69
05/13/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.6	69.6
05/14/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.2	69.2
05/15/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.7	68.7

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
05/16/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.3	69.3
05/17/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.1	69.1
05/18/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.7	68.7
05/19/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.1	69.1
05/20/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.2	69.2
05/21/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.9	68.9
05/22/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.3	69.3
05/23/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.4	69.4
05/24/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	67.7	67.7
05/25/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	67.1	67.1
05/26/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.5	68.5
05/27/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	67.8	67.8
05/28/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.9	68.9
05/29/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.7	68.7
05/30/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.3	69.3
05/31/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.7	69.7
06/01/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.9	69.9
06/02/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.8	69.8
06/03/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70	70
06/04/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.5	68.5
06/05/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	66.5	66.5
06/06/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.5	72.5
06/07/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.9	70.9
06/08/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.1	71.1
06/09/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.7	71.7
06/10/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.3	71.3
06/11/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.1	72.1
06/12/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.1	72.1
06/13/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.8	71.8
06/14/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.8	71.8
06/15/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.9	71.9
06/16/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.5	71.5
06/17/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.9	71.9
06/18/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.3	71.3
06/19/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.8	70.8
06/20/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.4	71.4
06/21/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.3	71.3
06/22/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.5	71.5
06/23/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.6	71.6
06/24/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.4	72.4
06/25/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.2	72.2
06/26/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.7	71.7
06/27/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.7	71.7
06/28/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.6	69.6
06/29/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.9	68.9
06/30/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.1	68.1
07/01/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.1	70.1
07/02/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.9	70.9
07/03/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.4	69.4
07/04/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.5	69.5
07/05/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.2	71.2
07/06/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.1	72.1
07/07/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.9	72.9
07/08/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68	68

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
07/09/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.7	71.7
07/10/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.7	72.7
07/11/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.6	71.6
07/12/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.9	71.9
07/13/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.2	70.2
07/14/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71	71
07/15/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.7	71.7
07/16/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.2	71.2
07/17/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.5	71.5
07/18/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71	71
07/19/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.8	71.8
07/20/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.5	71.5
07/21/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.3	71.3
07/22/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.8	71.8
07/23/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.1	70.1
07/24/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.9	68.9
07/25/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.8	69.8
07/26/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.7	70.7
07/27/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.5	70.5
07/28/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.4	71.4
07/29/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.6	71.6
07/30/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70	70
07/31/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.3	70.3
08/01/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.9	69.9
08/02/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.7	70.7
08/03/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.9	70.9
08/04/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.4	71.4
08/05/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.2	71.2
08/06/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.9	70.9
08/07/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.3	70.3
08/08/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.5	70.5
08/09/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71	71
08/10/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.6	70.6
08/11/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.4	71.4
08/12/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.4	71.4
08/13/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.3	70.3
08/14/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.8	69.8
08/15/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.4	70.4
08/16/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.2	69.2
08/17/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.4	70.4
08/18/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.6	70.6
08/19/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.9	70.9
08/20/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.2	70.2
08/21/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.2	70.2
08/22/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.7	68.7
08/23/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.3	69.3
08/24/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.8	69.8
08/25/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.7	69.7
08/26/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.3	70.3
08/27/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.5	69.5
08/28/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70	70
08/29/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.8	69.8
08/30/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.3	70.3
08/31/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.6	69.6

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
09/01/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.4	70.4
09/02/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.9	70.9
09/03/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.8	69.8
09/04/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69	69
09/05/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.8	69.8
09/06/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70	70
09/07/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.6	70.6
09/08/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.5	70.5
09/09/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71	71
09/10/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.9	70.9
09/11/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.2	70.2
09/12/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.1	69.1
09/13/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.2	69.2
09/14/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.6	69.6
09/15/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.5	69.5
09/16/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.5	70.5
09/17/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.6	69.6
09/18/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.7	69.7
09/19/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71	71
09/20/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.7	71.7
09/21/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.6	71.6
09/22/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.2	71.2
09/23/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.7	71.7
09/24/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.4	70.4
09/25/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.5	70.5
09/26/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.6	69.6
09/27/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.5	69.5
09/28/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.5	69.5
09/29/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.9	68.9
09/30/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.2	68.2
10/01/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.2	68.2
10/02/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	66.2	66.2
10/03/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.4	68.4
10/04/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.2	69.2
10/05/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70	70
10/06/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.5	68.5
10/07/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.7	70.7
10/08/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.1	70.1
10/09/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.8	70.8
10/10/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.7	70.7
10/11/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.8	70.8
10/12/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.7	70.7
10/13/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.1	71.1
10/14/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.3	71.3
10/15/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.3	69.3
10/16/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.5	70.5
10/17/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.9	70.9
10/18/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71	71
10/19/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71	71
10/20/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.2	71.2
10/21/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.8	70.8
10/22/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.7	70.7
10/23/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.2	71.2
10/24/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.9	70.9

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
10/25/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.6	70.6
10/26/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.3	71.3
10/27/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.7	71.7
10/28/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72	72
10/29/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.3	72.3
10/30/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.8	72.8
10/31/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	73.3	73.3
11/01/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.5	72.5
11/02/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.3	71.3
11/03/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.3	72.3
11/04/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72	72
11/05/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.5	72.5
11/06/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.6	70.6
11/07/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.4	71.4
11/08/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.8	71.8
11/09/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.4	72.4
11/10/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.9	71.9
11/11/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.5	71.5
11/12/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.5	71.5
11/13/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.3	70.3
11/14/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.6	69.6
11/15/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.8	68.8
11/16/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.9	68.9
11/17/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.1	69.1
11/18/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.3	69.3
11/19/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.4	68.4
11/20/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.1	70.1
11/21/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.4	68.4
11/22/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	67.1	67.1
11/23/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.9	69.9
11/24/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.7	68.7
11/25/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.6	69.6
11/26/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.6	68.6
11/27/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.9	68.9
11/28/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.7	68.7
11/29/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.7	68.7
11/30/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.2	69.2
12/01/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.3	70.3
12/02/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.5	71.5
12/03/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.3	72.3
12/04/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	66.8	66.8
12/05/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	68.5	68.5
12/06/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.8	69.8
12/07/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71	71
12/08/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.6	69.6
12/09/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.8	71.8
12/10/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.2	71.2
12/11/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.9	70.9
12/12/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71	71
12/13/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.6	70.6
12/14/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.5	70.5
12/15/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.4	71.4
12/16/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72	72
12/17/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	69.7	69.7

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
12/18/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	70.1	70.1
12/19/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.3	71.3
12/20/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.3	71.3
12/21/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	71.1	71.1
12/22/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.3	72.3
12/23/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	73	73
12/24/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.6	72.6
12/25/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	73.5	73.5
12/26/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.5	72.5
12/27/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.5	72.5
12/28/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	73	73
12/29/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.1	72.1
12/30/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.4	72.4
12/31/18	Effluent	min. daily ultra-violet transmit.	Unknown	%	72.3	72.3
01/01/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
01/02/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.3	90.3
01/03/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89.2	89.2
01/04/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
01/05/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
01/06/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
01/07/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89.3	89.3
01/08/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
01/09/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
01/10/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
01/11/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.5	87.5
01/12/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85.2	85.2
01/13/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
01/14/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.8	86.8
01/15/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
01/16/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.9	87.9
01/17/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.2	86.2
01/18/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
01/19/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
01/20/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
01/21/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
01/22/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.5	86.5
01/23/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
01/24/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88.8	88.8
01/25/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
01/26/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
01/27/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.2	90.2
01/28/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
01/29/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.6	86.6
01/30/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.2	90.2
01/31/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
02/01/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88.1	88.1
02/02/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87	87
02/03/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
02/04/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
02/05/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
02/06/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
02/07/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88.4	88.4
02/08/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
02/09/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85.2	85.2

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
02/10/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.7	87.7
02/11/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
02/12/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.3	90.3
02/13/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
02/14/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
02/15/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
02/16/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
02/17/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
02/18/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
02/19/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
02/20/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88.7	88.7
02/21/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
02/22/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89.8	89.8
02/23/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
02/24/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
02/25/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
02/26/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89	89
02/27/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88.7	88.7
02/28/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/01/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/02/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/03/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
03/04/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.9	87.9
03/05/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/06/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
03/07/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/08/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/09/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/10/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.5	87.5
03/11/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/12/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89.5	89.5
03/13/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87	87
03/14/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/15/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.6	86.6
03/16/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/17/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/18/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.2	87.2
03/19/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/20/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/21/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/22/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/23/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/24/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/25/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/26/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/27/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.9	86.9
03/28/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85.9	85.9
03/29/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/30/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
03/31/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/01/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/02/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
04/03/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/04/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
04/05/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/06/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/07/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
04/08/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/09/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/10/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/11/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/12/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/13/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/14/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/15/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85.3	85.3
04/16/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/17/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89	89
04/18/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.2	87.2
04/19/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/20/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.3	87.3
04/21/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.2	86.2
04/22/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
04/23/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/24/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/25/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
04/26/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85.7	85.7
04/27/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/28/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
04/29/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
04/30/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/01/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/02/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
05/03/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/04/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/05/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/06/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/07/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/08/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88.4	88.4
05/09/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/10/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
05/11/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/12/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/13/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	84.5	84.5
05/14/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
05/15/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/16/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85.7	85.7
05/17/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.8	86.8
05/18/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
05/19/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
05/20/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/21/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/22/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.8	86.8
05/23/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/24/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/25/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85	85
05/26/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	84.7	84.7
05/27/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
05/28/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
05/29/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
05/30/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85.1	85.1
05/31/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
06/01/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.9	86.9
06/02/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
06/03/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85	85
06/04/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	84.7	84.7
06/05/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
06/06/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
06/07/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
06/08/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
06/09/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
06/10/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
06/11/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87	87
06/12/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
06/13/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
06/14/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
06/15/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
06/16/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88.9	88.9
06/17/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89.8	89.8
06/18/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
06/19/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
06/20/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	83.5	83.5
06/21/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88.4	88.4
06/22/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
06/23/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.1	86.1
06/24/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
06/25/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.3	86.3
06/26/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
06/27/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
06/28/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
06/29/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	84	84
06/30/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	84	84
07/01/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	84.7	84.7
07/02/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
07/03/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
07/04/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89.1	89.1
07/05/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88.5	88.5
07/06/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
07/07/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.7	87.7
07/08/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85	85
07/09/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
07/10/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
07/11/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	84.5	84.5
07/12/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
07/13/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
07/14/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
07/15/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
07/16/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
07/17/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
07/18/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89.5	89.5
07/19/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
07/20/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
07/21/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
07/22/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88.4	88.4
07/23/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
07/24/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.9	86.9
07/25/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
07/26/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.3	86.3
07/27/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
07/28/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
07/29/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89.3	89.3
07/30/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
07/31/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/01/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/02/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/03/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88.1	88.1
08/04/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/05/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/06/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88	88
08/07/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89.2	89.2
08/08/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/09/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.9	87.9
08/10/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	84.9	84.9
08/11/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.4	87.4
08/12/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/13/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87	87
08/14/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/15/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/16/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/17/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/18/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/19/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89	89
08/20/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/21/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/22/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/23/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.3	86.3
08/24/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85.9	85.9
08/25/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	83.7	83.7
08/26/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/27/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/28/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/29/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/30/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
08/31/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/01/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/02/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.1	86.1
09/03/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/04/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85.9	85.9
09/05/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
09/06/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.9	86.9
09/07/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
09/08/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/09/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/10/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85.9	85.9
09/11/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.9	86.9
09/12/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/13/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
09/14/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/15/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/16/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/17/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	84.9	84.9
09/18/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89	89
09/19/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/20/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.9	86.9
09/21/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/22/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/23/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/24/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.6	86.6
09/25/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/26/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/27/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.8	86.8
09/28/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/29/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
09/30/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/01/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/02/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/03/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/04/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/05/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/06/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/07/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/08/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/09/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.3	87.3
10/10/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.9	87.9
10/11/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/12/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/13/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/14/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88.4	88.4
10/15/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/16/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/17/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85.5	85.5
10/18/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/19/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/20/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89.2	89.2
10/21/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
10/22/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/23/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/24/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88.8	88.8
10/25/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/26/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
10/27/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
10/28/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.5	87.5
10/29/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89.9	89.9
10/30/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
10/31/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89.5	89.5
11/01/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.6	87.6
11/02/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
11/03/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85.2	85.2
11/04/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.1	87.1
11/05/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89.5	89.5
11/06/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
11/07/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85.5	85.5
11/08/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
11/09/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
11/10/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
11/11/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
11/12/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
11/13/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
11/14/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
11/15/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.6	86.6
11/16/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
11/17/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88.2	88.2
11/18/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
11/19/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
11/20/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
11/21/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	84.8	84.8
11/22/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.9	86.9
11/23/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89.8	89.8
11/24/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89	89
11/25/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	88.4	88.4
11/26/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	80.4	80.4
11/27/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
11/28/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.2	86.2
11/29/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.8	87.8
11/30/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/01/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/02/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/03/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.2	90.2
12/04/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/05/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/06/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/07/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/08/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/09/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	86.3	86.3
12/10/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	85.5	85.5
12/11/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/12/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/13/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/14/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/15/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
12/16/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/17/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/18/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/19/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/20/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/21/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/22/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
12/23/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/24/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/25/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/26/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1
12/27/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90	90
12/28/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89.5	89.5
12/29/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	89	89
12/30/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	90.1	90.1

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
12/31/18	Effluent	minimum operational ultraviolet dose	Unknown	mj/cm2	87.1	87.1
01/24/18	Effluent	nitrate nitrogen total (as n) grab	Unknown	mg/L	1.5	1.5
02/21/18	Effluent	nitrate nitrogen total (as n) grab	Unknown	mg/L	1.5	1.5
03/14/18	Effluent	nitrate nitrogen total (as n) grab	Unknown	mg/L	1.9	1.9
04/19/18	Effluent	nitrate nitrogen total (as n) grab	Unknown	mg/L	2.3	2.3
05/23/18	Effluent	nitrate nitrogen total (as n) grab	Unknown	mg/L	3.5	3.5
06/14/18	Effluent	nitrate nitrogen total (as n) grab	Unknown	mg/L	3.6	3.6
07/18/18	Effluent	nitrate nitrogen total (as n) grab	Unknown	mg/L	2.8	2.8
08/09/18	Effluent	nitrate nitrogen total (as n) grab	Unknown	mg/L	3.1	3.1
09/06/18	Effluent	nitrate nitrogen total (as n) grab	Unknown	mg/L	5.2	5.2
10/04/18	Effluent	nitrate nitrogen total (as n) grab	Unknown	mg/L	2.1	2.1
11/14/18	Effluent	nitrate nitrogen total (as n) grab	Unknown	mg/L	2.9	2.9
12/12/18	Effluent	nitrate nitrogen total (as n) grab	Unknown	mg/L	2	2
01/04/18	Effluent	ph grab	Unknown	s.u.	7.04	7.04
01/11/18	Effluent	ph grab	Unknown	s.u.	6.99	6.99
01/18/18	Effluent	ph grab	Unknown	s.u.	6.99	6.99
01/24/18	Effluent	ph grab	Unknown	s.u.	7.09	7.09
02/01/18	Effluent	ph grab	Unknown	s.u.	6.98	6.98
02/07/18	Effluent	ph grab	Unknown	s.u.	6.97	6.97
02/15/18	Effluent	ph grab	Unknown	s.u.	6.99	6.99
02/21/18	Effluent	ph grab	Unknown	s.u.	6.98	6.98
03/01/18	Effluent	ph grab	Unknown	s.u.	7.37	7.37
03/08/18	Effluent	ph grab	Unknown	s.u.	7.03	7.03
03/14/18	Effluent	ph grab	Unknown	s.u.	7.06	7.06
03/23/18	Effluent	ph grab	Unknown	s.u.	7.09	7.09
03/29/18	Effluent	ph grab	Unknown	s.u.	6.97	6.97
04/05/18	Effluent	ph grab	Unknown	s.u.	6.96	6.96
04/12/18	Effluent	ph grab	Unknown	s.u.	7.09	7.09
04/19/18	Effluent	ph grab	Unknown	s.u.	7.1	7.1
04/26/18	Effluent	ph grab	Unknown	s.u.	7.14	7.14
05/03/18	Effluent	ph grab	Unknown	s.u.	7.03	7.03
05/10/18	Effluent	ph grab	Unknown	s.u.	6.99	6.99
05/17/18	Effluent	ph grab	Unknown	s.u.	7.1	7.1
05/23/18	Effluent	ph grab	Unknown	s.u.	7.21	7.21
05/31/18	Effluent	ph grab	Unknown	s.u.	7.04	7.04
06/07/18	Effluent	ph grab	Unknown	s.u.	7.05	7.05
06/14/18	Effluent	ph grab	Unknown	s.u.	7.13	7.13
06/21/18	Effluent	ph grab	Unknown	s.u.	7.03	7.03
06/28/18	Effluent	ph grab	Unknown	s.u.	7.21	7.21
07/05/18	Effluent	ph grab	Unknown	s.u.	7.5	7.5
07/11/18	Effluent	ph grab	Unknown	s.u.	7.06	7.06
07/18/18	Effluent	ph grab	Unknown	s.u.	7.07	7.07
07/26/18	Effluent	ph grab	Unknown	s.u.	7.18	7.18
08/02/18	Effluent	ph grab	Unknown	s.u.	6.94	6.94
08/09/18	Effluent	ph grab	Unknown	s.u.	7.34	7.34
08/16/18	Effluent	ph grab	Unknown	s.u.	7.16	7.16
08/23/18	Effluent	ph grab	Unknown	s.u.	7.25	7.25
08/30/18	Effluent	ph grab	Unknown	s.u.	7.29	7.29
09/06/18	Effluent	ph grab	Unknown	s.u.	7.42	7.42
09/13/18	Effluent	ph grab	Unknown	s.u.	7.23	7.23
09/20/18	Effluent	ph grab	Unknown	s.u.	7.3	7.3
09/26/18	Effluent	ph grab	Unknown	s.u.	7.32	7.32
10/04/18	Effluent	ph grab	Unknown	s.u.	7.33	7.33
10/11/18	Effluent	ph grab	Unknown	s.u.	7.26	7.26

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
10/18/18	Effluent	ph grab	Unknown	s.u.	7.27	7.27
10/25/18	Effluent	ph grab	Unknown	s.u.	7.31	7.31
11/08/18	Effluent	ph grab	Unknown	s.u.	7.2	7.2
11/14/18	Effluent	ph grab	Unknown	s.u.	7.2	7.2
11/21/18	Effluent	ph grab	Unknown	s.u.	7.29	7.29
11/30/18	Effluent	ph grab	Unknown	s.u.	6.98	6.98
12/06/18	Effluent	ph grab	Unknown	s.u.	7.17	7.17
12/12/18	Effluent	ph grab	Unknown	s.u.	7.04	7.04
12/18/18	Effluent	ph grab	Unknown	s.u.	7.11	7.11
12/28/18	Effluent	ph grab	Unknown	s.u.	7.07	7.07
01/24/18	Effluent	phosphorous total (as p) grab	Unknown	mg/L	2.3	2.3
02/21/18	Effluent	phosphorous total (as p) grab	Unknown	mg/L	5.6	5.6
03/14/18	Effluent	phosphorous total (as p) grab	Unknown	mg/L	4.9	4.9
04/19/18	Effluent	phosphorous total (as p) grab	Unknown	mg/L	3.8	3.8
05/23/18	Effluent	phosphorous total (as p) grab	Unknown	mg/L	4	4
06/14/18	Effluent	phosphorous total (as p) grab	Unknown	mg/L	6.2	6.2
07/18/18	Effluent	phosphorous total (as p) grab	Unknown	mg/L	3.5	3.5
08/09/18	Effluent	phosphorous total (as p) grab	Unknown	mg/L	6.7	6.7
09/06/18	Effluent	phosphorous total (as p) grab	Unknown	mg/L	5	5
10/04/18	Effluent	phosphorous total (as p) grab	Unknown	mg/L	0.5	0.5
11/14/18	Effluent	phosphorous total (as p) grab	Unknown	mg/L	8.2	8.2
12/12/18	Effluent	phosphorous total (as p) grab	Unknown	mg/L	5.7	5.7
01/04/18	Effluent	temp. grab	Unknown	deg c	19.8	19.8
01/11/18	Effluent	temp. grab	Unknown	deg c	17.6	17.6
01/18/18	Effluent	temp. grab	Unknown	deg c	19.5	19.5
01/24/18	Effluent	temp. grab	Unknown	deg c	18.2	18.2
02/01/18	Effluent	temp. grab	Unknown	deg c	18.9	18.9
02/07/18	Effluent	temp. grab	Unknown	deg c	19.7	19.7
02/15/18	Effluent	temp. grab	Unknown	deg c	19.1	19.1
02/21/18	Effluent	temp. grab	Unknown	deg c	18.8	18.8
03/01/18	Effluent	temp. grab	Unknown	deg c	18.5	18.5
03/08/18	Effluent	temp. grab	Unknown	deg c	18.5	18.5
03/14/18	Effluent	temp. grab	Unknown	deg c	18.8	18.8
03/23/18	Effluent	temp. grab	Unknown	deg c	16.4	16.4
03/29/18	Effluent	temp. grab	Unknown	deg c	19.6	19.6
04/05/18	Effluent	temp. grab	Unknown	deg c	20.3	20.3
04/12/18	Effluent	temp. grab	Unknown	deg c	19.7	19.7
04/19/18	Effluent	temp. grab	Unknown	deg c	19.1	19.1
04/26/18	Effluent	temp. grab	Unknown	deg c	21.2	21.2
05/03/18	Effluent	temp. grab	Unknown	deg c	21.4	21.4
05/10/18	Effluent	temp. grab	Unknown	deg c	22.4	22.4
05/17/18	Effluent	temp. grab	Unknown	deg c	23.3	23.3
05/23/18	Effluent	temp. grab	Unknown	deg c	23.2	23.2
05/31/18	Effluent	temp. grab	Unknown	deg c	23.5	23.5
06/07/18	Effluent	temp. grab	Unknown	deg c	24	24
06/14/18	Effluent	temp. grab	Unknown	deg c	24.9	24.9
06/21/18	Effluent	temp. grab	Unknown	deg c	24.9	24.9
06/28/18	Effluent	temp. grab	Unknown	deg c	25.3	25.3
07/05/18	Effluent	temp. grab	Unknown	deg c	25.3	25.3
07/11/18	Effluent	temp. grab	Unknown	deg c	26.1	26.1
07/18/18	Effluent	temp. grab	Unknown	deg c	26.2	26.2
07/26/18	Effluent	temp. grab	Unknown	deg c	26.2	26.2
08/02/18	Effluent	temp. grab	Unknown	deg c	26.4	26.4
08/09/18	Effluent	temp. grab	Unknown	deg c	26.3	26.3

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
08/16/18	Effluent	temp. grab	Unknown	deg c	26.5	26.5
08/23/18	Effluent	temp. grab	Unknown	deg c	26.4	26.4
08/30/18	Effluent	temp. grab	Unknown	deg c	25.7	25.7
09/06/18	Effluent	temp. grab	Unknown	deg c	25.4	25.4
09/13/18	Effluent	temp. grab	Unknown	deg c	25.7	25.7
09/20/18	Effluent	temp. grab	Unknown	deg c	25.9	25.9
09/26/18	Effluent	temp. grab	Unknown	deg c	25.7	25.7
10/04/18	Effluent	temp. grab	Unknown	deg c	26.4	26.4
10/11/18	Effluent	temp. grab	Unknown	deg c	25.5	25.5
10/18/18	Effluent	temp. grab	Unknown	deg c	24.8	24.8
10/25/18	Effluent	temp. grab	Unknown	deg c	24.6	24.6
11/08/18	Effluent	temp. grab	Unknown	deg c	23	23
11/14/18	Effluent	temp. grab	Unknown	deg c	21.3	21.3
11/21/18	Effluent	temp. grab	Unknown	deg c	21.2	21.2
11/30/18	Effluent	temp. grab	Unknown	deg c	20.1	20.1
12/06/18	Effluent	temp. grab	Unknown	deg c	19.8	19.8
12/12/18	Effluent	temp. grab	Unknown	deg c	19.7	19.7
12/18/18	Effluent	temp. grab	Unknown	deg c	19.3	19.3
12/28/18	Effluent	temp. grab	Unknown	deg c	18.6	18.6
01/01/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/02/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/03/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/04/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/05/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/06/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/07/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/08/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/09/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/10/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/11/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/12/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/13/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/14/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/15/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/16/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/17/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/18/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/19/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/20/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/21/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/22/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/23/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/24/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/25/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/26/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/27/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/28/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/29/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/30/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/31/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/01/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/02/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/03/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/04/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
02/05/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/06/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/07/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/08/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/09/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/10/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/11/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/12/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/13/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/14/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/15/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/16/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/17/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/18/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/19/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/20/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/21/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/22/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/23/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/24/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/25/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/26/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/27/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
02/28/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/01/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/02/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/03/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/04/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/05/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/06/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/07/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/08/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/09/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/10/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/11/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/12/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/13/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/14/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/15/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/16/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/17/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/18/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/19/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/20/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/21/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/22/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/23/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/24/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/25/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/26/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/27/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/28/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/29/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
03/30/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
03/31/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/01/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/02/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/03/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/04/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/05/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/06/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/07/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/08/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/09/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/10/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/11/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/12/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/13/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/14/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/15/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/16/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/17/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/18/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/19/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/20/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/21/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/22/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/23/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/24/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/25/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/26/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/27/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/28/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/29/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
04/30/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/01/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/02/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/03/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/04/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/05/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/06/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/07/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/08/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/09/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/10/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/11/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/12/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/13/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/14/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/15/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/16/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/17/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/18/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/19/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/20/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/21/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/22/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/23/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
05/24/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/25/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/26/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/27/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/28/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/29/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/30/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
05/31/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/01/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/02/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/03/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/04/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/05/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/06/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/07/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/08/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/09/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/10/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/11/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/12/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/13/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/14/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/15/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/16/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	2	2
06/17/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/18/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/19/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/20/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/21/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/22/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/23/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/24/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/25/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/26/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/27/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/28/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/29/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
06/30/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/01/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/02/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/03/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/04/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/05/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/06/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/09/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/16/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/24/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/25/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/26/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/27/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/28/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/29/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/30/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
07/31/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
08/01/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
08/06/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
08/13/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
08/20/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
08/21/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
08/22/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
08/23/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
08/24/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
08/25/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
08/26/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
08/27/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
08/28/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
08/29/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
08/30/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
08/31/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
09/04/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
09/10/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
09/11/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
09/12/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
09/13/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
09/14/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
09/15/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
09/16/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
09/17/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
09/18/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
09/24/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
10/01/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
10/09/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
10/15/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
10/22/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
10/29/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
11/07/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
11/15/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
11/21/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
11/29/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
12/05/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
12/12/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
12/19/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
12/29/18	Effluent	total coliform 7 day moving median 2.2	Unknown	mpn/100ml	<2	<2
01/01/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/02/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/03/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/04/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/05/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/06/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/07/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/08/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/09/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/10/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/11/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/12/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/13/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/14/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/15/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
01/16/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/17/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/18/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/19/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/20/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/21/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/22/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/23/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/24/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/25/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/26/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/27/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/28/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/29/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/30/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/31/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/01/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/02/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/03/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/04/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/05/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/06/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/07/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/08/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/09/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/10/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/11/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/12/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/13/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/14/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/15/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/16/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/17/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/18/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/19/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/20/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/21/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/22/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/23/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/24/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/25/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/26/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/27/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
02/28/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/01/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/02/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/03/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/04/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/05/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/06/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/07/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/08/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/09/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/10/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
03/11/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/12/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/13/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/14/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/15/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/16/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/17/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/18/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/19/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/20/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/21/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/22/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/23/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/24/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/25/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/26/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/27/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/28/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/29/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/30/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
03/31/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/01/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/02/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/03/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/04/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/05/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/06/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/07/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/08/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/09/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/10/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/11/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/12/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/13/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/14/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/15/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/16/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/17/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/18/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/19/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/20/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/21/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/22/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/23/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/24/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/25/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/26/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/27/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/28/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/29/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
04/30/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/01/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/02/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/03/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
05/04/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/05/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/06/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/07/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/08/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/09/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/10/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/11/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/12/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/13/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/14/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/15/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/16/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/17/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/18/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/19/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/20/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/21/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/22/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/23/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/24/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/25/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/26/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/27/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/28/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/29/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/30/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
05/31/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/01/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/02/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/03/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/04/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/05/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/06/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/07/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/08/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/09/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/10/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/11/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/12/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/13/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/14/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/15/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/16/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	2	2
06/17/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/18/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/19/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/20/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/21/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/22/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/23/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/24/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/25/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/26/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
06/27/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/28/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/29/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
06/30/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
07/01/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
07/02/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
07/03/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
07/04/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
07/05/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
07/06/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
07/09/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
07/16/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
07/24/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
07/25/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
07/26/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
07/27/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
07/28/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
07/29/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
07/30/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	13	13
07/31/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
08/01/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
08/06/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
08/13/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
08/20/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
08/21/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
08/22/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
08/23/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
08/24/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
08/25/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
08/26/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
08/27/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
08/28/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
08/29/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
08/30/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
08/31/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
09/04/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
09/10/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
09/11/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
09/12/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
09/13/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
09/14/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
09/15/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
09/16/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	2	2
09/17/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
09/18/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
09/24/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
10/01/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
10/09/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
10/15/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
10/22/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
10/29/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
11/07/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
11/15/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
11/21/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
11/29/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
12/05/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
12/12/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
12/19/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
12/29/18	Effluent	total coliform 30 day max. 23 total max.240 grab	Unknown	mpn/100ml	<2	<2
01/04/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
01/11/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
01/18/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
01/24/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
02/01/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
02/07/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
02/15/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
02/21/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
03/01/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
03/08/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
03/14/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
03/23/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
03/29/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
04/05/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
04/12/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
04/19/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
04/26/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
05/03/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
05/10/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
05/17/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
05/23/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
05/31/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
06/07/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
06/14/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
06/21/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
06/28/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
07/05/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
07/11/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
07/18/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
07/26/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
08/02/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
08/09/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
08/16/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
08/23/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
08/30/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
09/06/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
09/13/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
09/20/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
09/26/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
10/04/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
10/11/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
10/18/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
10/25/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
10/31/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
11/08/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
11/14/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
11/21/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
11/29/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
12/06/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
12/12/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
12/18/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
12/28/18	Effluent	tss 24-hr comp.	Unknown	mg/L	<0.3	<0.3
01/04/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
01/11/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
01/18/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
01/24/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
02/01/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
02/07/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
02/15/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
02/21/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
03/01/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
03/08/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
03/14/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
03/23/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
03/29/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
04/05/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
04/12/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
04/19/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
04/26/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
05/03/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
05/10/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
05/17/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
05/23/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
05/31/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
06/07/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
06/14/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
06/21/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
06/28/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
07/05/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
07/11/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
07/18/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
07/26/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
08/02/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
08/09/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
08/16/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
08/23/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
08/30/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
09/06/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
09/13/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
09/20/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
09/26/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
10/04/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
10/11/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
10/18/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
10/25/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
10/31/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
11/08/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
11/14/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
11/21/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
11/29/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
12/06/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
12/12/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
12/18/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
12/28/18	Effluent	tss calc value	Unknown	mg/L	0.15	0.15
01/06/18	Effluent	tss mass limit	Unknown	lb/day	175	175
01/13/18	Effluent	tss mass limit	Unknown	lb/day	195.6921429	195.6921429
01/20/18	Effluent	tss mass limit	Unknown	lb/day	175	175
01/27/18	Effluent	tss mass limit	Unknown	lb/day	194.0837143	194.0837143
02/03/18	Effluent	tss mass limit	Unknown	lb/day	175	175
02/10/18	Effluent	tss mass limit	Unknown	lb/day	175	175
02/17/18	Effluent	tss mass limit	Unknown	lb/day	175	175
02/24/18	Effluent	tss mass limit	Unknown	lb/day	175	175
03/03/18	Effluent	tss mass limit	Unknown	lb/day	175	175
03/10/18	Effluent	tss mass limit	Unknown	lb/day	175	175
03/17/18	Effluent	tss mass limit	Unknown	lb/day	175	175
03/24/18	Effluent	tss mass limit	Unknown	lb/day	179.2504286	179.2504286
03/31/18	Effluent	tss mass limit	Unknown	lb/day	175	175
04/07/18	Effluent	tss mass limit	Unknown	lb/day	175	175
04/14/18	Effluent	tss mass limit	Unknown	lb/day	175	175
04/21/18	Effluent	tss mass limit	Unknown	lb/day	175	175
04/28/18	Effluent	tss mass limit	Unknown	lb/day	175	175
05/05/18	Effluent	tss mass limit	Unknown	lb/day	175	175
05/12/18	Effluent	tss mass limit	Unknown	lb/day	175	175
05/19/18	Effluent	tss mass limit	Unknown	lb/day	175	175
05/26/18	Effluent	tss mass limit	Unknown	lb/day	175	175
06/02/18	Effluent	tss mass limit	Unknown	lb/day	175	175
06/09/18	Effluent	tss mass limit	Unknown	lb/day	175	175
06/16/18	Effluent	tss mass limit	Unknown	lb/day	175	175
06/23/18	Effluent	tss mass limit	Unknown	lb/day	175	175
06/30/18	Effluent	tss mass limit	Unknown	lb/day	175	175
07/07/18	Effluent	tss mass limit	Unknown	lb/day	175	175
07/14/18	Effluent	tss mass limit	Unknown	lb/day	175	175
07/21/18	Effluent	tss mass limit	Unknown	lb/day	175	175
07/28/18	Effluent	tss mass limit	Unknown	lb/day	175	175
08/04/18	Effluent	tss mass limit	Unknown	lb/day	175	175
08/11/18	Effluent	tss mass limit	Unknown	lb/day	175	175
08/18/18	Effluent	tss mass limit	Unknown	lb/day	175	175
08/25/18	Effluent	tss mass limit	Unknown	lb/day	175	175
09/01/18	Effluent	tss mass limit	Unknown	lb/day	175	175
09/08/18	Effluent	tss mass limit	Unknown	lb/day	175	175
09/15/18	Effluent	tss mass limit	Unknown	lb/day	175	175
09/22/18	Effluent	tss mass limit	Unknown	lb/day	175	175
09/29/18	Effluent	tss mass limit	Unknown	lb/day	175	175
10/06/18	Effluent	tss mass limit	Unknown	lb/day	175	175
10/13/18	Effluent	tss mass limit	Unknown	lb/day	175	175
10/20/18	Effluent	tss mass limit	Unknown	lb/day	175	175
10/27/18	Effluent	tss mass limit	Unknown	lb/day	175	175
11/03/18	Effluent	tss mass limit	Unknown	lb/day	175	175
11/10/18	Effluent	tss mass limit	Unknown	lb/day	175	175
11/17/18	Effluent	tss mass limit	Unknown	lb/day	175	175
11/24/18	Effluent	tss mass limit	Unknown	lb/day	175	175
12/01/18	Effluent	tss mass limit	Unknown	lb/day	175	175
12/08/18	Effluent	tss mass limit	Unknown	lb/day	175	175
12/15/18	Effluent	tss mass limit	Unknown	lb/day	175	175
12/22/18	Effluent	tss mass limit	Unknown	lb/day	175	175
12/29/18	Effluent	tss mass limit	Unknown	lb/day	175	175
01/06/18	Effluent	tss mass loading	Unknown	lb/day	0.98412	0.98412

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
01/13/18	Effluent	tss mass loading	Unknown	lb/day	1.706721429	1.706721429
01/20/18	Effluent	tss mass loading	Unknown	lb/day	1.183088571	1.183088571
01/27/18	Effluent	tss mass loading	Unknown	lb/day	2.173165714	2.173165714
02/03/18	Effluent	tss mass loading	Unknown	lb/day	2.058788571	2.058788571
02/10/18	Effluent	tss mass loading	Unknown	lb/day	1.40112	1.40112
02/17/18	Effluent	tss mass loading	Unknown	lb/day	1.03833	1.03833
02/24/18	Effluent	tss mass loading	Unknown	lb/day	0.934675714	0.934675714
03/03/18	Effluent	tss mass loading	Unknown	lb/day	1.34691	1.34691
03/10/18	Effluent	tss mass loading	Unknown	lb/day	1.168791429	1.168791429
03/17/18	Effluent	tss mass loading	Unknown	lb/day	1.41363	1.41363
03/24/18	Effluent	tss mass loading	Unknown	lb/day	1.817524286	1.817524286
03/31/18	Effluent	tss mass loading	Unknown	lb/day	1.336782857	1.336782857
04/07/18	Effluent	tss mass loading	Unknown	lb/day	1.458308571	1.458308571
04/14/18	Effluent	tss mass loading	Unknown	lb/day	1.515497143	1.515497143
04/21/18	Effluent	tss mass loading	Unknown	lb/day	1.236702857	1.236702857
04/28/18	Effluent	tss mass loading	Unknown	lb/day	1.127687143	1.127687143
05/05/18	Effluent	tss mass loading	Unknown	lb/day	1.049052857	1.049052857
05/12/18	Effluent	tss mass loading	Unknown	lb/day	1.002587143	1.002587143
05/19/18	Effluent	tss mass loading	Unknown	lb/day	0.972205714	0.972205714
05/26/18	Effluent	tss mass loading	Unknown	lb/day	0.87413625	0.87413625
06/02/18	Effluent	tss mass loading	Unknown	lb/day	1.01331	1.01331
06/09/18	Effluent	tss mass loading	Unknown	lb/day	1.002587143	1.002587143
06/16/18	Effluent	tss mass loading	Unknown	lb/day	0.999012857	0.999012857
06/23/18	Effluent	tss mass loading	Unknown	lb/day	0.970418571	0.970418571
06/30/18	Effluent	tss mass loading	Unknown	lb/day	0.990077143	0.990077143
07/07/18	Effluent	tss mass loading	Unknown	lb/day	0.8350425	0.8350425
07/14/18	Effluent	tss mass loading	Unknown	lb/day	0.95076	0.95076
07/21/18	Effluent	tss mass loading	Unknown	lb/day	0.981141429	0.981141429
07/28/18	Effluent	tss mass loading	Unknown	lb/day	0.88126	0.88126
08/04/18	Effluent	tss mass loading	Unknown	lb/day	0.85224375	0.85224375
08/11/18	Effluent	tss mass loading	Unknown	lb/day	0.979354286	0.979354286
08/18/18	Effluent	tss mass loading	Unknown	lb/day	0.999012857	0.999012857
08/25/18	Effluent	tss mass loading	Unknown	lb/day	0.89290125	0.89290125
09/01/18	Effluent	tss mass loading	Unknown	lb/day	0.8663175	0.8663175
09/08/18	Effluent	tss mass loading	Unknown	lb/day	0.981141429	0.981141429
09/15/18	Effluent	tss mass loading	Unknown	lb/day	0.85068	0.85068
09/22/18	Effluent	tss mass loading	Unknown	lb/day	0.86319	0.86319
09/29/18	Effluent	tss mass loading	Unknown	lb/day	0.995438571	0.995438571
10/06/18	Effluent	tss mass loading	Unknown	lb/day	1.106241429	1.106241429
10/13/18	Effluent	tss mass loading	Unknown	lb/day	1.015097143	1.015097143
10/20/18	Effluent	tss mass loading	Unknown	lb/day	1.011522857	1.011522857
10/27/18	Effluent	tss mass loading	Unknown	lb/day	0.997225714	0.997225714
11/03/18	Effluent	tss mass loading	Unknown	lb/day	0.98829	0.98829
11/10/18	Effluent	tss mass loading	Unknown	lb/day	0.97578	0.97578
11/17/18	Effluent	tss mass loading	Unknown	lb/day	0.96327	0.96327
11/24/18	Effluent	tss mass loading	Unknown	lb/day	1.15092	1.15092
12/01/18	Effluent	tss mass loading	Unknown	lb/day	1.336782857	1.336782857
12/08/18	Effluent	tss mass loading	Unknown	lb/day	1.104454286	1.104454286
12/15/18	Effluent	tss mass loading	Unknown	lb/day	1.077647143	1.077647143
12/22/18	Effluent	tss mass loading	Unknown	lb/day	1.542304286	1.542304286
12/29/18	Effluent	tss mass loading	Unknown	lb/day	1.17594	1.17594
01/01/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/02/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/03/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
01/04/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/05/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/06/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/07/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/08/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/09/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/10/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/11/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/12/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/13/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/14/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/15/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/16/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/17/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/18/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/19/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/20/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/21/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/22/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/23/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/24/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/25/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/26/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/27/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/28/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/29/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/30/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/31/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/01/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/02/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/03/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/04/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/05/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/06/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/07/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/08/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/09/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/10/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/11/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/12/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/13/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/14/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/15/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/16/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/17/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/18/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/19/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/20/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/21/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/22/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/23/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/24/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/25/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/26/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
02/27/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
02/28/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/01/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/02/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/03/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/04/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/05/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/06/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/07/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/08/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/09/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/10/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/11/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/12/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/13/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/14/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/15/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/16/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/17/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/18/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/19/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/20/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/21/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/22/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/23/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/24/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/25/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/26/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/27/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/28/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/29/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/30/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
03/31/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/01/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/02/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/03/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/04/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/05/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/06/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/07/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/08/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/09/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/10/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/11/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/12/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/13/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/14/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/15/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/16/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/17/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/18/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/19/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/20/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/21/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
04/22/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/23/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/24/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/25/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/26/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/27/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/28/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/29/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
04/30/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/01/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/02/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/03/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/04/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/05/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/06/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/07/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/08/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/09/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/10/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/11/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/12/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/13/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/14/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/15/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/16/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/17/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/18/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/19/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/20/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/21/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/22/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/23/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/24/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/25/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/26/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/27/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/28/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/29/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/30/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
05/31/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/01/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/02/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/03/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/04/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/05/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/06/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/07/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/08/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/09/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/10/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/11/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/12/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/13/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/14/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
06/15/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/16/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/17/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/18/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/19/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/20/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/21/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/22/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/23/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/24/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/25/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/26/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/27/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/28/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/29/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
06/30/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/01/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/02/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/03/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/04/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/05/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/06/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/09/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/16/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/24/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/25/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/26/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/27/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/28/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/29/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/30/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
07/31/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
08/01/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
08/06/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
08/13/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
08/20/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
08/21/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
08/22/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
08/23/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
08/24/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
08/25/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
08/26/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
08/27/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
08/28/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
08/29/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
08/30/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
08/31/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
09/04/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
09/10/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
09/11/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
09/12/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
09/13/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
09/14/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
09/15/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
09/16/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
09/17/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
09/18/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
09/24/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
10/01/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
10/09/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
10/15/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
10/22/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
10/29/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
11/05/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
11/13/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
11/19/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
11/27/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
12/03/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
12/10/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
12/17/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
12/27/18	Effluent	visual observation	Unknown	monthly/daily	yes	yes
01/24/18	reclamation	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
02/21/18	reclamation	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
03/14/18	reclamation	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
04/19/18	reclamation	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
05/23/18	reclamation	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
06/14/18	reclamation	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
07/18/18	reclamation	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
08/09/18	reclamation	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
09/06/18	reclamation	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
10/04/18	reclamation	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
11/14/18	reclamation	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
12/12/18	reclamation	ammonia nitrogen total (as n) grab	Unknown	mg/L	<0.1	<0.1
01/24/18	reclamation	boron grab	Unknown	mg/L	0.42	0.42
02/21/18	reclamation	boron grab	Unknown	mg/L	0.47	0.47
03/14/18	reclamation	boron grab	Unknown	mg/L	0.38	0.38
04/19/18	reclamation	boron grab	Unknown	mg/L	0.34	0.34
05/23/18	reclamation	boron grab	Unknown	mg/L	0.45	0.45
06/14/18	reclamation	boron grab	Unknown	mg/L	0.44	0.44
07/18/18	reclamation	boron grab	Unknown	mg/L	0.53	0.53
08/09/18	reclamation	boron grab	Unknown	mg/L	0.59	0.59
09/06/18	reclamation	boron grab	Unknown	mg/L	0.57	0.57
10/04/18	reclamation	boron grab	Unknown	mg/L	0.59	0.59
11/14/18	reclamation	boron grab	Unknown	mg/L	0.56	0.56
12/12/18	reclamation	boron grab	Unknown	mg/L	0.77	0.77
01/24/18	reclamation	chloride grab	Unknown	mg/L	55	55
02/21/18	reclamation	chloride grab	Unknown	mg/L	67	67
03/14/18	reclamation	chloride grab	Unknown	mg/L	56	56
04/19/18	reclamation	chloride grab	Unknown	mg/L	55	55
05/23/18	reclamation	chloride grab	Unknown	mg/L	70	70
06/14/18	reclamation	chloride grab	Unknown	mg/L	72	72
07/18/18	reclamation	chloride grab	Unknown	mg/L	80	80
08/09/18	reclamation	chloride grab	Unknown	mg/L	81	81
09/06/18	reclamation	chloride grab	Unknown	mg/L	86	86
10/04/18	reclamation	chloride grab	Unknown	mg/L	87	87
11/14/18	reclamation	chloride grab	Unknown	mg/L	84	84
12/12/18	reclamation	chloride grab	Unknown	mg/L	78	78
01/24/18	reclamation	nitrate nitrogen total (as n) grab	Unknown	mg/L	3.2	3.2

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
02/21/18	reclamation	nitrate nitrogen total (as n) grab	Unknown	mg/L	4.3	4.3
03/14/18	reclamation	nitrate nitrogen total (as n) grab	Unknown	mg/L	3.7	3.7
04/19/18	reclamation	nitrate nitrogen total (as n) grab	Unknown	mg/L	3.2	3.2
05/23/18	reclamation	nitrate nitrogen total (as n) grab	Unknown	mg/L	5.6	5.6
06/14/18	reclamation	nitrate nitrogen total (as n) grab	Unknown	mg/L	3.9	3.9
07/18/18	reclamation	nitrate nitrogen total (as n) grab	Unknown	mg/L	1.1	1.1
08/09/18	reclamation	nitrate nitrogen total (as n) grab	Unknown	mg/L	<0.05	<0.05
09/06/18	reclamation	nitrate nitrogen total (as n) grab	Unknown	mg/L	<0.05	<0.05
10/04/18	reclamation	nitrate nitrogen total (as n) grab	Unknown	mg/L	<0.05	<0.05
11/14/18	reclamation	nitrate nitrogen total (as n) grab	Unknown	mg/L	0.34	0.34
12/12/18	reclamation	nitrate nitrogen total (as n) grab	Unknown	mg/L	0.34	0.34
01/24/18	reclamation	nitrite nitrogen total (as n) grab	Unknown	mg/L	<0.02	<0.02
02/21/18	reclamation	nitrite nitrogen total (as n) grab	Unknown	mg/L	<0.02	<0.02
03/14/18	reclamation	nitrite nitrogen total (as n) grab	Unknown	mg/L	<0.02	<0.02
04/19/18	reclamation	nitrite nitrogen total (as n) grab	Unknown	mg/L	<0.02	<0.02
05/23/18	reclamation	nitrite nitrogen total (as n) grab	Unknown	mg/L	<0.02	<0.02
06/14/18	reclamation	nitrite nitrogen total (as n) grab	Unknown	mg/L	<0.02	<0.02
07/18/18	reclamation	nitrite nitrogen total (as n) grab	Unknown	mg/L	<0.02	<0.02
08/09/18	reclamation	nitrite nitrogen total (as n) grab	Unknown	mg/L	<0.02	<0.02
09/06/18	reclamation	nitrite nitrogen total (as n) grab	Unknown	mg/L	<0.02	<0.02
10/04/18	reclamation	nitrite nitrogen total (as n) grab	Unknown	mg/L	<0.02	<0.02
11/14/18	reclamation	nitrite nitrogen total (as n) grab	Unknown	mg/L	<0.02	<0.02
12/12/18	reclamation	nitrite nitrogen total (as n) grab	Unknown	mg/L	<0.02	<0.02
01/24/18	reclamation	organic nitrogen total (as n) grab	Unknown	mg/L	<1	<1
02/21/18	reclamation	organic nitrogen total (as n) grab	Unknown	mg/L	1.1	1.1
03/14/18	reclamation	organic nitrogen total (as n) grab	Unknown	mg/L	<1	<1
04/19/18	reclamation	organic nitrogen total (as n) grab	Unknown	mg/L	<1	<1
05/23/18	reclamation	organic nitrogen total (as n) grab	Unknown	mg/L	<1	<1
06/14/18	reclamation	organic nitrogen total (as n) grab	Unknown	mg/L	<1	<1
07/18/18	reclamation	organic nitrogen total (as n) grab	Unknown	mg/L	2.1	2.1
08/09/18	reclamation	organic nitrogen total (as n) grab	Unknown	mg/L	<1	<1
09/06/18	reclamation	organic nitrogen total (as n) grab	Unknown	mg/L	1.1	1.1
10/04/18	reclamation	organic nitrogen total (as n) grab	Unknown	mg/L	<1	<1
11/14/18	reclamation	organic nitrogen total (as n) grab	Unknown	mg/L	<1	<1
12/12/18	reclamation	organic nitrogen total (as n) grab	Unknown	mg/L	<1	<1
01/01/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0022	0.0022
01/02/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0022	0.0022
01/03/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0022	0.0022
01/04/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0022	0.0022
01/05/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0022	0.0022
01/06/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0022	0.0022
01/07/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0022	0.0022
01/08/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0022	0.0022
01/09/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0022	0.0022
01/10/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0022	0.0022
01/11/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0022	0.0022
01/12/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0022	0.0022
01/13/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0022	0.0022
01/14/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0022	0.0022
01/15/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0022	0.0022
01/16/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0023	0.0023
01/17/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0023	0.0023
01/18/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0023	0.0023
01/19/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0023	0.0023

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
01/20/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0023	0.0023
01/21/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0023	0.0023
01/22/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0023	0.0023
01/23/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0023	0.0023
01/24/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0023	0.0023
01/25/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0023	0.0023
01/26/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0023	0.0023
01/27/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0023	0.0023
01/28/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0023	0.0023
01/29/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0023	0.0023
01/30/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0023	0.0023
01/31/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0024	0.0024
02/01/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0216	0.0216
02/02/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0216	0.0216
02/03/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0216	0.0216
02/04/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0216	0.0216
02/05/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0216	0.0216
02/06/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0216	0.0216
02/07/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0216	0.0216
02/08/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0216	0.0216
02/09/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0216	0.0216
02/10/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0216	0.0216
02/11/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0216	0.0216
02/12/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0216	0.0216
02/13/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0216	0.0216
02/14/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0216	0.0216
02/15/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0216	0.0216
02/16/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0217	0.0217
02/17/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0217	0.0217
02/18/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0217	0.0217
02/19/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0217	0.0217
02/20/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0217	0.0217
02/21/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0217	0.0217
02/22/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0217	0.0217
02/23/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0217	0.0217
02/24/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0217	0.0217
02/25/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0217	0.0217
02/26/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0217	0.0217
02/27/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0217	0.0217
02/28/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0217	0.0217
03/01/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/02/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/03/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/04/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/05/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/06/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/07/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/08/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/09/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/10/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/11/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/12/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/13/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/14/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
03/15/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/16/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/17/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/18/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/19/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.013	0.013
03/20/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0131	0.0131
03/21/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0131	0.0131
03/22/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0131	0.0131
03/23/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0131	0.0131
03/24/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0131	0.0131
03/25/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0131	0.0131
03/26/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0131	0.0131
03/27/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0131	0.0131
03/28/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0131	0.0131
03/29/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0131	0.0131
03/30/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0131	0.0131
03/31/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0131	0.0131
04/01/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0151	0.0151
04/02/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0151	0.0151
04/03/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0151	0.0151
04/04/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0151	0.0151
04/05/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0151	0.0151
04/06/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0151	0.0151
04/07/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0151	0.0151
04/08/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0151	0.0151
04/09/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0151	0.0151
04/10/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0151	0.0151
04/11/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0151	0.0151
04/12/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0151	0.0151
04/13/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/14/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/15/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/16/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/17/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/18/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/19/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/20/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/21/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/22/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/23/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/24/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/25/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/26/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/27/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/28/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/29/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
04/30/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0152	0.0152
05/01/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/02/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/03/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/04/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/05/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/06/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/07/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
05/08/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/09/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/10/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/11/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/12/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/13/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/14/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/15/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/16/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/17/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/18/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/19/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/20/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/21/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/22/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/23/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0735	0.0735
05/24/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0736	0.0736
05/25/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0736	0.0736
05/26/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0736	0.0736
05/27/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0736	0.0736
05/28/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0736	0.0736
05/29/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0736	0.0736
05/30/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0736	0.0736
05/31/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0736	0.0736
06/01/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1428	0.1428
06/02/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1428	0.1428
06/03/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1428	0.1428
06/04/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1428	0.1428
06/05/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1428	0.1428
06/06/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1428	0.1428
06/07/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1428	0.1428
06/08/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1428	0.1428
06/09/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1428	0.1428
06/10/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1428	0.1428
06/11/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1428	0.1428
06/12/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1429	0.1429
06/13/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1429	0.1429
06/14/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1429	0.1429
06/15/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1429	0.1429
06/16/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1429	0.1429
06/17/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1429	0.1429
06/18/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1429	0.1429
06/19/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.18437	0.18437
06/20/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.206	0.206
06/21/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.197	0.197
06/22/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2	0.2
06/23/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.189	0.189
06/24/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.097	0.097
06/25/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.119	0.119
06/26/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.165	0.165
06/27/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.18	0.18
06/28/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.22	0.22
06/29/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2528	0.2528
06/30/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2291	0.2291

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
07/01/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2001	0.2001
07/02/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1279	0.1279
07/03/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.213	0.213
07/04/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1655	0.1655
07/05/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1384	0.1384
07/06/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.27	0.27
07/07/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.183	0.183
07/08/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2	0.2
07/09/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1568	0.1568
07/10/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1931	0.1931
07/11/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1896	0.1896
07/12/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2099	0.2099
07/13/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.211	0.211
07/14/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1545	0.1545
07/15/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1244	0.1244
07/16/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0842	0.0842
07/17/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1111	0.1111
07/18/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1163	0.1163
07/19/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1858	0.1858
07/20/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.227	0.227
07/21/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.269	0.269
07/22/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.256	0.256
07/23/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.14	0.14
07/24/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.218	0.218
07/25/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.352	0.352
07/26/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.4034	0.4034
07/27/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.3546	0.3546
07/28/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2089	0.2089
07/29/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0871	0.0871
07/30/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1967	0.1967
07/31/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2605	0.2605
08/01/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2942	0.2942
08/02/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.3944	0.3944
08/03/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.46	0.46
08/04/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.45	0.45
08/05/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.19	0.19
08/06/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.137	0.137
08/07/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.226	0.226
08/08/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.299	0.299
08/09/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2638	0.2638
08/10/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.377	0.377
08/11/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.51	0.51
08/12/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2	0.2
08/13/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1426	0.1426
08/14/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2812	0.2812
08/15/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.3565	0.3565
08/16/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.4657	0.4657
08/17/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.4153	0.4153
08/18/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.3848	0.3848
08/19/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1554	0.1554
08/20/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1655	0.1655
08/21/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.3369	0.3369
08/22/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.3106	0.3106
08/23/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2044	0.2044

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
08/24/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.17	0.17
08/25/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.36	0.36
08/26/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.4	0.4
08/27/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.49	0.49
08/28/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.52	0.52
08/29/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.15	0.15
08/30/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.25	0.25
08/31/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.3304	0.3304
09/01/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.4295	0.4295
09/02/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2942	0.2942
09/03/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.3062	0.3062
09/04/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.4131	0.4131
09/05/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.437	0.437
09/06/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.4135	0.4135
09/07/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.3089	0.3089
09/08/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.282	0.282
09/09/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1858	0.1858
09/10/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1613	0.1613
09/11/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1888	0.1888
09/12/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.3307	0.3307
09/13/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.31	0.31
09/14/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.195	0.195
09/15/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.186	0.186
09/16/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.136	0.136
09/17/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.18	0.18
09/18/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.39	0.39
09/19/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.41	0.41
09/20/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2104	0.2104
09/21/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2549	0.2549
09/22/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2898	0.2898
09/23/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1379	0.1379
09/24/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1677	0.1677
09/25/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2001	0.2001
09/26/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2012	0.2012
09/27/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.278	0.278
09/28/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2777	0.2777
09/29/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.154	0.154
09/30/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.071	0.071
10/01/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.127	0.127
10/02/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1564	0.1564
10/03/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1752	0.1752
10/04/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1857	0.1857
10/05/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2313	0.2313
10/06/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.068	0.068
10/07/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.058	0.058
10/08/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.103	0.103
10/09/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.105	0.105
10/10/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.104	0.104
10/11/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1198	0.1198
10/12/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2179	0.2179
10/13/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2291	0.2291
10/14/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0681	0.0681
10/15/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2422	0.2422
10/16/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.3734	0.3734

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
10/17/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1348	0.1348
10/18/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1246	0.1246
10/19/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1516	0.1516
10/20/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0866	0.0866
10/21/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0582	0.0582
10/22/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0845	0.0845
10/23/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1402	0.1402
10/24/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2419	0.2419
10/25/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.245	0.245
10/26/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.14	0.14
10/27/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.09	0.09
10/28/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.065	0.065
10/29/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.111	0.111
10/30/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.16	0.16
10/31/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.166	0.166
11/01/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1059	0.1059
11/02/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0876	0.0876
11/03/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0875	0.0875
11/04/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0606	0.0606
11/05/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1168	0.1168
11/06/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1928	0.1928
11/07/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.2578	0.2578
11/08/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.3267	0.3267
11/09/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.16	0.16
11/10/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1561	0.1561
11/11/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1657	0.1657
11/12/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1094	0.1094
11/13/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1143	0.1143
11/14/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1198	0.1198
11/15/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1079	0.1079
11/16/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.112	0.112
11/17/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.085	0.085
11/18/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.083	0.083
11/19/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.092	0.092
11/20/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.109	0.109
11/21/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0635	0.0635
11/22/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0598	0.0598
11/23/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0599	0.0599
11/24/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0603	0.0603
11/25/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0602	0.0602
11/26/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0638	0.0638
11/27/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0601	0.0601
11/28/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.06	0.06
11/29/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.06	0.06
11/30/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0602	0.0602
12/01/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0615	0.0615
12/02/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0598	0.0598
12/03/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0599	0.0599
12/04/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0621	0.0621
12/05/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.06	0.06
12/06/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.062	0.062
12/07/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.08	0.08
12/08/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.085	0.085
12/09/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.058	0.058

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
12/10/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.06	0.06
12/11/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.064	0.064
12/12/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.122	0.122
12/13/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0639	0.0639
12/14/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0589	0.0589
12/15/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0579	0.0579
12/16/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0581	0.0581
12/17/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0581	0.0581
12/18/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0583	0.0583
12/19/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.054	0.054
12/20/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.1185	0.1185
12/21/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0151	0.0151
12/22/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0053	0.0053
12/23/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0052	0.0052
12/24/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0054	0.0054
12/25/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0049	0.0049
12/26/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0051	0.0051
12/27/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0051	0.0051
12/28/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0049	0.0049
12/29/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0067	0.0067
12/30/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.0048	0.0048
12/31/18	reclamation	reclaim flow (from reclaim)	Unknown	mgd	0.005	0.005
01/24/18	reclamation	sodium grab	Unknown	mg/L	59	59
02/21/18	reclamation	sodium grab	Unknown	mg/L	64	64
03/14/18	reclamation	sodium grab	Unknown	mg/L	54	54
04/19/18	reclamation	sodium grab	Unknown	mg/L	62	62
05/23/18	reclamation	sodium grab	Unknown	mg/L	69	69
06/14/18	reclamation	sodium grab	Unknown	mg/L	72	72
07/18/18	reclamation	sodium grab	Unknown	mg/L	79	79
08/09/18	reclamation	sodium grab	Unknown	mg/L	86	86
09/06/18	reclamation	sodium grab	Unknown	mg/L	84	84
10/04/18	reclamation	sodium grab	Unknown	mg/L	89	89
11/14/18	reclamation	sodium grab	Unknown	mg/L	87	87
12/12/18	reclamation	sodium grab	Unknown	mg/L	82	82
01/24/18	reclamation	tds	Unknown	mg/L	206	206
02/21/18	reclamation	tds	Unknown	mg/L	424	424
03/14/18	reclamation	tds	Unknown	mg/L	350	350
04/19/18	reclamation	tds	Unknown	mg/L	390	390
05/23/18	reclamation	tds	Unknown	mg/L	406	406
06/14/18	reclamation	tds	Unknown	mg/L	466	466
07/18/18	reclamation	tds	Unknown	mg/L	478	478
08/09/18	reclamation	tds	Unknown	mg/L	374	374
09/06/18	reclamation	tds	Unknown	mg/L	436	436
10/04/18	reclamation	tds	Unknown	mg/L	384	384
11/14/18	reclamation	tds	Unknown	mg/L	448	448
12/12/18	reclamation	tds	Unknown	mg/L	436	436
12/11/18	REC-002	Antimony, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	0.43 DNQ	0.43 DNQ
12/11/18	REC-002	Arsenic, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	0.44 DNQ	0.44 DNQ
12/11/18	REC-002	Beryllium, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	<0.05	<0.1
12/11/18	REC-002	Cadmium, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	<0.06	<0.1
12/11/18	REC-002	Chromium (III)	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	<0.5	<0.5
12/11/18	REC-002	Chromium (VI)	Dissolved Hexavalent Chromium in Water by IC [E218.6]	ug/L	<0.3	<1
12/11/18	REC-002	Copper, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	6.1	6.1
12/11/18	REC-002	Lead, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	0.14 DNQ	0.14 DNQ

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
12/11/18	REC-002	Mercury, Total Recoverable	Mercury (Cold Vapor, Manual) - modified for CLP [CL245.1]	ug/L	<0.02	<0.02
12/11/18	REC-002	Nickel, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	3.6	3.6
12/11/18	REC-002	Selenium, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	<0.3	<2
12/11/18	REC-002	Silver, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	<0.05	<0.1
12/11/18	REC-002	Thallium, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	<0.05	<0.1
12/11/18	REC-002	Zinc, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	16	16
12/11/18	REC-002	Cyanide, Total (as CN)	Data Unavailable [DU]	ug/L	<0.002	<0.005
12/11/18	REC-002	2,3,7,8-TCDD (Dioxin)	Tetra-through Octa-Chlorinated Dioxins and Furans by HRGC/HRMS [E1613B]	pg/L	<1.49	<5
12/11/18	REC-002	Acrolein	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<2	<5
12/11/18	REC-002	Acrylonitrile	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<2
12/11/18	REC-002	Benzene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.3	<0.3
12/11/18	REC-002	Bromoform	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.3	<0.5
12/11/18	REC-002	Carbon Tetrachloride	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	Chlorobenzene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.3	<0.5
12/11/18	REC-002	Dibromochloromethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	Chloroethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	2-Chloroethylvinyl Ether	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.7	<1
12/11/18	REC-002	Chloroform	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	Dichlorobromomethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	1,1-Dichloroethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.1	<0.5
12/11/18	REC-002	1,2-Dichloroethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	1,1-Dichloroethylene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.3	<0.5
12/11/18	REC-002	1,2-Dichloropropane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	1,3-Dichloropropylenes, Sum	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	Ethylbenzene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	Bromomethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	Methyl Chloride	Data Unavailable [DU]	ug/L	<0.4	<0.5
12/11/18	REC-002	Methylene Chloride	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.5	<0.5
12/11/18	REC-002	1,1,2,2-Tetrachloroethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.3	<0.5
12/11/18	REC-002	Tetrachloroethene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	Toluene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.3	<0.3
12/11/18	REC-002	trans-1,2-Dichloroethene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	1,1,1-Trichloroethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	1,1,2-Trichloroethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	Trichloroethene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	Vinyl Chloride	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	2-Chlorophenol	Extractable Priority Pollutants [E625]	ug/L	<0.7	<5
12/11/18	REC-002	2,4-Dichlorophenol	Extractable Priority Pollutants [E625]	ug/L	<0.7	<5
12/11/18	REC-002	2,4-Dimethylphenol	Extractable Priority Pollutants [E625]	ug/L	<1	<2
12/11/18	REC-002	4,6-Dinitro-2-methylphenol	Extractable Priority Pollutants [E625]	ug/L	<3	<5
12/11/18	REC-002	2,4-Dinitrophenol	Extractable Priority Pollutants [E625]	ug/L	<5	<5
12/11/18	REC-002	2-Nitrophenol	Extractable Priority Pollutants [E625]	ug/L	<0.9	<10
12/11/18	REC-002	4-Nitrophenol	Extractable Priority Pollutants [E625]	ug/L	<3	<10
12/11/18	REC-002	4-Chloro-3-methylphenol	Extractable Priority Pollutants [E625]	ug/L	<1	<1
12/11/18	REC-002	Pentachlorophenol	Extractable Priority Pollutants [E625]	ug/L	<4	<5
12/11/18	REC-002	Phenol, Single Compound	Extractable Priority Pollutants [E625]	ug/L	<0.5	<1
12/11/18	REC-002	2,4,6-Trichlorophenol	Extractable Priority Pollutants [E625]	ug/L	<0.7	<10
12/11/18	REC-002	Acenaphthene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.2	<0.2
12/11/18	REC-002	Acenaphthylene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.2	<0.2
12/11/18	REC-002	Anthracene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.09	<0.2
12/11/18	REC-002	Benzidine	Extractable Priority Pollutants [E625]	ug/L	<3	<5
12/11/18	REC-002	Benzo(a)anthracene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.2	<0.2
12/11/18	REC-002	Benzo(a)pyrene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.2	<0.2
12/11/18	REC-002	Benzo(b)fluoranthene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.2	<0.2

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
12/11/18	REC-002	Benzo(ghi)perylene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.1	<0.2
12/11/18	REC-002	Benzo(k)fluoranthene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.2	<0.2
12/11/18	REC-002	Bis (2-Chloroethoxy) Methane	Extractable Priority Pollutants [E625]	ug/L	<0.4	<5
12/11/18	REC-002	Bis (2-Chloroethyl) Ether	Extractable Priority Pollutants [E625]	ug/L	<0.3	<1
12/11/18	REC-002	Bis (2-Chloroisopropyl) Ether	Extractable Priority Pollutants [E625]	ug/L	<0.4	<2
12/11/18	REC-002	Bis (2-Ethylhexyl) Phthalate	Extractable Priority Pollutants [E625]	ug/L	<3	<5
12/11/18	REC-002	4-Bromophenyl Phenyl Ether	Extractable Priority Pollutants [E625]	ug/L	<0.4	<5
12/11/18	REC-002	Butylbenzyl Phthalate	Extractable Priority Pollutants [E625]	ug/L	<0.6	<10
12/11/18	REC-002	2-Chloronaphthalene	Extractable Priority Pollutants [E625]	ug/L	<0.6	<10
12/11/18	REC-002	4-Chlorophenyl Phenyl Ether	Extractable Priority Pollutants [E625]	ug/L	<0.9	<5
12/11/18	REC-002	Chrysene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.2	<0.2
12/11/18	REC-002	Dibenzo(a,h)anthracene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.1	<0.2
12/11/18	REC-002	1,2-Dichlorobenzene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	1,3-Dichlorobenzene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/11/18	REC-002	1,4-Dichlorobenzene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.1	<0.5
12/11/18	REC-002	3,3-Dichlorobenzidine	Extractable Priority Pollutants [E625]	ug/L	<3	<5
12/11/18	REC-002	Diethyl Phthalate	Extractable Priority Pollutants [E625]	ug/L	<0.3	<2
12/11/18	REC-002	Dimethyl Phthalate	Extractable Priority Pollutants [E625]	ug/L	<0.3	<2
12/11/18	REC-002	Di-n-butyl Phthalate	Extractable Priority Pollutants [E625]	ug/L	<0.9	<10
12/11/18	REC-002	2,4-Dinitrotoluene	Extractable Priority Pollutants [E625]	ug/L	<0.2	<5
12/11/18	REC-002	2,6-Dinitrotoluene	Extractable Priority Pollutants [E625]	ug/L	<0.3	<5
12/11/18	REC-002	Di-n-octyl Phthalate	Extractable Priority Pollutants [E625]	ug/L	<0.6	<10
12/11/18	REC-002	1,2-Diphenylhydrazine	Extractable Priority Pollutants [E625]	ug/L	<0.6	<1
12/11/18	REC-002	Fluoranthene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.07	<0.2
12/11/18	REC-002	Fluorene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.2	<0.2
12/11/18	REC-002	Hexachlorobenzene	Extractable Priority Pollutants [E625]	ug/L	<0.9	<1
12/11/18	REC-002	Hexachlorobutadiene	Extractable Priority Pollutants [E625]	ug/L	<0.8	<1
12/11/18	REC-002	Hexachlorocyclopentadiene	Extractable Priority Pollutants [E625]	ug/L	<4	<5
12/11/18	REC-002	Hexachloroethane	Extractable Priority Pollutants [E625]	ug/L	<0.6	<1
12/11/18	REC-002	Indeno (1,2,3-cd) Pyrene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.03	<0.2
12/11/18	REC-002	Isophorone	Extractable Priority Pollutants [E625]	ug/L	<0.3	<1
12/11/18	REC-002	Naphthalene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.45	<1
12/11/18	REC-002	Nitrobenzene	Extractable Priority Pollutants [E625]	ug/L	<0.3	<1
12/11/18	REC-002	N-Nitrosodimethylamine	Extractable Priority Pollutants [E625]	ug/L	<0.3	<5
12/11/18	REC-002	N-Nitrosodi-n-Propylamine	Extractable Priority Pollutants [E625]	ug/L	<0.3	<5
12/11/18	REC-002	N-Nitrosodiphenylamine	Extractable Priority Pollutants [E625]	ug/L	<0.3	<1
12/11/18	REC-002	Phenanthrene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.1	<0.2
12/11/18	REC-002	Pyrene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.2	<0.2
12/11/18	REC-002	1,2,4-Trichlorobenzene	Extractable Priority Pollutants [E625]	ug/L	<0.6	<5
12/11/18	REC-002	Aldrin	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.002	<0.005
12/11/18	REC-002	alpha-BHC	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.004	<0.01
12/11/18	REC-002	beta-BHC	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.004	<0.005
12/11/18	REC-002	gamma-BHC	Organochlorine Pesticides and PCBs [E608]	ug/L	0.0045 DNQ	0.0045 DNQ
12/11/18	REC-002	delta-BHC	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.002	<0.005
12/11/18	REC-002	Chlordane	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.01	<0.05
12/11/18	REC-002	4,4-DDT	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.003	<0.01
12/11/18	REC-002	4,4-DDE	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.004	<0.02
12/11/18	REC-002	4,4-DDD	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.005	<0.02
12/11/18	REC-002	Dieldrin	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.005	<0.01
12/11/18	REC-002	Endosulfan I	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.004	<0.01
12/11/18	REC-002	Endosulfan II	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.005	<0.01
12/11/18	REC-002	Endosulfan Sulfate	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.003	<0.05
12/11/18	REC-002	Endrin	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.008	<0.01
12/11/18	REC-002	Endrin Aldehyde	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.004	<0.01

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
12/11/18	REC-002	Heptachlor	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.005	<0.01
12/11/18	REC-002	Heptachlor Epoxide	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.009	<0.01
12/11/18	REC-002	PCB-1016	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.08	<0.5
12/11/18	REC-002	PCB-1221	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.2	<0.5
12/11/18	REC-002	PCB-1232	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.1	<0.5
12/11/18	REC-002	PCB-1242	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.04	<0.5
12/11/18	REC-002	PCB-1248	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.06	<0.5
12/11/18	REC-002	PCB-1254	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.04	<0.5
12/11/18	REC-002	PCB-1260	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.04	<0.5
12/11/18	REC-002	Toxaphene	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.2	<0.5
12/11/18	REC-002	Hardness, Total (as CaCO3)	Standard Method 2340 B: Hardness by Calculation [A2340B]	mg/L	149	149
12/12/18	EFF-001	Antimony, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	0.35	0.35
12/12/18	EFF-001	Arsenic, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	<0.2	<0.5
12/12/18	EFF-001	Beryllium, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	<0.05	<0.1
12/12/18	EFF-001	Cadmium, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	<0.06	<0.1
12/12/18	EFF-001	Chromium (III)	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	<0.5	<0.5
12/12/18	EFF-001	Chromium (VI)	Dissolved Hexavalent Chromium in Water by IC [E218.6]	ug/L	<0.3	<1
12/12/18	EFF-001	Copper, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	10	10
12/12/18	EFF-001	Lead, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	0.14	0.14
12/12/18	EFF-001	Mercury, Total Recoverable	Mercury (Cold Vapor, Manual) - modified for CLP [CL245.1]	ug/L	<0.02	<0.02
12/12/18	EFF-001	Nickel, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	2.6	2.6
12/12/18	EFF-001	Selenium, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	<0.3	<2
12/12/18	EFF-001	Silver, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	<0.05	<0.1
12/12/18	EFF-001	Thallium, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	<0.05	<0.1
12/12/18	EFF-001	Zinc, Total Recoverable	Inductively Coupled Plasma/Mass Spectroscopy [E200.8]	ug/L	44	44
12/12/18	EFF-001	Cyanide, Total (as CN)	Data Unavailable [DU]	ug/L	<0.002	<0.005
12/12/18	EFF-001	2,3,7,8-TCDD (Dioxin)	Tetra-through Octa-Chlorinated Dioxins and Furans by HRGC/HRMS [E1613B]	pg/L	<1.49	<5.38
12/12/18	EFF-001	Acrolein	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<2	<5
12/12/18	EFF-001	Acrylonitrile	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<2
12/12/18	EFF-001	Benzene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.3	<0.3
12/12/18	EFF-001	Bromoform	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.3	<0.5
12/12/18	EFF-001	Carbon Tetrachloride	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	Chlorobenzene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.3	<0.5
12/12/18	EFF-001	Dibromochloromethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	Chloroethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	2-Chloroethylvinyl Ether	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.7	<1
12/12/18	EFF-001	Chloroform	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	0.41	0.41
12/12/18	EFF-001	Dichlorobromomethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	1,1-Dichloroethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.1	<0.5
12/12/18	EFF-001	1,2-Dichloroethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	1,1-Dichloroethylene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.3	<0.5
12/12/18	EFF-001	1,2-Dichloropropane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	1,3-Dichloropropylenes, Sum	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	Ethylbenzene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	Bromomethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	Methyl Chloride	Data Unavailable [DU]	ug/L	<0.4	<0.5
12/12/18	EFF-001	Methylene Chloride	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.5	<0.5
12/12/18	EFF-001	1,1,2,2-Tetrachloroethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.3	<0.5
12/12/18	EFF-001	Tetrachloroethene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	Toluene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.3	<0.3
12/12/18	EFF-001	trans-1,2-Dichloroethene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	1,1,1-Trichloroethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	1,1,2-Trichloroethane	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	Trichloroethene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
12/12/18	EFF-001	Vinyl Chloride	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	2-Chlorophenol	Extractable Priority Pollutants [E625]	ug/L	<3.5	<25
12/12/18	EFF-001	2,4-Dichlorophenol	Extractable Priority Pollutants [E625]	ug/L	<3.5	<25
12/12/18	EFF-001	2,4-Dimethylphenol	Extractable Priority Pollutants [E625]	ug/L	<5	<10
12/12/18	EFF-001	4,6-Dinitro-2-methylphenol	Extractable Priority Pollutants [E625]	ug/L	<15	<25
12/12/18	EFF-001	2,4-Dinitrophenol	Extractable Priority Pollutants [E625]	ug/L	<25	<25
12/12/18	EFF-001	2-Nitrophenol	Extractable Priority Pollutants [E625]	ug/L	<4.5	<50
12/12/18	EFF-001	4-Nitrophenol	Extractable Priority Pollutants [E625]	ug/L	<15	<50
12/12/18	EFF-001	4-Chloro-3-methylphenol	Extractable Priority Pollutants [E625]	ug/L	<5	<5
12/12/18	EFF-001	Pentachlorophenol	Extractable Priority Pollutants [E625]	ug/L	<20	<25
12/12/18	EFF-001	Phenol, Single Compound	Extractable Priority Pollutants [E625]	ug/L	<2.5	<5
12/12/18	EFF-001	2,4,6-Trichlorophenol	Extractable Priority Pollutants [E625]	ug/L	<3.5	<50
12/12/18	EFF-001	Acenaphthene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<1	<1
12/12/18	EFF-001	Acenaphthylene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<1	<1
12/12/18	EFF-001	Anthracene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.45	<1
12/12/18	EFF-001	Benzidine	Extractable Priority Pollutants [E625]	ug/L	<3	<5
12/12/18	EFF-001	Benzo(a)anthracene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<1	<1
12/12/18	EFF-001	Benzo(a)pyrene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<1	<1
12/12/18	EFF-001	Benzo(b)fluoranthene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<1	<1
12/12/18	EFF-001	Benzo(ghi)perylene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.5	<1
12/12/18	EFF-001	Benzo(k)fluoranthene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<1	<1
12/12/18	EFF-001	Bis (2-Chloroethoxy) Methane	Extractable Priority Pollutants [E625]	ug/L	<2	<25
12/12/18	EFF-001	Bis (2-Chloroethyl) Ether	Extractable Priority Pollutants [E625]	ug/L	<1.5	<5
12/12/18	EFF-001	Bis (2-Chloroisopropyl) Ether	Extractable Priority Pollutants [E625]	ug/L	<2	<10
12/12/18	EFF-001	Bis (2-Ethylhexyl) Phthalate	Extractable Priority Pollutants [E625]	ug/L	<15	<25
12/12/18	EFF-001	4-Bromophenyl Phenyl Ether	Extractable Priority Pollutants [E625]	ug/L	<2	<25
12/12/18	EFF-001	Butylbenzyl Phthalate	Extractable Priority Pollutants [E625]	ug/L	<3	<50
12/12/18	EFF-001	2-Chloronaphthalene	Extractable Priority Pollutants [E625]	ug/L	<3	<50
12/12/18	EFF-001	4-Chlorophenyl Phenyl Ether	Extractable Priority Pollutants [E625]	ug/L	<4.5	<25
12/12/18	EFF-001	Chrysene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<1	<1
12/12/18	EFF-001	Dibenzo(a,h)anthracene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.5	<1
12/12/18	EFF-001	1,2-Dichlorobenzene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	1,3-Dichlorobenzene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.4	<0.5
12/12/18	EFF-001	1,4-Dichlorobenzene	Volatile Organic Compounds EPA Method 624 [E624]	ug/L	<0.1	<0.5
12/12/18	EFF-001	3,3-Dichlorobenzidine	Extractable Priority Pollutants [E625]	ug/L	<3	<5
12/12/18	EFF-001	Diethyl Phthalate	Extractable Priority Pollutants [E625]	ug/L	<1.5	<10
12/12/18	EFF-001	Dimethyl Phthalate	Extractable Priority Pollutants [E625]	ug/L	<1.5	<10
12/12/18	EFF-001	Di-n-butyl Phthalate	Extractable Priority Pollutants [E625]	ug/L	<4.5	<50
12/12/18	EFF-001	2,4-Dinitrotoluene	Extractable Priority Pollutants [E625]	ug/L	<1	<25
12/12/18	EFF-001	2,6-Dinitrotoluene	Extractable Priority Pollutants [E625]	ug/L	<1.5	<25
12/12/18	EFF-001	Di-n-octyl Phthalate	Extractable Priority Pollutants [E625]	ug/L	<3	<5
12/12/18	EFF-001	1,2-Diphenylhydrazine	Extractable Priority Pollutants [E625]	ug/L	<3	<5
12/12/18	EFF-001	Fluoranthene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.3	<1
12/12/18	EFF-001	Fluorene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<1	<1
12/12/18	EFF-001	Hexachlorobenzene	Extractable Priority Pollutants [E625]	ug/L	<4.5	<5
12/12/18	EFF-001	Hexachlorobutadiene	Extractable Priority Pollutants [E625]	ug/L	<4	<5
12/12/18	EFF-001	Hexachlorocyclopentadiene	Extractable Priority Pollutants [E625]	ug/L	<20	<25
12/12/18	EFF-001	Hexachloroethane	Extractable Priority Pollutants [E625]	ug/L	<3	<5
12/12/18	EFF-001	Indeno (1,2,3-cd) Pyrene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.15	<1
12/12/18	EFF-001	Isophorone	Extractable Priority Pollutants [E625]	ug/L	<1.5	<5
12/12/18	EFF-001	Naphthalene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.45	<1
12/12/18	EFF-001	Nitrobenzene	Extractable Priority Pollutants [E625]	ug/L	<1.5	<5
12/12/18	EFF-001	N-Nitrosodimethylamine	Extractable Priority Pollutants [E625]	ug/L	<1.5	<25
12/12/18	EFF-001	N-Nitrosodi-n-Propylamine	Extractable Priority Pollutants [E625]	ug/L	<1.5	<25

Date	Location	Analyte	Method	Unit	Results (MDL)	Results (MRL)
12/12/18	EFF-001	N-Nitrosodiphenylamine	Extractable Priority Pollutants [E625]	ug/L	<1.5	<5
12/12/18	EFF-001	Phenanthrene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<0.5	<1
12/12/18	EFF-001	Pyrene	Extractable Priority Pollutants by GC/MS SIM [E625SIM]	ug/L	<1	<1
12/12/18	EFF-001	1,2,4-Trichlorobenzene	Extractable Priority Pollutants [E625]	ug/L	<3	<25
12/12/18	EFF-001	Aldrin	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.002	<0.005
12/12/18	EFF-001	alpha-BHC	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.004	<0.01
12/12/18	EFF-001	beta-BHC	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.004	<0.005
12/12/18	EFF-001	gamma-BHC	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.004	<0.01
12/12/18	EFF-001	delta-BHC	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.002	<0.005
12/12/18	EFF-001	Chlordane	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.01	<0.05
12/12/18	EFF-001	4,4-DDT	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.003	<0.01
12/12/18	EFF-001	4,4-DDE	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.004	<0.02
12/12/18	EFF-001	4,4-DDD	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.005	<0.02
12/12/18	EFF-001	Dieldrin	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.005	<0.01
12/12/18	EFF-001	Endosulfan I	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.004	<0.01
12/12/18	EFF-001	Endosulfan II	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.005	<0.01
12/12/18	EFF-001	Endosulfan Sulfate	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.008	<0.05
12/12/18	EFF-001	Endrin	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.008	<0.01
12/12/18	EFF-001	Endrin Aldehyde	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.004	<0.01
12/12/18	EFF-001	Heptachlor	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.005	<0.01
12/12/18	EFF-001	Heptachlor Epoxide	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.009	<0.01
12/12/18	EFF-001	PCB-1016	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.08	<0.5
12/12/18	EFF-001	PCB-1221	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.2	<0.5
12/12/18	EFF-001	PCB-1232	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.1	<0.5
12/12/18	EFF-001	PCB-1242	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.04	<0.5
12/12/18	EFF-001	PCB-1248	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.06	<0.5
12/12/18	EFF-001	PCB-1254	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.04	<0.5
12/12/18	EFF-001	PCB-1260	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.04	<0.5
12/12/18	EFF-001	Toxaphene	Organochlorine Pesticides and PCBs [E608]	ug/L	<0.2	<0.5
12/12/18	EFF-001	Hardness, Total (as CaCO3)	Standard Method 2340 B: Hardness by Calculation [A2340B]	mg/L	157	157

APPENDIX D

AIR QUALITY DATA

Project-Level Analysis
CalEEMod Runs

Healdsburg Recycled Water Project

Sonoma-North Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.50	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Healdsburg Recycled Water Project - Sonoma-North Coast County, Winter

Project Characteristics -

Land Use - Lot acreage accounts for acreage of the three project components (12" diameter pipeline, 8" diameter pipeline, and Bucher facilities).

Construction Phase - Based on project specific schedule of 6 weeks for 12" diameter pipeline, 5 weeks for 8" diameter pipeline, and 30 days for the Bucher Irrigation Facilities.

Off-road Equipment - Project specific information. Off highway trucks to account for water truck.

Off-road Equipment - Project specific equipment. Off highway truck to account for water truck.

Off-road Equipment - Project specific equipment. Off highway trucks to account for cement truck, water truck, and dump truck.

Grading - Based on 12 in diameter pipeline assumptions of 30 CY of aggregate base imported, and 30 CY of spoils disposal.

Trips and VMT - Worker crew size of 6 for the 8 and 12 inch diameter pipelines. Worker crew size of 4 for the Bucher Facilities. Haul trips based on material delivery trips for construction equipment, pipe materials, and material import/export. Assumesa 25 mile trip length.

Construction Off-road Equipment Mitigation - Assumes fugitive dust control of watering twice per day.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	26.00
tblConstructionPhase	NumDays	1.00	31.00
tblConstructionPhase	NumDays	1.00	30.00
tblConstructionPhase	PhaseEndDate	9/25/2020	7/2/2020
tblConstructionPhase	PhaseEndDate	4/29/2020	5/27/2020
tblConstructionPhase	PhaseStartDate	9/19/2020	5/28/2020
tblConstructionPhase	PhaseStartDate	4/29/2020	4/15/2020
tblGrading	AcresOfGrading	0.00	13.00
tblGrading	AcresOfGrading	0.00	15.00
tblGrading	MaterialExported	0.00	30.00
tblGrading	MaterialImported	0.00	30.00
tblLandUse	LotAcreage	0.00	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers

Healdsburg Recycled Water Project - Sonoma-North Coast County, Winter

tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripNumber	8.00	38.00
tblTripsAndVMT	HaulingTripNumber	0.00	21.00
tblTripsAndVMT	HaulingTripNumber	0.00	17.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00

tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	18.00	8.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.7156	24.4483	17.5449	0.0455	3.7120	1.1525	4.3406	1.7578	1.0729	2.3361	0.0000	4,389.4618	4,389.4618	1.2764	0.0000	4,421.3724
Maximum	**2.7156**	**24.4483**	**17.5449**	**0.0455**	**3.7120**	**1.1525**	**4.3406**	**1.7578**	**1.0729**	**2.3361**	**0.0000**	**4,389.4618**	**4,389.4618**	**1.2764**	**0.0000**	**4,421.3724**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.7156	24.4483	17.5449	0.0455	1.7643	1.1525	2.3929	0.8160	1.0729	1.3943	0.0000	4,389.4618	4,389.4618	1.2764	0.0000	4,421.3724
Maximum	**2.7156**	**24.4483**	**17.5449**	**0.0455**	**1.7643**	**1.1525**	**2.3929**	**0.8160**	**1.0729**	**1.3943**	**0.0000**	**4,389.4618**	**4,389.4618**	**1.2764**	**0.0000**	**4,421.3724**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**52.47**	**0.00**	**44.87**	**53.58**	**0.00**	**40.31**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	12 Diameter Pipeline	Site Preparation	4/15/2020	5/27/2020	5	31	
2	8 Diameter Pipeline	Site Preparation	5/28/2020	7/2/2020	5	26	
3	Bucher Facilities	Site Preparation	7/3/2020	8/13/2020	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Healdsburg Recycled Water Project - Sonoma-North Coast County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
12 Diameter Pipeline	Excavators	2	8.00	158	0.38
8 Diameter Pipeline	Cement and Mortar Mixers	0	0.00	9	0.56
12 Diameter Pipeline	Off-Highway Trucks	1	4.00	402	0.38
12 Diameter Pipeline	Rubber Tired Dozers	1	4.00	247	0.40
8 Diameter Pipeline	Excavators	2	8.00	158	0.38
8 Diameter Pipeline	Off-Highway Trucks	1	4.00	402	0.38
12 Diameter Pipeline	Graders	0	0.00	187	0.41
8 Diameter Pipeline	Pavers	0	0.00	130	0.42
8 Diameter Pipeline	Rollers	0	0.00	80	0.38
8 Diameter Pipeline	Rubber Tired Dozers	1	4.00	247	0.40
Bucher Facilities	Trenchers	1	8.00	78	0.50
Bucher Facilities	Off-Highway Trucks	1	4.00	402	0.38
Bucher Facilities	Plate Compactors	1	8.00	8	0.43
Bucher Facilities	Tractors/Loaders/Backhoes	1	8.00	97	0.37
8 Diameter Pipeline	Tractors/Loaders/Backhoes	0	0.00	97	0.37
12 Diameter Pipeline	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Bucher Facilities	Off-Highway Trucks	1	8.00	402	0.38
Bucher Facilities	Off-Highway Trucks	1	8.00	402	0.38
Bucher Facilities	Air Compressors	1	8.00	78	0.48
8 Diameter Pipeline	Graders	0	0.00	187	0.41
Bucher Facilities	Graders	0	8.00	187	0.41

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Bucher Facilities	7	8.00	0.00	17.00	16.80	6.60	25.00	LD_Mix	HDT_Mix	HHDT
12 Diameter Pipeline	4	12.00	0.00	38.00	16.80	6.60	25.00	LD_Mix	HDT_Mix	HHDT
8 Diameter Pipeline	4	12.00	0.00	21.00	16.80	6.60	25.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 12 Diameter Pipeline - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0113	0.0000	3.0113	1.6552	0.0000	1.6552			0.0000			0.0000
Off-Road	1.3613	13.6528	10.5065	0.0212		0.6264	0.6264		0.5763	0.5763		2,053.2191	2,053.2191	0.6641		2,069.8204
Total	**1.3613**	**13.6528**	**10.5065**	**0.0212**	**3.0113**	**0.6264**	**3.6377**	**1.6552**	**0.5763**	**2.2314**		**2,053.2191**	**2,053.2191**	**0.6641**		**2,069.8204**

3.2 12 Diameter Pipeline - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0118	0.4280	0.0908	1.1800e-003	0.0265	1.6000e-003	0.0281	7.2200e-003	1.5300e-003	8.7500e-003		126.5988	126.5988	7.6000e-003		126.7889
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0902	0.0682	0.6139	1.4600e-003	0.1533	1.1500e-003	0.1544	0.0407	1.0600e-003	0.0417		145.5879	145.5879	5.2100e-003		145.7181
Total	**0.1020**	**0.4962**	**0.7047**	**2.6400e-003**	**0.1797**	**2.7500e-003**	**0.1825**	**0.0479**	**2.5900e-003**	**0.0505**		**272.1867**	**272.1867**	**0.0128**		**272.5070**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.3551	0.0000	1.3551	0.7448	0.0000	0.7448			0.0000			0.0000
Off-Road	1.3613	13.6528	10.5065	0.0212		0.6264	0.6264		0.5763	0.5763	0.0000	2,053.2191	2,053.2191	0.6641		2,069.8204
Total	**1.3613**	**13.6528**	**10.5065**	**0.0212**	**1.3551**	**0.6264**	**1.9815**	**0.7448**	**0.5763**	**1.3211**	**0.0000**	**2,053.2191**	**2,053.2191**	**0.6641**		**2,069.8204**

3.2 12 Diameter Pipeline - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0118	0.4280	0.0908	1.1800e-003	0.0265	1.6000e-003	0.0281	7.2200e-003	1.5300e-003	8.7500e-003		126.5988	126.5988	7.6000e-003		126.7889
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0902	0.0682	0.6139	1.4600e-003	0.1533	1.1500e-003	0.1544	0.0407	1.0600e-003	0.0417		145.5879	145.5879	5.2100e-003		145.7181
Total	**0.1020**	**0.4962**	**0.7047**	**2.6400e-003**	**0.1797**	**2.7500e-003**	**0.1825**	**0.0479**	**2.5900e-003**	**0.0505**		**272.1867**	**272.1867**	**0.0128**		**272.5070**

3.3 8 Diameter Pipeline - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.5413	0.0000	3.5413	1.7124	0.0000	1.7124			0.0000			0.0000
Off-Road	1.3613	13.6528	10.5065	0.0212		0.6264	0.6264		0.5763	0.5763		2,053.2191	2,053.2191	0.6641		2,069.8204
Total	**1.3613**	**13.6528**	**10.5065**	**0.0212**	**3.5413**	**0.6264**	**4.1677**	**1.7124**	**0.5763**	**2.2887**		**2,053.2191**	**2,053.2191**	**0.6641**		**2,069.8204**

3.3 8 Diameter Pipeline - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.7800e-003	0.2820	0.0598	7.8000e-004	0.0174	1.0600e-003	0.0185	4.7600e-003	1.0100e-003	5.7700e-003		83.4168	83.4168	5.0100e-003		83.5421
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0902	0.0682	0.6139	1.4600e-003	0.1533	1.1500e-003	0.1544	0.0407	1.0600e-003	0.0417		145.5879	145.5879	5.2100e-003		145.7181
Total	**0.0980**	**0.3502**	**0.6737**	**2.2400e-003**	**0.1707**	**2.2100e-003**	**0.1729**	**0.0454**	**2.0700e-003**	**0.0475**		**229.0048**	**229.0048**	**0.0102**		**229.2602**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5936	0.0000	1.5936	0.7706	0.0000	0.7706			0.0000			0.0000
Off-Road	1.3613	13.6528	10.5065	0.0212		0.6264	0.6264		0.5763	0.5763	0.0000	2,053.2191	2,053.2191	0.6641		2,069.8204
Total	**1.3613**	**13.6528**	**10.5065**	**0.0212**	**1.5936**	**0.6264**	**2.2200**	**0.7706**	**0.5763**	**1.3469**	**0.0000**	**2,053.2191**	**2,053.2191**	**0.6641**		**2,069.8204**

3.3 8 Diameter Pipeline - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.7800e-003	0.2820	0.0598	7.8000e-004	0.0174	1.0600e-003	0.0185	4.7600e-003	1.0100e-003	5.7700e-003		83.4168	83.4168	5.0100e-003		83.5421
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0902	0.0682	0.6139	1.4600e-003	0.1533	1.1500e-003	0.1544	0.0407	1.0600e-003	0.0417		145.5879	145.5879	5.2100e-003		145.7181
Total	**0.0980**	**0.3502**	**0.6737**	**2.2400e-003**	**0.1707**	**2.2100e-003**	**0.1729**	**0.0454**	**2.0700e-003**	**0.0475**		**229.0048**	**229.0048**	**0.0102**		**229.2602**

3.4 Bucher Facilities - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	2.6500	24.2050	17.0936	0.0439		1.1510	1.1510		1.0715	1.0715		4,233.8790	4,233.8790	1.2694		4,265.6150
Total	**2.6500**	**24.2050**	**17.0936**	**0.0439**	**0.5303**	**1.1510**	**1.6812**	**0.0573**	**1.0715**	**1.1287**		**4,233.8790**	**4,233.8790**	**1.2694**		**4,265.6150**

3.4 Bucher Facilities - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.4600e-003	0.1979	0.0420	5.4000e-004	0.0122	7.4000e-004	0.0130	3.3400e-003	7.1000e-004	4.0500e-003		58.5242	58.5242	3.5200e-003		58.6121
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0455	0.4093	9.8000e-004	0.1022	7.6000e-004	0.1030	0.0271	7.0000e-004	0.0278		97.0586	97.0586	3.4700e-003		97.1454
Total	**0.0656**	**0.2433**	**0.4512**	**1.5200e-003**	**0.1144**	**1.5000e-003**	**0.1159**	**0.0304**	**1.4100e-003**	**0.0319**		**155.5828**	**155.5828**	**6.9900e-003**		**155.7575**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	2.6500	24.2050	17.0936	0.0439		1.1510	1.1510		1.0715	1.0715	0.0000	4,233.8790	4,233.8790	1.2694		4,265.6150
Total	**2.6500**	**24.2050**	**17.0936**	**0.0439**	**0.2386**	**1.1510**	**1.3896**	**0.0258**	**1.0715**	**1.0973**	**0.0000**	**4,233.8790**	**4,233.8790**	**1.2694**		**4,265.6150**

3.4 Bucher Facilities - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.4600e-003	0.1979	0.0420	5.4000e-004	0.0122	7.4000e-004	0.0130	3.3400e-003	7.1000e-004	4.0500e-003		58.5242	58.5242	3.5200e-003		58.6121
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0455	0.4093	9.8000e-004	0.1022	7.6000e-004	0.1030	0.0271	7.0000e-004	0.0278		97.0586	97.0586	3.4700e-003		97.1454
Total	**0.0656**	**0.2433**	**0.4512**	**1.5200e-003**	**0.1144**	**1.5000e-003**	**0.1159**	**0.0304**	**1.4100e-003**	**0.0319**		**155.5828**	**155.5828**	**6.9900e-003**		**155.7575**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.578299	0.039453	0.169996	0.109068	0.028307	0.006716	0.029274	0.026666	0.003071	0.001838	0.005325	0.000874	0.001112

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Healdsburg Recycled Water Project

Sonoma-North Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.50	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Healdsburg Recycled Water Project - Sonoma-North Coast County, Annual

Project Characteristics -

Land Use - Lot acreage accounts for acreage of the three project components (12" diameter pipeline, 8" diameter pipeline, and Bucher facilities).

Construction Phase - Based on project specific schedule of 6 weeks for 12" diameter pipeline, 5 weeks for 8" diameter pipeline, and 30 days for the Bucher Irrigation Facilities.

Off-road Equipment - Project specific information. Off highway trucks to account for water truck.

Off-road Equipment - Project specific equipment. Off highway truck to account for water truck.

Off-road Equipment - Project specific equipment. Off highway trucks to account for cement truck, water truck, and dump truck.

Grading - Based on 12 in diameter pipeline assumptions of 30 CY of aggregate base imported, and 30 CY of spoils disposal.

Trips and VMT - Worker crew size of 6 for the 8 and 12 inch diameter pipelines. Worker crew size of 4 for the Bucher Facilities. Haul trips based on material delivery trips for construction equipment, pipe materials, and material import/export. Assumesa 25 mile trip length.

Construction Off-road Equipment Mitigation - Assumes fugitive dust control of watering twice per day.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	26.00
tblConstructionPhase	NumDays	1.00	31.00
tblConstructionPhase	NumDays	1.00	30.00
tblConstructionPhase	PhaseEndDate	9/25/2020	7/2/2020
tblConstructionPhase	PhaseEndDate	4/29/2020	5/27/2020
tblConstructionPhase	PhaseStartDate	9/19/2020	5/28/2020
tblConstructionPhase	PhaseStartDate	4/29/2020	4/15/2020
tblGrading	AcresOfGrading	0.00	13.00
tblGrading	AcresOfGrading	0.00	15.00
tblGrading	MaterialExported	0.00	30.00
tblGrading	MaterialImported	0.00	30.00
tblLandUse	LotAcreage	0.00	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers

Healdsburg Recycled Water Project - Sonoma-North Coast County, Annual

tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripNumber	8.00	38.00
tblTripsAndVMT	HaulingTripNumber	0.00	21.00
tblTripsAndVMT	HaulingTripNumber	0.00	17.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00

tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	18.00	8.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0820	0.7677	0.5818	1.3600e-003	0.1071	0.0352	0.1423	0.0505	0.0326	0.0831	0.0000	119.4249	119.4249	0.0348	0.0000	120.2958
Maximum	**0.0820**	**0.7677**	**0.5818**	**1.3600e-003**	**0.1071**	**0.0352**	**0.1423**	**0.0505**	**0.0326**	**0.0831**	**0.0000**	**119.4249**	**119.4249**	**0.0348**	**0.0000**	**120.2958**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0820	0.7677	0.5818	1.3600e-003	0.0517	0.0352	0.0869	0.0237	0.0326	0.0563	0.0000	119.4248	119.4248	0.0348	0.0000	120.2956
Maximum	**0.0820**	**0.7677**	**0.5818**	**1.3600e-003**	**0.0517**	**0.0352**	**0.0869**	**0.0237**	**0.0326**	**0.0563**	**0.0000**	**119.4248**	**119.4248**	**0.0348**	**0.0000**	**120.2956**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**51.70**	**0.00**	**38.91**	**53.14**	**0.00**	**32.29**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-15-2020	7-14-2020	0.5539	0.5539
2	7-15-2020	9-30-2020	0.2908	0.2908
		Highest	0.5539	0.5539

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	12 Diameter Pipeline	Site Preparation	4/15/2020	5/27/2020	5	31	
2	8 Diameter Pipeline	Site Preparation	5/28/2020	7/2/2020	5	26	
3	Bucher Facilities	Site Preparation	7/3/2020	8/13/2020	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
12 Diameter Pipeline	Excavators	2	8.00	158	0.38
8 Diameter Pipeline	Cement and Mortar Mixers	0	0.00	9	0.56
12 Diameter Pipeline	Off-Highway Trucks	1	4.00	402	0.38
12 Diameter Pipeline	Rubber Tired Dozers	1	4.00	247	0.40
8 Diameter Pipeline	Excavators	2	8.00	158	0.38
8 Diameter Pipeline	Off-Highway Trucks	1	4.00	402	0.38
12 Diameter Pipeline	Graders	0	0.00	187	0.41
8 Diameter Pipeline	Pavers	0	0.00	130	0.42
8 Diameter Pipeline	Rollers	0	0.00	80	0.38
8 Diameter Pipeline	Rubber Tired Dozers	1	4.00	247	0.40
Bucher Facilities	Trenchers	1	8.00	78	0.50
Bucher Facilities	Off-Highway Trucks	1	4.00	402	0.38
Bucher Facilities	Plate Compactors	1	8.00	8	0.43
Bucher Facilities	Tractors/Loaders/Backhoes	1	8.00	97	0.37
8 Diameter Pipeline	Tractors/Loaders/Backhoes	0	0.00	97	0.37
12 Diameter Pipeline	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Bucher Facilities	Off-Highway Trucks	1	8.00	402	0.38
Bucher Facilities	Off-Highway Trucks	1	8.00	402	0.38
Bucher Facilities	Air Compressors	1	8.00	78	0.48
8 Diameter Pipeline	Graders	0	0.00	187	0.41
Bucher Facilities	Graders	0	8.00	187	0.41

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Bucher Facilities	7	8.00	0.00	17.00	16.80	6.60	25.00	LD_Mix	HDT_Mix	HHDT
12 Diameter Pipeline	4	12.00	0.00	38.00	16.80	6.60	25.00	LD_Mix	HDT_Mix	HHDT
8 Diameter Pipeline	4	12.00	0.00	21.00	16.80	6.60	25.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 12 Diameter Pipeline - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0467	0.0000	0.0467	0.0257	0.0000	0.0257	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0211	0.2116	0.1629	3.3000e-004		9.7100e-003	9.7100e-003		8.9300e-003	8.9300e-003	0.0000	28.8711	28.8711	9.3400e-003	0.0000	29.1045
Total	**0.0211**	**0.2116**	**0.1629**	**3.3000e-004**	**0.0467**	**9.7100e-003**	**0.0564**	**0.0257**	**8.9300e-003**	**0.0346**	**0.0000**	**28.8711**	**28.8711**	**9.3400e-003**	**0.0000**	**29.1045**

3.2 12 Diameter Pipeline - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.8000e-004	6.5800e-003	1.3600e-003	2.0000e-005	3.9000e-004	2.0000e-005	4.2000e-004	1.1000e-004	2.0000e-005	1.3000e-004	0.0000	1.7918	1.7918	1.0000e-004	0.0000	1.7944
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2500e-003	9.5000e-004	9.3400e-003	2.0000e-005	2.2700e-003	2.0000e-005	2.2900e-003	6.0000e-004	2.0000e-005	6.2000e-004	0.0000	2.0702	2.0702	7.0000e-005	0.0000	2.0720
Total	**1.4300e-003**	**7.5300e-003**	**0.0107**	**4.0000e-005**	**2.6600e-003**	**4.0000e-005**	**2.7100e-003**	**7.1000e-004**	**4.0000e-005**	**7.5000e-004**	**0.0000**	**3.8620**	**3.8620**	**1.7000e-004**	**0.0000**	**3.8665**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0210	0.0000	0.0210	0.0115	0.0000	0.0115	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0211	0.2116	0.1629	3.3000e-004		9.7100e-003	9.7100e-003		8.9300e-003	8.9300e-003	0.0000	28.8710	28.8710	9.3400e-003	0.0000	29.1045
Total	**0.0211**	**0.2116**	**0.1629**	**3.3000e-004**	**0.0210**	**9.7100e-003**	**0.0307**	**0.0115**	**8.9300e-003**	**0.0205**	**0.0000**	**28.8710**	**28.8710**	**9.3400e-003**	**0.0000**	**29.1045**

3.2 12 Diameter Pipeline - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.8000e-004	6.5800e-003	1.3600e-003	2.0000e-005	3.9000e-004	2.0000e-005	4.2000e-004	1.1000e-004	2.0000e-005	1.3000e-004	0.0000	1.7918	1.7918	1.0000e-004	0.0000	1.7944
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2500e-003	9.5000e-004	9.3400e-003	2.0000e-005	2.2700e-003	2.0000e-005	2.2900e-003	6.0000e-004	2.0000e-005	6.2000e-004	0.0000	2.0702	2.0702	7.0000e-005	0.0000	2.0720
Total	**1.4300e-003**	**7.5300e-003**	**0.0107**	**4.0000e-005**	**2.6600e-003**	**4.0000e-005**	**2.7100e-003**	**7.1000e-004**	**4.0000e-005**	**7.5000e-004**	**0.0000**	**3.8620**	**3.8620**	**1.7000e-004**	**0.0000**	**3.8665**

3.3 8 Diameter Pipeline - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0460	0.0000	0.0460	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0177	0.1775	0.1366	2.8000e-004		8.1400e-003	8.1400e-003		7.4900e-003	7.4900e-003	0.0000	24.2144	24.2144	7.8300e-003	0.0000	24.4102
Total	**0.0177**	**0.1775**	**0.1366**	**2.8000e-004**	**0.0460**	**8.1400e-003**	**0.0542**	**0.0223**	**7.4900e-003**	**0.0298**	**0.0000**	**24.2144**	**24.2144**	**7.8300e-003**	**0.0000**	**24.4102**

3.3 8 Diameter Pipeline - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	3.6400e-003	7.5000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.3000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.9902	0.9902	6.0000e-005	0.0000	0.9917
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0400e-003	8.0000e-004	7.8300e-003	2.0000e-005	1.9000e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.7363	1.7363	6.0000e-005	0.0000	1.7378
Total	**1.1400e-003**	**4.4400e-003**	**8.5800e-003**	**3.0000e-005**	**2.1200e-003**	**2.0000e-005**	**2.1500e-003**	**5.7000e-004**	**2.0000e-005**	**5.9000e-004**	**0.0000**	**2.7265**	**2.7265**	**1.2000e-004**	**0.0000**	**2.7295**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0207	0.0000	0.0207	0.0100	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0177	0.1775	0.1366	2.8000e-004		8.1400e-003	8.1400e-003		7.4900e-003	7.4900e-003	0.0000	24.2144	24.2144	7.8300e-003	0.0000	24.4102
Total	**0.0177**	**0.1775**	**0.1366**	**2.8000e-004**	**0.0207**	**8.1400e-003**	**0.0289**	**0.0100**	**7.4900e-003**	**0.0175**	**0.0000**	**24.2144**	**24.2144**	**7.8300e-003**	**0.0000**	**24.4102**

3.3 8 Diameter Pipeline - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	3.6400e-003	7.5000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.3000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.9902	0.9902	6.0000e-005	0.0000	0.9917
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0400e-003	8.0000e-004	7.8300e-003	2.0000e-005	1.9000e-003	1.0000e-005	1.9200e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.7363	1.7363	6.0000e-005	0.0000	1.7378
Total	**1.1400e-003**	**4.4400e-003**	**8.5800e-003**	**3.0000e-005**	**2.1200e-003**	**2.0000e-005**	**2.1500e-003**	**5.7000e-004**	**2.0000e-005**	**5.9000e-004**	**0.0000**	**2.7265**	**2.7265**	**1.2000e-004**	**0.0000**	**2.7295**

3.4 Bucher Facilities - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.9500e-003	0.0000	7.9500e-003	8.6000e-004	0.0000	8.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0398	0.3631	0.2564	6.6000e-004		0.0173	0.0173		0.0161	0.0161	0.0000	57.6137	57.6137	0.0173	0.0000	58.0455
Total	**0.0398**	**0.3631**	**0.2564**	**6.6000e-004**	**7.9500e-003**	**0.0173**	**0.0252**	**8.6000e-004**	**0.0161**	**0.0169**	**0.0000**	**57.6137**	**57.6137**	**0.0173**	**0.0000**	**58.0455**

3.4 Bucher Facilities - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	2.9400e-003	6.1000e-004	1.0000e-005	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.8016	0.8016	5.0000e-005	0.0000	0.8028
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-004	6.2000e-004	6.0200e-003	1.0000e-005	1.4600e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3356	1.3356	5.0000e-005	0.0000	1.3368
Total	**8.8000e-004**	**3.5600e-003**	**6.6300e-003**	**2.0000e-005**	**1.6400e-003**	**2.0000e-005**	**1.6700e-003**	**4.4000e-004**	**2.0000e-005**	**4.6000e-004**	**0.0000**	**2.1372**	**2.1372**	**1.0000e-004**	**0.0000**	**2.1396**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.5800e-003	0.0000	3.5800e-003	3.9000e-004	0.0000	3.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0398	0.3631	0.2564	6.6000e-004		0.0173	0.0173		0.0161	0.0161	0.0000	57.6136	57.6136	0.0173	0.0000	58.0454
Total	**0.0398**	**0.3631**	**0.2564**	**6.6000e-004**	**3.5800e-003**	**0.0173**	**0.0208**	**3.9000e-004**	**0.0161**	**0.0165**	**0.0000**	**57.6136**	**57.6136**	**0.0173**	**0.0000**	**58.0454**

3.4 Bucher Facilities - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	2.9400e-003	6.1000e-004	1.0000e-005	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.8016	0.8016	5.0000e-005	0.0000	0.8028
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-004	6.2000e-004	6.0200e-003	1.0000e-005	1.4600e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3356	1.3356	5.0000e-005	0.0000	1.3368
Total	**8.8000e-004**	**3.5600e-003**	**6.6300e-003**	**2.0000e-005**	**1.6400e-003**	**2.0000e-005**	**1.6700e-003**	**4.4000e-004**	**2.0000e-005**	**4.6000e-004**	**0.0000**	**2.1372**	**2.1372**	**1.0000e-004**	**0.0000**	**2.1396**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.578299	0.039453	0.169996	0.109068	0.028307	0.006716	0.029274	0.026666	0.003071	0.001838	0.005325	0.000874	0.001112

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Programmatic Analysis
CalEEMod Runs

HRWP - Programmatic Components

Sonoma-North Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.27	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

HRWP - Programmatic Components - Sonoma-North Coast County, Winter

Project Characteristics - Construction run for programmatic level expansion of 12-inch pipeline and operations associated with increased water haul trips.

Land Use - Acreage based on project construction associated with 3..5 mile extension of the 12in diameter pipeline.

Construction Phase - Project schedule scaled up based on project level assumption of 6 weeks for 3,500 ft of pipeline.

Off-road Equipment - Project specific equipment.

Trips and VMT - Assumes a construction crew size of 6 workers. Haul trips based on construction equipment deliveries, pipe material deliveries, and haul trucks for material import/export assuming 10 CY capacity trucks.

Grading - Material import/export based on project level assumption of 30 CY of material import and export for 3,500 ft pipeline.

Vehicle Trips - 40 one-way daily trips based on permanent program to haul 10-20 truck trips per day. Trip length based on average distance to the two primary customers. Percent trip adjusted to represent 100% of the haul truck trips and purpose.

Energy Use -

Construction Off-road Equipment Mitigation - Assumes fugitive dust control of watering twice per day.

Fleet Mix - Analysis assumes all water hauling trips are HHDT trips.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	161.00
tblFleetMix	HHD	0.03	1.00
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.17	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	6.7160e-003	0.00
tblFleetMix	MCY	5.3250e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	1.1120e-003	0.00
tblFleetMix	MHD	0.03	0.00
tblFleetMix	OBUS	3.0710e-003	0.00
tblFleetMix	SBUS	8.7400e-004	0.00
tblFleetMix	UBUS	1.8380e-003	0.00

tblGrading	MaterialExported	0.00	158.00
tblGrading	MaterialImported	0.00	158.00
tblLandUse	LotAcreage	0.00	1.27
tblOffRoadEquipment	HorsePower	402.00	97.00
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripNumber	40.00	164.00
tblTripsAndVMT	WorkerTripNumber	13.00	12.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CW_TL	14.70	14.40
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	0.00	40.00
tblVehicleTrips	SU_TR	0.00	40.00
tblVehicleTrips	WD_TR	0.00	40.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	1.3392	13.0204	11.5705	0.0201	3.1968	0.6468	3.8436	1.7043	0.5951	2.2994	0.0000	1,965.4669	1,965.4669	0.5661	0.0000	1,979.6191
2021	1.2619	12.0749	11.4503	0.0201	3.2141	0.5892	3.8033	1.7086	0.5421	2.2506	0.0000	1,959.3052	1,959.3052	0.5655	0.0000	1,973.4437
Maximum	**1.3392**	**13.0204**	**11.5705**	**0.0201**	**3.2141**	**0.6468**	**3.8436**	**1.7086**	**0.5951**	**2.2994**	**0.0000**	**1,965.4669**	**1,965.4669**	**0.5661**	**0.0000**	**1,979.6191**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	1.3392	13.0204	11.5705	0.0201	1.5406	0.6468	2.1874	0.7940	0.5951	1.3891	0.0000	1,965.4669	1,965.4669	0.5661	0.0000	1,979.6191
2021	1.2619	12.0749	11.4503	0.0201	1.5579	0.5892	2.1471	0.7982	0.5421	1.3403	0.0000	1,959.3052	1,959.3052	0.5655	0.0000	1,973.4437
Maximum	**1.3392**	**13.0204**	**11.5705**	**0.0201**	**1.5579**	**0.6468**	**2.1874**	**0.7982**	**0.5951**	**1.3891**	**0.0000**	**1,965.4669**	**1,965.4669**	**0.5661**	**0.0000**	**1,979.6191**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**51.67**	**0.00**	**43.32**	**53.35**	**0.00**	**40.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.2359	8.8132	1.8941	0.0229	0.4965	0.0279	0.5244	0.1355	0.0267	0.1621		2,469.1289	2,469.1289	0.1729		2,473.4500
Total	**0.2359**	**8.8132**	**1.8942**	**0.0229**	**0.4965**	**0.0279**	**0.5244**	**0.1355**	**0.0267**	**0.1621**		**2,469.1291**	**2,469.1291**	**0.1729**	**0.0000**	**2,473.4503**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.2359	8.8132	1.8941	0.0229	0.4965	0.0279	0.5244	0.1355	0.0267	0.1621		2,469.1289	2,469.1289	0.1729		2,473.4500
Total	**0.2359**	**8.8132**	**1.8942**	**0.0229**	**0.4965**	**0.0279**	**0.5244**	**0.1355**	**0.0267**	**0.1621**		**2,469.1291**	**2,469.1291**	**0.1729**	**0.0000**	**2,473.4503**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/14/2020	3/26/2021	5	161	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Off-Highway Trucks	1	4.00	97	0.37
Site Preparation	Rubber Tired Dozers	1	4.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	5	12.00	0.00	164.00	16.80	6.60	25.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0113	0.0000	3.0113	1.6552	0.0000	1.6552			0.0000			0.0000
Off-Road	1.2392	12.5965	10.8811	0.0177		0.6443	0.6443		0.5928	0.5928		1,714.6766	1,714.6766	0.5546		1,728.5406
Total	**1.2392**	**12.5965**	**10.8811**	**0.0177**	**3.0113**	**0.6443**	**3.6556**	**1.6552**	**0.5928**	**2.2479**		**1,714.6766**	**1,714.6766**	**0.5546**		**1,728.5406**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.8100e-003	0.3557	0.0754	9.8000e-004	0.0323	1.3300e-003	0.0336	8.5200e-003	1.2800e-003	9.7900e-003		105.2024	105.2024	6.3200e-003		105.3604
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0902	0.0682	0.6139	1.4600e-003	0.1533	1.1500e-003	0.1544	0.0407	1.0600e-003	0.0417		145.5879	145.5879	5.2100e-003		145.7181
Total	**0.1000**	**0.4238**	**0.6893**	**2.4400e-003**	**0.1855**	**2.4800e-003**	**0.1880**	**0.0492**	**2.3400e-003**	**0.0515**		**250.7903**	**250.7903**	**0.0115**		**251.0785**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.3551	0.0000	1.3551	0.7448	0.0000	0.7448			0.0000			0.0000
Off-Road	1.2392	12.5965	10.8811	0.0177		0.6443	0.6443		0.5928	0.5928	0.0000	1,714.6766	1,714.6766	0.5546		1,728.5406
Total	**1.2392**	**12.5965**	**10.8811**	**0.0177**	**1.3551**	**0.6443**	**1.9994**	**0.7448**	**0.5928**	**1.3376**	**0.0000**	**1,714.6766**	**1,714.6766**	**0.5546**		**1,728.5406**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.8100e-003	0.3557	0.0754	9.8000e-004	0.0323	1.3300e-003	0.0336	8.5200e-003	1.2800e-003	9.7900e-003		105.2024	105.2024	6.3200e-003		105.3604
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0902	0.0682	0.6139	1.4600e-003	0.1533	1.1500e-003	0.1544	0.0407	1.0600e-003	0.0417		145.5879	145.5879	5.2100e-003		145.7181
Total	**0.1000**	**0.4238**	**0.6893**	**2.4400e-003**	**0.1855**	**2.4800e-003**	**0.1880**	**0.0492**	**2.3400e-003**	**0.0515**		**250.7903**	**250.7903**	**0.0115**		**251.0785**

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0113	0.0000	3.0113	1.6552	0.0000	1.6552			0.0000			0.0000
Off-Road	1.1688	11.6883	10.8227	0.0177		0.5869	0.5869		0.5399	0.5399		1,714.9601	1,714.9601	0.5547		1,728.8264
Total	**1.1688**	**11.6883**	**10.8227**	**0.0177**	**3.0113**	**0.5869**	**3.5982**	**1.6552**	**0.5399**	**2.1951**		**1,714.9601**	**1,714.9601**	**0.5547**		**1,728.8264**

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.2700e-003	0.3259	0.0725	9.6000e-004	0.0496	1.1800e-003	0.0508	0.0128	1.1300e-003	0.0139		103.8007	103.8007	6.2600e-003		103.9571
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0838	0.0608	0.5551	1.4100e-003	0.1533	1.1000e-003	0.1544	0.0407	1.0100e-003	0.0417		140.5444	140.5444	4.6300e-003		140.6601
Total	**0.0930**	**0.3867**	**0.6276**	**2.3700e-003**	**0.2029**	**2.2800e-003**	**0.2051**	**0.0534**	**2.1400e-003**	**0.0556**		**244.3451**	**244.3451**	**0.0109**		**244.6173**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.3551	0.0000	1.3551	0.7448	0.0000	0.7448			0.0000			0.0000
Off-Road	1.1688	11.6883	10.8227	0.0177		0.5869	0.5869		0.5399	0.5399	0.0000	1,714.9601	1,714.9601	0.5547		1,728.8264
Total	**1.1688**	**11.6883**	**10.8227**	**0.0177**	**1.3551**	**0.5869**	**1.9420**	**0.7448**	**0.5399**	**1.2848**	**0.0000**	**1,714.9601**	**1,714.9601**	**0.5547**		**1,728.8264**

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.2700e-003	0.3259	0.0725	9.6000e-004	0.0496	1.1800e-003	0.0508	0.0128	1.1300e-003	0.0139		103.8007	103.8007	6.2600e-003		103.9571
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0838	0.0608	0.5551	1.4100e-003	0.1533	1.1000e-003	0.1544	0.0407	1.0100e-003	0.0417		140.5444	140.5444	4.6300e-003		140.6601
Total	**0.0930**	**0.3867**	**0.6276**	**2.3700e-003**	**0.2029**	**2.2800e-003**	**0.2051**	**0.0534**	**2.1400e-003**	**0.0556**		**244.3451**	**244.3451**	**0.0109**		**244.6173**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2359	8.8132	1.8941	0.0229	0.4965	0.0279	0.5244	0.1355	0.0267	0.1621		2,469.1289	2,469.1289	0.1729		2,473.4500
Unmitigated	0.2359	8.8132	1.8941	0.0229	0.4965	0.0279	0.5244	0.1355	0.0267	0.1621		2,469.1289	2,469.1289	0.1729		2,473.4500

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	40.00	40.00	40.00	209,664	209,664
Total	40.00	40.00	40.00	209,664	209,664

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.40	0.00	0.00	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

HRWP - Programmatic Components

Sonoma-North Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.27	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

HRWP - Programmatic Components - Sonoma-North Coast County, Annual

Project Characteristics - Construction run for programmatic level expansion of 12-inch pipeline and operations associated with increased water haul trips.

Land Use - Acreage based on project construction associated with 3..5 mile extension of the 12in diameter pipeline.

Construction Phase - Project schedule scaled up based on project level assumption of 6 weeks for 3,500 ft of pipeline.

Off-road Equipment - Project specific equipment.

Trips and VMT - Assumes a construction crew size of 6 workers. Haul trips based on construction equipment deliveries, pipe material deliveries, and haul trucks for material import/export assuming 10 CY capacity trucks.

Grading - Material import/export based on project level assumption of 30 CY of material import and export for 3,500 ft pipeline.

Vehicle Trips - 40 one-way daily trips based on permanent program to haul 10-20 truck trips per day. Trip length based on average distance to the two primary customers. Percent trip adjusted to represent 100% of the haul truck trips and purpose.

Energy Use -

Construction Off-road Equipment Mitigation - Assumes fugitive dust control of watering twice per day.

Fleet Mix - Analysis assumes all water hauling trips are HHDT trips.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	161.00
tblFleetMix	HHD	0.03	1.00
tblFleetMix	LDA	0.58	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.17	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	6.7160e-003	0.00
tblFleetMix	MCY	5.3250e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	1.1120e-003	0.00
tblFleetMix	MHD	0.03	0.00
tblFleetMix	OBUS	3.0710e-003	0.00
tblFleetMix	SBUS	8.7400e-004	0.00
tblFleetMix	UBUS	1.8380e-003	0.00

tblGrading	MaterialExported	0.00	158.00
tblGrading	MaterialImported	0.00	158.00
tblLandUse	LotAcreage	0.00	1.27
tblOffRoadEquipment	HorsePower	402.00	97.00
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	25.00
tblTripsAndVMT	HaulingTripNumber	40.00	164.00
tblTripsAndVMT	WorkerTripNumber	13.00	12.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CW_TL	14.70	14.40
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	0.00	40.00
tblVehicleTrips	SU_TR	0.00	40.00
tblVehicleTrips	WD_TR	0.00	40.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0665	0.6505	0.5778	1.0100e-003	0.1594	0.0323	0.1918	0.0851	0.0298	0.1149	0.0000	89.2577	89.2577	0.0257	0.0000	89.8995
2021	0.0382	0.3680	0.3489	6.1000e-004	0.0978	0.0180	0.1157	0.0520	0.0165	0.0686	0.0000	54.2751	54.2751	0.0156	0.0000	54.6662
Maximum	**0.0665**	**0.6505**	**0.5778**	**1.0100e-003**	**0.1594**	**0.0323**	**0.1918**	**0.0851**	**0.0298**	**0.1149**	**0.0000**	**89.2577**	**89.2577**	**0.0257**	**0.0000**	**89.8995**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0665	0.6505	0.5778	1.0100e-003	0.0766	0.0323	0.1090	0.0396	0.0298	0.0694	0.0000	89.2576	89.2576	0.0257	0.0000	89.8994
2021	0.0382	0.3680	0.3489	6.1000e-004	0.0472	0.0180	0.0652	0.0243	0.0165	0.0408	0.0000	54.2751	54.2751	0.0156	0.0000	54.6662
Maximum	**0.0665**	**0.6505**	**0.5778**	**1.0100e-003**	**0.0766**	**0.0323**	**0.1090**	**0.0396**	**0.0298**	**0.0694**	**0.0000**	**89.2576**	**89.2576**	**0.0257**	**0.0000**	**89.8994**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**51.84**	**0.00**	**43.36**	**53.43**	**0.00**	**39.95**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

HRWP - Programmatic Components - Sonoma-North Coast County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-14-2020	11-13-2020	0.4712	0.4712
2	11-14-2020	2-13-2021	0.4557	0.4557
3	2-14-2021	5-13-2021	0.1953	0.1953
		Highest	0.4712	0.4712

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0421	1.5977	0.3272	4.2100e-003	0.0868	4.9700e-003	0.0918	0.0238	4.7600e-003	0.0285	0.0000	411.6513	411.6513	0.0276	0.0000	412.3421
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0421**	**1.5977**	**0.3272**	**4.2100e-003**	**0.0868**	**4.9700e-003**	**0.0918**	**0.0238**	**4.7600e-003**	**0.0285**	**0.0000**	**411.6513**	**411.6513**	**0.0276**	**0.0000**	**412.3421**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0421	1.5977	0.3272	4.2100e-003	0.0868	4.9700e-003	0.0918	0.0238	4.7600e-003	0.0285	0.0000	411.6513	411.6513	0.0276	0.0000	412.3421
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0421**	**1.5977**	**0.3272**	**4.2100e-003**	**0.0868**	**4.9700e-003**	**0.0918**	**0.0238**	**4.7600e-003**	**0.0285**	**0.0000**	**411.6513**	**411.6513**	**0.0276**	**0.0000**	**412.3421**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/14/2020	3/26/2021	5	161	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Excavators	2	8.00	158	0.38
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Off-Highway Trucks	1	4.00	97	0.37
Site Preparation	Rubber Tired Dozers	1	4.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	5	12.00	0.00	164.00	16.80	6.60	25.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1506	0.0000	0.1506	0.0828	0.0000	0.0828	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0620	0.6298	0.5441	8.9000e-004		0.0322	0.0322		0.0296	0.0296	0.0000	77.7764	77.7764	0.0252	0.0000	78.4053
Total	**0.0620**	**0.6298**	**0.5441**	**8.9000e-004**	**0.1506**	**0.0322**	**0.1828**	**0.0828**	**0.0296**	**0.1124**	**0.0000**	**77.7764**	**77.7764**	**0.0252**	**0.0000**	**78.4053**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.8000e-004	0.0176	3.6500e-003	5.0000e-005	1.5400e-003	7.0000e-005	1.6100e-003	4.1000e-004	6.0000e-005	4.7000e-004	0.0000	4.8032	4.8032	2.8000e-004	0.0000	4.8102
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0200e-003	3.0800e-003	0.0301	7.0000e-005	7.3200e-003	6.0000e-005	7.3800e-003	1.9500e-003	5.0000e-005	2.0000e-003	0.0000	6.6781	6.6781	2.4000e-004	0.0000	6.6840
Total	**4.5000e-003**	**0.0207**	**0.0338**	**1.2000e-004**	**8.8600e-003**	**1.3000e-004**	**8.9900e-003**	**2.3600e-003**	**1.1000e-004**	**2.4700e-003**	**0.0000**	**11.4813**	**11.4813**	**5.2000e-004**	**0.0000**	**11.4942**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0678	0.0000	0.0678	0.0372	0.0000	0.0372	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0620	0.6298	0.5441	8.9000e-004		0.0322	0.0322		0.0296	0.0296	0.0000	77.7763	77.7763	0.0252	0.0000	78.4052
Total	**0.0620**	**0.6298**	**0.5441**	**8.9000e-004**	**0.0678**	**0.0322**	**0.1000**	**0.0372**	**0.0296**	**0.0669**	**0.0000**	**77.7763**	**77.7763**	**0.0252**	**0.0000**	**78.4052**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.8000e-004	0.0176	3.6500e-003	5.0000e-005	1.5400e-003	7.0000e-005	1.6100e-003	4.1000e-004	6.0000e-005	4.7000e-004	0.0000	4.8032	4.8032	2.8000e-004	0.0000	4.8102
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0200e-003	3.0800e-003	0.0301	7.0000e-005	7.3200e-003	6.0000e-005	7.3800e-003	1.9500e-003	5.0000e-005	2.0000e-003	0.0000	6.6781	6.6781	2.4000e-004	0.0000	6.6840
Total	**4.5000e-003**	**0.0207**	**0.0338**	**1.2000e-004**	**8.8600e-003**	**1.3000e-004**	**8.9900e-003**	**2.3600e-003**	**1.1000e-004**	**2.4700e-003**	**0.0000**	**11.4813**	**11.4813**	**5.2000e-004**	**0.0000**	**11.4942**

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0919	0.0000	0.0919	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0357	0.3565	0.3301	5.4000e-004		0.0179	0.0179		0.0165	0.0165	0.0000	47.4515	47.4515	0.0154	0.0000	47.8351
Total	**0.0357**	**0.3565**	**0.3301**	**5.4000e-004**	**0.0919**	**0.0179**	**0.1098**	**0.0505**	**0.0165**	**0.0670**	**0.0000**	**47.4515**	**47.4515**	**0.0154**	**0.0000**	**47.8351**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.8000e-004	9.8600e-003	2.1400e-003	3.0000e-005	1.4400e-003	4.0000e-005	1.4800e-003	3.7000e-004	3.0000e-005	4.1000e-004	0.0000	2.8912	2.8912	1.7000e-004	0.0000	2.8954
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2800e-003	1.6700e-003	0.0166	4.0000e-005	4.4700e-003	3.0000e-005	4.5000e-003	1.1900e-003	3.0000e-005	1.2200e-003	0.0000	3.9325	3.9325	1.3000e-004	0.0000	3.9357
Total	**2.5600e-003**	**0.0115**	**0.0188**	**7.0000e-005**	**5.9100e-003**	**7.0000e-005**	**5.9800e-003**	**1.5600e-003**	**6.0000e-005**	**1.6300e-003**	**0.0000**	**6.8236**	**6.8236**	**3.0000e-004**	**0.0000**	**6.8311**

3.2 Site Preparation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0413	0.0000	0.0413	0.0227	0.0000	0.0227	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0357	0.3565	0.3301	5.4000e-004		0.0179	0.0179		0.0165	0.0165	0.0000	47.4514	47.4514	0.0154	0.0000	47.8351
Total	**0.0357**	**0.3565**	**0.3301**	**5.4000e-004**	**0.0413**	**0.0179**	**0.0592**	**0.0227**	**0.0165**	**0.0392**	**0.0000**	**47.4514**	**47.4514**	**0.0154**	**0.0000**	**47.8351**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.8000e-004	9.8600e-003	2.1400e-003	3.0000e-005	1.4400e-003	4.0000e-005	1.4800e-003	3.7000e-004	3.0000e-005	4.1000e-004	0.0000	2.8912	2.8912	1.7000e-004	0.0000	2.8954
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2800e-003	1.6700e-003	0.0166	4.0000e-005	4.4700e-003	3.0000e-005	4.5000e-003	1.1900e-003	3.0000e-005	1.2200e-003	0.0000	3.9325	3.9325	1.3000e-004	0.0000	3.9357
Total	**2.5600e-003**	**0.0115**	**0.0188**	**7.0000e-005**	**5.9100e-003**	**7.0000e-005**	**5.9800e-003**	**1.5600e-003**	**6.0000e-005**	**1.6300e-003**	**0.0000**	**6.8236**	**6.8236**	**3.0000e-004**	**0.0000**	**6.8311**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0421	1.5977	0.3272	4.2100e-003	0.0868	4.9700e-003	0.0918	0.0238	4.7600e-003	0.0285	0.0000	411.6513	411.6513	0.0276	0.0000	412.3421
Unmitigated	0.0421	1.5977	0.3272	4.2100e-003	0.0868	4.9700e-003	0.0918	0.0238	4.7600e-003	0.0285	0.0000	411.6513	411.6513	0.0276	0.0000	412.3421

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	40.00	40.00	40.00	209,664	209,664
Total	40.00	40.00	40.00	209,664	209,664

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.40	0.00	0.00	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Energy Consumption and Energy-Related GHG Emissions

Healdsburg Recycled Water Project SEIR
Energy Consumption Emissions

Annual Electrical Demand	320,625 kWh

Energy Consumption (kWh)	Annual GHG Emissions (MT CO_2e)
320,625	33.22

Notes & Assumptions:

Annual electrical demand based on information provided by the City: 19,500 kWh would be required at build out for the recycled water system and booster pump station would require 825 kWh/day.

Source: City of Healdsburg (personal communication). February 27, 2019, May 2, 2019.

City of Healdsburg Municipal Utility Department Emission Factor Calculations

Emissions Factors	t/kWh	Share of Portfolio	t/kWh	t/MWh	lbs/MWh
Eligible Renewable Sources	-	38%	-		
Large Hydroelectric	-	39%	-		
Natural Gas	0.000459	17%	0.00007795		
Unspecified	0.000427	6%	0.00002565		
Total	-	100%	0.00010359	0.10359481	228.38719563

Source: City of Healdsburg Electric Utilities Department: 2017 Power Content Label. Available: https://www.ci.healdsburg.ca.us/231/Power-Content-Label

Natural Gas Facility Emissions Factor Calculation

	CO_2	CH_4	N_2O	CO_2e
kg per mmBtu [1]	53.06	-	-	-
g per mmBtu [1]	53,060	1.00	0.10	-
t per mmBtu	0.05	0.00	0.00	-
t CO_2e per mmBtu	0.05	0.00	0.00	0.05
t CO_2e per GJ	-			0.06

Source: EPA Emission Factors (March 2018) Available: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf

Heat Rates

Value	Units
7,755	btu/kWh
0.00818196	GJ/kWh

Source: California Natural Gas-Fired Heat Rates (Table 1) Available: http://www.energy.ca.gov/2017publications/CEC-200-2017-003/CEC-200-2017-003.pdf

Natural Gas Facility Emissions Factor

Natural gas emissions factor	0.06	t CO_2e per GJ
Natural gas facility heat rate	0.00818196	GJ/kWh
Natural Gas Facility Emissions Factor	0.000458507	t CO_2e per kWh

Unspecified Electricity Source Emissions Factor Calculation

ARB California GHG Inventory Unspecified Electricity Emissions Factors

	CO_2	CH_4	N_2O	CO_2e	Units
Pacific Northwest (PNW)	427	0.008117	0.00094388	427.4774042	g/kWh
Pacific Southwest (PSW)	427	0.008117	0.00094388	427.4774042	g/kWh
PNW and PSW				0.000427477	t/kWh

Source: Annex 1B. Electricity Production - Imports. California's 2000-2014 GHG Emission Inventory Available: https://www.arb.ca.gov/cc/inventory/doc/methods_00-14/annex_1b_electricity_production_imports.pdf

Unspecified Emissions Factor

Unspecified Electricity Emissions Factor	0.000427	t CO_2e per kWh

Conversions

GJ	mmBtu
1	0.947817
g	kg
1	1,000
g	t
1	0.000001
lb	t
2204.62	1
kW	MW
1	0.001
GWP Factors	
CO_2	1
CH_4	28
N_2O	265

Summary of Proposed Project Energy Requirements

Phase	Energy Requirement	Unit	Annual Energy Consumption (MMBtu)
Construction (amortized over 25 years)			
2018 Proposed Area			
Diesel	378	Gallons/yr	52
Gasoline	19	Gallons/yr	2
2018 Program Expansion Area			
Diesel	441	Gallons/yr	61
Gasoline	40	Gallons/yr	5
		Subtotal	120
Site Operations			
Electrical	320,625	KWh/yr	1,094
		Subtotal	1,094
Operational Transportation			
2018 Program Expansion Area			
Diesel	243,450	Gallons/yr	33,619
Gasoline	-	Gallons/yr	-
		Subtotal	33,619
		Total	34,834

Notes:

Totals do not add due to rounding.

Source: Modeled by AECOM in 2019

Conversion Factors			
Category	**Amount**	**Units**	**Sources:**
Diesel (heat content)	5.8	MMBtu/barrel	http://www.theclimateregistry.org/wp-content/uploads/2017/05/2017-Climate-Registry-Default-Emission-Factors.pdf
Motor Gasoline	5.25	MMBtu/barrel	http://www.theclimateregistry.org/wp-content/uploads/2017/05/2017-Climate-Registry-Default-Emission-Factors.pdf
Natural Gas	0.1	MMBtu/therm	https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references
Propane	0.0913	MMBtu/gallon	https://www.eia.gov/environment/emissions/co2_vol_mass.php
Kerosene	0.135	MMBtu/gallon	https://www.eia.gov/environment/emissions/co2_vol_mass.php
Wood	20	MMBtu/cord	https://www.eia.gov/energyexplained/index.cfm?page=about_btu 2020 Forecast Energy Use (MMBtu)
Gallons per Barrel	42	gallons/barrel	http://www.theclimateregistry.org/wp-content/uploads/2017/05/2017-Climate-Registry-Default-Emission-Factors.pdf

2018 Proposed Area: Construction Fuel Consumption, Total and Amortized over 30 Years

Phase	Source	MT CO_2e/yr [a]	Fuel Type	Factor (MT CO_2/gallon) [b]	Gallons/year
12 inch Pipeline	Offroad Equip	29.10	Diesel	0.01016	2,865
	Hauling	1.79	Diesel	0.01016	177
	Vendor	0.00	Diesel	0.01016	-
	Worker	2.07	Gas	0.008887	233
8 inch Pipeline	Offroad Equip	24.41	Diesel	0.01016	2,403
	Hauling	0.99	Diesel	0.01016	98
	Vendor	0.00	Diesel	0.01016	-
	Worker	1.74	Gas	0.008887	196
Bucher Irrigation Facilities	Offroad Equip	58.05	Diesel	0.01016	5,713
	Hauling	0.80	Diesel	0.01016	79
	Vendor	0.00	Diesel	0.01016	-
	Worker	1.34	Gas	0.008887	150
			Total Gallons	**Diesel**	**11,334**
				Gasoline	**579**
			Amortized Demands (over 30 years)	**Diesel**	**378**
				Gasoline	**19**

Notes:

Assumed amortization period is 30 years.

Sources:

[a] Modeled by AECOM in 2019;

[b] U.S. Energy Information Administration 2016 (https://www.eia.gov/environment/emissions/co2_vol_mass.php)

2018 Program Expansion Area: Construction Fuel Consumption, Total and Amortized over 30 Years

Phase	Source	MT CO_2e/yr [a]	Fuel Type	Factor (MT CO_2/gallon) [b]	Gallons/year
2018 Program Expansion	Offroad Equip	126.61	Diesel	0.01016	12,461
	Hauling	7.71	Diesel	0.01016	758
	Worker	10.62	Gas	0.008887	1,195
			Total Gallons	**Diesel**	**13,220**
				Gasoline	**1,195**
			Amortized Demands (over 30 years)	**Diesel**	**441**
				Gasoline	**40**

Notes:

Assumed amortization period is 30 years.

Sources:

[a] Modeled by AECOM in 2019;

[b] U.S. Energy Information Administration 2016 (https://www.eia.gov/environment/emissions/co2_vol_mass.php)

APPENDIX E

NOISE DATA

Project-Generated Construction Source Noise Prediction Model

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	1,034	50
	50	83
From Palmer	700	54
From Bucher	900	52
From Irrigation Facility	3500	37

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Compactor (ground)	83	0.2
Pickup Truck	75	0.4
Dump Truck	76	0.4
Excavator	81	0.4
Excavator	81	0.4
Backhoe	78	0.4
Ground Type	Soft	
Ground Factor	0.50	

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Compactor (ground)	76.0
Pickup Truck	71.0
Dump Truck	72.0
Excavator	77.0
Excavator	77.0
Backhoe	74.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
82.9

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, Janua

[2] Based on the following from the Federal Transit Noise and Vibration

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold