DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
1010 10TH Street, Suite 3400, Modesto, CA 95354
Planning Phone: (209) 525-6330 Fax: (209) 525-5911
Building Phone: (209) 525-6557 Fax: (209) 525-7759

CEQA Referral Initial Study And Notice of Intent to Adopt a Negative Declaration

Date: **July 29, 2022**

To: **Distribution List (See Attachment A)**

From: **Kristen Anaya, Associate Planner, Planning and Community Development**

Subject: **USE PERMIT APPLICATION NO. PLN2021-0102 – DARLING INGREDIENTS**

Comment Period: **July 29, 2022 – August 31, 2022**

Respond By: **August 31, 2022**

Public Hearing Date: **September 15, 2022**

You may have previously received an Early Consultation Notice regarding this project, and your comments, if provided, were incorporated into the Initial Study. Based on all comments received, Stanislaus County anticipates adopting a Negative Declaration for this project. This referral provides notice of a 30-day comment period during which Responsible and Trustee Agencies and other interested parties may provide comments to this Department regarding our proposal to adopt the Negative Declaration.

All applicable project documents are available for review at: Stanislaus County Department of Planning and Community Development, 1010 10th Street, Suite 3400, Modesto, CA 95354. Please provide any additional comments to the above address or call us at (209) 525-6330 if you have any questions. Thank you.

Applicant: **Bill McMurtry, Darling Ingredients, Inc.**

Project Location: **11946 South Carpenter Road, between Ruble Road and the TID Lateral Canal No. 5, in the Crows Landing area.**

APN: **058-022-005**

Williamson Act Contract: **N/A**

General Plan: **Agriculture**

Current Zoning: **General Agriculture (A-2-40)**

Project Description: **Request to expand an existing legal non-conforming (LNC) animal rendering plant, operating on a 9± acre portion of a 74± acre parcel in the General Agriculture (A-2-40) zoning district, by allowing an increase in the permitted daily processing throughput from 1,650,000 pounds to 1,850,000 pounds and for construction of a new 2,160± square-foot loadout building, an 800± square-foot boiler room addition, and a 36,000± square-foot shell building, and for installation of 10,700± square feet of exterior equipment.**

Full document with attachments available for viewing at:
http://www.stancounty.com/planning/pl/act-projects.shtm

USE PERMIT APPLICATION NO. PLN2021-0102 – DARLING INGREDIENTS
Attachment A

Distribution List

	CA DEPT OF CONSERVATION Land Resources / Mine Reclamation		STAN CO ALUC
X	CA DEPT OF FISH & WILDLIFE		STAN CO ANIMAL SERVICES
	CA DEPT OF FORESTRY (CAL FIRE)	X	STAN CO BUILDING PERMITS DIVISION
	CA DEPT OF TRANSPORTATION DIST 10	X	STAN CO CEO
X	CA OPR STATE CLEARINGHOUSE		STAN CO CSA
X	CA RWQCB CENTRAL VALLEY REGION	X	STAN CO DER
	CA STATE LANDS COMMISSION	X	STAN CO ERC
	CEMETERY DISTRICT	X	STAN CO FARM BUREAU
X	CENTRAL VALLEY FLOOD PROTECTION	X	STAN CO HAZARDOUS MATERIALS
	CITY OF:		STAN CO PARKS & RECREATION
	COMMUNITY SERVICES DIST:	X	STAN CO PUBLIC WORKS
X	COOPERATIVE EXTENSION		STAN CO RISK MANAGEMENT
	COUNTY OF:	X	STAN CO SHERIFF
X	DER GROUNDWATER RESOURCES DIVISION	X	STAN CO SUPERVISOR DIST 2: CHIESA
X	FIRE PROTECTION DIST: MOUNTAIN VIEW FIRE	X	STAN COUNTY COUNSEL
X	GSA: WEST TURLOCK SUBBASIN GSA		StanCOG
	HOSPITAL DIST:	X	STANISLAUS FIRE PREVENTION BUREAU
X	IRRIGATION DIST: TURLOCK	X	STANISLAUS LAFCO
X	MOSQUITO DIST: TURLOCK	X	STATE OF CA SWRCB DIVISION OF DRINKING WATER DIST. 10
X	MOUNTAIN VALLEY EMERGENCY MEDICAL SERVICES	X	SURROUNDING LAND OWNERS
	MUNICIPAL ADVISORY COUNCIL:	X	TELEPHONE COMPANY: AT&T
X	PACIFIC GAS & ELECTRIC		TRIBAL CONTACTS (CA Government Code §65352.3)
	POSTMASTER:	X	US ARMY CORPS OF ENGINEERS
	RAILROAD:		US FISH & WILDLIFE
X	SAN JOAQUIN VALLEY APCD		US MILITARY (SB 1462) (7 agencies)
X	SCHOOL DIST 1: CHATOM UNION		USDA NRCS
X	SCHOOL DIST 2: TURLOCK UNIFIED	X	WATER DIST: TURLOCK
	WORKFORCE DEVELOPMENT	X	CA DEPT OF FOOD AND AGRICULTURE
X	STAN CO AG COMMISSIONER		
	TUOLUMNE RIVER TRUST		

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STANISLAUS COUNTY
CEQA REFERRAL RESPONSE FORM

TO: **Stanislaus County Planning & Community Development**
1010 10th Street, Suite 3400
Modesto, CA 95354

FROM: _____

SUBJECT: **USE PERMIT APPLICATION NO. PLN2021-0102 – DARLING INGREDIENTS**

Based on this agency's particular field(s) of expertise, it is our position the above described project:

_____ Will not have a significant effect on the environment.
_____ May have a significant effect on the environment.
_____ No Comments.

Listed below are specific impacts which support our determination (e.g., traffic general, carrying capacity, soil types, air quality, etc.) – (attach additional sheet if necessary)

1.
2.
3.
4.

Listed below are possible mitigation measures for the above-listed impacts: *PLEASE BE SURE TO INCLUDE WHEN THE MITIGATION OR CONDITION NEEDS TO BE IMPLEMENTED (PRIOR TO RECORDING A MAP, PRIOR TO ISSUANCE OF A BUILDING PERMIT, ETC.):*

1.
2.
3.
4.

In addition, our agency has the following comments (attach additional sheets if necessary).

_____

_____

Response prepared by:

_____

Name Title Date

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CEQA INITIAL STUDY

Adapted from CEQA Guidelines APPENDIX G Environmental Checklist Form, Final Text, January 1, 2020

1.	**Project title:**	Use Permit Application No. PLN2021-0102 – Darling Ingredients
2.	**Lead agency name and address:**	Stanislaus County 1010 10th Street, Suite 3400 Modesto, CA 95354
3.	**Contact person and phone number:**	Kristen Anaya, Associate Planner (209) 525-6330
4.	**Project location:**	11946 South Carpenter Road, between Ruble Road and the TID Lateral No. 5, in the Crows Landing area (APN: 058-022-005).
5.	**Project sponsor's name and address:**	Bill McMurtry, Darling Ingredients 5601 North MacArthur Blvd. Irving, TX 75038
6.	**General Plan designation:**	Agriculture
7.	**Zoning:**	General Agriculture (A-2-40)

8. Description of project:

Request to expand an existing legal non-conforming (LNC) animal rendering plant, operating on a 9± acre portion of a 74± acre parcel in the General Agriculture (A-2-40) zoning district, by allowing an increase in the permitted daily processing throughput from 1,650,000 pounds to 1,850,000 pounds and for construction of a new 2,160± square-foot loadout building, an 800± square-foot boiler room addition, and a 36,000± square-foot shell building, and for installation of 10,700± square feet of exterior equipment. The existing facility consists of approximately 63,623± square feet of structures, tanks, silos, and pipelines, which serve to render beef and poultry animal byproduct received primarily from local farmers, slaughterhouses, and livestock producers, which consists of carcasses, offal, fat, and bone into useable products such as: gelatin, edible fats, feed-grade fats, animal proteins and meals, plasma, pet food ingredients, organic fertilizers, fuel feedstocks, and yellow grease. The end fat and protein products produced by the plant are currently primarily sold to diesel refineries and to companies within the agriculture industry as ingredients for animal feed and fertilizers. The facility also converts used cooking oil and commercial bakery residuals into feed and fuel ingredients. The LNC use has been expanded over the years under Use Permit No. 73-03 and several subsequent Staff Approval Permits. The proposed modifications exceed 25% expansion of an approved use (Use Permit No. 73-03) allowed with Staff Approval Permits in accordance with County Code Section 21.100.050(A) and consequently, a new Use Permit is required. The documented baseline processing throughput for the facility is 1,250,000 pounds per day and current-day operations are limited to 1,650,000 pounds per day. In addition to expanding the permitted daily processing throughput from the current 1,650,000 pounds per day to 1,850,000 pounds per day, this request proposes to construct a new single-story, approximately 25 feet tall, 2,160± square-foot loadout building, which will serve to ship out finished segregated products; two fat tanks totaling 226 square feet; a 314 square-foot protein storage silo, and a 240 square-foot wastewater equalization tank. Additionally, the project proposes future construction of a 800± square-foot addition to the boiler structure, which cooks down the byproducts by eliminating moisture and separating fats from proteins; a 10,000± square-foot wastewater treatment cell, and a 23,300 square-foot shell building, increasing the operational footprint by an additional 30% to provide flexibility for expansion, the use of which will be determined at a later date if constructed. At the time the facility proposes to expand in the future, a Staff Approval Permit will be required to specify the proposed use of the shell building.

The project site is improved with an 8-foot-tall vinyl wall and 4- to 6-foot-tall shrubs installed along the road frontage. Additionally, the site is partially paved with the exception of a dirt parking area comprised of 35 parking stalls and a dirt trailer parking area. A complete building and on-site infrastructure breakdown can be viewed in the attached site plan. The facility is also supported by on-site wastewater holding ponds which are regulated by Waste Discharge Requirements through the Regional Water Quality Control Board. The balance of the property, consisting of approximately 40 acres, is planted in row crops. Wastewater generated by the facility is spread onto the on-site row crops, which receive irrigation water from Turlock Irrigation District. The facility is currently regulated by the Stanislaus County Department of Environmental Resources as an existing Public Water System (PWS) and the site is served by on-site wells for domestic water purposes and an on-site wastewater treatment system for wastewater service. All vehicular traffic to the site takes access off South Carpenter Road via a paved and gated driveway. The facility operates 24 hours per day, seven days per week, year-round with approximately 52 employees working at this location. A maximum shift consists of 12 employees, and minimum shift of six. The requested improvements are anticipated to add up to 10 additional employees for the maximum shift. The facility currently has approximately 140 one-way truck trips (70 round trips) and proposes an increase of 18 additional one-way truck trips (nine round trips) per day. The existing facility has sufficient parking stalls to accommodate the proposed expansion; however, additional building-mounted exterior lighting, up to 25 feet tall, may be installed on the proposed structures as needed.

9.	**Surrounding land uses and setting:**	Confined animal agriculture, irrigated agriculture, and scattered single-family dwellings in all directions; the San Joaquin River to the west.
10.	**Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.):**	Stanislaus County Department of Public Works Department of Environmental Resources San Joaquin Valley Air Pollution Control District Regional Water Quality Control Board
11.	**Attachments:**	I. Air Quality and GHG Technical Report, prepared by Yorke Engineering, LLC, dated May 2022

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.

☐ **Aesthetics**	☐ **Agriculture & Forestry Resources**	☐ **Air Quality**
☐ **Biological Resources**	☐ **Cultural Resources**	☐ **Energy**
☐ **Geology / Soils**	☐ **Greenhouse Gas Emissions**	☐ **Hazards & Hazardous Materials**
☐ **Hydrology / Water Quality**	☐ **Land Use / Planning**	☐ **Mineral Resources**
☐ **Noise**	☐ **Population / Housing**	☐ **Public Services**
☐ **Recreation**	☐ **Transportation**	☐ **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 NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.**

Signature on file. **July 28, 2022**
Prepared by Kristen Anaya, Associate Planner 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 off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

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

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

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration.

Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

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

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

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

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

9) The explanation of each issue should identify:

> **a) the significant criteria or threshold, if any, used to evaluate each question; and**
>
> **b) the mitigation measure identified, if any, to reduce the impact to less than significant.**

ISSUES

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

Discussion: The site itself is not considered to be a scenic resource or unique scenic vista. The only scenic designation in the County is along Interstate 5, which is located approximately 7.3 miles to the west. As the site is already developed with an animal rendering plant, aesthetics associated with the project site are not anticipated to change as a result of this project. The project site is improved with an 8-foot-tall vinyl wall and 4- to 6-foot-tall shrubs installed along the road frontage with no new signage proposed. There is existing pole- and structure-mounted lighting, up to 75 feet tall, installed throughout the site; however, additional building-mounted lighting, up to 25 feet tall, may be installed on the proposed structures as needed. Standard conditions of approval will be added to this project to address glare and skyglow from any proposed on-site lighting.

Mitigation: None.

References: Application information; Stanislaus County Zoning Ordinance; the Stanislaus County General Plan; and Support Documentation[1].

II. AGRICULTURE AND FOREST 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 Department 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:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			**X**	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			**X**	
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 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 forest land or conversion of forest land to non-forest use?				**X**
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?			**X**	

Discussion: The 9-acre project area is improved with an existing animal rendering plant and wastewater holding ponds which are regulated by Waste Discharge Requirements through the Regional Water Quality Control Board. Wastewater generated by the facility is spread on the remaining 40 acres of the property, which is planted in row crops. The project site and surrounding properties are zoned General Agriculture (A-2-40) and are designated Agriculture in the Stanislaus County General Plan.

The Stanislaus County's Williamson Act Uniform Rules defines prime farmland as land that qualifies for rating as class I or class II in the Natural Resource Conservation Service land use capability classification, land which qualifies for rating of 80 through 100 in the Storie Index Rating, irrigated pasture land which supports livestock used for the production of food and fiber, or land planted with crops that gross $800 per acre for three of the last five years. The USDA uses the class system for soils which ranges from I to VIII to score the capability of the soils for agricultural production, with Class I soils being the most productive and Class VIII soils be non-agricultural. The California Revised Storie Index is a rating system based on soil properties, including texture, steepness, and drainage, that dictate the potential for soils to be used for irrigated agricultural production in California. This rating system grades soils with an index rating between 81-100 to be excellent (Grade 1), 61-80 to be good (Grade 2), 41-60 to be fair (Grade 3), 21-40 to be poor (Grade 4), 11-20 to be very poor (Grade 5), and 10 or less to be nonagricultural (Grade 6). The USDA Natural Resources Conservation Service's Eastern Stanislaus County Soil Survey indicates that the entire parcel is made up of Waukena fine sandy loam, moderately saline-alkali (WbA), with 0 to 1 percent slopes, which has a Storie Index Rating of 38 (Grade 4) and is rated as Class 4s, which is not considered to be prime soil. The California Department of Conservation's Important Farmland Maps considers the western 2/5^{ths} portion of the site to be Urban and Built-Up Land and the eastern 3/5^{ths} portion of the site to be Unique Farmland.

The 40-acre portion of the site planted in row crops receives irrigation water from Turlock Irrigation District (TID). The TID Lateral Canal No. 5 borders the site to the south, South Carpenter Road to the west, and irrigated farmland to the north and east. Agricultural property ranging size from 25 to 260 acres, which are all farmed in row crops, surround the site. With the exception of the 1± acre parcel owned by City of Turlock to the southwest, all surrounding parcels are currently enrolled under Williamson Act Contracts.

The County's Agricultural Element's Agricultural Buffer Guidelines states that new or expanding uses approved by discretionary permit in the A-2 zoning district or on a parcel adjoining the A-2 zoning district should incorporate a minimum 150-foot-wide agricultural buffer setback, or 300-foot-wide buffer setback for people-intensive uses, to physically avoid conflicts between agricultural and non-agricultural uses. Public roadways, utilities, drainage facilities, rivers and adjacent riparian areas, landscaping, parking lots, and similar low people-intensive uses are permitted uses within the buffer setback area. The footprint of the rendering facility is located at least 150 feet from the western, northern, and eastern property lines abutting adjacent farmed parcels. The facility is located approximately 95 feet from the southern property line and

accordingly, the applicant is requesting a buffer alternative consisting of the existing 8-foot vinyl wall and shrubs, located along a portion of the southern property line along the facility footprint. Parking and wastewater ponds are a permitted use within the setback area. This agricultural buffer was referred to the Stanislaus County Agricultural Commissioner's Office, who did not identify any issues with the buffer as proposed. Conflicts between surrounding agricultural uses is not anticipated to occur.

The project will have no impact to forest land or timberland. The project is an agricultural use and does not appear to conflict with any agricultural activities in the area and/or lands enrolled in the Williamson Act.

Based on the specific features and design of this project, it does not appear this project will impact the long-term productive agricultural capability of surrounding contracted lands in the A-2 zoning district. The animal rendering facility is existing and has been in operation prior to 1973. The requested project is to allow for a minor expansion to improve facility efficiency. There is no indication this project will result in the removal of adjacent contracted land from agricultural use.

Mitigation: None.

References: E-mail correspondence from the Stanislaus County Agricultural Commissioner's Office, dated June 20, 2022; USDA Natural Resource Conservation Service Web Soil Survey; USDA Soil Conservation Service Soil Survey of Eastern Stanislaus Area CA; California Farmland Mapping and Monitoring Program Data; Application Materials; Stanislaus County General Plan and Support Documentation[1].

III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Conflict with or obstruct implementation of the applicable air quality plan?			**X**	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			**X**	
c) Expose sensitive receptors to substantial pollutant concentrations?			**X**	
d) Result in other emissions (such as those odors adversely affecting a substantial number of people?			**X**	

Discussion: The proposed project is located within the San Joaquin Valley Air Basin (SJVAB) and, therefore, falls under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). In conjunction with the Stanislaus Council of Governments (StanCOG), the SJVAPCD is responsible for formulating and implementing air pollution control strategies. The SJVAPCD's most recent air quality plans are the 2007 PM10 (respirable particulate matter) Maintenance Plan, the 2008 PM2.5 (fine particulate matter) Plan, and the 2007 Ozone Plan. These plans establish a comprehensive air pollution control program leading to the attainment of state and federal air quality standards in the SJVAB, which has been classified as "extreme non-attainment" for ozone, "attainment" for respirable particulate matter (PM-10), and "non-attainment" for PM 2.5, as defined by the Federal Clean Air Act.

The documented baseline processing throughput for the facility is 1,250,000 pounds per day and current-day operations are limited to 1,650,000 pounds per day. In addition to expanding the permitted daily processing throughput from the current 1,650,000 pounds per day to 1,850,000 pounds per day, this request proposes to construct new buildings and other infrastructure which will improve odor abatement and processing efficiency. The 9-acre project area containing the existing animal rendering plant is also supported by on-site wastewater holding ponds which are regulated by Waste Discharge Requirements through the Regional Water Quality Control Board. The balance of the property, consisting of approximately 40 acres, is planted in row crops. All vehicular traffic to the site takes access off South Carpenter Road via a paved and gated driveway. The facility operates 24 hours per day, seven days per week, year-round with approximately 52 employees working at this location. A maximum shift consists of 12 employees, and minimum shift of six. The requested improvements

are anticipated to add up to 10 additional employees for the maximum shift. The facility currently has approximately 140 one-way truck trips (70 round trips) and proposes an increase of 18 additional one-way trips (nine round trips) per day.

A referral response was received from the SJVAPCD indicating that emissions resulting from construction and/or operation of the project may exceed the District's thresholds of significance for carbon monoxide (CO), oxides of nitrogen (NOx), reactive organic gases (ROG), oxides of sulfur (SOx), and particulate matter (PM10 and PM2.5). The SJVAPCD recommended that a more detailed preliminary review of the project be conducted for the project's construction and operational emissions. Further, the Air District recommended other potential air impacts related to Toxic Air Contaminants, Ambient Air Quality Standards, and Hazards and Odors be addressed. The SJVAPCD recommended the project be evaluated for potential health impacts to surrounding receptors (on-site and off-site) resulting from operational and multi-year construction Toxic Air Contaminants (TAC) emissions, and stated that a Health Risk Assessment should evaluate the risk associated with sensitive receptors in the area and mitigate any potentially significant risk to help limit emission exposure to sensitive receptors. The SJVAPCD also recommended the County evaluate heavy-duty truck routing patterns to help limit emission exposure to sensitive receptors, reduce idling of heavy-duty trucks, and utilize zero emission equipment.

The Air District response also indicated that the project is subject to District Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review). The project may also be subject to the following rules: Rule 9510 (Indirect Source Review), Regulation VIII (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants). The project may be subject to other applicable District permits and rules, which must be met as part of the District's Authority to Construct (ATC) permitting process. A condition of approval will be added to the project requiring a finalized ATC Permit be issued and any other applicable Air District permits be obtained prior to issuance of a building permit.

In response to the SJVAPCD comments, an Air Quality and GHG Technical Report, including a Health Risk Assessment (HRA), was prepared by Yorke Engineering, LLC, dated May 2022 (see Attachment I). The document examined the combined impacts from construction and operations of the project, quantifying direct emissions from construction, as well as indirect emissions such as GHG emissions (such as carbon dioxide [CO_2], methane [CH_4], nitrous oxide [N_2O], and total carbon dioxide equivalent [CO_2e]) from energy use, solid waste disposal, vegetation planting or removal, and water use. The document also quantifies construction emissions such as diesel particulate matter (DPM), ozone precursors oxides of nitrogen (NO_x), volatile organic compounds (VOCs), and respirable particulate matter (PM_{10}) from fugitive dust and diesel engine exhaust resulting from various construction activities such as excavation, grading, demolition, and vehicle travel and exhaust. The document quantified these emissions through the California Emissions Estimator Model (CalEEMod) version 2020.4.0 as the modeling tool of project analysis.

A combination of Manufacturing, General Light Industry, and Unrefrigerated Warehouse – No Rail land use types was utilized in the CalEEMod analysis for operational emissions, which assumed low VOC paint usage, low-flow kitchen and bathroom plumbed fixtures, high efficiency lighting, off-road construction equipment consisting of cranes, forklifts, generator sets, graders, rubber-tired dozers, tractors, loaders, backhoes, cement and mortar mixers, pavers, rollers, air compressors, and welders. The construction emissions analysis assumed that during construction access roads would be watered twice daily and that construction equipment and vehicles would reach a maximum speed of 15 miles per hour on unpaved roads. The highest source of DPM emissions were found to be from diesel-fueled equipment at 0.806 pounds per year. Overall project emissions from construction and operations, including mobile (non-permitted) and stationary sources, did not exceed the Air District's screening thresholds for any of the criteria pollutants.

Future attainment of federal and State ambient air quality standards is a function of successful implementation of the SJVAPCD's attainment plans. Consequently, the application of significance thresholds for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality. Pursuant to the SJVAPCD's guidance, if project-specific emissions would be less than the thresholds of significance for criteria pollutants, the project would not be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the SJVAPCD is in nonattainment under applicable federal or State ambient air quality standards. As project emissions would be well below SJVAPCD significance thresholds as mentioned above, the project would not have impacts that are cumulatively considerable.

The net change of GHG emissions, including construction and operations for both mobile and stationary sources included the following: an increase of 30,627 metric ton (MT)/year of CO_2e to a proposed total of 46,642 MT/year, an increase of 0.35 MT/year of N_20 to a proposed total of 0.59 MT/year, an increase of 0.55 MT/year of CH_4 to a proposed total of 0.82 MT/year, and an increase of 30,507 MT/year of CO_2 to a proposed total of 46,442 MT/year. The SJVAPCD does not have numeric thresholds adopted for assessing GHG impacts on global climate change; instead, the Air District has adopted a three-tier approach to assessing cumulative impacts on global climate change through the Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI). This approach identifies projects that (a) either comply with a formally-adopted GHG emission reduction plan within a geographic area; (b) projects which—where a GHG emission reduction plan has not been adopted—have implemented Best Performance Standards (BPS); or (c) projects—where neither an adopted region-wide GHG emission reduction plan nor BPS have been implemented—have quantified project-specific GHG emissions and demonstrate that project-specific GHG emissions would be reduced or mitigated by at least 29% compared to business as usual (BAU), including GHG emissions reductions achieved since the 2002-2004 baseline period, consistent with California Air Resource Board's (CARB) AB 32 Scoping Plan. Projects which achieve at least 29% GHG emissions reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG emissions. The capacity increase requested for this project will displace Darling International's Fresno-based animal rendering facility which will close as of December 2023, concurrent with the start of operations with the proposed project. Consequently, GHG emissions from the permitted and non-permitted sources associated with the Fresno facility will be substantially off-set by the proposed expansion of the subject Turlock facility. Further, the proposed facility will reduce GHG emissions compared to alternative options for processing and rending animal carcasses and produces renewable carbon-neutral green diesel fuel. A portion of the emissions that do occur from electricity usage or fuel combustion in vehicles are covered by California's Cap-and-Trade program utilized by electricity generation and fuel suppliers. Additionally, the Air District's CEQA Cap-and-Trade Policy states that "the District considers GHG emissions resulting from the combustion of all fuels supplied by those fuel suppliers not subject to the Cap-and-Trade Regulation to be insignificant. Therefore, it is reasonable to apply this policy to GHG emissions resulting from the combustion of all fuels in the State of California." Consequently, the proposed project will not have a significant adverse impact related to GHG emissions.

As mentioned in the referral response, their SJVAPCD recommended a screening that evaluates toxic air contaminant (TAC) emissions that may have a significant health impact with respect to both carcinogenic and non-carcinogenic health risks on nearby sensitive receptors. The screening method is calculated based on the procedures set forth in the California Air Pollution Control Officer's Association (CAPCOA) Prioritization Guidelines, which have been adopted by the SJVAPCD, and produces a "prioritization score." The prioritization score places consideration on potency, toxicity, and quantity of TAC emissions and proximity to sensitive receptors such as hospitals, daycare centers, schools, and residences. In the case of carcinogens, the threshold for cancer risk from emissions resulting from the project is expressed as excess cancer cases per one million exposed persons. Non-carcinogenic risk is expressed as a hazard index via a ratio of expected exposure levels to acceptable exposure levels. The nearest known sensitive receptor is a single residence approximately 0.25 miles to the north of the facility. There are no other residential or other sensitive receptors within a mile of the facility. Based on TAC emissions from the project and the distance to the nearest sensitive receptor, the facility's prioritization score for construction and operations associated with the project is 0.059 and 0.760 respectively, which is well below the threshold of 10 set by the SJVAPCD. The document found that the cancer risk at all receptor locations were predicted to be below the SJVAPCD significance threshold, and the Chronic Hazard Index (HIC) was well below the non-cancer thresholds at all locations.

Further, although the rendering industry has the potential to create an odor profile, the facility is an existing use and odor conditions will not be worsened by the proposed expansion. The odor abatement system is proposed to be upgraded to include additional scrubber pretreatment ahead of the existing Regenerative Thermal Oxidizer (RTO). This upgrade will help ensure the system is state of the art and meets all the regulatory conditions required by the SJVAPCD.

Because of this, the project is not considered to pose a potential health risk to nearby sensitive receptors. Additionally, air impacts associated with the project are considered to be less than significant with development standards requiring that all applicable Air District permits be obtained applied to the project. Based on the analysis prepared for the project impacts to air quality are considered to be less than significant.

Mitigation: None.

References: Referral response from the San Joaquin Valley Air Pollution Control District, dated March 31, 2022; Air Quality and GHG Technical Report, prepared by Yorke Engineering, LLC, dated May 2022; Response to Air Quality and GHG Technical Report from the San Joaquin Valley Air Pollution Control District, dated June 8, 2022; San Joaquin Valley Air Pollution Control District - Regulation VIII Fugitive Dust/PM-10 Synopsis; San Joaquin Valley Air Pollution Control District – APR-2025, CEQA Cap-and-Trade Policy; www.valleyair.org; and the Stanislaus County General Plan and Support Documentation[1].

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

Discussion: The proposed improvements will be located within the footprint of an existing animal rendering plant located within a 9± acre portion of a 74± acre parcel in the General Agriculture (A-2-40) zoning district. The project site is located approximately 750± feet from the San Joaquin River and abuts the Turlock Irrigation District (TID) Lateral Canal No. 5 to the north. Confined animal agriculture with wastewater lagoons and irrigated farmland routinely disturbed in conjunction with farming practices surround the site in all directions. The project site is located within the Crows Landing Quad of the United States Geological Survey 7.5-minute topographic quadrangle map. The California Natural Diversity Database (CNDDB) identifies the following special-status species which are state or federally listed, threatened, or identified as a species of special concern and potentially occurring in the Crows Landing Quad: Swainson's hawk, tricolored blackbird, California Ridgway's rail, green sturgeon, steelhead, vernal pool smallscale and Delta button-celery. The San Joaquin River is physically separated from the project site by Crows Landing Road so no fish species exist on-site. The vernal pool smallscale and Delta button-celery are the nearest species listed in the CNDDB; however, there is a low likelihood that the species are present on the project site as the land is already disturbed by annual farming practices and existing daily operations associated with the rendering plant. It does not appear this project will result in impacts to endangered species or habitats, locally designated species, or wildlife dispersal or mitigation corridors. There is no known sensitive or protected species or natural community located on the site.

The project will not conflict with a Habitat Conservation Plan, a Natural Community Conservation Plan, or other locally approved conservation plans. Impacts to endangered species or habitats, locally designated species, or wildlife dispersal or mitigation corridors are considered to be less than significant.

An Early Consultation was referred to the California Department of Fish and Wildlife and no response was received.

Mitigation: None.

References: California Department of Fish and Wildlife's Natural Diversity Database Quad Species List; Stanislaus County General Plan and Support Documentation[1].

V. CULTURAL RESOURCES -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to in § 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**	

Discussion: As this project is not a General Plan Amendment it was not referred to the tribes listed with the Native American Heritage Commission (NAHC), in accordance with SB 18. Tribal notification of the project was not referred to any tribes in conjunction with AB 52 requirements, as Stanislaus County has not received any requests for consultation from the tribes listed with the NAHC. It does not appear that this project will result in significant impacts to any archaeological or cultural resources. The project site is already developed and the proposed construction is within the area which has already been disturbed. However, standard conditions of approval regarding the discovery of cultural resources during the construction process will be added to the project.

Mitigation: None.

References: Stanislaus County General Plan and Support Documentation[1].

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

Discussion: The CEQA Guidelines Appendix F states that energy consuming equipment and processes, which will be used during construction or operation such as: energy requirements of the project by fuel type and end use, energy conservation equipment and design features, energy supplies that would serve the project, total estimated daily vehicle trips to be generated by the project, and the additional energy consumed per-trip by mode, shall be taken into consideration when evaluating energy impacts. Additionally, the project's compliance with applicable state or local energy legislation, policies, and standards must be considered.

All construction activities shall be in compliance with all San Joaquin Valley Air Pollution Control District (SJVAPCD) regulations and with Title 24, Green Building Code, which includes energy efficiency requirements. The operation proposes to operate out of existing buildings and proposes to construct two awnings for which a building permit will be required. Any future construction activities will be required to occur in compliance with all SJVAPCD regulations.

All vehicular traffic to the site takes access off South Carpenter Road via a paved and gated driveway. The facility operates 24 hours per day, seven days per week, year-round with approximately 52 employees working at this location. A maximum shift consists of 12 employees, and minimum shift of six. The requested improvements are anticipated to add up to 10 additional employees for the maximum shift. The facility currently has approximately 140 one-way truck trips (70 round trips) and proposes an increase of 18 additional one-way trips (nine round trips) per day.

Energy consuming equipment and processes include equipment, trucks, and the employee and customer vehicles. Trucks are the main consumers of energy associated with this project but shall be required to meet all Air District regulations, including rules and regulations that increase energy efficiency for heavy trucks. Consequently, emissions would be minimal. Therefore, consumption of energy resources would be less than significant without mitigation for the proposed project.

A referral response was received from the SJVAPCD indicating that emissions resulting from construction and/or operation of the project may exceed the District's thresholds of significance for carbon monoxide (CO), oxides of nitrogen (NOx), reactive organic gases (ROG), oxides of sulfur (SOx), (PM10), and particulate matter. The SJVAPCD recommended that a more detailed preliminary review of the project be conducted for the project's construction and operational emissions. Construction and operational emissions were analyzed within an Air Quality and GHG Technical Report, prepared by Yorke Engineering and dated May 2022. The analysis evaluated construction and operational ROG, NOx, CO, SO2, PM10, PM25, CO2, CH4, and N2O emissions. A combination of Manufacturing, General Light Industry, and Unrefrigerated Warehouse – No Rail land use types was utilized in the California Emissions Estimator Model (CalEEMod) analysis for operational emissions, which assumed low VOC paint usage, low-flow kitchen and bathroom plumbed fixtures, high efficiency lighting, off-road construction equipment consisting of cranes, forklifts, generator sets, graders, rubber-tired dozers, tractors, loaders, backhoes, cement and mortar mixers, pavers, rollers, air compressors, and welders. The construction emissions analysis assumed that during construction access roads would be watered twice daily and that construction equipment and vehicles would reach a maximum speed of 15 miles per hour on unpaved roads. The highest source of Diesel Particulate Matter (DPM) emissions were found to be from diesel-fueled equipment at 0.806 pounds per year. Overall project emissions from construction and operations, including mobile (non-permitted) and stationary sources, did not exceed the Air District's screening thresholds for any of the criteria pollutants. The analysis found that emissions for each of the pollutants associated with the construction and operation of the project are below the Air District's thresholds of significance.

Impacts to energy are considered to be less than significant.

Mitigation: None.

References: Application information; Referral response from the San Joaquin Valley Air Pollution Control District, dated March 31, 2022; Air Quality and GHG Technical Report, prepared by Yorke Engineering, LLC, dated May 2022; Response to Air Quality and GHG Technical Report from the San Joaquin Valley Air Pollution Control District, dated June 8, 2022; San Joaquin Valley Air Pollution Control District - Regulation VIII Fugitive Dust/PM-10 Synopsis; www.valleyair.org; Stanislaus County General Plan and Support Documentation[1].

VII. GEOLOGY AND SOILS -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			**X**	
ii) Strong seismic ground shaking?			**X**	
iii) Seismic-related ground failure, including liquefaction?			**X**	
iv) Landslides?			**X**	
b) Result in substantial soil erosion or the loss of topsoil?			**X**	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			**X**	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			**X**	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?			**X**	
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			**X**	

Discussion: The USDA Natural Resources Conservation Service's Eastern Stanislaus County Soil Survey indicates that the property is comprised entirely of Waukena fine sandy loam, moderately saline-alkali, 0 to 1 percent slopes (WbA – California Revised Storie Index Rating: 38). As contained in Chapter 5 of the General Plan Support Documentation, the areas of the County subject to significant geologic hazard are located in the Diablo Range, west of Interstate 5; however, as per the California Building Code, all of Stanislaus County is located within a geologic hazard zone (Seismic Design Category D, E, or F) and a soils test may be required at building permit application. Results from the soils test will determine if unstable or expansive soils are present. If such soils are present, special engineering of the structure will be required to compensate for the soil deficiency. All construction must be designed and built according to building standards appropriate to withstand shaking for the area in which they are constructed which is verified with the building permit review process.

The proposed development will alter the existing drainage pattern of the site. Stormwater is proposed to be maintained on-site through on-site wastewater lagoons, captured for reuse in the conversion process, or utilized for crop irrigation. The project was referred to the Department of Public Works who had no comment on the project. However, a grading, drainage and erosion/sediment control plan for the project may be required during the building permitting phase as a regulatory requirement, to be reviewed by the Department of Public Works that includes drainage calculations and enough information to verify that runoff from the project will not flow onto adjacent properties and Stanislaus County road right-of-way and is in compliance with the current State of California National Pollutant Discharge Elimination System (NPDES) General Construction Permit.

The Stanislaus County Department of Environmental Resources (DER) indicated that any addition or expansion of a septic tank or alternative wastewater disposal system would require the approval of the Department of Environmental Resources (DER) through the building permit process, which also takes soil type into consideration within the specific design requirements. DER's Hazardous Materials (Hazmat) Division responded with a request that the applicant update their Hazardous Materials Business Plan into the California Environmental Reporting System (CERS) by handlers of materials in excess of 55 gallons, 500 pounds of hazardous material, or of 200 cubic feet of compressed gas, and notification of

Hazmat relative to quantities of waste generated and waste disposal practices, and obtain and maintain an active EPA ID numbers with the California Environmental Protection Agency Department of Toxic Substances Control (DTSC), if applicable.

The project site is not located near an active fault or within a high earthquake zone. Landslides are not likely due to the flat terrain of the area.

DER, Public Works, and the Building Permits Division review and approve any building or grading permit to ensure their standards are met. Conditions of approval regarding these standards will be applied to the project and will be triggered when a building permit is requested.

Impacts to Geology and Soils are considered to be less than significant.

Mitigation: None.

References: Referral response from the Department of Environmental Resources – Hazardous Materials Division, dated March 23, 2022; Referral response from the Department of Environmental Resources (DER), dated July 8, 2022; Referral response from the Stanislaus County Department of Public Works, dated July 6, 2022; Stanislaus County General Plan and Support Documentation[1].

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

Discussion: This is a request to expand an existing animal rendering plant by increasing the permitted daily processing throughput from 1,650,000 pounds per day to 1,850,000 pounds per day, constructing a new single-story, approximately 25 feet tall, 2,160± square-foot loadout building, constructing an 800± square-foot addition to the boiler structure, installing approximately 10,700± square feet of new exterior equipment consisting of silos, fat tanks, to improve processing efficiency and the existing odor abatement system, and constructing 23,300± square-foot shell building for future utilization. All vehicular traffic to the site takes access off South Carpenter Road via a paved and gated driveway. The facility operates 24 hours per day, seven days per week, year-round with approximately 52 employees working at this location. A maximum shift consists of 12 employees, and minimum shift of six. The requested improvements are anticipated to add up to 10 additional employees for the maximum shift. The facility currently has approximately 140 one-way truck trips (70 round trips) and proposes an increase of 18 additional one-way trips (nine round trips) per day. No vehicle maintenance and dumping services will occur on-site. Lighting will include, wall lighting up to 25 feet in height on the buildings. All construction must meet California Green Building Standards Code (CALGreen Code), which includes mandatory provisions applicable to all new residential, commercial, and school buildings. The intent of the CALGreen Code is to establish minimum statewide standards to significantly reduce the greenhouse gas emissions from new construction. The Code includes provisions to reduce water use, wastewater generation, and solid waste generation, as well as requirements for bicycle parking and designated parking for fuel-efficient and carpool/vanpool vehicles in commercial development. The code requires mandatory inspections of building energy systems for non-residential buildings over 10,000 square feet to ensure that they are operating at their design efficiencies. It is the intent of the CALGreen Code that buildings constructed pursuant to the Code achieve at least a 15 percent reduction in energy usage when compared to the State's mandatory energy efficiency standards contained in Title 24. The Code also sets limits on volatile organic compounds (VOCs) and formaldehyde content of various building materials, architectural coatings, and adhesives. A development standard will be added to this project to address compliance with Title 24, Green Building Code, which includes energy efficiency requirements.

The principal Greenhouse Gasses (GHGs) are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and water vapor (H2O). CO2 is the reference gas for climate change because it is the predominant greenhouse gas emitted. To account for the varying warming potential of different GHGs, GHG emissions are often quantified and reported as CO2 equivalents (CO2e). In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] No. 32), which requires the California Air Resources Board's (CARB) design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020. Two additional bills, SB 350 and SB32, were passed in 2015 further amending the states Renewables Portfolio Standard (RPS) for electrical generation and amending the reduction targets to 40% of 1990 levels by 2030.

Under its mandate to provide local agencies with assistance in complying with California Environmental Quality Act (CEQA) in climate change matters, the San Joaquin Valley Air Pollution Control District (SJVAPCD) developed its Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects under CEQA. As a general principal to be applied in determining whether a proposed project would be deemed to have a less than significant impact on global climate change, a project must be in compliance with an approved GHG emission reduction plan that is supported by a CEQA-compliant environmental document or be determined to have reduced or mitigated GHG emissions by 29 percent relative to Business-As-Usual conditions, consistent with GHG emission reduction targets established in CARB's Scoping Plan for AB 32 implementation. The SJVAPCD guidance is intended to streamline the process of determining if project-specific GHG emissions would have a significant effect. The proposed approach relies on the use of performance-based standards and their associated pre-quantified GHG emission reduction effectiveness (Best Performance Standards, or BPS). Establishing BPS is intended to help project proponents, lead agencies, and the public by proactively identifying effective, feasible mitigation measures. Emission reductions achieved through implementation of BPS would be pre-quantified, thus reducing the need for project-specific quantification of GHG emissions.

The Air District response also indicated that the project is subject to District Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review). The project may also be subject to the following rules: Rule 9510 (Indirect Source Review), Regulation VIII (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants). The project may be subject to other applicable District permits and rules, which must be met as part of the District's Authority to Construct (ATC) permitting process. A condition of approval will be added to the project requiring a finalized ATC Permit be issued prior to issuance of a building permit.

In response to the SJVAPCD comments, an Air Quality and GHG Technical Report, including a Health Risk Assessment (HRA), was prepared by Yorke Engineering, LLC, dated May 2022. The document examined the combined impacts from construction and operations of the project, quantifying direct emissions from construction, as well as indirect emissions such as GHG emissions (such as carbon dioxide [CO_2], methane [CH_4], nitrous oxide [N_2O], and total carbon dioxide equivalent [CO_2e]) from energy use, solid waste disposal, vegetation planting or removal, and water use. The document also quantifies construction emissions such as diesel particulate matter (DPM), ozone precursors oxides of nitrogen (NO_x), volatile organic compounds (VOCs), and respirable particulate matter (PM_{10}) from fugitive dust and diesel engine exhaust resulting from various construction activities such as excavation, grading, demolition, and vehicle travel and exhaust. The document quantified these emissions through the California Emissions Estimator Model (CalEEMod) version 2020.4.0 as the modeling tool of project analysis.

The net change of GHG emissions, including construction and operations for both mobile and stationary sources included the following: an increase of 30,627 metric ton (MT)/year of CO_2e to a proposed total of 46,642 MT/year, an increase of 0.35 MT/year of N_20 to a proposed total of 0.59 MT/year, an increase of 0.55 MT/year of CH_4 to a proposed total of 0.82 MT/year, and an increase of 30,507 MT/year of CO_2 to a proposed total of 46,442 MT/year. The SJVAPCD does not have numeric thresholds adopted for assessing GHG impacts on global climate change; instead, the Air District has adopted a three-tier approach to assessing cumulative impacts on global climate change through the Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI). This approach identifies projects that (a) either comply with a formally-adopted GHG emission reduction plan within a geographic area; (b) projects which—where a GHG emission reduction plan has not been adopted—have implemented Best Performance Standards (BPS); or (c) projects—where neither an adopted region-wide GHG emission reduction plan nor BPS have been implemented—have quantified project-specific GHG emissions and demonstrate that project-specific GHG emissions would be reduced or mitigated by at least 29% compared to business as usual (BAU), including GHG emissions reductions achieved since the 2002-2004 baseline period, consistent with CARB's

AB 32 Scoping Plan. Projects which achieve at least 29% GHG emissions reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG emissions. The capacity increase requested for this project will displace Darling International's Fresno-based animal rendering facility which will close as of December 2023, concurrent with the start of operations with the proposed project. Consequently, GHG emissions from the permitted and non-permitted sources associated with the Fresno facility will be substantially off-set by the proposed expansion of the subject Turlock facility. Further, the proposed facility will reduce GHG emissions compared to alternative options for processing and rending animal carcasses and produces renewable carbon-neutral green diesel fuel. A portion of the emissions that do occur from electricity usage or fuel combustion in vehicles are covered by California's Cap-and-Trade program utilized by electricity generation and fuel suppliers. Specifically, the Air District's CEQA Cap-and-Trade Policy states that "the District considers GHG emissions resulting from the combustion of all fuels supplied by those fuel suppliers not subject to the Cap-and-Trade Regulation to be insignificant. Therefore, it is reasonable to apply this policy to GHG emissions resulting from the combustion of all fuels in the State of California." Consequently, the proposed project will not have a significant adverse impact related to GHG emissions.

Future attainment of federal and State ambient air quality standards is a function of successful implementation of the SJVAPCD's attainment plans. Consequently, the application of significance thresholds for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality. Pursuant to the SJVAPCD's guidance, if project-specific emissions would be less than the thresholds of significance for criteria pollutants, the project would not be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the SJVAPCD is in nonattainment under applicable federal or State ambient air quality standards. As project emissions would be well below SJVAPCD significance thresholds as mentioned above, the project would not have impacts that are cumulatively considerable.

A referral response from the Turlock Irrigation District (TID) provided general safety information regarding existing electrical infrastructure on the site and requested that the applicant consult with TID's Electrical Engineering Division for clearance requirements for power lines, requests for facility relocations, and new electrical service needs. These requirements will be reflected in the conditions of approval applied to the project.

Impacts associated with greenhouse gas emissions are expected to have a less than significant impact.

Mitigation: None.

References: Referral response from the San Joaquin Valley Air Pollution Control District, dated March 31, 2022; Air Quality and GHG Technical Report, prepared by Yorke Engineering, LLC, dated May 2022; Response to Air Quality and GHG Technical Report from the San Joaquin Valley Air Pollution Control District, dated June 8, 2022; Referral response from Turlock Irrigation District (TID), dated March 30, 2022; Stanislaus County General Plan and Support Documentation[1].

IX. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			**X**	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			**X**	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			**X**	

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			**X**	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?			**X**	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			**X**	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			**X**	

Discussion: The County Department of Environmental Resources is responsible for overseeing hazardous materials and has not indicated any particular concerns in this area. The facility is registered in the California Environmental Reporting System as a generator of hazardous materials, CERS ID #10178145. The project was referred to the Stanislaus County Department of Environmental Resources (DER) Hazardous Materials (Hazmat) Division responded with a request that the applicant update their Hazardous Materials Business Plan as required in the California Environmental Reporting System (CERS) for handlers of materials in excess of 55 gallons, 500 pounds of hazardous material, or of 200 cubic feet of compressed gas, notify Hazmat relative to quantities of waste generated and waste disposal practices, and obtain and maintain an active EPA ID numbers with the California Environmental Protection Agency Department of Toxic Substances Control (DTSC), if applicable. Further, the facility is registered with and regulated by the California Department of Food and Agriculture (CDFA) Meat, Poultry, and Egg Safety (MPES) Branch and requires state permitting and inspections.

Pesticide exposure is a risk in areas located in the vicinity of agriculture. Sources of exposure include contaminated groundwater which is consumed, and drift from spray applications. Application of sprays is strictly controlled by the Agricultural Commissioner and can only be accomplished after first obtaining permits. All new or expanding uses approved by discretionary permit in the General Agriculture (A-2) zoning district or on a parcel adjoining the A-2 zoning district are required to incorporate an agricultural buffer, which is typically a 150-foot-wide setback, or 300-foot-wide setback for people-intensive uses, the purpose for which is to minimize conflicts that may occur between agricultural and non-agricultural uses involving pesticide drift, dust, noise, odor and similar nuisances. When these recommended distances are not met, an alternative may be proposed by the applicant. Public roadways, utilities, drainage facilities, rivers and adjacent riparian areas, landscaping, parking lots, and similar low people-intensive uses are permitted uses within the buffer setback area. The existing facility is located a minimum distance of 150 feet± from abutting parcels with production agriculture to the north, west and east. The facility is located approximately 95 feet from the southern property line and accordingly, the applicant is requesting a buffer alternative consisting of the existing 8-foot vinyl wall and shrubs, located along a portion of the southern property line along the facility footprint. E-mail correspondence received from the Stanislaus County Agricultural Commissioner's Office stated that their staff had no issues with the existing buffer setbacks and barriers for continued utilization of the project's agricultural buffer.

The project site is not listed on the EnviroStor database managed by the CA Department of Toxic Substances Control or within the vicinity of any airport. The nearest school, Mountain View Middle School, is located 2¼ miles to the northeast. The groundwater is not known to be contaminated in this area. The project does not interfere with the Stanislaus County Local Hazard Mitigation Plan, which identifies risks posed by disasters and identifies ways to minimize damage from those disasters. The site is located in a Local Responsibility Area (LRA) for fire protection and is served by Mountain View Fire. The project was referred to the District; however, no response has been received to date.

Project impacts related to Hazards and Hazardous Materials are considered to be less than significant impact.

Mitigation: None.

References: E-mail correspondence from the Agricultural Commissioner's Office, dated June 22, 2022; Referral from the Department of Environmental Resources – Hazardous Materials Division, dated March 23, 2022; Stanislaus County General Plan and Support Documentation[1].

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

Discussion: Areas subject to flooding have been identified in accordance with the Federal Emergency Management Act (FEMA). The project site is located in FEMA Flood Zone AE, which includes floodplain areas that present the 1% annual chance of flooding. All flood zone requirements will be addressed by the Building Permits Division during the building permit process. On-site areas subject to flooding have not been identified by the Federal Emergency Management Agency and/or County designated flood areas.

The project proposes to utilize an existing private septic system and domestic wells for wastewater and water services, respectively. An existing on-site industrial supply well provides the facility with water for operations. The site is served by an existing public water system, regulated by the Regional Water Quality Control Board and Department of Environmental Resources (DER) staff, which requires ongoing testing. A referral response from DER stated that the project applicant is responsible to notify DER staff in the event the existing on-site wastewater treatment system (OWTS) will be modified, upgraded, or replaced, that any increase in the facility's drainage fixtures or number of users will trigger new OWTS review and upgrading, that any new building requiring an OWTS shall be designed according to type and occupancy of the proposed structure to the estimated waste/sewage design flow rate, and that all applicable Local Agency Management Program (LAMP) standards and setbacks shall be met. These requirements will be added to the project as conditions of approval.

The proposed development will alter the existing drainage pattern of the site. Stormwater is proposed to be maintained on-site through an on-site storm drainage basin. The project was referred to the Department of Public Works who did not comment on the project to date. However, as part of the building permit process, a grading, drainage, and erosion/sediment control plan for the project site may be required to be submitted for review and approval to the Department of Public Works that includes drainage calculations and enough information to verify that runoff from the project will not flow onto adjacent properties and Stanislaus County road right-of-way and is in compliance with the current State of California National Pollutant Discharge Elimination System (NPDES) General Construction Permit. If this is required, it would be triggered at building permit review.

The project site is located within the Turlock sub-basin which is jointly managed by the West Turlock Subbasin and East Turlock Subbasin Groundwater Sustainability Agency (GSA). The Turlock basin isn't considered to be critically over drafted, but since most of the cities within the basin rely solely on groundwater, it is considered a high-priority basin. Due to that designation, the Sustainable Groundwater Management Act (SGMA) requires that the STRGBA GSA adopt and begin implementation of a Groundwater Sustainability Plan (GSP) by January 31, 2022.

A referral response received from the Central Valley Regional Water Quality Control District provided a list of the Board's permits and programs that may be applicable to the proposed project. The developer will be required to contact Regional Water to determine which permits/standards must be met prior to construction as a development standard.

A referral response was received from the Turlock Irrigation District (TID) who did not provide comments on the project with respect to irrigation facilities on or near the site. The project was referred to the DER Hazardous Materials (Hazmat) Division who responded with a request that the applicant conduct a Phase I Environmental Site Assessment (ESA) prior to issuance of a grading permit, if required, and that the project applicant update their hazardous material inventory and site map in the California Environmental Reporting System (CERS) in the event that hazardous materials be stored in any new on-site buildings.

As a result of the development standards required for this project, impacts associated with drainage, water quality, and runoff are expected to have a less than significant impact.

Mitigation: None.

References: Referral response from the Department of Environmental Resources, dated July 8, 2022; Referral response from the Department of Environmental Resources – Hazardous Materials Division, dated March 23, 2022; Referral response from the Department of Public Works, dated July 6, 2022; Referral response from Turlock Irrigation District, dated March 30, 2022; Stanislaus County General Plan and Support Documentation[1].

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

Discussion: The project site is designated Agriculture by the Stanislaus County General Plan land use diagrams and zoned General Agriculture (A-2-40). The applicant is requesting to expand an existing legal non-conforming (LNC) animal rendering plant located within a 9± acre portion of a 74± acre parcel, further identified as Assessor's Parcel Number 058-022-005. The existing facility consists of approximately 63,623± square feet of structures, tanks, silos, and pipelines, which serve to render beef and poultry animal byproduct, which consists of carcasses, offal, fat, and bone into useable products such as: gelatin, edible fats, feed-grade fats, animal proteins and meals, plasma, pet food ingredients, organic fertilizers, fuel feedstocks, and yellow grease. The LNC use has been expanded over the years under Use Permit No. 73-03 and several subsequent Staff Approval Permits. The proposed modifications exceed 25% expansion of an approved use (Use Permit No. 73-03) allowed with Staff Approval Permits in accordance with County Code Section 21.100.050(A) and

consequently, a new Use Permit is required. Specifically, this request proposes to increase the permitted daily processing throughput from 1,650,000 pounds per day to 1,850,000 pounds per day; construct a new single-story, approximately 25 feet tall, 2,160± square-foot loadout building, which will serve to ship out finished segregated products; construct an 800± square-foot addition to the boiler structure, which cooks down the byproducts by eliminating moisture and separating fats from proteins; install approximately 10,700± square feet of new exterior equipment consisting of silos and fat tanks, to improve processing efficiency and the existing odor abatement system; and provide flexibility for future expansion by proposing an additional 30% increase in structural footprint consisting of a 23,300± square-foot shell building for future utilization. At the time the facility proposes to expand in the future, a Staff Approval Permit will be required to specify the proposed use of the shell structure.

The project site is improved with a block wall and trees installed along the road frontage. Additionally, the site is partially paved with the exception of a dirt parking area comprising 35 parking stalls and a dirt trailer parking area. A complete building and on-site infrastructure breakdown can be viewed in the attached site plan. The facility is also supported by on-site wastewater holding ponds which are regulated by Waste Discharge Requirements through the Regional Water Quality Control Board. The balance of the property, consisting of approximately 40 acres, is planted in row crops. Wastewater generated by the facility is spread on on-site row crops, which receive irrigation water from Turlock Irrigation District. The facility is currently regulated by the Stanislaus County Department of Environmental Resources as a Public Water System (PWS) and the site is served by on-site wells for domestic water and industrial supply purposes and an on-site wastewater treatment system for wastewater service. All vehicular traffic to the site takes access off South Carpenter Road via a paved and gated driveway. The facility operates 24 hours per day, seven days per week, year-round with approximately 52 employees working at this location. A maximum shift consists of 12 employees, and minimum shift of six. The requested improvements are anticipated to add up to 10 additional employees for the maximum shift. The facility currently has approximately 140 one-way truck trips (70 round trips) and proposes an increase of 18 additional one-way trips (nine round trips) per day.

The facility is considered an LNC use due to being established prior to the current General Agriculture (A-2) zoning going into effect in 1971 and not being permitted under the existing zoning. Consequently, modification to the LNC use exceeding 25 percent of the facility footprint or operational activities requires a Use Permit, pursuant to County Code Section 21.80.070(A). Specifically, in order to approve a Use Permit to expand an LNC use, the Planning Commission must find that the changes:

1. Will not, under the circumstances of the particular case, be detrimental to the health, safety and general welfare of persons residing or working in the neighborhood of the use; and

2. Will not be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of persons residing or working in the neighborhood or to the general welfare of the county; and

3. Is logically and reasonably related to the existing use and that the size or intensity of the enlargement, expansion, restoration or changes is not such that it would be more appropriately moved to a zoning district in which it is permitted.

The County's Agricultural Element's Agricultural Buffer Guidelines states that new or expanding uses approved by discretionary permit in the A-2 zoning district or on a parcel adjoining the A-2 zoning district should incorporate a minimum 150-foot-wide agricultural buffer setback, or 300-foot-wide buffer setback for people-intensive uses, to physically avoid conflicts between agricultural and non-agricultural uses. Public roadways, utilities, drainage facilities, rivers and adjacent riparian areas, landscaping, parking lots, and similar low people-intensive uses are permitted uses within the buffer setback area. The footprint of the rendering facility is located at least 150 feet from the western, northern, and eastern property lines abutting adjacent farmed parcels. The facility is located approximately 95 feet from the southern property line; however, an existing 8-foot vinyl wall is located along a portion of the southern property line along the facility footprint. Parking and wastewater ponds are a permitted use within the setback area. This agricultural buffer was referred to the Stanislaus County Agricultural Commissioner's Office, who did not identify any issues with the buffer as proposed. Conflicts between surrounding agricultural uses is not anticipated to occur.

The project will not physically divide an established community nor conflict with any habitat conservation plans.

Mitigation: None.

References: Referral response from the Department of Environmental Resources, dated July 8, 2022; Stanislaus County General Plan and Support Documentation[1].

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

Discussion: The location of all commercially viable mineral resources in Stanislaus County has been mapped by the State Division of Mines and Geology in Special Report 173. There are no known significant resources on the site, nor is the project site located in a geological area known to produce resources.

Mitigation: None.

References: Stanislaus County General Plan and Support Documentation[1].

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

Discussion: The Stanislaus County General Plan identifies noise levels up to 70 dB Ldn (or CNEL) as the normally acceptable level of noise for industrial, manufacturing, utilities, and agriculture uses. The Stanislaus County General Plan identifies noise levels for residential or other noise-sensitive land uses of up to 55 hourly Leq, dBA and 75 Lmax, dBA from 7 a.m. to 10 p.m. and 45 hourly Leq, dBA and 65 Lmax, dBA from 10 p.m. to 7 a.m. Pure tone noises, such as music, shall be reduced by five dBA; however, when ambient noise levels exceed the standards, the standards shall be increased to the ambient noise levels. The site itself is impacted by the noise generated from the San Joaquin River, equipment from adjacent agricultural operations, and traffic from South Carpenter Road. The nearest known sensitive receptor is a single residence approximately 0.25 miles to the north of the facility. There are no other residential or other sensitive receptors within a mile of the facility. On-site grading resulting from this project may result in a temporary increase in the area's ambient noise levels; however, noise impacts associated with on-site activities and traffic are not anticipated to exceed the normally acceptable level of noise. Noise associated with the construction work would be temporary but required to meet the noise ordinance and Noise Element standards. The site is not located within an airport land use plan. Noise impacts are considered to be less than significant with mitigation included.

The site is not located within an airport land use plan.

Mitigation: None.

References: Application materials; Stanislaus County Noise Control Ordinance; General Plan; Stanislaus County General Plan and Support Documentation[1].

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

Discussion: The site is not included in the vacant sites inventory for the 2016 Stanislaus County Housing Element, which covers the 5th cycle Regional Housing Needs Allocation (RHNA) for the county and will therefore not impact the County's ability to meet their RHNA. No population growth will be induced nor will any existing housing be displaced as a result of this project.

Impacts related to Population and Housing are considered to be less than significant.

Mitigation: None.

References: Stanislaus County General Plan and Support Documentation[1].

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

Discussion: The project site is served by the Mountain View Fire for fire protection services, the Chatom Union and Turlock Unified school districts for school services, the Stanislaus County Sheriff Department for police protection, Stanislaus County Parks and Recreation Department for parks facilities, and the Turlock Irrigation District (TID) for power. County adopted Public Facilities Fees, as well as fire and school fees are required to be paid based on the development

type prior to issuance of a building permit. Payment of the applicable district fees will be required prior to issuance of a building permit. This project was circulated to all applicable: school, fire, police, irrigation, public works departments, and districts during the Early Consultation referral period, and no concerns were identified with regard to public services.

The project proposes to utilize an existing private septic system and domestic wells for wastewater and water services, respectively. An existing on-site industrial supply well provides the facility with water for operations. The site is served by an existing public water system, regulated by the Regional Water Quality Control Board and Department of Environmental Resources (DER) staff, which requires ongoing testing. A referral response from DER stated that the project applicant is responsible to notify DER staff in the event the existing on-site wastewater treatment system (OWTS) will be modified, upgraded, or replaced, that any increase in the facility's drainage fixtures or number of users will trigger new OWTS review and upgrading, that any new building requiring an OWTS shall be designed according to type and occupancy of the proposed structure to the estimated waste/sewage design flow rate, and that all applicable Local Agency Management Program (LAMP) standards and setbacks shall be met. These requirements will be added to the project as conditions of approval.

A referral response from the Turlock Irrigation District (TID) indicated that there are existing overhead and underground services, and requested that the developer/applicant contact the TID Electrical Engineering Department for clearance requirements for overhead and underground power lines, requests for facility relocations, and new electrical service needs.

No significant impacts related to Public Services were identified.

Mitigation: None.

References: Referral response from the Department of Environmental Resources, dated July 8, 2022; Referral response from Turlock Irrigation District, dated March 30, 2022; Stanislaus County General Plan and Support Documentation[1].

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

Discussion: This project does not include any recreational facilities and is not anticipated to increase demands for recreational facilities, as such impacts typically are associated with residential development. Non-residential development pays parks fees through the payment of public facilities fees, which are collected during the issuance of a building permit. This requirement will be incorporated into the project as a development standard.

No significant impacts related to Recreation were identified.

Mitigation: None.

References: Stanislaus County General Plan and Support Documentation[1].

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

Discussion: All vehicular traffic to the project site takes access off South Carpenter Road via a paved and gated driveway. The facility operates 24 hours per day, seven days per week, year-round with approximately 52 employees working at this location. A maximum shift consists of 12 employees, and minimum shift of six. The requested improvements are anticipated to add up to 10 additional employees for the maximum shift. The facility currently has approximately 140 one-way truck trips (70 round trips) and proposes an increase of 18 additional one-way trips (nine round trips) per day. Increased traffic resulting from the proposed use of the site is insignificant; therefore, staff has no evidence to support that this project will significantly impact South Carpenter Road.

This project was referred to the Department of Public Works and City of Turlock, both of which responded to the project with no comment regarding the proposed project.

Although they responded with no comment to the project, a grading, drainage, and erosion/sediment control plan for the project site may be required to be submitted to the Department of Public Works in conjunction with the building permit submittal for the new structure, including drainage calculations and enough information to verify that runoff from the project will not flow onto adjacent properties and Stanislaus County road right-of-way and is in compliance with the current State of California National Pollutant Discharge Elimination System (NPDES) General Construction Permit.

Senate Bill 743 (SB743) requires that the transportation impacts under the California Environmental Quality Act (CEQA) evaluate impacts by using Vehicle Miles Traveled (VMT) as a metric. Stanislaus County has currently not adopted any significance thresholds for VMT, and projects are treated on a case-by-case basis for evaluation under CEQA. However, the State of California - Office of Planning and Research (OPR) has issued guidelines regarding VMT significance under CEQA. One of the guidelines, presented in the December 2018 document Technical Advisory on Evaluating Transportation Impacts in CEQA, states that locally serving retail would generally redistribute trips from other local uses, rather than generate new trips. The proposed project fits this description of locally serving retail as it served local agricultural businesses for acceptance, handling, and rendering of deceased livestock and therefore is presumed to create a less than significant transportation impact related to VMT.

Impacts associated with Transportation are expected to have a less than significant impact.

Mitigation: None.

References: Referral response from Public Works, dated July 6, 2022; Referral response from City of Turlock, dated March 24, 2022; Stanislaus County General Plan and Support Documentation[1].

XVIII. TRIBAL CULTURAL RESOURCES -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), 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 for the in subdivision (c) of Public Resource Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.			**X**	

Discussion: In accordance with SB 18 and AB 52, this project was not referred to the tribes listed with the Native American Heritage Commission (NAHC) as the project is not a General Plan Amendment and no tribes have requested consultation or project referral noticing. Tribal notification of the project was not referred to any tribes in conjunction with AB 52 requirements, as Stanislaus County has not received any requests for consultation from the tribes listed with the NAHC. A standard condition of approval will be added to the project which requires if any cultural or tribal resources are discovered during project-related activities, all work is to stop, and the lead agency and a qualified professional are to be consulted to determine the importance and appropriate treatment of the find.

Tribal Impacts are considered to be less than significant.

Mitigation: None.

References: Stanislaus County General Plan and Support Documentation[1].

XIX. UTILITIES AND SERVICE SYSTEMS -- Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Included	Less Than Significant Impact	No Impact
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 regulations related to solid waste?			**X**	

Discussion: Limitations on providing services have not been identified. The site is served by Turlock Irrigation District (TID) for electrical service and Pacific Gas & Electric (PG&E) for natural gas. The project proposes to utilize an existing private septic system and domestic wells for wastewater and water services, respectively. An existing on-site industrial supply well provides the facility with water for operations. The site is served by an existing public water system, regulated by the Regional Water Quality Control Board and Department of Environmental Resources (DER) staff, which requires ongoing testing. A referral response from DER stated that the project applicant is responsible to notify DER staff in the event the existing on-site wastewater treatment system (OWTS) will be modified, upgraded, or replaced, that any increase in the facility's drainage fixtures or number of users will trigger new OWTS review and upgrading, that any new building requiring an OWTS shall be designed according to type and occupancy of the proposed structure to the estimated waste/sewage design flow rate, and that all applicable Local Agency Management Program (LAMP) standards and setbacks shall be met. These requirements will be added to the project as conditions of approval. The Department of Public Works will review and approve any required grading and drainage plans prior to construction. Conditions of approval will be added to the project to reflect this requirement.

The proposed development will alter the existing drainage pattern of the site. Stormwater is proposed to be maintained on-site through an on-site storm drainage basin. The project was referred to the Department of Public Works who did not comment on the project to date. However, as part of the building permit process, a grading, drainage, and erosion/sediment control plan for the project site may be required to be submitted for review and approval to the Department of Public Works that includes drainage calculations and enough information to verify that runoff from the project will not flow onto adjacent properties and Stanislaus County road right-of-way and is in compliance with the current State of California National Pollutant Discharge Elimination System (NPDES) General Construction Permit. If this is required, it would be triggered at building permit review.

A referral response from TID indicated that there are existing overhead and underground services, and requested that the developer/applicant contact the TID Electrical Engineering Department for clearance requirements for overhead and underground power lines, requests for facility relocations, and new electrical service needs. The project was referred to PG&E who has not provided comments on the project to date.

No significant impacts related to Utilities and Services Systems have been identified.

Mitigation: None.

References: Referral response from the Department of Environmental Resources, dated July 8, 2022; Referral response from Turlock Irrigation District, dated March 30, 2022; Stanislaus County General Plan and Support Documentation[1].

XX. WILDFIRE – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			**X**	

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?			**X**	
c) Require the installation of maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?			**X**	
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?			**X**	

Discussion: The Stanislaus County Local Hazard Mitigation Plan identifies risks posed by disasters and identifies ways to minimize damage from those disasters. With the Wildfire Hazard Mitigation Activities of this plan in place, impacts to an adopted emergency response plan or emergency evacuation plan are anticipated to be less than significant. The terrain of the site is relatively flat, and the site has access to a County-maintained road. The site is located in a Local Responsibility Area (LRA) for fire protection, the southern half is designated as urban and the northern half as nonurban and is served by Mountain View Fire Protection District. The project was referred to the District, but no response was received. California Building Code establishes minimum standards for the protection of life and property by increasing the ability of a building to resist intrusion of flame and embers. No construction is proposed, but if future construction does occur it will be required to meet fire code, which will be verified through the building permit review process. A grading and drainage plan may be required for the proposed new structures, and all fire protection, and emergency vehicle access standards met. These requirements will be applied as development standards for the project. Accordingly, wildfire risk and risks associated with postfire land changes are considered to be less than significant.

Mitigation: None.

References: Stanislaus County General Plan and Support Documentation[1].

XXI. MANDATORY FINDINGS OF SIGNIFICANCE --	**Potentially Significant Impact**	**Less Than Significant With Mitigation Included**	**Less Than Significant Impact**	**No Impact**
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			**X**	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)			**X**	

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			**X**	

Discussion: Review of this project has not indicated any features which might significantly impact the environmental quality of the site and/or the surrounding area.

The project site is improved with the existing animal rendering facility, wastewater lagoons, and approximately 40 acres of row crops. Both the San Joaquin River and South Carpenter Road border the project site to the west and the Turlock Irrigation District (TID) Lateral Canal No. 5 to the south. Agricultural property ranging in size from 25 to 260 acres, zoned General Agriculture (A-2-40), which are either farmed in irrigated row crops or improved with confined animal facilities, surround the site in all directions. No other commercially developed properties exist within at least a mile of the project site. Outside of the permitted uses for the A-2 zoning district, development of the surrounding properties would require discretionary approval and additional environmental review. Approval of the project is not anticipated to set a precedent for further development of the surrounding area.

Mitigation: None.

References: Initial Study; Stanislaus County General Plan and Support Documentation[1].

[1]Stanislaus County General Plan and Support Documentation adopted in August 23, 2016, as amended. ***Housing Element*** adopted on April 5, 2016.

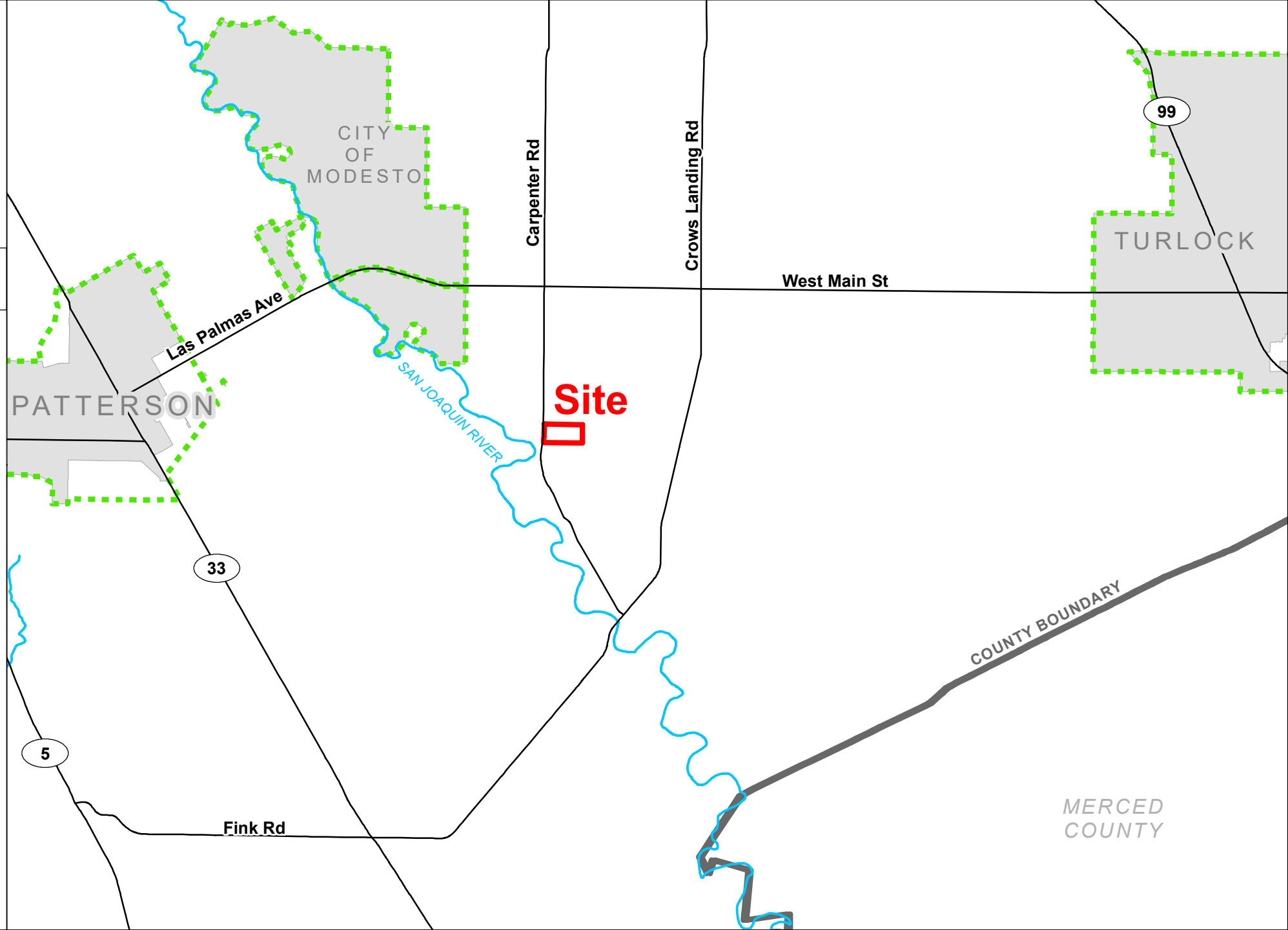
DARLING INGREDIENTS INC

UP PLN2021-0102

AREA MAP

LEGEND

- Project Site
- Sphere of Influence
- City
- Road
- River



N 0 2mi 0 2km

Source: Planning Department GIS Date: 11/15/2021

DARLING INGREDIENTS INC

UP PLN2021-0102

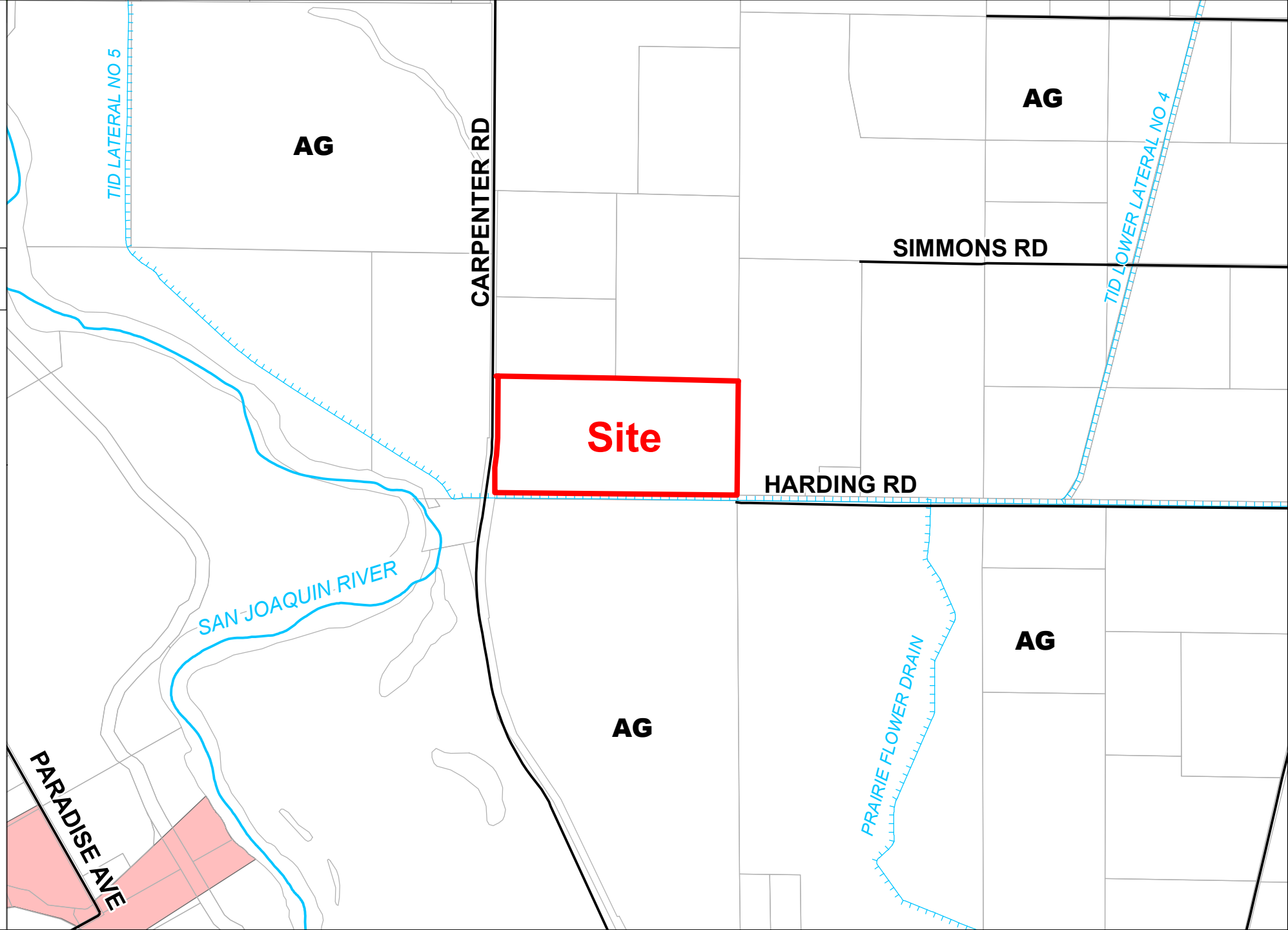
GENERAL PLAN MAP

LEGEND

- Project Site
- Parcel
- Road
- River
- Canal

General Plan

- Agriculture
- Commercial



N

0 1,500 ft

0 300 m

Source: Planning Department GIS

Date: 11/15/2021

DARLING INGREDIENTS INC

UP PLN2021-0102

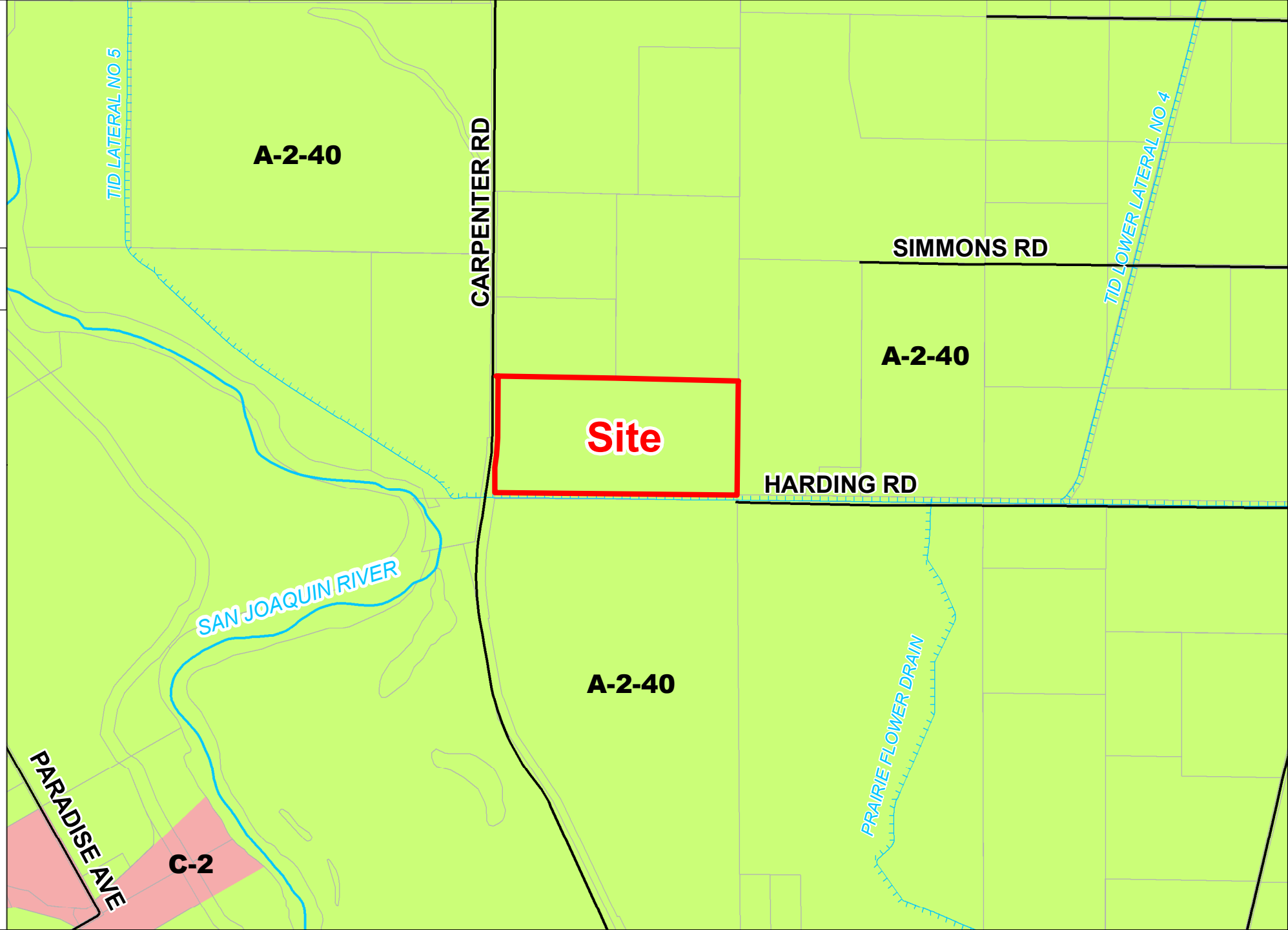
ZONING MAP

LEGEND

- Project Site
- Parcel
- Road
- River
- Canal

Zoning Designation

- General Agriculture 40 Acre
- General Commercial



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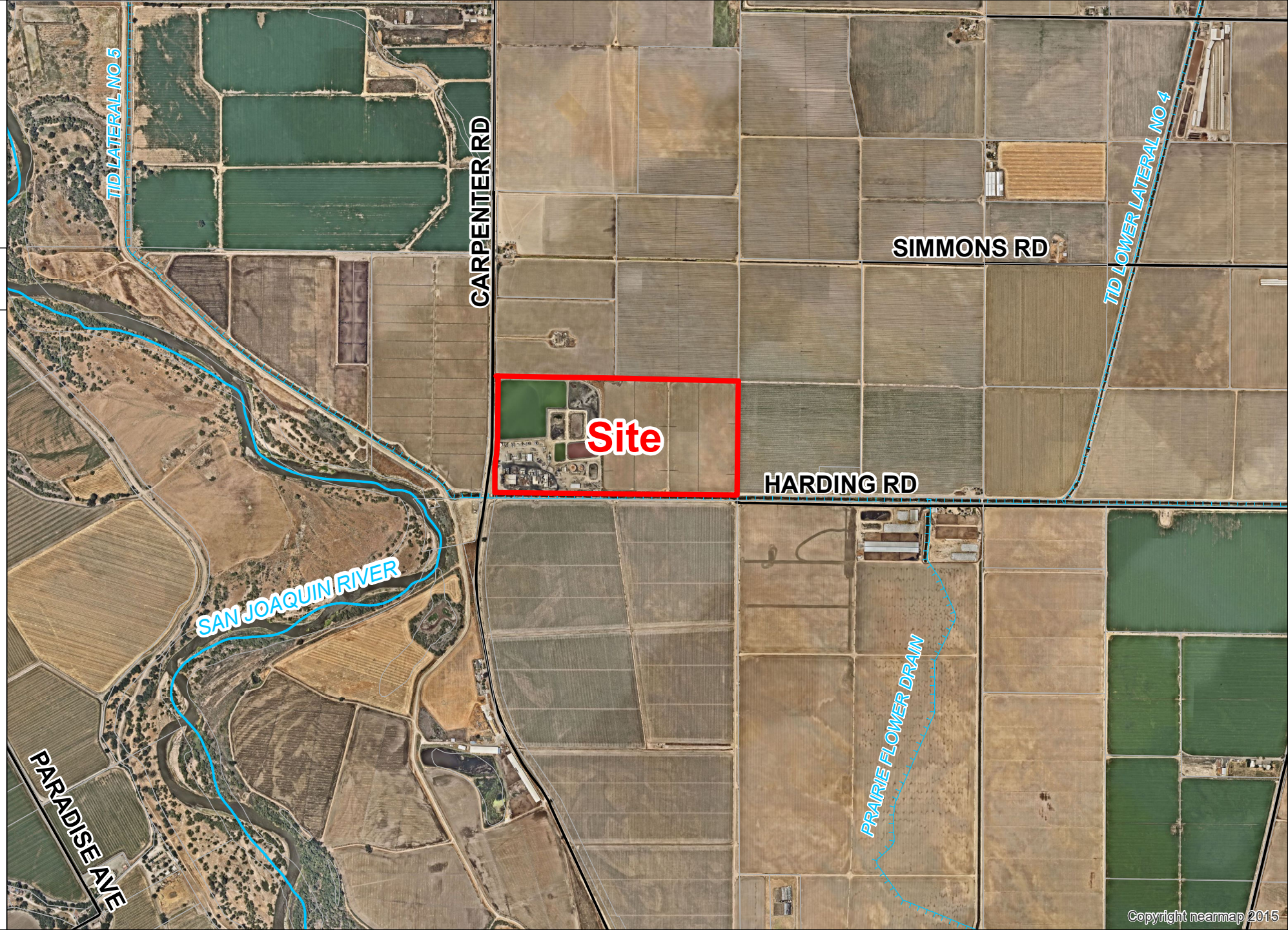
Source: Planning Department GIS

Date: 11/15/2021

DARLING INGREDIENTS INC

UP PLN2021-0102

2021 AERIAL AREA MAP



LEGEND

- Project Site
- Road
- River
- Canal

N

0 1,500 ft

0 300 m

Source: Planning Department GIS

Date: 11/15/2021

DARLING INGREDIENTS INC

UP PLN2021-0102

2021 AERIAL SITE MAP

LEGEND

- Project Site
- Road
- Canal

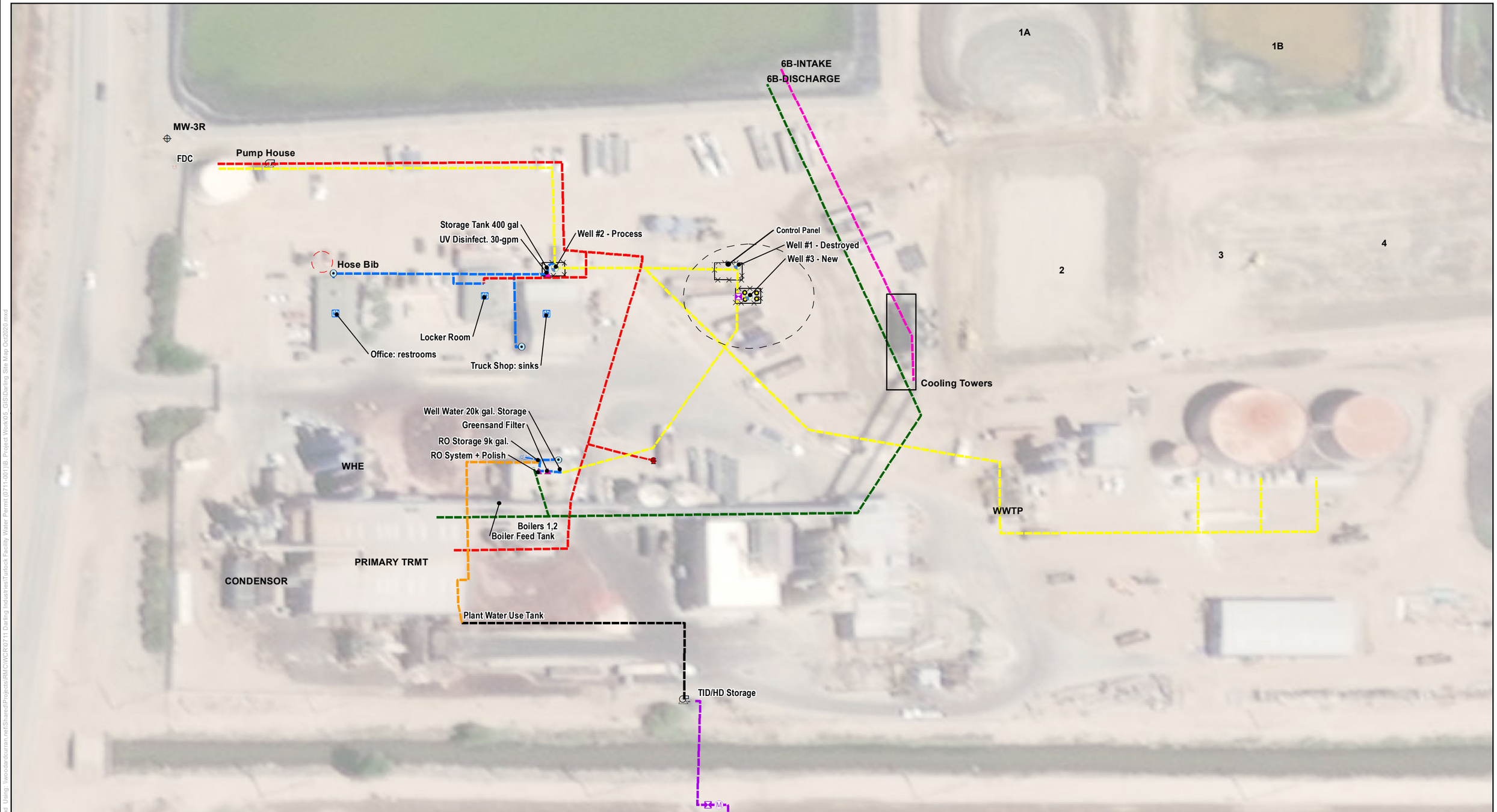
N

0 400 ft

0 100 m

Source: Planning Department GIS

Date: 11/15/2021



Site Plan

Darling Ingredients, Inc.
11946 Carpenter Road
Crows Landing, CA

Figure 2

Legend

Water Facilities

- Production Well
- Domestic Uses
- Fire Dept Conn
- Fire Hydrant
- Water Treatment
- Monitoring Well
- Hose Bib
- Eye Wash
- Meter
- Backflow Prevention
- Pump
- Well Water
- Water Line
- Fire Line
- Recycled Water
- RO Reject
- CT Makeup Water
- Blowdown
- Plant
- Bollards
- Fence

0 25 50 100 Feet

N

WOODARD &CURRAN

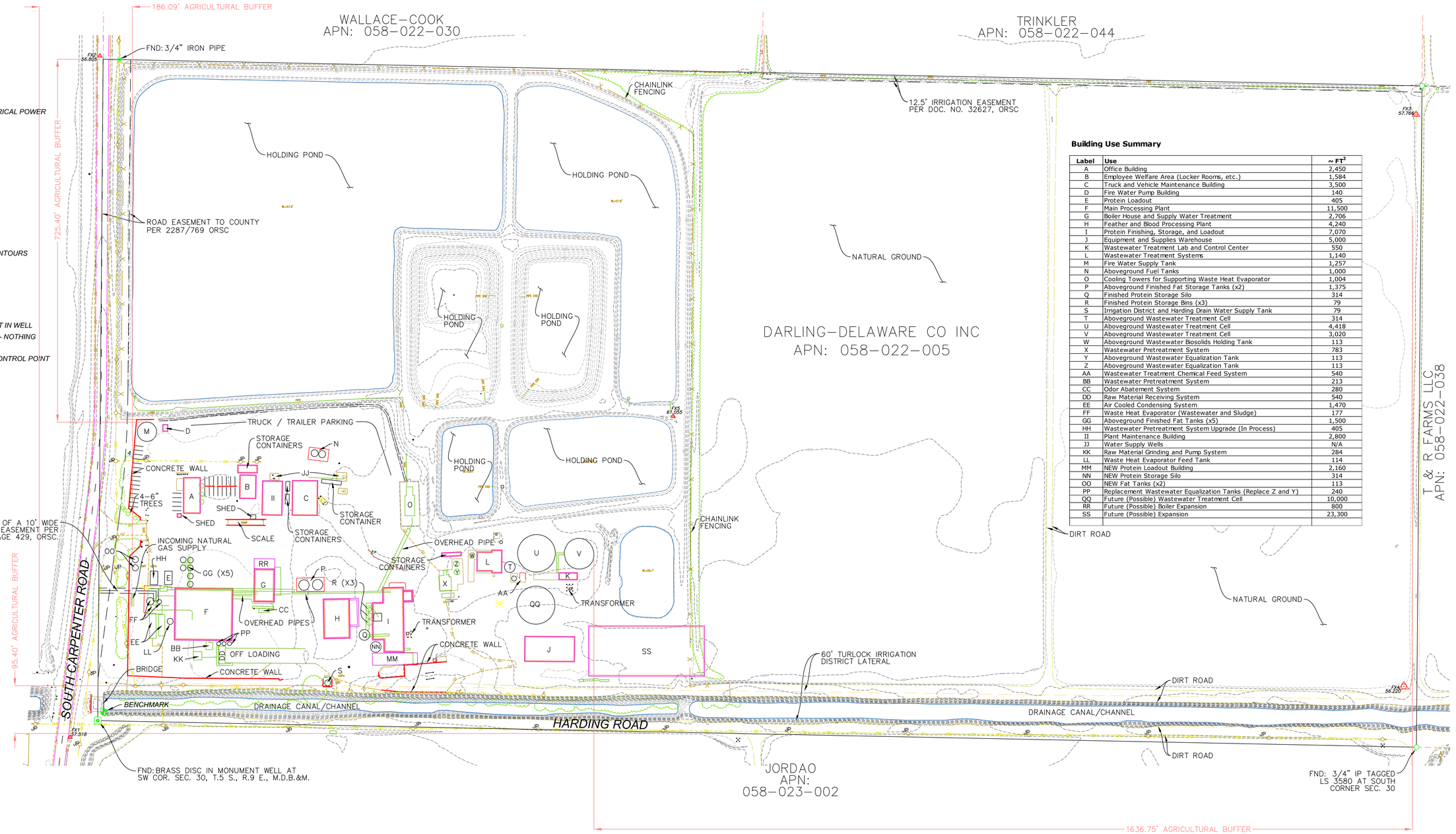
Project #: 0711001.01
Map Created: October 2020

Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions.
Any reliance upon the map or data contained herein shall be at the users' sole risk. **Data Sources:**

Figure Exported: 12/1/2020 By: kalmestad Using: \\woodardcurran.net\Shared\Projects\RM\CWCR\0711 Darling Industries\Turlock Facility Water Permit (0711-001)\B. Project Work\05_GIS\Darling Site Map Oct2020.mxd

LEGEND:

- CENTERLINE
- BOUNDARY
- PARCEL LINES
- EASEMENT
- FENCE
- OVERHEAD ELECTRICAL POWER
- CONCRETE WALL
- STREET LIGHT
- JOINT POLE
- ELEVATION POINT
- SIGN
- TREE
- INDEX CONTOUR
- INTERMEDIATE CONTOURS
- BUILDING
- BENCHMARK
- FOUND IRON PIPE
- FOUND MONUMENT IN WELL
- DIMENSION POINT - NOTHING FOUND OR SET
- FLIGHT CROSS / CONTROL POINT



Building Use Summary

Label	Use	~ FT²
A	Office Building	2,450
B	Employee Welfare Area (Locker Rooms, etc.)	1,584
C	Truck and Vehicle Maintenance Building	3,500
D	Fire Water Pump Building	140
E	Protein Loadout	405
F	Main Processing Plant	11,500
G	Boiler House and Supply Water Treatment	2,706
H	Feather and Blood Processing Plant	4,240
I	Protein Finishing, Storage, and Loadout	7,070
J	Equipment and Supplies Warehouse	5,000
K	Wastewater Treatment Lab and Control Center	550
L	Wastewater Treatment Systems	1,140
M	Fire Water Supply Tank	1,257
N	Aboveground Fuel Tanks	1,000
O	Cooling Towers for Supporting Waste Heat Evaporator	1,004
P	Aboveground Finished Fat Storage Tanks (x2)	1,375
Q	Finished Protein Storage Silo	314
R	Finished Protein Storage Bins (x3)	79
S	Irrigation District and Harding Drain Water Supply Tank	79
T	Aboveground Wastewater Treatment Cell	314
U	Aboveground Wastewater Treatment Cell	4,418
V	Aboveground Wastewater Treatment Cell	3,020
W	Aboveground Wastewater Biosolids Holding Tank	113
X	Wastewater Pretreatment System	783
Y	Aboveground Wastewater Equalization Tank	113
Z	Aboveground Wastewater Equalization Tank	113
AA	Wastewater Treatment Chemical Feed System	540
BB	Wastewater Pretreatment System	213
CC	Odor Abatement System	280
DD	Raw Material Receiving System	540
EE	Air Cooled Condensing System	1,470
FF	Waste Heat Evaporator (Wastewater and Sludge)	177
GG	Aboveground Finished Fat Tanks (x5)	1,500
HH	Wastewater Pretreatment System Upgrade (In Process)	405
II	Plant Maintenance Building	2,800
JJ	Water Supply Wells	N/A
KK	Raw Material Grinding and Pump System	284
LL	Waste Heat Evaporator Feed Tank	114
MM	NEW Protein Loadout Building	2,160
NN	NEW Protein Storage Silo	314
OO	NEW Fat Tanks (x2)	113
PP	Replacement Wastewater Equalization Tanks (Replace Z and Y)	240
QQ	Future (Possible) Wastewater Treatment Cell	10,000
RR	Future (Possible) Boiler Expansion	800
SS	Future (Possible) Expansion	23,300

ABBREVIATIONS:

AC	ASPHALT CONCRETE
BLDG	BUILDING
CONC	CONCRETE
℄	CENTERLINE
DI	DRAIN / DROP INLET
(E)	EXISTING
EC	END CURVE
EP	EDGE OF PAVEMENT
ETW	EDGE OF TRAVELED WAY
FDC	FIRE DEPARTMENT CONNECTION
FF	FINISH FLOOR
FG	FINISHED GROUND
FH	FIRE HYDRANT
FOC	FACE OF CURB
FP	FINISH PAVEMENT
GB	GRADE BREAK
GR	GRATE ELEVATION
GV	GATE VALVE
IRR	IRRIGATION
INV	INVERT
JP	JOINT POLE
MAX	MAXIMUM
MH	MAINTENANCE HOLE
OH	OVERHEAD
(P)	PROPOSED
PCC	PORTLAND CEMENT CONCRETE
ℙ	PROPERTY LINE
POC	POINT OF CONNECTION
PUE	PUBLIC UTILITY EASEMENT
ROW	RIGHT-OF-WAY
SDMH	STORM DRAIN MANHOLE
SD	STORM DRAIN
SE	SOUTHEAST
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEAN OUT
SW	SIDEWALK OR SOUTHWEST
W	WATER
WV	WATER VALVE

100 0 100 200

1 INCH = 100 FEET

REV	COMMENTS	NAME	DATE	CHKD

DARLING INGREDIENTS INC.

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DESCRIPTION: BOUNDARY AND TOPOGRAPHIC SURVEY
TURLOCK, CA

DRAWN BY	DATE	ASSY NO.
GConley	9/23/2021	
APPROVED BY	DATE	OLD NO.

SIZE	SCALE	PLANT NO.	PAGE	OF	DRAWING NO.	REV
D	N/A	660	1	1	660 53 300	C

Darling Ingredients Inc.

11946 Carpenter Road
Crows Landing, CA
95313

May 2022

Prepared by:

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Air Quality and GHG Technical Report For Use Permit Application

ATTACHMENT I

Air Quality and GHG Technical Report For Use Permit Application

Prepared for:

Darling Ingredients Inc.
11946 Carpenter Road
Crows Landing, CA 95313

May 2022

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Table of Contents

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Appendices

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List of Tables

List of Figures

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List of Acronyms and Abbreviations

AAQA	Ambient Air Quality Analysis
AAQS	Ambient Air Quality Standards
APN	Assessor's Parcel Number
APR	Application Review
AQAP	Air Quality Attainment Plan
ATC	Authority to Construct
BACT	Best Available Control Technology
BAU	Business as Usual
BPS	Best Performance Standards
CA	California
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model®
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAS	Chemical Abstracts Service
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CV-SALTS	Central Valley Salinity Alternatives for Long-Term Sustainability
DPM	Diesel Particulate Matter
EIR	Environmental Impact Report
ERC	Emission Reduction Credit
GAMAQI	[SJVAPCD] Guidance for Assessing and Mitigating Air Quality Impacts
GHG	Greenhouse Gas
GWP	Global Warming Potential
HI	Hazard Index
hr	Hour
HRA	Health Risk Assessment
kg	Kilogram
lb	Pound
Mcf	Thousand cubic feet
MMBtu	Million British Thermal Units
MT	Metric Ton
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NO_x	Oxides of Nitrogen

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NSPS	New Source Performance Standards
NSR	New Source Review
OEHHA	[California] Office of Environmental Health Hazard Assessment
PAH	Polycyclic Aromatic Hydrocarbon
$PM_{2.5}$	Fine Particulate Matter (Less Than 2.5 Microns in Size)
PM_{10}	Respirable Particulate Matter (Less Than 10 Microns in Size)
PS	Prioritization Score
PTE	Potential to Emit
PTO	Permit to Operate
RTO	Regenerative Thermal Oxidizer
scf	Standard Cubic Foot
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_x	Oxides of Sulfur
TAC	Toxic Air Contaminant
TPD	Tons per Day
TPY	Tons per Year
U.S. EPA	United States Environmental Protection Agency
U.S. FDA	United States Food and Drug Administration
VERA	Voluntary Emission Reduction Agreement
VOC	Volatile Organic Compound
VWC	Valley Water Collaborative
yr	Year

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Air Quality and GHG Technical Report for Use Permit Application

1.0 INTRODUCTION

1.1 Background

Darling Ingredients, Inc. (Darling) is a global developer of sustainable natural ingredients from edible and inedible bionutrients, creating a wide range of ingredients and customized specialty solutions for customers in the pharmaceutical, food, pet food, feed, technical, fuel, bioenergy, and fertilizer industries. The Company collects and transforms all aspects of animal by-product streams into useable and specialty ingredients, such as gelatin, edible fats, feed-grade fats, animal proteins and meals, plasma, pet food ingredients, organic fertilizers, yellow grease, fuel feedstocks, and green energy. The Company also recovers and converts used cooking oil and commercial bakery residuals into valuable feed and fuel ingredients.

Darling is a critical service provider to the food production industry (e.g., dairy, poultry, beef, etc.) and has been a fully functioning essential business during the pandemic. Without Darling's services, there can be interruptions in the food supply chain, and the byproducts it processes have the potential to be mismanaged in ways that can have a significant adverse impact on public health and the environment.

Darling holds a Board Seat with the Valley Water Collaborative (VWC), and it is actively working with the VWC and the Central Valley Regional Water Board to meet its obligations to both the Salt and Nitrate initiatives under the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) program. This program includes providing a source of safe drinking water to impacted well owners in the Turlock Management Zone. There are several wastewater improvements driven by these initiatives currently in process at the Darling Turlock facility.

1.2 Project Overview

Darling operates the Turlock facility under Use Permit 73-13 and subsequent modifications by staff approval or building permit. Darling is proposing the following changes at the facility:

Increase the maximum daily processing throughput from 1,650,000 pounds per day (lb/day) [825 tons per day (TPD)] to 1,850,000 lb/day (925 TPD). The current 1,650,000 lb/day limit is memorialized in the facility's Permit to Operate (PTO) from the San Joaquin Valley Air Pollution Control District (SJVAPCD). The proposed capacity upgrade will be accomplished by removing a "batch" cooking process and replacing it with a "continuous" cooking process. The continuous process is more efficient and allows for faster processing, facilitating the potential throughput increase.

This cooking process change will also allow for species (poultry and beef) segregation of the byproducts being processed. This segregation will add more value to the finished fat and protein ingredients produced.

In support of these changes, there will be enhancements to the byproduct receiving and feed system, and modifications to the water vapor condensing system, fat presses, and centrifuges. These changes will take place within the existing building footprint.

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With the rendering industry having the potential to create an odor profile, the odor abatement system will be upgraded to include additional scrubber pretreatment ahead of the existing Regenerative Thermal Oxidizer (RTO). This upgrade will help ensure the system is state of the art and meets all the regulatory conditions required by the SJVAPCD.

To support the segregation of the finished fat and protein produced by the upgraded cooking process, some limited fat and protein storage will be added and the protein finishing system will be modified, including the curing, milling, and screening steps. These changes will be accommodated within an existing building, other than added finished ingredient bin/silo storage which will be installed outdoors, and a 2,160-square-foot loadout building that will be added to support the shipping of the segregated protein, as required by Darling's customers and the United States Food and Drug Administration (U.S. FDA).

The facility is frequently upgrading its wastewater treatment systems in an effort to comply with its Waste Discharge Requirements and to help ensure its land application practices align with the Water Boards CV-SALTS initiative.

The Darling facility operates at 11946 Carpenter Road on two legal parcels of approximately 74 acres with a combined Assessor's Parcel Number (APN) of 058-022-005. Approximately 40 acres on the eastern end of the site are farmed with rotating seasonal crops. Approximately 22 acres are used for storage of treated wastewater. The facility operations are clustered on approximately 8.5 acres at the southwest corner of the site. Existing building coverage is approximately 44,556 square feet. Due to the nature of the business, the facility is set up to operate on a full-time, year-round basis. There are currently 50 employees. The largest current maximum shift for the plant operation is 12 employees. The smallest current minimum shift is third shift, with 4 employees. A sizable portion of the staff is truck drivers who, in general, run routes to collect the raw materials.

At the current maximum permitted capacity of 1,650,000 lb/day[1], raw material delivery and finished product shipment in heavy-duty trucks would require approximately 140 one-way trips per day (70 round trips); the proposed Project would add an additional 18 one-way trips (9 round trips) per day. However, the facility has been operating at less than maximum capacity for the last 2 years (i.e., the "Baseline" period). For the last 2 years, the facility has processed an average of approximately 775,000 lb/day, with approximately 82 one-way trips (41 round trips) associated with raw material delivery and finished product shipment. The proposed Project is expected to increase the workforce by approximately 10 full-time employees.

1.3 Project Location and Surrounding Land Uses

The facility is located in Stanislaus County at 11946 Carpenter Road (APN 058-022-005). The facility is bounded by Carpenter Road to the west and Harding Road to the south and is located approximately 9 miles west of the City of Turlock. An area map indicating the general location of the facility in a regional context is provided as Figure 1-1. An aerial photograph of the facility and surrounding area is provided as Figure 1-2. A site layout drawing is provided as Figure 1-3.

1.4 Equipment Description

Specifications for the proposed new equipment are summarized in Table 1-1, along with the proposed emission controls.

[1] SVJAPCD Permit N-2107-5-8, Condition 13; Permit N-2107-9-16, Condition 7.

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Table 1-1: Equipment Specifications

Device Description	Specification	Vented To:
Raw material grinder and pump	Not available	Enclosed – not vented
Continuous Cooker	Dupps Model 200U	Odor Control System
Scrubbers	Custom built for Darling by Integrated Environmental Systems (IES): 1 x 6,000-CFM Venturi 1 x 6,000 CFM packed bed 1 x 4,000-CFM Venturi 1 x 4,000 CFM packed bed	Existing Odor Control System
Centrifuge	Elgin Model 1850	Odor Control System
Presses	3 x Dupps Model 12x10	Odor Control System
Fat Storage Tanks	15,000-gallons each	Atmosphere (no control)
Mechanical Protein Conveyance	Not available	Enclosed - not vented
Bucket Elevator	Not available	Enclosed - not vented
Curing bin	Not available	Atmosphere (no control)
Hammermill	Ottinger Model Mighty Samson	Enclosed – not vented
Protein Screen	Rotex	Aspirator consisting of cyclone with bag filter
Aspirator consisting of cyclone with bag filter	Not available	Inside Building
Load-out Bin (silo)	400-ton	Atmosphere (no control)

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Figure 1-1: Regional Location of Darling Ingredients

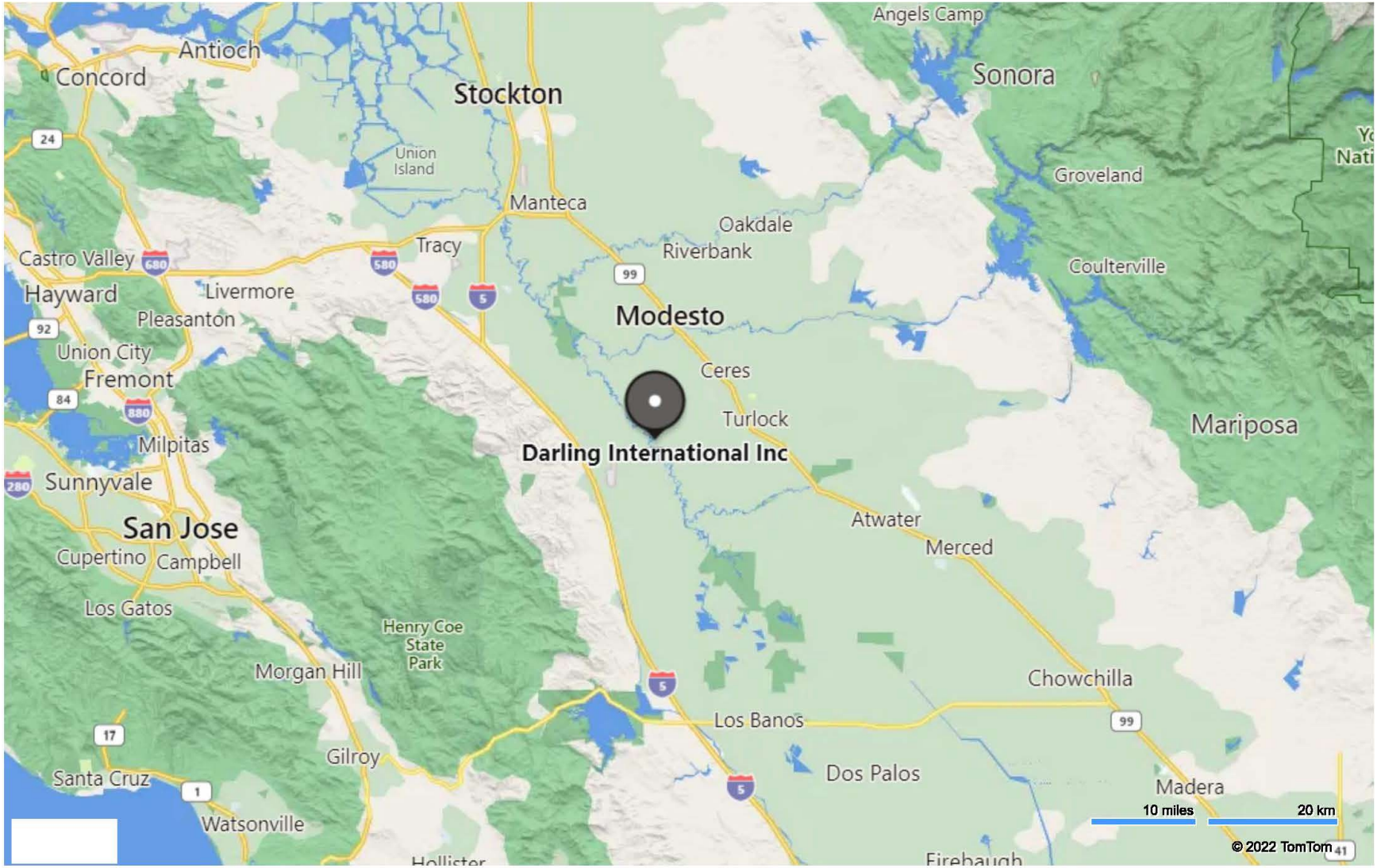

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Figure 1-2: Aerial Photograph of Darling Ingredients and Surrounding Properties

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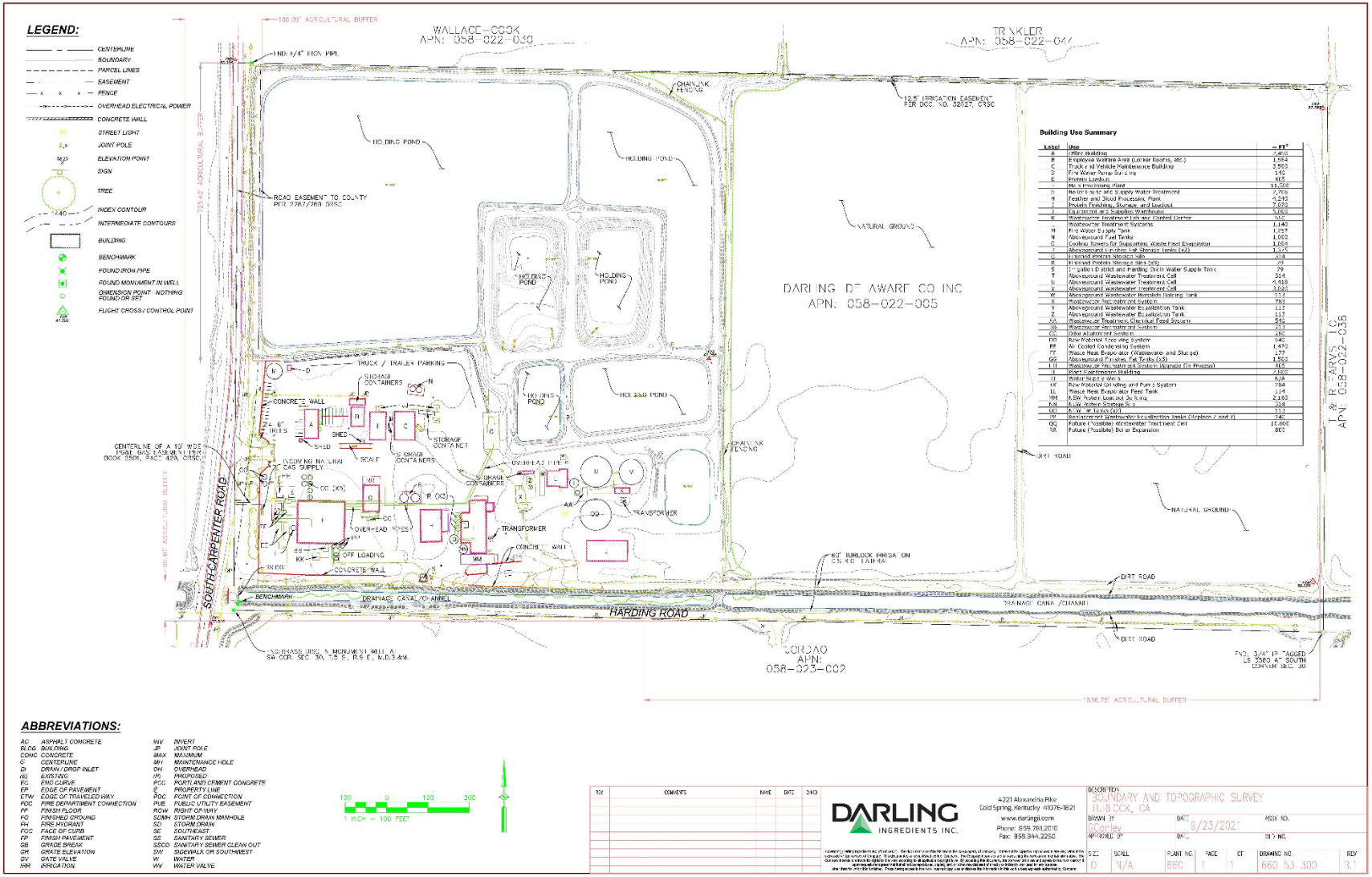
Figure 1-3: Plot Plan of Darling Ingredients



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2.0 EMISSIONS

2.1 Construction Emissions

The construction emissions analysis was prepared using the California Emissions Estimator Model® (CalEEMod) version 2020.4.0 (CAPCOA 2021), the official statewide land use computer model designed to provide a uniform platform for estimating potential criteria pollutant and greenhouse gas (GHG) emissions associated with construction of land use projects. The model quantifies direct emissions from construction (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The mobile source emission factors used in the model include the Pavley standards and Low Carbon Fuel Standards. The model also identifies project design features, regulatory measures, and mitigation measures to reduce criteria pollutant and GHG emissions, along with calculating the benefits achieved from the selected measures.

A project's construction phase produces many types of emissions, but respirable particulate matter (PM_{10}), including fine particulate matter ($PM_{2.5}$), in fugitive dust and diesel engine exhaust are the pollutants of greatest concern. Fugitive dust emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel on paved and unpaved surfaces, and vehicle exhaust. The use of diesel-powered construction equipment emits ozone precursors oxides of nitrogen (NO_x) and volatile organic compounds (VOCs), as well as diesel particulate matter (DPM). Asphalt paving and/or the use of architectural coatings and other materials associated with finishing buildings may also emit VOCs and toxic air contaminants (TACs).

Daily and total annual construction emissions of criteria pollutants are summarized in Table 2-1 in lb/day and tons per year (TPY). GHG emissions (carbon dioxide [CO_2], methane [CH_4], nitrous oxide [N_2O], and total carbon dioxide equivalent [CO_2e) in Metric Tons per year (MT/yr) are provided in Table 2-2. A complete discussion of methodology, data inputs, and emission calculations is provided in Appendix A.

Table 2-1: Mitigated Construction Emissions Summary

Pollutant	Daily Emissions (lb/day)	Annual Emissions (TPY)
VOC	19.68	0.14
NO_x	12.03	0.43
CO	7.93	0.45
SO_x	0.02	0.001
PM_{10}	3.01	0.03
$PM_{2.5}$	1.66	0.02

Table 2-2: Annual Construction GHG Emissions Summary

Pollutant	(MT/yr)
CO_2	66.6
CH_4	0.0
N_2O	0.0
CO_2e	67.2

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2.2 Operational Mobile Source Emissions

Emissions estimates were prepared for the mobile sources required to support Darling's operations. The mobile sources include employee commute vehicles used for travel to and from the facility, support vehicle traffic, heavy-duty trucks to deliver feedstock to the facility, and heavy-duty trucks to deliver finished fats and proteins to customers.

The SJVAPCD has developed California Environmental Quality Act (CEQA) significance thresholds for non-permitted sources, which include the mobile sources discussed herein. Mobile sources are not required to obtain permits from the SJVAPCD, and thus are not subject to the New Source Review (NSR) requirements of Rule 2201, such as Best Available Control Technology (BACT), modeling, or offsets. Mobile sources may be subject to State or federal emission standards, depending on the vehicle or equipment in question.

Mobile source emissions estimates have been prepared for the following source categories:

- Onroad Vehicle Exhaust Emissions;
- Fugitive Dust from Vehicle Travel on Paved Roads; and
- TAC Emissions:
  - Vehicle Exhaust TAC Emissions:
    - Diesel Exhaust Emissions, and
    - Gasoline Exhaust Emissions; and
  - Paved Road Dust and Particulate TAC Emissions.

Mobile source emissions estimates have been prepared for the Baseline and Project periods so that emissions increases due to the Project can be determined. Emissions estimates for the Baseline period are based on the vehicle activity required to support operations for the most recent 2-year period preceding the submittal of the Use Permit application. Emissions estimates for the Project are based on the vehicle activity required to support operations at the full requested capacity of 925 tons per day of feedstock.

Daily and annual operational mobile source emissions are summarized in Tables 2-3 and 2-4, respectively. Mobile source TAC emissions estimates are provided in Tables 2-5, 2-6, and 2-7. Mobile source GHG emissions are summarized in Table 2-8. A complete discussion of methodology, data inputs, and emission calculations is provided in Appendix B.

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Table 2-3: Summary of Daily Mobile Source Operating Emissions

Activity	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Proposed Project						
Vehicle Emissions	32.53	1.47	17.39	0.22	1.88	0.80
Paved Road Dust	0.00	0	0	0	2.58	0.65
Total	32.53	1.47	17.39	0.22	4.46	1.44
Baseline Period						
Vehicle Emissions	13.48	0.86	8.78	0.09	1.69	0.62
Paved Road Dust	0	0	0	0	1.49	0.37
Total	13.48	0.86	8.78	0.09	3.18	0.99
Net Increase	19.05	0.62	8.61	0.13	1.28	0.45

Table 2-4: Summary of Annual Mobile Source Operating Emissions

Activity	NO_x (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
Proposed Project						
Vehicle Emissions	10,150	462	5,425	69	585	249
Paved Road Dust	0	0	0	0	805	201
Total (lb/yr)	10,150	462	5,425	69	1,391	451
Baseline						
Vehicle Emissions	4,207	269	2,738	29	527	194
Paved Road Dust	0	0	0	0	464	116
Total (lb/yr)	4,207	269	2,738	29	992	310
Net Increase						
Net Increase (lb/yr)	5,943	193	2,687	30	399	141
Net Increase (TPY)	2.97	0.10	1.34	0.02	0.20	0.07

Table 2-5: DPM Emissions from Truck Exhaust

Vehicle	Hourly DPM Emissions (lb/hr)		Annual DPM Emissions (lb/yr)	
	On-site Exhaust	Near-site Exhaust	On-site Exhaust	Near-site Exhaust
DPM (Net Increase = Project minus Baseline)	1.52E-04	1.52E-04	0.475	0.475

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Table 2-6: Net Increase in TAC Emissions from Onroad Gasoline Vehicles

TAC	CAS#	Total Hourly (lb/hr)	Total Annual (lb/yr)
1,2,4-Trimethylbenzene	95636	2.41E-05	7.52E-02
1,3-Butadiene	106990	1.33E-05	4.14E-02
Acetaldehyde	75070	6.01E-06	1.88E-02
Acrolein	107028	3.37E-06	1.05E-02
Benzene	71432	6.42E-05	2.00E-01
Chlorine	7782505	1.86E-05	5.81E-02
Copper	7440508	1.35E-07	4.21E-04
Ethyl benzene	100414	2.63E-05	8.19E-02
Formaldehyde	50000	4.13E-05	1.29E-01
Hexane	110543	3.85E-05	1.20E-01
Manganese	7439965	1.35E-07	4.21E-04
Methanol	67561	9.90E-06	3.09E-02
Methyl ethyl ketone {2-Butanone}	78933	4.83E-07	1.51E-03
Methyl tert-butyl ether	1634044	4.70E-05	1.47E-01
m-Xylene	108383	8.88E-05	2.77E-01
Naphthalene	91203	1.21E-06	3.77E-03
Nickel	7440020	1.35E-07	4.21E-04
o-Xylene	95476	3.08E-05	9.62E-02
Styrene	100425	2.89E-06	9.02E-03
Toluene	108883	1.43E-04	4.47E-01

Table 2-7: Net Increase in TAC from Paved Road Dust

TAC	TAC Emissions	
	Hourly (lb/hr)	Annual (lb/yr)
Arsenic	7.14E-07	2.23E-03
Cadmium	1.65E-07	5.14E-04
Chromium	4.67E-08	1.46E-04
Cobalt	1.26E-06	3.94E-03
Copper	8.13E-06	2.54E-02
Lead	6.81E-06	2.13E-02
Manganese	4.40E-05	1.37E-01
Nickel	6.59E-07	2.06E-03
Mercury	4.94E-07	1.54E-03
Selenium	1.10E-07	3.43E-04
Vanadium	3.90E-06	1.22E-02

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Table 2-8: Summary of GHG Emissions from Mobile Sources

Period	CO_2 (MT/yr)	CH_4 (kg/yr)	N_2O (kg/yr)	Total CO_2e (MT/yr)
Proposed Project	3,298	0.01	0.51	3,450
Baseline	1,384	0.01	0.21	1,446
Net Increase	–	–	–	2,004

2.3 Stationary Source Emissions

Darling is proposing modifications to its rendering facility to facilitate the proposed capacity upgrades. The proposed Project includes the following facility upgrades:

- Increase maximum daily throughput from 1,650,000 lb/day to 1,850,000 lb/day, with a corresponding increase in maximum annual throughput from 602,250,000 lb/year to 675,250,000 lb/year;
- Replace the three batch cookers (preheaters) with a Dupps Model 200U continuous cooker, condenser, and other supporting process equipment;
- Segregate the protein handling system to allow for the production of speciated finished product without increasing the current throughput limitations; and
- Upgrade the existing odor control system by adding two pretreatment venturi scrubbers and two pretreatment packed bed scrubbers prior to the existing scrubber and RTO. PM_{10} emissions increases from the RTO due to the capacity upgrade will be abated by the installation of the new scrubber equipment on a potential to emit (PTE) basis.

In addition, Darling is proposing a change of conditions for each of its two existing boilers (SJVAPCD Permits N-2107-13-7 and N-2107-15-1) to change the PM_{10} emission factor used to calculate emissions. The change in the boiler emission factors will result in a decrease in the permitted PTE of PM_{10} from each of these devices.

2.3.1 Process Information

Stationary source emissions are a result of either material throughput, e.g., PM_{10} emissions from material handling, or natural gas combustion in the boilers or the RTO.

The facility is currently permitted to process up to a maximum daily throughput of 1,650,000 lb/day (602,250,000 lb/year). However, the facility has operated at levels below that maximum for several years. For the purpose of this analysis, the throughput activity for the past 2 years is used as the Baseline facility condition. Following implementation of the proposed Project, the maximum throughput will be 1,850,000 lb/day and 675,250,000 lb/year. Facility throughput is summarized in Table 2-9. These values are used to estimate Baseline and Project emissions.

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Table 2-9: Throughput Information

Processing Step	Baseline 2-Year Average Throughput		Proposed Project Throughput	
	TPD	TPY	TPD	TPY
Raw Material Incoming	387	120,775	925	337,625
Fat Load-out	49	15,246	185	67,525
Protein Load-out	97	30,326	185	67,525

Baseline natural gas usage is determined from the utility bills for the facility. Because the gas usage is not monitored for each individual combustion device, some simplifying assumptions were made to estimate gas usage in the RTO and each boiler.

To estimate gas usage for the Project, the requested material throughput (i.e., 925 TPD) is multiplied by a gas consumption rate derived from Baseline data. Because gas usage and raw material throughput are known for the Baseline period, a gas consumption rate in units of cubic feet of gas per ton of throughput can be calculated. In this way, "projected actual" gas usage is estimated for use in the emission calculations. Projected actual gas usage is preferred to maximum potential gas usage because the boilers have excess capacity and will not be fully utilized at the requested material throughput. Gas usage information is summarized in Table 2-10.

Table 2-10: Baseline and Projected Actual Gas Usage Information

Unit	Max Heat Rate (MMBtu/hr)	Baseline Gas Usage Allocation (Mcf/yr)	Baseline Gas Usage Allocation (MMBtu/yr)	Projected Actual Annual Gas Use (scf/yr)	Projected Actual Annual Gas Use (MMBtu/yr)
RTO	3	12,782	13,140	25,564,202	26280.0
B&W	48	97,660	100,395	294,292,706	302532.9
Nebraska	76.93	156,521	160,903	471,665,372	484872.0
Total	124.93	266,963	274,438	791,522,281	813684.9

2.3.2 Emissions

Emissions are estimated using the following methodologies:

- Rendering process emissions for oxides of sulfur (SO_x), PM_{10}, and VOC are estimated based on the throughput information and permitted emission factors;
- Rendering process emissions for NO_x and carbon monoxide (CO) are estimated based on the Baseline and Projected Actual gas usage information and permitted emission factors;
- Protein loadout emissions are estimated based on throughput information and permitted emission factors; and
- Boiler emissions are estimated based on the Baseline and Projected Actual gas usage information and permitted emission factors.

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Daily Project and Baseline criteria pollutant emissions, along with the change in emissions, are summarized in Table 2-11. Annual Project and Baseline criteria pollutant emissions, along with the change in emissions, are summarized in Table 2-12. The net increase in TAC emissions from each of the stationary sources is provided in Table 2-13. Annual Project and Baseline GHG emissions, along with the change in emissions, are summarized in Table 2-14. A complete discussion and emission calculations are provided in Appendix C.

Table 2-11: Daily Stationary Source Emissions

Device	NO_x (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	CO (lb/day)	VOC (lb/day)
Project					
Rendering	70.56	138.75	70.29	80.64	27.75
B&W Boiler	13.92	3.28	3.36	42.62	6.34
Nebraska Boiler	14.77	5.26	5.35	134.78	10.15
Total – Project	99.25	147.30	79.01	258.05	44.24
Baseline					
Rendering	70.56	58.06	37.79	80.64	11.61
B&W Boiler	13.92	3.28	8.76	42.62	6.34
Nebraska Boiler	14.77	5.26	14.03	134.78	10.15
Total – Base	99.25	66.61	60.58	258.05	28.10
Net Change	0.00	80.69	18.43	0.00	16.14

Table 2-12: Annual Stationary Source Emissions

Device	NO_x (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	CO (lb/yr)	VOC (lb/yr)
Project					
Rendering	25,754	50,644	25,657	29,434	10,129
B&W Boiler	2,932	862	882	11,194	1,664
Nebraska Boiler	3,879	1,382	1,406	35,396	2,667
Total – Project	32,565	52,888	27,946	76,023	14,459
Baseline					
Rendering	12,877	18,116	11,804	14,717	3,623
B&W Boiler	973	286	763	3,715	552
Nebraska Boiler	1,287	459	1,223	11,746	885
Total – Base	15,137	18,861	13,790	30,177	5,060
Net Change					
Net Change (lb/yr)	17,428	34,027	14,156	45,846	9,399
Net Change (TPY)	8.71	17.01	7.08	22.92	4.70

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Table 2-13: Net Change in Operational TAC Emissions

Pollutant	RTO		B&W Boiler		Nebraska Boiler	
	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)
Benzene	0.00	0.102	0.00	1.140	0.00	1.828
Formaldehyde	0.00	0.217	0.00	2.419	0.00	3.876
Total PAHs (excluding Naphthalene)	0.00	0.001	0.00	0.020	0.00	0.032
Naphthalene	0.00	0.004	0.00	0.059	0.00	0.095
Acetaldehyde	0.00	0.055	0.00	0.610	0.00	0.977
Acrolein	0.00	0.035	0.00	0.531	0.00	0.851
Ammonia	0.00	40.90	0.00	3539.4	0.00	5672.6
Ethyl Benzene	0.00	0.121	0.00	1.357	0.00	2.174
Hexane	0.00	0.081	0.00	0.905	0.00	1.450
Toluene	0.00	0.468	0.00	5.211	0.00	8.351
Xylene	0.00	0.348	0.00	3.874	0.00	6.208

Table 2-14: Net Change in Operational GHG Emissions

Device	CO_2 (MT/yr)	CH_4 (MT/yr)	N_2O (MT/yr)	CO_2e (MT/yr)
Project				
Rendering	1393.37	0.03	0.00	
B&W Boiler	16,040.29	0.30	0.03	
Nebraska Boiler	25,707.91	0.48	0.05	
Total – Project	43,141.57	0.81	0.08	
Baseline				
Rendering	696.68	0.01	0.00	
B&W Boiler	5,322.92	0.10	0.01	
Nebraska Boiler	8,531.09	0.16	0.02	
Total – Base	14,550.70	0.27	0.03	
Net Change	28,590.87	0.54	0.05	
Global Warming Potential (GWP)	1.00	21.00	310.00	
CO_2e	28,591	11.32	16.72	28,619

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3.0 AIR QUALITY SIGNIFICANCE FINDINGS AND MITIGATION

An analysis of the criteria pollutant and toxic air contaminant (TAC) emissions from the proposed Project and the consistency of the Project with relevant air quality plans and programs that are applicable to the project area are presented in this section. The air quality impact assessment is based upon a review of the emissions presented in Section 3 as well as an assessment of the Project's potential to impact ambient air quality standards or cause unacceptable health risks.

Project impacts related to air quality are evaluated relative to the environmental checklist form in Appendix G of the CEQA Guidelines. The findings of this report on the four questions in the checklist relevant to air quality impacts are summarized in Table 3-1.

Table 3-1: Summary of Air Quality Significance Determinations

Issue Area	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
AIR QUALITY Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?			✓	
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?			✓	
c) Expose sensitive receptors to substantial pollutant concentrations?			✓	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			✓	

3.1 CEQA Significance Criteria

To assess the air quality impact, the SJVAPCD established Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) which provides significance thresholds to assist Lead Agencies in determining whether a project may have the potential for a significant impact on air quality. If the project exceeds the significance threshold established for an effect, the project would be considered to have a significant impact on air quality. If, during the preparation of the Initial Study, the Lead Agency finds that any of the thresholds may be exceeded and cannot be mitigated, then a determination of significant air quality impact must be made, and an Environmental Impact Report (EIR) is required. If the impacts can be mitigated to be less than significant after the implementation of mitigation measures, then a Mitigated Negative Declaration (MND) might be the appropriate CEQA document. Each of the Air Quality (AQ) significance criteria are analyzed in the subsections below.

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3.2 Impact AQ-1: Would the Project Conflict with or Obstruct Implementation of the Applicable Air Quality Plan?

3.2.1 Evaluation Criteria

The SJVAPCD GAMAQI does not list specific criteria for evaluating this impact area, so a qualitative approach is used to compare the Project design and emissions to applicable air quality plans.

3.2.2 Discussion

The SJVAPCD has prepared Air Quality Attainment Plans (AQAPs) for ozone and $PM_{2.5}$ and a maintenance plan for PM_{10}. As a requirement of the Clean Air Act, an attainment plan must be prepared for pollutants which exceed the National Ambient Air Quality Standards (NAAQS), and a maintenance plan has been prepared for pollutants for which the San Joaquin Valley is designated as attainment or unclassifiable with respect to the NAAQS. A maintenance plan is prepared to ensure that additional emissions of attainment/unclassified pollutants will not adversely affect air quality to the extent that it would result in a violation of the applicable air quality standard.

SJVAPCD Rule 2201, New Source Review, is a major component of the SJVAPCD's attainment strategy. NSR provides mechanisms, including emissions trade-offs, by which Authorities to Construct (ATCs) and PTOs may be granted without interfering with the attainment or maintenance of the NAAQS or the California Ambient Air Quality Standards (CAAQS). SJVAPCD implementation of NSR ensures that there is no net increase in operational emissions above specified thresholds from new and modified stationary sources for all nonattainment pollutants and their precursors. Permitted emissions above offset thresholds must be offset to below the rule threshold, adjusted for the distance of the source of emission reduction credits (ERCs) from the project, and adjusted by a factor to provide a net air quality benefit for ozone precursors. Furthermore, the SJVAPCD's NSR program is designed to ensure that project-specific emissions increases below NSR offset thresholds will not prevent the SJVAPCD from achieving attainment. The SJVAPCD's attainment plans demonstrate that this level of emissions increase will not interfere with attainment or maintenance of the NAAQS. Consequently, emissions impacts from sources permitted consistent with NSR requirements are consistent with the SJVAPCD's AQAPs and are not individually or cumulatively significant.

The SJVAPCD's attainment plans must account for emissions from existing projects and provide for future growth. The attainment plans must ensure that on a valley-wide basis (i.e., cumulative basis), there is no increase in emissions of nonattainment pollutants or precursors (NO_x, VOC, and $PM_{2.5}$). District plans must treat future growth as actual "in the air" emissions, and the plans must include control measures that achieve reductions needed to offset (mitigate) such growth and ensure reasonable further progress toward attainment of the NAAQS.

The 2018 Integrated $PM_{2.5}$ AQAP accounts for current and projected future growth of waste management-related emissions. For example, the Plan includes 0.3 TPD of $PM_{2.5}$ emissions for the Waste Management category starting in 2020. As shown in Tables 2-3 and 2-11, the PM_{10} net emissions increase for the Project is 18.88 lb/day (= 0.45 lb/day for mobile sources + 18.43 lb/day for stationary sources) (0.006 TPD). $PM_{2.5}$ is a subset of

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PM_{10}. Using PM_{10} as a surrogate for $PM_{2.5}$, Project $PM_{2.5}$ emissions would represent only about 3.3% of the emissions accounted for in the $PM_{2.5}$ AQAP. Therefore, it is reasonable to assume that both the permitted and non-permitted PM2.5 emissions associated with the proposed Project are accounted for and do not conflict with or obstruct implementation of the applicable air quality plan.

The proposed Project will utilize two existing boilers and one existing RTO that are permitted to operate at full capacity by the SJVAPCD in compliance with the SJVAPCD's NSR rule. The proposed Project will not result in emissions exceeding currently permitted levels. The PTOs ensure that BACT is achieved on these existing sources, and the permit conditions ensure compliance with applicable federal New Source Performance Standards (NSPS) and SJVAPCD rules and regulations. The proposed Project includes the installation of new scrubbers ahead of the RTO to further reduce PM_{10} emissions from the rendering process.

Finally, most of the capacity increase requested for this Project is displaced from Darling's Fresno facility, which is scheduled to close in December 2023, concurrent with the start of operations of the proposed Project. The permitted and non-permitted emissions associated with the Fresno facility will cease to occur, thus substantially or wholly offsetting the increases within the same air basin projected to occur at the Turlock facility due to this Project.

3.2.3 Level of Significance

The proposed Project will not conflict with or obstruct implementation of the applicable air quality plan. Therefore, the proposed Project will have a less than significant impact on air quality.

3.2.4 Proposed Mitigation

None required.

3.3 Impact AQ-2: Would the Project 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?

3.3.1 Evaluation Criteria

The Project is evaluated to determine if it is significant based on mass emissions, ambient air quality significance thresholds, and cumulative impacts.

3.3.1.1 Mass Emissions

The SJVAPCD's thresholds of significance for criteria pollutant emissions are presented in Table 3-2.

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Table 3-2: Air Quality Thresholds of Significance

Pollutant/ Precursor	Thresholds of Significance		
	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
	(TPY)	(TPY)	(TPY)
CO	100	100	100
NO_x	10	10	10
VOC	10	10	10
SO_x	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

3.3.1.2 Ambient Air Quality

When assessing the significance of project-related impacts on air quality, the SJVAPCD recommends that an Ambient Air Quality Analysis (AAQA) be performed when on-site emissions increases from construction activities or operational activities exceed the 100 lb/day screening level for any criteria pollutant after implementation of all enforceable mitigation measures.

3.3.1.3 Cumulative Impacts

When assessing whether there is a new significant cumulative effect, the Lead Agency shall consider whether the incremental effects of the project are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects [California Code of Regulations (CCR) Title 14 Section 15064(h)(1)].

Per CEQA Guidelines §15064(h)(3), a Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including but not limited to an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative impacts within the geographic area in which the project is located [14 CCR §15064(h)(3)].

Although the CEQA Guidelines allow for such a finding, Section 9.2 of the SJVAPCD GAMAQI indicates, "Design elements, mitigation measures, and compliance with District rules and regulations may not be sufficient to reduce project-related impacts on air quality to a less than significant level. In such situations, project proponents may enter into a Voluntary Emission Reduction Agreement (VERA) with the District to reduce the project related impact on air quality to a less than significant level. A VERA is a mitigation measure by which the project proponent provides pound-for-pound mitigation of nonattainment pollutant emissions increases through a process that funds and implements emission reduction projects. A VERA can be implemented to address impacts from both construction and operational phases of a project."

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3.3.2 Discussion

3.3.2.1 Mass Significance Thresholds

Annual Project emissions are compared to the SJVAPCD mass annual CEQA significant thresholds in Table 3-3. As shown, construction, non-permitted operational, and permitted operational emissions do not exceed the significance threshold for any criteria pollutant.

Table 3-3: Project Emissions Compared to Annual CEQA Emissions Thresholds

Category	NO_x (TPY)	VOC (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)
Project Construction Emissions	0.43	0.14	0.45	0.00076	0.03	0.02
CEQA Construction Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*
Project Permitted Source Emissions	8.71	4.70	22.92	17.01	7.08	7.08
CEQA Permitted Source Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*
Project Non-Permitted Source Emissions	2.97	0.10	1.34	0.02	0.20	0.07
CEQA Non-Permitted Source Threshold	10	10	100	27	15	15
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

3.3.2.2 Ambient Air Quality

Project permitted and non-permitted source emissions are compared to the SJVAPCD daily AAQA screening threshold in Table 3-4. As shown, construction, non-permitted operational, and permitted operational emissions are less than the screening level for all pollutants. In accordance with the GAMAQI and policy memorandum Application Review (APR) 2201, modeling is not required for the proposed Project.

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Table 3-4: Project Emissions Compared to Daily AAQA Screening Level

Category	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Project Construction Emissions	12.03	19.68	7.93	0.02	3.01	1.66
AAQA Construction Screening Level	100	100	100	100	100	100
Exceed Level?	*No*	*No*	*No*	*No*	*No*	*No*
Project Permitted Source Emissions	0.00	16.14	0.00	80.69	18.43	18.43
AAQA Permitted Source Screening Level	100	100	100	100	100	100
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*
Project Non-Permitted Source Emissions	19.05	0.62	8.61	0.13	1.28	0.45
AAQA Non-Permitted Source Screening Level	100	100	100	100	100	100
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

3.3.2.3 Cumulative Impacts

CEQA defines cumulative impacts as two or more individual effects which, when considered together, are either significant or "cumulatively considerable," meaning they add considerably to a significant environmental impact. A cumulative impact analysis considers a project over time and in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed.

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development. Future attainment of the CAAQS and NAAQS in the San Joaquin Valley Air Basin (SJVAB) will be a function of successful implementation of the SJVAPCD's attainment plans. Consequently, the SJVAPCD's application of thresholds of significance for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

Per the GAMAQI (page 108), the District's attainment plans demonstrate that project-specific net emissions increases below NSR offset requirements will not prevent the SJVAPCD from achieving attainment. As noted elsewhere, the stationary emissions sources associated with this Project, i.e., the RTO, the B&W boiler, and the Nebraska boiler, are existing sources, permitted at full capacity in full compliance with the District's NSR requirements. Therefore, according to the GAMAQI guidance, these permitted sources are not individually or cumulatively significant.

As shown in Table 3-3, the proposed Project does not cause an exceedance of the SVJAPCD's thresholds of significance for any criteria pollutant during construction or

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operations. Per SJVAPCD policy, the Project would not be considered cumulatively significant.

Finally, as discussed elsewhere, most of the capacity increase requested for this Project is displaced from Darling's Fresno facility, which is scheduled to close in December 2023, concurrent with the start of operations of the proposed Project. The permitted and non-permitted emissions associated with Darling's Fresno facility will cease to occur, thus substantially or wholly offsetting the increases projected to occur at the Turlock facility as a result of this Project.

3.3.3 Level of Significance

As shown in Tables 3-3 and 3-4, criteria pollutant emissions from the proposed Project would be less than the defined CEQA significance criteria. Therefore, Project construction emissions, permitted stationary source emissions, and non-permitted (mobile source) emissions would be less than significant for all criteria pollutants. Therefore, the Project will have a less than significant impact on air quality.

The proposed Project will not have cumulative impacts during construction, as there are no known projects within 2 miles of the Project site that would be constructed or operated concurrent with Project construction. Because the Turlock facility operates permitted stationary sources, compliance with the SJVAPCD's NSR program ensures that the emissions will not be cumulatively significant.

Based on the analyses conducted, the proposed Project is not expected to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable NAAQS or CAAQS. Therefore, the Project will have a less than significant cumulative impact on air quality.

3.3.4 Proposed Mitigation

None required.

3.4 Impact AQ-3: Would the Project Expose Sensitive Receptors to Substantial Pollutant Concentrations?

3.4.1 Evaluation Criteria

The SJVAPCD's significance thresholds for TAC emissions from the operations of both permitted and non-permitted sources are presented in Table 3-5.

Carcinogenic (cancer) risk is expressed as excess cancer cases per one million exposed persons. Non-carcinogenic (acute and chronic) hazard indices (HIs) are expressed as a ratio of expected exposure levels to acceptable (reference) exposure levels.

Table 3-5: Air Quality Thresholds of Significance – TAC

Category	Significance Threshold
Carcinogens	Maximally Exposed Individual risk equals or exceeds 10 in one million
Non-Carcinogens	Acute HI equals or exceeds 1 for the Maximally Exposed Individual
	Chronic HI equals or exceeds 1 for the Maximally Exposed Individual

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The California Air Pollution Control Officer's Association (CAPCOA) guidelines outline a technique for calculating a "prioritization score" (PS) that helps air districts identify priority facilities for risk assessment, which involves consideration of potency, toxicity, quantity of emissions, and proximity to sensitive receptors such as hospitals, daycare centers, schools, worksites, and residences. If the PS exceeds the high risk level, or intermediate risk level after consideration of additional factors, a refined health risk assessment (HRA) is recommended to determine if the project's potential health risks are significant. The PS hierarchy is explained below:

- Low Score: Projects having a total score less than 1 are low risk and are not likely to have an adverse health risk;
- Intermediate Score: Projects having a total score at least 1 and less than 10 need to evaluate additional factors to determine if the project's TAC emissions will have a less than significant health risk; and
- High Score: Projects having a total score equal to or over 10 may have high risk. A refined HRA may be necessary to demonstrate that the project's TAC emissions will have a less than significant health risk.

3.4.2 Discussion

To assess the potential acute, chronic, and carcinogenic health risks from a project, a two-step process can be followed, where initially a screening risk prioritization is conducted. If the potential for high health risks is found, then an HRA may be required.

Risk PSs were developed using the SJVAPCD's Risk Prioritization worksheet. The worksheet assesses the potential health risk from the proposed Project by calculating a PS at the nearest residential and business receptors. The completed worksheets are included in Appendix D, and the results are summarized in Table 3-6. The PSs indicate low risk during both construction and operations.

Table 3-6: Risk Prioritization Scores

Project Phase	Prioritization Score	Rank
Construction	0.059	Low
Operations	0.760	Low

3.4.3 Level of Significance

Based on the low PS, the absence of any nearby sensitive receptors, and low population density in the vicinity of the Project, construction and operation of the proposed Project will not expose sensitive receptors to substantial pollutant concentrations or result in adverse health risks. Therefore, the Project will have a less than significant impact.

3.4.4 Proposed Mitigation

None required.

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3.5 Impact AQ-4: Would the Project Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People?

3.5.1 Evaluation Criteria

The Project should be evaluated to determine the likelihood that the Project would result in nuisance odors. Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact. Nuisance odors may be assessed qualitatively, considering the design elements and proximity to off-site receptors that potentially would be exposed to objectionable odors.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, there are no quantitative or formulaic methodologies to determine if potential odors would have a significant impact. Rather, projects must be assessed on a case-by-case basis.

The SJVAPCD GAMAQI establishes the screening level for potential odor sources as a 1-mile setback for rendering facilities. The GAMAQI also recommends reviewing the odor complaint history for the facility.

3.5.2 Discussion

The proposed Project may potentially be a source of odors. The proposed Project would increase the throughput of raw materials which could cause odors. The nearest residential receptor to Project site is a single residence approximately 0.25 miles to the north of the facility. There are no other residential or sensitive receptors within 1 mile of the facility.

Odors associated with the rendering process may occur due to the decomposition of raw materials prior to entry into the cookers. The facility has strict operational guidelines in place to minimize storage time and thus minimize decomposition and associated odors. While the proposed Project will increase the facility throughput, the Project also increases the production capacity by installation of a continuous cooker. The net effect is that the storage time of raw materials prior to cooking will not increase compared to current practice, and thus, odors due to decomposition are not expected to worsen.

The cooking process creates a vapor stream consisting of water and VOCs. The VOCs may be malodorous. This vapor stream is routed through condensers to remove water followed by an odor control system consisting of scrubbers and the RTO to prevent emissions of these malodorous compounds to the atmosphere. The odor control system has sufficient capacity for the additional material throughput. In addition, the proposed Project will install additional scrubbers to improve the odor removal efficiency of the system. Odors from the cooking process are not expected to worsen as a result of the Project.

3.5.3 Level of Significance

The proposed Project will have a less than significant impact related to emissions which cause odors.

3.5.4 Proposed Mitigation

None required.

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4.0 GREENHOUSE GAS ANALYSIS

An analysis of GHG emissions from the proposed Project and the consistency of the Project with relevant plans and programs that are applicable to the project area are presented in this section. The impact assessment is based upon a review of relevant literature and technical reports that include, but are not limited to, information and guidelines from the California Air Resources Board (CARB), the United States Environmental Protection Agency (U.S. EPA), and SJVAPCD, as well as the applicable provisions of CEQA.

When evaluating the GHG emissions and impacts, it is important to consider that California law requires that inedible animal byproducts be rendered. Darling is not the generator of these wastes; it is the solution provider. Without Darling's services, there is potential for the animal wastes to be mismanaged in ways that can present significant risk to human health and the environment. If, for example, Darling did not provide rendering services and the waste were disposed of illegally in a landfill, GHG emissions from waste decomposition in the landfill would far exceed the GHG emissions generated during the rendering of those materials. Further, all the fat currently produced at the Turlock facility is used in the production of renewable (green) diesel fuel, which substantially reduces GHG emissions compared to petroleum diesel.

The findings of this report on the two questions in the CEQA Appendix G environmental checklist relevant to greenhouse gas impacts are summarized in Table 4-1.

Table 4-1: Summary of GHG Emissions Significance Determinations

Issue Area	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
Greenhouse Gas Emissions Would the project:				
a) Would the Project Generate Greenhouse Gas Emissions, Either Directly or Indirectly, that May Have a Significant Impact on the Environment?			✓	
b) Would the Project Conflict with any Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases?			✓	

4.1 Summary of GHG Emissions

GHG emissions for construction, operational non-permitted sources, and operational permitted sources are presented in Tables 2-2, 2-8, and 2-14, and the detailed calculations are presented in Appendices A, B, and C. GHG emissions for the Project are summarized in Table 4-2.

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Table 4-2: GHG Emissions – Total Project

Device	CO_2 (MT/yr)	CH_4 (MT/yr)	N_2O (MT/yr)	CO_2e (MT/yr)
Project				
Construction (amortized over 30 years)	2	0.00	0.00	2
Mobile Sources	3,298	0.01	0.51	3,456
Rendering	1,393	0.03	0	1,394
B&W Boiler	16,040	0.3	0.03	16,056
Nebraska Boiler	25,708	0.48	0.05	25,733
Total – Project	46,442	0.82	0.59	46,642
Baseline				
Mobile Sources	1,384	0.01	0.21	1,449
Rendering	697	0.01	0	697
B&W Boiler	5,323	0.1	0.01	5,328
Nebraska Boiler	8,531	0.16	0.02	8,541
Total – Base	15,934	0.28	0.24	16,015
Net Change	**30,507**	**0.55**	**0.35**	**30,627**

4.2 GHG Significance Criteria

Climate change impacts are inherently global and cumulative and not project-specific. The SJVAPCD's GAMAQI observes:

> *"It is widely recognized that no single project could generate sufficient GHG emissions to noticeably change global climate temperature. However, the combination of GHG emissions from past, present and future projects could contribute substantially to global climate change. Thus, project specific GHG emissions should be evaluated in terms of whether or not they would result in a cumulatively significant impact on global climate change."*

SJVAPCD's GAMAQI states: "[I]n the absence of scientific evidence supporting establishment of a numerical threshold, the District policy applies performance based standards to assess project-specific GHG emission impacts on global climate change. The determination is founded on the principal that projects whose emissions have been reduced or mitigated consistent with the California Global Warming Solutions Act of 2006, commonly referred to as 'AB 32', should be considered to have a less than significant impact on global climate change."

The SJVAPCD has adopted guidance documents for assessing and mitigating GHG impacts on global climate change. Rather than establishing specific numeric thresholds of significance (as in the case of criteria pollutant emissions), the SJVAPCD guidance utilizes a tiered approach to assess cumulative impacts on global climate change. The GAMAQI recommends a three-tier approach:

- Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant

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individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the Lead Agency with jurisdiction over the affected resource and supported by a CEQA-compliant environmental review document adopted by the Lead Agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement Best Performance Standard (BPS).

- Projects implementing BPS would not require quantification of project-specific GHG emissions. Consistent with CEQA Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.
- Projects not implementing BPS would require quantification of project-specific GHG emissions and demonstration that project-specific GHG emissions would be reduced or mitigated by at least 29% compared to business as usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period, consistent with GHG emission reduction targets established in CARB's AB 32 Scoping Plan. Projects achieving at least a 29% GHG emissions reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG emissions.

4.3 Impact GHG-1: Would the Project Generate Greenhouse Gas Emissions, Either Directly or Indirectly, that May Have a Significant Impact on the Environment?

4.3.1 Discussion

The capacity increase requested for this Project is primarily displaced from Darling's Fresno facility, which is scheduled to close in December 2023, concurrent with the start of operations of the proposed Project. The GHG emissions from the permitted and non-permitted sources associated with the Fresno facility will cease to occur, thus substantially or wholly offsetting the GHG emissions increases projected to occur at the Turlock facility due to this Project.

California law requires inedible animal waste materials to be rendered. Thus, if Darling does not have the capacity to service the market, the waste materials would be diverted to an alternate rendering facility. GHG emissions from rendering at an alternate facility would likely be comparable to Darling's emissions, and transportation emissions would likely be higher. Alternative disposal options, such as landfill, would result in GHG emissions from waste decomposition that would far exceed the GHG emissions generated during the rendering of those materials.

In addition, as noted, the fat produced at the Turlock facility is used in the production of renewable (green) diesel fuel, which substantially reduces GHG emissions compared to petroleum diesel.

The facility is not subject to California's Cap-and-Trade program. However, while Project emissions do not create a compliance obligation for the Darling under Cap-and-Trade,

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some of the emissions are covered by the Cap-and-Trade program in connection with the activities of other source categories, such as electricity generation and fuel suppliers.[2]

The SJVAPCD's CEQA Cap-and-Trade Policy also recommends that projects that are required to comply with CARB's GHG Cap-and-Trade program be determined to have a less than cumulatively significant impact on global climate change. This policy is included in the SJVAPCD's December 2009 CEQA GHG policies (described above) and 2015 GAMAQI, which states that a project whose emissions have been reduced or mitigated consistent with AB 32 should be considered to have a less than significant impact on global climate change (SJVAPCD 2015a). This approach would include both the CARB GHG Cap-and-Trade program and other GHG-reducing regulations (such as AB 341 and SB 605) as adopted GHG emissions reduction plans.

4.3.2 Level of Significance

Under the SJVAPCD's tiered approach in assessing the significance of project-specific GHG emissions increases, projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the Project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions (SJVAPCD 2015a).

Because the proposed Project will reduce GHG emissions compared to other waste management options, the proposed Project produces renewable carbon-neutral green diesel fuel, and some portion of the emissions that do occur (e.g., electricity usage, fuel combustion in vehicles) are covered by the Cap-and-Trade program, the proposed Project will not have a significant adverse impact related to GHG emissions.

4.3.3 Mitigation Measures

None required. However, emissions covered under the Cap-and-Trade program (e.g., electricity usage, fuel combustion in vehicles) are considered mitigated emissions.

4.4 Impact GHG-2: Would the Project Conflict with any Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases?

4.4.1 Discussion

According to California law, inedible animal waste must be source-separated and processed at a rendering facility (or other authorized processor). As such, rendering of

[2] CARB's Cap-and-Trade Regulation establishes a set of rules that limit GHG emissions from the State's largest sources of GHGs by applying a statewide aggregate GHG allowance budget to covered entities (17 CCR Sections 95800 to 96023). The Cap-and-Trade Program imposes an enforceable statewide cap on GHG emissions at covered facilities, including refineries, electric power providers, cement production facilities, oil and gas production facilities, and fuel suppliers, that steadily declines over time.
To the extent that fuels are supplied from fuel suppliers that are not subject to the Cap-and-Trade Regulation because emissions from the quantities of fuel supplied would not exceed the Cap-and-Trade applicability threshold, the SJVAPCD's CEQA Cap-and-Trade Policy states:

> *"As did the CARB when excluding such sources from the Cap-and-Trade Regulation, the District considers GHG emissions resulting from the combustion of all fuels supplied by those fuel suppliers not subject to the Cap-and-Trade Regulation to be insignificant. Therefore, it is reasonable to apply this policy to GHG emissions resulting from the combustion of all fuels in the State of California."*

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animal waste is not the subject of any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

4.4.2 Level of Significance after Mitigation

The proposed Project does not conflict with any applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. Therefore, the proposed Project will have a less than significant impact with respect to GHG emissions.

4.4.3 Mitigation Measures

None required.

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APPENDIX A – CONSTRUCTION EMISSIONS

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Appendix A:
Construction Emissions

Air Quality and GHG Technical Report

Prepared for:

Darling Ingredients, Inc.
11946 Carpenter Rd.
Crows Landing, CA 95313

May 2022

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Attachments

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List of Acronyms and Abbreviations

BMP	Best Management Practice
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DPM	Diesel Particulate Matter
GHG	Greenhouse Gas
MT	Metric Ton
N_2O	Nitrous Oxide
NO_x	Oxides of Nitrogen
PM_{10}	Respirable Particulate Matter (Less Than 10 Microns in Size)
$PM_{2.5}$	Fine Particulate Matter (Less Than 2.5 Microns in Size)
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_x	Oxides of Sulfur
sq. ft.	Square Foot
TAC	Toxic Air Contaminant
TPD	Tons per Day
TPY	Tons per Year
VOC	Volatile Organic Compound

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Appendix A: Construction Emissions

1.0 INTRODUCTION

The construction emissions analysis was performed using the California Emissions Estimator Model® (CalEEMod) version 2020.4.0 (CAPCOA 2021), the official statewide land use computer model designed to provide a uniform platform for estimating potential criteria pollutant[1] and greenhouse gas (GHG)[2] emissions associated with construction of a land use project. The model quantifies direct emissions from construction (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The mobile source emission factors used in the model – published by the California Air Resources Board (CARB) – include the Pavley standards and Low Carbon Fuel Standards. The model allows the user to incorporate project design features, regulatory measures, and mitigation measures to reduce criteria pollutant and GHG emissions and calculates the benefits achieved from selected measures. CalEEMod was developed by the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the South Coast Air Quality Management District, Bay Area Air Quality Management District, San Joaquin Valley Air Pollution Control District, and other California air districts. Default land use data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) were provided by the various California air districts to account for local requirements and conditions. As the official assessment methodology for land use projects in California, CalEEMod is relied upon for construction emissions quantification for this Project.

A project's construction phase produces many types of emissions, but respirable particulate matter (PM_{10}) [including fine particular matter ($PM_{2.5}$)] in fugitive dust and diesel engine exhaust are the pollutants of greatest concern. Fugitive dust emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel on paved and unpaved surfaces, and vehicle exhaust. Construction-related emissions can cause substantial increases in localized concentrations of PM_{10}, as well as affect PM_{10} compliance with ambient air quality standards on a regional basis. Particulate emissions from construction activities can lead to adverse health effects and nuisance concerns such as reduced visibility and soiling of exposed surfaces. The use of diesel-powered construction equipment emits ozone precursors oxides of nitrogen (NO_x) and volatile organic compounds (VOCs), as well as diesel particulate matter (DPM), the latter being a composite of toxic air contaminants (TACs). Large construction projects using large earthmoving equipment are evaluated to determine if operations may exceed the California Environmental Quality Act (CEQA) significance threshold for NO_x emissions and could temporarily expose area residents to hazardous levels of DPM. Use of architectural coatings and other materials associated with finishing buildings may also emit reactive organic gas (ROG) and TACs.

[1] Criteria pollutants include oxides of nitrogen (NO_x), oxides of sulfur (SO_x), carbon monoxide (CO), volatile organic compounds (VOCs), and particulate matter (PM_{10} and $PM_{2.5}$).

[2] GHGs include, but are not limited to, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O).

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2.0 CONSTRUCTION EMISSIONS ESTIMATES

2.1 CalEEMod Model Input Data and Assumptions

The information used to develop the emissions estimates for the proposed Project is presented in this section. Not all CalEEMod defaults used are listed, but the default assumptions that have a particularly important impact on the project emissions are listed.

- Defined in Project Description of Use Permit Amendment Application:
  - Basic project design features, including project vicinity, site plan, building sizes, constructions phasing, etc. (see Attachment A-1);
  - Plant throughput increase is designed for 100 tons per day (TPD) and includes:
    - One 2,160 sq. ft. loadout building;
    - Two 113 sq. ft. fat tanks;
    - One 314 sq. ft. protein silo; and
    - One 10,500 sq. ft. wastewater treatment reactor; and
  - No demolition, material import or material export.
- Assumptions:
  - Low VOC paint will be used for any required painting;
  - Off-road equipment used in construction includes cranes, forklifts, generator sets, graders, rubber-tired dozers, tractors, loaders, backhoes, cement and mortar mixers, pavers, rollers, air compressors, and welders; and
  - During construction, exposed soil will be watered twice daily.
- CalEEMod defaults were used for:
  - Construction equipment load factor, usage hours, and average age;
  - Architectural coating areas;
  - Vehicle emission profiles and all calculations related to traffic and mobile source emissions; and
  - All other calculations not specifically listed as an assumption.

PM_{10} emitted during construction can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors, making quantification difficult. Despite this variability in emissions, experience has shown that there are several feasible control measures that can be reasonably implemented to significantly reduce fugitive dust emissions from construction. For larger projects, a fugitive dust control would be implemented, including Best Management Practices (BMPs) such as frequent water application to exposed surfaces. A dust control plan is usually sufficient mitigation to reduce PM_{10} impacts to a level considered less than significant. For these emissions estimates, standard (i.e., CalEEMod default) construction mitigation measures are assumed.

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Based on information defined in the Use Permit Amendment Application and the listed assumptions, the land use data in Table 2-1 was used as the CalEEMod input for construction. Additional data inputs are provided in Attachment A-2.

Table 2-1: Land Use Data for CalEEMod Input

Project Element	Land Use Type	Land Use Subtype	Unit Amount (1,000 sq. ft.)	Lot Size (acres)	Estimated Area (sq. ft.)
Wastewater Treatment Reactor	Industrial	Manufacturing	10.50	0.24	10,500
Tanks and Silos	Industrial	General Light Industry	1.34	0.03	1,340
Loadout Building	Industrial	Unrefrigerated Warehouse-No Rail	2.16	0.05	2,160
Project Site				0.32	14,000

2.2 Project Construction Emissions

Construction activities for the process expansion will consist of constructing a wastewater treatment reactor, a loadout building, a protein storage silo, and two fat storage tanks. Emissions associated with construction will occur from the equipment used for construction, trucks delivering equipment, and workers commuting. Construction activities are estimated to take approximately 6 to 12 months starting in late-2022.

2.2.1 Criteria Emissions

Table 2-2 summarizes mitigated maximum daily construction criteria pollutant emissions, and Table 2-3 shows mitigated annual criteria pollutant emissions in tons[3] for the composting and bioenergy facilities. CalEEMod output reports are provided in Attachment B-3.

Table 2-2: Daily Construction Emissions Summary

Criteria Pollutants	Unmitigated (lb/day)	Mitigated (lb/day)
VOC	19.7	19.7
NO_x	12.0	12.0
CO	7.93	7.93
SO2	0.02	0.02
PM_{10} (total)	5.9	3.0
$PM_{2.5}$ (total)	3.1	1.7

[3] Construction of each phase is expected to last no more than 1 year, so the emissions presented in tons are the total construction for each phase and the maximum annual emissions.

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Table 2-3: Annual Construction Emissions Summary

Criteria Pollutants	Unmitigated (TPY)	Mitigated (TPY)
VOC	3.6	3.6
NO_x	2.2	2.2
CO	0.45	0.45
SO2	0.001	0.001
PM_{10} (exhaust)	1.1	0.5
$PM_{2.5}$ (exhaust)	0.6	0.3

2.2.2 Greenhouse Gas Emissions

GHGs – collectively reported as carbon dioxide equivalents (CO_2e) – are directly emitted from mobile sources such as on-road vehicles and off-road construction equipment burning fuels such as gasoline, diesel, biodiesel, propane, or natural gas (compressed or liquefied).

Mitigated GHG emissions in metric tons (MT)[4] were estimated for construction of the Project elements using CalEEMod; the results are shown in Table 2-4. CalEEMod output reports are provided in Attachment A-3.

Table 2-4: Construction Greenhouse Gas Emissions Summary

GHG	Unmitigated (MT)	Mitigated (MT)
CO_2	66.6	66.6
CH_4	0.0	0.0
N_2O	0.0	0.0
CO_2e	67.2	67.2

[4] Construction of each phase is expected to last no more than 1 year, so the emissions presented in tons are the total construction for each phase and the maximum annual emissions.

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ATTACHMENT A-1 – FACILITY PLOT PLAN

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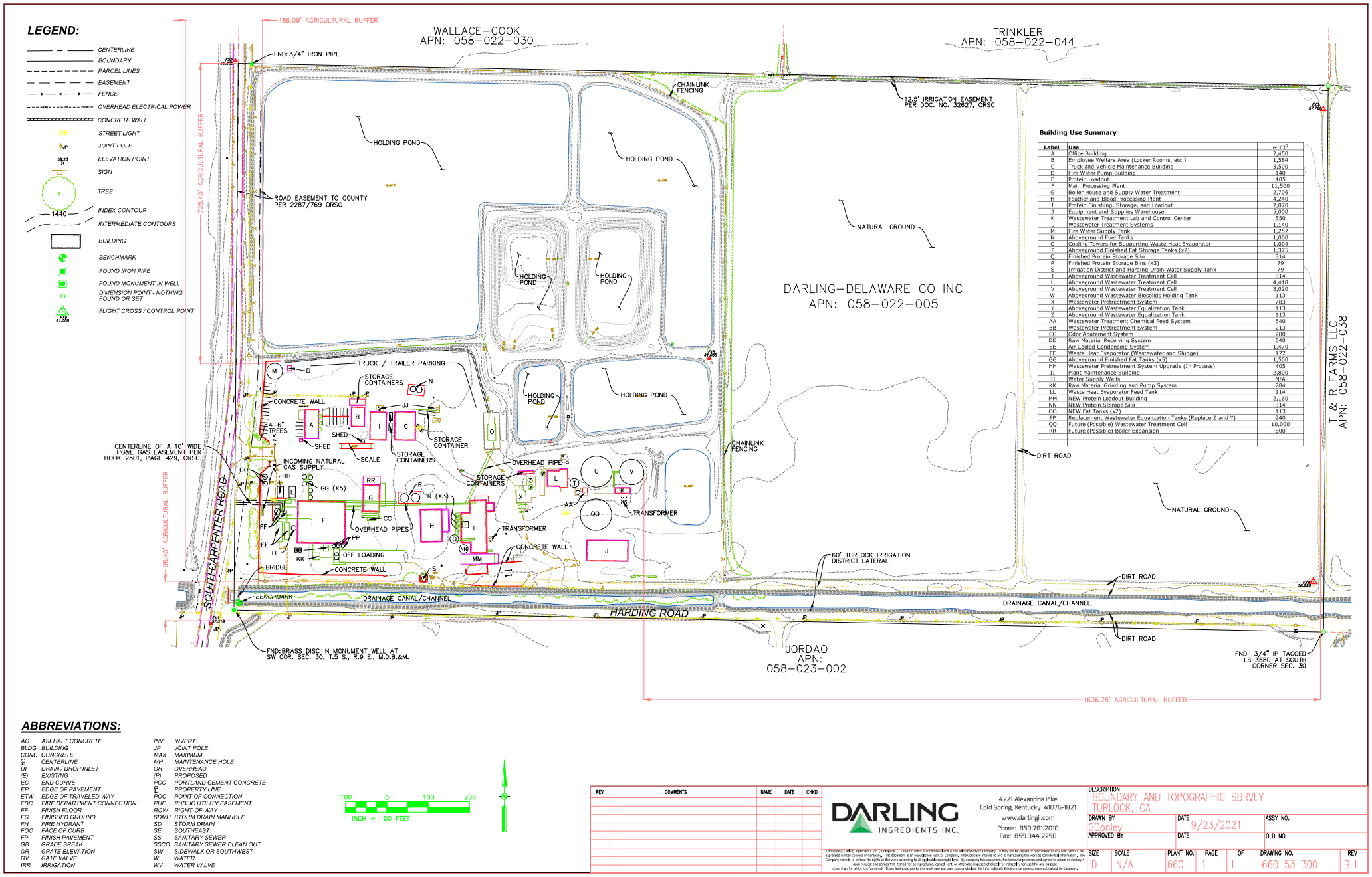

Building Use Summary

Label	Use	~ FT²
A	Office Building	2,450
B	Employee Welfare Area (Locker Rooms, etc.)	1,584
C	Truck and Vehicle Maintenance Building	3,500
D	Fire Water Pump Building	140
E	Protein Loadout	405
F	Main Processing Plant	11,500
G	Boiler House and Supply Water Treatment	2,706
H	Feather and Blood Processing Plant	4,240
I	Protein Finishing, Storage, and Loadout	7,070
J	Equipment and Supplies Warehouse	5,000
K	Wastewater Treatment Lab and Control Center	550
L	Wastewater Treatment Systems	1,140
M	Fire Water Supply Tank	1,257
N	Aboveground Fuel Tanks	1,000
O	Cooling Towers for Supporting Waste Heat Evaporator	1,004
P	Aboveground Finished Fat Storage Tanks (x2)	1,375
Q	Finished Protein Storage Silo	314
R	Finished Protein Storage Bins (x3)	79
S	Irrigation District and Harding Drain Water Supply Tank	79
T	Aboveground Wastewater Treatment Cell	314
U	Aboveground Wastewater Treatment Cell	4,418
V	Aboveground Wastewater Treatment Cell	3,020
W	Aboveground Wastewater Biosolids Holding Tank	113
X	Wastewater Pretreatment System	783
Y	Aboveground Wastewater Equalization Tank	113
Z	Aboveground Wastewater Equalization Tank	113
AA	Wastewater Treatment Chemical Feed System	540
BB	Wastewater Pretreatment System	213
CC	Odor Abatement System	280
DD	Raw Material Receiving System	540
EE	Air Cooled Condensing System	1,470
FF	Waste Heat Evaporator (Wastewater and Sludge)	177
GG	Aboveground Finished Fat Tanks (x5)	1,500
HH	Wastewater Pretreatment System Upgrade (In Process)	405
II	Plant Maintenance Building	2,800
JJ	Water Supply Wells	N/A
KK	Raw Material Grinding and Pump System	284
LL	Waste Heat Evaporator Feed Tank	114
MM	NEW Protein Loadout Building	2,160
NN	NEW Protein Storage Silo	314
OO	NEW Fat Tanks (x2)	113
PP	Replacement Wastewater Equalization Tanks (Replace Z and Y)	240
QQ	Future (Possible) Wastewater Treatment Cell	10,000
RR	Future (Possible) Boiler Expansion	800

ABBREVIATIONS:

AC	ASPHALT CONCRETE	INV	INVERT
BLDG	BUILDING	JP	JOINT POLE
CONC	CONCRETE	MAX	MAXIMUM
℄	CENTERLINE	MH	MAINTENANCE HOLE
DI	DRAIN / DROP INLET	OH	OVERHEAD
(E)	EXISTING	(P)	PROPOSED
EC	END CURVE	PCC	PORTLAND CEMENT CONCRETE
EP	EDGE OF PAVEMENT	ℙ	PROPERTY LINE
ETW	EDGE OF TRAVELED WAY	POC	POINT OF CONNECTION
FDC	FIRE DEPARTMENT CONNECTION	PUE	PUBLIC UTILITY EASEMENT
FF	FINISH FLOOR	ROW	RIGHT-OF-WAY
FG	FINISHED GROUND	SDMH	STORM DRAIN MANHOLE
FH	FIRE HYDRANT	SD	STORM DRAIN
FOC	FACE OF CURB	SE	SOUTHEAST
FP	FINISH PAVEMENT	SS	SANITARY SEWER
GB	GRADE BREAK	SSCO	SANITARY SEWER CLEAN OUT
GR	GRATE ELEVATION	SW	SIDEWALK OR SOUTHWEST
GV	GATE VALVE	W	WATER
IRR	IRRIGATION	WV	WATER VALVE

REV	COMMENTS	NAME	DATE	CHKD

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DRAWN BY	GConley
DATE	9/23/2021
ASSY NO.	
APPROVED BY	
DATE	
OLD NO.	

SIZE	SCALE	PLANT NO.	PAGE	OF	DRAWING NO.	REV
D	N/A	660	1	1	660 53 300	B.1

ATTACHMENT A-2 – CALEEMOD INPUT DATA AND EMISSIONS SUMMARY

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Table 1: Land Use Data for CalEEMod Input

Table 1: Land Use Data for CalEEMod Input

Project Element	Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage (footprint)	Square Feet (est.)
Wastewater Treatment Reactor	Industrial	Manufacturing	10.50	1,000 sq. ft.	0.24	10,500
Tanks and Silos	Industrial	General Light Industry	1.34	1,000 sq. ft.	0.03	1,340
Loadout Building	Industrial	Unrefrigerated Warehouse-No Rail	2.16	1,000 sq. ft.	0.05	2,160
Project Site					**0.32**	**14,000**

Notes:

Electric utility: Pacific Gas & Electric Company (PG&E)

Climate Zone 3 - Turlock

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Table 2: Mitigation Measures Assumptions Summary

Table 2a: CalEEMod Mitigation Measures used in Analysis

Source	Mitigation Measure	Amount/Reduction
Construction	Water Application	2x daily
	Architectural Coatings	Low-VOC Compliant
Energy	High Efficiency Lighting	0.1
Water	Low-flow Bathroom Faucet	0.32
	Low-flow Kitchen Faucet	0.18
	Low-flow Toilet	0.2
	Low-flow Shower	0.2

Table 2b: Other Non Default CalEEMod Settings / Assumptions

Category	Mitigation Option Selected
mitigation construction	Water Exposed Area 2x a day
mitigation area	Use Low VOC Paint
mitigation water	Use Low Flow appliances
Coatings Phase	10 days, not 5

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Table 3: Emissions Summary

Table 3a: Daily Construction Emission Summary

Pollutant	Unmitigated (lb/day)	Mitigated (lb/day)
VOC	19.68	19.68
NOx	12.03	12.03
CO	7.93	7.93
SO2	0.02	0.02
PM10 Total	5.93	3.01
PM2.5 Total	3.07	1.66

Table 3b: Annual Construction Emissions Summary

Pollutant	Unmitigated (TPY)	Mitigated (TPY)
VOC	0.14	0.14
NOx	0.43	0.43
CO	0.45	0.45
SO2	0.001	0.001
PM10 Total	0.03	0.03
PM2.5 Total	0.02	0.02

Table 3c: Construction Greenhouse Gas Emissions Summary

GHG	Unmitigated (MT)	Mitigated (MT)
CO2	66.6	66.6
CH4	0.0	0.0
N2O	0.0	0.0
CO2e	67.2	67.2

Notes:

1. Total PM_{10} / $PM_{2.5}$ comprises fugitive dust plus engine exhaust

Darling Ingredients Inc.
Turlock Capacity Upgrade Project
Construction Emission Estimates

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Daily Construction Emissions copied and pasted from Table 2.1 (construction emissions) of Summer and Winter CalEEMod outputs.

Winter

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Year	lb/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM1	PM10 Total	Fugitive PM2.5	Exhaust PM2.	PM2.5 Tot	Bio- CO2 lb/day	NBio- CO2	Total CO2	CH4	N2O	CO2e
2022		19.6763	12.035	7.849	0.015	5.4141	0.5178	5.9319	2.5957	0.4764	3.072	0	1,451.59	1,451.59	0.4439	8.07E-03	1,463.49
Maximum		19.6763	12.035	7.849	0.015	5.4141	0.5178	5.9319	2.5957	0.4764	3.072	0	1,451.59	1,451.59	0.4439	8.07E-03	1,463.49

Mitigated Construction

Year	lb/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM1	PM10 Total	Fugitive PM2.5	Exhaust PM2.	PM2.5 Tot	Bio- CO2 lb/day	NBio- CO2	Total CO2	CH4	N2O	CO2e
2022		19.6763	12.035	7.849	0.015	2.4926	0.5178	3.0104	1.183	0.4764	1.6593	0	1,451.59	1,451.59	0.4439	8.07E-03	1,463.49
Maximum		19.6763	12.035	7.849	0.015	2.4926	0.5178	3.0104	1.183	0.4764	1.6593	0	1,451.59	1,451.59	0.4439	8.07E-03	1,463.49

Summer

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Year	lb/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM1	PM10 Total	Fugitive PM2.5	Exhaust PM2.	PM2.5 Tot	Bio- CO2 lb/day	NBio- CO2	Total CO2	CH4	N2O	CO2e
2022		19.6766	12.03	7.934	0.0151	5.4141	0.5178	5.9319	2.5957	0.4764	3.072	0	1,462.47	1,462.47	0.4438	7.85E-03	1,474.28
Maximum		19.6766	12.03	7.934	0.0151	5.4141	0.5178	5.9319	2.5957	0.4764	3.072	0	1,462.47	1,462.47	0.4438	7.85E-03	1,474.28

Mitigated Construction

Year	lb/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM1	PM10 Total	Fugitive PM2.5	Exhaust PM2.	PM2.5 Tot	Bio- CO2 lb/day	NBio- CO2	Total CO2	CH4	N2O	CO2e
2022		19.6766	12.03	7.934	0.0151	2.4926	0.5178	3.0104	1.183	0.4764	1.6593	0	1,462.47	1,462.47	0.4438	7.85E-03	1,474.28
Maximum		19.6766	12.03	7.934	0.0151	2.4926	0.5178	3.0104	1.183	0.4764	1.6593	0	1,462.47	1,462.47	0.4438	7.85E-03	1,474.28

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Unmitigated Maximum	**19.68**	**12.03**	**7.93**	**0.02**	**5.41**	**0.52**	**5.93**	**2.60**	**0.48**	**3.07**
Mitigated Maximum	**19.68**	**12.03**	**7.93**	**0.02**	**2.49**	**0.52**	**3.01**	**1.18**	**0.48**	**1.66**

	Unmitigated	Mitigated
ROG	19.68	19.68
NOx	12.03	12.03
CO	7.93	7.93
SO2	0.02	0.02
PM10 Total	5.93	3.01
PM2.5 Total	3.07	1.66

Darling Ingredients Inc.
Turlock Capacity Upgrade Project
Construction Emission Estimates

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Annual Construction and Operational Emissions copied and pasted from Tables 2.1 and 2.2 Annual CalEEMod outputs.

2.1 Overall Construction
Unmitigated Construction

Year	tons/yr	ROG	NOx	CO	SO2	Fugitive PM	Exhaust PM	PM10 Total	Fugitive PM	Exhaust PM	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
2022		0.1413	0.4272	0.4472	7.60E-04	0.0113	0.0222	0.0334	4.13E-03	0.0205	0.0246	0	66.5798	66.5798	0.0186	3.90E-04	67.1613
Maximum		0.1413	0.4272	0.4472	7.60E-04	0.0113	0.0222	0.0334	4.13E-03	0.0205	0.0246	0	66.5798	66.5798	0.0186	3.90E-04	67.1613

Mitigated Construction

Year	tons/yr	ROG	NOx	CO	SO2	Fugitive PM	Exhaust PM	PM10 Total	Fugitive PM	Exhaust PM	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
												MT/yr					
2022		0.1413	0.4272	0.4472	7.60E-04	8.21E-03	0.0222	0.0304	2.70E-03	0.0205	0.0232	0	66.5797	66.5797	0.0186	3.90E-04	67.1612
Maximum		0.1413	0.4272	0.4472	7.60E-04	8.21E-03	0.0222	0.0304	2.70E-03	0.0205	0.0232	0	66.5797	66.5797	0.0186	3.90E-04	67.1612

	ROG	NOx	CO	SO2	Fugitive PM	Exhaust PM	PM10 Total	Fugitive PM	Exhaust PM	PM2.5 Total	**Bio- CO2**	**NBio- CO2**	**Total CO2**	**CH4**	**N2O**	**CO2e**
Unmitigated Construction	**0.14**	**0.43**	**0.45**	**0.00**	**0.01**	**0.02**	**0.03**	**0.00**	**0.02**	**0.02**	**0.00**	**66.58**	**66.58**	**0.02**	**0.00**	**67.16**
Mitigated Construction	**0.14**	**0.43**	**0.45**	**0.00**	**0.01**	**0.02**	**0.03**	**0.00**	**0.02**	**0.02**	**0.00**	**66.58**	**66.58**	**0.02**	**0.00**	**67.16**

	Unmitigated Construction	**Mitigated Construction**
Total CO2	**66.58**	**66.58**
CH4	**0.02**	**0.02**
N2O	**0.00**	**0.00**
CO2e	**67.16**	**67.16**
ROG	**0.14**	**0.14**
NOx	**0.43**	**0.43**
CO	**0.45**	**0.45**
SO2	**0.00**	**0.00**
PM10 Total	**0.03**	**0.03**
PM2.5 Total	**0.02**	**0.02**
Total CO2	**66.58**	**66.58**
CH4	**0.02**	**0.02**
N2O	**0.00**	**0.00**
CO2e	**67.16**	**67.16**

ATTACHMENT A-3 – CALEEMOD OUTPUT REPORTS

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Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Darling Use Permit Amendment

San Joaquin Valley Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	10.50	1000sqft	0.24	10,500.00	0
General Light Industry	1.34	1000sqft	0.03	1,340.00	0
Unrefrigerated Warehouse-No Rail	2.16	1000sqft	0.05	2,160.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Architectural Coatings phase updated to reflect construction plan.

Vehicle Trips - Mobile source emissions calculated outside of CalEEMod.

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	PhaseEndDate	11/18/2022	11/25/2022
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	ST_TR	1.99	0.00
tblVehicleTrips	ST_TR	6.42	0.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	SU_TR	5.09	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	4.96	0.00
tblVehicleTrips	WD_TR	3.93	0.00
tblVehicleTrips	WD_TR	1.74	0.00

2.0 Emissions Summary

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2022	0.1413	0.4272	0.4472	7.6000e-004	0.0113	0.0222	0.0334	4.1300e-003	0.0205	0.0246	0.0000	66.5798	66.5798	0.0186	3.9000e-004	67.1613
Maximum	**0.1413**	**0.4272**	**0.4472**	**7.6000e-004**	**0.0113**	**0.0222**	**0.0334**	**4.1300e-003**	**0.0205**	**0.0246**	**0.0000**	**66.5798**	**66.5798**	**0.0186**	**3.9000e-004**	**67.1613**

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					
2022	0.1413	0.4272	0.4472	7.6000e-004	8.2100e-003	0.0222	0.0304	2.7000e-003	0.0205	0.0232	0.0000	66.5797	66.5797	0.0186	3.9000e-004	67.1612
Maximum	**0.1413**	**0.4272**	**0.4472**	**7.6000e-004**	**8.2100e-003**	**0.0222**	**0.0304**	**2.7000e-003**	**0.0205**	**0.0232**	**0.0000**	**66.5797**	**66.5797**	**0.0186**	**3.9000e-004**	**67.1612**

	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**	**27.22**	**0.00**	**9.18**	**34.62**	**0.00**	**5.81**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2022	8-31-2022	0.2587	0.2587
2	9-1-2022	9-30-2022	0.0842	0.0842
		Highest	0.2587	0.2587

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	0.0644	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5000e-004	2.5000e-004	0.0000	0.0000	2.7000e-004
Energy	1.5300e-003	0.0139	0.0117	8.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	26.4300	26.4300	2.1200e-003	5.0000e-004	26.6316
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	3.3920	0.0000	3.3920	0.2005	0.0000	8.4035
Water						0.0000	0.0000		0.0000	0.0000	1.0271	1.6208	2.6480	0.1058	2.5200e-003	6.0436
Total	**0.0660**	**0.0139**	**0.0118**	**8.0000e-005**	**0.0000**	**1.0600e-003**	**1.0600e-003**	**0.0000**	**1.0600e-003**	**1.0600e-003**	**4.4191**	**28.0511**	**32.4701**	**0.3083**	**3.0200e-003**	**41.0789**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0644	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5000e-004	2.5000e-004	0.0000	0.0000	2.7000e-004
Energy	1.5300e-003	0.0139	0.0117	8.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	26.0698	26.0698	2.0600e-003	4.9000e-004	26.2679
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	3.3920	0.0000	3.3920	0.2005	0.0000	8.4035
Water						0.0000	0.0000		0.0000	0.0000	0.8217	1.2967	2.1184	0.0846	2.0200e-003	4.8349
Total	**0.0660**	**0.0139**	**0.0118**	**8.0000e-005**	**0.0000**	**1.0600e-003**	**1.0600e-003**	**0.0000**	**1.0600e-003**	**1.0600e-003**	**4.2137**	**27.3667**	**31.5804**	**0.2871**	**2.5100e-003**	**39.5065**

	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**	**4.65**	**2.44**	**2.74**	**6.88**	**16.89**	**3.83**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2022	6/14/2022	5	10	
2	Site Preparation	Site Preparation	6/15/2022	6/15/2022	5	1	
3	Grading	Grading	6/16/2022	6/17/2022	5	2	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Building Construction	Building Construction	6/18/2022	11/4/2022	5	100	
5	Paving	Paving	11/5/2022	11/11/2022	5	5	
6	Architectural Coating	Architectural Coating	11/12/2022	11/25/2022	5	10	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 21,000; Non-Residential Outdoor: 7,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	6.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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
Demolition	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	6.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2022

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	3.5500e-003	0.0321	0.0374	6.0000e-005		1.6900e-003	1.6900e-003		1.6100e-003	1.6100e-003	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308
Total	**3.5500e-003**	**0.0321**	**0.0374**	**6.0000e-005**		**1.6900e-003**	**1.6900e-003**		**1.6100e-003**	**1.6100e-003**	**0.0000**	**5.2068**	**5.2068**	**9.6000e-004**	**0.0000**	**5.2308**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.7000e-004	1.9600e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5087	0.5087	1.0000e-005	1.0000e-005	0.5133
Total	**2.2000e-004**	**1.7000e-004**	**1.9600e-003**	**1.0000e-005**	**6.2000e-004**	**0.0000**	**6.2000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5087**	**0.5087**	**1.0000e-005**	**1.0000e-005**	**0.5133**

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	3.5500e-003	0.0321	0.0374	6.0000e-005		1.6900e-003	1.6900e-003		1.6100e-003	1.6100e-003	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308
Total	**3.5500e-003**	**0.0321**	**0.0374**	**6.0000e-005**		**1.6900e-003**	**1.6900e-003**		**1.6100e-003**	**1.6100e-003**	**0.0000**	**5.2068**	**5.2068**	**9.6000e-004**	**0.0000**	**5.2308**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.7000e-004	1.9600e-003	1.0000e-005	6.2000e-004	0.0000	6.2000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5087	0.5087	1.0000e-005	1.0000e-005	0.5133
Total	**2.2000e-004**	**1.7000e-004**	**1.9600e-003**	**1.0000e-005**	**6.2000e-004**	**0.0000**	**6.2000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5087**	**0.5087**	**1.0000e-005**	**1.0000e-005**	**0.5133**

3.3 Site Preparation - 2022

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9000e-004	3.4700e-003	1.9800e-003	0.0000		1.3000e-004	1.3000e-004		1.2000e-004	1.2000e-004	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4310
Total	**2.9000e-004**	**3.4700e-003**	**1.9800e-003**	**0.0000**	**2.7000e-004**	**1.3000e-004**	**4.0000e-004**	**3.0000e-005**	**1.2000e-004**	**1.5000e-004**	**0.0000**	**0.4275**	**0.4275**	**1.4000e-004**	**0.0000**	**0.4310**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0254	0.0254	0.0000	0.0000	0.0257
Total	**1.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0254**	**0.0254**	**0.0000**	**0.0000**	**0.0257**

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					1.2000e-004	0.0000	1.2000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9000e-004	3.4700e-003	1.9800e-003	0.0000		1.3000e-004	1.3000e-004		1.2000e-004	1.2000e-004	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4310
Total	**2.9000e-004**	**3.4700e-003**	**1.9800e-003**	**0.0000**	**1.2000e-004**	**1.3000e-004**	**2.5000e-004**	**1.0000e-005**	**1.2000e-004**	**1.3000e-004**	**0.0000**	**0.4275**	**0.4275**	**1.4000e-004**	**0.0000**	**0.4310**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0254	0.0254	0.0000	0.0000	0.0257
Total	**1.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0254**	**0.0254**	**0.0000**	**0.0000**	**0.0257**

3.4 Grading - 2022

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					5.3100e-003	0.0000	5.3100e-003	2.5700e-003	0.0000	2.5700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0800e-003	0.0120	5.9400e-003	1.0000e-005		5.2000e-004	5.2000e-004		4.8000e-004	4.8000e-004	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2482
Total	**1.0800e-003**	**0.0120**	**5.9400e-003**	**1.0000e-005**	**5.3100e-003**	**5.2000e-004**	**5.8300e-003**	**2.5700e-003**	**4.8000e-004**	**3.0500e-003**	**0.0000**	**1.2381**	**1.2381**	**4.0000e-004**	**0.0000**	**1.2482**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.1000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0814	0.0814	0.0000	0.0000	0.0821
Total	**4.0000e-005**	**3.0000e-005**	**3.1000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0814**	**0.0814**	**0.0000**	**0.0000**	**0.0821**

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	1.1600e-003	0.0000	1.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0800e-003	0.0120	5.9400e-003	1.0000e-005		5.2000e-004	5.2000e-004		4.8000e-004	4.8000e-004	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2482
Total	**1.0800e-003**	**0.0120**	**5.9400e-003**	**1.0000e-005**	**2.3900e-003**	**5.2000e-004**	**2.9100e-003**	**1.1600e-003**	**4.8000e-004**	**1.6400e-003**	**0.0000**	**1.2381**	**1.2381**	**4.0000e-004**	**0.0000**	**1.2482**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.1000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0814	0.0814	0.0000	0.0000	0.0821
Total	**4.0000e-005**	**3.0000e-005**	**3.1000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0814**	**0.0814**	**0.0000**	**0.0000**	**0.0821**

3.5 Building Construction - 2022

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	0.0343	0.3513	0.3576	5.7000e-004		0.0186	0.0186		0.0171	0.0171	0.0000	50.0739	50.0739	0.0162	0.0000	50.4787
Total	**0.0343**	**0.3513**	**0.3576**	**5.7000e-004**		**0.0186**	**0.0186**		**0.0171**	**0.0171**	**0.0000**	**50.0739**	**50.0739**	**0.0162**	**0.0000**	**50.4787**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2022

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	2.0000e-004	5.0800e-003	1.5200e-003	2.0000e-005	6.0000e-004	6.0000e-005	6.6000e-004	1.7000e-004	5.0000e-005	2.3000e-004	0.0000	1.8311	1.8311	1.0000e-005	2.7000e-004	1.9132
Worker	1.3400e-003	1.0300e-003	0.0118	3.0000e-005	3.7300e-003	2.0000e-005	3.7500e-003	9.9000e-004	2.0000e-005	1.0100e-003	0.0000	3.0523	3.0523	8.0000e-005	9.0000e-005	3.0800
Total	**1.5400e-003**	**6.1100e-003**	**0.0133**	**5.0000e-005**	**4.3300e-003**	**8.0000e-005**	**4.4100e-003**	**1.1600e-003**	**7.0000e-005**	**1.2400e-003**	**0.0000**	**4.8834**	**4.8834**	**9.0000e-005**	**3.6000e-004**	**4.9932**

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	0.0343	0.3513	0.3576	5.7000e-004		0.0186	0.0186		0.0171	0.0171	0.0000	50.0738	50.0738	0.0162	0.0000	50.4787
Total	**0.0343**	**0.3513**	**0.3576**	**5.7000e-004**		**0.0186**	**0.0186**		**0.0171**	**0.0171**	**0.0000**	**50.0738**	**50.0738**	**0.0162**	**0.0000**	**50.4787**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2022

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	2.0000e-004	5.0800e-003	1.5200e-003	2.0000e-005	6.0000e-004	6.0000e-005	6.6000e-004	1.7000e-004	5.0000e-005	2.3000e-004	0.0000	1.8311	1.8311	1.0000e-005	2.7000e-004	1.9132
Worker	1.3400e-003	1.0300e-003	0.0118	3.0000e-005	3.7300e-003	2.0000e-005	3.7500e-003	9.9000e-004	2.0000e-005	1.0100e-003	0.0000	3.0523	3.0523	8.0000e-005	9.0000e-005	3.0800
Total	**1.5400e-003**	**6.1100e-003**	**0.0133**	**5.0000e-005**	**4.3300e-003**	**8.0000e-005**	**4.4100e-003**	**1.1600e-003**	**7.0000e-005**	**1.2400e-003**	**0.0000**	**4.8834**	**4.8834**	**9.0000e-005**	**3.6000e-004**	**4.9932**

3.6 Paving - 2022

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	1.6200e-003	0.0148	0.0176	3.0000e-005		7.4000e-004	7.4000e-004		6.9000e-004	6.9000e-004	0.0000	2.3492	2.3492	6.8000e-004	0.0000	2.3663
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.6200e-003**	**0.0148**	**0.0176**	**3.0000e-005**		**7.4000e-004**	**7.4000e-004**		**6.9000e-004**	**6.9000e-004**	**0.0000**	**2.3492**	**2.3492**	**6.8000e-004**	**0.0000**	**2.3663**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.5000e-004	1.7700e-003	0.0000	5.6000e-004	0.0000	5.6000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4579	0.4579	1.0000e-005	1.0000e-005	0.4620
Total	**2.0000e-004**	**1.5000e-004**	**1.7700e-003**	**0.0000**	**5.6000e-004**	**0.0000**	**5.6000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4579**	**0.4579**	**1.0000e-005**	**1.0000e-005**	**0.4620**

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	1.6200e-003	0.0148	0.0176	3.0000e-005		7.4000e-004	7.4000e-004		6.9000e-004	6.9000e-004	0.0000	2.3492	2.3492	6.8000e-004	0.0000	2.3663
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.6200e-003**	**0.0148**	**0.0176**	**3.0000e-005**		**7.4000e-004**	**7.4000e-004**		**6.9000e-004**	**6.9000e-004**	**0.0000**	**2.3492**	**2.3492**	**6.8000e-004**	**0.0000**	**2.3663**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.5000e-004	1.7700e-003	0.0000	5.6000e-004	0.0000	5.6000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4579	0.4579	1.0000e-005	1.0000e-005	0.4620
Total	**2.0000e-004**	**1.5000e-004**	**1.7700e-003**	**0.0000**	**5.6000e-004**	**0.0000**	**5.6000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4579**	**0.4579**	**1.0000e-005**	**1.0000e-005**	**0.4620**

3.7 Architectural Coating - 2022

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	0.0973					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**0.0984**	**7.0400e-003**	**9.0700e-003**	**1.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0509	0.0509	0.0000	0.0000	0.0513
Total	**2.0000e-005**	**2.0000e-005**	**2.0000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0509**	**0.0509**	**0.0000**	**0.0000**	**0.0513**

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	0.0973					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**0.0984**	**7.0400e-003**	**9.0700e-003**	**1.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - 2022

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0509	0.0509	0.0000	0.0000	0.0513
Total	**2.0000e-005**	**2.0000e-005**	**2.0000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0509**	**0.0509**	**0.0000**	**0.0000**	**0.0513**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Manufacturing	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Manufacturing	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Unrefrigerated Warehouse-No	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.511221	0.052103	0.170611	0.160645	0.028932	0.007649	0.013284	0.025916	0.000654	0.000315	0.023645	0.001472	0.003552
Manufacturing	0.511221	0.052103	0.170611	0.160645	0.028932	0.007649	0.013284	0.025916	0.000654	0.000315	0.023645	0.001472	0.003552

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unrefrigerated Warehouse-No Rail	0.511221	0.052103	0.170611	0.160645	0.028932	0.007649	0.013284	0.025916	0.000654	0.000315	0.023645	0.001472	0.003552

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	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	10.9266	10.9266	1.7700e-003	2.1000e-004	11.0346
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	11.2867	11.2867	1.8300e-003	2.2000e-004	11.3983
NaturalGas Mitigated	1.5300e-003	0.0139	0.0117	8.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	15.1432	15.1432	2.9000e-004	2.8000e-004	15.2332
NaturalGas Unmitigated	1.5300e-003	0.0139	0.0117	8.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	15.1432	15.1432	2.9000e-004	2.8000e-004	15.2332

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	27738	1.5000e-004	1.3600e-003	1.1400e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4802	1.4802	3.0000e-005	3.0000e-005	1.4890
Manufacturing	217350	1.1700e-003	0.0107	8.9500e-003	6.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004	0.0000	11.5986	11.5986	2.2000e-004	2.1000e-004	11.6676
Unrefrigerated Warehouse-No Rail	38685.6	2.1000e-004	1.9000e-003	1.5900e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	2.0644	2.0644	4.0000e-005	4.0000e-005	2.0767
Total		**1.5300e-003**	**0.0139**	**0.0117**	**8.0000e-005**		**1.0500e-003**	**1.0500e-003**		**1.0500e-003**	**1.0500e-003**	**0.0000**	**15.1432**	**15.1432**	**2.9000e-004**	**2.8000e-004**	**15.2332**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	27738	1.5000e-004	1.3600e-003	1.1400e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4802	1.4802	3.0000e-005	3.0000e-005	1.4890
Manufacturing	217350	1.1700e-003	0.0107	8.9500e-003	6.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004	0.0000	11.5986	11.5986	2.2000e-004	2.1000e-004	11.6676
Unrefrigerated Warehouse-No Rail	38685.6	2.1000e-004	1.9000e-003	1.5900e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	2.0644	2.0644	4.0000e-005	4.0000e-005	2.0767
Total		**1.5300e-003**	**0.0139**	**0.0117**	**8.0000e-005**		**1.0500e-003**	**1.0500e-003**		**1.0500e-003**	**1.0500e-003**	**0.0000**	**15.1432**	**15.1432**	**2.9000e-004**	**2.8000e-004**	**15.2332**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	11537.4	1.0675	1.7000e-004	2.0000e-005	1.0780
Manufacturing	90405	8.3646	1.3500e-003	1.6000e-004	8.4473
Unrefrigerated Warehouse-No Rail	20044.8	1.8546	3.0000e-004	4.0000e-005	1.8730
Total		**11.2867**	**1.8200e-003**	**2.2000e-004**	**11.3983**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	11175.6	1.0340	1.7000e-004	2.0000e-005	1.0442
Manufacturing	87570	8.1023	1.3100e-003	1.6000e-004	8.1824
Unrefrigerated Warehouse-No Rail	19349.3	1.7903	2.9000e-004	4.0000e-005	1.8080
Total		**10.9266**	**1.7700e-003**	**2.2000e-004**	**11.0346**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	0.0644	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5000e-004	2.5000e-004	0.0000	0.0000	2.7000e-004
Unmitigated	0.0644	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5000e-004	2.5000e-004	0.0000	0.0000	2.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	9.7300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0547					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5000e-004	2.5000e-004	0.0000	0.0000	2.7000e-004
Total	**0.0644**	**0.0000**	**1.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.5000e-004**	**2.5000e-004**	**0.0000**	**0.0000**	**2.7000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	9.7300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0547					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.5000e-004	2.5000e-004	0.0000	0.0000	2.7000e-004
Total	**0.0644**	**0.0000**	**1.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.5000e-004**	**2.5000e-004**	**0.0000**	**0.0000**	**2.7000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.1184	0.0846	2.0200e-003	4.8349
Unmitigated	2.6480	0.1058	2.5200e-003	6.0436

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.309875 / 0	0.2535	0.0101	2.4000e-004	0.5785
Manufacturing	2.42813 / 0	1.9860	0.0793	1.8900e-003	4.5327
Unrefrigerated Warehouse-No Rail	0.4995 / 0	0.4085	0.0163	3.9000e-004	0.9325
Total		**2.6480**	**0.1058**	**2.5200e-003**	**6.0436**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.2479 / 0	0.2028	8.1000e-003	1.9000e-004	0.4628
Manufacturing	1.9425 / 0	1.5888	0.0635	1.5100e-003	3.6262
Unrefrigerated Warehouse-No Rail	0.3996 / 0	0.3268	0.0131	3.1000e-004	0.7460
Total		**2.1184**	**0.0846**	**2.0100e-003**	**4.8349**

8.0 Waste Detail

8.1 Mitigation Measures Waste

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.3920	0.2005	0.0000	8.4035
Unmitigated	3.3920	0.2005	0.0000	8.4035

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.66	0.3370	0.0199	0.0000	0.8348
Manufacturing	13.02	2.6429	0.1562	0.0000	6.5478
Unrefrigerated Warehouse-No Rail	2.03	0.4121	0.0244	0.0000	1.0209
Total		**3.3920**	**0.2005**	**0.0000**	**8.4035**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.66	0.3370	0.0199	0.0000	0.8348
Manufacturing	13.02	2.6429	0.1562	0.0000	6.5478
Unrefrigerated Warehouse-No Rail	2.03	0.4121	0.0244	0.0000	1.0209
Total		**3.3920**	**0.2005**	**0.0000**	**8.4035**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

11.0 Vegetation

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Darling Use Permit Amendment

San Joaquin Valley Unified APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	10.50	1000sqft	0.24	10,500.00	0
General Light Industry	1.34	1000sqft	0.03	1,340.00	0
Unrefrigerated Warehouse-No Rail	2.16	1000sqft	0.05	2,160.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Architectural Coatings phase updated to reflect construction plan.

Vehicle Trips - Mobile source emissions calculated outside of CalEEMod.

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	PhaseEndDate	11/18/2022	11/25/2022
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	ST_TR	1.99	0.00
tblVehicleTrips	ST_TR	6.42	0.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	SU_TR	5.09	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	4.96	0.00
tblVehicleTrips	WD_TR	3.93	0.00
tblVehicleTrips	WD_TR	1.74	0.00

2.0 Emissions Summary

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2022	19.6766	12.0301	7.9337	0.0151	5.4141	0.5178	5.9319	2.5957	0.4764	3.0720	0.0000	1,462.4650	1,462.4650	0.4438	7.8500e-003	1,474.2768
Maximum	**19.6766**	**12.0301**	**7.9337**	**0.0151**	**5.4141**	**0.5178**	**5.9319**	**2.5957**	**0.4764**	**3.0720**	**0.0000**	**1,462.4650**	**1,462.4650**	**0.4438**	**7.8500e-003**	**1,474.2768**

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					
2022	19.6766	12.0301	7.9337	0.0151	2.4926	0.5178	3.0104	1.1830	0.4764	1.6593	0.0000	1,462.4650	1,462.4650	0.4438	7.8500e-003	1,474.2768
Maximum	**19.6766**	**12.0301**	**7.9337**	**0.0151**	**2.4926**	**0.5178**	**3.0104**	**1.1830**	**0.4764**	**1.6593**	**0.0000**	**1,462.4650**	**1,462.4650**	**0.4438**	**7.8500e-003**	**1,474.2768**

	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**	**53.96**	**0.00**	**49.25**	**54.43**	**0.00**	**45.99**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.3531	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0600e-003	3.0600e-003	1.0000e-005		3.2600e-003
Energy	8.3800e-003	0.0762	0.0640	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003		91.4661	91.4661	1.7500e-003	1.6800e-003	92.0097
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3615**	**0.0762**	**0.0655**	**4.6000e-004**	**0.0000**	**5.8000e-003**	**5.8000e-003**	**0.0000**	**5.8000e-003**	**5.8000e-003**		**91.4692**	**91.4692**	**1.7600e-003**	**1.6800e-003**	**92.0129**

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	0.3531	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0600e-003	3.0600e-003	1.0000e-005		3.2600e-003
Energy	8.3800e-003	0.0762	0.0640	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003		91.4661	91.4661	1.7500e-003	1.6800e-003	92.0097
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3615**	**0.0762**	**0.0655**	**4.6000e-004**	**0.0000**	**5.8000e-003**	**5.8000e-003**	**0.0000**	**5.8000e-003**	**5.8000e-003**		**91.4692**	**91.4692**	**1.7600e-003**	**1.6800e-003**	**92.0129**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	Demolition	Demolition	6/1/2022	6/14/2022	5	10	
2	Site Preparation	Site Preparation	6/15/2022	6/15/2022	5	1	
3	Grading	Grading	6/16/2022	6/17/2022	5	2	
4	Building Construction	Building Construction	6/18/2022	11/4/2022	5	100	
5	Paving	Paving	11/5/2022	11/11/2022	5	5	
6	Architectural Coating	Architectural Coating	11/12/2022	11/25/2022	5	10	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 21,000; Non-Residential Outdoor: 7,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	Graders	1	6.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	6.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2022

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	0.7094	6.4138	7.4693	0.0120		0.3375	0.3375		0.3225	0.3225		1,147.9025	1,147.9025	0.2119		1,153.2001
Total	**0.7094**	**6.4138**	**7.4693**	**0.0120**		**0.3375**	**0.3375**		**0.3225**	**0.3225**		**1,147.9025**	**1,147.9025**	**0.2119**		**1,153.2001**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0502	0.0318	0.4644	1.2100e-003	0.1277	6.7000e-004	0.1284	0.0339	6.2000e-004	0.0345		122.0565	122.0565	3.0300e-003	3.0000e-003	123.0272
Total	**0.0502**	**0.0318**	**0.4644**	**1.2100e-003**	**0.1277**	**6.7000e-004**	**0.1284**	**0.0339**	**6.2000e-004**	**0.0345**		**122.0565**	**122.0565**	**3.0300e-003**	**3.0000e-003**	**123.0272**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2022

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	0.7094	6.4138	7.4693	0.0120		0.3375	0.3375		0.3225	0.3225	0.0000	1,147.9025	1,147.9025	0.2119		1,153.2001
Total	**0.7094**	**6.4138**	**7.4693**	**0.0120**		**0.3375**	**0.3375**		**0.3225**	**0.3225**	**0.0000**	**1,147.9025**	**1,147.9025**	**0.2119**		**1,153.2001**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0502	0.0318	0.4644	1.2100e-003	0.1277	6.7000e-004	0.1284	0.0339	6.2000e-004	0.0345		122.0565	122.0565	3.0300e-003	3.0000e-003	123.0272
Total	**0.0502**	**0.0318**	**0.4644**	**1.2100e-003**	**0.1277**	**6.7000e-004**	**0.1284**	**0.0339**	**6.2000e-004**	**0.0345**		**122.0565**	**122.0565**	**3.0300e-003**	**3.0000e-003**	**123.0272**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.5797	6.9332	3.9597	9.7300e-003		0.2573	0.2573		0.2367	0.2367		942.5179	942.5179	0.3048		950.1386
Total	**0.5797**	**6.9332**	**3.9597**	**9.7300e-003**	**0.5303**	**0.2573**	**0.7876**	**0.0573**	**0.2367**	**0.2940**		**942.5179**	**942.5179**	**0.3048**		**950.1386**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0251	0.0159	0.2322	6.0000e-004	0.0639	3.4000e-004	0.0642	0.0169	3.1000e-004	0.0172		61.0283	61.0283	1.5200e-003	1.5000e-003	61.5136
Total	**0.0251**	**0.0159**	**0.2322**	**6.0000e-004**	**0.0639**	**3.4000e-004**	**0.0642**	**0.0169**	**3.1000e-004**	**0.0172**		**61.0283**	**61.0283**	**1.5200e-003**	**1.5000e-003**	**61.5136**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.5797	6.9332	3.9597	9.7300e-003		0.2573	0.2573		0.2367	0.2367	0.0000	942.5179	942.5179	0.3048		950.1386
Total	**0.5797**	**6.9332**	**3.9597**	**9.7300e-003**	**0.2386**	**0.2573**	**0.4959**	**0.0258**	**0.2367**	**0.2625**	**0.0000**	**942.5179**	**942.5179**	**0.3048**		**950.1386**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0251	0.0159	0.2322	6.0000e-004	0.0639	3.4000e-004	0.0642	0.0169	3.1000e-004	0.0172		61.0283	61.0283	1.5200e-003	1.5000e-003	61.5136
Total	**0.0251**	**0.0159**	**0.2322**	**6.0000e-004**	**0.0639**	**3.4000e-004**	**0.0642**	**0.0169**	**3.1000e-004**	**0.0172**		**61.0283**	**61.0283**	**1.5200e-003**	**1.5000e-003**	**61.5136**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2022

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					5.3119	0.0000	5.3119	2.5686	0.0000	2.5686			0.0000			0.0000
Off-Road	1.0832	12.0046	5.9360	0.0141		0.5173	0.5173		0.4759	0.4759		1,364.8198	1,364.8198	0.4414		1,375.8551
Total	**1.0832**	**12.0046**	**5.9360**	**0.0141**	**5.3119**	**0.5173**	**5.8292**	**2.5686**	**0.4759**	**3.0445**		**1,364.8198**	**1,364.8198**	**0.4414**		**1,375.8551**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0402	0.0255	0.3715	9.7000e-004	0.1022	5.4000e-004	0.1027	0.0271	4.9000e-004	0.0276		97.6452	97.6452	2.4200e-003	2.4000e-003	98.4218
Total	**0.0402**	**0.0255**	**0.3715**	**9.7000e-004**	**0.1022**	**5.4000e-004**	**0.1027**	**0.0271**	**4.9000e-004**	**0.0276**		**97.6452**	**97.6452**	**2.4200e-003**	**2.4000e-003**	**98.4218**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2022

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					2.3904	0.0000	2.3904	1.1559	0.0000	1.1559			0.0000			0.0000
Off-Road	1.0832	12.0046	5.9360	0.0141		0.5173	0.5173		0.4759	0.4759	0.0000	1,364.8198	1,364.8198	0.4414		1,375.8551
Total	**1.0832**	**12.0046**	**5.9360**	**0.0141**	**2.3904**	**0.5173**	**2.9077**	**1.1559**	**0.4759**	**1.6318**	**0.0000**	**1,364.8198**	**1,364.8198**	**0.4414**		**1,375.8551**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0402	0.0255	0.3715	9.7000e-004	0.1022	5.4000e-004	0.1027	0.0271	4.9000e-004	0.0276		97.6452	97.6452	2.4200e-003	2.4000e-003	98.4218
Total	**0.0402**	**0.0255**	**0.3715**	**9.7000e-004**	**0.1022**	**5.4000e-004**	**0.1027**	**0.0271**	**4.9000e-004**	**0.0276**		**97.6452**	**97.6452**	**2.4200e-003**	**2.4000e-003**	**98.4218**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2022

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	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**		**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

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	0.0000
Vendor	4.1100e-003	0.0973	0.0299	3.8000e-004	0.0123	1.1000e-003	0.0134	3.5300e-003	1.0600e-003	4.5900e-003		40.3514	40.3514	2.7000e-004	6.0500e-003	42.1606
Worker	0.0301	0.0191	0.2787	7.2000e-004	0.0766	4.0000e-004	0.0770	0.0203	3.7000e-004	0.0207		73.2339	73.2339	1.8200e-003	1.8000e-003	73.8163
Total	**0.0343**	**0.1163**	**0.3085**	**1.1000e-003**	**0.0889**	**1.5000e-003**	**0.0904**	**0.0239**	**1.4300e-003**	**0.0253**		**113.5853**	**113.5853**	**2.0900e-003**	**7.8500e-003**	**115.9769**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2022

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	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**	**0.0000**	**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

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	0.0000
Vendor	4.1100e-003	0.0973	0.0299	3.8000e-004	0.0123	1.1000e-003	0.0134	3.5300e-003	1.0600e-003	4.5900e-003		40.3514	40.3514	2.7000e-004	6.0500e-003	42.1606
Worker	0.0301	0.0191	0.2787	7.2000e-004	0.0766	4.0000e-004	0.0770	0.0203	3.7000e-004	0.0207		73.2339	73.2339	1.8200e-003	1.8000e-003	73.8163
Total	**0.0343**	**0.1163**	**0.3085**	**1.1000e-003**	**0.0889**	**1.5000e-003**	**0.0904**	**0.0239**	**1.4300e-003**	**0.0253**		**113.5853**	**113.5853**	**2.0900e-003**	**7.8500e-003**	**115.9769**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2022

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	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758		1,035.8246	1,035.8246	0.3017		1,043.3677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6469**	**5.9174**	**7.0348**	**0.0113**		**0.2961**	**0.2961**		**0.2758**	**0.2758**		**1,035.8246**	**1,035.8246**	**0.3017**		**1,043.3677**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0904	0.0573	0.8359	2.1700e-003	0.2299	1.2100e-003	0.2311	0.0610	1.1100e-003	0.0621		219.7017	219.7017	5.4500e-003	5.4100e-003	221.4490
Total	**0.0904**	**0.0573**	**0.8359**	**2.1700e-003**	**0.2299**	**1.2100e-003**	**0.2311**	**0.0610**	**1.1100e-003**	**0.0621**		**219.7017**	**219.7017**	**5.4500e-003**	**5.4100e-003**	**221.4490**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2022

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	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758	0.0000	1,035.8246	1,035.8246	0.3017		1,043.3677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6469**	**5.9174**	**7.0348**	**0.0113**		**0.2961**	**0.2961**		**0.2758**	**0.2758**	**0.0000**	**1,035.8246**	**1,035.8246**	**0.3017**		**1,043.3677**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0904	0.0573	0.8359	2.1700e-003	0.2299	1.2100e-003	0.2311	0.0610	1.1100e-003	0.0621		219.7017	219.7017	5.4500e-003	5.4100e-003	221.4490
Total	**0.0904**	**0.0573**	**0.8359**	**2.1700e-003**	**0.2299**	**1.2100e-003**	**0.2311**	**0.0610**	**1.1100e-003**	**0.0621**		**219.7017**	**219.7017**	**5.4500e-003**	**5.4100e-003**	**221.4490**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - 2022

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	19.4670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**19.6715**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0200e-003	3.1800e-003	0.0464	1.2000e-004	0.0128	7.0000e-005	0.0128	3.3900e-003	6.0000e-005	3.4500e-003		12.2057	12.2057	3.0000e-004	3.0000e-004	12.3027
Total	**5.0200e-003**	**3.1800e-003**	**0.0464**	**1.2000e-004**	**0.0128**	**7.0000e-005**	**0.0128**	**3.3900e-003**	**6.0000e-005**	**3.4500e-003**		**12.2057**	**12.2057**	**3.0000e-004**	**3.0000e-004**	**12.3027**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - 2022

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	19.4670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**19.6715**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0200e-003	3.1800e-003	0.0464	1.2000e-004	0.0128	7.0000e-005	0.0128	3.3900e-003	6.0000e-005	3.4500e-003		12.2057	12.2057	3.0000e-004	3.0000e-004	12.3027
Total	**5.0200e-003**	**3.1800e-003**	**0.0464**	**1.2000e-004**	**0.0128**	**7.0000e-005**	**0.0128**	**3.3900e-003**	**6.0000e-005**	**3.4500e-003**		**12.2057**	**12.2057**	**3.0000e-004**	**3.0000e-004**	**12.3027**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Manufacturing	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Manufacturing	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Unrefrigerated Warehouse-No	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.511221	0.052103	0.170611	0.160645	0.028932	0.007649	0.013284	0.025916	0.000654	0.000315	0.023645	0.001472	0.003552
Manufacturing	0.511221	0.052103	0.170611	0.160645	0.028932	0.007649	0.013284	0.025916	0.000654	0.000315	0.023645	0.001472	0.003552
Unrefrigerated Warehouse-No Rail	0.511221	0.052103	0.170611	0.160645	0.028932	0.007649	0.013284	0.025916	0.000654	0.000315	0.023645	0.001472	0.003552

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	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	8.3800e-003	0.0762	0.0640	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003		91.4661	91.4661	1.7500e-003	1.6800e-003	92.0097
NaturalGas Unmitigated	8.3800e-003	0.0762	0.0640	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003		91.4661	91.4661	1.7500e-003	1.6800e-003	92.0097

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	75.9945	8.2000e-004	7.4500e-003	6.2600e-003	4.0000e-005		5.7000e-004	5.7000e-004		5.7000e-004	5.7000e-004		8.9405	8.9405	1.7000e-004	1.6000e-004	8.9937
Manufacturing	595.479	6.4200e-003	0.0584	0.0490	3.5000e-004		4.4400e-003	4.4400e-003		4.4400e-003	4.4400e-003		70.0564	70.0564	1.3400e-003	1.2800e-003	70.4727
Unrefrigerated Warehouse-No Rail	105.988	1.1400e-003	0.0104	8.7300e-003	6.0000e-005		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004		12.4692	12.4692	2.4000e-004	2.3000e-004	12.5433
Total		**8.3800e-003**	**0.0762**	**0.0640**	**4.5000e-004**		**5.8000e-003**	**5.8000e-003**		**5.8000e-003**	**5.8000e-003**		**91.4661**	**91.4661**	**1.7500e-003**	**1.6700e-003**	**92.0097**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0759945	8.2000e-004	7.4500e-003	6.2600e-003	4.0000e-005		5.7000e-004	5.7000e-004		5.7000e-004	5.7000e-004		8.9405	8.9405	1.7000e-004	1.6000e-004	8.9937
Manufacturing	0.595479	6.4200e-003	0.0584	0.0490	3.5000e-004		4.4400e-003	4.4400e-003		4.4400e-003	4.4400e-003		70.0564	70.0564	1.3400e-003	1.2800e-003	70.4727
Unrefrigerated Warehouse-No Rail	0.105988	1.1400e-003	0.0104	8.7300e-003	6.0000e-005		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004		12.4692	12.4692	2.4000e-004	2.3000e-004	12.5433
Total		**8.3800e-003**	**0.0762**	**0.0640**	**4.5000e-004**		**5.8000e-003**	**5.8000e-003**		**5.8000e-003**	**5.8000e-003**		**91.4661**	**91.4661**	**1.7500e-003**	**1.6700e-003**	**92.0097**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	0.3531	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0600e-003	3.0600e-003	1.0000e-005		3.2600e-003
Unmitigated	0.3531	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0600e-003	3.0600e-003	1.0000e-005		3.2600e-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	lb/day										lb/day					
Architectural Coating	0.0533					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2996					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0600e-003	3.0600e-003	1.0000e-005		3.2600e-003
Total	**0.3531**	**1.0000e-005**	**1.4300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.0600e-003**	**3.0600e-003**	**1.0000e-005**		**3.2600e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0533					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2996					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0600e-003	3.0600e-003	1.0000e-005		3.2600e-003
Total	**0.3531**	**1.0000e-005**	**1.4300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.0600e-003**	**3.0600e-003**	**1.0000e-005**		**3.2600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Darling Use Permit Amendment

San Joaquin Valley Unified APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	10.50	1000sqft	0.24	10,500.00	0
General Light Industry	1.34	1000sqft	0.03	1,340.00	0
Unrefrigerated Warehouse-No Rail	2.16	1000sqft	0.05	2,160.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Architectural Coatings phase updated to reflect construction plan.

Vehicle Trips - Mobile source emissions calculated outside of CalEEMod.

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	PhaseEndDate	11/18/2022	11/25/2022
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	ST_TR	1.99	0.00
tblVehicleTrips	ST_TR	6.42	0.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	SU_TR	5.09	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	4.96	0.00
tblVehicleTrips	WD_TR	3.93	0.00
tblVehicleTrips	WD_TR	1.74	0.00

2.0 Emissions Summary

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2022	19.6763	12.0347	7.8494	0.0150	5.4141	0.5178	5.9319	2.5957	0.4764	3.0720	0.0000	1,451.5885	1,451.5885	0.4439	8.0700e-003	1,463.4866
Maximum	**19.6763**	**12.0347**	**7.8494**	**0.0150**	**5.4141**	**0.5178**	**5.9319**	**2.5957**	**0.4764**	**3.0720**	**0.0000**	**1,451.5885**	**1,451.5885**	**0.4439**	**8.0700e-003**	**1,463.4866**

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					
2022	19.6763	12.0347	7.8494	0.0150	2.4926	0.5178	3.0104	1.1830	0.4764	1.6593	0.0000	1,451.5885	1,451.5885	0.4439	8.0700e-003	1,463.4866
Maximum	**19.6763**	**12.0347**	**7.8494**	**0.0150**	**2.4926**	**0.5178**	**3.0104**	**1.1830**	**0.4764**	**1.6593**	**0.0000**	**1,451.5885**	**1,451.5885**	**0.4439**	**8.0700e-003**	**1,463.4866**

	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**	**53.96**	**0.00**	**49.25**	**54.43**	**0.00**	**45.99**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.3531	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0600e-003	3.0600e-003	1.0000e-005		3.2600e-003
Energy	8.3800e-003	0.0762	0.0640	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003		91.4661	91.4661	1.7500e-003	1.6800e-003	92.0097
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3615**	**0.0762**	**0.0655**	**4.6000e-004**	**0.0000**	**5.8000e-003**	**5.8000e-003**	**0.0000**	**5.8000e-003**	**5.8000e-003**		**91.4692**	**91.4692**	**1.7600e-003**	**1.6800e-003**	**92.0129**

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	0.3531	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0600e-003	3.0600e-003	1.0000e-005		3.2600e-003
Energy	8.3800e-003	0.0762	0.0640	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003		91.4661	91.4661	1.7500e-003	1.6800e-003	92.0097
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3615**	**0.0762**	**0.0655**	**4.6000e-004**	**0.0000**	**5.8000e-003**	**5.8000e-003**	**0.0000**	**5.8000e-003**	**5.8000e-003**		**91.4692**	**91.4692**	**1.7600e-003**	**1.6800e-003**	**92.0129**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	Demolition	Demolition	6/1/2022	6/14/2022	5	10	
2	Site Preparation	Site Preparation	6/15/2022	6/15/2022	5	1	
3	Grading	Grading	6/16/2022	6/17/2022	5	2	
4	Building Construction	Building Construction	6/18/2022	11/4/2022	5	100	
5	Paving	Paving	11/5/2022	11/11/2022	5	5	
6	Architectural Coating	Architectural Coating	11/12/2022	11/25/2022	5	10	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 21,000; Non-Residential Outdoor: 7,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	Graders	1	6.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	6.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2022

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	0.7094	6.4138	7.4693	0.0120		0.3375	0.3375		0.3225	0.3225		1,147.9025	1,147.9025	0.2119		1,153.2001
Total	**0.7094**	**6.4138**	**7.4693**	**0.0120**		**0.3375**	**0.3375**		**0.3225**	**0.3225**		**1,147.9025**	**1,147.9025**	**0.2119**		**1,153.2001**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0472	0.0376	0.3800	1.0700e-003	0.1277	6.7000e-004	0.1284	0.0339	6.2000e-004	0.0345		108.4609	108.4609	3.1600e-003	3.3500e-003	109.5394
Total	**0.0472**	**0.0376**	**0.3800**	**1.0700e-003**	**0.1277**	**6.7000e-004**	**0.1284**	**0.0339**	**6.2000e-004**	**0.0345**		**108.4609**	**108.4609**	**3.1600e-003**	**3.3500e-003**	**109.5394**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2022

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	0.7094	6.4138	7.4693	0.0120		0.3375	0.3375		0.3225	0.3225	0.0000	1,147.9025	1,147.9025	0.2119		1,153.2001
Total	**0.7094**	**6.4138**	**7.4693**	**0.0120**		**0.3375**	**0.3375**		**0.3225**	**0.3225**	**0.0000**	**1,147.9025**	**1,147.9025**	**0.2119**		**1,153.2001**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0472	0.0376	0.3800	1.0700e-003	0.1277	6.7000e-004	0.1284	0.0339	6.2000e-004	0.0345		108.4609	108.4609	3.1600e-003	3.3500e-003	109.5394
Total	**0.0472**	**0.0376**	**0.3800**	**1.0700e-003**	**0.1277**	**6.7000e-004**	**0.1284**	**0.0339**	**6.2000e-004**	**0.0345**		**108.4609**	**108.4609**	**3.1600e-003**	**3.3500e-003**	**109.5394**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.5797	6.9332	3.9597	9.7300e-003		0.2573	0.2573		0.2367	0.2367		942.5179	942.5179	0.3048		950.1386
Total	**0.5797**	**6.9332**	**3.9597**	**9.7300e-003**	**0.5303**	**0.2573**	**0.7876**	**0.0573**	**0.2367**	**0.2940**		**942.5179**	**942.5179**	**0.3048**		**950.1386**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0236	0.0188	0.1900	5.4000e-004	0.0639	3.4000e-004	0.0642	0.0169	3.1000e-004	0.0172		54.2305	54.2305	1.5800e-003	1.6800e-003	54.7697
Total	**0.0236**	**0.0188**	**0.1900**	**5.4000e-004**	**0.0639**	**3.4000e-004**	**0.0642**	**0.0169**	**3.1000e-004**	**0.0172**		**54.2305**	**54.2305**	**1.5800e-003**	**1.6800e-003**	**54.7697**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.5797	6.9332	3.9597	9.7300e-003		0.2573	0.2573		0.2367	0.2367	0.0000	942.5179	942.5179	0.3048		950.1386
Total	**0.5797**	**6.9332**	**3.9597**	**9.7300e-003**	**0.2386**	**0.2573**	**0.4959**	**0.0258**	**0.2367**	**0.2625**	**0.0000**	**942.5179**	**942.5179**	**0.3048**		**950.1386**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0236	0.0188	0.1900	5.4000e-004	0.0639	3.4000e-004	0.0642	0.0169	3.1000e-004	0.0172		54.2305	54.2305	1.5800e-003	1.6800e-003	54.7697
Total	**0.0236**	**0.0188**	**0.1900**	**5.4000e-004**	**0.0639**	**3.4000e-004**	**0.0642**	**0.0169**	**3.1000e-004**	**0.0172**		**54.2305**	**54.2305**	**1.5800e-003**	**1.6800e-003**	**54.7697**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2022

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					5.3119	0.0000	5.3119	2.5686	0.0000	2.5686			0.0000			0.0000
Off-Road	1.0832	12.0046	5.9360	0.0141		0.5173	0.5173		0.4759	0.4759		1,364.8198	1,364.8198	0.4414		1,375.8551
Total	**1.0832**	**12.0046**	**5.9360**	**0.0141**	**5.3119**	**0.5173**	**5.8292**	**2.5686**	**0.4759**	**3.0445**		**1,364.8198**	**1,364.8198**	**0.4414**		**1,375.8551**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0301	0.3040	8.6000e-004	0.1022	5.4000e-004	0.1027	0.0271	4.9000e-004	0.0276		86.7687	86.7687	2.5300e-003	2.6800e-003	87.6315
Total	**0.0377**	**0.0301**	**0.3040**	**8.6000e-004**	**0.1022**	**5.4000e-004**	**0.1027**	**0.0271**	**4.9000e-004**	**0.0276**		**86.7687**	**86.7687**	**2.5300e-003**	**2.6800e-003**	**87.6315**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2022

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					2.3904	0.0000	2.3904	1.1559	0.0000	1.1559			0.0000			0.0000
Off-Road	1.0832	12.0046	5.9360	0.0141		0.5173	0.5173		0.4759	0.4759	0.0000	1,364.8198	1,364.8198	0.4414		1,375.8551
Total	**1.0832**	**12.0046**	**5.9360**	**0.0141**	**2.3904**	**0.5173**	**2.9077**	**1.1559**	**0.4759**	**1.6318**	**0.0000**	**1,364.8198**	**1,364.8198**	**0.4414**		**1,375.8551**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0301	0.3040	8.6000e-004	0.1022	5.4000e-004	0.1027	0.0271	4.9000e-004	0.0276		86.7687	86.7687	2.5300e-003	2.6800e-003	87.6315
Total	**0.0377**	**0.0301**	**0.3040**	**8.6000e-004**	**0.1022**	**5.4000e-004**	**0.1027**	**0.0271**	**4.9000e-004**	**0.0276**		**86.7687**	**86.7687**	**2.5300e-003**	**2.6800e-003**	**87.6315**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2022

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	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**		**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

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	0.0000
Vendor	3.9900e-003	0.1038	0.0310	3.8000e-004	0.0123	1.1100e-003	0.0134	3.5300e-003	1.0600e-003	4.5900e-003		40.3912	40.3912	2.6000e-004	6.0600e-003	42.2039
Worker	0.0283	0.0226	0.2280	6.4000e-004	0.0766	4.0000e-004	0.0770	0.0203	3.7000e-004	0.0207		65.0765	65.0765	1.9000e-003	2.0100e-003	65.7236
Total	**0.0323**	**0.1264**	**0.2590**	**1.0200e-003**	**0.0889**	**1.5100e-003**	**0.0904**	**0.0239**	**1.4300e-003**	**0.0253**		**105.4678**	**105.4678**	**2.1600e-003**	**8.0700e-003**	**107.9276**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2022

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	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**	**0.0000**	**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

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	0.0000
Vendor	3.9900e-003	0.1038	0.0310	3.8000e-004	0.0123	1.1100e-003	0.0134	3.5300e-003	1.0600e-003	4.5900e-003		40.3912	40.3912	2.6000e-004	6.0600e-003	42.2039
Worker	0.0283	0.0226	0.2280	6.4000e-004	0.0766	4.0000e-004	0.0770	0.0203	3.7000e-004	0.0207		65.0765	65.0765	1.9000e-003	2.0100e-003	65.7236
Total	**0.0323**	**0.1264**	**0.2590**	**1.0200e-003**	**0.0889**	**1.5100e-003**	**0.0904**	**0.0239**	**1.4300e-003**	**0.0253**		**105.4678**	**105.4678**	**2.1600e-003**	**8.0700e-003**	**107.9276**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2022

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	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758		1,035.8246	1,035.8246	0.3017		1,043.3677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6469**	**5.9174**	**7.0348**	**0.0113**		**0.2961**	**0.2961**		**0.2758**	**0.2758**		**1,035.8246**	**1,035.8246**	**0.3017**		**1,043.3677**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0849	0.0677	0.6841	1.9300e-003	0.2299	1.2100e-003	0.2311	0.0610	1.1100e-003	0.0621		195.2296	195.2296	5.6900e-003	6.0400e-003	197.1709
Total	**0.0849**	**0.0677**	**0.6841**	**1.9300e-003**	**0.2299**	**1.2100e-003**	**0.2311**	**0.0610**	**1.1100e-003**	**0.0621**		**195.2296**	**195.2296**	**5.6900e-003**	**6.0400e-003**	**197.1709**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2022

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	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758	0.0000	1,035.8246	1,035.8246	0.3017		1,043.3677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6469**	**5.9174**	**7.0348**	**0.0113**		**0.2961**	**0.2961**		**0.2758**	**0.2758**	**0.0000**	**1,035.8246**	**1,035.8246**	**0.3017**		**1,043.3677**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0849	0.0677	0.6841	1.9300e-003	0.2299	1.2100e-003	0.2311	0.0610	1.1100e-003	0.0621		195.2296	195.2296	5.6900e-003	6.0400e-003	197.1709
Total	**0.0849**	**0.0677**	**0.6841**	**1.9300e-003**	**0.2299**	**1.2100e-003**	**0.2311**	**0.0610**	**1.1100e-003**	**0.0621**		**195.2296**	**195.2296**	**5.6900e-003**	**6.0400e-003**	**197.1709**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - 2022

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	19.4670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**19.6715**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7200e-003	3.7600e-003	0.0380	1.1000e-004	0.0128	7.0000e-005	0.0128	3.3900e-003	6.0000e-005	3.4500e-003		10.8461	10.8461	3.2000e-004	3.4000e-004	10.9539
Total	**4.7200e-003**	**3.7600e-003**	**0.0380**	**1.1000e-004**	**0.0128**	**7.0000e-005**	**0.0128**	**3.3900e-003**	**6.0000e-005**	**3.4500e-003**		**10.8461**	**10.8461**	**3.2000e-004**	**3.4000e-004**	**10.9539**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - 2022

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	19.4670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**19.6715**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7200e-003	3.7600e-003	0.0380	1.1000e-004	0.0128	7.0000e-005	0.0128	3.3900e-003	6.0000e-005	3.4500e-003		10.8461	10.8461	3.2000e-004	3.4000e-004	10.9539
Total	**4.7200e-003**	**3.7600e-003**	**0.0380**	**1.1000e-004**	**0.0128**	**7.0000e-005**	**0.0128**	**3.3900e-003**	**6.0000e-005**	**3.4500e-003**		**10.8461**	**10.8461**	**3.2000e-004**	**3.4000e-004**	**10.9539**

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Manufacturing	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Manufacturing	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Unrefrigerated Warehouse-No	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.511221	0.052103	0.170611	0.160645	0.028932	0.007649	0.013284	0.025916	0.000654	0.000315	0.023645	0.001472	0.003552
Manufacturing	0.511221	0.052103	0.170611	0.160645	0.028932	0.007649	0.013284	0.025916	0.000654	0.000315	0.023645	0.001472	0.003552
Unrefrigerated Warehouse-No Rail	0.511221	0.052103	0.170611	0.160645	0.028932	0.007649	0.013284	0.025916	0.000654	0.000315	0.023645	0.001472	0.003552

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	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	8.3800e-003	0.0762	0.0640	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003		91.4661	91.4661	1.7500e-003	1.6800e-003	92.0097
NaturalGas Unmitigated	8.3800e-003	0.0762	0.0640	4.6000e-004		5.7900e-003	5.7900e-003		5.7900e-003	5.7900e-003		91.4661	91.4661	1.7500e-003	1.6800e-003	92.0097

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	75.9945	8.2000e-004	7.4500e-003	6.2600e-003	4.0000e-005		5.7000e-004	5.7000e-004		5.7000e-004	5.7000e-004		8.9405	8.9405	1.7000e-004	1.6000e-004	8.9937
Manufacturing	595.479	6.4200e-003	0.0584	0.0490	3.5000e-004		4.4400e-003	4.4400e-003		4.4400e-003	4.4400e-003		70.0564	70.0564	1.3400e-003	1.2800e-003	70.4727
Unrefrigerated Warehouse-No Rail	105.988	1.1400e-003	0.0104	8.7300e-003	6.0000e-005		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004		12.4692	12.4692	2.4000e-004	2.3000e-004	12.5433
Total		**8.3800e-003**	**0.0762**	**0.0640**	**4.5000e-004**		**5.8000e-003**	**5.8000e-003**		**5.8000e-003**	**5.8000e-003**		**91.4661**	**91.4661**	**1.7500e-003**	**1.6700e-003**	**92.0097**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0759945	8.2000e-004	7.4500e-003	6.2600e-003	4.0000e-005		5.7000e-004	5.7000e-004		5.7000e-004	5.7000e-004		8.9405	8.9405	1.7000e-004	1.6000e-004	8.9937
Manufacturing	0.595479	6.4200e-003	0.0584	0.0490	3.5000e-004		4.4400e-003	4.4400e-003		4.4400e-003	4.4400e-003		70.0564	70.0564	1.3400e-003	1.2800e-003	70.4727
Unrefrigerated Warehouse-No Rail	0.105988	1.1400e-003	0.0104	8.7300e-003	6.0000e-005		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004		12.4692	12.4692	2.4000e-004	2.3000e-004	12.5433
Total		**8.3800e-003**	**0.0762**	**0.0640**	**4.5000e-004**		**5.8000e-003**	**5.8000e-003**		**5.8000e-003**	**5.8000e-003**		**91.4661**	**91.4661**	**1.7500e-003**	**1.6700e-003**	**92.0097**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	0.3531	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0600e-003	3.0600e-003	1.0000e-005		3.2600e-003
Unmitigated	0.3531	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0600e-003	3.0600e-003	1.0000e-005		3.2600e-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	lb/day										lb/day					
Architectural Coating	0.0533					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2996					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0600e-003	3.0600e-003	1.0000e-005		3.2600e-003
Total	**0.3531**	**1.0000e-005**	**1.4300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.0600e-003**	**3.0600e-003**	**1.0000e-005**		**3.2600e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0533					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2996					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.0600e-003	3.0600e-003	1.0000e-005		3.2600e-003
Total	**0.3531**	**1.0000e-005**	**1.4300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.0600e-003**	**3.0600e-003**	**1.0000e-005**		**3.2600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Darling Use Permit Amendment - San Joaquin Valley Unified APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B – MOBILE SOURCE EMISSIONS

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Appendix B:
Mobile Source Emissions

Air Quality and GHG
Technical Report

Prepared for:

Darling Ingredients, Inc.
11946 Carpenter Road
Crows Landing, CA 95313

May 2022

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ATTACHMENT B-1 – EMISSION CALCULATION WORKSHEETS

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List of Acronyms and Abbreviations

CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAS No.	Chemical Abstract Service Number
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DPM	Diesel Particulate Matter
g	Gram
gal	Gallon
GHG	Greenhouse Gas
hr	Hour
kg	Kilogram
lb	Pound
LDT1	Light-Duty Truck (EMFAC Category 1)
m^2	Square Meter
MT	Metric Ton
N_2O	Nitrous Oxide
No.	Number
NO_x	Nitrogen Oxides
$PM_{2.5}$	Fine Particulate Mater
PM_{10}	Respirable Particulate Matter
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_x	Sulfur Oxides
TAC	Toxic Air Contaminant
TPD	Tons per Day
TPY	Tons per Year
U.S. EPA	United States Environmental Protection Agency
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
wt.	Weight
yr	Year

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Appendix B: Mobile Source Emissions

1.0 INTRODUCTION

1.1 Overview

Emissions estimates have been prepared for the mobile sources required to operate the proposed Capacity Upgrade Project (Project) at the Darling Ingredients, Inc. (Darling) Turlock facility. Emissions estimates have been prepared for the following source categories:

- Onroad Vehicle Exhaust Emissions;
- Fugitive Dust from Vehicle Travel on Paved Roads;
- Toxic Air Contaminant (TAC) Emissions:
  - Vehicle Exhaust TAC Emissions:
    - Diesel Exhaust Emissions, and
    - Gasoline Exhaust Emissions; and
  - Paved Road Dust and Particulate TAC Emissions.

Mobile source emissions estimates are made for the vehicle operations for the Baseline period (the average of the past 2 years of operation) and the vehicle operations required for facility operation with the proposed Project.

For each category of emissions, the calculation methodology is explained and the data and assumptions used in the calculations are provided. Emissions are summarized by category in each section. A summary of mobile source pollutant emissions is provided in Section 4.0. Emission calculation worksheets are provided in Attachment B-1.

1.2 Facility Throughput

Baseline throughput, proposed Project throughput, and the anticipated truck traffic associated with the Project is summarized in Table 1-1.

Table 1-1: Throughput Information

Processing Step	2-Year Historic Baseline Throughput		Proposed Project Throughput		2-Year Historic Baseline Truck Traffic		Proposed Project Truck Traffic	
	TPD	TPY	TPD	TPY	Truck/ Day	Truck/ Yr	Truck/ Day	Truck/ Yr
Raw Material Incoming	387	120,775	925	337,625	26	8,052	62	22,509
Fat Load-out	49	15,246	185	67,525	5	1,525	19	6,753
Protein Load-out	97	30,326	185	67,525	10	3,033	19	6,753

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2.0 VEHICLE EXHAUST EMISSIONS

2.1 Onroad Vehicle Exhaust Emissions

Employee travel, routine business travel, and the transport of raw materials to the facility and finished product from the facility result in onroad vehicle exhaust emissions.

2.1.1 Methodology

Emissions from motor vehicles are estimated using factors that relate emissions of a given air contaminant to vehicle miles traveled (VMT), or other relevant parameters. Emissions from motor vehicles are typically determined using emission factors that are representative of a given vehicle category (e.g., passenger car, light-duty truck) and fuel type that reflect the characteristics of the population of the vehicle type in a given vehicle fleet. The fleet emission factors reflect the characteristics of the vehicles in the fleet, such as the type of vehicle, the age of the vehicle, the weight of the vehicle, fuel efficiency, etc. The factors also reflect the demographics of the region in which the vehicles operate and the regulatory requirements applicable to the types of vehicles which comprise the fleet.

The emission factors change on an annual basis as older vehicles are replaced by new vehicles and as regulatory requirements that mandate lower standards become effective. Consequently, the models used to generate these factors are complex. In California, the recommended model for calculating emissions from onroad mobile sources is EMFAC2021 (CARB 2021a), developed and maintained by the California Air Resources Board (CARB). The EMFAC2021 model was used to generate emission factors required for calculating the onroad emissions from the vehicle fleet required for operation of the proposed Project.[1] EMFAC was run with San Joaquin Valley Air Pollution Control District (SJVAPCD) as the region for 2024, the first year of operation expected for the Project. Subsequent years are expected to have lower emissions as new low-emitting engines and truck technologies are implemented across the fleet.

The fleet consists of the vehicles used to transport personnel and supplies to the facility, conduct routine business activities, deliver raw materials to the facility, and deliver liquid (fat) and solid (protein) products to end users.

Onroad emissions include running exhaust, idling exhaust, and startup exhaust. Fugitive particulate emissions include tire wear and brake wear. Fugitive hydrocarbon emissions include running loss, hot soak, and diurnal emissions. The off-site mileage and the on-site mileage are also used to calculate fugitive dust emissions from travel on paved roads.

Emissions are calculated for each vehicle category and fuel type using the total VMT, operating days, or number of starts per day, as appropriate. Calculation procedures are summarized in Table 2-1.

[1] The EMFAC output report developed using the online tool provided the fleet size (number of vehicles), total annual mileage for the fleet, total number of trips, operating days, and total emissions for the fleet of all relevant pollutants. This information was used to calculate emission factors in units of grams per mile, gram per start, and gram per day for each pollutant, as appropriate. The EMFAC output report along with the calculated emission factors are included in Attachment B-1.

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Table 2-1: EMFAC2021 Onroad Vehicle Emission Calculations

EMFAC2021 Component		Calculation Procedure
g/VMT	Running Exhaust	Calculated using total annual VMT
	Tire & Brake Wear	Calculated using total annual VMT
g/Trip	Startup	Calculated from number of trips
	Hot Soak	Calculated from number of trips
	Running Loss	Calculated from number of trips
	Diurnal Loss	Calculated from number of trips
g/Vehicle-Day	Idle Exhaust	Calculated based on the vehicle operating days

2.1.2 Vehicle Activity

The daily operation of the Project will require the use of onroad mobile sources for transport of personnel, conducting routine business, transport of raw materials, and transport of finished product. Operational activities are listed in Table 2-2.

Table 2-2: Operational Activities

Activity	Required Vehicles
Employee commute	Light-duty cars or trucks for employee commute
Misc. business activity	No change from Baseline operations, excluded from analysis
Laboratory services	No change from Baseline operations, excluded from analysis
Delivery of office supplies	No change from Baseline operations, excluded from analysis
Deliver feedstock	Heavy-Heavy-Duty Diesel Truck (15 cubic yard capacity)
Transport product	Heavy-Heavy-Duty Diesel Truck (10 cubic yard capacity)

The EMFAC2021 model was run to derive emission factors for light-duty trucks (LDT1) (assumed for employee commute vehicles) and T7 trucks (assumed for raw material and finished product hauling). The EMFAC2021 factors used for calculating emissions from the onroad mobile sources are included in Tables 3.1 and 3.2 in Attachment B-1 for the Project and Baseline periods, respectively.

On-site mileage for raw material and product delivery trucks is estimated to be no more than 0.25 miles, one way. Off-site mileage for the raw material trucks assumes an average one-way distance of 30 miles. Off-site mileage for the finished product (fat and protein) trucks assumes an average one-way distance of 30 miles. Off-site mileage for the workers assumes that all workers live in Modesto, a distance of approximately 12 miles. The proposed Project is expected to require up to 10 additional employees.

Table 2-3 summarizes the information used with the EMFAC emission factors to calculate the onroad mobile source emissions at the maximum requested processing rate of 925 tons per day and 337,625 tons per year. Table 2-4 summarizes the information used with the EMFAC emission factors to calculate the onroad mobile source emissions at the 2-year historic average processing rate (Baseline period) of 387 tons per day and 120,775 tons per year.

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Table 2-3: Onroad Mobile Source Activity for Proposed Project

Vehicle Type[1]	Vehicle Use	Oper. Days	Veh/ Day	One-Way Trips per Vehicle	One-Way Trips per Year	One-Way On-Site Trip Mileage	One-Way Off-Site Trip Mileage	Annual Travel (VMT/yr)
LDT1	Supervisor	312	2	2	1,248	0.25	12	15,288
LDT1	Technical Staff	312	2	2	1,248	0.25	12	15,288
LDT1	Mechanic	312	3	2	1,872	0.25	12	22,932
LDT1	Equipment Operators	312	25	2	15,600	0.25	12	191,100
T7 Tractor	Ship Raw Material to Facility[2]	312	62	2	38,688	0.25	30	1,170,312
T7 Tractor	Ship Product from Facility	312	38	2	23,712	0.25	30	717,288

Notes:

1. LDT1 (Light-Duty Truck) and T7 Tractor (diesel) refer to vehicle categories in EMFAC2017. LDT1 is gasoline fueled; T7 are diesel fueled.

Table 2-4: Onroad Mobile Source Activity for Baseline Period

Vehicle Type[1]	Vehicle Use	Oper. Days	Veh/ Day	One-Way Trips per Vehicle	One-Way Trips per Year	One-Way On-Site Trip Mileage	One-Way Off-Site Trip Mileage	Annual Travel (VMT/yr)
LDT1	Supervisor	312	2	2	1,248	0.25	12	15,288
LDT1	Technical Staff	312	2	2	1,248	0.25	12	15,288
LDT1	Mechanic	312	3	2	1,872	0.25	12	22,932
LDT1	Equipment Operators	312	20	2	12,480	0.25	12	152,880
T7 Tractor	Ship Raw Material to Facility[2]	312	26	2	16,224	0.25	30	490,776
T7 Tractor	Ship Product from Facility	312	15	2	9,360	0.25	30	283,140

Notes:

1. LDT1 (Light Duty Truck) and T7 Tractor (diesel) refer to vehicle categories in EMFAC2021. LDT1 is assumed to be gasoline fueled; T7 are diesel fueled.

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2.1.3 Onroad Vehicle Exhaust Emissions

The annual emissions were calculated for 2024. The emissions estimates are summarized in Tables 2-5 and 2-6 for criteria pollutants and greenhouse gases (GHG), respectively.

Table 2-5: Summary of Daily Criteria Pollutant Emissions from Onroad Vehicles

Type	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Proposed Project						
Exhaust	32.53	1.47	17.39	0.22	0.32	0.30
Fugitive	0.00	0.00	0.00	0.00	1.56	0.50
Total (lb/day)	32.53	1.47	17.39	0.22	1.88	0.80
Baseline Period						
Exhaust	13.48	0.86	8.78	0.09	0.13	0.13
Fugitive	0.00	0.00	0.00	0.00	1.56	0.50
Total (lb/day)	13.48	0.86	8.78	0.09	1.69	0.62
Net Increase						
Total (lb/day)	19.05	0.62	8.61	0.13	0.19	0.18

Table 2-6: Summary of Annual Criteria Pollutant Emissions from Onroad Vehicles

Type	NO_x (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
Proposed Project						
Exhaust	10149.93	361.01	5424.71	68.88	99.04	94.70
Fugitive	–	101.14	–	–	486.28	154.72
Total (lb/yr)	10149.93	462.15	5424.71	68.88	585.31	249.41
Total (TPY)	5.07	0.23	2.71	0.03	0.29	0.12
Baseline Period						
Exhaust	4206.90	167.93	2737.95	28.93	41.09	39.27
Fugitive	–	101.14	–	–	486.28	154.72
Total (lb/yr)	4206.90	269.07	2737.95	28.93	527.37	193.99
Total (TPY)	2.10	0.13	1.37	0.01	0.26	0.10
Net Increase						
Total (lb/yr)	5943.02	294.22	2686.76	39.95	544.22	210.14
Total (TPY)	2.97	0.10	1.34	0.02	0.03	0.03

Table 2-7: Summary of GHG Emissions from Onroad Vehicles

Period	CO_2 (MT/yr)	CH_4 (kg/yr)	N_2O (kg/yr)	Total CO_2e (MT/yr)
Proposed Project	3,298.01	0.01	0.51	3,450
Baseline	1,383.62	0.01	0.21	1,446
Net Increase	–	–	–	2,004

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3.0 DUST/PARTICULATE EMISSIONS

Operations that involve the movement of material or that expose or disturb erodible surfaces may generate fugitive dust. During Project operations, fugitive dust is generated by the transport of raw material and finished product on paved roads.

Fugitive dust emissions were calculated using United States Environmental Protection Agency (U.S. EPA)-recommended equations that generate "predictive emission factors" that are specific to the given activity. The calculations generally take into account the silt and moisture content of the material. The methodologies and detailed emission calculations are presented in the following sections.

3.1 Fugitive Dust from Vehicle Travel on Paved Roads

3.1.1 Methodology

Particulate emissions may occur whenever vehicles travel on a paved roadway surface due to the resuspension of silt that accumulates on the roadway surface. Emissions from travel on paved roads are calculated using Equation 3-1, which is reproduced from EPA AP-42, Chapter 13.2.1, Paved Roads (EPA 2011).

$$EF = k \times (sL)^{0.91} \times W^{1.02} \times Cf \qquad \text{(Eq. 3-1)}$$

Where:

EF = Emission factor (grams/VMT)

k = Particle size multiplier (dimensionless)

sL = Roadway silt loading (g/m^2)

W = Average roadway fleet weight (tons)

Cf = Rain correction factor (Cf = 1-P/4N, where P is the number of days with at least 0.01 inch rain and N is the number of days in the period, i.e., 365)

Table 3-1: Paved Road Emission Factor Data

Variable	Value
k (PM_{10})	1.00 g/VMT
k ($PM_{2.5}$)	0.25 g/VMT
Rain Days[1]	51 days/year

Notes:

1. CAPCOA 2021, Table 1.1.

Because daily emissions are relevant to the analysis and it does not rain daily, the rain correction factor is excluded from the calculations. This approach ensures that daily emissions are not underestimated and that the annual emissions are conservative (i.e., are likely overestimated).

Equation 3-1 calls for the average weight of all vehicles traveling the road. For example, if 99% of traffic on the road consists of 2-ton cars/trucks while the remaining 1% consists of 20-ton trucks, then the average weight "W" is 2.2 tons. More specifically, Equation 3-1

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is not intended to be used to calculate a separate emission factor for each vehicle weight class. Instead, only one emission factor should be calculated to represent the "fleet" average weight of all vehicles traveling the road (EPA 2011). According to CARB, the average fleet weight in California is 2.4 tons.

Emissions from paved roads depend on the roadway silt loading, which in turn depends on the volume of traffic experienced by a given type of roadway. The roadway silt content used in the calculations was obtained from the area source methodology used by the SJVAPCD for calculating fugitive dust emissions from paved roads. The SJVAPCD-recommended silt loading factors by road type are listed in Table 3-2. The calculated respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$) emission factors for each road type are shown in Table 3-3.

Table 3-2: Paved Road Silt Loading[1]

Freeway (g/m^2)	Major (g/m^2)	Collector (g/m^2)	Local (g/m^2)	Rural[2] (g/m^2)	On-Site[3] (g/m^2)
0.020	0.035	0.035	0.320	1.60	1.60

Notes:

1. SJVAPCD 2005.
2. The rural roadway type is a roadway type specific to the SJVAPCD methodology. It is intended to capture roadways that have higher than normal silt loading due to the nature of the vehicular traffic (i.e., agricultural, industrial, oilfield).
3. On-site surfaces are assumed to be paved with asphalt or concrete. Silt loading is assumed to be similar to rural roads.

Table 3-3: Paved Road Particulate Emission Factors

Pollutant	Freeway (lb/VMT)	Major (lb/VMT)	Collector (lb/VMT)	Local (lb/VMT)	Rural (lb/VMT)	On-Site (lb/VMT)
PM_{10}	1.48E-04	2.46E-04	2.46E-04	1.84E-03	7.96E-03	7.96E-03
$PM_{2.5}$	3.69E-05	6.14E-05	6.14E-05	4.60E-04	1.99E-03	1.99E-03

3.1.2 Paved Road VMT

The VMT on a given type of roadway segment was determined by multiplying the total VMT for the activity by the "segment fraction of total travel" on the types of paved roadways in California; the distribution is summarized in Table 3-4. The travel distances broken down by vehicle type and road type are summarized in Tables 4.1c and 4.2c in Attachment B-1 for the proposed Project and Baseline periods, respectively.

Table 3-4: Distribution of VMT by Roadway Type[1]

Freeway	Major	Collector	Local	Rural	On-Site
33.25%	38.97%	27.59%	0.19%	Note 2	Estimated[3]

Notes:

1. SJVAPCD 2005.
2. Rural is assumed to be 0.25 miles, one way.
3. On-site distances are estimated to be no more than 0.25 miles, one way.

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3.1.3 Paved Roads Particulate Emissions

The fugitive dust emissions from vehicle travel on paved public roads are calculated from the VMT on a given type of roadway segment and the emission factor corresponding to the roadway segment type (Table 3-3). The predicted emissions are summarized in Table 3-5. Paved road particulate emission calculations are provided in Tables 4.1 and 4.2 in Attachment B-1 for the Project and Baseline periods, respectively.

Table 3-5: Paved Road Particulate Emissions

Pollutant	Freeway	Major	Collector	Local	Rural	On-Site	Total
Proposed Project							
PM_{10} (lb/day)	0.34	0.66	0.47	0.03	0.55	0.55	2.58
$PM_{2.5}$ (lb/day)	0.08	0.16	0.12	0.01	0.14	0.14	0.65
PM_{10} (lb/yr)	105.51	205.78	145.69	7.91	170.18	170.18	805.25
$PM_{2.5}$ (lb/yr)	26.38	51.44	36.42	1.98	42.55	42.55	201.31
Baseline Period							
PM_{10} (lb/day)	0.15	0.30	0.21	0.01	0.55	0.27	1.49
$PM_{2.5}$ (lb/day)	0.04	0.07	0.05	0.00	0.14	0.07	0.37
PM_{10} (lb/yr)	47.61	92.85	65.74	3.57	170.18	84.47	464.42
$PM_{2.5}$ (lb/yr)	11.90	23.21	16.43	0.89	42.55	21.12	116.10
Net Increase							
PM_{10} (lb/day)	0.19	0.36	0.26	0.01	0.00	0.27	1.09
$PM_{2.5}$ (lb/day)	0.05	0.09	0.06	0.00	0.00	0.07	0.27
PM_{10} (lb/yr)	57.90	112.93	79.95	4.34	0.00	85.71	340.83
$PM_{2.5}$ (lb/yr)	14.48	28.23	19.99	1.09	0.00	21.43	85.21

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4.0 SUMMARY OF CRITERIA POLLUTANT AND GHG EMISSIONS

The predicted daily and annual emissions from the proposed Project, Baseline period, and net change are summarized in Tables 4-1 and 4-2, respectively.

Table 4-1: Summary of Daily Mobile Source Operating Emissions

Activity	NO_x (lb/day)	VOC (lb/day)	CO (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Proposed Project						
Vehicle Emissions	32.53	1.47	17.39	0.22	1.88	0.80
Paved Road Dust	0.00	0	0	0	2.58	0.65
Total	32.53	1.47	17.39	0.22	4.46	1.44
Baseline Period						
Vehicle Emissions	13.48	0.86	8.78	0.09	1.69	0.62
Paved Road Dust	0	0	0	0	1.49	0.37
Total	13.48	0.86	8.78	0.09	3.18	0.99
Net Increase	19.05	0.62	8.61	0.13	1.28	0.45

Table 4-2: Summary of Annual Mobile Source Operating Emissions

Activity	NO_x (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
Proposed Project						
Vehicle Emissions	10149.93	462.15	5424.71	68.88	585.31	249.41
Paved Road Dust	0	0	0	0	805.25	201.31
Total (lb/yr)	10149.93	462.15	5424.71	68.88	1390.56	450.73
Baseline						
Vehicle Emissions	4206.90	269.07	2737.95	28.93	527.37	193.99
Paved Road Dust	0	0	0	0	464.42	116.10
Total (lb/yr)	4206.90	269.07	2737.95	28.93	991.79	310.10
Net Increase (lb/yr)	5943.02	193.08	2686.76	39.95	398.78	140.63
Net Increase (TPY)	2.97	0.10	1.34	0.02	0.20	0.07

Table 4-3: Summary of GHG Emissions from Onroad Vehicles

Period	CO_2 (MT/yr)	CH_4 (kg/yr)	N_2O (kg/yr)	Total CO_2e (MT/yr)
Proposed Project	3,298.01	0.01	0.51	3,450
Baseline	1,383.62	0.01	0.21	1,446
Net Increase	–	–	–	2,004

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5.0 TOXIC AIR CONTAMINANT EMISSIONS

The emissions of TACs are calculated either using process information for a given activity and an appropriate emission factor or by "speciating" the PM_{10} emissions using a profile that identifies the weight fraction of the TAC constituent in the parent compound. TAC emissions are estimated for the proposed Project; Baseline TAC emissions are subtracted to yield a net increase.

5.1 Vehicle and Equipment Exhaust TAC Emissions

5.1.1 Diesel Exhaust Emissions

TAC emissions from diesel combustion are based on PM_{10} emissions, assuming that 100% of the PM_{10} emissions are diesel particulate matter (DPM). Per SJVAPCD guidance, emissions from 0.25 miles of near-site travel are included in the TAC inventory for health risk assessment purposes. The DPM emissions are summarized in Table 5-1 for the on-site and near-site travel. PM_{10} emissions from diesel combustion are provided in Tables 3.1 and 3.2 in Attachment B-1 for the Project and Baseline periods, respectively. DPM emissions are summarized in Table 6a in Attachment B-1.

Table 5-1: Emissions of DPM from Diesel-Fueled Vehicles

Vehicle	PM_{10} Emissions (lb/hr)		PM_{10} Emissions (lb/yr)	
	On-Site Exhaust	Near-Site Exhaust[1,2]	On-Site Exhaust	Near-Site Exhaust[1]
T7 Tractor	0.031	0.031	0.806	0.806
Total PM_{10} = DPM	0.031	0.031	0.806	0.806

1. Near-site encompasses 0.25 miles off-site, per SJVAPCD guidance. On-site mileage is 0.25 miles per one-way trip; therefore, near-site mileage is equal to on-site mileage.

5.1.2 Gasoline Exhaust Emissions

Gasoline combustion TAC emission factors are sourced from the SJVAPCD's AB 2588 program (SJVAPCD 2017). Fuel consumption is based on an average fuel economy for gasoline-fueled light trucks of 24.45 miles per gallon (EMFAC2021). Travel distance for the gasoline-powered vehicles includes 0.25 miles per trip on-site (one-way distance) and 0.25 miles per trip off-site (one-way distance). VMT and fuel consumption are summarized in Table 5-2. Gasoline exhaust TAC emissions are summarized in Table 5-3. Gasoline exhaust TAC emission calculations are provided in Table 6c in Attachment B-1.

Table 5-2: Gasoline Vehicle Mileage and Fuel Consumption

Parameter	On-Site	Near-Site[1]
VMT/day	18.5	18.5
Fuel Consumption (gal/day)	0.8	0.8

1. Near-site encompasses 0.25 miles off-site, per SJVAPCD guidance.

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Table 5-3: Gasoline Vehicle Exhaust TAC Emissions

TAC	CAS No.	Emission Factor (lb/1,000 gal)	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)
1,2,4-Trimethylbenzene	95636	5.89E-01	8.92E-05	2.78E-01
1,3-Butadiene	106990	3.24E-01	4.90E-05	1.53E-01
Acetaldehyde	75070	1.47E-01	2.22E-05	6.94E-02
Acrolein	107028	8.25E-02	1.25E-05	3.90E-02
Benzene	71432	1.57E+00	2.38E-04	7.41E-01
Chlorine	7782505	4.55E-01	6.89E-05	2.15E-01
Copper	7440508	3.30E-03	4.99E-07	1.56E-03
Ethyl benzene	100414	6.42E-01	9.72E-05	3.03E-01
Formaldehyde	50000	1.01E+00	1.53E-04	4.77E-01
Hexane	110543	9.42E-01	1.43E-04	4.45E-01
Manganese	7439965	3.30E-03	4.99E-07	1.56E-03
Methanol	67561	2.42E-01	3.66E-05	1.14E-01
Methyl ethyl ketone	78933	1.18E-02	1.79E-06	5.57E-03
Methyl tert-butyl ether	1634044	1.15E+00	1.74E-04	5.43E-01
m-Xylene	108383	2.17E+00	3.28E-04	1.02E+00
Naphthalene	91203	2.95E-02	4.47E-06	1.39E-02
Nickel	7440020	3.30E-03	4.99E-07	1.56E-03
o-Xylene	95476	7.54E-01	1.14E-04	3.56E-01
Styrene	100425	7.07E-02	1.07E-05	3.34E-02
Toluene	108883	3.50E+00	5.30E-04	1.65E+00

5.2 Dust and Particulate TAC Emissions

Paved road dust may contain heavy metals which are regulated TACs. To estimate TAC emissions from road dust, the PM_{10} emissions are speciated according to a speciation profile that is specific to the road surface.

5.2.1 Paved Road Dust TAC Emissions

TAC emissions from paved road particulate are estimated by speciating the PM_{10} emissions according to the speciation profile provided by CARB per Particulate Speciation Profile #471 (CARB 2021b). On-site and near-site paved road PM_{10} emissions are based on total paved road emissions of 0.109 pounds per hour and 340.36 pounds per year. The paved road dust TAC emissions are summarized in Table 5-4. Paved road dust TAC emission calculations are provided in Table 6c in Attachment B-1.

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Table 5-4: Paved Road Dust TAC Emissions

TAC	CAS No.	Wt. Fraction	Emissions	
			(lb/hr)	(lb/yr)
Arsenic	7440-38-2	0.000013	1.42E-06	4.42E-03
Cadmium	7440-43-9	0.000003	3.27E-07	1.02E-03
Chromium-VI[1]	18540-29-9	0.00000085	9.27E-08	2.89E-04
Cobalt	7440-48-4	0.000023	2.51E-06	7.83E-03
Copper	7440-50-8	0.000148	1.61E-05	5.04E-02
Lead	7439-92-1	0.000124	1.35E-05	4.22E-02
Manganese	7439-96-5	0.0008	8.73E-05	2.72E-01
Nickel	7440-02-0	0.000012	1.31E-06	4.08E-03
Mercury	7439-97-6	0.000009	9.82E-07	3.06E-03
Selenium	7782-49-2	0.000002	2.18E-07	6.81E-04
Vanadium	7440-62-2	0.000071	7.75E-06	2.42E-02

1. Hexavalent chromium is assumed to be 5% of total chromium per SJVAPCD guidance.

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ATTACHMENT B-1 – EMISSION CALCULATION WORKSHEETS

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Turlock Capacity Upgrade Project
Mobile Source
Emission Calculations

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Table 1: Process Information

Table 1: Process Throughput

Processing Step	2-Year Historic Baseline Throughput		Proposed Project Throughtput		Truck Capacity	2-Year Historic Baseline Truck Traffic		Proposed Project Truck Traffic	
	Ton/day	Ton/Year	Ton/day	Ton/Year	Ton/Truck	Truck/Day	Truck/Year	Truck/Day	Truck/Year
Raw Material Incoming	387	120,775	925	337,625	15	26	8052	62	22509
Fat Load-out	49	15,246	185	67,525	10	5	1525	19	6753
Protein Load-out	97	30,326	185	67,525	10	10	3033	19	6753

Data and Parameters

Daily Operating Hours	10	hours/day
Raw Material Receive Days	312	Day/year
Product shipment days	312	Day/year
Raw Material Throughput 2020	236,502,422	lb/yr
Raw Material Throughput 2021	246,598,752	lb/yr
Raw Material Throughput 2-yr average	241,550,587	lb/yr
Raw Material Throughput 2-yr average	120,775	ton/yr
Fat Load Out 2020	30,814,729	lb/yr
Fat Load Out 2021	30,169,239	lb/yr
Fat Load Out 2-yr average	30,491,984	lb/yr
Fat Load Out 2-yr average	15,246	ton/yr
Protein Load Out 2020	59,922,653	lb/yr
Protein Load Out 2021	61,383,090	lb/yr
Protein Load Out 2-yr average	60,652,872	lb/yr
Protein Load Out 2-yr average	30,326	ton/yr

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Table 2: Onroad Mobile Sources - Vehicle Information

Table 2a: Vehicle Information and Mileage Calculation - Proposed Project

Vehicle Type	Vehicle Use	Vehicle Weight (lb)			Days	Veh/day	One-way Trips per Vehicle per Day	One-way Trips per Year	One-way Onsite Trip Mileage[1]	One-way Offsite Trip Mileage[2]	Total One-way Trip Mileage	Onsite Total VMT/yr	Offsite Total VMT/yr	Total VMT/yr
		Gross	Empty	Average										
LDT1	Supervisor	6,250	6,250	6,250	312	2	2	1,248	0.25	12	12.25	312	14,976	15,288
LDT1	Technical Staff	6,250	6,250	6,250	312	2	2	1,248	0.25	12	12.25	312	14,976	15,288
LDT1	Mechanic	6,250	6,250	6,250	312	3	2	1,872	0.25	12	12.25	468	22,464	22,932
LDT1	Equipment Operators	6,250	6,250	6,250	312	30	2	18,720	0.25	12	12.25	4,680	224,640	229,320
T7 Tractor	Ship Raw Material to Facility	53,000	23,000	38,000	312	62	2	38,688	0.25	30	30.25	9,672	1,160,640	1,170,312
T7 Tractor	Ship Product from Facility	43,000	23,000	33,000	312	38	2	23,712	0.25	30	30.25	5,928	711,360	717,288

Table 2b: Vehicle Information and Mileage Calculation - Baseline Period

Vehicle Type	Vehicle Use	Vehicle Weight (lb)			Days	Veh/day	One-way Trips per Vehicle per Day	One-way Trips per Year	One-way Onsite Trip Mileage[1]	One-way Offsite Trip Mileage[2,4]	Total One-way Trip Mileage	Onsite Total VMT/yr	Offsite Total VMT/yr	Total VMT/yr
		Gross	Empty	Average										
LDT1	Supervisor	6,250	6,250	6,250	312	2	2	1,248	0.25	12	12.25	312	14,976	15,288
LDT1	Technical Staff	6,250	6,250	6,250	312	2	2	1,248	0.25	12	12.25	312	14,976	15,288
LDT1	Mechanic	6,250	6,250	6,250	312	3	2	1,872	0.25	12	12.25	468	22,464	22,932
LDT1	Equipment Operators	6,250	6,250	6,250	312	20	2	12,480	0.25	12	12.25	3,120	149,760	152,880
T7 Tractor	Ship Raw Material to Facility	53,000	23,000	38,000	312	26	2	16,224	0.25	30	30.25	4,056	486,720	490,776
T7 Tractor	Ship Product from Facility	23,000	23,000	23,000	312	15	2	9,360	0.25	30	30.25	2,340	280,800	283,140

Table 2c: Onsite/Offsite Vehicle Usage Information - Proposed Project

Vehicle Type	Fuel	# Veh	Trips per Year	Onsite Total VMT/yr	Offsite Total VMT/yr	Total VMT/yr
LDT1	gasoline	37	23,088	5,772	277,056	282,828
T7 Tractor	diesel	100	62,400	15,600	1,872,000	1,887,600

Table 2d: Onsite/Offsite Vehicle Usage Information - Baseline Period

Vehicle Type	Fuel	# Veh	Trips per Year	Onsite Total VMT/yr	Offsite Total VMT/yr	Total VMT/yr
LDT1	gasoline	27	16,848	4,212	202,176	206,388
T7 Tractor	diesel	41	25,584	6,396	767,520	773,916

Notes:

1. Onsite mileage is the distance from the front gate of the facility to the furthest point of the facility for delivery and shipment.
2. Mileage for employees based on the distance from **Modesto** to the project site.

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Table 3.1: Project Onroad Mobile Sources Exhaust Emissions

Table 3.1a: Onroad Mobile Sources - Criteria Pollutant Exhaust Emissions

Pollutant	Vehicle Type	Running Exhaust EF (g/mile)	Idle EF (g/veh/day)	Start EF (g/trip)	Total Running Exhaust (lb/yr)	Total Idle (lb/yr)	Total Start (lb/yr)	Total Emissions (lb/yr)	Onsite Emissions (lb/yr)	Offsite Emissions (lb/yr)	Total Emissions (lb/day)	Onsite Emissions (lb/day)
NOx	LDT1	0.188	0.000	0.496	116.85	0.00	25.25	142.10	2.90	139.20	0.46	9.29E-03
	T7 Tractor	1.603	40.773	3.935	6,665.02	2,802.00	540.80	10,007.83	82.71	9,925.12	32.08	2.65E-01
VOC	LDT1	0.040	0.000	0.734	24.96	0.00	37.34	62.30	1.27	61.03	0.20	4.07E-03
	T7 Tractor	0.015	3.457	0.000	61.12	237.60	0.00	298.72	2.47	296.25	0.96	7.91E-03
CO	LDT1	2.011	0.000	6.966	1,252.79	0.00	354.25	1,607.04	32.80	1,574.24	5.15	1.05E-01
	T7 Tractor	0.082	50.601	0.000	340.28	3,477.40	0.00	3,817.68	31.55	3,786.13	12.24	1.01E-01
SOx	LDT1	0.003	0.000	0.001	2.10	0.00	0.05	2.14	0.04	2.10	0.01	1.40E-04
	T7 Tractor	0.015	0.079	0.000	61.29	5.45	0.00	66.74	0.55	66.19	0.21	1.77E-03
PM10	LDT1	0.002	0.000	0.004	1.34	0.00	0.18	1.53	0.03	1.50	0.00	9.99E-05
	T7 Tractor	0.023	0.017	0.000	96.37	1.14	0.00	97.51	0.81	96.71	0.31	2.58E-03
PM2.5	LDT1	0.002	0.000	0.003	1.23	0.00	0.17	1.40	0.03	1.38	0.00	9.19E-05
	T7 Tractor	0.022	0.016	0.000	92.20	1.09	0.00	93.29	0.77	92.52	0.30	2.47E-03

Table 3.1b: Onroad Mobile Sources - Fugitive ROG Emissions

Pollutant	Vehicle Type	Diurnal EF (g/trip)	Hot Soak EF (g/trip)	Running Loss (g/trip)	Total Diurnal (lb/yr)	Total Hot Soak (lb/yr)	Total Running Loss (lb/yr)	Total Emissions (lb/yr)	Onsite Emissions (lb/yr)	Offsite Emissions (lb/yr)	Total Emissions (lb/day)
VOC	LDT1	1.01	0.25	0.74	51.2	12.5	37.4	101.14	2.06	99.08	0.32
	T7 Tractor	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.000	0.000	0.00

Table 3.1c: Onroad Mobile Sources - Fugitive PM Emissions

Pollutant	Vehicle Type	Tire Wear (g/mile)	Break Wear (g/mile)	Total Tire Wear (lb/yr)	Total Break Wear (lb/yr)	Total Emissions (lb/yr)	Onsite Emissions (lb/yr)	Offsite Emissions (lb/yr)	Total Emissions (lb/day)
PM10	LDT1	0.0080	0.0085	4.99	5.31	10.30	0.21	10.09	0.033
	T7 Tractor	0.0360	0.0784	149.81	326.17	475.98	3.93	472.04	1.526
PM2.5	LDT1	0.0020	0.0030	1.25	1.86	3.11	0.06	3.04	0.010
	T7 Tractor	0.0090	0.0275	37.45	114.16	151.61	1.25	150.36	0.486

Table 3.1d: Summary of Criteria Pollutant Emissions from Onroad Operations Vehicles

Type	NO_x (lb/yr)	ROG (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
Exhaust	10149.93	361.01	5424.71	68.88	99.04	94.70
Fugitive	---	101.14	---	---	486.28	154.72
Total (Lb/Yr)	10149.93	462.15	5424.71	68.88	585.31	249.41
Total (TPY)	5.07	0.23	2.71	0.03	0.29	0.12

Table 3.1e: Onroad Mobile Sources - Greenhouse Gas Exhaust Emissions

Pollutant	Vehicle Type	Running Exhaust EF (g/mile)	Idle EF (g/veh/day)	Start EF (g/trip)	Total Running Exhaust (MT/yr)	Total Idle (MT/yr)	Total Start (MT/yr)	Total Emissions (MT/yr)
CO2	LDT1	340.200	0.000	91.827	96.22	0.000	2.1	98.34
	T7 Tractor	1556.777	8368.454	0.000	2,938.6	261.096	0.0	3,200
CH4	LDT1	0.009	0.000	0.136	0.0	0.000	0.00	0.01
	T7 Tractor	0.001	0.161	0.000	0.0	0.005	0.00	0.01
N2O	LDT1	0.013	0.000	0.044	0.00	0.000	0.00	0.00
	T7 Tractor	0.245	1.318	0.000	0.46	0.041	0.00	0.50
CO2e	LDT1							100
	T7 Tractor							3,350
	Total							**3,450**

Table 3.1f: GHG Emissions from Onroad Mobile Source Activity

CO_2	CH_4	N_2O	Total CO_2e
(MT/Yr)	(Kg/Yr)	(Kg/Yr)	(MT/Yr)
3,298	11.95	508.77	3,450

Table 3.1g: Global Warming Potential

Pollutant	GWP
CO2	1
CH4	25
N2O	298

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Table 3.2: Baseline Onroad Mobile Sources Exhaust Emissions

Table 3.2a: Onroad Mobile Sources - Criteria Pollutant Exhaust Emissions

Pollutant	Vehicle Type	Running Exhaust EF (g/mile)	Idle EF (g/veh/day)	Start EF (g/trip)	Total Running Exhaust (lb/yr)	Total Idle (lb/yr)	Total Start (lb/yr)	Total Emissions (lb/yr)	Onsite Emissions (lb/yr)	Offsite Emissions (lb/yr)	Total Emissions (lb/day)	Onsite Emissions (lb/day)
NOx	LDT1	0.188	0.000	0.496	85.27	0.00	18.42	103.70	2.12	101.58	0.33	6.78E-03
	T7 Tractor	1.603	40.773	3.935	2,732.66	1,148.82	221.73	4,103.21	33.91	4,069.30	13.15	1.09E-01
VOC	LDT1	0.040	0.000	0.734	18.21	0.00	27.25	45.46	0.93	44.53	0.15	2.97E-03
	T7 Tractor	0.015	3.457	0.000	25.06	97.41	0.00	122.47	1.01	121.46	0.39	3.24E-03
CO	LDT1	2.011	0.000	6.966	914.20	0.00	258.50	1,172.70	23.93	1,148.77	3.76	7.67E-02
	T7 Tractor	0.082	50.601	0.000	139.51	1,425.74	0.00	1,565.25	12.94	1,552.31	5.02	4.15E-02
SOx	LDT1	0.003	0.000	0.001	1.53	0.00	0.03	1.56	0.03	1.53	0.01	1.02E-04
	T7 Tractor	0.015	0.079	0.000	25.13	2.23	0.00	27.36	0.23	27.14	0.09	7.25E-04
PM10	LDT1	0.002	0.000	0.004	0.98	0.00	0.13	1.11	0.02	1.09	0.00	7.29E-05
	T7 Tractor	0.023	0.017	0.000	39.51	0.47	0.00	39.98	0.33	39.65	0.13	1.06E-03
PM2.5	LDT1	0.002	0.000	0.003	0.90	0.00	0.12	1.02	0.02	1.00	0.00	6.70E-05
	T7 Tractor	0.022	0.016	0.000	37.80	0.45	0.00	38.25	0.32	37.93	0.12	1.01E-03

Table 3.2b: Onroad Mobile Sources - Fugitive ROG Emissions

Pollutant	Vehicle Type	Diurnal EF (g/trip)	Hot Soak EF (g/trip)	Running Loss (g/trip)	Total Diurnal (lb/yr)	Total Hot Soak (lb/yr)	Total Running Loss (lb/yr)	Total Emissions (lb/yr)	Onsite Emissions (lb/yr)	Offsite Emissions (lb/yr)	Total Emissions (lb/day)
VOC	LDT1	1.01	0.25	0.74	51.2	12.5	37.4	101.14	2.06	99.08	0.32
	T7 Tractor	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.000	0.000	0.00

Table 3.2c: Onroad Mobile Sources - Fugitive PM Emissions

Pollutant	Vehicle Type	Tire Wear (g/mile)	Break Wear (g/mile)	Total Tire Wear (lb/yr)	Total Break Wear (lb/yr)	Total Emissions (lb/yr)	Onsite Emissions (lb/yr)	Offsite Emissions (lb/yr)	Total Emissions (lb/day)
PM10	LDT1	0.0080	0.0085	4.99	5.31	10.30	0.21	10.09	0.033
	T7 Tractor	0.0360	0.0784	149.81	326.17	475.98	3.93	472.04	1.526
PM2.5	LDT1	0.0020	0.0030	1.25	1.86	3.11	0.06	3.04	0.010
	T7 Tractor	0.0090	0.0275	37.45	114.16	151.61	1.25	150.36	0.486

Table 3.2d: Summary of Criteria Pollutant Emissions from Onroad Operations Vehicles

Type	NO_x (lb/yr)	ROG (lb/yr)	CO (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	$PM_{2.5}$ (lb/yr)
Exhaust	4206.90	167.93	2737.95	28.93	41.09	39.27
Fugitive	---	101.14	---	---	486.28	154.72
Total (Lb/Yr)	4206.90	269.07	2737.95	28.93	527.37	193.99
Total (TPY)	2.10	0.13	1.37	0.01	0.26	0.10

Table 3.2e: Onroad Mobile Sources - Greenhouse Gas Exhaust Emissions

Pollutant	Vehicle Type	Running Exhaust EF (g/mile)	Idle EF (g/veh/day)	Start EF (g/trip)	Total Running Exhaust (MT/yr)	Total Idle (MT/yr)	Total Start (MT/yr)	Total Emissions (MT/yr)
CO2	LDT1	340.200	0.000	91.827	70.21	0.000	1.5	71.76
	T7 Tractor	1556.777	8368.454	0.000	1,204.8	107.049	0.0	1,312
CH4	LDT1	0.009	0.000	0.136	0.0	0.000	0.00	0.00
	T7 Tractor	0.001	0.161	0.000	0.0	0.002	0.00	0.00
N2O	LDT1	0.013	0.000	0.044	0.00	0.000	0.00	0.00
	T7 Tractor	0.245	1.318	0.000	0.19	0.017	0.00	0.21
CO2e	LDT1							73
	T7 Tractor							1,374
	Total							**1,446**

Table 3.2f: GHG Emissions from Onroad Mobile Source Activity

CO_2	CH_4	N_2O	Total CO_2e
(MT/Yr)	(Kg/Yr)	(Kg/Yr)	(MT/Yr)
1,384	6.71	210.09	1,446

Table 3.2g: Global Warming Potential

Pollutant	GWP
CO2	1
CH4	25
N2O	298

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Table 4.1: Project Onroad Mobile Source Paved Road Dust

Table 4.1a: Paved Road PM_{10} Emission Factors[1]

Vehicle	Average Vehicle Weight (ton)	Pollutant	Freeway (lb/VMT)	Major (lb/VMT)	Collector (lb/VMT)	Local (lb/VMT)	Rural/Onsite (lb/VMT)
		sL (g/m^2)[2] -->	0.020	0.035	0.035	0.320	1.600
Fleet Average	2.40	PM10	1.48E-04	2.46E-04	2.46E-04	1.84E-03	7.96E-03
		PM2.5	3.69E-05	6.14E-05	6.14E-05	4.60E-04	1.99E-03

$$E = k\,(sL)^{0.91} \times (W)^{1.02} * C_f$$

Variable	Value	UOM
k (PM10)	1.00	g/VMT
k(PM2.5)	0.25	g/VMT
Rain Days[3]	51	day/yr
C_f	0.965	

Table 4.1b: Fraction of VMT by Functional Type of Roadway[2]

Freeway	Major	Collector	Local	Rural
33.25%	38.97%	27.59%	0.20%	note 4

Table 4.1c: Summary of Onroad VMT by Phase and Road Type

EMFAC Vehicle Type	Activity	Unit of Measure	Freeway	Major	Collector	Local	Rural	Total Offsite	Onsite	Total VMT
LDT1	Supervisor	VMT/day	15.96	18.71	13.24	0.10	1.00	49	1	50
		VMT/Yr	4,980	5,836	4,132	29.95	312.00	14,976	312	15,288
LDT1	Technical Staff	VMT/day	15.96	18.71	13.24	0.10	1.00	49	1	50
		VMT/Yr	4,980	5,836	4,132	29.95	312.00	14,976	312	15,288
LDT1	Mechanic	VMT/day	24	28	20	0.14	1.50	74	1.5	75
		VMT/Yr	7,469	8,754	6,198	44.93	468.00	22,464	468	22,932
LDT1	Equipment Operators	VMT/day	239	281	199	1.44	15.00	735	15	750
		VMT/Yr	74,693	87,542	61,978	449.28	4680.00	224,640	4,680	229,320
T7 Tractor	Ship Raw Material to Facility	VMT/day	1,237	1,450	1,026	7.44	31.00	3,751	31	3,782
		VMT/Yr	385,913	452,301	320,221	2321.28	9672.00	1,160,640	9,672	1,170,312
T7 Tractor	Ship from Compost Facility	VMT/day	758	889	629	4.56	19.00	2,299	19	2,318
		VMT/Yr	236,527	277,217	196,264	1,423	5,928	711,360	5,928	717,288

Table 4.1d: Entrained Road Dust Emissions from Travel on Paved Roads (lb/day)

EMFAC Vehicle Type	Activity	Pollutant	Freeway	Major	Collector	Local	Rural	Onsite	Total
LDT1	Supervisor	PM10	2.36E-03	4.60E-03	3.25E-03	1.77E-04	7.96E-03	7.96E-03	2.63E-02
		PM2.5	5.89E-04	1.15E-03	8.13E-04	4.42E-05	1.99E-03	1.99E-03	6.58E-03
LDT1	Technical Staff	PM10	2.36E-03	4.60E-03	3.25E-03	1.77E-04	7.96E-03	7.96E-03	2.63E-02
		PM2.5	5.89E-04	1.15E-03	8.13E-04	4.42E-05	1.99E-03	1.99E-03	6.58E-03
LDT1	Mechanic	PM10	3.53E-03	6.89E-03	4.88E-03	2.65E-04	1.19E-02	1.19E-02	3.95E-02
		PM2.5	8.84E-04	1.72E-03	1.22E-03	6.63E-05	2.99E-03	2.99E-03	9.87E-03
LDT1	Equipment Operators	PM10	3.53E-02	6.89E-02	4.88E-02	2.65E-03	1.19E-01	1.19E-01	3.95E-01
		PM2.5	8.84E-03	1.72E-02	1.22E-02	6.63E-04	2.99E-02	2.99E-02	9.87E-02
T7 Tractor	Ship Raw Material to Facility	PM10	1.83E-01	3.56E-01	2.52E-01	1.37E-02	2.47E-01	2.47E-01	1.30E+00
		PM2.5	4.57E-02	8.90E-02	6.30E-02	3.42E-03	6.17E-02	6.17E-02	3.25E-01
T7 Tractor	Ship from Compost Facility	PM10	1.12E-01	2.18E-01	1.55E-01	8.39E-03	1.51E-01	1.51E-01	7.96E-01
		PM2.5	2.80E-02	5.46E-02	3.86E-02	2.10E-03	3.78E-02	3.78E-02	1.99E-01
Total	All	PM10	0.34	0.66	0.47	0.03	0.55	0.55	2.58
		PM2.5	0.08	0.16	0.12	0.01	0.14	0.14	0.65

Table 4.1e: Entrained Road Dust Emissions from Travel on Paved Roads (lb/yr)

EMFAC Vehicle Type	Activity	Pollutant	Freeway	Major	Collector	Local	Rural	Onsite	Total
LDT1	Supervisor	PM10	0.74	1.43	1.02	0.06	2.48	2.48	8.21
		PM2.5	0.18	0.36	0.25	0.01	0.62	0.62	2.05
LDT1	Technical Staff	PM10	0.74	1.43	1.02	0.06	2.48	2.48	8.21
		PM2.5	0.18	0.36	0.25	0.01	0.62	0.62	2.05
LDT1	Mechanic	PM10	1.10	2.15	1.52	0.08	3.73	3.73	12.31
		PM2.5	0.28	0.54	0.38	0.02	0.93	0.93	3.08
LDT1	Equipment Operators	PM10	11.03	21.51	15.23	0.83	37.27	37.27	123.13
		PM2.5	2.76	5.38	3.81	0.21	9.32	9.32	30.78
T7 Tractor	Ship Raw Material to Facility	PM10	56.98	111.13	78.68	4.27	77.02	77.02	405.10
		PM2.5	14.25	27.78	19.67	1.07	19.25	19.25	101.28
T7 Tractor	Ship from Compost Facility	PM10	34.92	68.11	48.22	2.62	47.20	47.20	248.29
		PM2.5	8.73	17.03	12.06	0.65	11.80	11.80	62.07
Total	All	PM10	105.51	205.78	145.69	7.91	170.18	170.18	805.25
		PM2.5	26.38	51.44	36.42	1.98	42.55	42.55	201.31

Notes:

1. Methodology per AP-42, 13.2.1 Paved Roads
2. SJVAPCD, Appendix A: Comments and Responses Rule 9510 and 3180 December 15, 2005
3. http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-d2020-4-0-full-merge.pdf?sfvrsn=6, Table 1.1 has 51 days with precipitation > 0.1 inches for tulare county.
4. Rural is assumed to be 0.25 miles.

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Table 4.2: Baseline Onroad Mobile Source Paved Road Dust

Table 4.2a: Paved Road PM_{10} Emission Factors[1]

Vehicle	Average Vehicle Weight (ton)	Pollutant	Freeway (lb/VMT)	Major (lb/VMT)	Collector (lb/VMT)	Local (lb/VMT)	Rural/Onsite (lb/VMT)
		sL (g/m^2)[2] -->	0.020	0.035	0.035	0.320	1.600
Fleet Average	2.40	PM10	1.48E-04	2.46E-04	2.46E-04	1.84E-03	7.96E-03
		PM2.5	3.69E-05	6.14E-05	6.14E-05	4.60E-04	1.99E-03

$$E = k\,(sL)^{0.91} \times (W)^{1.02} * C_f$$

Variable	Value	UOM
k (PM10)	1.00	g/VMT
k(PM2.5)	0.25	g/VMT
Rain Days[3]	51	day/yr
C_f	0.965	

Table 4.2b: Fraction of VMT by Functional Type of Roadway[2]

Freeway	Major	Collector	Local	Rural
33.25%	38.97%	27.59%	0.20%	note 4

Table 4.2c: Summary of Onroad VMT by Phase and Road Type

EMFAC Vehicle Type	Activity	Unit of Measure	Freeway	Major	Collector	Local	Rural	Total Offsite	Onsite	Total VMT
LDT1	Supervisor	VMT/day	15.96	18.71	13.24	0.10	1.00	49	1	50
		VMT/Yr	4,980	5,836	4,132	29.95	312.00	14,976	312	15,288
LDT1	Technical Staff	VMT/day	15.96	18.71	13.24	0.10	1.00	49	1	50
		VMT/Yr	4,980	5,836	4,132	29.95	312.00	14,976	312	15,288
LDT1	Mechanic	VMT/day	24	28	20	0.14	1.50	74	1.5	75
		VMT/Yr	7,469	8,754	6,198	44.93	468.00	22,464	468	22,932
LDT1	Equipment Operators	VMT/day	160	187	132	0.96	15.00	495	10	505
		VMT/Yr	49,795	58,361	41,319	299.52	4680.00	149,760	3,120	152,880
T7 Tractor	Ship Raw Material to Facility	VMT/day	519	608	430	3.12	31.00	1,591	13	1,604
		VMT/Yr	161,834	189,675	134,286	973.44	9672.00	486,720	4,056	490,776
T7 Tractor	Ship from Finished Product from Facility	VMT/day	299	351	248	1.80	19.00	919	7.5	927
		VMT/Yr	93,366	109,428	77,473	562	5,928	280,800	2,340	283,140

Table 4.2d: Entrained Road Dust Emissions from Travel on Paved Roads (lb/day)

EMFAC Vehicle Type	Activity	Pollutant	Freeway	Major	Collector	Local	Rural	Onsite	Total
LDT1	Supervisor	PM10	2.36E-03	4.60E-03	3.25E-03	1.77E-04	7.96E-03	7.96E-03	2.63E-02
		PM2.5	5.89E-04	1.15E-03	8.13E-04	4.42E-05	1.99E-03	1.99E-03	6.58E-03
LDT1	Technical Staff	PM10	2.36E-03	4.60E-03	3.25E-03	1.77E-04	7.96E-03	7.96E-03	2.63E-02
		PM2.5	5.89E-04	1.15E-03	8.13E-04	4.42E-05	1.99E-03	1.99E-03	6.58E-03
LDT1	Mechanic	PM10	3.53E-03	6.89E-03	4.88E-03	2.65E-04	1.19E-02	1.19E-02	3.95E-02
		PM2.5	8.84E-04	1.72E-03	1.22E-03	6.63E-05	2.99E-03	2.99E-03	9.87E-03
LDT1	Equipment Operators	PM10	2.36E-02	4.60E-02	3.25E-02	1.77E-03	1.19E-01	7.96E-02	3.03E-01
		PM2.5	5.89E-03	1.15E-02	8.13E-03	4.42E-04	2.99E-02	1.99E-02	7.57E-02
T7 Tractor	Ship Raw Material to Facility	PM10	7.66E-02	1.49E-01	1.06E-01	5.74E-03	2.47E-01	1.04E-01	6.88E-01
		PM2.5	1.91E-02	3.73E-02	2.64E-02	1.44E-03	6.17E-02	2.59E-02	1.72E-01
T7 Tractor	Ship from Finished Product from Facility	PM10	4.42E-02	8.62E-02	6.10E-02	3.31E-03	1.51E-01	5.97E-02	4.06E-01
		PM2.5	1.10E-02	2.15E-02	1.53E-02	8.28E-04	3.78E-02	1.49E-02	1.01E-01
Total	All	PM10	0.15	0.30	0.21	0.01	0.55	0.27	1.49
		PM2.5	0.04	0.07	0.05	0.00	0.14	0.07	0.37

Table 4.2e: Entrained Road Dust Emissions from Travel on Paved Roads (lb/yr)

EMFAC Vehicle Type	Activity	Pollutant	Freeway	Major	Collector	Local	Rural	Onsite	Total
LDT1	Supervisor	PM10	0.74	1.43	1.02	0.06	2.48	2.48	8.21
		PM2.5	0.18	0.36	0.25	0.01	0.62	0.62	2.05
LDT1	Technical Staff	PM10	0.74	1.43	1.02	0.06	2.48	2.48	8.21
		PM2.5	0.18	0.36	0.25	0.01	0.62	0.62	2.05
LDT1	Mechanic	PM10	1.10	2.15	1.52	0.08	3.73	3.73	12.31
		PM2.5	0.28	0.54	0.38	0.02	0.93	0.93	3.08
LDT1	Equipment Operators	PM10	7.35	14.34	10.15	0.55	37.27	24.84	94.51
		PM2.5	1.84	3.58	2.54	0.14	9.32	6.21	23.63
T7 Tractor	Ship Raw Material to Facility	PM10	23.90	46.60	33.00	1.79	77.02	32.30	214.60
		PM2.5	5.97	11.65	8.25	0.45	19.25	8.07	53.65
T7 Tractor	Ship from Finished Product from Facility	PM10	13.79	26.89	19.04	1.03	47.20	18.63	126.58
		PM2.5	3.45	6.72	4.76	0.26	11.80	4.66	31.64
Total	All	PM10	47.61	92.85	65.74	3.57	170.18	84.47	464.42
		PM2.5	11.90	23.21	16.43	0.89	42.55	21.12	116.10

Notes:

1. Methodology per AP-42, 13.2.1 Paved Roads
2. SJVAPCD, Appendix A: Comments and Responses Rule 9510 and 3180 December 15, 2005
3. http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-d2020-4-0-full-merge.pdf?sfvrsn=6, Table 1.1 has 51 days with precipitation > 0.1 inches for tulare county.
4. Rural is assumed to be 0.25 miles.

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Table 5.1: Summary of Project Emissions

Table 5.1a: Summary of Daily Criteria Pollutant Emissions

Activity	NOx (lb/day)	VOC (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
3. Onroad Vehicle Exhaust	32.53	1.47	17.39	0.22	1.88	0.80
4. Onroad Vehicle Paved Road Dust	---	---	---	---	2.58	0.65
Total	32.53	1.47	17.39	0.22	4.46	1.44

Table 5.1b: Summary of Annual Criteria Pollutant Emissions

Activity	NOx (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SOx (lb/yr)	PM10 (lb/yr)	PM2.5 (lb/yr)
3. Onroad Vehicle Exhaust	10149.93	462.15	5424.71	68.88	585.31	249.41
4. Onroad Vehicle Paved Road Dust	---	---	---	---	805.25	201.31
Total	10149.93	462.15	5424.71	68.88	1390.56	450.73
Total (TPY)	5.07	0.23	2.71	0.03	0.70	0.23

Table 5.1c: Summary of Annual GHG Emissions

Activity	CO2 (MT/yr)	CH4 (MT/yr)	N2O (MT/yr)	CO2e (MT/Yr)
3. Onroad Vehicle Exhaust	3298.01	0.01	0.51	3449.92
4. Onroad Vehicle Paved Road Dust	---	---	---	---
Total	**3298.01**	**0.01**	**0.51**	**3449.92**

Darling Ingredients, Inc.
Turlock Capacity Upgrade Project
Mobile Source
Emission Calculations

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Table 5.1: Summary of Project Emissions

Table 5.1a: Summary of Daily Criteria Pollutant Emissions

Activity	NOx (lb/day)	VOC (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
3. Onroad Vehicle Exhaust	13.48	0.86	8.78	0.09	1.69	0.62
4. Onroad Vehicle Paved Road Dust	---	---	---	---	1.49	0.37
Total	13.48	0.86	8.78	0.09	3.18	0.99

Table 5.1b: Summary of Annual Criteria Pollutant Emissions

Activity	NOx (lb/yr)	VOC (lb/yr)	CO (lb/yr)	SOx (lb/yr)	PM10 (lb/yr)	PM2.5 (lb/yr)
3. Onroad Vehicle Exhaust	4206.90	269.07	2737.95	28.93	527.37	193.99
4. Onroad Vehicle Paved Road Dust	---	---	---	---	464.42	116.10
Total	4206.90	269.07	2737.95	28.93	991.79	310.10
Total (TPY)	2.10	0.13	1.37	0.01	0.50	0.16

Table 5.1c: Summary of Annual GHG Emissions

Activity	CO2 (MT/yr)	CH4 (MT/yr)	N2O (MT/yr)	CO2e (MT/Yr)
3. Onroad Vehicle Exhaust	1383.62	0.01	0.21	1446.40
4. Onroad Vehicle Paved Road Dust	---	---	---	---
Total	**1383.62**	**0.01**	**0.21**	**1446.40**

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Table 6: Project Diesel and Gasoline Vehicle TAC Emissions

Table 6a: DPM Emissions

Vehicle	Period	PM10 Emissions (lb/hr)		PM10 Emissions (lb/day)		PM10 Emissions (lb/yr)	
		Onsite Exhaust	Nearsite Exhaust[1]	Onsite Exhaust	Nearsite Exhaust[1]	Onsite Exhaust	Nearsite Exhaust[1]
T7 Tractor	Project	2.58E-04	2.58E-04	0.003	0.003	0.806	0.806
T7 Tractor	Baseline	1.06E-04	1.06E-04	0.001	0.001	0.330	0.330
Net Increase DPM		**1.52E-04**	**1.52E-04**	**0.002**	**0.002**	**0.475**	**0.475**

Table 6b: Gasoline Vehicle Mileage and Fuel Consumption

Parameter	Period	Onsite	Near-site[1]
VMT/Day	Project	18.5	18.5
VMT/Day	Baseline	13.5	13.5
Net Increase - VMT/Day		5.0	5.0
Net Increase in Fuel Consumption (gal/day)		0.2	0.2

Average Fuel Economy Light Truck[2] 24.45 MPG

Table 6c: Net Increase in TAC Emissions from Onroad Gasoline Vehicles

TAC	CAS#	Emission Factor[3] (lb/1000-gal)	Onsite (lb/day)	Near-site (lb/day)	Onsite (lb/yr)	Near-site (lb/yr)	Total (lb/hr)	Total (lb/day)	Total (lb/yr)
1,2,4-Trimethylbenzene	95636	5.89E-01	1.205E-04	1.205E-04	3.759E-02	3.759E-02	2.41E-05	2.41E-04	7.52E-02
1,3-Butadiene	106990	3.24E-01	6.627E-05	6.627E-05	2.068E-02	2.068E-02	1.33E-05	1.33E-04	4.14E-02
Acetaldehyde	75070	1.47E-01	3.007E-05	3.007E-05	9.381E-03	9.381E-03	6.01E-06	6.01E-05	1.88E-02
Acrolein	107028	8.25E-02	1.687E-05	1.687E-05	5.265E-03	5.265E-03	3.37E-06	3.37E-05	1.05E-02
Benzene	71432	1.57E+00	3.211E-04	3.211E-04	1.002E-01	1.002E-01	6.42E-05	6.42E-04	2.00E-01
Chlorine	7782505	4.55E-01	9.307E-05	9.307E-05	2.904E-02	2.904E-02	1.86E-05	1.86E-04	5.81E-02
Copper	7440508	3.30E-03	6.750E-07	6.750E-07	2.106E-04	2.106E-04	1.35E-07	1.35E-06	4.21E-04
Ethyl benzene	100414	6.42E-01	1.313E-04	1.313E-04	4.097E-02	4.097E-02	2.63E-05	2.63E-04	8.19E-02
Formaldehyde	50000	1.01E+00	2.066E-04	2.066E-04	6.445E-02	6.445E-02	4.13E-05	4.13E-04	1.29E-01
Hexane	110543	9.42E-01	1.927E-04	1.927E-04	6.012E-02	6.012E-02	3.85E-05	3.85E-04	1.20E-01
Manganese	7439965	3.30E-03	6.750E-07	6.750E-07	2.106E-04	2.106E-04	1.35E-07	1.35E-06	4.21E-04
Methanol	67561	2.42E-01	4.950E-05	4.950E-05	1.544E-02	1.544E-02	9.90E-06	9.90E-05	3.09E-02
Methyl ethyl ketone {2-Butanor	78933	1.18E-02	2.414E-06	2.414E-06	7.530E-04	7.530E-04	4.83E-07	4.83E-06	1.51E-03
Methyl tert-butyl ether	1634044	1.15E+00	2.352E-04	2.352E-04	7.339E-02	7.339E-02	4.70E-05	4.70E-04	1.47E-01
m-Xylene	108383	2.17E+00	4.439E-04	4.439E-04	1.385E-01	1.385E-01	8.88E-05	8.88E-04	2.77E-01
Naphthalene	91203	2.95E-02	6.034E-06	6.034E-06	1.883E-03	1.883E-03	1.21E-06	1.21E-05	3.77E-03
Nickel	7440020	3.30E-03	6.750E-07	6.750E-07	2.106E-04	2.106E-04	1.35E-07	1.35E-06	4.21E-04
o-Xylene	95476	7.54E-01	1.542E-04	1.542E-04	4.812E-02	4.812E-02	3.08E-05	3.08E-04	9.62E-02
Styrene	100425	7.07E-02	1.446E-05	1.446E-05	4.512E-03	4.512E-03	2.89E-06	2.89E-05	9.02E-03
Toluene	108883	3.50E+00	7.159E-04	7.159E-04	2.234E-01	2.234E-01	1.43E-04	1.43E-03	4.47E-01

Notes:

1. Near-site encompasses 1/4 mile offsite, per SJVAPCD guidance. Onsite mileage is 0.25 miles per one-way trip; therefore, nearsite mileage is equal to onsite mileage.
2. calculated per EMFAC
3. SJVAPCD, AB 2588 "Hot Spots" Air Toxics Profiles, March 27, 2017, District Toxic Profile ID 176, Gasoline-Fired Portable Catalyst ICE

Darling Ingredients, Inc.
Turlock Capacity Upgrade Project
Mobile Source
Emission Calculations

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Table 7: TAC from Paved Road Dust

Table 7a: Criteria Pollutant Information

Pollutant	Period	Onsite (lb/hr)	Near-site[1] (lb/hr)	Onsite (lb/day)	Near-site[1] (lb/day)	Onsite (lb/yr)	Near-site[1] (lb/yr)
PM10	Project	0.0545	0.0545	0.55	0.55	170.18	170.18
PM10	Baseline	0.027	0.027	0.27	0.27	84.47	84.47
Net Increase of PM10		0.0275	0.0275	0.2747	0.2747	85.7118	85.7118

Table 7b: Net Increase in TAC from Paved Road Dust

TAC	Wt. Fraction[2]	TAC Emissions	
		lb/hr	lb/yr
Arsenic	0.000013	7.14E-07	2.23E-03
Cadmium	0.000003	1.65E-07	5.14E-04
Chromium[3]	0.00000085	4.67E-08	1.46E-04
Cobalt	0.000023	1.26E-06	3.94E-03
Copper	0.000148	8.13E-06	2.54E-02
Lead	0.000124	6.81E-06	2.13E-02
Manganese	0.0008	4.40E-05	1.37E-01
Nickel	0.000012	6.59E-07	2.06E-03
Mercury	0.000009	4.94E-07	1.54E-03
Selenium	0.000002	1.10E-07	3.43E-04
Vanadium (Fume Or Dust)	0.000071	3.90E-06	1.22E-02

Notes:

1. Nearsite emissions include emissions up to 1/4 mile offsite. Nearsite PM10 emissions are calculated in Table 4 as "Rural" emissions.
2. CARB speciation profile for Paved Roads (#471), accessed: https://ww2.arb.ca.gov/speciation-profiles-used-carb-modeling
3. Hexavalent chromium is assumed to be 5% of total chromium per SJVAPCD guidance.

APPENDIX C – STATIONARY SOURCE EMISSIONS

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Appendix C:
Stationary Source Emissions

Air Quality and GHG
Technical Report

Prepared for:

Darling Ingredients, Inc.
11946 Carpenter Road
Crows Landing, CA 95313

May 2022

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List of Acronyms and Abbreviations

B&W	Babcock and Wilcox
CARB	California Air Resources Board
cfm	Cubic Feet per Minute
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
EF	Emission Factor
GHG	Greenhouse Gas
GWP	Global Warming Potential
hr	Hour
lb	Pound
MMBtu	Million British Thermal Units
MMscf	Million Standard Cubic Feet
MCF	Thousand Cubic Feet
MT	Metric Ton
N_2O	Nitrous Oxide
NO_x	Nitrogen Oxides
PAH	Polycyclic Aromatic Hydrocarbons
$PM_{2.5}$	Fine Particulate Mater
PM_{10}	Respirable Particulate Matter
PTE	Potential to Emit
RTO	Regenerative Thermal Oxidizer
scf	Standard Cubic Feet
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_x	Sulfur Oxides
TAC	Toxic Air Contaminant
U.S. EPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds
yr	Year

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Appendix C: Stationary Source Emissions

1.0 INTRODUCTION

Darling Ingredients Inc. (Darling) is proposing modifications to its food processing byproduct conversion facility in Turlock, CA, to facilitate the proposed capacity upgrades. Darling is a critical service provider to the food production industry. Over time, the capacity of the rendering industry in California has been challenged to keep pace with population growth and the related demand for food. The proposed Project is critical to ensure the sustainability of the service Darling provides, including prevention of the potential impacts to human health and the environment if the food processing byproducts and animal mortalities were to be mismanaged.

The proposed Project includes the following facility upgrades:

- Increase maximum daily throughput from 1,650,000 pounds per day to 1,850,000 pounds per day, with a corresponding increase in maximum annual throughput from 602,250,000 pounds per year to 675,250,000 pounds per year;
- Replace the three batch cookers (preheaters) with a Dupps Model 200U continuous cooker, condenser, and other supporting process equipment;
- Segregate the protein handling system to allow for the production of speciated finished product without increasing the current throughput limitations; and
- Upgrade the existing odor control system by adding two pretreatment venturi scrubbers and two pretreatment packed bed scrubbers prior to the existing scrubber and Regenerative Thermal Oxidizer (RTO).

In addition, Darling is proposing a change of conditions for each of its two boilers [San Joaquin Valley Air Pollution Control District (SJVAPCD) Permits N-2107-13-7 and N-2107-15-1] to change the respirable particulate matter (PM_{10}) emission factor used to calculate emissions. Any related emissions increase due to the proposed throughput increase will be abated by the installation of the new scrubber equipment. The proposed Project will yield no net increase in PM_{10} emissions from the stationary sources at the facility, and the change in the boiler emission factors will result in a decrease in the permitted potential to emit (PTE) of PM_{10} from the boilers.

A Process Description is provided in Section 2 of this appendix to explain the basis for the emission changes. Emission calculations are explained in Section 3 of this appendix, and calculation worksheets with the detailed calculations are provided in Attachment C.1.

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2.0 PROCESS DESCRIPTION

2.1 Post Upgrade Process Overview

Raw materials for conversion are collected and transported by truck from regional food processors and dairy operations to the existing receiving areas. The raw material is conveyed to grinders, where it is ground and chopped into a uniform size for more efficient processing. The ground material is conveyed to the cookers via pumps. The existing boilers provide steam to heat the cooking process. Cooking evaporates water, and the solids (protein) are separated from the liquid (fat). The liquid fat and solid protein is further refined before being stored for shipment. The current process utilizes three batch cookers as preheaters for certain raw materials prior to the existing cooker; this proposed Project would replace the three batch cookers with a continuous cooker, condenser, and supporting equipment. These changes will facilitate an upgrade to the overall facility capacity and allow for finished fat and protein speciation for higher finished product value.

Vapors from the cooking process will be treated through an upgraded odor control system, including additional pretreatment prior to the existing venturi scrubber and RTO. One venturi scrubber and packed tower scrubber will be added to support the cooking lines, and a second venturi scrubber and packed tower scrubber will be added to support the feather process line.

2.2 Proposed Rendering Process Changes

The proposed project will include replacement of three batch cookers with one Dupps 200U continuous cooker. This change will facilitate an increase in the maximum raw material throughput from 1,650,000 pounds per day to 1,850,000 pounds per day. The new Dupps 200U cooker will be supported by a new air-cooled condenser for condensing the evaporated water and reducing odor, in addition to cooling the vapor stream prior to the existing odor control system.

To enhance performance of the odor control system, Darling will install two venturi scrubbers [one rated at 4,000 cubic feet per minute (cfm) and one rated at 6,000 cfm] and two packed tower scrubbers (one rated at 4,000 cfm and one rated at 6,000 cfm) as pretreatment for the cooking lines and the feather line. These scrubbers will be installed prior to the existing 10,000 cfm venturi scrubber and 10,000 cfm RTO. These pretreatment scrubbers are expected to reduce the facility's potential odor profile and reduce the PM_{10} emissions from the RTO by 25%.

A species segregation enclosed drag line will be constructed for delivery of protein to a species segregation curing bin, hammermill, screen, 400-ton storage/loadout bin, and loadout building. This will allow for animal speciation of the protein for a higher finished product value with no change in the loadout limitations in the existing air permits. The fat segregation will take place with the addition of two 15,000-gallon fat tanks, which are permit-exempt based on the vapor pressure of the finished fat. The screen will be aspirated through a debris collector with a bag filter discharging into protein finishing space.

For the last 2 years, the rendering process has been operating at a little less than half of the permitted capacity of the facility. The 2-year historical average throughput will serve as the Baseline for the rendering process emissions. The throughput information used in the emission calculations is shown in Table 2-1.

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Table 2-1: Throughput Information

Processing Step	2-Year Historical Baseline Throughput		Proposed Project Throughput	
	TPD	TPY	TPD	TPY
Raw Material Incoming	387	120,775	925	337,625
Fat Loadout	49	15,246	185	67,525
Protein Loadout	97	30,326	185	67,525

2.3 Combustion Equipment

The facility operates three combustion devices that will be impacted by the proposed Project: 1) one 48 million British thermal units (MMBtu) per hour Babcock & Wilcox (B&W) boiler, 2) one 76.93 MMBtu per hour Nebraska boiler, and 3) one 3 MMBtu per hour RTO.

2.3.1 Baseline Natural Gas Usage

The baseline natural gas usage for the combustion equipment is based on the 2-year historical gas consumption for the facility. However, natural gas usage for the combustion equipment is not tracked separately for each device. Gas usage for each device and relevant time period was derived as follows:

- The RTO is assumed to operate at a maximum of 100% heat rate on an hourly and daily basis and 50% heat rate on an annual average basis;
- The boilers are assumed to operate at a maximum of 100% heat rate on an hourly and daily basis;
- The annual gas usage associated with the RTO operating as described above is subtracted from the 2-year historical actual gas usage to determine the total annual consumption for two boilers; and
- Annual gas consumption is allocated to the boilers according to the boiler heat rate. The total boiler heat rate is 124.93 MMBtu per hour (= 48 + 76.93). Gas allocated to the B&W is 38% (= 48/124.93) and gas allocated to the Nebraska boiler is 62% (= 76.93/124.93).

Comparing the historical annual gas consumption to the maximum heat rate of the boilers indicates that the boilers operated at approximately 25% of the maximum heat rate on an annual average basis during the Baseline period.

2.3.2 Project Natural Gas Usage

The Project gas usage is based on the following assumptions. The assumptions and calculations presented herein reflect the anticipated future use of the equipment.

- The RTO is assumed to operate at 100% heat rate, or 3 MMBtu per hour, on an hourly, daily, and annual basis.
- Gas usage for the boilers will be based on a "projected actual" basis because the boiler capacity exceeds the heat requirements of the process (the boilers and RTO are permitted by the SJVAPCD to operate at full rated capacity).

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- The historical annual gas usage and throughput (i.e., the most recent 2 years) were used to calculate the heat required per ton of raw material throughput. Using that calculated heat requirement and the proposed Project throughput of 925 tons per day, the total annual heat requirement for the boilers was estimated. This value likely overestimates the heat required, as the proposed continuous cooker is more efficient than the batch cookers it will replace. Based on this approach, the boilers will be required to operate at approximately 72% of their maximum capacity on an annual average basis. This is a reasonable conclusion, as boilers require periodic maintenance and will have down time (e.g., holidays, etc.).
- The boilers are assumed to operate at maximum rated capacity to estimate maximum hourly and daily gas usage, and at 72% of the maximum rated capacity to estimate annual gas usage and emissions.

Table 2-2: Throughput Information

Unit	Max Heat Rate (MMBtu/hr)	Baseline Gas Usage Allocation (MCF/yr)	Baseline Gas Usage Allocation (MMBtu/yr)	Projected Actual Annual Gas Use (scf/yr)	Projected Actual Annual Gas Use (MMBtu/yr)
RTO	3	12,782	13,140	25,564,202	26,280.0
B&W	48	97,660	100,395	294,292,706	302,532.9
Nebraska	76.93	156,521	160,903	471,665,372	484,872.0
Total	–	266,963	274,438	791,522,281	813,684.9

2.3.3 Boiler Change of PM_{10} Emission Factor

Darling has requested that the SJVAPCD change the PM_{10} emission factor used to calculate emissions from each of the two boilers. Specifically, Permit N-2107-1-14, Conditions 8 and 9, and Permit N-2107-13-4, Condition 4, specify a PM_{10} emission factor of 0.0076 pounds per MMBtu when calculating emissions. Darling requested that these conditions be updated to 0.0029 pounds PM_{10} per MMBtu as the emission factor, which is more representative of currently accepted emission factors and source test information. These changes to emission factors are reflected in the emission calculations prepared for this analysis.

2.4 Operating Schedule

The facility can operate up to twenty-four (24) hours per day, seven (7) days per week, and fifty-two (52) weeks per year.

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3.0 EMISSION CALCULATION METHODOLOGY

3.1 Overview

The proposed Project will install several new components. Several of the new components will impact emissions; those changes are discussed in Sections 3.2 through 3.6. Some of the proposed changes will not impact emissions, as explained below:

- The new separate raw material grinder and pump to move raw material from a reworked existing pit to the new cooker comprise an all wet and closed system with no emissions; and
- Fat will be held in two new 15,000-gallon storage tanks, which are exempt from SJVAPCD permit requirements due to low vapor pressure of the fat; the expected emissions are negligible and are not estimated.

3.2 Rendering Process Emissions

The rendering process emissions estimates apply to SJVAPCD Permits 9-18 (Rendering Line) and 14-1 (Feather Line), which share the RTO and emission limits. The new cooker, closed entrainment trap, screen, centrifuge, and presses are vented to the odor control system, i.e., the RTO and scrubbers. The proposed Project will not increase the toxic air contaminant (TAC) emissions from the rendering operations itself, as the rendered products do not contain TACs and TACs are not released during processing. Rendering TAC emissions are not estimated.

The rendering process PM_{10}, sulfur oxides (SO_x), and volatile organic compound (VOC) emissions are calculated based on the process throughput information presented in Table 2-1 and the emission factors listed in Table 3-1. Nitrogen oxide (NO_x) and carbon monoxide (CO) emissions are estimated based on the RTO heat rate presented in Table 2-2, and the emission factors listed in Table 3-1.

Baseline and Project emission calculations are provided in Tables 1 and 2, respectively, in Attachment C-1.

Table 3-1: Rendering Process Emission Factors

Pollutant	Pre-Project	Post-Project
NO_x	0.98 lb/MMBtu	0.98 lb/MMBtu
SO_x	0.15 lb/ton	0.15 lb/ton
PM_{10}	0.097 lb/ton	0.07275 lb/ton
CO	1.12 lb/MMBtu	1.12 lb/MMBtu
VOC	0.03 lb/ton	0.03 lb/ton

3.3 Meat and Bonemeal Loadout

Meat and bonemeal (i.e., protein) loadout PM_{10} emissions are based on an emission factor of 0.25 pounds of emissions per ton of throughput. Baseline emissions are estimated based on the 2-year historical throughput of the loadout system of 97.2 tons per day, and the Project emissions are based on the maximum throughput of the loadout system of 1,200 tons per day.[1] Actual future

[1] The Meat and Bonemeal Loadout system is permitted by the SJVAPCD to process up to 1,200 tons per day.

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loadout system throughput will likely be less than 300 tons per day; thus, these emissions estimates ensure that emissions are not underestimated.

3.4 Boiler Emissions

Boiler emission calculations apply to the Nebraska Boiler (Permit N-2107-13-7) and the B&W Boiler (Permit N-2107-15-1). The boilers are assumed to operate at 100% of maximum capacity on an hourly and daily basis during both Baseline and Project periods. On an annual average basis, the boilers operated at approximately 25% of maximum capacity during the Baseline period and will operate at about 72% of capacity following implementation of the Project. These assumptions are used to estimate criteria pollutant and TAC emissions.

The boiler criteria pollutant emissions are calculated based on the heat rate information presented in Table 2-2. Baseline and Project emission factors are the same for all pollutants except for PM_{10}. The proposed change to the PM_{10} emission factor for the boilers will result in lower reported PM_{10} emissions from the equipment. Baseline and Project PM_{10} emission factors are shown in Table 3-2. Baseline and Project boiler emission calculations are provided in Tables 3, 4, 5, and 6 in Attachment C-1.

Table 3-2: Boiler PM_{10} Emission Factors

Emission Unit	Baseline (lb/MMBtu)	Proposed Project (lb/MMBtu)
B&W Boiler (N-2107-15-1)	0.0076	0.0029
Nebraska Boiler (N-2107-13-7)	0.0076	0.0029

3.5 Greenhouse Gas Emissions

Greenhouse gas (GHG) emissions are estimated based on 2-year historical gas usage for the Baseline period, projected actual gas usage for the Project, California Air Resources Board (CARB) emission factors and global warming potential (GWP) factors. The GHG emission factors and GWP are shown in Table 3-3. Baseline and Project emission calculations are provided in Tables 7 and 8, respectively, in Attachment C-1.

Table 3-3: GHG Emission Factors and GWP

Parameter	CO_2	CH_4	N_2O
Emission Factor (kg CO_2/MMBtu)	53.02	0.001	0.0001
GWP	1	21	310

3.6 Toxic Air Contaminant Emissions

TAC emissions are estimated based on 2-year historical gas usage for the Baseline period, projected actual gas usage for the Project, and SCAQMD default emission factors for natural gas combustion (from the SCAQMD Annual Emissions Report program). The emission factors are shown in Table 3-4. Baseline and Project emission calculations are provided in Tables 10a, 10b, and 10c for the RTO, B&W Boiler, and Nebraska Boiler, respectively, in Attachment C-1.

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Table 3-4: TAC Emission Factors

Pollutant	Cas No.	RTO EF (lb/MMscf)	Boiler EF (lb/MMscf)
Benzene	71432	0.008	0.0058
Formaldehyde	50000	0.017	0.0123
Total PAHs (excluding Naphthalene)	1151	0.0001	0.0001
Naphthalene	91203	0.0003	0.0003
Acetaldehyde	75070	0.0043	0.0031
Acrolein	107028	0.0027	0.0027
Ammonia	7664417	3.2	18
Ethyl Benzene	100414	0.0095	0.0069
Hexane	110543	0.0063	0.0046
Toluene	108883	0.0366	0.0265
Xylene	1330207	0.0272	0.0197

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4.0 SUMMARY OF EMISSIONS

Hourly Project and Baseline criteria pollutant emissions, along with the change in emissions, are summarized in Table 4-1. Daily Project and Baseline criteria pollutant emissions, along with the change in emissions, are summarized in Table 4-2. Annual Project and Baseline criteria pollutant emissions, along with the change in emissions, are summarized in Table 4-3. Annual Project and Baseline GHG emissions, along with the change in emissions, are summarized in Table 4-4. Baseline and Project TAC emissions are found in Tables 10a, 10b, and 10c in Attachment C-1.

Table 4-1: Hourly Emissions

Device	NO_x (lb/hr)	SO_x (lb/hr)	PM_{10} (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Project					
Rendering	2.94	5.78	2.93	3.36	1.16
B&W Boiler	1.73	0.14	0.14	1.78	0.26
Nebraska Boiler	0.62	0.22	0.22	5.62	0.42
Total – Project	5.28	6.14	3.29	10.75	1.84
Baseline					
Rendering	2.94	2.42	1.57	3.36	0.48
B&W Boiler	1.73	0.14	0.36	1.78	0.26
Nebraska Boiler	0.62	0.22	0.58	5.62	0.42
Total – Base	5.28	2.78	2.52	10.75	1.17
Net Change	0.00	3.36	0.77	0.00	0.67

Table 4-2: Daily Emissions

Device	NO_x (lb/day)	SO_x (lb/day)	PM_{10} (lb/day)	CO (lb/day)	VOC (lb/day)
Project					
Rendering	70.56	138.75	70.29	80.64	27.75
B&W Boiler	13.92	3.28	3.36	42.62	6.34
Nebraska Boiler	14.77	5.26	5.35	134.78	10.15
Total – Project	99.25	147.30	79.01	258.05	44.24
Baseline					
Rendering	70.56	58.06	37.79	80.64	11.61
B&W Boiler	13.92	3.28	8.76	42.62	6.34
Nebraska Boiler	14.77	5.26	14.03	134.78	10.15
Total – Base	99.25	66.61	60.58	258.05	28.10
Net Change	0.00	80.69	18.43	0.00	16.14

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Table 4-3: Annual Emission

Device	NO_x (lb/yr)	SO_x (lb/yr)	PM_{10} (lb/yr)	CO (lb/yr)	VOC (lb/yr)
Project					
Rendering	25754.40	50643.75	25657.22	29433.60	10128.75
B&W Boiler	2932.05	862.22	882.42	11193.72	1663.93
Nebraska Boiler	3878.98	1381.89	1406.13	35395.66	2666.80
Total – Project	32565.42	52887.85	27945.76	76022.97	14459.48
Baseline					
Rendering	12877.20	18116.25	11803.87	14716.80	3623.25
B&W Boiler	972.99	286.12	763.00	3714.60	552.17
Nebraska Boiler	1287.23	458.57	1222.87	11745.94	884.97
Total – Base	15137.42	18860.95	13789.73	30177.34	5060.39
Net Change (lb/yr)	17428.01	34026.90	14156.03	45845.63	9399.09
Net Change (TPY)	8.71	17.01	7.08	22.92	4.70

Table 4-4: Annual GHG Emissions

Device	CO_2 (MT/yr)	CH_4 (MT/yr)	N_2O (MT/yr)	CO_2e (MT/yr)
Project				
Rendering	1393.37	0.03	0.00	
B&W Boiler	16040.29	0.30	0.03	
Nebraska Boiler	25707.91	0.48	0.05	
Total – Project	43141.57	0.81	0.08	
Baseline				
Rendering	696.68	0.01	0.00	
B&W Boiler	5322.92	0.10	0.01	
Nebraska Boiler	8531.09	0.16	0.02	
Total – Base	14550.70	0.27	0.03	
Net Change	28590.87	0.54	0.05	
GWP	1.00	21.00	310.00	
CO_2e	28590.87	11.32	16.72	28618.91

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ATTACHMENT C-1 – EMISSION CALCULATION WORKSHEETS

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Table 0: Gas Usage

Table 0a: Historic Gas Usage and Throughput

Year	Gas Usage (MCF/yr)	Throughput (ton/yr)	Gas Usage (MCF/ton)
2020	254,201	118,251	2.15
2021	279,725	123,299	2.27
Annual Average	**266,963**	**120,775**	

Table 0b: Projected Activity and Gas Usage

Throughput (ton/yr)	Projected Actual Gas Usage (MCF/yr)	Maximum gas usage for boilers (MCF/yr)	Future Actual % of max capacity
337625	765,958	1,064,579	72%

Table 0c: Gas Allocation to Combustion Units

Unit	Max Heat Rate (MMBtu/hr)	Baseline Gas Usage Allocation (MCF/yr)	Baseline Gas Usage Allocation (MMBtu/yr)	Projected Actual Annual Gas Use (scf/yr)	Projected Actual Annual Gas Use (MMBtu/yr)
RTO	3	12,782	13,140	25,564,202	26280.0
B&W	48	97,660	100,395	294,292,706	302532.9
Nebraska	76.93	156,521	160,903	471,665,372	484872.0
Total	124.93	266,963	274,438	791,522,281	

Notes:

1. Projected gas usage total in Table 0c exceeds the total predicted in Table 0b. The difference is that the RTO fuel combustion is included in gas usage per ton of raw material calculated in Table 0a (which is used in 0b to calculate the utilization). The RTO gas usage projection is calculated separately in Table 0c. This manipulation is deliberate: 1) there is no basis for an assumption about RTO heat load, and 2) this ensures that future actual emissions for the RTO and boilers are not underestimated.

2. The total heat rate in Table 0c referes only to the total for the boilers. This ensures that boiler emissions are not underestimated and that the RTO heat input is at maximum capcity for the projected actual emission calculations.

Operating Parameters

Heat Content	1028	Btu/CF
Opeating hours	8760	hr/yr
Operating days	365	day/yr

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Table 1: Baseline Rendering Emissions

Unit: Rendering
Permit No. N-2107-9-18 *Note: Shared emission limit with Permit N-2107-14-1*

Table 1a: Baseline RTO Emissions

Pollutant	Emission Factor	Lb/hr	Lb/day	Lb/yr
NOx	0.98 lb/MMBtu	2.94	70.56	12877.2
SOx	0.15 lb/ton	2.42	58.06	18116.25
PM10	0.097 lb/ton	1.56	37.55	11715.18
CO	1.12 lb/MMBtu	3.36	80.64	14716.8
VOC	0.03 lb/ton	0.48	11.61	3623.25

Operating Parameters

RTO Heat Rate	3	MMBtu/hr
RTO Heat Rate	72	MMBtu/day
Annual Average Heat Rate	50%	
RTO Heat Rate	13140	MMBtu/yr
Daily Operation	24	hr/day
Annual Operation	8760	hr/yr
2-year average Throughput	774,199	lb/day
2-year average Throughput	387.10	ton/day
2-year average Throughput	241,550,000	lb/yr
2-year average Throughput	120,775	ton/yr

Unit: Meat and Bonemeal Loadout
Permit No. N-2107-12-5

Table 1b: Baseline Meat and Bonemeal Loadout Emissions

Pollutant	Emission Factor (lb/ton)	Lb/hr	Lb/day	Lb/yr
NOx	0	0.00	0.00	0.00
SOx	0	0.00	0.00	0.00
PM10	0.0025	0.01	0.24	88.69
CO	0	0.00	0.00	0.00
VOC	0	0.00	0.00	0.00

Operating Parameters

2- year average Throughput	97.20	ton/day
Operations	24	hr/day
Operations	365	day/yr

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Table 2: Project Rendering Emissions

Unit: Rendering
Permit No. N-2107-9-18 *Note: Shared emission limit with Permit N-2107-14-1*

Table 2a: Project RTO Emissions

Pollutant	Emission Factor	Lb/hr	Lb/day	Lb/yr
NOx	0.98 lb/MMBtu	2.94	70.56	25754.40
SOx	0.15 lb/ton	5.78	138.75	50643.75
PM10	0.07275 lb/ton	2.80	67.29	24562.22
CO	1.12 lb/MMBtu	3.36	80.64	29433.60
VOC	0.03 lb/ton	1.16	27.75	10128.75

Operating Parameters

RTO Heat Rate	3	MMBtu/hr
Daily Operation	24	hr/day
Annual Operation	8760	hr/yr
Throughput	1,850,000	lb/day
Throughput	925	ton/day
Throughput	675,250,000	lb/yr
Throughput	337,625	ton/yr
Scrubber Control	25%	

Unit: Meat and Bonemeal Loadout
Permit No. N-2107-12-4

Table 2b: Project Meat and Bonemeal Loadout

Pollutant	Emission Factor	Lb/hr	Lb/day	Lb/yr
NOx	0	0.00	0.00	0.00
SOx	0	0.00	0.00	0.00
PM10	0.0025	0.13	3.00	1095.00
CO	0	0.00	0.00	0.00
VOC	0	0.00	0.00	0.00

Operating Parameters

Throughput	1,200	ton/day
Operations	24	hr/day
Operations	365	day/yr

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Table 3: Baseline B&W Boiler Emissions

Unit: Babcock & Wilcox Boiler
Permit No. N-2107-15-1

Table 3a: Baseline B&W Boiler Normal Operating Emissions

Pollutant	Emission Factor (lb/MMBtu)	Lb/hr	Lb/day	Lb/yr
NOx	0.0073	0.35	7.01	671.81
SOx	0.00285	0.14	2.74	262.28
PM10	0.0076	0.36	7.30	699.42
CO	0.037	1.78	35.52	3405.05
VOC	0.0055	0.26	5.28	506.16

Table 3b: Baseline B&W Boiler SU/SD Emissions

Pollutant	Emission Factor (lb/MMBtu)	Lb/hr	Lb/day	Lb/yr
NOx	0.036	1.73	6.91	301.18
SOx	0.00285	0.14	0.55	23.84
PM10	0.0076	0.36	1.46	63.58
CO	0.037	1.78	7.10	309.55
VOC	0.0055	0.26	1.06	46.01

Table 3c: Baseline B&W Boiler Total Operating Emissions

Pollutant	Emission Factor	Lb/hr	Lb/day	Lb/yr
NOx	---	1.73	13.92	972.99
SOx	---	0.14	3.28	286.12
PM10	---	0.36	8.76	763.00
CO	---	1.78	42.62	3714.60
VOC	---	0.26	6.34	552.17

Operating Parameters

Boiler Heat Rate	48.0	MMBtu/hr
Boiler Heat Rate	1152.0	MMBtu/day
Boiler Heat Rate	100394.6	MMBtu/yr
Normal Ops Heat Rate	92028.4	MMBtu/yr
SU/SD Heat Rate	8366.2	MMBtu/yr
Daily Operation	24	hr/day
Daily SU/SD	4	hr/day
Daily Normal Ops	20	hr/day
Annual Operation	8760	hr/yr
Annual SU/SD	730	hr/yr
Annual Normal Op:	8030	hr/yr

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Table 4: Project B&W Boiler Emissions

Unit: Babcock & Wilcox Boiler
Permit No. N-2107-15-1

Table 4a: Project B&W Boiler Normal Operating Emissions

Pollutant	Emission Factor (lb/MMBtu)	Lb/hr	Lb/day	Lb/yr
NOx	0.0073	0.35	7.01	2024.45
SOx	0.00285	0.14	2.74	790.37
PM10	0.002918288	0.14	2.80	809.30
CO	0.037	1.78	35.52	10260.91
VOC	0.0055	0.26	5.28	1525.27

Table 4b: Project B&W Boiler SU/SD Emissions

Pollutant	Emission Factor (lb/MMBtu)	Lb/hr	Lb/day	Lb/yr
NOx	0.036	1.73	6.91	907.60
SOx	0.00285	0.14	0.55	71.85
PM10	0.0029	0.14	0.56	73.11
CO	0.037	1.78	7.10	932.81
VOC	0.0055	0.26	1.06	138.66

Table 4c: Project B&W Boiler Total Operating Emissions

Pollutant	Emission Factor	Lb/hr	Lb/day	Lb/yr
NOx	---	1.73	13.92	2932.05
SOx	---	0.14	3.28	862.22
PM10	---	0.14	3.36	882.42
CO	---	1.78	42.62	11193.72
VOC	---	0.26	6.34	1663.93

Operating Parameters

Boiler Heat Rate	48	MMBtu/hr
Boiler Heat Rate	1152	MMBtu/day
Projected Annual Average Actual Heat Rate	302532.90	MMBtu/yr
Normal Ops Heat Rate	277321.83	MMBtu/yr
SU/SD Heat Rate	25211.08	MMBtu/yr
Daily Operation	24	hr/day
Daily SU/SD	4	hr/day
Daily Normal Ops	20	hr/day
Annual Operation	8760	hr/yr
Annual SU/SD	730	hr/yr
Annual Normal Op:	8030	hr/yr
Revised PM10 EF	3	lb/MMscf
HHV	1028	Btu/scf

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Table 5: Baseline Nebraska Boiler Emissions

Unit: Nebraska Boiler
Permit No. N-2107-13-7

Table 5: Baseline Nebraska Boiler Emissions

Pollutant	Emission Factor (lb/MMBtu)	Lb/hr	Lb/day	Lb/yr
NOx	0.008	0.62	14.77	1287.23
SOx	0.00285	0.22	5.26	458.57
PM10	0.0076	0.58	14.03	1222.87
CO	0.073	5.62	134.78	11745.94
VOC	0.0055	0.42	10.15	884.97

Operating Parameters

Boiler Heat Rate	76.9	MMBtu/hr
Boiler Heat Rate	1846.3	MMBtu/day
Boiler Heat Rate	160903.3	MMBtu/yr
Daily Operation	24	hr/day
Daily SU/SD	0	hr/day
Daily Normal Ops	24	hr/day
Annual Operation	8760	hr/yr
Annual SU/SD	0	hr/yr
Annual Normal Op:	8760	hr/yr

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Table 6: Project Nebraska Boiler Emissions

Unit: Nebraska Boiler
Permit No. N-2107-13-7

Table 6: Project Nebraska Boiler Emissions

Pollutant	Emission Factor (lb/MMBtu)	Lb/hr	Lb/day	Lb/yr
NOx	0.008	0.62	14.77	3878.98
SOx	0.00285	0.22	5.26	1381.89
PM10	0.0029	0.22	5.35	1406.13
CO	0.073	5.62	134.78	35395.66
VOC	0.0055	0.42	10.15	2666.80

Operating Parameters

Boiler Heat Rate	76.93	MMBtu/hr
Boiler Heat Rate	1846.32	MMBtu/day
Projected Annual Average Actual Heat Rate	484872.00	MMBtu/yr
Daily Operation	24	hr/day
Daily SU/SD	0	hr/day
Daily Normal Ops	24	hr/day
Annual SU/SD	0	hr/yr
Annual Normal Op:	8760	hr/yr
Revised PM10 EF	3	lb/MMscf
HHV	1028	Btu/scf

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Table 7: Baseline GHG Emissions

Device	Selected Stationary Source Combustion Fuels for Facility[3]	Annual Amount Combusted	Unit of Measure	CARB GHG Reportable Emissions				EPA GHG Reportable Emissions			
				Non-Biogenic CO_2 Emissions[4] (metric tons)	Biogenic CO_2 Emissions[4] (metric tons)	CH_4 Emissions[4] (metric tons)	N_2O Emissions[4] (metric tons)	Non-Biogenic CO_2 Emissions[4] (metric tons)	Biogenic CO_2 Emissions[4] (metric tons)	CH_4 Emissions[4] (metric tons)	N_2O Emissions[4] (metric tons)
RTO	Natural Gas - Weighted U.S. Average (scf)	12782101.17	(scf)	696.68		0.0131	0.0013	695.85		0.0131	0.0013
B&W Boiler	Natural Gas - Weighted U.S. Average (scf)	97660154.84	(scf)	5,322.92		0.1004	0.0100	5,316.58		0.1002	0.0100
Nebraska Boiler	Natural Gas - Weighted U.S. Average (scf)	156520743.99	(scf)	8,531.09		0.1609	0.0161	8,520.92		0.1606	0.0161
GHG Emissions (metric tons/year)				14,550.70		0.27	0.03	14533.35		0.27	0.03
Global Warming Potentials (GWP)				1	1	21	310	1	1	25	298
CO_2e Emissions (metric tons CO_2e/year)				**14,550.70**		**5.76**	**8.51**	**14533.35**		**6.85**	**8.16**
Total Annual Non-Biogenic CO_2e Emissions for Selected Fuels[4]				**14,565 metric tons**				**14,548 metric tons**			
Total Annual CO_2e Emissions for Selected Fuels[5]				**14,565 metric tons**				**14,548 metric tons**			
Total Annual CO_2e Emissions for Selected Fuels[5]				**16,055 short tons**				**16,037 short tons**			

Notes:

1. This calculator is only meant to be used to estimate stationary combustion GHG Emissions to determine if California Air Resources Board (CARB) or Environmental Protection Agency (EPA) thresholds apply. If total emissions for the facility are close to the threshold, please review the appropriate regulation to perform more rigorous analysis to determine reporting requirements.
2. In addition to stationary combustion emissions, many facilities are required to report their GHG Emissions based on source catergory (independent of total GHG Emissions), and other sources are required to report if combined source and process emissions exceeds the reporting threshold [25,000 Metric Tons (MT) CO_2e for EPA and 10,000 MT CO_2e for CARB]. The list of these source categories are given on worksheet titled **"Source List"**. More information determining process GHG Emissions can be found in the EPA and CARB mandatory reporting regulations.
3. Emergency/back-up generating units, fire suppression systems and equipment, portable equipment, and primary and secondary schools with an NAICS code of 611110 (not exempt under EPA) are excluded from the reporting of GHG Emissions under 17 CCR 95101(f). Emergency equipment, irrigation pumps at agricultural operations, flares (unless required under a source category) Mobile Sources are also exempt from reporting and are covered under other regulations.
4. All Higher Heating Values, and CO_2, CH_4, and N_2O emission factors used to calculate CO_2e emisssions from annual fuel usage are from 40 CFR Part 98, Subpart C, Tables C-1 and C-2.
5. The Annual CO_2e emissions are also displayed in short tons to assist in determing CO_2e permitting thresholds for the EPA GHG Tailoring Rule. Also, CO2 Emissions reported under 40 CFR Part 75 are reported in short tons as well.
6. CARB Reporting Thresholds: under 10,000 MT CO2e except source categories, no reporting; 10,000 to less than 25,000 MT CO2e, CARB abbreviated GHG reporting; over 25,000 MT CO2e, CARB Full Reporting and Verification require: over 25,000 MT non-biogenic CO2e, CARB reporting and Cap-and-Trade registration required.
7. EPA Reporting Threshold: under 25,000 MT non-biogenic CO2e, no reporting except source categories; over 25,000 MT CO2e, EPA GHG Reporting; over 100,000 short tons CO2e, EPA GHG Reporting and Title V permitting.
8. Source Categories with no minimum reporting threshold are listed on the tab titled "Source List".

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Table 8: Project GHG Emissions

Device	Selected Stationary Source Combustion Fuels for Facility[3]	Annual Amount Combusted	Unit of Measure	CARB GHG Reportable Emissions				EPA GHG Reportable Emissions			
				Non-Biogenic CO_2 Emissions[4] (metric tons)	Biogenic CO_2 Emissions[4] (metric tons)	CH_4 Emissions[4] (metric tons)	N_2O Emissions[4] (metric tons)	Non-Biogenic CO_2 Emissions[4] (metric tons)	Biogenic CO_2 Emissions[4] (metric tons)	CH_4 Emissions[4] (metric tons)	N_2O Emissions[4] (metric tons)
RTO	Natural Gas - Weighted U.S. Average (scf)	25564202.33	(scf)	1,393.37		0.0263	0.0026	1,391.70		0.0262	0.0026
B&W Boiler	Natural Gas - Weighted U.S. Average (scf)	294292706.07	(scf)	16,040.29		0.3025	0.0303	16,021.17		0.3019	0.0302
Nebraska Boiler	Natural Gas - Weighted U.S. Average (scf)	471665372.46	(scf)	25,707.91		0.4849	0.0485	25,677.26		0.4839	0.0484
GHG Emissions (metric tons/year)				43,141.57		0.81	0.08	43090.12		0.81	0.08
Global Warming Potentials (GWP)				1	1	21	310	1	1	25	298
CO_2e Emissions (metric tons CO_2e/year)				**43,141.57**		**17.09**	**25.22**	**43090.12**		**20.30**	**24.20**
Total Annual Non-Biogenic CO_2e Emissions for Selected Fuels[4]				**43,184 metric tons**				**43,135 metric tons**			
Total Annual CO_2e Emissions for Selected Fuels[5]				**43,184 metric tons**				**43,135 metric tons**			
Total Annual CO_2e Emissions for Selected Fuels[5]				**47,602 short tons**				**47,547 short tons**			

Notes:

1. This calculator is only meant to be used to estimate stationary combustion GHG Emissions to determine if California Air Resources Board (CARB) or Environmental Protection Agency (EPA) thresholds apply. If total emissions for the facility are close to the threshold, please review the appropriate regulation to perform more rigorous analysis to determine reporting requirements.
2. In addition to stationary combustion emissions, many facilities are required to report their GHG Emissions based on source catergory (independent of total GHG Emissions), and other sources are required to report if combined source and process emissions exceeds the reporting threshold [25,000 Metric Tons (MT) CO_2e for EPA and 10,000 MT CO_2e for CARB]. The list of these source categories are given on worksheet titled **"Source List"**. More information determining process GHG Emissions can be found in the EPA and CARB mandatory reporting regulations.
3. Emergency/back-up generating units, fire suppression systems and equipment, portable equipment, and primary and secondary schools with an NAICS code of 611110 (not exempt under EPA) are excluded from the reporting of GHG Emissions under 17 CCR 95101(f). Emergency equipment, irrigation pumps at agricultural operations, flares (unless required under a source category) Mobile Sources are also exempt from reporting and are covered under other regulations.
4. All Higher Heating Values, and CO_2, CH_4, and N_2O emission factors used to calculate CO_2e emisssions from annual fuel usage are from 40 CFR Part 98, Subpart C, Tables C-1 and C-2.
5. The Annual CO_2e emissions are also displayed in short tons to assist in determing CO_2e permitting thresholds for the EPA GHG Tailoring Rule. Also, CO2 Emissions reported under 40 CFR Part 75 are reported in short tons as well.
6. CARB Reporting Thresholds: under 10,000 MT CO2e except source categories, no reporting; 10,000 to less than 25,000 MT CO2e, CARB abbreviated GHG reporting; over 25,000 MT CO2e, CARB Full Reporting and Verification require: over 25,000 MT non-biogenic CO2e, CARB reporting and Cap-and-Trade registration required.
7. EPA Reporting Threshold: under 25,000 MT non-biogenic CO2e, no reporting except source categories; over 25,000 MT CO2e, EPA GHG Reporting; over 100,000 short tons CO2e, EPA GHG Reporting and Title V permitting.
8. Source Categories with no minimum reporting threshold are listed on the tab titled "Source List".

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Table 9: Facility Total Emissions

Table 9a: Net Change Total Hourly Emissions

Device	NOx	SOx	PM10	CO	VOC
Project					
Rendering	2.94	5.78	2.93	3.36	1.16
B&W Boiler	1.73	0.14	0.14	1.78	0.26
Nebraska Boiler	0.62	0.22	0.22	5.62	0.42
Total - Project	5.28	6.14	3.29	10.75	1.84
Baseline					
Rendering	2.94	2.42	1.57	3.36	0.48
B&W Boiler	1.73	0.14	0.36	1.78	0.26
Nebraska Boiler	0.62	0.22	0.58	5.62	0.42
Total - Base	5.28	2.78	2.52	10.75	1.17
Net Change	0.00	3.36	0.77	0.00	0.67

Table 9b: Net Change Total Daily Emissions

Device	NOx	SOx	PM10	CO	VOC
Project					
Rendering	70.56	138.75	70.29	80.64	27.75
B&W Boiler	13.92	3.28	3.36	42.62	6.34
Nebraska Boiler	14.77	5.26	5.35	134.78	10.15
Total - Project	99.25	147.30	79.01	258.05	44.24
Baseline					
Rendering	70.56	58.06	37.79	80.64	11.61
B&W Boiler	13.92	3.28	8.76	42.62	6.34
Nebraska Boiler	14.77	5.26	14.03	134.78	10.15
Total - Base	99.25	66.61	60.58	258.05	28.10
Net Change	0.00	80.69	18.43	0.00	16.14

Table 9c: Net Change Total Annual Emissions

Device	NOx	SOx	PM10	CO	VOC
Project					
Rendering	25754.40	50643.75	25657.22	29433.60	10128.75
B&W Boiler	2932.05	862.22	882.42	11193.72	1663.93
Nebraska Boiler	3878.98	1381.89	1406.13	35395.66	2666.80
Total - Project	32565.42	52887.85	27945.76	76022.97	14459.48
Baseline					
Rendering	12877.20	18116.25	11803.87	14716.80	3623.25
B&W Boiler	972.99	286.12	763.00	3714.60	552.17
Nebraska Boiler	1287.23	458.57	1222.87	11745.94	884.97
Total - Base	15137.42	18860.95	13789.73	30177.34	5060.39
Net Change	17428.01	34026.90	14156.03	45845.63	9399.09
Net Change (TPY)	8.71	17.01	7.08	22.92	4.70

Table 9d: Net Change Total Annual GHG Emissions

Device	CO2 (MT/yr)	CH4 (MT/yr)	N2O (MT/yr)	CO2e (MT/yr)
Project				
Rendering	1393.37	0.03	0.00	
B&W Boiler	16040.29	0.30	0.03	
Nebraska Boiler	25707.91	0.48	0.05	
Total - Project	43141.57	0.81	0.08	
Baseline				
Rendering	696.68	0.01	0.00	
B&W Boiler	5322.92	0.10	0.01	
Nebraska Boiler	8531.09	0.16	0.02	
Total - Base	14550.70	0.27	0.03	
Net Change	28590.87	0.54	0.05	
GWP	1.00	21.00	310.00	
CO2e	28590.87	11.32	16.72	28618.91

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Table 10: TAC Emissions

Table 10a: RTO TAC Emissions

POLLUTANT	CAS NO.	EF (lb/MMscf)	Project Emissions		Baseline Emissions		Net Change in Emissions	
			lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
Benzene	71432	0.008	2.33E-05	0.20	2.33E-05	0.10	0.00E+00	0.10
Formaldehyde	50000	0.017	4.96E-05	0.43	4.96E-05	0.22	0.00E+00	0.22
Total PAHs (excluding Naphthalene)	1151	0.0001	2.92E-07	0.00	2.92E-07	0.00	0.00E+00	0.00
Naphthalene	91203	0.0003	8.75E-07	0.01	8.75E-07	0.00	0.00E+00	0.00
Acetaldehyde	75070	0.0043	1.25E-05	0.11	1.25E-05	0.05	0.00E+00	0.05
Acrolein	107028	0.0027	7.88E-06	0.07	7.88E-06	0.03	0.00E+00	0.03
Ammonia	7664417	3.2	9.34E-03	81.81	9.34E-03	40.90	0.00E+00	40.90
Ethyl Benzene	100414	0.0095	2.77E-05	0.24	2.77E-05	0.12	0.00E+00	0.12
Hexane	110543	0.0063	1.84E-05	0.16	1.84E-05	0.08	0.00E+00	0.08
Toluene	108883	0.0366	1.07E-04	0.94	1.07E-04	0.47	0.00E+00	0.47
Xylene	1330207	0.0272	7.94E-05	0.70	7.94E-05	0.35	0.00E+00	0.35

Table 10b: B&W Boiler TAC Emissions

POLLUTANT	CAS NO.	EF (lb/MMscf)	Project Emissions		Baseline Emissions		Net Change in Emissions	
			lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
Benzene	71432	0.0058	2.71E-04	1.71	2.71E-04	0.57	0.00E+00	1.14
Formaldehyde	50000	0.0123	5.74E-04	3.62	5.74E-04	1.20	0.00E+00	2.42
Total PAHs (excluding Naphthalene)	1151	0.0001	4.67E-06	0.03	4.67E-06	0.01	0.00E+00	0.02
Naphthalene	91203	0.0003	1.40E-05	0.09	1.40E-05	0.03	0.00E+00	0.06
Acetaldehyde	75070	0.0031	1.45E-04	0.91	1.45E-04	0.30	0.00E+00	0.61
Acrolein	107028	0.0027	1.26E-04	0.79	1.26E-04	0.26	0.00E+00	0.53
Ammonia	7664417	18	8.40E-01	5297.27	8.40E-01	1757.88	0.00E+00	3539.39
Ethyl Benzene	100414	0.0069	3.22E-04	2.03	3.22E-04	0.67	0.00E+00	1.36
Hexane	110543	0.0046	2.15E-04	1.35	2.15E-04	0.45	0.00E+00	0.90
Toluene	108883	0.0265	1.24E-03	7.80	1.24E-03	2.59	0.00E+00	5.21
Xylene	1330207	0.0197	9.20E-04	5.80	9.20E-04	1.92	0.00E+00	3.87

Table 10c: Nebraska Boiler TAC Emissions

POLLUTANT	CAS NO.	EF (lb/MMscf)	Project Emissions		Baseline Emissions		Net Change in Emissions	
			lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
Benzene	71432	0.0058	4.34E-04	2.74	4.34E-04	0.91	0.00E+00	1.83
Formaldehyde	50000	0.0123	9.20E-04	5.80	9.20E-04	1.93	0.00E+00	3.88
Total PAHs (excluding Naphthalene)	1151	0.0001	7.48E-06	0.05	7.48E-06	0.02	0.00E+00	0.03
Naphthalene	91203	0.0003	2.25E-05	0.14	2.25E-05	0.05	0.00E+00	0.09
Acetaldehyde	75070	0.0031	2.32E-04	1.46	2.32E-04	0.49	0.00E+00	0.98
Acrolein	107028	0.0027	2.02E-04	1.27	2.02E-04	0.42	0.00E+00	0.85
Ammonia	7664417	18	1.35E+00	8489.98	1.35E+00	2817.37	0.00E+00	5672.60
Ethyl Benzene	100414	0.0069	5.16E-04	3.25	5.16E-04	1.08	0.00E+00	2.17
Hexane	110543	0.0046	3.44E-04	2.17	3.44E-04	0.72	0.00E+00	1.45
Toluene	108883	0.0265	1.98E-03	12.50	1.98E-03	4.15	0.00E+00	8.35
Xylene	1330207	0.0197	1.47E-03	9.29	1.47E-03	3.08	0.00E+00	6.21

		RTO	B&W	Nebraska
Projected Actual Gas Usage	MMscf/hr	0.0029	0.0467	0.0748
Projected Actual Gas Usage	MMscf/yr	25.56	294.29	471.67
Baseline Actual Gas Usage	MMscf/hr	0.0029	0.0467	0.0748
Baseline Actual Gas Usage	MMscf/yr	12.78	97.66	156.52

APPENDIX D – HEALTH RISK PRIORITIZATION SCORE

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Name

Prioritization Calculator

Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.

Applicability				
Author or updater	Matthew Cegielski	*Last Update*	March 28, 2022	
Facility:	Darling Ingredients, Inc.			
ID#:				
Project #:				
Unit and Process#	**Construction; DPM**			
Operating Hours hr/yr	8,760.00			
Receptor Proximity (meters)	**Cancer Score**	**Chronic Score**	**Acute Score**	**Max Score**
0< R<100	1.47E+00	2.17E-03	0.00E+00	1.47E+00
100≤R<250	3.66E-01	5.43E-04	0.00E+00	3.66E-01
250≤R<500	5.86E-02	8.69E-05	0.00E+00	5.86E-02
500≤R<1000	1.61E-02	2.39E-05	0.00E+00	1.61E-02
1000≤R<1500	4.40E-03	6.52E-06	0.00E+00	4.40E-03
1500≤R<2000	2.93E-03	4.34E-06	0.00E+00	2.93E-03
2000<R	1.47E-03	2.17E-06	0.00E+00	1.47E-03

Construction; DPM	Enter the unit's CAS# of the substances emitted and their amounts.				Prioritzation score for each substance generated below. Totals on last row.		
Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**	**Average Hourly (lbs/hr)**	**Cancer**	**Chronic**	**Acute**
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	6.34E-01		7.24E-05	1.47E+00	2.17E-03	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	**1.47E+00**	**2.17E-03**	**0.00E+00**

Instructions:

1 If applicable, fill in the facility name, ID#, Project #, and Unit/Process # in the yellow highlighted cells located at the top left hand corner of the sheet.

2 Calculate the annual and max hourly emission rates for all toxic air contaminants (TACs) associated with the unit/process.

3 Find the CAS number for all TACs emitted from the units/processes using the dropdown list in Table 1.

4 Insert yearly operating hours, all CAS numbers, and annual/max hourly emission rates into the yellow highlighted cells.

5 Identify the proximity of the nearest receptor to the unit/process in meters.

6 Identfiy the maximum score in column E (in blue font) associated with the range that includes the nearest receptor distance to the unit/process.

7 If the substance list for the unit is longer than the number of rows or if there are multiple processes use additional prior worksheets and use the "Totals" tab to identify the Max Score for the Project.

Table 1.

Use the substance dropdown list in the CAS# Finder to locate CAS# of substances.

Substance	**CAS# Finder**
Benzene	71432

Name

Prioritization Calculator

Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.

Applicability			
Author or updater	Matthew Cegielski	*Last Update*	March 28, 2022
Facility:	Darling Ingredients, Inc.		
ID#:			
Project #:			
Unit and Process#	Operations; Mobile; DPM		

Operating Hours hr/yr	8,760.00			
Receptor Proximity (meters)	**Cancer Score**	**Chronic Score**	**Acute Score**	**Max Score**
0< R<100	2.20E+00	3.26E-03	0.00E+00	2.20E+00
100≤R<250	5.49E-01	8.14E-04	0.00E+00	5.49E-01
250≤R<500	8.79E-02	1.30E-04	0.00E+00	8.79E-02
500≤R<1000	2.42E-02	3.58E-05	0.00E+00	2.42E-02
1000≤R<1500	6.59E-03	9.77E-06	0.00E+00	6.59E-03
1500≤R<2000	4.39E-03	6.51E-06	0.00E+00	4.39E-03
2000<R	2.20E-03	3.26E-06	0.00E+00	2.20E-03

Operations; Mobile; DPM

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritization score for each substance generated below. Totals on last row.

Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**	**Average Hourly (lbs/hr)**	**Cancer**	**Chronic**	**Acute**
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	9.51E-01		1.09E-04	2.20E+00	3.26E-03	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	**2.20E+00**	**3.26E-03**	**0.00E+00**

Instructions:

1 If applicable, fill in the facility name, ID#, Project #, and Unit/Process # in the yellow highlighted cells located at the top left hand corner of the sheet.

2 Calculate the annual and max hourly emission rates for all toxic air contaminants (TACs) associated with the unit/process.

3 Find the CAS number for all TACs emitted from the units/processes using the dropdown list in Table 1.

4 Insert yearly operating hours, all CAS numbers, and annual/max hourly emission rates into the yellow highlighted cells.

5 Identify the proximity of the nearest receptor to the unit/process in meters.

6 Identfiy the maximum score in column E (in blue font) associated with the range that includes the nearest receptor distance to the unit/process.

7 If the substance list for the unit is longer than the number of rows or if there are multiple processes use additional prior worksheets and use the "Totals" tab to identify the Max Score for the Project.

Table 1.

Use the substance dropdown list in the CAS# Finder to locate CAS# of substances.

Substance	**CAS# Finder**
Benzene	71432

Name

Prioritization Calculator

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.		
Author or updater	Matthew Cegielski	*Last Update*	November 2, 2020
Facility:	Darling Ingredients, Inc.		
ID#:			
Project #:			
Unit and Process#	**Operations; Mobile; Gasoline Exhaust**		
Operating Hours hr/yr	8,760.00		

Receptor Proximity (meters)	Cancer Score	Chronic Score	Acute Score	Max Score
0< R<100	1.09E-01	7.86E-03	7.97E-03	1.09E-01
100≤R<250	2.72E-02	1.97E-03	1.99E-03	2.72E-02
250≤R<500	4.36E-03	3.15E-04	3.19E-04	4.36E-03
500≤R<1000	1.20E-03	8.65E-05	8.77E-05	1.20E-03
1000≤R<1500	3.27E-04	2.36E-05	2.39E-05	3.27E-04
1500≤R<2000	2.18E-04	1.57E-05	1.59E-05	2.18E-04
2000<R	1.09E-04	7.86E-06	7.97E-06	1.09E-04

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

Use the substance dropdown list in the CAS# Finder to locate CAS# of substances.

Substance	CAS# Finder
Asbestos	1332214

Operations; Mobile; Gasoline Exhaust

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritzation score for each substance generated below. Totals on last row.

Substance	CAS#	Annual Emissions (lbs/yr)	Maximum Hourly (lbs/hr)	Average Hourly (lbs/hr)	Cancer	Chronic	Acute
1,2,4-Trimethylbenze	**95636**	7.52E-02	2.41E-05	8.58E-06	0.00E+00	0.00E+00	0.00E+00
1,3-Butadiene	**106990**	4.14E-02	1.33E-05	4.72E-06	5.41E-02	3.54E-04	3.01E-05
Acetaldehyde	**75070**	1.88E-02	6.01E-06	2.14E-06	3.90E-04	2.29E-06	1.92E-05
Acrolein	**107028**	1.05E-02	3.37E-06	1.20E-06	0.00E+00	5.15E-04	2.02E-03
Benzene	**71432**	2.00E-01	6.42E-05	2.29E-05	4.47E-02	1.14E-03	3.57E-03
Chlorine	**7782505**	5.81E-02	1.86E-05	6.63E-06	0.00E+00	4.97E-03	1.33E-04
Copper	**7440508**	4.21E-04	1.35E-07	4.81E-08	0.00E+00	0.00E+00	2.02E-06
Ethyl benzene	**100414**	8.19E-02	2.63E-05	9.35E-06	1.58E-03	7.02E-07	0.00E+00
Formaldehyde	**50000**	1.29E-01	4.13E-05	1.47E-05	5.96E-03	2.45E-04	1.13E-03
Hexane	**110543**	1.20E-01	3.85E-05	1.37E-05	0.00E+00	2.94E-07	0.00E+00
Manganese	**7439965**	4.21E-04	1.35E-07	4.81E-08	0.00E+00	8.01E-05	0.00E+00
Methanol	**67561**	3.09E-02	9.90E-06	3.53E-06	0.00E+00	1.32E-07	5.30E-07
Methyl ethyl ketone	**78933**	1.51E-03	4.83E-07	1.72E-07	0.00E+00	0.00E+00	5.57E-08
Methyl tert-butyl ether	**1634044**	1.47E-01	4.70E-05	1.68E-05	2.94E-04	3.14E-07	0.00E+00
m-Xylene	**108383**	2.77E-01	8.88E-05	3.16E-05	0.00E+00	6.78E-06	6.05E-06
Naphthalene	**91203**	3.77E-03	1.21E-06	4.30E-07	9.86E-04	7.16E-06	0.00E+00
Nickel	**7440020**	4.21E-04	1.35E-07	4.81E-08	8.43E-04	5.15E-04	1.01E-03
o-Xylene	**95476**	9.62E-02	3.08E-05	1.10E-05	0.00E+00	2.35E-06	2.10E-06
Styrene	**100425**	9.02E-03	2.89E-06	1.03E-06	0.00E+00	1.72E-07	2.07E-07
Toluene	**108883**	4.47E-01	1.43E-04	5.10E-05	0.00E+00	1.82E-05	4.30E-05
				Totals	**1.09E-01**	**7.86E-03**	**7.97E-03**

Name

Prioritization Calculator

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.
Author or updater	Matthew Cegielski — *Last Update* November 2, 2020
Facility:	Darling Ingredients, Inc.
ID#:	
Project #:	
Unit and Process#	Operations; Mobile; Road Dust
Operating Hours hr/yr	8,760.00

Receptor Proximity (meters)	Cancer Score	Chronic Score	Acute Score	Max Score
0< R<100	4.81E-01	3.25E-02	1.19E-02	4.81E-01
100≤R<250	1.20E-01	8.12E-03	2.96E-03	1.20E-01
250≤R<500	1.93E-02	1.30E-03	4.74E-04	1.93E-02
500≤R<1000	5.30E-03	3.57E-04	1.30E-04	5.30E-03
1000≤R<1500	1.44E-03	9.75E-05	3.56E-05	1.44E-03
1500≤R<2000	9.63E-04	6.50E-05	2.37E-05	9.63E-04
2000<R	4.81E-04	3.25E-05	1.19E-05	4.81E-04

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

Operations; Mobile; Road Dust

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritization score for each substance generated below. Totals on last row.

Substance	CAS#	Annual Emissions (lbs/yr)	Maximum Hourly (lbs/hr)	Average Hourly (lbs/hr)	Cancer	Chronic	Acute
Arsenic	**7440382**	2.23E-03	7.14E-07	2.54E-07	5.66E-02	2.54E-03	5.36E-03
Cadmium	**7440439**	5.14E-04	1.65E-07	5.87E-08	1.66E-02	4.40E-04	0.00E+00
Chromium, hexavalent	**18540299**	1.46E-04	4.67E-08	1.66E-08	1.68E-01	1.25E-05	0.00E+00
Cobalt	**7440484**	3.94E-03	1.26E-06	4.50E-07	2.34E-01	0.00E+00	0.00E+00
Copper	**7440508**	2.54E-02	8.13E-06	2.90E-06	0.00E+00	0.00E+00	1.22E-04
Lead	**7439921**	2.13E-02	6.81E-06	2.43E-06	1.96E-03	0.00E+00	0.00E+00
Manganese	**7439965**	1.37E-01	4.40E-05	1.57E-05	0.00E+00	2.61E-02	0.00E+00
Nickel	**7440020**	2.06E-03	6.59E-07	2.35E-07	4.12E-03	2.52E-03	4.94E-03
Mercury	**7439976**	1.54E-03	4.94E-07	1.76E-07	0.00E+00	8.81E-04	1.24E-03
Selenium	**7782492**	3.43E-04	1.10E-07	3.91E-08	0.00E+00	2.94E-07	0.00E+00
Vanadium (fume or dust)	**7440622**	1.22E-02	3.90E-06	1.39E-06	0.00E+00	0.00E+00	1.95E-04
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	**4.81E-01**	**3.25E-02**	**1.19E-02**

Use the substance dropdown list in the CAS# Finder to locate CAS# of substances.

Substance	CAS# Finder
Vanadium (fume or dust)	7440622

Name **Prioritization Calculator**

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in gray areas.			
Author or updater	Matthew Cegielski	*Last Update*	November 2, 2020	
Facility:	Darling Ingredients, Inc.			
ID#:				
Project #:				
Unit and Process#	**Permitted; Combustion**			
Operating Hours hr/yr	8,760.00			

Receptor Proximity (meters)	Cancer Score	Chronic Score	Acute Score	Max Score
0< R<100	1.58E+00	8.93E-01	0.00E+00	1.58E+00
100≤R<250	3.94E-01	2.23E-01	0.00E+00	3.94E-01
250≤R<500	6.31E-02	3.57E-02	0.00E+00	6.31E-02
500≤R<1000	1.73E-02	9.82E-03	0.00E+00	1.73E-02
1000≤R<1500	4.73E-03	2.68E-03	0.00E+00	4.73E-03
1500≤R<2000	3.15E-03	1.79E-03	0.00E+00	3.15E-03
2000<R	1.58E-03	8.93E-04	0.00E+00	1.58E-03

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritization score for each substance generated below. Totals on last row.

Permitted; Combustion

Substance	CAS#	Annual Emissions (lbs/yr)	Maximum Hourly (lbs/hr)	Average Hourly (lbs/hr)	Cancer	Chronic	Acute
Benzene	**71432**	3.07E+00	0.00E+00	3.51E-04	6.86E-01	1.75E-02	0.00E+00
Formaldehyde	**50000**	6.51E+00	0.00E+00	7.43E-04	3.01E-01	1.24E-02	0.00E+00
PAHs, total, w/o individ. components reported [Treated as B(a)P for HRA]	**1151**	5.25E-02	0.00E+00	5.99E-06	4.44E-01	0.00E+00	0.00E+00
Naphthalene	**91203**	1.57E-01	0.00E+00	1.80E-05	4.12E-02	2.99E-04	0.00E+00
Acetaldehyde	**75070**	1.64E+00	0.00E+00	1.87E-04	3.41E-02	2.01E-04	0.00E+00
Acrolein	**107028**	1.42E+00	0.00E+00	1.62E-04	0.00E+00	6.93E-02	0.00E+00
Ammonia	**7664417**	9.25E+03	0.00E+00	1.06E+00	0.00E+00	7.92E-01	0.00E+00
Ethyl benzene	**100414**	3.65E+00	0.00E+00	4.17E-04	7.03E-02	3.13E-05	0.00E+00
Hexane	**110543**	2.43E+00	0.00E+00	2.78E-04	0.00E+00	5.96E-06	0.00E+00
Toluene	**108883**	1.40E+01	0.00E+00	1.60E-03	0.00E+00	5.72E-04	0.00E+00
Xylene	**1330207**	1.04E+01	0.00E+00	1.19E-03	0.00E+00	2.55E-04	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	**1.58E+00**	**8.93E-01**	**0.00E+00**

Use the substance dropdown list in the CAS# Finder to locate CAS# of substances.

Substance	CAS# Finder
Asbestos	1332214