Althouse and MEADE, inc.
BIOLOGICAL AND ENVIRONMENTAL SERVICES
1602 Spring Street, Paso Robles, CA 93446
(805) 237-9626 • Fax (805) 237-9181 • www.althouseandmeade.com

January 8, 2020
Project 1152.03
Bradley Canyon Farm, LLC
1255 Tierra Redonda
Bradley, CA 93426

Re: Native Tree Impact Assessment Letter for Bradley Canyon Farm, San Luis Obispo County
Dear Mr. Dayspring:
This letter provides information regarding project-related impacts to native tree species at 1255 Tierra Redonda, Bradley, California. The project has potential to result in impacts to several native oak, pine, and manzanita trees present within and surrounding proposed work areas. Work activities with potential to impact native oak trees include tree trimming (>10\% canopy), grade or drainage changes, trenching, soil compaction, soil contamination, herbicides, fertilization, and/or irrigation. The minimum protection zone (MPZ) for oak trees extends to the dripline of the canopy, with a critical root zone (CRZ) that typically extends beyond the canopy ( 1.5 times canopy width). The level of impact will be determined by proximity to MPZ or CRZ, dependent on the work activity. Hoop houses that interfere with existing oak trees may require limb trimming of greater than 10 percent of tree canopy. Grading and/or soil compaction is possible at hoop house locations, potentially compromising root systems and water intake potential. Irrigation is proposed at several locations across the site, which has potential to impact oak tree root systems and contaminate soil if fertilizers are used.

Native trees in proximity of the project area were surveyed to determine potential impacts and to assess health and structure of individual trees. Methods and findings of this survey are provided below.

## Methods

Mature trees were surveyed on November 13 and December 6, 2019 by Althouse and Meade Botanist Kristen Andersen and Biologist Charleen Rode. Each tree with a diameter at breast height (dbh) greater than or equal to four inches was visually assessed from the ground and tagged with a numerically coded metal tag (from 1 through 100, and 102 through 172) on the trunk of each tree just above dbh. Data collection consisted of tree identification to species, height (feet), dbh (inches), canopy width (feet), Critical Root Zone (CRZ) width, and tree health. Tree CRZ was calculated by multiplying 1.5 times the canopy width (feet). Individual tree health and structural condition was evaluated using a scale of $0-5$ where $0=$ dead, $1=$ poor and $5=$ excellent. Nests
and tree cavities were noted when observed. Trees were marked digitally in the field and GPS coordinates were recorded and mapped for each tree, including calculated CRZ (Figure 1).

## Results

A total of 183 native trees were observed within the work area or extended 50-foot buffer zone, and included big berry manzanita (Arctostaphylos glauca), gray pine (Pinus sabiniana), coast live oak (Quercus agrifolia), and blue oak (Quercus douglasii) (Table 1). Potential impacts to native trees by proposed work activities was determined by CRZ proximity to work areas and/or intersection with proposed or existing structures (Figure 1).

Table 1. Native Trees Observed within Buffered Work Area

| Tally of Trees by Species |  |  |  |
| :--- | ---: | ---: | ---: |
| Scientific Name | Dead | Protected | Potentially Impacted |
| Arctostaphylos glauca | 2 | 25 | 1 |
| Pinus sabiniana | 0 | 17 | 6 |
| Quercus agrifolia | 0 | 5 | 1 |
| Quercus douglasii | 0 | 94 | 32 |
| Total | $\mathbf{2}$ | $\mathbf{1 4 1}$ | $\mathbf{4 0}$ |

## Recommendations

We recommend that an "As-Built Tree Impact Assessment" be submitted to the County upon hoop house installation and prior to final inspection to inform final mitigation obligations for impacted trees. The "As-Built" assessment will determine the number of impacted native trees required to satisfy the $2: 1$ ratio consistent with typical County standards for native tree impacts.

Thank you for allowing us to be of assistance. If you have any questions or concerns, please call at (805) 237-9626.

Sincerely,


Kristen Andersen
Biologist III


Legend

| Project Components** | CRZ Protection Status*** | Tree Species |
| :---: | :---: | :---: |
| Built | Impacted | - Arctostaphylos glauca |
| Planned | Protected | Pinus sabiniana |

## Native Tree Impact Assessment for Bradley Canyon Farms, LLC

Table 1. Tree Assessment Results

| Tag Number | Scientific Name | Height (feet) | DBH (inches) | Canopy Width (feet) | CRZ Width (feet) | Tree Health | Impact Status | Explanation of Impact Status |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Quercus douglasii | 37 | 28 | 40 | 45 | 4 | Protected | - |
| 2 | Quercus douglasii | 22 | 7 | 6 | 9 | 4 | Protected | - |
| 3 | Arctostaphylos glauca | 8 | 4 | 15 | 22.5 | 4 | Protected | - |
| 4 | Quercus douglasii | 35 | 23 | 24 | 36 | 2.5 | Protected | - |
| 5 | Quercus douglasii | 40 | 24 | 30 | 36 | 3 | Protected | - |
| 6 | Quercus douglasii | 36 | 12 | 21 | 31.5 | 4 | Protected | - |
| 7 | Quercus douglasii | 28 | 18 | 30 | 45 | 4 | Protected | - |
| 8 | Quercus douglasii | 22 | 12 | 18 | 27 | 4.5 | Protected | - |
| 9 | Quercus douglasii | 30 | 18 | 30 | 45 | 4 | Protected | - |
| 10 | Quercus douglasii | 25 | 16 | 12 | 18 | 3.5 | Protected | - |
| 11 | Quercus douglasii | 38 | 22 | 32 | 48 | 4 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 12 | Quercus douglasii | 25 | 11 | 22 | 33 | 4 | Protected | - |
| 13 | Quercus douglasii | 20 | 5 | 6 | 9 | 3 | Protected | - |
| 14 | Quercus douglasii | 15 | 5 | 16 | 24 | 4 | Protected | - |
| 15 | Quercus douglasii | 20 | 10 | 15 | 22.5 | 4 | Protected | - |
| 16 | Quercus douglasii | 28 | 13 | 30 | 45 | 5 | Protected | CRZ intersects with hoop house structure; canopy does not. Impact negligible. |


| Tag Number | Scientific Name | Height (feet) | DBH <br> (inches) | Canopy Width (feet) | CRZ <br> Width <br> (feet) | Tree Health | Impact Status | Explanation of Impact Status |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 17 | Quercus douglasii | 22 | 23 | 36 | 54 | 3.5 | Protected | - |
| 18 | Quercus douglasii | 22 | 16 | 26 | 39 | 3.5 | Protected | - |
| 19 | Quercus douglasii | 32 | 19 | 54 | 81 | 5 | Protected | - |
| 20 | Quercus douglasii | 30 | 13 | 40 | 60 | 3.5 | Protected | - |
| 21 | Quercus douglasii | 30 | 32 | 40 | 60 | 5 | Protected | - |
| 22 | Quercus douglasii | 25 | 15 | 36 | 54 | 5 | Protected | - |
| 23 | Quercus douglasii | 22 | 9 | 28 | 42 | 5 | Protected | - |
| 24 | Quercus douglasii | 20 | 10 | 20 | 30 | 5 | Protected | - |
| 25 | Arctostaphylos glauca | 12 | 6 | 14 | 21 | 4 | Protected | - |
| 26 | Arctostaphylos glauca | 10 | 7 | 24 | 36 | 4 | Protected | - |
| 27 | Quercus douglasii** | 20 | 13 | 24 | 36 | 3 | Protected | - |
| 28 | Arctostaphylos glauca | 16 | 13 | 24 | 36 | 5 | Protected | - |
| 29 | Quercus douglasii | 20 | 9 | 16 | 24 | 4 | Protected | - |
| 30 | Arctostaphylos glauca | 20 | 13 | 24 | 36 | 3.5 | Protected | - |
| 31 | Quercus douglasii | 33 | 22 | 40 | 60 | 5 | Protected | - |
| 32 | Quercus douglasii | 30 | 34 | 50 | 75 | 5 | Protected | - |
| 33 | Quercus douglasii | 35 | 9 | 30 | 45 | 4 | Protected | - |
| 34 | Arctostaphylos glauca | 12 | 10 | 24 | 36 | 5 | Protected | - |
| 35 | Quercus douglasii | 20 | 15 | 40 | 60 | 4 | Protected | - |
| 36 | Quercus douglasii | 18 | 11 | 30 | 45 | 4 | Protected | - |
| 37 | Arctostaphylos glauca | 10 | 11 | 20 | 30 | 2 | Protected | - |


| Tag Number | Scientific Name | Height (feet) | DBH (inches) | Canopy Width (feet) | CRZ <br> Width <br> (feet) | Tree Health | Impact Status | Explanation of Impact Status |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 38 | Quercus douglasii | 32 | 24 | 48 | 72 | 5 | Potentially Impacted | Canopy intersects with hoop house structures. Potential for trimming. |
| 39 | Quercus douglasii | 35 | 31 | 44 | 66 | 4.5 | Protected | - |
| 40 | Quercus douglasii | 40 | 33 | 42 | 63 | 5 | Protected | CRZ intersects with hoop house structure; canopy does not. Impact negligible. |
| 41 | Quercus douglasii | 25 | 22 | 35 | 52.5 | 2.5 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 42 | Arctostaphylos glauca | 10 | 9 | 36 | 54 | 3.5 | Protected | CRZ intersects with hoop house structure; canopy does not. Impact negligible. |
| 43 | Quercus douglasii | 22 | 13 | 30 | 45 | 4 | Protected | CRZ intersects with hoop house structure; canopy does not. Impact negligible. |
| 44 | Quercus douglasii | 25 | 12 | 32 | 48 | 4 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 45 | Quercus douglasii | 45 | 22 | 50 | 75 | 5 | Potentially <br> Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 46 | Quercus douglasii | 20 | 10 | 25 | 37.5 | 4 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 47 | Quercus douglasii | 18 | 7 | 16 | 24 | 4 | Protected | - |



| Tag Number | Scientific Name | Height (feet) | DBH (inches) | Canopy Width <br> (feet) | CRZ <br> Width <br> (feet) | Tree Health | Impact Status | Explanation of Impact Status |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 63 | Quercus douglasii | 30 | 18 | 44 | 66 | 5 | Protected | CRZ intersects with hoop house structure; canopy does not. Impact negligible. |
| 64 | Quercus douglasii | 45 | 18 | 40 | 60 | 5 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 65 | Quercus douglasii | 25 | 31 | 42 | 63 | 5 | Protected | - |
| 66 | Quercus douglasii | 35 | 13 | 45 | 67.5 | 4.5 | Potentially Impacted | Canopy within edge of hoop house structure. Potential for trimming. |
| 67 | Quercus douglasii | 45 | 14 | 40 | 60 | 5 | Protected | CRZ intersects with hoop house structure; canopy does not. Impact negligible. |
| 68 | Quercus douglasii | 30 | 30 | 45 | 67.5 | 5 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 69 | Quercus agrifolia | 22 | 16 | 16 | 24 | 5 | Protected | - |
| 70 | Quercus douglasii | 30 | 32 | 50 | 75 | 4 | Protected | CRZ intersects with hoop house structure; canopy does not. Impact negligible. |
| 71 | Quercus douglasii | 25 | 23 | 28 | 42 | 4 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 72 | Quercus agrifolia | 15 | 10 | 16 | 24 | 5 | Protected | CRZ intersects with hoop house structure; canopy |

\(\left.$$
\begin{array}{llllllll}\hline \begin{array}{l}\text { Tag } \\
\text { Number }\end{array} & \text { Scientific Name } & \begin{array}{l}\text { Height } \\
\text { (feet) }\end{array} & \begin{array}{l}\text { DBH } \\
\text { (inches) }\end{array} & \begin{array}{l}\text { Canopy } \\
\text { Width } \\
\text { (feet) }\end{array} & \begin{array}{l}\text { CRZ } \\
\text { Width } \\
\text { (feet) }\end{array}
$$ \& \begin{array}{l}Tree <br>

Health\end{array} \& Impact Status\end{array} \quad $$
\begin{array}{l}\text { Explanation of Impact Status }\end{array}
$$\right]\)| does not. Impact |
| :--- |
| negligible. |

\(\left.\left.$$
\begin{array}{lllllllll}\hline \begin{array}{l}\text { Tag } \\
\text { Number }\end{array} & \text { Scientific Name } & \begin{array}{l}\text { Height } \\
\text { (feet) }\end{array} & \begin{array}{l}\text { DBH } \\
\text { (inches) }\end{array} & \begin{array}{l}\text { Canopy } \\
\text { Width } \\
\text { (feet) }\end{array} & \begin{array}{l}\text { CRZ } \\
\text { Width } \\
\text { (feet) }\end{array} & \begin{array}{l}\text { Tree } \\
\text { Health }\end{array} & \text { Impact Status } & \text { Explanation of Impact Status }\end{array}
$$\right] \begin{array}{l}CRZ intersects with hoop <br>
house structure; canopy <br>

does not. Impact\end{array}\right]\)| negligible. |
| :--- |

$\left.\left.\begin{array}{lllllllll}\hline \begin{array}{l}\text { Tag } \\ \text { Number }\end{array} & \text { Scientific Name } & \begin{array}{l}\text { Height } \\ \text { (feet) }\end{array} & \begin{array}{l}\text { DBH } \\ \text { (inches) }\end{array} & \begin{array}{l}\text { Canopy } \\ \text { Width } \\ \text { (feet) }\end{array} & \begin{array}{l}\text { CRZ } \\ \text { Width } \\ \text { (feet) }\end{array} & \begin{array}{l}\text { Tree } \\ \text { Health }\end{array} & \text { Impact Status } & \text { Explanation of Impact Status }\end{array}\right] \begin{array}{l}\text { Canopy intersects with } \\ \text { proposed water tank }\end{array}\right]$ components.

| Tag Number | Scientific Name | Height (feet) | DBH <br> (inches) | Canopy Width (feet) | CRZ <br> Width <br> (feet) | Tree Health | Impact Status | Explanation of Impact Status |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 121 | Quercus douglasii | 18 | 4 | 20 | 30 | 1 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 122 | Quercus douglasii | 20 | 11 | 20 | 30 | 3 | Protected | - |
| 123 | Quercus douglasii | 25 | 12 | 25 | 37.5 | 4 | Protected | - |
| 124 | Quercus douglasii | 25 | 89 | 26 | 39 | 3 | Protected | - |
| 125 | Quercus douglasii | 50 | 23 | 54 | 81 | 3 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 126 | Quercus douglasii** | 45 | 16 | 30 | 45 | 4 | Protected | - |
| 127 | Quercus douglasii | 25 | 5 | 26 | 39 | 4 | Protected | - |
| 128 | Quercus douglasii | 20 | 4 | 15 | 22.5 | 4 | Protected | - |
| 129 | Quercus douglasii | 15 | 11 | 10 | 15 | 4 | Protected | - |
| 130 | Quercus douglasii | 40 | 7 | 20 | 30 | 3.5 | Protected | - |
| 131 | Pinus sabiniana | 18 | 9 | 12 | 18 | 4 | Protected | - |
| 132 | Quercus douglasii | 32 | 5 | 30 | 45 | 3 | Potentially Impacted | Canopy is near edge of hoop house structure. Potential for trimming. |
| 133 | Quercus douglasii | 15 | 12 | 10 | 15 | 3 | Protected | - |
| 134 | Quercus douglasii | 25 | 23 | 20 | 30 | 4 | Protected | CRZ intersects with hoop house structure; canopy does not. Impact negligible. |
| 135 | Quercus douglasii | 25 | 6 | 30 | 45 | 4 | Protected | CRZ intersects with hoop house structure; canopy |



| Tag Number | Scientific Name | Height (feet) | DBH (inches) | Canopy <br> Width <br> (feet) | CRZ <br> Width <br> (feet) | Tree Health | Impact Status | Explanation of Impact Status |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 151 | Arctostaphylos glauca | 12 | 5 | 18 | 27 | 4 | Protected | - |
| 152 | Quercus douglasii | 20 | 8 | 6 | 9 | 3.5 | Protected | - |
| 153 | Quercus douglasii | 25 | 6 | 12 | 18 | 2.5 | Protected | - |
| 154 | Quercus douglasii | 20 | 5 | 3 | 4.5 | 1 | Protected | - |
| 155 | Quercus douglasii | 25 | 8 | 18 | 27 | 2 | Protected | - |
| 156 | Quercus douglasii | 25 | 36 | 20 | 30 | 2 | Protected | - |
| 157 | Quercus douglasii | 28 | 28 | 50 | 75 | 4.5 | Potentially <br> Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 158 | Quercus douglasii | 55 | 24 | 36 | 54 | 3 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 159 | Quercus douglasii | 42 | 14 | 30 | 45 | 4 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 160 | Quercus douglasii | 35 | 14 | 28 | 42 | 4 | Potentially <br> Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 161 | Quercus douglasii | 32 | 14 | 24 | 36 | 4 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 162 | Quercus douglasii | 22 | 11 | 27 | 40.5 | 3.5 | Potentially <br> Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 163 | Quercus douglasii | 24 | 19 | 25 | 37.5 | 4 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |


| Tag Number | Scientific Name | Height (feet) | DBH (inches) | Canopy Width (feet) | CRZ <br> Width <br> (feet) | Tree Health | Impact Status | Explanation of Impact Status |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 164 | Quercus agrifolia | 45 | 5 | 40 | 60 | 5 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 165 | Quercus douglasii | 15 | 24 | 6 | 9 | 4 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 166 | Quercus douglasii | 50 | 6 | 56 | 84 | 4.5 | Protected | CRZ intersects with hoop house structure; canopy does not. Impact negligible. |
| 167 | Quercus douglasii | 25 | 12 | 15 | 22.5 | 3.5 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 168 | Quercus douglasii | 25 | 6 | 20 | 30 | 4 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 169 | Quercus douglasii | 20 | 23 | 10 | 15 | 3.5 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 170 | Quercus douglasii | 54 | 31 | 40 | 60 | 5 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 171 | Quercus douglasii | 50 | 14 | 36 | 54 | 5 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 172 | Quercus douglasii | 40 | 32 | 32 | 48 | 4.5 | Potentially Impacted | Canopy intersects with hoop house structure. Potential for trimming. |
| 173* | Arctostaphylos glauca | 12 | NA | Dead | Dead | 0 | Dead | - |


| Tag Number | Scientific Name | Height (feet) | DBH <br> (inches) | Canopy Width (feet) | CRZ <br> Width <br> (feet) | Tree Health | Impact Status | Explanation of Impact Status |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 174* | Arctostaphylos glauca | 10 | 4 | 25 | 18 | 3 | Protected | - |
| 175* | Arctostaphylos glauca | 7 | NA | 15 | 11 | 5 | Protected | - |
| 176* | Quercus agrifolia | 35 | 22 | 20 | 20 | 0.5 | Protected | - |
| 177* | Arctostaphylos glauca | 12 | 13 | 15 | 11 | 5 | Protected | - |
| 178* | Arctostaphylos glauca | 15 | 17 | 25 | 18 | 4 | Protected | - |
| 179* | Arctostaphylos glauca | 8 | NA | Dead | Dead | 0 | Dead | - |
| 180* | Arctostaphylos glauca | 12 | 18 | 12 | 9 | 4 | Protected | - |
| 181* | Pinus sabiniana | 60 | 32 | 54 | 81 | 4 | Potentially Impacted | Canopy intersects with proposed water tank components. |
| 182* | Arctostaphylos glauca | 8 | 3 | 8 | 12 | 3.5 | Protected | - |
| 183* | Arctostaphylos glauca | 10 | 5 | 20 | 30 | 2.5 | Protected | - |
| 184* | Arctostaphylos glauca | 12 | 5 | 20 | 30 | 5 | Protected | - |
| 185* | Arctostaphylos glauca | 8 | 4 | 10 | 15 | 2.5 | Potentially <br> Impacted | Canopy intersects with proposed parking lot. |
| 186* | Arctostaphylos glauca | 6 | 3 | 8 | 12 | 3 | Protected | - |
| 187* | Arctostaphylos glauca | 8 | 3 | 24 | 36 | 5 | Protected | Canopy intersects with hoop house structure. DBH $<4$ inches. |


| Tally of Trees by Species |  |  |  |
| :--- | ---: | ---: | ---: |
| Scientific Name | Dead | Protected | Potentially Impacted |
| Arctostaphylos glauca | 2 | 25 | 1 |
| Pinus sabiniana | 0 | 17 | 6 |
| Quercus agrifolia | 0 | 5 | 1 |


| Tag Number | Height (feet) | DBH (inches) | Canopy Width (feet) |  | CRZ Width (feet) | Tree Health | Impact Status | Explanation of Impact Status |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Quercus douglasii |  |  |  | 0 |  |  | 94 | 32 |
| Total |  |  |  | 2 |  |  | 141 | 40 |

NOTE: A final as-built impact analysis is recommended to inform final mitigation obligations for impacted trees.
Total Tree Count = $183 \quad$ Tree tag numbers not included: 101, 106, 110, 114
DBH: Diameter at Breast Height CRZ: Critical Root Zone
*Trees not tagged due to inaccessibility to trunks.
**Unattended stick nest observed in tree canopy.

