Colusa County
Initial Study
Evaluation of Environmental Impacts

1. Project Title: **American Commodity Company Bioenergy Plant CUP # 18-10-1**

2. Lead agency name and address: **Colusa County Department of Planning and Building 220 12th Street Colusa, CA 95932**

3. Contact person and phone number: **Kent Johanns, Associate Planner (530) 458-0480**

4. Project location: **The project site is located north of Abel Road and approximately three-quarters of a mile east of Husted Road in the Williams area; it is located primarily on APN 017-050-048, with a northern portion on APN 017-050-047 (Parcel Map attached in Appendix A)**

5. Project sponsor's name and address: **American Commodity Company (Bob Watts) 6133 Abel Road Williams, CA 95987**

6. General Plan designation: **Agriculture General (AG)**

7. Zoning Classification: **Exclusive Agriculture (E-A)**

8. Surround land uses and setting: **See Project Description below**

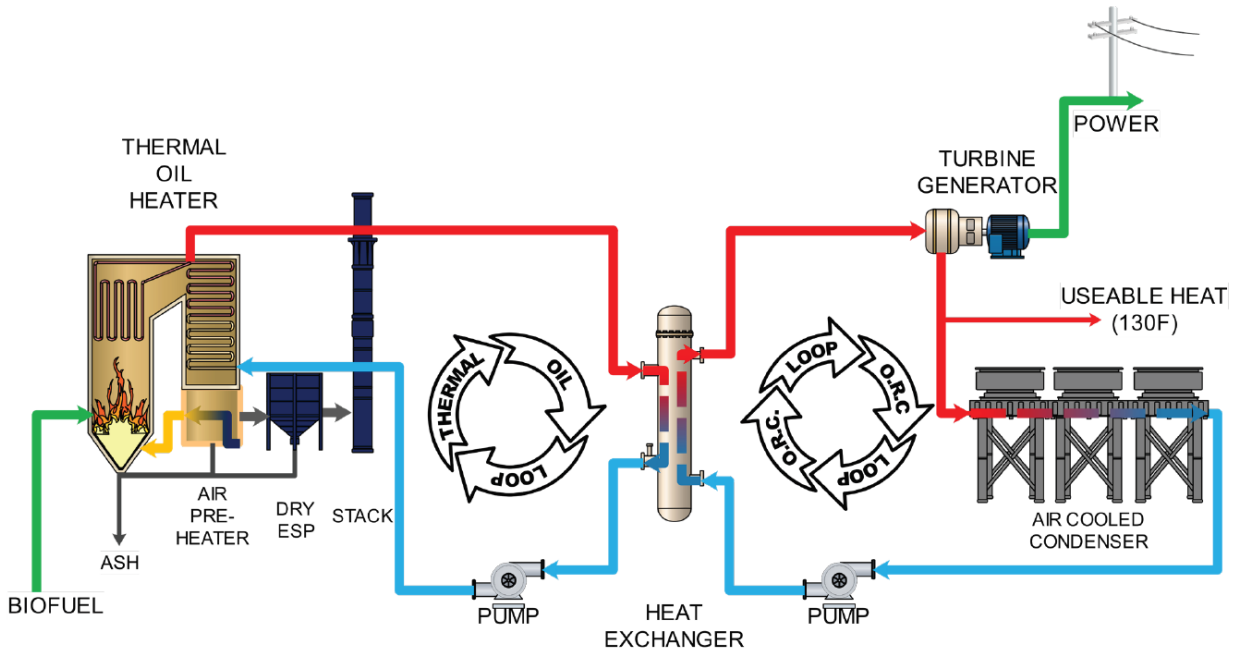
PROJECT DESCRIPTION

Overview

The project team will install a rice hull fueled powerplant at the American Commodity Company (ACC) rice milling facility on Abel Road in Williams, CA. The purpose of the project is to utilize ACC's rice hulls to provide 3.0 MW of net electric power (3.6 gross) for export sale to Pacific Gas and Electric (PG&E) under a Bioenergy Marketing Adjusting Tariff (BioMAT) power purchase contract. The proposed bioenergy facility includes a thermal oil (TO) heater integrated with an organic rankine cycle (ORC) generator that is interconnected with the PG&E power grid. This is an established process for small (1 to 8 MW) biomass power facilities that has been implemented in hundreds of installations world-wide over the last 20 years.

The TO heater is designed to utilize up to 37,000 bone dry tons (BDT) rice hull biomass generated primarily onsite as fuel to provide heated thermal oil to the generator. The power generation is achieved with a turbine-based ORC with air cooled condenser designed for an electrical generation rate of 3.6 MW with 0.6 MW utilized for station loads and the remaining 3.0 MW delivered to the grid. The process flow diagram in Figure 1 describes the process from rice hull biofuel to power including the TO and the ORC loops along with all of the major equipment to be supplied.

Figure 1 - Biomass Powerplant Process Flow Diagram



The project will include several major equipment items including storage silos, TO heater, and organic Rankine cycle (ORC) turbine. This equipment will do the following:

- The storage silos will accept mechanically conveyed rice hulls from the rice hulling operations[1] as there will be no outside storage of the rice hulls;
- The thermal oil heater is a thermal oxidizer (or gas burner) that will combust the producer gas and capture the heat through the use of a heat exchanger;
- The ORC turbine will use heat captured in the heat exchanger to generate renewable electricity. The ORC unit is a closed loop system that does not generate emissions;
- The thermal oil loop in the ORC is cooled by an air-cooled system.

[1] The three storage silos will store 35 tons of rice hull feedstock each.

- Any feedstock hulls brought in from other nearby facilities hopper style "belly dump" trailer or a "walking floor" style trailer. The tractor/trailer will drive onto an elevated receiving platform, where the hulls will be discharged through a grate and onto a mechanical conveyor. The hulls will be conveyed to a silo for storage. The receiving platform and conveying equipment will be contained within a covered and sided structure.
- The ash will be conveyed into a "clam-shell" style bin, the conveying system will be enclosed. The hopper bin will contain the ash until there is sufficient volume for a bulk trailer load. During load-out a tractor/trailer will pull into an enclosed structure and under the clam-shell bin. The load-out structure will be positioned so the tractor/trailer will be facing east or west during load-out to prevent wind drift.

Figure 2 shows a similar reference project built in Northern Italy in 2009 where similar technology was employed. West Biofuels (Woodland, CA) will deliver the facility to ACC on a turnkey basis and execute the project from engineering to commissioning. In addition, West Biofuels will provide an annual maintenance support contract to ACC on an ongoing basis.

Figure 2 - Reference Rice Hull Powerplant Facility in Northern Italy

There is only one continuous emissions source when the plant is operating, the stack of the TO heater. The TO heater employs ultra-low emissions technologies to minimize emissions. In addition, there will be emission controls for NOx and CO including: air staged combustion, flue-gas recirculation, and Selective Non-Catalytic Reduction. The controls for PM include a multiclone and a dry ESP to remove any fine particulate in the exhaust. The PM controls are very efficient, with control of PM emissions generally exceeding 99%.

One of the environmentally advantageous systems being employed by the proposed facility is a dry/adiabatic cooling system. Dry/adiabatic cooling systems use significantly less water than traditional wet cooling systems, and are becoming more common in thermal power plants. While dry/adiabatic cooling systems do typically require higher capital costs and somewhat higher auxiliary operating power than traditional wet cooling towers, its use here will avoid the use of significant amount of fresh water for power plant cooling purposes.

A small emergency backup engine is supplied with the thermal oil equipment in case of an electrical outage. This engine is less than 50 horsepower and runs a backup pump to ensure that thermal oil is circulated until the plant cools down to a safe level. The rice hulls and ash will be handled in enclosed structures including silos, conveyors, and structures so no fugitive dust emissions are anticipated.

Location and Project Background

The proposed bioenergy facility will be located at 6133 Abel Road in conjunction with the existing ACC Williams rice hulling facility. ACC is a full-service handler and marketer of milled and paddy rice, including all types and varieties of short and medium grain rice produced in California. This facility, and bioenergy plant to be collocated, is approximately one mile west of Interstate 5, and southwest of the center of the City of Williams. Figure 3 displays the ACC facility and some of the surrounding lands. Figure 4 shows the location of the facility in a regional context. Figure 5 displays the facility layout, and Figures 6, 7, and 8 show elevations of most of the power plant components.

Figure 3 - ACC Williams Facility

The ACC facility property is comprised of two parcels. The bioenergy facility will be located on Colusa County Assessor Parcel No. 017-050-048-000, a 5.31-acre parcel in the southeast corner of the ACC facility property. The zoning designation of this parcel is Exclusive Agriculture (E-A). Table 44-2.20.30 of the Colusa County Zoning Code lists Energy Generation for Off-Site Use as an allowable use in the E-A zone if a Use Permit is approved by the Colusa County Planning Commission.

Figure 4 - Regional Location of Proposed Bioenergy Facility

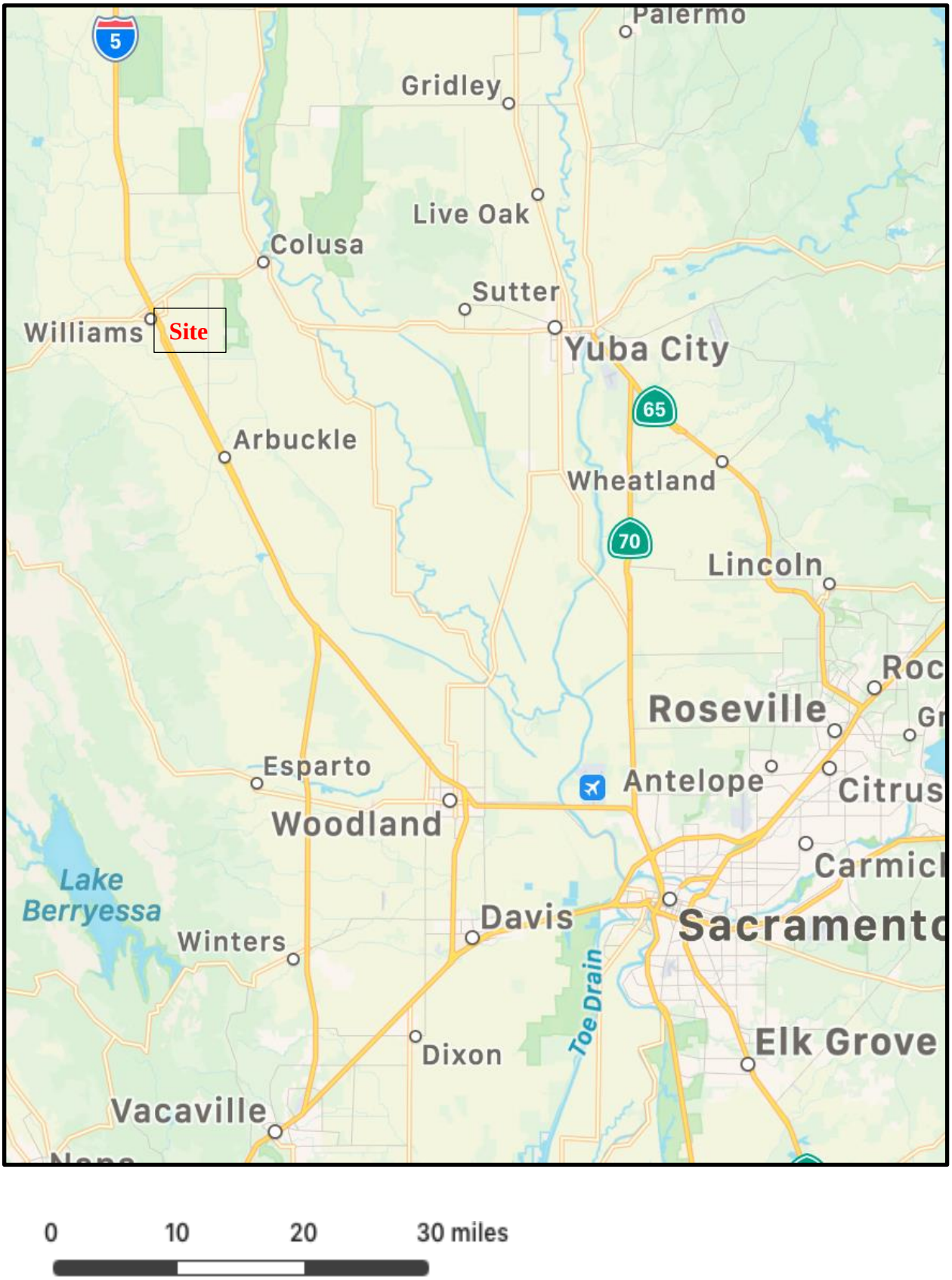


Figure 5 - Layout of Bioenergy Facility at ACC Williams

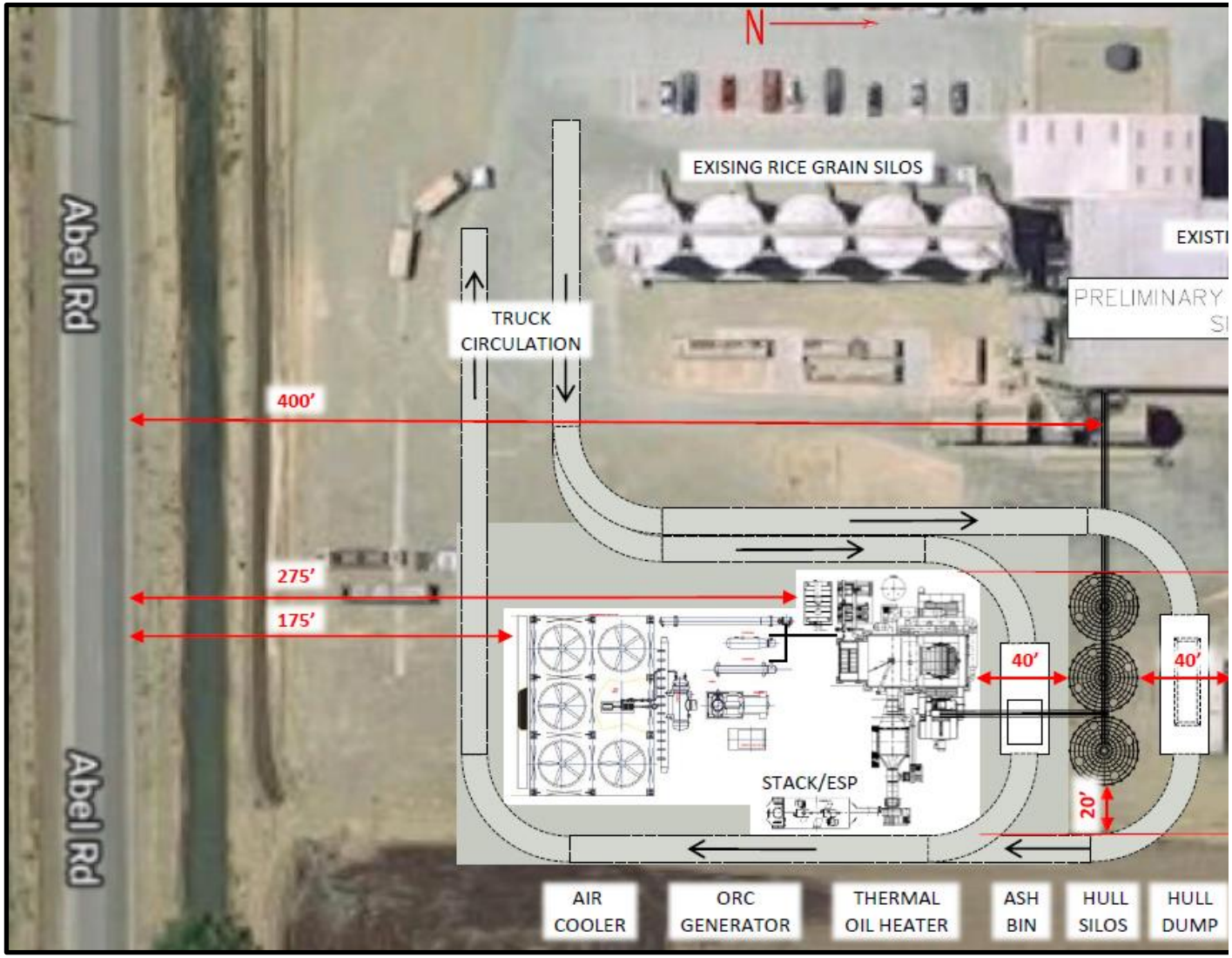


Figure 6 - Thermal Oil Heater Elevation

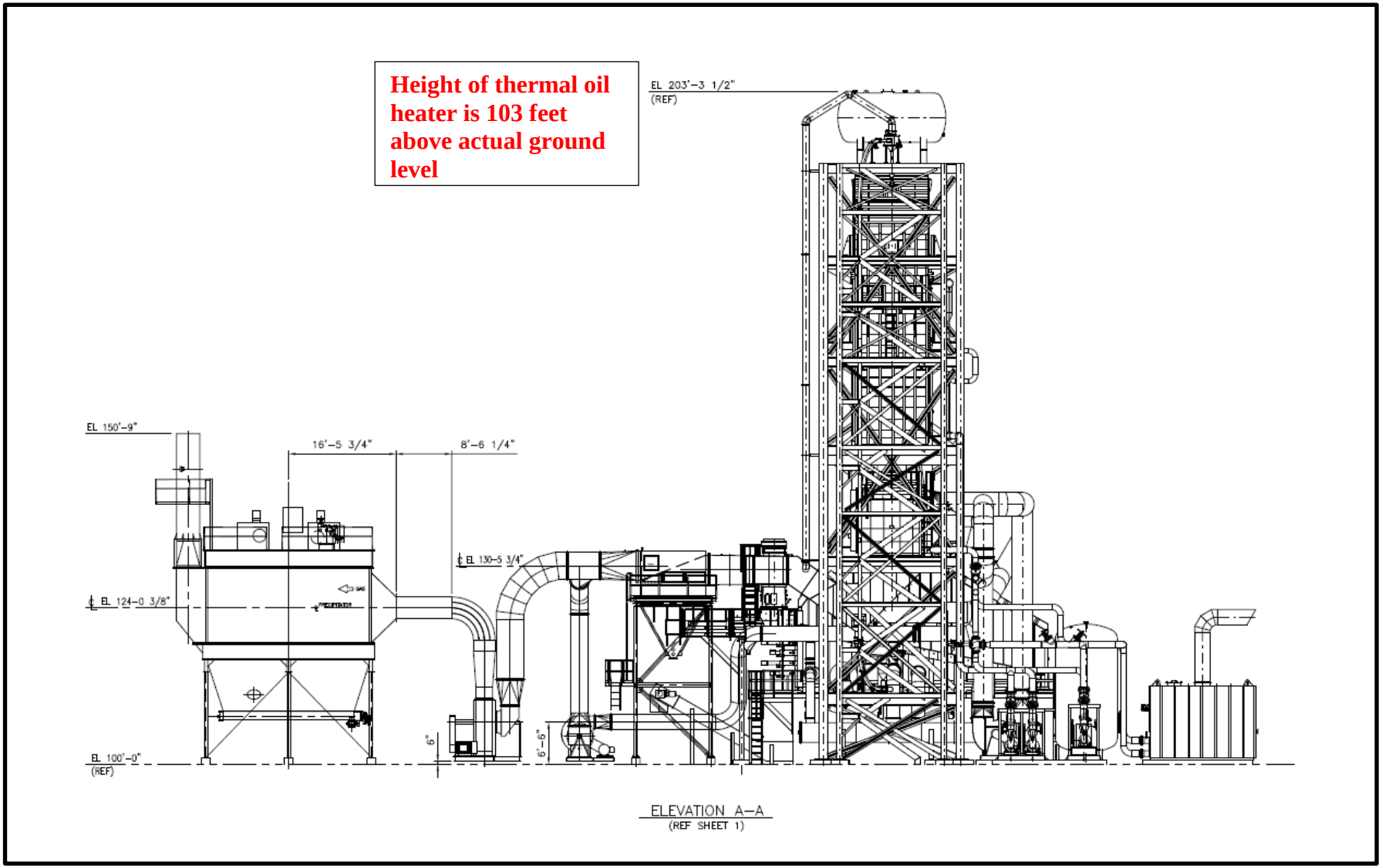


Figure 7 - Dry Cooling Tower Elevation

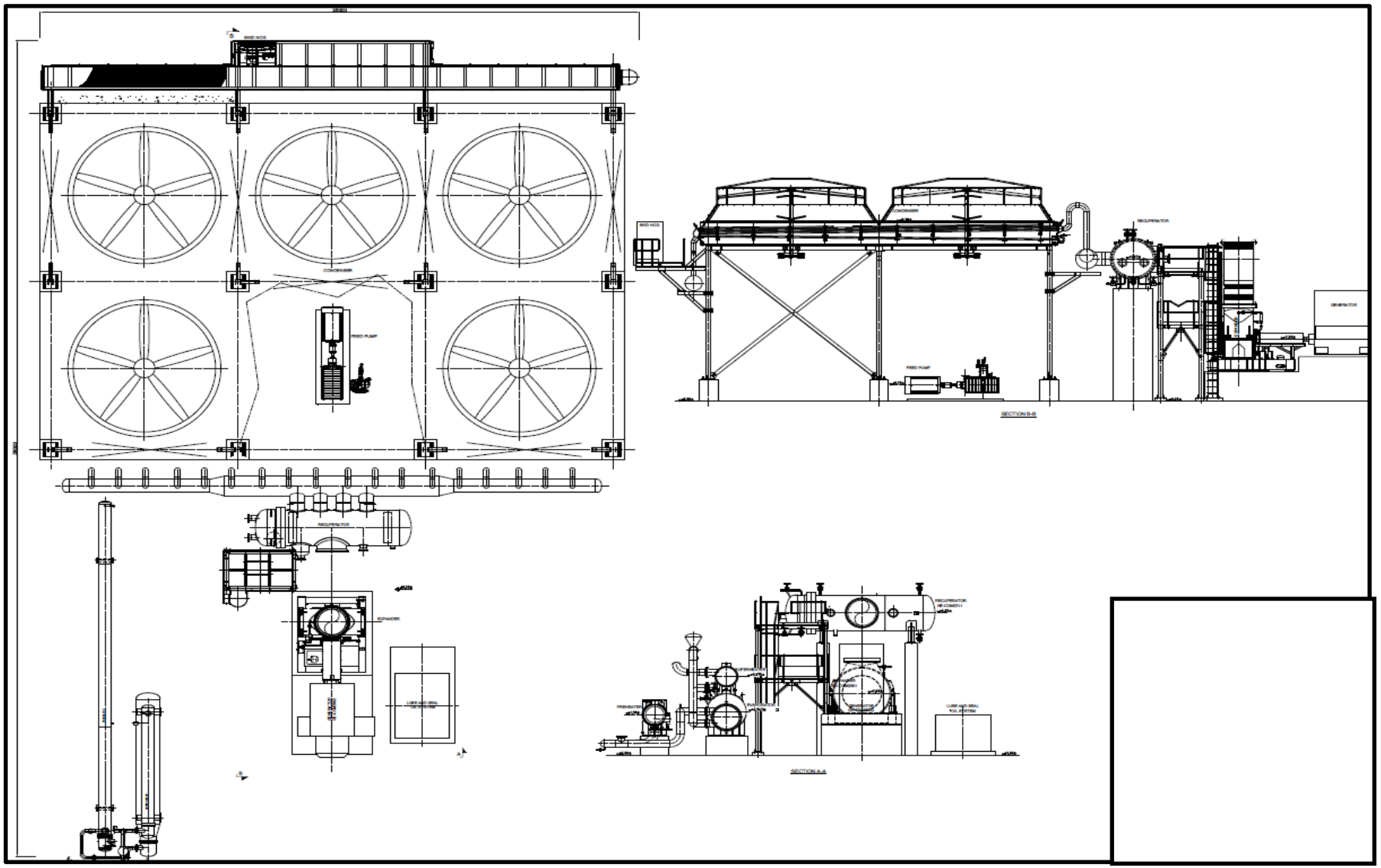
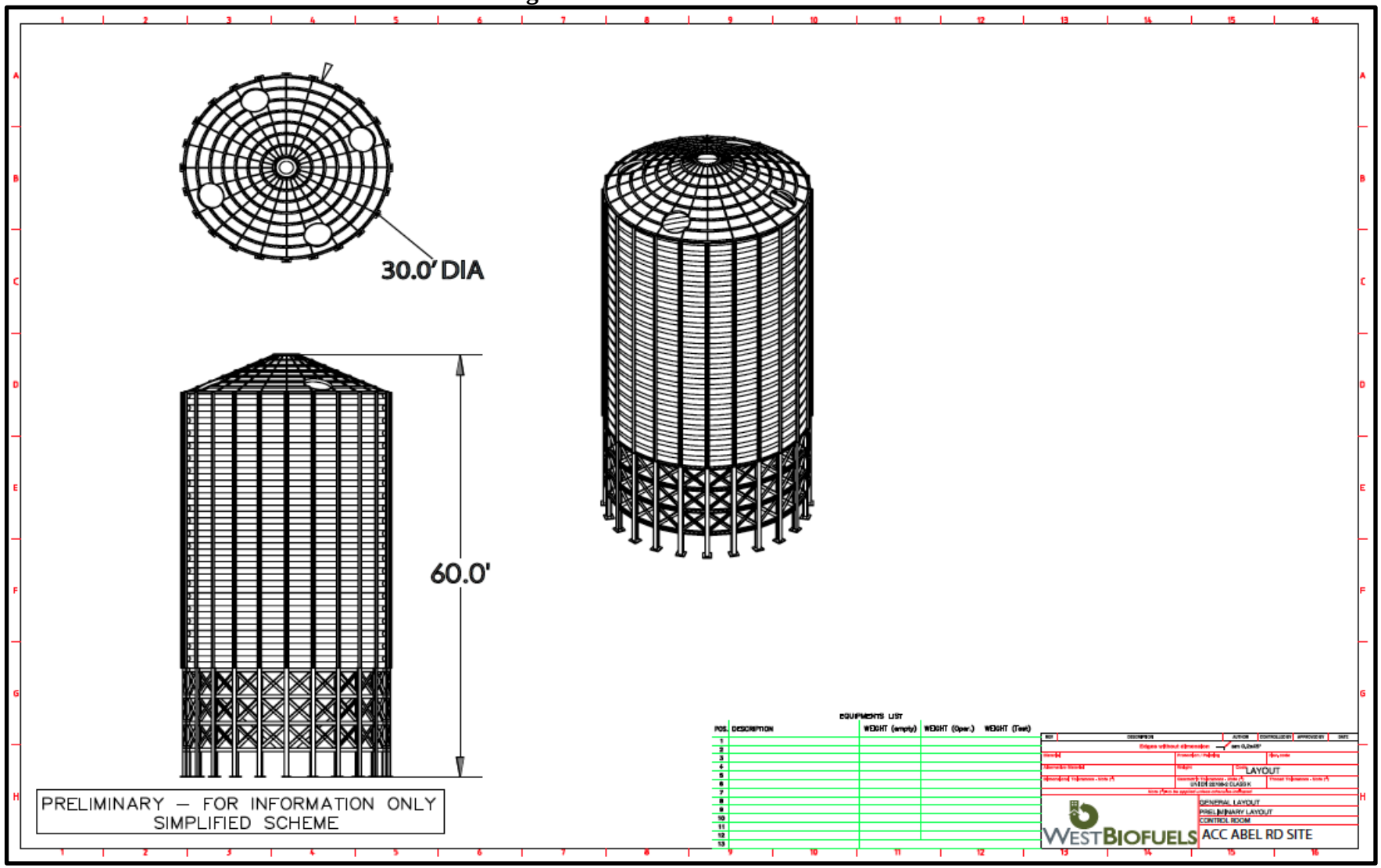


Figure 8 - Rice Hull Silo Elevation



ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

DETERMINATION (To be completed by the Lead Agency)**:**
On the basis of this initial evaluation:

[ ] I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

[ ] I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

[ ] I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

[ ] I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

[ ] I Find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEAGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_____ _____
Project Planner Date

_____ _____
Reviewed By Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including of-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, and EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analysis may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:
   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS – Except as provided in Public Resources Code § 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	**[ ]**	**[ ]**	**[**x**]**	**[ ]**
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway?	**[ ]**	**[ ]**	**[ ]**	**[**x**]**
c) In non-urbanized areas, substantially degrade the existing visual character or quality public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	**[ ]**	**[ ]**	**[**x**]**	**[ ]**
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	**[ ]**	**[ ]**	**[**x**]**	**[ ]**

Impact Discussion:

The proposed project site is currently on the same property as the ACC rice processing facility and is of flat topography. The properties surrounding the proposed project site are in agricultural production and are zoned agriculture, with almonds to the west, rice to the north and east, and rice and tomatoes to the south. There is also an almond processing facility on the west side of the ACC rice processing facility. Directly north of the ACC facility is a nearly 8-acre solar photovoltaic array, which is located on ACC property and supplies the rice processing facility with renewable solar electricity. The closest residence is approximately 2,900 feet to the north, and there is a residential development approximately 4,000 feet due west of the site.

The project will blend in with existing agricultural processing activity and facilities in the area and not have any adverse effect on a scenic vista or substantially degrade the visual character of the surrounding area. The project is not on or near any state scenic highway. Facility lighting of the proposed project will be in character to the existing lighting at the existing ACC facility.

The tallest components of the project will be the thermal oil heater (with accompanying exhaust stack) at approximately 103 feet above ground level. This is visually comparable to the nearby existing rice grain silos (five silos at 85 feet tall) and the receiving elevator (at 135 feet in height),

Figures 9, 10, 11, 12, and 13 display the visual aspects of the site and properties to the east, west, and south from Abel Road.

Figure 9 – ACC Rice Mill Facility

Figure 10 - Proposed Bioenergy Project Location on ACC Property

Figure 11 - Property to the East of Proposed Bioenergy Project

Figure 12 - Property to the South of Proposed Bioenergy Project

Figure 13 - Property Directly West of ACC

Mitigation Measures:

- Proposed facility should be painted in colors similar to the existing ACC facility;
- Lighting shall utilize downward shining shades

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant tot the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	[ ]	[ ]	[ ]	[x]
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	[ ]	[ ]	[ ]	[x]
c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	[ ]	[ ]	[ ]	[x]
d) Result in the loss of forestland or conversion of forestland to non-forest use?	[ ]	[ ]	[ ]	[x]
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use?	[ ]	[ ]	[ ]	[x]

Impact Discussion:

The proposed project site is currently on the same property as the ACC rice processing facility and is of flat topography with concrete paving and compacted soil. The project area has been used for rice processing related activities and as a container storage area as well as having been subjected to heavy-duty truck and trailer traffic over the years. Current agricultural zoning allows installation of a power plant with attainment of a conditional use permit from Colusa County.

The CA Department of Conservation's Farmland Mapping and Monitoring Program has identified the project site property as "Urban and Built-Up Land". Land surrounding the ACC facility is designated as "Prime Farmland" and "Farmland of Statewide Importance". However, the proposed project will not conduct any activities on adjacent lands so there will be no impact to those agricultural lands, nor conversion of those lands to non-agricultural use. The proposed project site is not covered under the Williamson Act.

Mitigation Measures:

- No mitigation required.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	**[ ]**	[x]	**[ ]**	**[ ]**
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	**[ ]**	[x]	**[ ]**	**[ ]**
c) Expose sensitive receptors to substantial pollutant concentration?	**[ ]**	[x]	**[ ]**	**[ ]**
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	**[ ]**	**[ ]**	**[ ]**	[x]

Impact Discussion:

Projected Emissions – Stationary Sources

The proposed bioenergy facility will combust approximately 37,000 bone dry tons (BDT) of rice hulls per year to produce 3.6 MW (gross) of electricity. The facility process description and process schematic are presented above in the Project Description section.

The facility is planned to operate 24/7, however given there will be scheduled and unscheduled maintenance requirements for the equipment it is anticipated that the bioenergy facility will operate 90%-plus[2].

The thermal oil heater is currently configured to be equipped with Selective Non-Catalytic Reduction (SNCR) emissions control equipment to control nitrogen oxides (NOx) and Best Available Control Technology (BACT) for particulate matter (PM) using an electrostatic precipitator (ESP) in conjunction with a multi-clone.

A summary table of stationary emissions is presented below in Table 1. The emissions are based on 100% operation time, i.e., 24 hours per day, 7 days, 365 days a year.

Table 1 - Stationary Source Emission Estimates

[2] Personal Communication, Matt Summers, West Biofuels, July 9, 2019

Pollutant	Thermal Oil Heater Controlled Emission Factors in lbs/MMBtu[3,4]	Amount of combusted fuel per year in BDT	Boiler Heat Input in MMBtu per hour	Estimated controlled emissions in TPY	BACT
NOx	0.056	37,000	70.0	17.2	Selective Non-Catalytic Reduction (SNCR) – 75% efficient
PM	0.06	37,000	70.0	18.4	Multi-clone w/ ESP
PM10	0.06	37,000	70.0	18.4	Multi-clone w/ ESP
VOC	0.017	37,000	70.0	5.2	Good combustion practices
CO	0.18	37,000	70.0	55.2	Good combustion practices
SOx	0.08	37,000	70.0	24.5	CaO Addition to Bed[5]

Project Emissions - Construction

The construction of the bioenergy facility will include grading and earthworks for the bioenergy facility (less than one acre); the erection of the feedstock storage silos and enclosed conveyor system, the thermal oil heater and emissions controls, the ORC, and dry cooling tower; access road and turnaround improvements; and control room and shop Construction emissions were estimated using the most current version of the computer program California Emissions Estimator Model® (CalEEMod).[6]

Project construction is assumed to take 12 months with approximately 2.2 acres of ground area. Inputs for the CalEEMod modeling are contained in Appendix B. Table 2 presents the maximum daily and annual construction emissions.

Table 2 - Construction Emission Estimates

[3]NOx, with SNCR equipment, and PM, with multi-clone and baghouse, SOx and CO emission factors taken from thermal oil heater equipment supplier (Solagen, LLC., St. Helens, OR)
[4] VOC emission factor taken from Chapter 1.6, Wood Residue Combustion in Boilers, AP-42, U.S. Environmental Protection Agency
[5] CaO will be added to the grate bed to lower the SOx, however the TPY emissions shown are uncontrolled emissions.
[6] http://www.caleemod.com/ Version CalEEMod.2016.3.1

Pollutant	Maximum Controlled Daily Emissions (lb/day)	Maximum Controlled Annual Emissions (TPY)
VOC	25.1	1.1
NOx	46.4	2.9
CO	44.38	2.47
SOx	0.21	0.01
PM_{10}	11.6	0.65
$PM_{2.5}$	3.59	0.21

The results of the CalEEMod modeling are found in Appendix C.

Project Emissions – Mobile Sources

Mobile emission sources for the proposed bioenergy facility operation include truck activity (for additional feedstock delivery in addition to what is already available onsite), employee commute trips, and offsite ash hauling. The onsite feedstock will be pneumatically conveyed from the collocated rice hulling operation to the rice hull storage silos prior to being conveyed to the thermal oil heater for combustion. These operations are powered electrically.

The mobile sources inputs for the CalEEMod modeling are found in Appendix B. The results of the operational mobile and temporary source emissions are presented in Table 3 and the modeling results can be found in Appendix C.

Table 3 - Operational Mobile Emission Estimates

Pollutant	Maximum Controlled Daily Emissions (lb/day)	Maximum Controlled Annual Emissions (TPY)
VOC	2.27	0.4
NOx	3.02	0.3
CO	3.48	0.22
SOx	0.012	0.0014
PM_{10}	0.35	0.05
$PM_{2.5}$	0.14	0.02

Pre-Project Potential to Emit

There is potential to emit before the implementation of the proposed project from the alternative disposal method of the rice hull feedstock. In the past, ACC sent much of their rice hull waste to the biomass combustion plant south of Williams. However, the power purchase agreement for this facility expired in May 2018 and the facility's future is in serious doubt. If ACC does not have an on-site option for using the rice hulls such as the bioenergy plant, they will be transported to the Central Valley for use as poultry bedding. This option will involve considerable haul truck traffic with accompanying emissions, particularly NOx.

Using current diesel truck emission factors (grams per vehicle mile traveled) from the CalEEMod modeling effort, and the round-trip distance of 160 miles from the ACC facility to

Livingston, CA in the Central Valley (where the poultry farms and processing facilities are centered around), the mobile emissions for the haul trucks is presented below in Table 4. To be conservative in these estimates, only 20,000 BTD were included in the transfer to the Livingston area.

Table 4 - Mobile Emissions for Rice Hull Delivery to Central Valley

Pollutant	Tons of rice hulls exported off site	Tons of rice hulls per haul truck	Number of haul trucks	Round Trip miles to Livingston, CA	Truck miles	Emission Factor in g/VMT (CalEEMOD)	Total Pounds per Year	Tons per Year
	20,000	14	1,429	160	457,143			
NOx						23.75	23,914	11.96
PM10						0.05	54	0.03
PM2.5						0.05	54	0.03
VOC (ROG)						1.10	1,108	0.55
SOx						0.02	15	0.04
CH4						0.01	6	0.02
CO						0.66	665	1.82
CO2						1,557.90	1,568,685	4,298

Net Potential to Emit

The factors in Table 4 are then utilized in Table 5 below to show the difference in emissions, particularly NOx if the rice hulls are utilized onsite in the proposed power plant instead of shipped to the Central Valley

The net emissions based on the project represent the difference between the pre-project potential to emit and the project's potential to emit, as shown in Table 6. This net emissions approach for determining CEQA impact significance of small-scale biomass facility has been used for several other similar projects and has been accepted by both the planning departments and air districts including Madera County and San Joaquin Valley APCD, Calaveras County and Calaveras APCD, Shasta County and Shasta County AQMD, Mariposa County and Mariposa APCD, and Placer County APCD. It must be noted that this does not exempt the facility from acquiring an Authority to Construct permit in which the full amount of emission from the power plant alone must be considered.

Table 5 - Difference in Emissions for Rice Hull Delivery to Central Valley

	Amount of rice hulls to be consumed per year in power plant (in BDT)	Avoided amount of rice hulls transported offsite for poultry bedding	Haul truck emissions (TPY)*	Estimated controlled combustion emissions in TPY**	Operational Emissions in TPY***	Amount of net emissions produced in TPY
NOx	37,000	20,000	11.96	17.2	0.3	5.5
PM10	37,000	20,000	0.03	18.4	0.05	18.4
VOC (ROG)	37,000	20,000	0.55	5.2	0.4	5.0
CO	37,000	20,000	0.33	55.2	0.22	55.1
SOx	37,000	20,000	0.01	24.5	0.001	24.5

* From emissions calculations in Table 4

** From emissions calculations in Table 1

*** From emissions calculations in Table 3

A diesel-fired emergency pump engine will be sited with the facility to service the thermal oil circulation in case of an unforeseen shutdown. However, this engine will be 50 horsepower, which is exempt from permitting by the Colusa County APCD Rule 2.36 (c) (3).

Mitigation Measures:

- The proposed project must obtain an Authority to Construct permit from the Colusa County Air Pollution Control District.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?	**[ ]**	**[ ]**	**[**x**]**	**[ ]**
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?	**[ ]**	**[ ]**	**[**x**]**	**[ ]**
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh,	**[ ]**	**[ ]**	**[ ]**	**[**x**]**

vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	**[ ]**	**[ ]**	**[**x**]**	**[ ]**
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	**[ ]**	**[ ]**	**[ ]**	**[**x**]**
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	**[ ]**	**[ ]**	**[ ]**	**[**x**]**

Impact Discussion:

The project area has been used for rice processing related activities, as a container storage area, and subjected to heavy-duty vehicle traffic over the years. No vegetation exists on the land where the proposed bioenergy facility is to be constructed and operated, and there is no wildlife habitat observable on the project site land. Surrounding properties have been farmed for many decades with nearly all plant and animal habitat removed. Weedy and invasive plant species are found along the perimeters of the agricultural parcels. An irrigation ditch (supplied by the GlennColusa Irrigation District) runs along the front of the ACC facility and proposed power facility, and along Abel Road.

The irrigation ditch does have ample vegetation to have potential bird, amphibian, reptile, and fish habitat. There is the potential for the Giant Garter Snake (*Thamnophis gigas*), a federal threatened species under the Endangered Species Act. Habitat for this species include irrigation and drainage canals and rice fields which are adjacent to the project site. However, the vegetation along the irrigation ditch adjacent to the power plant site does not have grassy banks and cattails and bulrushes which are preferred by the snake. Plus, the power plant is set back from the irrigation ditch by nearly 200 feet with most of the open space being compacted soil devoid of any vegetation or suitable habitat for the Giant Garter Snake.

As mentioned above no construction activities will occur near the irrigation ditch. No vegetation along the ditch will be disturbed or removed. By doing so, no wildlife habitat will be disturbed by the proposed project and will not conflict with any goals, objectives, and conditions of the Colusa County Conservation Element.

Mitigation Measures:

- Construction activity will be confined to the already disturbed and vacant area of the project site to minimize any disturbance to possible GGS habitat along the irrigation ditch.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	**[ ]**	**[x]**	**[ ]**	**[ ]**
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	**[ ]**	**[x]**	**[ ]**	**[ ]**
c) Disturb any human remains, including those interred outside of formal cemeteries?	**[ ]**	**[ ]**	**[ ]**	**[x]**

Impact Discussion:

Cultural or historical resources appear to be non-existent on the project site land. The site currently has the scenic aspects of an industrial site due to the ACC rice processing facility. The surrounding properties of the proposed project site have been in agricultural production for years and are zoned agriculture. There does not appear to be any structures or other resources of historical or cultural significance on the surrounding properties. Nonetheless, construction activities such as grading and excavating for the power plant construction have the potential to disturb archaeological and/or historical resources.

Mitigation Measures:

- If cultural or historic resources are encountered on the project site, the applicant shall halt work immediately and notify the Colusa County Community Development Department and a professionally licensed archaeologist. The archaeologist shall assess the resources and develop appropriate management recommendations for archaeological resource treatment.

	Significant Impact	Less Than Significant with Mitigation Incorporation	Significant Impact	Impact
VI. ENERGY – Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operations?	**[ ]**	**[ ]**	**[ ]**	**[x]**
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	**[ ]**	**[ ]**	**[ ]**	**[x]**

Impact Discussion:

The proposed project is to be constructed utilizing modern equipment which will not result in wasteful, inefficient, or unnecessary consumption of energy. As it is an energy producing facility, selling electricity to PG&E, all efforts have been made to reduce the onsite energy consumption of the produced power.

The Colusa County General Plan Conservation Element Objective CON-2A encourage the use of renewable energy development such as commercial bioenergy facilities to utilize agricultural byproducts.

Mitigation Measures:

- No mitigation required

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
VIII. GEOLOGY RESOURCES – Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	**[ ]**	**[ ]**	**[ ]**	**[x]**
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	**[ ]**	**[ ]**	**[ ]**	**[x]**
ii) Strong seismic ground shaking?	**[ ]**	**[ ]**	**[ ]**	**[x]**

iii) Seismic-related ground failure, including liquefaction?	**[ ]**	**[ ]**	**[ ]**	**[x]**
iv) Landslides?	**[ ]**	**[ ]**	**[ ]**	**[**x**]**
b) Result in substantial soil erosion or the loss of topsoil?	**[ ]**	**[ ]**	**[ ]**	**[**x**]**
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	**[ ]**	**[ ]**	**[ ]**	**[**x**]**
d) Be located on expansive soil, as defined in California Building Code (2010), creating substantial direct or indirect risks to life or property?	**[ ]**	**[ ]**	**[ ]**	**[**x**]**
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	**[ ]**	**[ ]**	**[ ]**	**[x]**
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	**[ ]**	**[ ]**	**[ ]**	**[x]**

Impact Discussion:

Seismic activity potential within Colusa County as being relatively low and it is not located within a highly active fault zone. No Alquist-Priolo Earthquake Fault Zones are located within the County (see http://myhazards.caloes.ca.gov). No active faults that are located within Colusa County[7].

Landslides are most likely to form when the ground is sloped. The proposed bioenergy facility is proposed to be located on a site with flat topography and all of the surrounding lands are flat topography as well

Soils information was obtained from the U.S. Department of Agriculture/Natural Resources Conservation Services (USDA/NRCS) soils survey mapping system.[89] Soils on the ACC project site parcels where potential soil disturbance may occur are the Hustabel (sandy loam, 0 to 1% slopes) soil. This soil type occurs at the 100 to 150 elevation in the project area, and is moderately well drained with neglible runoff. The other soil found beneath the ACC project site is Westfan (loam, 0 to 2% slopes) soil. This soil type occurs at the 70 to 150 elevation in the

[7] CA Dept. of Conservation, Division of Mines and Geology Special Publication 42
[8] SoilWeb: an online tool for USDA/NRCS soil survey data in California: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx
[9] Soil Survey of Yuba County, 1988. http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/yubaCA1998/yubaCA1998_1.pdf

project area, and is well drained with very low runoff. None of these soils are considered expansive. It should be noted also that the powerplant project site is partially paved or the soil has been compacted over the years by truck and vehicular traffic.

The proposed project will not need a septic system or alternative wastewater disposal. The proposed facility does not discharge wastewater, and operators and employees will be able to use existing bathrooms at the ACC rice hulling facility.

Paleontology

A search of the University of California Museum of Paleontology collections database lists 212 previously recorded paleontological resources in Colusa County. None of these resources appear to exist in the project area.

Mitigation Measure:

- In accordance with Colusa County Zoning Code 44-5,40.050 Grading Standards, grading shall be limited to building pads and access drives thereto, and extensive grading shall be discouraged.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS – Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	**[ ]**	**[ ]**	**[x]**	**[ ]**
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	**[ ]**	**[ ]**	**[x]**	**[ ]**

Impact Discussion:

CalEEMod was also used to assess the project construction greenhouse gas (GHG) emissions. Table 6 presents the results of the construction GHG assessment.

Table 6 - Construction GHG

Pollutant	Maximum Controlled Annual Emissions (metric tons)
Carbon Dioxide-Equivalent	1,110

CalEEMod was also used to assess the project operational mobile and temporary source greenhouse gas (GHG) emissions. Table 7 presents the results of the operational mobile GHG assessment.

Table 7 - Mobile GHG Emissions

Pollutant	Maximum Controlled Annual Emissions (metric tons)
Carbon Dioxide-Equivalent	413

Table 8 calculated the net project GHG emissions for the facility. The GHG generated from the project include the above calculated GHG emissions from the construction and mobile operations with the emissions from the combustion of 37,000 BDT of rice hulls annually by the proposed facility. This is reduced by the two-thirds reduction of in transportation of the rice hulls to an alternative site, the displacement of natural gas electricity with renewable energy from this facility and the sequestration of carbon in the rice hulls by photosynthesis. The rice is grown in farms near the facility and the rice plants scrub carbon dioxide from the air and use photosynthesis to sequester the carbon in the rice hulls. The following table shows the results for the net GHG burden of the bioenergy facility.

Table 8. Net Project GHG Burden

Emission Source	Projected GHG Emissions (CO2e in metric tons per year)
Construction Emissions	1,110
	37 MT/year[10]
Mobile Operations	413 MT/year
Project Emissions	51,800 MT/year[11]
Natural Gas Electricity Displaced (8,200 hours)	(-12,614) MT/year[12]
Reduced Transportation of Rice Hulls to Alternative Site	(-4,298) MT/year[13]
Sequestered Carbon Dioxide in Rice Hulls	(-51,800) MT/year[14]
TOTAL	(-16,462) **MT/year**

[10] Amortized over 30 years

[11] Uses a CO2e emission factor of 1.4 tons CO2 per dry ton of rice hulls combusted in biomass power plant. Rice hulls are 38% carbon and there are 3.66 tons of carbon dioxide released per ton of carbon.

[12] Uses a CO2e emission factor of 800 lbs. of CO2 per megawatt hour of electricity generated in a combined cycle natural gas power plant. From "Biomass Waste for Energy Project Reporting Protocol" January 2013. Prepared by the Placer County Air Pollution Control District. https://www.placer.ca.gov/DocumentCenter/View/2115/Biomass-Waste-For-Energy-Project-Protocol-PDF?bidId=

[13] Uses a CO2e emission factor of 1.73 tons CO2 per dry ton of biomass. From "Biomass Waste for Energy Project Reporting Protocol" January 2013. Prepared by the Placer County Air Pollution Control District. https://www.placer.ca.gov/DocumentCenter/View/2115/Biomass-Waste-For-Energy-Project-Protocol-PDF?bidId=

[14] Rice plants sequester 1.4 tons CO2 per dry ton of rice hulls during photosynthesis. Rice hulls are 38% carbon and it requires 3.66 tons of carbon dioxide to sequester 1 ton of carbon in photosynthesis.

It must be noted that Table 8 shows that the net GHG emissions resulting from the operation of the plant is actually negative due to the displacement of natural gas generation emission with the carbon neutral biomass generation. It is further reduced because of fewer trucks transporting rice hulls to the Central Valley. Biomass combustion for the production of electricity is considered to be carbon neutral by state, federal and international agencies. CO_2e emissions related to the burning of biomass has been exempted from the California Cap and Trade program for this reason and, as such, it is reasonable to consider the calculation of total emissions as potentially carbon neutral when determining the project's environmental impacts. One of the very beneficial environmental impacts of this project is that net greenhouse gasses are reduced every year that the plant operates.

Mitigation Measures:

- No mitigation required

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

g) Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires.	**[ ]**	**[ ]**	**[ ]**	**[x]**

Impact Discussion:

During future construction and operational phases of the proposed project, common hazardous materials, including gasoline and other motor vehicle fuels, solvents lubricating oils, welding gases, used oil may be present on site. The proposed facility, once operating, as it would be owned by ACC could amend their existing Hazardous Material Business Plan (HMBP) to the Colusa County Environmental Health/CUPA. The ACC facility maintains this HMBP because it currently has various amounts of cylinder gases, propane, Stoddard solvent, lubricating oil, diesel (665 gallon above ground storage tank), and gasoline (240 gallon above ground storage tank). Some hazardous waste is also stored on site for ultimate disposal/recycling and the ACC is considered a small quantity hazardous waste generator. This is not expected to change with the construction and operation of the power plant facility. ACC maintains their HMBP inventories and updates through the California Environmental Reporting System (CERS). The ACC CERS identification number is 10805929.

The proposed power plant itself will also have hazardous materials used in the production of electricity. The Organic Rankine Cycle (ORC) operates by using cyclopentane as a working fluid to run the turbine-generator set. The cyclopentane is heated up to a vapor phase via a heat exchange with thermal oil heater. It is cooled back down to a liquid phase by the dry cooling system. The ORC system contains 4,800 gallons of cyclopentane. Cyclopentane is a flammable liquid similar to other refrigerants used as working fluids. The ORC system to be used meets all the standards of American Society of Mechanical Engineers (ASME), the National Fire Protection Association (NFPA), and the American Society of Testing and Materials (ASTM).

The thermal oil heater will also contain approximately 7,500 gallons of a petroleum-based heating oil. This oil is known under the trade name Therminol 66. It is the most popular high temperature, liquid-phase heat transfer fluid in the world. The Material Safety Data Sheet for Therminol 66 indicates it is not considered a hazardous substance or mixture. However, while Therminol 66 has a relatively high flash point, it is not classified as a fire-resistant heat transfer fluid.

Since the Therminol could be contained in an accompanying 8,000-gallon storage tank if needed during facility servicing, this above ground tankage will likely require the preparation of a Spill Prevention Control and Countermeasures (SPCC) Plan. This tank volume is combined with the tank volumes of the ACC facility above ground diesel tank (655 gallons) and the above ground gasoline tank (240 gallons) for a total of 8,905 gallons. As the thermal oil heater tankage and system contain more than 8,000 gallons of oil, the SPCC Plan would have to be prepared by a registered engineer. The Plan does not have to submitted to CERS, but must be available to inspectors upon request. The 8,000-gallon Therminol storage tank does have secondary containment.

The combustion of the rice hull feedstock in the power plant facility will create ash. This ash will be returned to the surrounding rice fields as a soil amendment. It is expected to be non-hazardous as the feedstock to the power plant will be limited to rice hulls. Nonetheless, the ash should be initially analyzed for hazardous components for confirmation of non-hazardous classification.

Review of the CA Department of Toxic Substances Control Envirostor online data base (https://www.envirostor.dtsc.ca.gov/public/) indicates the proposed site is not on current list of hazardous materials sites. No hazardous or toxic waste sites are located on or adjacent to the proposed project site.

Mitigation Measures:

- The ACC facility shall amend its HMBP to include new chemicals brought onto the property for the construction and operation of the bioenergy facility
- The ACC facility shall have a SPCC Plan prepared by a registered engineer
- All materials, construction, installation, and operation of the ORC and thermal oil heater systems shall abide by the ASME, NFPA, and ASTM standards

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	**[ ]**	**[ ]**	**[ ]**	**[x]**
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	**[ ]**	**[ ]**	**[ ]**	**[x]**
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	**[ ]**	**[ ]**	**[ ]**	**[x]**
i) result in substantial erosion or siltation on- or off-site;	**[ ]**	**[ ]**	**[ ]**	**[x]**
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	**[ ]**	**[ ]**	**[x]**	**[ ]**
iii) create or contribute runoff water which would exceed the capacity of existing or planned storm	**[ ]**	**[ ]**	**[x]**	**[ ]**

water drainage systems or provide substantial additional sources of polluted runoff; or				
iv) impede or redirect flood flows?	**[ ]**	**[ ]**	**[ ]**	**[**x**]**
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	**[ ]**	**[ ]**	**[ ]**	**[x]**
e) Conflict with or obstruct implementation or a water quality control plan or sustainable groundwater management plan?	**[ ]**	**[ ]**	**[x]**	**[ ]**

Impact Discussion:

The proposed project site lies within the drainage area for the Sacramento River. Surface water movement near the project site is almost exclusively via irrigation water laterals. The Glenn Colusa Irrigation District, which supplies much of the surface flow irrigation water from its main canal west and south of the project site, has a district lateral very near the project site (north and east). Another smaller irrigation ditch flows east along the southern edge of the ACC property as can be seen in Figure 14 below.

Storm water from the ACC property potentially can flow into this ditch. ACC currently is part of the California Statewide Industrial General Permit 2014-0057-DWQ. The ACC Water Discharge Identification (WDID) is 5S06M2000303 and its SIC Code is 2041 – Flour and Other Grain Mill Products. AAC also has the required Storm Water Pollution Prevention Plan (SWPPP) filed as well. The SWPPP indicates two potential storm water discharge points to the irrigation ditch, with one west of the entry driveway, and one east of the entry driveway. Both appear to empty from the large concrete parking areas. It is expected that the proposed power plant project site would drain to the eastern discharge point. Although the mill is currently

Figure 14 - Irrigation Ditch on Southern Edge of ACC Property

exempt from the monitoring requirements of the General Permit, the power plant will be added to the plan and the monitoring requirements reassessed to see if they would apply.

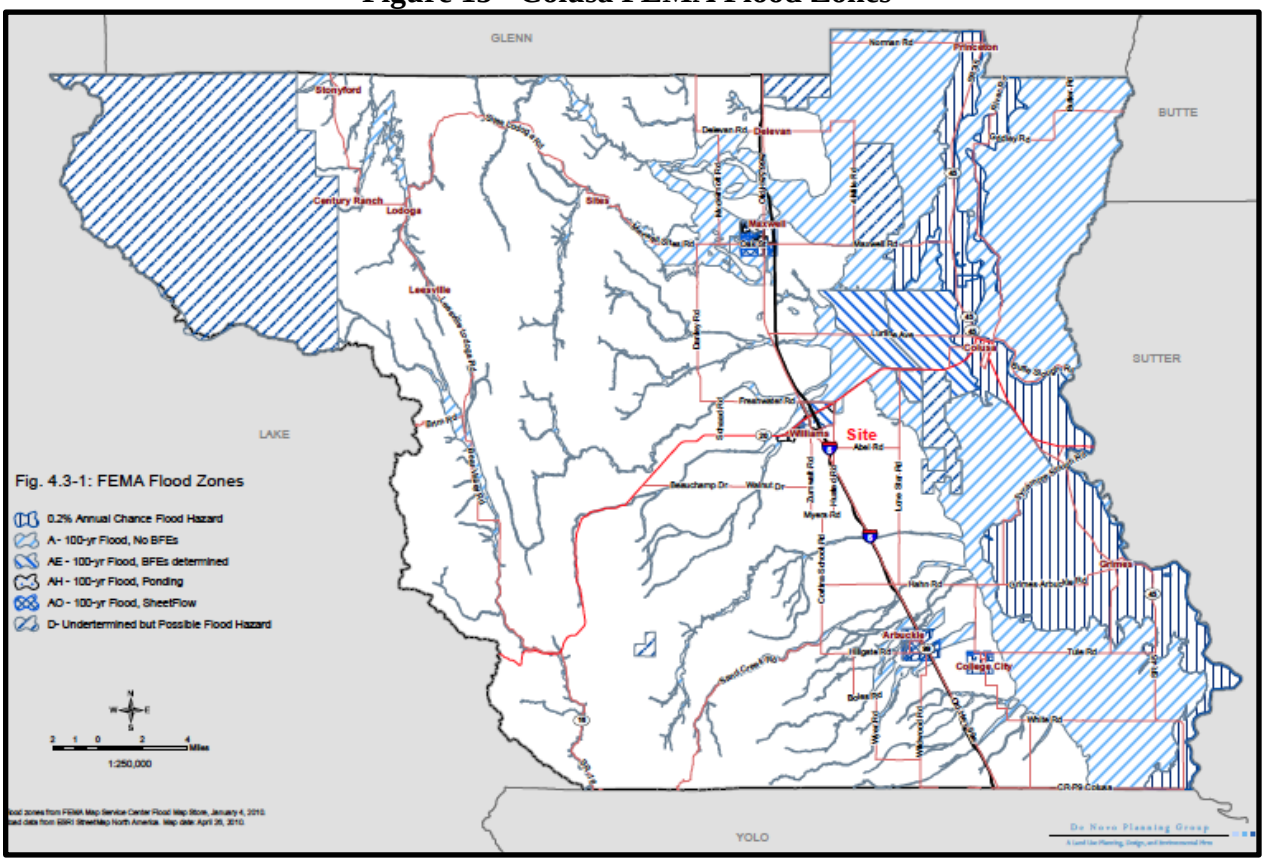
Proposed grading and earthworks involving soil disturbance is expected to be less than one-acre for the power plant construction. As such, the power plant facility does not require coverage under the statewide General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ. It should be noted that with the site being flat, there will be no cut and fill that would change the topography or create any additional runoff.

The ACC water supply is currently fulfilled with an onsite domestic well. The proposed power plant will need no water for its operations. A small amount may be used occasionally to clean equipment that gets dusty. This amount will not significant impact the use of water on the site and not conflict or obstruct the local groundwater management plan (2008 Colusa County Groundwater Management Plan).

The ACC facility and proposed power plant are not located in any Federal Emergency Management Agency (FEMA) as indicated in Figure 15 below. The 2018 Colusa County Local Hazard Mitigation Plan Update Table B-19 indicates that there can be some localized flooding along Abel Road during severe weather events. The construction of the power plant should not add to this issue as it will substantially alter the drainage pattern on the ACC facility property.

There will be no process or industrial wastewater generated by the power plant, and thus now water quality standards will be violated and no degradation to surface or groundwater will occur. The 8,000 thermal heater oil storage tank has secondary containment to capture any potential leaks from the primary tank.

Figure 15 - Colusa FEMA Flood Zones



Mitigation Measures:

- Proposed facility will be added to ACC's existing facility's industrial storm water permit and Storm Water Pollution Prevention Plan

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

Impact Discussion:

The ACC facility property is comprised of two parcels. Much of the bioenergy facility will be located on Colusa County Assessor Parcel No. 017-050-048 a 5.31-acre parcel in the southeast

corner of the ACC facility property. A northern portion of the facility will be located on APN 017-050-047, a 46.02 acre parcel upon which nearly of the existing ACC facility is located on. The zoning designation of both parces are Exclusive Agriculture (E-A). Table 44-2.20.30 of the Colusa County Zoning Code lists Energy Generation for Off-Site Use as an allowable use in the E-A zone if a Use Permit is approved by the Colusa County Planning Commission.

The lands surrounding the ACC facility are a combination of the field agricultural crops, such as rice, tomatoes, and almond trees, and agricultural industries. To the west of the ACC facility is the Vann Family Orchards almond processing facility, with accompanying almond orchards to the west and north of that facility. To the north and east of ACC are rice fields, with a photovoltaic solar facility immediately adjacent to the ACC facility (northside, and supplying electricity to ACC). To the southeast of the ACC facility is the Tamaki Rice Corporation rice processing facility, located on industrially zoned land within the city limits of Williams. Directly to the south, across Abel Road, the land is also in the city limits of Williams and is zoned agricultural. Figure 15 indicates the surrounding properties within 300 feet of the proposed power plant, along with the property owners' names.

Figure 16 - Surrounding Properties within 300 Feet of Proposed Facility

	APN	Owner	Address
1	017-050-048-000	American Commodity Company, LLC	6133 Abel Road, Williams, CA 95987
2	017-050-007-000	American Commodity Company, LLC	6133 Abel Road, Williams, CA 95987
3	017-050-044-000	Williams Rice Milling Company	1701 Abel Road, Williams, CA 95987
4	017-250-001-000	Morning Star Packing Company, LP	2211 Old Highway 99W, Williams, CA 95987
5	005-250-002-000	Morning Star Packing Company, LP	2211 Old Highway 99W, Williams, CA 95987
6	005-250-003-000	Morning Star Packing Company, LP	2211 Old Highway 99W, Williams, CA 95987
7	017-050-047-000	American Commodity Company, LLC	6133 Abel Road, Williams, CA 95987
8	017-050-075-000	Vann Brothers Orchards	365 Ruggieri Way, Williams, CA 95987
9	017-050-002-000	Gobel, Frederick C. & Charlene JT	3552 W. Deerfield Dr. Eagle, ID 83616
10	017-050-003-000	Gobel, Frederick C. & Charlene JT	3552 W. Deerfield Dr. Eagle, ID 83616
11	017-050-073-000	Vann Brothers Orchards	365 Ruggieri Way, Williams, CA 95987

The proposed bioenergy facility on the east side of the ACC rice processing facility would be no more than an extension of the ACC facility and would not create any land use impacts in the area. In addition to be allowed within the EA zoning of the area, biomass utilization such as electricity production, is encouraged by the Colusa County General Plan with the issuance of a Use Permit. The Land Use and Conservation Elements (Policy CON 2-1, 2-2, and 2-3) specifically support biomass energy development on general agricultural lands with a Conditional Use Permit.

Mitigation Measures:

- No mitigation required

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

Impact Discussion: There is no known commercially viable mineral resource at the site.

Mitigation Measures:

- No mitigation required

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

airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Impact Discussion:

Future construction activities on the project site may generate noise levels in excess of standards established in the Colusa County General Plan. Additionally, construction activities may also result in ground borne vibrations. Both of these are expected to not to exceed significant impact threshold to the nearest sensitive receptor, which is a residence located approximately 2,900 feet north of the project site.

Noise from the biomass power plant is generated primarily by the biomass thermal oil heater, the ORC turbine generator, fans on the dry cooling system, and pumps.

For a 3.6 MW direct combustion biomass project, the total facility at full operation could generate up to a 75 to 80 dB at a distance of 50 feet from the power plant. It should be noted these noise estimates are based on a much larger biomass power plant facility (18.5 MW, located in Amador County, CA).

The formula used to estimate noise levels at distance from the power plant facility is:

$$L_2 = L_1 + 20 * \log(\frac{d_1}{d_2})$$

Where L_2 is the sound intensity level at the new distance from the noise source, L_1 is the sound intensity level at the original distance, d_1 is the original distance, and d_2 is the new distance.

The closest residence to the bioenergy facility is located approximately 2,900 feet to the north of the proposed power plant. Based on typical attenuation rates[15], and using the higher value of 80 dB at 50 feet, this results in 44.7 dB. This value is below the exterior and interior noise levels for sensitive land uses, such as residences, in Table N-1 of the Colusa County Noise Element. It should also be noted that this noise level does not include the ambient noise levels, nor the noise levels of the existing baseline noise at the ACC rice processing facility. Thus, the noise impact of the proposed facility is expected to be less than significant.

Although there is a private airstrip (Williams Soaring Center) within two miles of the proposed power plant, no excessive or significant increase in noise is expected.

Mitigation Measures:

- No mitigation required

Potentially Significant	Less Than Significant	Less Than Significant	No Impact

[15] For most instances, sound intensity (sound level in decibels) decreases by -6dB with a doubling of the distance.

	Impact	with Mitigation Incorporation	Impact	
XIV. POPULATION AND HOUSING – Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	**[ ]**	**[ ]**	**[**x**]**	**[ ]**
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	**[ ]**	**[ ]**	**[**x**]**	**[ ]**

Impact Discussion:

During the one-year construction of the power plant, an average of 20 workers will be on the site and involved in plant development. Upon completion of construction a total of 2 additional operating and maintenance personnel will be permanently employed at the site, in addition to 6 support personnel that are already employed at the ACC rice processing facility. It is expected that nearly all construction and operating personnel will come from the local and regional area with the impact of these workers on existing housing is expected to be minimal.

Mitigation Measures:

- No mitigation required

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

Parks?	**[ ]**	**[ ]**	**[ ]**	**[x]**
Other public facilities?	**[ ]**	**[ ]**	**[ ]**	**[x]**

Impact Discussion:

The project is not anticipated to have any impact on public services other than fire protection administered by the Williams Fire Protection Authority. The proposed project site is easily accessed from Abel Road, and is about 7 to 8 minutes from the nearest fire station. The project site provides all weather access around the facility and adequate turn-around area for emergency apparatus. All surfaces are able to accommodate a 40,000 lb. emergency vehicle. ACC will amend its current Hazardous Materials Business Plan to comply with notification requirements regarding hazardous materials at the power plant facility as required by the Williams Fire Protection Authority. With these design features and HMMP amendments, impacts to fire protection services can be considered to be less than significant. (2030 Colusa County General Plan Safety Element)

Mitigation Measures:
- No mitigation required

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

Impact Discussion:

The proposed bioenergy project is not located near any public parks or recreation areas. Nor is the project expected to increase the population of potential public park or recreation area users, essentially eliminating any significant impacts to local public parks or recreation areas. The project itself is strictly an industrial-like project with no accompanying recreational facilities.

Mitigation Measures:
- No mitigation required

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

Impact Discussion:

The proposed ACC bioenergy facility is accessed via Abel Road and will operate 24 hours a day, 7 days a week requiring at least two employees per shift, resulting in six additional vehicular round-trip to and from the site. These are in addition to the 93 to 105 employees (depending on season) already at the site for the rice hulling operations. Regarding additional truck traffic, the proposed project has the potential to significantly reduce outgoing traffic by utilizing the rice hulls on-site, rather than transporting them off-site for alternative use or disposal. As described in the Air Quality, at least 20,000 BDT of the 30,000 BDT of rice hulls to be used as feedstock in the power plant would remain on site. This would translate to a reduction of 1,428 trucks coming and leaving the site annually. Even with the addition of trucks removing the ash it is still a less than significant transportation impact as the project results in decreased vehicle miles (per CEQA Guidelines Section 15064.3 (b) (1).

Abel Road is minor county highway (Colusa County General Plan Background Report) and a designated Major Collector road (Colusa County Circulation Element Figure CIRC-1). As a minor county highway with very little residences along it, it is likely in the Level of Service (LOS) A category, which has 900 vehicles or less per day of usage. This LOS A will not be impacted by the additional of 8 power plant worker vehicles accessing the power plant site. And, as mentioned there will be a reduction of truck traffic as well. Potential traffic hazard conditions will also be reduced with less vehicles using Abel Road.

The proposed facility site has good access for emergency, with adequate turn-around capabilities.

Mitigation Measures:

- No mitigation required

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

Impact Discussion:

Tribal cultural or historical resources appear to be non-existent on the project site land, as it is covered with concrete paving or highly compacted soil. Prior to the ACC facility being constructed the site was cultivated for several decades. Nonetheless, construction activities such as grading and excavating for the power plant construction have the potential to disturb tribal cultural resources. If such resources are found, their significance for tribal cultural resources would be need to be determined.

Mitigation Measures:

- If cultural resources are encountered on the project site, the applicant shall halt work immediately and notify the Colusa County Community Development Department and a professionally licensed archaeologist. The archaeologist shall assess the resources and develop appropriate management recommendations for archaeological resource treatment.

	Potentially Significant	Less Than Significant	Less Than Significant	No Impact

	Impact	with Mitigation Incorporation	Impact	
XIX. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	**[ ]**	**[ ]**	**[ ]**	**[x]**
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.	**[ ]**	**[ ]**	**[ ]**	**[x]**
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	**[ ]**	**[ ]**	**[ ]**	**[x]**
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals	**[ ]**	**[ ]**	**[x]**	**[ ]**
e) Comply with federal, state, and local management and reduction statutes and regulation related to solid waste?	**[ ]**	**[ ]**	**[x]**	**[ ]**

Impact Discussion:

Although the ACC facility has an onsite domestic well for use by the existing facility, the proposed bioenergy facility does not use water in its operations, as the system uses heat exchange fluids to generate electricity. The cooling system for condensing the ORC working fluid is a "dry" system, which uses fans instead of water. The power plant does not generate any process or industrial wastewater as well. Electrical needs will be supplied by the power plant itself or from the existing ACC facility. Any other utilities are jointly shared with, or jointly supplied by the existing ACC facility. No significant impacts on utilities will occur.

The power plant control room may generate some small amounts of solid waste. This will be combined with the existing ACC solid waste stream. The power plant process will generate about 7,400 tons of non-hazardous ash from the facility, however would not be solid waste for disposal, rather it will be used on local and regional agricultural lands as a soil amendment. All federal, state, and local regulation will be adhered to for this purpose.

Mitigation Measures:

- **No mitigation required**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XX. WILDFIRE – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency evacuation plan?	**[ ]**	**[ ]**	**[ ]**	**[x]**
b) Due slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	**[ ]**	**[ ]**	**[ ]**	**[x]**
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in the temporary or ongoing impacts to the environment?	**[ ]**	**[ ]**	**[ ]**	**[x]**
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	**[ ]**	**[ ]**	**[ ]**	**[x]**

Impact Discussion:

The construction and operation of the proposed bioenergy facility at the ACC facility will not impair the current Colusa County Local Hazard Mitigation Plan Update (December 2018). Although there is the potential for some localized roadway flooding along Abel Road, the proposed project will not further contribute to that flooding.

The proposed bioenergy facility, and the host ACC rice processing facility site, are not located in a CalFIRE designated State Responsibility Area or on lands classified as very high fire hazard severity zone. Due to the agricultural and industrial nature of the ACC facility and surrounding lands wildfire risk could be considered low to very low with minimal potential to exacerbate wildfire risks and accompanying impacts

Mitigation Measures:

- No mitigation required

	Potentially Significant	Less Than Significant	Less Than Significant	No Impact

	Impact	with Mitigation Incorporation	Impact	
XXI. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	**[ ]**	**[ ]**	**[ ]**	**[x]**
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects?	**[ ]**	**[ ]**	**[ ]**	**[x]**
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	**[ ]**	**[ ]**	**[ ]**	**[x]**

Impact Discussion:

Any potential impacts from the project are either nonexistent, less than significant, or are less than significant with mitigation incorporation (see Air Quality, Hazards and Hazardous Materials, and Tribal Cultural Resources sections).

There are potential positive impacts of the project such as:

- Reduction of truck traffic as much of the rice hulls which are currently trucked off site for alternative disposal will be used on site for electricity generation;
- Overall reduction of greenhouse gases due to use in electricity generation and concomitant reduction in electricity generation via conventional natural gas power generation systems, reduced off-site transportation of rice hulls to alternative disposal, and sequestered carbon dioxide in rice hulls (see Table 8);
- Reduction of mobile emissions, particularly NOx due to reduction in truck traffic to alternative disposal sites; and,
- Use of state-of-the-art electricity generation and emissions control equipment in controlling air emissions.

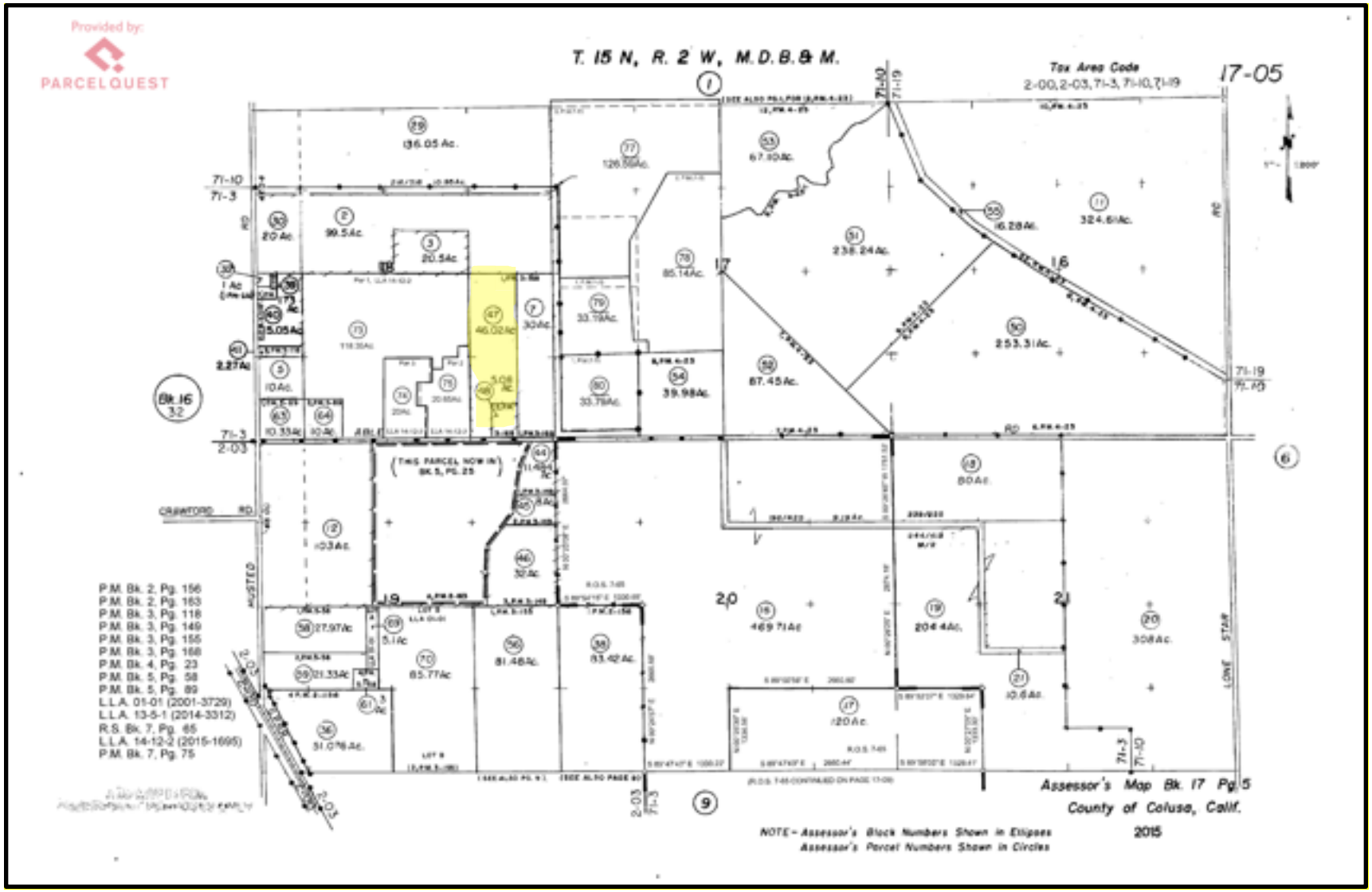
CHECKLIST SOURCES

1. Colusa County General Plan (2012)
2. Colusa County Zoning Ordinance.
3. Housing Element (Colusa County General Plan).
4. United States Geological Survey Topographic Maps.
5. Seismic Safety Element (Colusa County General Plan).
6. Soils Survey of Colusa County – USDA 2001.
7. Safety Element (Colusa County General Plan).
8. Noise Element (Colusa County General Plan).
9. Scenic Highways Element (Colusa County General Plan).
10. Annual Report on the Status of California State Listed Threatened and Endangered Animals and Plants.
11. Vascular Plants of Bear Valley, Walker Ridge and Surrounding Areas of Colusa and Lake Counties 1994.
12. California's Forests and Rangelands, State of California 1988.
13. A Planner's Guide for Oak Woodlands.
14. California Native Plant Society's Inventory of Rare and Endangered Plants of California 1994.
15. Restoring Central Valley Streams: A Plan for Action; Dept. of Fish & Game 1993.
16. Conservation Element (Colusa County General Plan).
17. Open Space Element (Colusa County General Plan).
18. Community Services Element (Colusa County General Plan).
19. Farmers and Neighbors: Land Use, Pesticides and Other Issues; UC Agricultural Issues Center 1995.
20. Index – Fire Hazard Severity Zone Maps; California Department of Forestry.
21. Hazardous Waste and Substances Sites List; State of California 1994.
22. California's Far North: County and Regional Profiles; University of California 1996.
23. Specific Project Review and Site Investigation by Staff.
24. Circulation Element (Colusa County General Plan).
25. Sacramento River Flood Control System Evaluation – Phase III – Mid Valley Area; State of California, U. S. Army Corps of Engineers & The Reclamation Board, March 1996.
26. Federal Emergency Management Agency Flood Insurance Rate Maps, May 15, 2003.
27. California Natural Diversity Database Website
28. Additional Source Documentation as noted the Initial Study
29. Natural Environment Study/Biological Assessment , Sycamore Environmental Consultants, August 2014

NOTE: All of the above listed Checklist sources are on file at the Colusa County Department of Planning & Building and Department of Public Works. Staff is available to assist you in checking any references.

Appendices

Appendix A
Assessor's Parcel Map



Appendix B
Inputs for CalEEMod

ACC Data Needs for CALEEMOD Modeling

OperationalYear	2021
Construction Start Date	9/1/19

Land Type		Units				
General Light Industry	1.54	Acre	Powerplant area is approximately 560' x 120', inclusive of control room and shop/storage			
Unrefrigerated Warehouse-No Rail	0.17	Acre	Control room and shop are 120' x 60'	560	60	
Other Asphalt Surfaces	0.46	Acre	Roadways for circulation of hull delivery and ash hauling trucks	120	120	
Parking Lot	5	Number of Spaces	These will be existing spaces at mill facility			

PhaseNumber	ConstructionPhaseName	PhaseType	PhaseStartDate	PhaseEndDate	NumDaysWeek	Number of Days	
1	Demolition	Demolition	**Not Applicable (N/A)**	N/A	N/A	N/A	
2	Site Preparation	Site Preparation	9/1/19	3/1/20	5	20	
3	Grading	Grading	3/1/20	3/15/20	5	5	**Note: Site Preparation includes grading**
4	Building Construction	Building Construction	6/1/20	8/1/20	5	50	
5	Paving	Paving	4/1/20	6/1/20	5	5	
6	Equipment Installation	Paving	8/1/20	3/1/21	5	80	

ConstructionPhaseName	EquipmentType	Count	Hours per Day
Demolition	N/A	N/A	N/A
Demolition	N/A	N/A	N/A
Demolition	N/A	N/A	N/A
Demolition	N/A	N/A	N/A
Demolition	N/A	N/A	N/A

ConstructionPhaseName	EquipmentType	Count	Hours per Day	
Site Preparation	Heavy wheel loader	1	8	**Note: Site Preparation includes grading**
Site Preparation	Excavator	1	8	
Site Preparation	Dumper truck	1	2	Moving material on-site only, no off site hauls
Site Preparation				
Site Preparation				

ConstructionPhaseName	EquipmentType	Count	Hours per Day	
Grading	Heavy wheel loader	1	8	
Grading	Grader	1	8	
Grading	Dumper truck	1	2	20 trips with base material for roadways
Grading	N/A	N/A	N/A	
Grading	N/A	N/A	N/A	

ConstructionPhaseName	EquipmentType	Count	Hours per Day	
Building Construction	Material Handling Crane	1	6	
Building Construction	Manlifts	1	8	
Equpment Installation	Material Handling Crane	1	8	
Equpment Installation	Heavy Crane	1	8	Only used for 4 days for heavy lifts
Equpment Installation	Manlifts/Boomlifts	3	8	

ConstructionPhaseName	EquipmentType	Count	Hours per Day	
Paving	Heavy Wheel Loader	1	8	
Paving	Compactor	1	8	
Paving	Asphalt truck	1	8	50 miles to asphalt plant
Paving				
Paving				

ConstructionPhaseName	WorkerTripNumber	VendorTripNumber	HaulingTripNumber	WorkerTripLength	VendorTripLength	HaulingTripLength	
Demolition	N/A	N/A	N/A	N/A	N/A	N/A	
Site Preparation	80	20	0	30	50	N/A	
Grading	20	5	20	30	50	50	
Building Construction	200	50	10	30	50	50	
Paving	20	5	20	30	50	50	
Equipment Installation	320	80	50	30	50	120	Some equipment delivery trips are from Oregon or Stockton Port so this is average

Operational Trip Type	Week Day (trips per day)	Saturday (trips per day)	Sunday (trips per day)	VMT per trip	
Workers	8	6	6	30	
Biomass Delivery (off-site rice hulls)	2	1	1	45	Up to 10,000 tons of offsite hulls - 14 tons per truck
'Belly dump grain truck (14 ton hul					
Biomass Fuel					
Ash Removal	2	0	0	15	To fertilize local cropland, up to 8,000 tons/year - 14 tons per truck

Water Use	Required Water (gallons/day)	
Processing	400	Water supplied by existing well, only for worke
Workers	4	

Operational Equipment Type	Count	HoursPerDay	DaysPerYear	
Hull Handling Equipment	1	24	330	All electric powered, no emissions
Thermal Oil Heater	1	24	330	Stack emissions with controls
ORC Generator	1	24	330	All electric powered, no emissions
Air Cooled Condenser	1	24	330	All electric powered, no emissions
Manlift/Boomlift	2	8	20	For maintenance shutdowns/4 per year at 5 days each

Appendix C
CalEEMod Results

American Commodity Company Bioenergy

Colusa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	67.20	1000sqft	1.54	67,200.00	0
Unrefrigerated Warehouse-No Rail	7.20	1000sqft	0.17	7,200.00	0
Other Asphalt Surfaces	0.46	Acre	0.46	20,037.60	0
Parking Lot	5.00	Space	0.05	2,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	56
Climate Zone	3			**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

American Commodity Company Bioenergy - Colusa County, Annual

Project Characteristics - Assumed PG&E for Utility based upon location.

Land Use -

Construction Phase - Assumed equipment installation to be part of building construction phase.

Off-road Equipment - Site Preparation includes grading

Off-road Equipment - Conservatively assumed all equipment operating on the same day.

Off-road Equipment - Default data

Off-road Equipment - Data assumed based upon typical equipment

Grading - Assumed no cut/fill needed

Demolition - No demolition

Trips and VMT - Site preparation includes grading

Architectural Coating - Powerplant ares is 560x120 ft.

Vehicle Trips - GLI = Workers OAS=Ash Removal UW=Biomass Delivery

Energy Use -

Water And Wastewater - Water supplied from onsite well

Operational Off-Road Equipment - Equipment for maintenance Shutdowns assuming 4 per year, 5 days each

Fleet Mix - Assumes LDT1/LDT2/LDA for workers and HHDT for ash and biomass trucks

Table Name	Column Name	Default Value	New Value
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tblArchitecturalCoating	ConstArea_Nonresidential_Interior	111,600.00	67,200.00
tblArchitecturalCoating	PhaseName	Architectural Coating	Equipment Installation
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tblConstructionPhase	NumDays	220.00	50.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	3.00	25.00
tblConstructionPhase	PhaseEndDate	9/10/2020	12/17/2020
tblConstructionPhase	PhaseEndDate	8/13/2020	8/9/2020

tblConstructionPhase	PhaseEndDate	8/27/2020	4/7/2020
tblConstructionPhase	PhaseEndDate	10/2/2019	10/4/2019
tblConstructionPhase	PhaseStartDate	10/11/2019	6/1/2020
tblConstructionPhase	PhaseStartDate	8/14/2020	4/1/2020
tblConstructionPhase	PhaseStartDate	9/28/2019	9/2/2019
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tblFleetMix	HHD	0.07	1.00
tblFleetMix	LDA	0.54	0.33
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tblFleetMix	LDA	0.54	0.00
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tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Pavers	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Off-Highway Trucks

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American Commodity Company Bioenergy - Colusa County, Annual

tblTripsAndVMT	PhaseName		Building Construction
tblTripsAndVMT	PhaseName		Paving
tblTripsAndVMT	PhaseName		Equipment Installation
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tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TL	14.70	30.00
tblVehicleTrips	CW_TL	14.70	15.00
tblVehicleTrips	CW_TL	14.70	0.00
tblVehicleTrips	CW_TL	14.70	45.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	1.32	0.09
tblVehicleTrips	ST_TR	1.68	0.14
tblVehicleTrips	SU_TR	0.68	0.09
tblVehicleTrips	SU_TR	1.68	0.14
tblVehicleTrips	WD_TR	6.97	0.12
tblVehicleTrips	WD_TR	0.00	4.40
tblVehicleTrips	WD_TR	1.68	0.28
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00

tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	IndoorWaterUseRate	15,540,000.00	0.00
tblWater	IndoorWaterUseRate	1,665,000.00	146,000.00

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					
2019	0.0336	0.3330	0.2187	8.8000e-004	0.0357	8.7500e-003	0.0444	9.3700e-003	8.1000e-003	0.0175	0.0000	80.6542	80.6542	9.1200e-003	0.0000	80.8821
2020	1.1199	2.8876	2.4656	0.0120	0.5977	0.0534	0.6511	0.1635	0.0508	0.2143	0.0000	1,108.3866	1,108.3866	0.0465	0.0000	1,109.5478
Maximum	**1.1199**	**2.8876**	**2.4656**	**0.0120**	**0.5977**	**0.0534**	**0.6511**	**0.1635**	**0.0508**	**0.2143**	**0.0000**	**1,108.3866**	**1,108.3866**	**0.0465**	**0.0000**	**1,109.5478**

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					
2019	0.0336	0.2167	0.2187	8.8000e-004	0.0357	8.7500e-003	0.0444	9.3700e-003	8.1000e-003	0.0175	0.0000	80.6542	80.6542	9.1200e-003	0.0000	80.8821
2020	1.1199	2.7612	2.4656	0.0120	0.5977	0.0534	0.6511	0.1635	0.0508	0.2143	0.0000	1,108.3865	1,108.3865	0.0465	0.0000	1,109.5477
Maximum	**1.1199**	**2.7612**	**2.4656**	**0.0120**	**0.5977**	**0.0534**	**0.6511**	**0.1635**	**0.0508**	**0.2143**	**0.0000**	**1,108.3865**	**1,108.3865**	**0.0465**	**0.0000**	**1,109.5477**

	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**	**7.54**	**0.00**	**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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-2-2019	12-1-2019	0.3407	0.2310
3	3-2-2020	6-1-2020	0.0601	0.0318
4	6-2-2020	9-1-2020	1.3396	1.2747
5	9-2-2020	9-30-2020	0.6791	0.6701
		Highest	1.3396	1.2747

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	0.3790	1.0000e-005	7.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4300e-003	1.4300e-003	0.0000	0.0000	1.5200e-003
Energy	8.2600e-003	0.0751	0.0631	4.5000e-004		5.7100e-003	5.7100e-003		5.7100e-003	5.7100e-003	0.0000	274.0835	274.0835	0.0103	3.3000e-003	275.3230
Mobile	0.0103	0.2079	0.1331	9.6000e-004	0.0454	1.0000e-003	0.0464	0.0122	9.5000e-004	0.0132	0.0000	89.5291	89.5291	2.7300e-003	0.0000	89.5973
Offroad	7.5000e-004	0.0119	0.0218	3.0000e-005		2.3000e-004	2.3000e-004		2.1000e-004	2.1000e-004	0.0000	2.9334	2.9334	9.5000e-004	0.0000	2.9571
Waste						0.0000	0.0000		0.0000	0.0000	18.2895	0.0000	18.2895	1.0809	0.0000	45.3114
Water						0.0000	0.0000		0.0000	0.0000	0.0463	0.0859	0.1322	4.7600e-003	1.1000e-004	0.2850
Total	**0.3984**	**0.2949**	**0.2187**	**1.4400e-003**	**0.0454**	**6.9400e-003**	**0.0523**	**0.0122**	**6.8700e-003**	**0.0191**	**18.3358**	**366.6333**	**384.9691**	**1.0996**	**3.4100e-003**	**413.4752**

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	0.3790	1.0000e-005	7.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4300e-003	1.4300e-003	0.0000	0.0000	1.5200e-003
Energy	8.2600e-003	0.0751	0.0631	4.5000e-004		5.7100e-003	5.7100e-003		5.7100e-003	5.7100e-003	0.0000	274.0835	274.0835	0.0103	3.3000e-003	275.3230
Mobile	0.0103	0.2079	0.1331	9.6000e-004	0.0454	1.0000e-003	0.0464	0.0122	9.5000e-004	0.0132	0.0000	89.5291	89.5291	2.7300e-003	0.0000	89.5973
Offroad	7.5000e-004	0.0119	0.0218	3.0000e-005		2.3000e-004	2.3000e-004		2.1000e-004	2.1000e-004	0.0000	2.9334	2.9334	9.5000e-004	0.0000	2.9571
Waste						0.0000	0.0000		0.0000	0.0000	18.2895	0.0000	18.2895	1.0809	0.0000	45.3114
Water						0.0000	0.0000		0.0000	0.0000	0.0463	0.0859	0.1322	4.7600e-003	1.1000e-004	0.2850
Total	**0.3984**	**0.2949**	**0.2187**	**1.4400e-003**	**0.0454**	**6.9400e-003**	**0.0523**	**0.0122**	**6.8700e-003**	**0.0191**	**18.3358**	**366.6333**	**384.9691**	**1.0996**	**3.4100e-003**	**413.4752**

	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	9/2/2019	10/4/2019	5	25	
2	Paving	Paving	4/1/2020	4/7/2020	5	5	
3	Building Construction	Building Construction	6/1/2020	8/9/2020	5	50	
4	Equipment Installation	Building Construction	8/28/2020	12/17/2020	5	80	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.51

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 67,200; Non-Residential Outdoor: 67,200; Striped Parking Area: 1,322 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
Paving	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation	Graders	1	8.00	187	0.41
Equipment Installation	Generator Sets	1	8.00	84	0.74
Building Construction	Aerial Lifts	4	8.00	63	0.31
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Paving	Plate Compactors	1	8.00	8	0.43
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	3	8.00	231	0.29
Site Preparation	Off-Highway Trucks	1	2.00	402	0.38
Paving	Off-Highway Trucks	1	8.00	402	0.38
Site Preparation	Excavators	1	8.00	158	0.38

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	3	80.00	20.00	0.00	30.00	50.00	50.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	200.00	50.00	20.00	30.00	50.00	50.00	LD_Mix	HDT_Mix	HHDT
Paving	6	20.00	5.00	20.00	30.00	50.00	50.00	LD_Mix	HDT_Mix	HHDT
Equipment Installation	1	320.00	80.00	50.00	30.00	50.00	120.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

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					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0166	0.1986	0.0972	2.7000e-004		7.1000e-003	7.1000e-003		6.5300e-003	6.5300e-003	0.0000	23.9779	23.9779	7.5900e-003	0.0000	24.1676
Total	**0.0166**	**0.1986**	**0.0972**	**2.7000e-004**	**2.3900e-003**	**7.1000e-003**	**9.4900e-003**	**2.6000e-004**	**6.5300e-003**	**6.7900e-003**	**0.0000**	**23.9779**	**23.9779**	**7.5900e-003**	**0.0000**	**24.1676**

3.2 Site Preparation - 2019

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	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
Vendor	7.0500e-003	0.1249	0.0386	3.9000e-004	0.0113	1.5100e-003	0.0128	3.2500e-003	1.4400e-003	4.6900e-003	0.0000	37.2856	37.2856	8.3000e-004	0.0000	37.3065
Worker	0.0100	9.5400e-003	0.0829	2.1000e-004	0.0220	1.5000e-004	0.0222	5.8600e-003	1.3000e-004	5.9900e-003	0.0000	19.3907	19.3907	7.0000e-004	0.0000	19.4081
Total	**0.0171**	**0.1345**	**0.1215**	**6.0000e-004**	**0.0333**	**1.6600e-003**	**0.0350**	**9.1100e-003**	**1.5700e-003**	**0.0107**	**0.0000**	**56.6763**	**56.6763**	**1.5300e-003**	**0.0000**	**56.7146**

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					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0166	0.0822	0.0972	2.7000e-004		7.1000e-003	7.1000e-003		6.5300e-003	6.5300e-003	0.0000	23.9779	23.9779	7.5900e-003	0.0000	24.1676
Total	**0.0166**	**0.0822**	**0.0972**	**2.7000e-004**	**2.3900e-003**	**7.1000e-003**	**9.4900e-003**	**2.6000e-004**	**6.5300e-003**	**6.7900e-003**	**0.0000**	**23.9779**	**23.9779**	**7.5900e-003**	**0.0000**	**24.1676**

3.2 Site Preparation - 2019

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	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
Vendor	7.0500e-003	0.1249	0.0386	3.9000e-004	0.0113	1.5100e-003	0.0128	3.2500e-003	1.4400e-003	4.6900e-003	0.0000	37.2856	37.2856	8.3000e-004	0.0000	37.3065
Worker	0.0100	9.5400e-003	0.0829	2.1000e-004	0.0220	1.5000e-004	0.0222	5.8600e-003	1.3000e-004	5.9900e-003	0.0000	19.3907	19.3907	7.0000e-004	0.0000	19.4081
Total	**0.0171**	**0.1345**	**0.1215**	**6.0000e-004**	**0.0333**	**1.6600e-003**	**0.0350**	**9.1100e-003**	**1.5700e-003**	**0.0107**	**0.0000**	**56.6763**	**56.6763**	**1.5300e-003**	**0.0000**	**56.7146**

3.3 Paving - 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					
Off-Road	2.6900e-003	0.0275	0.0141	5.0000e-005		9.7000e-004	9.7000e-004		8.9000e-004	8.9000e-004	0.0000	4.3505	4.3505	1.3900e-003	0.0000	4.3853
Paving	6.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.3600e-003**	**0.0275**	**0.0141**	**5.0000e-005**		**9.7000e-004**	**9.7000e-004**		**8.9000e-004**	**8.9000e-004**	**0.0000**	**4.3505**	**4.3505**	**1.3900e-003**	**0.0000**	**4.3853**

3.3 Paving - 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	1.7000e-004	5.3500e-003	9.1000e-004	2.0000e-005	4.3000e-004	3.0000e-005	4.5000e-004	1.2000e-004	2.0000e-005	1.4000e-004	0.0000	1.7157	1.7157	4.0000e-005	0.0000	1.7166
Vendor	2.8000e-004	5.4400e-003	1.6100e-003	2.0000e-005	5.6000e-004	5.0000e-005	6.1000e-004	1.6000e-004	5.0000e-005	2.1000e-004	0.0000	1.8487	1.8487	4.0000e-005	0.0000	1.8496
Worker	4.5000e-004	4.2000e-004	3.6800e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9390	0.9390	3.0000e-005	0.0000	0.9398
Total	**9.0000e-004**	**0.0112**	**6.2000e-003**	**5.0000e-005**	**2.0900e-003**	**9.0000e-005**	**2.1700e-003**	**5.7000e-004**	**8.0000e-005**	**6.5000e-004**	**0.0000**	**4.5035**	**4.5035**	**1.1000e-004**	**0.0000**	**4.5060**

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					
Off-Road	2.6900e-003		0.0141	5.0000e-005		9.7000e-004	9.7000e-004		8.9000e-004	8.9000e-004	0.0000	4.3505	4.3505	1.3900e-003	0.0000	4.3853
Paving	6.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.3600e-003**		**0.0141**	**5.0000e-005**		**9.7000e-004**	**9.7000e-004**		**8.9000e-004**	**8.9000e-004**	**0.0000**	**4.3505**	**4.3505**	**1.3900e-003**	**0.0000**	**4.3853**

3.3 Paving - 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	1.7000e-004	5.3500e-003	9.1000e-004	2.0000e-005	4.3000e-004	3.0000e-005	4.5000e-004	1.2000e-004	2.0000e-005	1.4000e-004	0.0000	1.7157	1.7157	4.0000e-005	0.0000	1.7166
Vendor	2.8000e-004	5.4400e-003	1.6100e-003	2.0000e-005	5.6000e-004	5.0000e-005	6.1000e-004	1.6000e-004	5.0000e-005	2.1000e-004	0.0000	1.8487	1.8487	4.0000e-005	0.0000	1.8496
Worker	4.5000e-004	4.2000e-004	3.6800e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9390	0.9390	3.0000e-005	0.0000	0.9398
Total	**9.0000e-004**	**0.0112**	**6.2000e-003**	**5.0000e-005**	**2.0900e-003**	**9.0000e-005**	**2.1700e-003**	**5.7000e-004**	**8.0000e-005**	**6.5000e-004**	**0.0000**	**4.5035**	**4.5035**	**1.1000e-004**	**0.0000**	**4.5060**

3.4 Building Construction - 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					
Off-Road	0.0479	0.5557	0.3607	7.7000e-004		0.0230	0.0230		0.0216	0.0216	0.0000	66.9022	66.9022	0.0179	0.0000	67.3488
Total	**0.0479**	**0.5557**	**0.3607**	**7.7000e-004**		**0.0230**	**0.0230**		**0.0216**	**0.0216**	**0.0000**	**66.9022**	**66.9022**	**0.0179**	**0.0000**	**67.3488**

3.4 Building Construction - 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	1.7000e-004	5.3500e-003	9.1000e-004	2.0000e-005	4.3000e-004	3.0000e-005	4.5000e-004	1.2000e-004	2.0000e-005	1.4000e-004	0.0000	1.7157	1.7157	4.0000e-005	0.0000	1.7166
Vendor	0.0281	0.5439	0.1611	1.9500e-003	0.0563	4.8800e-003	0.0612	0.0163	4.6600e-003	0.0209	0.0000	184.8716	184.8716	3.6400e-003	0.0000	184.9626
Worker	0.0454	0.0420	0.3683	1.0400e-003	0.1102	7.0000e-004	0.1109	0.0293	6.5000e-004	0.0299	0.0000	93.9043	93.9043	3.0200e-003	0.0000	93.9798
Total	**0.0737**	**0.5912**	**0.5303**	**3.0100e-003**	**0.1669**	**5.6100e-003**	**0.1725**	**0.0457**	**5.3300e-003**	**0.0510**	**0.0000**	**280.4916**	**280.4916**	**6.7000e-003**	**0.0000**	**280.6590**

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					
Off-Road	0.0479	0.4913	0.3607	7.7000e-004		0.0230	0.0230		0.0216	0.0216	0.0000	66.9021	66.9021	0.0179	0.0000	67.3487
Total	**0.0479**	**0.4913**	**0.3607**	**7.7000e-004**		**0.0230**	**0.0230**		**0.0216**	**0.0216**	**0.0000**	**66.9021**	**66.9021**	**0.0179**	**0.0000**	**67.3487**

3.4 Building Construction - 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	1.7000e-004	5.3500e-003	9.1000e-004	2.0000e-005	4.3000e-004	3.0000e-005	4.5000e-004	1.2000e-004	2.0000e-005	1.4000e-004	0.0000	1.7157	1.7157	4.0000e-005	0.0000	1.7166
Vendor	0.0281	0.5439	0.1611	1.9500e-003	0.0563	4.8800e-003	0.0612	0.0163	4.6600e-003	0.0209	0.0000	184.8716	184.8716	3.6400e-003	0.0000	184.9626
Worker	0.0454	0.0420	0.3683	1.0400e-003	0.1102	7.0000e-004	0.1109	0.0293	6.5000e-004	0.0299	0.0000	93.9043	93.9043	3.0200e-003	0.0000	93.9798
Total	**0.0737**	**0.5912**	**0.5303**	**3.0100e-003**	**0.1669**	**5.6100e-003**	**0.1725**	**0.0457**	**5.3300e-003**	**0.0510**	**0.0000**	**280.4916**	**280.4916**	**6.7000e-003**	**0.0000**	**280.6590**

3.5 Equipment Installation - 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					
Archit. Coating	0.7863					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0186	0.1737	0.1942	3.3000e-004		9.3000e-003	9.3000e-003		9.1800e-003	9.1800e-003	0.0000	28.6625	28.6625	3.2300e-003	0.0000	28.7433
Total	**0.8050**	**0.1737**	**0.1942**	**3.3000e-004**		**9.3000e-003**	**9.3000e-003**		**9.1800e-003**	**9.1800e-003**	**0.0000**	**28.6625**	**28.6625**	**3.2300e-003**	**0.0000**	**28.7433**

3.5 Equipment Installation - 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	9.3000e-004	0.0283	4.9800e-003	1.0000e-004	2.5500e-003	1.5000e-004	2.7000e-003	7.0000e-004	1.4000e-004	8.4000e-004	0.0000	9.8100	9.8100	1.1000e-004	0.0000	9.8129
Vendor	0.0719	1.3925	0.4124	5.0000e-003	0.1441	0.0125	0.1566	0.0416	0.0119	0.0536	0.0000	473.2713	473.2713	9.3200e-003	0.0000	473.5043
Worker	0.1162	0.1074	0.9428	2.6600e-003	0.2821	1.8000e-003	0.2839	0.0750	1.6600e-003	0.0767	0.0000	240.3950	240.3950	7.7300e-003	0.0000	240.5884
Total	**0.1891**	**1.5282**	**1.3601**	**7.7600e-003**	**0.4287**	**0.0144**	**0.4432**	**0.1173**	**0.0137**	**0.1311**	**0.0000**	**723.4763**	**723.4763**	**0.0172**	**0.0000**	**723.9055**

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					
Archit. Coating	0.7863					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0186	0.1391	0.1942	3.3000e-004		9.3000e-003	9.3000e-003		9.1800e-003	9.1800e-003	0.0000	28.6625	28.6625	3.2300e-003	0.0000	28.7432
Total	**0.8050**	**0.1391**	**0.1942**	**3.3000e-004**		**9.3000e-003**	**9.3000e-003**		**9.1800e-003**	**9.1800e-003**	**0.0000**	**28.6625**	**28.6625**	**3.2300e-003**	**0.0000**	**28.7432**

3.5 Equipment Installation - 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	9.3000e-004	0.0283	4.9800e-003	1.0000e-004	2.5500e-003	1.5000e-004	2.7000e-003	7.0000e-004	1.4000e-004	8.4000e-004	0.0000	9.8100	9.8100	1.1000e-004	0.0000	9.8129
Vendor	0.0719	1.3925	0.4124	5.0000e-003	0.1441	0.0125	0.1566	0.0416	0.0119	0.0536	0.0000	473.2713	473.2713	9.3200e-003	0.0000	473.5043
Worker	0.1162	0.1074	0.9428	2.6600e-003	0.2821	1.8000e-003	0.2839	0.0750	1.6600e-003	0.0767	0.0000	240.3950	240.3950	7.7300e-003	0.0000	240.5884
Total	**0.1891**	**1.5282**	**1.3601**	**7.7600e-003**	**0.4287**	**0.0144**	**0.4432**	**0.1173**	**0.0137**	**0.1311**	**0.0000**	**723.4763**	**723.4763**	**0.0172**	**0.0000**	**723.9055**

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	0.0103	0.2079	0.1331	9.6000e-004	0.0454	1.0000e-003	0.0464	0.0122	9.5000e-004	0.0132	0.0000	89.5291	89.5291	2.7300e-003	0.0000	89.5973
Unmitigated	0.0103	0.2079	0.1331	9.6000e-004	0.0454	1.0000e-003	0.0464	0.0122	9.5000e-004	0.0132	0.0000	89.5291	89.5291	2.7300e-003	0.0000	89.5973

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	8.06	6.05	6.05	81,769	81,769
Other Asphalt Surfaces	2.02	0.00	0.00	7,894	7,894
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	2.02	1.01	1.01	28,305	28,305
Total	12.10	7.06	7.06	117,967	117,967

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
General Light Industry	30.00	0.00	0.00	100.00	0.00	0.00	100	0	0
Other Asphalt Surfaces	15.00	0.00	0.00	100.00	0.00	0.00	100	0	0
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	45.00	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
General Light Industry	0.330000	0.330000	0.330000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Other Asphalt Surfaces	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
Parking Lot	0.536952	0.036131	0.183149	0.127934	0.026885	0.006680	0.007966	0.065455	0.000936	0.001568	0.004917	0.000552	0.000876
Unrefrigerated Warehouse-No Rail	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	192.2960	192.2960	8.7000e-003	1.8000e-003	193.0494
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	192.2960	192.2960	8.7000e-003	1.8000e-003	193.0494
NaturalGas Mitigated	8.2600e-003	0.0751	0.0631	4.5000e-004		5.7100e-003	5.7100e-003		5.7100e-003	5.7100e-003	0.0000	81.7875	81.7875	1.5700e-003	1.5000e-003	82.2735
NaturalGas Unmitigated	8.2600e-003	0.0751	0.0631	4.5000e-004		5.7100e-003	5.7100e-003		5.7100e-003	5.7100e-003	0.0000	81.7875	81.7875	1.5700e-003	1.5000e-003	82.2735

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					
General Light Industry	1.40246e+006	7.5600e-003	0.0688	0.0578	4.1000e-004		5.2200e-003	5.2200e-003		5.2200e-003	5.2200e-003	0.0000	74.8408	74.8408	1.4300e-003	1.3700e-003	75.2856
Other Asphalt Surfaces	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
Parking Lot	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
Unrefrigerated Warehouse-No Rail	130176	7.0000e-004	6.3800e-003	5.3600e-003	4.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004	0.0000	6.9467	6.9467	1.3000e-004	1.3000e-004	6.9880
Total		**8.2600e-003**	**0.0751**	**0.0631**	**4.5000e-004**		**5.7000e-003**	**5.7000e-003**		**5.7000e-003**	**5.7000e-003**	**0.0000**	**81.7875**	**81.7875**	**1.5600e-003**	**1.5000e-003**	**82.2735**

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					
General Light Industry	1.40246e+006	7.5600e-003	0.0688	0.0578	4.1000e-004		5.2200e-003	5.2200e-003		5.2200e-003	5.2200e-003	0.0000	74.8408	74.8408	1.4300e-003	1.3700e-003	75.2856
Other Asphalt Surfaces	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
Parking Lot	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
Unrefrigerated Warehouse-No Rail	130176	7.0000e-004	6.3800e-003	5.3600e-003	4.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004	0.0000	6.9467	6.9467	1.3000e-004	1.3000e-004	6.9880
Total		**8.2600e-003**	**0.0751**	**0.0631**	**4.5000e-004**		**5.7000e-003**	**5.7000e-003**		**5.7000e-003**	**5.7000e-003**	**0.0000**	**81.7875**	**81.7875**	**1.5600e-003**	**1.5000e-003**	**82.2735**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	592704	172.4244	7.8000e-003	1.6100e-003	173.1000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	700	0.2036	1.0000e-005	0.0000	0.2044
Unrefrigerated Warehouse-No Rail	67608	19.6679	8.9000e-004	1.8000e-004	19.7450
Total		**192.2960**	**8.7000e-003**	**1.7900e-003**	**193.0495**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	592704	172.4244	7.8000e-003	1.6100e-003	173.1000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	700	0.2036	1.0000e-005	0.0000	0.2044
Unrefrigerated Warehouse-No Rail	67608	19.6679	8.9000e-004	1.8000e-004	19.7450
Total		**192.2960**	**8.7000e-003**	**1.7900e-003**	**193.0495**

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	0.3790	1.0000e-005	7.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4300e-003	1.4300e-003	0.0000	0.0000	1.5200e-003
Unmitigated	0.3790	1.0000e-005	7.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4300e-003	1.4300e-003	0.0000	0.0000	1.5200e-003

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	0.0870					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2920					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.0000e-005	1.0000e-005	7.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4300e-003	1.4300e-003	0.0000	0.0000	1.5200e-003
Total	**0.3790**	**1.0000e-005**	**7.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.4300e-003**	**1.4300e-003**	**0.0000**	**0.0000**	**1.5200e-003**

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	0.0870					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2920					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.0000e-005	1.0000e-005	7.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4300e-003	1.4300e-003	0.0000	0.0000	1.5200e-003
Total	**0.3790**	**1.0000e-005**	**7.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.4300e-003**	**1.4300e-003**	**0.0000**	**0.0000**	**1.5200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.1322	4.7600e-003	1.1000e-004	0.2850
Unmitigated	0.1322	4.7600e-003	1.1000e-004	0.2850

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0.146 / 0	0.1322	4.7600e-003	1.1000e-004	0.2850
Total		**0.1322**	**4.7600e-003**	**1.1000e-004**	**0.2850**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0.146 / 0	0.1322	4.7600e-003	1.1000e-004	0.2850
Total		**0.1322**	**4.7600e-003**	**1.1000e-004**	**0.2850**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	18.2895	1.0809	0.0000	45.3114
Unmitigated	18.2895	1.0809	0.0000	45.3114

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	83.33	16.9152	0.9997	0.0000	41.9068
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	6.77	1.3743	0.0812	0.0000	3.4046
Total		**18.2895**	**1.0809**	**0.0000**	**45.3114**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	83.33	16.9152	0.9997	0.0000	41.9068
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	6.77	1.3743	0.0812	0.0000	3.4046
Total		**18.2895**	**1.0809**	**0.0000**	**45.3114**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Aerial Lifts	2	8.00	20	63	0.31	Diesel

UnMitigated/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
Equipment Type	tons/yr										MT/yr					
Aerial Lifts	7.5000e-004	0.0119	0.0218	3.0000e-005		2.3000e-004	2.3000e-004		2.1000e-004	2.1000e-004	0.0000	2.9334	2.9334	9.5000e-004	0.0000	2.9571
Total	**7.5000e-004**	**0.0119**	**0.0218**	**3.0000e-005**		**2.3000e-004**	**2.3000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**2.9334**	**2.9334**	**9.5000e-004**	**0.0000**	**2.9571**

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

American Commodity Company Bioenergy

Colusa County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	67.20	1000sqft	1.54	67,200.00	0
Unrefrigerated Warehouse-No Rail	7.20	1000sqft	0.17	7,200.00	0
Other Asphalt Surfaces	0.46	Acre	0.46	20,037.60	0
Parking Lot	5.00	Space	0.05	2,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	56
Climate Zone	3			**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

American Commodity Company Bioenergy - Colusa County, Summer

Project Characteristics - Assumed PG&E for Utility based upon location.

Land Use -

Construction Phase - Assumed equipment installation to be part of building construction phase.

Off-road Equipment - Site Preparation includes grading

Off-road Equipment - Conservatively assumed all equipment operating on the same day.

Off-road Equipment - Default data

Off-road Equipment - Data assumed based upon typical equipment

Grading - Assumed no cut/fill needed

Demolition - No demolition

Trips and VMT - Site preparation includes grading

Architectural Coating - Powerplant ares is 560x120 ft.

Vehicle Trips - GLI = Workers OAS=Ash Removal UW=Biomass Delivery

Energy Use -

Water And Wastewater - Water supplied from onsite well

Operational Off-Road Equipment - Equipment for maintenance Shutdowns assuming 4 per year, 5 days each

Fleet Mix - Assumes LDT1/LDT2/LDA for workers and HHDT for ash and biomass trucks

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	37,200.00	67,200.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	111,600.00	67,200.00
tblArchitecturalCoating	PhaseName	Architectural Coating	Equipment Installation
tblConstructionPhase	NumDays	220.00	80.00
tblConstructionPhase	NumDays	220.00	50.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	3.00	25.00
tblConstructionPhase	PhaseEndDate	9/10/2020	12/17/2020
tblConstructionPhase	PhaseEndDate	8/13/2020	8/9/2020

American Commodity Company Bioenergy - Colusa County, Summer

tblConstructionPhase	PhaseEndDate	8/27/2020	4/7/2020
tblConstructionPhase	PhaseEndDate	10/2/2019	10/4/2019
tblConstructionPhase	PhaseStartDate	10/11/2019	6/1/2020
tblConstructionPhase	PhaseStartDate	8/14/2020	4/1/2020
tblConstructionPhase	PhaseStartDate	9/28/2019	9/2/2019
tblFleetMix	HHD	0.07	0.00
tblFleetMix	HHD	0.07	1.00
tblFleetMix	HHD	0.07	1.00
tblFleetMix	LDA	0.54	0.33
tblFleetMix	LDA	0.54	0.00
tblFleetMix	LDA	0.54	0.00
tblFleetMix	LDT1	0.04	0.33
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.18	0.33
tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	6.6800e-003	0.00
tblFleetMix	LHD2	6.6800e-003	0.00
tblFleetMix	LHD2	6.6800e-003	0.00
tblFleetMix	MCY	4.9170e-003	0.00
tblFleetMix	MCY	4.9170e-003	0.00
tblFleetMix	MCY	4.9170e-003	0.00
tblFleetMix	MDV	0.13	0.00

tblFleetMix	MDV	0.13	0.00
tblFleetMix	MDV	0.13	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MHD	7.9660e-003	0.00
tblFleetMix	MHD	7.9660e-003	0.00
tblFleetMix	MHD	7.9660e-003	0.00
tblFleetMix	OBUS	9.3600e-004	0.00
tblFleetMix	OBUS	9.3600e-004	0.00
tblFleetMix	OBUS	9.3600e-004	0.00
tblFleetMix	SBUS	5.5200e-004	0.00
tblFleetMix	SBUS	5.5200e-004	0.00
tblFleetMix	SBUS	5.5200e-004	0.00
tblFleetMix	UBUS	1.5680e-003	0.00
tblFleetMix	UBUS	1.5680e-003	0.00
tblFleetMix	UBUS	1.5680e-003	0.00
tblOffRoadEquipment	OffRoadEquipmentType	Air Compressors	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Pavers	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Off-Highway Trucks

American Commodity Company Bioenergy - Colusa County, Summer

tblOffRoadEquipment	OffRoadEquipmentType	Paving Equipment	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType	Scrapers	Excavators
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName	Architectural Coating	Equipment Installation
tblOffRoadEquipment	PhaseName		Site Preparation
tblOffRoadEquipment	PhaseName		Equipment Installation
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	20.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	120.00
tblTripsAndVMT	PhaseName		Site Preparation

American Commodity Company Bioenergy - Colusa County, Summer

tblTripsAndVMT	PhaseName		Building Construction
tblTripsAndVMT	PhaseName		Paving
tblTripsAndVMT	PhaseName		Equipment Installation
tblTripsAndVMT	VendorTripLength	6.60	50.00
tblTripsAndVMT	VendorTripLength	6.60	50.00
tblTripsAndVMT	VendorTripLength	6.60	50.00
tblTripsAndVMT	VendorTripLength	6.60	50.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	16.00	50.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	80.00
tblTripsAndVMT	WorkerTripLength	16.80	30.00
tblTripsAndVMT	WorkerTripLength	16.80	30.00
tblTripsAndVMT	WorkerTripLength	16.80	30.00
tblTripsAndVMT	WorkerTripLength	16.80	30.00
tblTripsAndVMT	WorkerTripNumber	8.00	80.00
tblTripsAndVMT	WorkerTripNumber	41.00	200.00
tblTripsAndVMT	WorkerTripNumber	15.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	320.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CC_TTP	28.00	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00

tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TL	14.70	30.00
tblVehicleTrips	CW_TL	14.70	15.00
tblVehicleTrips	CW_TL	14.70	0.00
tblVehicleTrips	CW_TL	14.70	45.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	1.32	0.09
tblVehicleTrips	ST_TR	1.68	0.14
tblVehicleTrips	SU_TR	0.68	0.09
tblVehicleTrips	SU_TR	1.68	0.14
tblVehicleTrips	WD_TR	6.97	0.12
tblVehicleTrips	WD_TR	0.00	4.40
tblVehicleTrips	WD_TR	1.68	0.28
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00

tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	IndoorWaterUseRate	15,540,000.00	0.00
tblWater	IndoorWaterUseRate	1,665,000.00	146,000.00

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					
2019	2.7646	26.0385	19.0333	0.0721	2.9408	0.6996	3.6403	0.7705	0.6481	1.4186	0.0000	7,313.1864	7,313.1864	0.8126	0.0000	7,333.5004
2020	25.1223	44.5773	44.3763	0.2104	11.0652	1.1442	11.6580	3.0178	1.0756	3.5904	0.0000	21,507.2381	21,507.2381	1.1012	0.0000	21,522.0234
Maximum	**25.1223**	**44.5773**	**44.3763**	**0.2104**	**11.0652**	**1.1442**	**11.6580**	**3.0178**	**1.0756**	**3.5904**	**0.0000**	**21,507.2381**	**21,507.2381**	**1.1012**	**0.0000**	**21,522.0234**

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					
2019	2.7646	16.7328	19.0333	0.0721	2.9408	0.6996	3.6403	0.7705	0.6481	1.4186	0.0000	7,313.1864	7,313.1864	0.8126	0.0000	7,333.5004
2020	25.1223	42.0028	44.3763	0.2104	11.0652	1.1442	11.6580	3.0178	1.0756	3.5904	0.0000	21,507.2381	21,507.2381	1.1012	0.0000	21,522.0233
Maximum	**25.1223**	**42.0028**	**44.3763**	**0.2104**	**11.0652**	**1.1442**	**11.6580**	**3.0178**	**1.0756**	**3.5904**	**0.0000**	**21,507.2381**	**21,507.2381**	**1.1012**	**0.0000**	**21,522.0233**

	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**	**16.82**	**0.00**	**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**

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	2.0773	8.0000e-005	8.1900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Energy	0.0453	0.4117	0.3458	2.4700e-003		0.0313	0.0313		0.0313	0.0313		494.0016	494.0016	9.4700e-003	9.0600e-003	496.9372
Mobile	0.0730	1.3478	0.9457	6.4300e-003	0.2896	6.5100e-003	0.2961	0.0777	6.1900e-003	0.0839		663.9733	663.9733	0.0201		664.4763
Offroad	0.0745	1.1943	2.1754	3.3400e-003		0.0228	0.0228		0.0210	0.0210		323.3512	323.3512	0.1046		325.9657
Total	**2.2701**	**2.9538**	**3.4751**	**0.0122**	**0.2896**	**0.0606**	**0.3502**	**0.0777**	**0.0585**	**0.1362**		**1,481.3436**	**1,481.3436**	**0.1342**	**9.0600e-003**	**1,487.3978**

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	lb/day										lb/day					
Area	2.0773	8.0000e-005	8.1900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Energy	0.0453	0.4117	0.3458	2.4700e-003		0.0313	0.0313		0.0313	0.0313		494.0016	494.0016	9.4700e-003	9.0600e-003	496.9372
Mobile	0.0730	1.3478	0.9457	6.4300e-003	0.2896	6.5100e-003	0.2961	0.0777	6.1900e-003	0.0839		663.9733	663.9733	0.0201		664.4763
Offroad	0.0745	1.1943	2.1754	3.3400e-003		0.0228	0.0228		0.0210	0.0210		323.3512	323.3512	0.1046		325.9657
Total	**2.2701**	**2.9538**	**3.4751**	**0.0122**	**0.2896**	**0.0606**	**0.3502**	**0.0777**	**0.0585**	**0.1362**		**1,481.3436**	**1,481.3436**	**0.1342**	**9.0600e-003**	**1,487.3978**

	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	9/2/2019	10/4/2019	5	25	
2	Paving	Paving	4/1/2020	4/7/2020	5	5	
3	Building Construction	Building Construction	6/1/2020	8/9/2020	5	50	
4	Equipment Installation	Building Construction	8/28/2020	12/17/2020	5	80	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.51

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 67,200; Non-Residential Outdoor: 67,200; Striped Parking Area: 1,322 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
Paving	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation	Graders	1	8.00	187	0.41
Equipment Installation	Generator Sets	1	8.00	84	0.74
Building Construction	Aerial Lifts	4	8.00	63	0.31
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Paving	Plate Compactors	1	8.00	8	0.43
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	3	8.00	231	0.29
Site Preparation	Off-Highway Trucks	1	2.00	402	0.38
Paving	Off-Highway Trucks	1	8.00	402	0.38
Site Preparation	Excavators	1	8.00	158	0.38

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	3	80.00	20.00	0.00	30.00	50.00	50.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	200.00	50.00	20.00	30.00	50.00	50.00	LD_Mix	HDT_Mix	HHDT
Paving	6	20.00	5.00	20.00	30.00	50.00	50.00	LD_Mix	HDT_Mix	HHDT
Equipment Installation	1	320.00	80.00	50.00	30.00	50.00	120.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

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					0.1909	0.0000	0.1909	0.0206	0.0000	0.0206			0.0000			0.0000
Off-Road	1.3237	15.8852	7.7792	0.0214		0.5677	0.5677		0.5223	0.5223		2,114.4912	2,114.4912	0.6690		2,131.2162
Total	**1.3237**	**15.8852**	**7.7792**	**0.0214**	**0.1909**	**0.5677**	**0.7586**	**0.0206**	**0.5223**	**0.5429**		**2,114.4912**	**2,114.4912**	**0.6690**		**2,131.2162**

3.2 Site Preparation - 2019

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	0.0000	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
Vendor	0.5664	9.4558	3.0794	0.0316	0.9258	0.1202	1.0460	0.2663	0.1150	0.3813		3,296.7626	3,296.7626	0.0725		3,298.5749
Worker	0.8745	0.6974	8.1746	0.0191	1.8241	0.0117	1.8358	0.4837	0.0108	0.4944		1,901.9326	1,901.9326	0.0711		1,903.7093
Total	**1.4409**	**10.1533**	**11.2540**	**0.0508**	**2.7499**	**0.1319**	**2.8818**	**0.7499**	**0.1258**	**0.8757**		**5,198.6952**	**5,198.6952**	**0.1436**		**5,202.2842**

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					0.1909	0.0000	0.1909	0.0206	0.0000	0.0206			0.0000			0.0000
Off-Road	1.3237	6.5796	7.7792	0.0214		0.5677	0.5677		0.5223	0.5223	0.0000	2,114.4912	2,114.4912	0.6690		2,131.2162
Total	**1.3237**	**6.5796**	**7.7792**	**0.0214**	**0.1909**	**0.5677**	**0.7586**	**0.0206**	**0.5223**	**0.5429**	**0.0000**	**2,114.4912**	**2,114.4912**	**0.6690**		**2,131.2162**

3.2 Site Preparation - 2019

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	0.0000	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
Vendor	0.5664	9.4558	3.0794	0.0316	0.9258	0.1202	1.0460	0.2663	0.1150	0.3813		3,296.7626	3,296.7626	0.0725		3,298.5749
Worker	0.8745	0.6974	8.1746	0.0191	1.8241	0.0117	1.8358	0.4837	0.0108	0.4944		1,901.9326	1,901.9326	0.0711		1,903.7093
Total	**1.4409**	**10.1533**	**11.2540**	**0.0508**	**2.7499**	**0.1319**	**2.8818**	**0.7499**	**0.1258**	**0.8757**		**5,198.6952**	**5,198.6952**	**0.1436**		**5,202.2842**

3.3 Paving - 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					
Off-Road	1.0773	10.9836	5.6560	0.0199		0.3865	0.3865		0.3564	0.3564		1,918.2613	1,918.2613	0.6128		1,933.5821
Paving	0.2672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3445**	**10.9836**	**5.6560**	**0.0199**		**0.3865**	**0.3865**		**0.3564**	**0.3564**		**1,918.2613**	**1,918.2613**	**0.6128**		**1,933.5821**

3.3 Paving - 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	0.0674	2.0445	0.3560	7.2500e-003	0.1752	0.0101	0.1853	0.0481	9.6200e-003	0.0577		759.9543	759.9543	0.0150		760.3297
Vendor	0.1128	2.0610	0.6415	7.8400e-003	0.2315	0.0195	0.2509	0.0666	0.0186	0.0852		817.3421	817.3421	0.0158		817.7362
Worker	0.1981	0.1535	1.8209	4.6300e-003	0.4560	2.8200e-003	0.4588	0.1209	2.6000e-003	0.1235		460.5629	460.5629	0.0155		460.9491
Total	**0.3783**	**4.2591**	**2.8185**	**0.0197**	**0.8627**	**0.0323**	**0.8950**	**0.2355**	**0.0308**	**0.2664**		**2,037.8593**	**2,037.8593**	**0.0462**		**2,039.0149**

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					
Off-Road	1.0773		5.6560	0.0199		0.3865	0.3865		0.3564	0.3564	0.0000	1,918.2613	1,918.2613	0.6128		1,933.5821
Paving	0.2672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3445**		**5.6560**	**0.0199**		**0.3865**	**0.3865**		**0.3564**	**0.3564**	**0.0000**	**1,918.2613**	**1,918.2613**	**0.6128**		**1,933.5821**

3.3 Paving - 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	0.0674	2.0445	0.3560	7.2500e-003	0.1752	0.0101	0.1853	0.0481	9.6200e-003	0.0577		759.9543	759.9543	0.0150		760.3297
Vendor	0.1128	2.0610	0.6415	7.8400e-003	0.2315	0.0195	0.2509	0.0666	0.0186	0.0852		817.3421	817.3421	0.0158		817.7362
Worker	0.1981	0.1535	1.8209	4.6300e-003	0.4560	2.8200e-003	0.4588	0.1209	2.6000e-003	0.1235		460.5629	460.5629	0.0155		460.9491
Total	**0.3783**	**4.2591**	**2.8185**	**0.0197**	**0.8627**	**0.0323**	**0.8950**	**0.2355**	**0.0308**	**0.2664**		**2,037.8593**	**2,037.8593**	**0.0462**		**2,039.0149**

3.4 Building Construction - 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					
Off-Road	1.9176	22.2277	14.4286	0.0306		0.9203	0.9203		0.8624	0.8624		2,949.8829	2,949.8829	0.7876		2,969.5737
Total	**1.9176**	**22.2277**	**14.4286**	**0.0306**		**0.9203**	**0.9203**		**0.8624**	**0.8624**		**2,949.8829**	**2,949.8829**	**0.7876**		**2,969.5737**

3.4 Building Construction - 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	6.7400e-003	0.2045	0.0356	7.3000e-004	0.0175	1.0100e-003	0.0185	4.8100e-003	9.6000e-004	5.7700e-003		75.9954	75.9954	1.5000e-003		76.0330
Vendor	1.1284	20.6100	6.4151	0.0784	2.3145	0.1947	2.5092	0.6657	0.1863	0.8520		8,173.4212	8,173.4212	0.1576		8,177.3616
Worker	1.9809	1.5351	18.2091	0.0463	4.5603	0.0282	4.5884	1.2091	0.0260	1.2351		4,605.6285	4,605.6285	0.1545		4,609.4907
Total	**3.1160**	**22.3496**	**24.6598**	**0.1254**	**6.8922**	**0.2239**	**7.1161**	**1.8797**	**0.2132**	**2.0928**		**12,855.0451**	**12,855.0451**	**0.3136**		**12,862.8852**

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					
Off-Road	1.9176	19.6532	14.4286	0.0306		0.9203	0.9203		0.8624	0.8624	0.0000	2,949.8829	2,949.8829	0.7876		2,969.5737
Total	**1.9176**	**19.6532**	**14.4286**	**0.0306**		**0.9203**	**0.9203**		**0.8624**	**0.8624**	**0.0000**	**2,949.8829**	**2,949.8829**	**0.7876**		**2,969.5737**

3.4 Building Construction - 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	6.7400e-003	0.2045	0.0356	7.3000e-004	0.0175	1.0100e-003	0.0185	4.8100e-003	9.6000e-004	5.7700e-003		75.9954	75.9954	1.5000e-003		76.0330
Vendor	1.1284	20.6100	6.4151	0.0784	2.3145	0.1947	2.5092	0.6657	0.1863	0.8520		8,173.4212	8,173.4212	0.1576		8,177.3616
Worker	1.9809	1.5351	18.2091	0.0463	4.5603	0.0282	4.5884	1.2091	0.0260	1.2351		4,605.6285	4,605.6285	0.1545		4,609.4907
Total	**3.1160**	**22.3496**	**24.6598**	**0.1254**	**6.8922**	**0.2239**	**7.1161**	**1.8797**	**0.2132**	**2.0928**		**12,855.0451**	**12,855.0451**	**0.3136**		**12,862.8852**

3.5 Equipment Installation - 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					
Archit. Coating	19.6585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4658	4.3436	4.8540	8.3000e-003		0.2324	0.2324		0.2295	0.2295		789.8748	789.8748	0.0890		792.1009
Total	**20.1243**	**4.3436**	**4.8540**	**8.3000e-003**		**0.2324**	**0.2324**		**0.2295**	**0.2295**		**789.8748**	**789.8748**	**0.0890**		**792.1009**

3.5 Equipment Installation - 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	0.0232	0.6710	0.1236	2.5900e-003	0.0657	3.6900e-003	0.0694	0.0180	3.5300e-003	0.0215		270.8838	270.8838	3.0100e-003		270.9589
Vendor	1.8055	32.9760	10.2641	0.1255	3.7031	0.3115	4.0147	1.0651	0.2980	1.3631		13,077.4739	13,077.4739	0.2522		13,083.7785
Worker	3.1694	2.4562	29.1346	0.0740	7.2964	0.0451	7.3415	1.9346	0.0416	1.9762		7,369.0056	7,369.0056	0.2472		7,375.1851
Total	**4.9980**	**36.1031**	**39.5223**	**0.2021**	**11.0652**	**0.3603**	**11.4255**	**3.0178**	**0.3431**	**3.3608**		**20,717.3633**	**20,717.3633**	**0.5024**		**20,729.9225**

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					
Archit. Coating	19.6585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4658	3.4786	4.8540	8.3000e-003		0.2324	0.2324		0.2295	0.2295	0.0000	789.8748	789.8748	0.0890		792.1009
Total	**20.1243**	**3.4786**	**4.8540**	**8.3000e-003**		**0.2324**	**0.2324**		**0.2295**	**0.2295**	**0.0000**	**789.8748**	**789.8748**	**0.0890**		**792.1009**

3.5 Equipment Installation - 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	0.0232	0.6710	0.1236	2.5900e-003	0.0657	3.6900e-003	0.0694	0.0180	3.5300e-003	0.0215		270.8838	270.8838	3.0100e-003		270.9589
Vendor	1.8055	32.9760	10.2641	0.1255	3.7031	0.3115	4.0147	1.0651	0.2980	1.3631		13,077.4739	13,077.4739	0.2522		13,083.7785
Worker	3.1694	2.4562	29.1346	0.0740	7.2964	0.0451	7.3415	1.9346	0.0416	1.9762		7,369.0056	7,369.0056	0.2472		7,375.1851
Total	**4.9980**	**36.1031**	**39.5223**	**0.2021**	**11.0652**	**0.3603**	**11.4255**	**3.0178**	**0.3431**	**3.3608**		**20,717.3633**	**20,717.3633**	**0.5024**		**20,729.9225**

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	0.0730	1.3478	0.9457	6.4300e-003	0.2896	6.5100e-003	0.2961	0.0777	6.1900e-003	0.0839		663.9733	663.9733	0.0201		664.4763
Unmitigated	0.0730	1.3478	0.9457	6.4300e-003	0.2896	6.5100e-003	0.2961	0.0777	6.1900e-003	0.0839		663.9733	663.9733	0.0201		664.4763

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	8.06	6.05	6.05	81,769	81,769
Other Asphalt Surfaces	2.02	0.00	0.00	7,894	7,894
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	2.02	1.01	1.01	28,305	28,305
Total	12.10	7.06	7.06	117,967	117,967

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
General Light Industry	30.00	0.00	0.00	100.00	0.00	0.00	100	0	0
Other Asphalt Surfaces	15.00	0.00	0.00	100.00	0.00	0.00	100	0	0
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	45.00	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
General Light Industry	0.330000	0.330000	0.330000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Other Asphalt Surfaces	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
Parking Lot	0.536952	0.036131	0.183149	0.127934	0.026885	0.006680	0.007966	0.065455	0.000936	0.001568	0.004917	0.000552	0.000876
Unrefrigerated Warehouse-No Rail	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	0.0453	0.4117	0.3458	2.4700e-003		0.0313	0.0313		0.0313	0.0313		494.0016	494.0016	9.4700e-003	9.0600e-003	496.9372
NaturalGas Unmitigated	0.0453	0.4117	0.3458	2.4700e-003		0.0313	0.0313		0.0313	0.0313		494.0016	494.0016	9.4700e-003	9.0600e-003	496.9372

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					
General Light Industry	3842.37	0.0414	0.3767	0.3164	2.2600e-003		0.0286	0.0286		0.0286	0.0286		452.0432	452.0432	8.6600e-003	8.2900e-003	454.7295
Other Asphalt Surfaces	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
Parking Lot	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
Unrefrigerated Warehouse-No Rail	356.647	3.8500e-003	0.0350	0.0294	2.1000e-004		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003		41.9584	41.9584	8.0000e-004	7.7000e-004	42.2078
Total		**0.0453**	**0.4117**	**0.3458**	**2.4700e-003**		**0.0313**	**0.0313**		**0.0313**	**0.0313**		**494.0016**	**494.0016**	**9.4600e-003**	**9.0600e-003**	**496.9372**

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					
General Light Industry	3.84237	0.0414	0.3767	0.3164	2.2600e-003		0.0286	0.0286		0.0286	0.0286		452.0432	452.0432	8.6600e-003	8.2900e-003	454.7295
Other Asphalt Surfaces	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
Parking Lot	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
Unrefrigerated Warehouse-No Rail	0.356647	3.8500e-003	0.0350	0.0294	2.1000e-004		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003		41.9584	41.9584	8.0000e-004	7.7000e-004	42.2078
Total		**0.0453**	**0.4117**	**0.3458**	**2.4700e-003**		**0.0313**	**0.0313**		**0.0313**	**0.0313**		**494.0016**	**494.0016**	**9.4600e-003**	**9.0600e-003**	**496.9372**

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	2.0773	8.0000e-005	8.1900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Unmitigated	2.0773	8.0000e-005	8.1900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186

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	0.4766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.6000e-004	8.0000e-005	8.1900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Total	**2.0773**	**8.0000e-005**	**8.1900e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0175**	**0.0175**	**5.0000e-005**		**0.0186**

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	lb/day										lb/day					
Architectural Coating	0.4766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.6000e-004	8.0000e-005	8.1900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Total	**2.0773**	**8.0000e-005**	**8.1900e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0175**	**0.0175**	**5.0000e-005**		**0.0186**

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
Aerial Lifts	2	8.00	20	63	0.31	Diesel

UnMitigated/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
Equipment Type	lb/day										lb/day					
Aerial Lifts	0.0745	1.1943	2.1754	3.3400e-003		0.0228	0.0228		0.0210	0.0210		323.3512	323.3512	0.1046		325.9657
Total	**0.0745**	**1.1943**	**2.1754**	**3.3400e-003**		**0.0228**	**0.0228**		**0.0210**	**0.0210**		**323.3512**	**323.3512**	**0.1046**		**325.9657**

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

American Commodity Company Bioenergy

Colusa County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	67.20	1000sqft	1.54	67,200.00	0
Unrefrigerated Warehouse-No Rail	7.20	1000sqft	0.17	7,200.00	0
Other Asphalt Surfaces	0.46	Acre	0.46	20,037.60	0
Parking Lot	5.00	Space	0.05	2,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	56
Climate Zone	3			**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

American Commodity Company Bioenergy - Colusa County, Winter

Project Characteristics - Assumed PG&E for Utility based upon location.

Land Use -

Construction Phase - Assumed equipment installation to be part of building construction phase.

Off-road Equipment - Site Preparation includes grading

Off-road Equipment - Conservatively assumed all equipment operating on the same day.

Off-road Equipment - Default data

Off-road Equipment - Data assumed based upon typical equipment

Grading - Assumed no cut/fill needed

Demolition - No demolition

Trips and VMT - Site preparation includes grading

Architectural Coating - Powerplant ares is 560x120 ft.

Vehicle Trips - GLI = Workers OAS=Ash Removal UW=Biomass Delivery

Energy Use -

Water And Wastewater - Water supplied from onsite well

Operational Off-Road Equipment - Equipment for maintenance Shutdowns assuming 4 per year, 5 days each

Fleet Mix - Assumes LDT1/LDT2/LDA for workers and HHDT for ash and biomass trucks

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	37,200.00	67,200.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	111,600.00	67,200.00
tblArchitecturalCoating	PhaseName	Architectural Coating	Equipment Installation
tblConstructionPhase	NumDays	220.00	80.00
tblConstructionPhase	NumDays	220.00	50.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	3.00	25.00
tblConstructionPhase	PhaseEndDate	9/10/2020	12/17/2020
tblConstructionPhase	PhaseEndDate	8/13/2020	8/9/2020

tblConstructionPhase	PhaseEndDate	8/27/2020	4/7/2020
tblConstructionPhase	PhaseEndDate	10/2/2019	10/4/2019
tblConstructionPhase	PhaseStartDate	10/11/2019	6/1/2020
tblConstructionPhase	PhaseStartDate	8/14/2020	4/1/2020
tblConstructionPhase	PhaseStartDate	9/28/2019	9/2/2019
tblFleetMix	HHD	0.07	0.00
tblFleetMix	HHD	0.07	1.00
tblFleetMix	HHD	0.07	1.00
tblFleetMix	LDA	0.54	0.33
tblFleetMix	LDA	0.54	0.00
tblFleetMix	LDA	0.54	0.00
tblFleetMix	LDT1	0.04	0.33
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.18	0.33
tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	6.6800e-003	0.00
tblFleetMix	LHD2	6.6800e-003	0.00
tblFleetMix	LHD2	6.6800e-003	0.00
tblFleetMix	MCY	4.9170e-003	0.00
tblFleetMix	MCY	4.9170e-003	0.00
tblFleetMix	MCY	4.9170e-003	0.00
tblFleetMix	MDV	0.13	0.00

tblFleetMix	MDV	0.13	0.00
tblFleetMix	MDV	0.13	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MHD	7.9660e-003	0.00
tblFleetMix	MHD	7.9660e-003	0.00
tblFleetMix	MHD	7.9660e-003	0.00
tblFleetMix	OBUS	9.3600e-004	0.00
tblFleetMix	OBUS	9.3600e-004	0.00
tblFleetMix	OBUS	9.3600e-004	0.00
tblFleetMix	SBUS	5.5200e-004	0.00
tblFleetMix	SBUS	5.5200e-004	0.00
tblFleetMix	SBUS	5.5200e-004	0.00
tblFleetMix	UBUS	1.5680e-003	0.00
tblFleetMix	UBUS	1.5680e-003	0.00
tblFleetMix	UBUS	1.5680e-003	0.00
tblOffRoadEquipment	OffRoadEquipmentType	Air Compressors	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Pavers	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Off-Highway Trucks

American Commodity Company Bioenergy - Colusa County, Winter

tblOffRoadEquipment	OffRoadEquipmentType	Paving Equipment	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType	Scrapers	Excavators
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName	Architectural Coating	Equipment Installation
tblOffRoadEquipment	PhaseName		Site Preparation
tblOffRoadEquipment	PhaseName		Equipment Installation
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	20.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	120.00
tblTripsAndVMT	PhaseName		Site Preparation

American Commodity Company Bioenergy - Colusa County, Winter

tblTripsAndVMT	PhaseName		Building Construction
tblTripsAndVMT	PhaseName		Paving
tblTripsAndVMT	PhaseName		Equipment Installation
tblTripsAndVMT	VendorTripLength	6.60	50.00
tblTripsAndVMT	VendorTripLength	6.60	50.00
tblTripsAndVMT	VendorTripLength	6.60	50.00
tblTripsAndVMT	VendorTripLength	6.60	50.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	16.00	50.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	80.00
tblTripsAndVMT	WorkerTripLength	16.80	30.00
tblTripsAndVMT	WorkerTripLength	16.80	30.00
tblTripsAndVMT	WorkerTripLength	16.80	30.00
tblTripsAndVMT	WorkerTripLength	16.80	30.00
tblTripsAndVMT	WorkerTripNumber	8.00	80.00
tblTripsAndVMT	WorkerTripNumber	41.00	200.00
tblTripsAndVMT	WorkerTripNumber	15.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	320.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CC_TTP	28.00	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00

tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	41.00	0.00
tblVehicleTrips	CW_TL	14.70	30.00
tblVehicleTrips	CW_TL	14.70	15.00
tblVehicleTrips	CW_TL	14.70	0.00
tblVehicleTrips	CW_TL	14.70	45.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	1.32	0.09
tblVehicleTrips	ST_TR	1.68	0.14
tblVehicleTrips	SU_TR	0.68	0.09
tblVehicleTrips	SU_TR	1.68	0.14
tblVehicleTrips	WD_TR	6.97	0.12
tblVehicleTrips	WD_TR	0.00	4.40
tblVehicleTrips	WD_TR	1.68	0.28
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00

tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	IndoorWaterUseRate	15,540,000.00	0.00
tblWater	IndoorWaterUseRate	1,665,000.00	146,000.00

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					
2019	2.7839	26.8861	17.3837	0.0694	2.9408	0.7000	3.6407	0.7705	0.6484	1.4190	0.0000	7,044.1807	7,044.1807	0.8040	0.0000	7,064.2799
2020	25.2007	46.3998	38.3603	0.1998	11.0652	1.1450	11.6592	3.0178	1.0764	3.5916	0.0000	20,459.9101	20,459.9101	1.0832	0.0000	20,473.9730
Maximum	**25.2007**	**46.3998**	**38.3603**	**0.1998**	**11.0652**	**1.1450**	**11.6592**	**3.0178**	**1.0764**	**3.5916**	**0.0000**	**20,459.9101**	**20,459.9101**	**1.0832**	**0.0000**	**20,473.9730**

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					
2019	2.7839	17.5805	17.3837	0.0694	2.9408	0.7000	3.6407	0.7705	0.6484	1.4190	0.0000	7,044.1807	7,044.1807	0.8040	0.0000	7,064.2799
2020	25.2007	43.8253	38.3603	0.1998	11.0652	1.1450	11.6592	3.0178	1.0764	3.5916	0.0000	20,459.9100	20,459.9100	1.0832	0.0000	20,473.9730
Maximum	**25.2007**	**43.8253**	**38.3603**	**0.1998**	**11.0652**	**1.1450**	**11.6592**	**3.0178**	**1.0764**	**3.5916**	**0.0000**	**20,459.9100**	**20,459.9100**	**1.0832**	**0.0000**	**20,473.9730**

	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**	**16.21**	**0.00**	**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**

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	2.0773	8.0000e-005	8.1900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Energy	0.0453	0.4117	0.3458	2.4700e-003		0.0313	0.0313		0.0313	0.0313		494.0016	494.0016	9.4700e-003	9.0600e-003	496.9372
Mobile	0.0650	1.4166	0.8130	6.1100e-003	0.2896	6.6200e-003	0.2962	0.0777	6.2900e-003	0.0840		631.6372	631.6372	0.0208		632.1577
Offroad	0.0745	1.1943	2.1754	3.3400e-003		0.0228	0.0228		0.0210	0.0210		323.3512	323.3512	0.1046		325.9657
Total	**2.2621**	**3.0226**	**3.3424**	**0.0119**	**0.2896**	**0.0607**	**0.3503**	**0.0777**	**0.0586**	**0.1363**		**1,449.0075**	**1,449.0075**	**0.1349**	**9.0600e-003**	**1,455.0792**

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	lb/day										lb/day					
Area	2.0773	8.0000e-005	8.1900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Energy	0.0453	0.4117	0.3458	2.4700e-003		0.0313	0.0313		0.0313	0.0313		494.0016	494.0016	9.4700e-003	9.0600e-003	496.9372
Mobile	0.0650	1.4166	0.8130	6.1100e-003	0.2896	6.6200e-003	0.2962	0.0777	6.2900e-003	0.0840		631.6372	631.6372	0.0208		632.1577
Offroad	0.0745	1.1943	2.1754	3.3400e-003		0.0228	0.0228		0.0210	0.0210		323.3512	323.3512	0.1046		325.9657
Total	**2.2621**	**3.0226**	**3.3424**	**0.0119**	**0.2896**	**0.0607**	**0.3503**	**0.0777**	**0.0586**	**0.1363**		**1,449.0075**	**1,449.0075**	**0.1349**	**9.0600e-003**	**1,455.0792**

	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	9/2/2019	10/4/2019	5	25	
2	Paving	Paving	4/1/2020	4/7/2020	5	5	
3	Building Construction	Building Construction	6/1/2020	8/9/2020	5	50	
4	Equipment Installation	Building Construction	8/28/2020	12/17/2020	5	80	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.51

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 67,200; Non-Residential Outdoor: 67,200; Striped Parking Area: 1,322 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
Paving	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation	Graders	1	8.00	187	0.41
Equipment Installation	Generator Sets	1	8.00	84	0.74
Building Construction	Aerial Lifts	4	8.00	63	0.31
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Paving	Plate Compactors	1	8.00	8	0.43
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	3	8.00	231	0.29
Site Preparation	Off-Highway Trucks	1	2.00	402	0.38
Paving	Off-Highway Trucks	1	8.00	402	0.38
Site Preparation	Excavators	1	8.00	158	0.38

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	3	80.00	20.00	0.00	30.00	50.00	50.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	200.00	50.00	20.00	30.00	50.00	50.00	LD_Mix	HDT_Mix	HHDT
Paving	6	20.00	5.00	20.00	30.00	50.00	50.00	LD_Mix	HDT_Mix	HHDT
Equipment Installation	1	320.00	80.00	50.00	30.00	50.00	120.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

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					0.1909	0.0000	0.1909	0.0206	0.0000	0.0206			0.0000			0.0000
Off-Road	1.3237	15.8852	7.7792	0.0214		0.5677	0.5677		0.5223	0.5223		2,114.4912	2,114.4912	0.6690		2,131.2162
Total	**1.3237**	**15.8852**	**7.7792**	**0.0214**	**0.1909**	**0.5677**	**0.7586**	**0.0206**	**0.5223**	**0.5429**		**2,114.4912**	**2,114.4912**	**0.6690**		**2,131.2162**

3.2 Site Preparation - 2019

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	0.0000	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
Vendor	0.5759	10.1487	3.1276	0.0314	0.9258	0.1206	1.0464	0.2663	0.1154	0.3817		3,275.9805	3,275.9805	0.0755		3,277.8668
Worker	0.8843	0.8522	6.4769	0.0166	1.8241	0.0117	1.8358	0.4837	0.0108	0.4944		1,653.7090	1,653.7090	0.0595		1,655.1970
Total	**1.4602**	**11.0009**	**9.6045**	**0.0480**	**2.7499**	**0.1323**	**2.8822**	**0.7499**	**0.1262**	**0.8761**		**4,929.6895**	**4,929.6895**	**0.1350**		**4,933.0637**

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					0.1909	0.0000	0.1909	0.0206	0.0000	0.0206			0.0000			0.0000
Off-Road	1.3237	6.5796	7.7792	0.0214		0.5677	0.5677		0.5223	0.5223	0.0000	2,114.4912	2,114.4912	0.6690		2,131.2162
Total	**1.3237**	**6.5796**	**7.7792**	**0.0214**	**0.1909**	**0.5677**	**0.7586**	**0.0206**	**0.5223**	**0.5429**	**0.0000**	**2,114.4912**	**2,114.4912**	**0.6690**		**2,131.2162**

3.2 Site Preparation - 2019

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	0.0000	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
Vendor	0.5759	10.1487	3.1276	0.0314	0.9258	0.1206	1.0464	0.2663	0.1154	0.3817		3,275.9805	3,275.9805	0.0755		3,277.8668
Worker	0.8843	0.8522	6.4769	0.0166	1.8241	0.0117	1.8358	0.4837	0.0108	0.4944		1,653.7090	1,653.7090	0.0595		1,655.1970
Total	**1.4602**	**11.0009**	**9.6045**	**0.0480**	**2.7499**	**0.1323**	**2.8822**	**0.7499**	**0.1262**	**0.8761**		**4,929.6895**	**4,929.6895**	**0.1350**		**4,933.0637**

3.3 Paving - 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					
Off-Road	1.0773	10.9836	5.6560	0.0199		0.3865	0.3865		0.3564	0.3564		1,918.2613	1,918.2613	0.6128		1,933.5821
Paving	0.2672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3445**	**10.9836**	**5.6560**	**0.0199**		**0.3865**	**0.3865**		**0.3564**	**0.3564**		**1,918.2613**	**1,918.2613**	**0.6128**		**1,933.5821**

3.3 Paving - 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	0.0687	2.1626	0.3776	7.1700e-003	0.1752	0.0102	0.1854	0.0481	9.7300e-003	0.0578		751.7119	751.7119	0.0167		752.1291
Vendor	0.1151	2.2082	0.6524	7.7900e-003	0.2315	0.0196	0.2510	0.0666	0.0187	0.0853		812.1116	812.1116	0.0165		812.5246
Worker	0.2008	0.1874	1.4339	4.0200e-003	0.4560	2.8200e-003	0.4588	0.1209	2.6000e-003	0.1235		400.4158	400.4158	0.0129		400.7375
Total	**0.3845**	**4.5581**	**2.4638**	**0.0190**	**0.8627**	**0.0325**	**0.8952**	**0.2355**	**0.0310**	**0.2666**		**1,964.2393**	**1,964.2393**	**0.0461**		**1,965.3913**

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					
Off-Road	1.0773		5.6560	0.0199		0.3865	0.3865		0.3564	0.3564	0.0000	1,918.2613	1,918.2613	0.6128		1,933.5821
Paving	0.2672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3445**		**5.6560**	**0.0199**		**0.3865**	**0.3865**		**0.3564**	**0.3564**	**0.0000**	**1,918.2613**	**1,918.2613**	**0.6128**		**1,933.5821**

3.3 Paving - 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	0.0687	2.1626	0.3776	7.1700e-003	0.1752	0.0102	0.1854	0.0481	9.7300e-003	0.0578		751.7119	751.7119	0.0167		752.1291
Vendor	0.1151	2.2082	0.6524	7.7900e-003	0.2315	0.0196	0.2510	0.0666	0.0187	0.0853		812.1116	812.1116	0.0165		812.5246
Worker	0.2008	0.1874	1.4339	4.0200e-003	0.4560	2.8200e-003	0.4588	0.1209	2.6000e-003	0.1235		400.4158	400.4158	0.0129		400.7375
Total	**0.3845**	**4.5581**	**2.4638**	**0.0190**	**0.8627**	**0.0325**	**0.8952**	**0.2355**	**0.0310**	**0.2666**		**1,964.2393**	**1,964.2393**	**0.0461**		**1,965.3913**

3.4 Building Construction - 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					
Off-Road	1.9176	22.2277	14.4286	0.0306		0.9203	0.9203		0.8624	0.8624		2,949.8829	2,949.8829	0.7876		2,969.5737
Total	**1.9176**	**22.2277**	**14.4286**	**0.0306**		**0.9203**	**0.9203**		**0.8624**	**0.8624**		**2,949.8829**	**2,949.8829**	**0.7876**		**2,969.5737**

3.4 Building Construction - 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	6.8700e-003	0.2163	0.0378	7.2000e-004	0.0175	1.0200e-003	0.0185	4.8100e-003	9.7000e-004	5.7800e-003		75.1712	75.1712	1.6700e-003		75.2129
Vendor	1.1505	22.0822	6.5237	0.0779	2.3145	0.1955	2.5100	0.6657	0.1870	0.8527		8,121.1162	8,121.1162	0.1652		8,125.2464
Worker	2.0077	1.8736	14.3388	0.0402	4.5603	0.0282	4.5884	1.2091	0.0260	1.2351		4,004.1584	4,004.1584	0.1287		4,007.3754
Total	**3.1650**	**24.1721**	**20.9002**	**0.1188**	**6.8922**	**0.2247**	**7.1169**	**1.8797**	**0.2140**	**2.0936**		**12,200.4458**	**12,200.4458**	**0.2956**		**12,207.8346**

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					
Off-Road	1.9176	19.6532	14.4286	0.0306		0.9203	0.9203		0.8624	0.8624	0.0000	2,949.8829	2,949.8829	0.7876		2,969.5737
Total	**1.9176**	**19.6532**	**14.4286**	**0.0306**		**0.9203**	**0.9203**		**0.8624**	**0.8624**	**0.0000**	**2,949.8829**	**2,949.8829**	**0.7876**		**2,969.5737**

3.4 Building Construction - 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	6.8700e-003	0.2163	0.0378	7.2000e-004	0.0175	1.0200e-003	0.0185	4.8100e-003	9.7000e-004	5.7800e-003		75.1712	75.1712	1.6700e-003		75.2129
Vendor	1.1505	22.0822	6.5237	0.0779	2.3145	0.1955	2.5100	0.6657	0.1870	0.8527		8,121.1162	8,121.1162	0.1652		8,125.2464
Worker	2.0077	1.8736	14.3388	0.0402	4.5603	0.0282	4.5884	1.2091	0.0260	1.2351		4,004.1584	4,004.1584	0.1287		4,007.3754
Total	**3.1650**	**24.1721**	**20.9002**	**0.1188**	**6.8922**	**0.2247**	**7.1169**	**1.8797**	**0.2140**	**2.0936**		**12,200.4458**	**12,200.4458**	**0.2956**		**12,207.8346**

3.5 Equipment Installation - 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					
Archit. Coating	19.6585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4658	4.3436	4.8540	8.3000e-003		0.2324	0.2324		0.2295	0.2295		789.8748	789.8748	0.0890		792.1009
Total	**20.1243**	**4.3436**	**4.8540**	**8.3000e-003**		**0.2324**	**0.2324**		**0.2295**	**0.2295**		**789.8748**	**789.8748**	**0.0890**		**792.1009**

3.5 Equipment Installation - 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	0.0234	0.7192	0.1263	2.5700e-003	0.0657	3.7100e-003	0.0694	0.0180	3.5500e-003	0.0216		269.5959	269.5959	3.2600e-003		269.6774
Vendor	1.8408	35.3315	10.4379	0.1247	3.7031	0.3128	4.0159	1.0651	0.2992	1.3643		12,993.7860	12,993.7860	0.2643		13,000.3942
Worker	3.2123	2.9978	22.9420	0.0643	7.2964	0.0451	7.3415	1.9346	0.0416	1.9762		6,406.6534	6,406.6534	0.2059		6,411.8006
Total	**5.0764**	**39.0485**	**33.5063**	**0.1915**	**11.0652**	**0.3616**	**11.4268**	**3.0178**	**0.3443**	**3.3621**		**19,670.0352**	**19,670.0352**	**0.4735**		**19,681.8722**

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					
Archit. Coating	19.6585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4658	3.4786	4.8540	8.3000e-003		0.2324	0.2324		0.2295	0.2295	0.0000	789.8748	789.8748	0.0890		792.1009
Total	**20.1243**	**3.4786**	**4.8540**	**8.3000e-003**		**0.2324**	**0.2324**		**0.2295**	**0.2295**	**0.0000**	**789.8748**	**789.8748**	**0.0890**		**792.1009**

3.5 Equipment Installation - 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	0.0234	0.7192	0.1263	2.5700e-003	0.0657	3.7100e-003	0.0694	0.0180	3.5500e-003	0.0216		269.5959	269.5959	3.2600e-003		269.6774
Vendor	1.8408	35.3315	10.4379	0.1247	3.7031	0.3128	4.0159	1.0651	0.2992	1.3643		12,993.7860	12,993.7860	0.2643		13,000.3942
Worker	3.2123	2.9978	22.9420	0.0643	7.2964	0.0451	7.3415	1.9346	0.0416	1.9762		6,406.6534	6,406.6534	0.2059		6,411.8006
Total	**5.0764**	**39.0485**	**33.5063**	**0.1915**	**11.0652**	**0.3616**	**11.4268**	**3.0178**	**0.3443**	**3.3621**		**19,670.0352**	**19,670.0352**	**0.4735**		**19,681.8722**

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	0.0650	1.4166	0.8130	6.1100e-003	0.2896	6.6200e-003	0.2962	0.0777	6.2900e-003	0.0840		631.6372	631.6372	0.0208		632.1577
Unmitigated	0.0650	1.4166	0.8130	6.1100e-003	0.2896	6.6200e-003	0.2962	0.0777	6.2900e-003	0.0840		631.6372	631.6372	0.0208		632.1577

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	8.06	6.05	6.05	81,769	81,769
Other Asphalt Surfaces	2.02	0.00	0.00	7,894	7,894
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	2.02	1.01	1.01	28,305	28,305
Total	12.10	7.06	7.06	117,967	117,967

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
General Light Industry	30.00	0.00	0.00	100.00	0.00	0.00	100	0	0
Other Asphalt Surfaces	15.00	0.00	0.00	100.00	0.00	0.00	100	0	0
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	45.00	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
General Light Industry	0.330000	0.330000	0.330000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Other Asphalt Surfaces	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
Parking Lot	0.536952	0.036131	0.183149	0.127934	0.026885	0.006680	0.007966	0.065455	0.000936	0.001568	0.004917	0.000552	0.000876
Unrefrigerated Warehouse-No Rail	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	0.0453	0.4117	0.3458	2.4700e-003		0.0313	0.0313		0.0313	0.0313		494.0016	494.0016	9.4700e-003	9.0600e-003	496.9372
NaturalGas Unmitigated	0.0453	0.4117	0.3458	2.4700e-003		0.0313	0.0313		0.0313	0.0313		494.0016	494.0016	9.4700e-003	9.0600e-003	496.9372

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					
General Light Industry	3842.37	0.0414	0.3767	0.3164	2.2600e-003		0.0286	0.0286		0.0286	0.0286		452.0432	452.0432	8.6600e-003	8.2900e-003	454.7295
Other Asphalt Surfaces	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
Parking Lot	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
Unrefrigerated Warehouse-No Rail	356.647	3.8500e-003	0.0350	0.0294	2.1000e-004		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003		41.9584	41.9584	8.0000e-004	7.7000e-004	42.2078
Total		**0.0453**	**0.4117**	**0.3458**	**2.4700e-003**		**0.0313**	**0.0313**		**0.0313**	**0.0313**		**494.0016**	**494.0016**	**9.4600e-003**	**9.0600e-003**	**496.9372**

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					
General Light Industry	3.84237	0.0414	0.3767	0.3164	2.2600e-003		0.0286	0.0286		0.0286	0.0286		452.0432	452.0432	8.6600e-003	8.2900e-003	454.7295
Other Asphalt Surfaces	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
Parking Lot	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
Unrefrigerated Warehouse-No Rail	0.356647	3.8500e-003	0.0350	0.0294	2.1000e-004		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003		41.9584	41.9584	8.0000e-004	7.7000e-004	42.2078
Total		**0.0453**	**0.4117**	**0.3458**	**2.4700e-003**		**0.0313**	**0.0313**		**0.0313**	**0.0313**		**494.0016**	**494.0016**	**9.4600e-003**	**9.0600e-003**	**496.9372**

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	2.0773	8.0000e-005	8.1900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Unmitigated	2.0773	8.0000e-005	8.1900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186

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	0.4766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.6000e-004	8.0000e-005	8.1900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Total	**2.0773**	**8.0000e-005**	**8.1900e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0175**	**0.0175**	**5.0000e-005**		**0.0186**

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	lb/day										lb/day					
Architectural Coating	0.4766					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.6000e-004	8.0000e-005	8.1900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Total	**2.0773**	**8.0000e-005**	**8.1900e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0175**	**0.0175**	**5.0000e-005**		**0.0186**

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
Aerial Lifts	2	8.00	20	63	0.31	Diesel

UnMitigated/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
Equipment Type	lb/day										lb/day					
Aerial Lifts	0.0745	1.1943	2.1754	3.3400e-003		0.0228	0.0228		0.0210	0.0210		323.3512	323.3512	0.1046		325.9657
Total	**0.0745**	**1.1943**	**2.1754**	**3.3400e-003**		**0.0228**	**0.0228**		**0.0210**	**0.0210**		**323.3512**	**323.3512**	**0.1046**		**325.9657**

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