San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

February 9, 2023

Maz Ahmadi
South Valley Almond Co LLC
15443 Beech Ave
Wasco, CA 93280

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: S-3152
Project Number: S-1224423

Dear Mr. Ahmadi:

Enclosed for your review and comment is the District's analysis of South Valley Almond Co LLC's application for an Authority to Construct for the installation of a new air curtain incinerator, at 15443 Beech Avenue in Wasco, CA.

The notice of preliminary decision for this project has been posted on the District's website (www.valleyair.org). After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Homero Ramirez of Permit Services at (661) 392-5616.

Sincerely,

Brian Clements
Director of Permit Services

BC:har

Enclosures

cc: Courtney Graham, CARB (w/ enclosure) via email

Samir Sheikh
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: (661) 392-5500 FAX: (661) 392-5585

www.valleyair.org www.healthyairliving.com

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Air Curtain Incinerator

Facility Name:	South Valley Almond Co LLC	Date:	February 7, 2023
Mailing Address:	15443 Beech Ave Wasco, CA 93280	Engineer:	Homero Ramirez
		Lead Engineer:	Steve Davidson
Contact Person:	Maz Ahmadi		
Telephone:	(661) 599-1503		
E-Mail:	mahmadi@svfnuts.com		
Application #(s):	S-3152-13-0		
Project #:	S-1224423		
Deemed Complete:	November 23, 2022		

I. Proposal

South Valley Almond Co LLC has requested an Authority to Construct (ATC) permit for the installation of a new air curtain incinerator (S-3152-13-0) that will be used to burn stockpiles of almond wood sticks removed from the almond unloading and precleaning operations and other wood waste removed from its almond orchards. The facility has proposed to use the air curtain incinerator to burn up to 80 ton/day and 8,000 ton/year of almond wood waste material.

Permit Exempt Equipment:

The facility has proposed a 49 bhp Hatz Model 3H50TIC Tier 4 Final certified diesel-fired IC engine to power air curtain incinerator fan and the instrument panel (see Appendix B). Since the IC engine is less than 50 bhp, it is exempt from District permits pursuant to Section 6.1.2 of Rule 2020. Therefore, emissions from the IC engine are not evaluated in this application review.

Background of Biomass Disposal:

Historically, the almond hulling and shelling facilities in the District paid for the biomass waste material to be chipped and hauled to the biomass power plants. However, with the shutdown of a number of biomass power plants in the San Joaquin Valley and legislative stipulations on the ratio of agricultural to forest derived biomass that can be burned on still operating biomass plants accepting subsidies, disposal of agricultural biomass at biomass power plants has been curtailed. Consequently, the facilities have built up large inventories of almond stick waste materials. Open burning is not an option because the sticks, having been removed from the fields, are not considered agricultural waste under District Rule 4103, Open Burning. The feasibility and cost effectiveness of alternative disposal options such as sending the material to

a landfill or a composting facility are addressed in the Best Available Control Technology (BACT) analysis in Appendix E of this application review.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (8/15/19)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (8/15/19)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4103	Open Burning (4/15/10)
Rule 4106	Prescribed Burning and Hazard Reduction Burning (6/21/01)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4202	Particulate Matter Emission Rate (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4302	Incinerator Burning (12/16/93)
Rule 4702	Internal Combustion Engines (8/19/21)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The facility is located at 15443 Beech Avenue in Wasco, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

The facility operates an almond processing plant. As a byproduct of the almond receiving and precleaning operations, field debris consisting of wood sticks and dirt are removed from the almonds and collected into piles. As stated earlier, the facility has been accumulating stockpiles of wood sticks as the closure of biomass power plants within the San Joaquin Valley has curtailed what was the primary and most cost effective option for the disposal of woody biomass for local agricultural sources and agricultural processors.

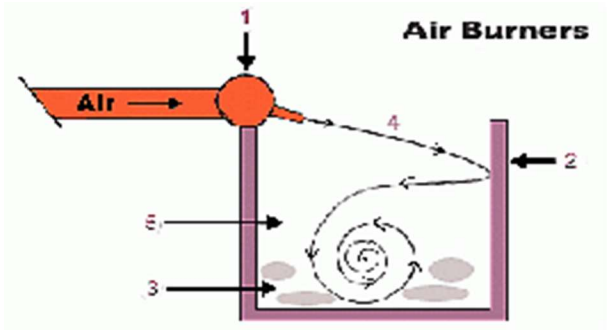
The facility has proposed an AirBurner Inc. Model S-223 air curtain incinerator (see Appendix B) as a means of disposing of their biomass waste. The proposed air curtain incinerator is a 33’ 3” feet long by 8’ 6" feet wide by 8' 6" feet high portable unit consisting of refractory-lined, opened-topped firebox, and a fan. A schematic of the air curtain incinerator and photographs of air curtain incinerators in the field are included at the end of this section. The power source for the fan will be provided by the permit exempt (50 bhp or less) diesel-fired IC engine. Waste material is loaded through the top opening of the firebox by heavy equipment such as a grapple loader

or claw. Although the device is described as an incinerator and classified as such under New Source Performance Standards Subparts CCCC and EEEE, unlike conventional incinerators, there are no burners per se or use of supplementary fuels to support the combustion. Once ignited, the waste material sustains its own combustion. Ignition of the waste material could be performed with accelerants, a propane torch, drip torch, or flare. However, accelerants (e.g. gasoline, diesel fuel, kerosene, turpentine) will not be allowed with this project. Once ignited, to avoid blowing out the fire, 15 – 20 minutes of burn time is required before the air curtain can be engaged. The applicable New Source Performance Standard allows a 30 minute start-up period.

The air curtain is produced by a fan, powered by the diesel-fired IC engine, which produces up to 18,000 cfm of air, which is distributed across the top of the firebox by means of a manifold lining the top of one side. The high velocity air curtain is directed at a slight angle downward so that a rotational air current develops within the upper portion of the firebox. The air curtain promotes complete combustion by: (1) oxygenating the fire, increasing its temperature (1,600 - 2,200 ºF), which helps combust green wood, and (2) increasing the residence time of gases and particles within the firebox by impeding their upward flow out of the firebox. The result is a burn with visible emissions not exceeding 10% opacity. As the waste material in the firebox burns down, new material is periodically dropped by a front end loader through the top opening of the firebox. When new material is dropped into the firebox, the air curtain is briefly “broken” and a puff of smoke is emitted. According to a number of emissions tests performed, the exhaust flow exits the firebox along the side opposite the air curtain manifold.

At the conclusion of the burn, the ashes will be removed with a large rake and stockpiled with the “dirt” material that has been removed from the precleaning lines.

Schematic from Air Burner Inc. and Photographs of Units in Operation



1. Air-curtain burner manifold directs high-velocity airflow downward along refractory-lined walls.

2. Firebox contains the fire and ash.

3. Vegetation to be burned.

4. Airflow forms an air curtain over the burning vegetation.

5. Continuous airflow oxygenates the burning vegetation, allowing for higher burning temperatures and a more complete burn.




V. Equipment Listing

S-3152-13-0: AIR BURNERS INC. MODEL S-223 AIR CURTAIN INCINERATOR WITH A FAN POWERED BY A PERMIT-EXEMPT IC ENGINE (50 BHP OR LESS)

VI. Emission Control Technology Evaluation

Combustion contaminants NOx, SOx, PM_{10}, CO, and VOC are emitted by the air curtain incinerator. The purpose of the air curtain is to promote more complete combustion compared to open burning, producing less PM_{10}, VOC and CO. There are also source test data that indicate the air curtain produces less NOx than open burning. The proposed air curtain incinerator is a portable unit and a permit exempt diesel-fired IC engine will provide the source of power for the fan and auxiliary power needs of the unit.

As stated earlier, the facility has proposed a permit exempt 49 bhp Tier 4 Final certified diesel-fired IC engine to power fan of the air curtain incinerator. The use of a Tier 4 Final certified diesel-fired IC engine will minimize engine emissions; however, since engine is permit exempt its emissions are not evaluated under this project.

VII. General Calculations

A. Assumptions

- Two new emissions units are considered with the operation: the air curtain incinerator and the ash handling operation. Since these emissions units are integral part of a single functioning operation, they will be part of one permit unit per District Policy APR-1025, *Permit Unit Determination (8/6/14)*.

- The air contaminants emitted are combustion contaminants (NOx, SOx, PM_{10}, CO, and VOC) from the burning of almond biomass waste from the air curtain incinerator and PM_{10} from the ash handling operation after the burn is completed.

- It is assumed that the proposed air curtain incinerator will only burn biomass waste material, including almond wood sticks, that has been generated onsite as a byproduct of almond processing.

- The mass reduction from the waste wood from burn is 97-98% (Air Burners Inc.). Thus, after the burn, 3% of the original mass of material remains as residual wood ash. For a conservative estimate of emissions, it is assumed that 3% of the original mass of material remains as residual ash after the burn.

- Proposed maximum daily burn rate = 80 tons/day (per applicant).

- Proposed maximum annual burn rate = 8,000 tons/year (per applicant).

- Ash generated daily = 2.4 ton/day (80 ton/day x 0.03 lb-ash/lb-waste burned).

- Ash generated annually = 240 ton/year (8,000 ton/year x 0.03 lb-ash/lb-waste burned).

- To streamline emission calculations, PM2.5 emissions are assumed to be equal to PM10 emissions. Only if needed to determine if a project is a Federal major modification for PM2.5 will specific PM2.5 emission calculations be performed.

B. Emission Factors

Air Curtain Incinerator emission factors are based on a District memo ([1]) as summarized in the following tables:

Emission Factors for Air Curtain Incinerator		
Pollutant	**Emission Factor (lb/ton)**	**Source**
NOx	1.0	Air Curtain Incinerator Emission Factors Determination Memo ([1])
SOx	0.1	
PM_{10}	1.3	
CO	2.6	
VOC	0.9	

Emission Factor for Ash Handling Operation		
Pollutant	**Emission Factor (lb/ton)**	**Source**
PM_{10}	0.23	Air Curtain Incinerator Emission Factors Determination Memo ([1])

As noted in the memo mentioned above, the ash handling emission factor is based on the emission factor for coal fly ash for the combined activities of unloading from a dump truck and spreading at a landfill.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since this is a new emissions unit, PE1 = 0 for all pollutants.

2. Post-Project Potential to Emit (PE2)

The permit unit for air curtain incinerator consists of two emissions units: combustion emissions from fire box and PM_{10} emissions from the ash handling. PE for each emission unit is calculated below:

Combustion Emissions:

Daily and annual PE2 for combustion emissions are calculated using the equations below and summarized in the following tables:

Daily PE2 = Throughput (ton/day) x EF2 (lb-pollutant/ton)
Annual PE2 = Throughput (ton/year) x EF2 (lb-pollutant/ton)

[1] https://www.valleyair.org/busind/pto/emission_factors/Criteria/Criteria/Air-Curtain-Incinerators/EF-Determination-Analysis.pdf

Daily PE2 for Air Curtain Incinerator					
Pollutant	**Throughput (tons/day)**		**Emission Factor (lb/ton)**		**Daily PE2 (lb/day)**
NOx	80.0	x	1.0	=	80.0
SOx		x	0.1	=	8.0
PM_{10}		x	1.3	=	104.0
CO		x	2.6	=	208.0
VOC		x	0.9	=	72.0

Annual PE2 for Air Curtain Incinerator					
Pollutant	**Throughput (tons/year)**		**Emission Factor (lb/ton)**		**Annual PE2 (lb/year)**
NOx	8,000	x	1.0	=	8,000
SOx		x	0.1	=	800
PM_{10}		x	1.3	=	10,400
CO		x	2.6	=	20,800
VOC		x	0.9	=	7,200

Ash Handling Emissions

Ash handling operation involves with PM_{10} emissions only calculated as below:

Daily PE2 = Amount of Ash Handled (ton/day) x Emission Factor (lb-PM_{10}/ton)
= 2.4 ton/day x 0.23 lb-PM_{10}/ton
= 0.6 lb-PM_{10}/day

Annual PE2 = Amount of Ash Handled (ton/year) x Emission Factor (lb-PM_{10}/ton)
= 240 ton/year x 0.23 lb-PM_{10}/ton
= 55 lb-PM_{10}/year

Permit Unit Total Emissions:

Permit unit total emissions are calculated by adding emissions from air curtain incinerator and ash handling in the following tables:

Daily PE2 (lb/day)					
Emissions Unit	**NOx**	**SOx**	**PM_{10}**	**CO**	**VOC**
Air Curtain Incinerator	80.0	8.0	104.0	208.0	72.0
Ash Handling	0.0	0.0	0.6	0.0	0.0
Permit Unit Total PE2	**80.0**	**8.0**	**104.6**	**208.0**	**72.0**

Annual PE2 (lb/year)					
Emissions Unit	**NOx**	**SOx**	**PM_{10}**	**CO**	**VOC**
Air Curtain Incinerator	8,000	800	10,400	20,800	7,200
Ash Handling	0	0	55	0	0
Permit Unit Total PE2	**8,000**	**800**	**10,455**	**20,800**	**7,200**

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

SSPE1 (lb/year)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
S-3152-1-4	0	0	6,348	0	0
S-3152-2-5	0	0	5,042	0	0
S-3152-3-4	0	0	0	0	346
S-3152-4-3	0	0	0	0	282
S-3152-5-1	0	0	0	0	500
S-3152-11-1	0	0	0	0	323
S-3152-12-0	0	0	310	0	0
SSPE1	**0**	**0**	**11,700**	**0**	**1,451**

4. Post-Project Stationary Source Potential to Emit (SSPE2)

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

SSPE2 (lb/year)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
S-3152-1-4	0	0	6,348	0	0
S-3152-2-5	0	0	5,042	0	0
S-3152-3-4	0	0	0	0	346
S-3152-4-3	0	0	0	0	282
S-3152-5-1	0	0	0	0	500
S-3152-11-1	0	0	0	0	323
S-3152-12-0	0	0	310	0	0
S-3152-13-0	8,000	800	10,455	20,800	7,200
SSPE2	**8,000**	**800**	**22,155**	**20,800**	**8,651**

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months), pursuant to the Clean Air Act, Title 3, Section 302, US Codes 7602(j) and (z)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 70.2

Rule 2201 Major Source Determination (lb/year)						
	NO_X	**SO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**VOC**
SSPE1	0	0	11,700	11,700	0	1,451
SSPE2	8,000	800	22,155	22,155	20,800	8,651
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	No

Note: PM2.5 assumed to be equal to PM10

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source as a result of this project.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO_2	VOC	SO_2	CO	PM	PM_{10}
Estimated Facility PE before Project Increase	0	0.7	0	0	5.9	5.9
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source?	No	No	No	No	No	No

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

6. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

Since this is a new emissions unit, BE = PE1 = 0 for all pollutants.

7. SB 288 Major Modification

40 CFR Part 51.165 defines a SB 288 Major Modification as any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act.

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification and no further discussion is required.

8. Federal Major Modification / New Major Source

Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

As defined in 40 CFR 51.165, Section (a)(1)(v) and part D of Title I of the CAA, a Federal Major Modification is any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act. The significant net emission increase threshold for each criteria pollutant is included in Rule 2201.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification and no further discussion is required.

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10

I. Project Emissions Increase - New Major Source Determination

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO_2	VOC	SO_2	CO	PM	PM_{10}
Total PE from New and Modified Units	4.0	3.6	0.4	10.4	5.2	5.2
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	No	No	No	No	No	No

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis is required.

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix D.

VIII. Compliance Determination

Rule 2020 Exemptions

This rule specifies emissions units that are not required to obtain an Authority to Construct or Permit to Operate. Section 6.0 lists District exempt source categories for which no Authority to Construct or Permit to Operate is required, except as required by Section 5.0.

Section 6.1.2 lists a permit exempt source category for piston type internal combustion engines with a manufacturer's maximum continuous rating of 50 braking horsepower (bhp) or less.

The facility has proposed a 49 bhp Tier 4 Final certified diesel-fired IC engine to power air curtain incinerator fan and the instrument panel (see Appendix B), which meets the exemption listed in Section 6.1.2 above.

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

Pursuant to District Rule 2201, Section 4.1, BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

a. Any new emissions unit with a potential to emit exceeding two pounds per day,

b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an Adjusted Increase in Permitted Emissions (AIPE) exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New emissions units – PE > 2 lb/day

This project involves with two new emissions units (air curtain incinerator combustion emissions and ash handling operation) and emissions from each emissions unit are compared to the BACT thresholds in the tables below:

Combustion Emissions:

New Emissions Unit BACT Applicability				
Pollutant	**Daily PE2 (lb/day)**	**BACT Threshold (lb/day)**	**SSPE2 (lb/yr)**	**BACT Triggered?**
NOx	80.0	> 2.0	n/a	Yes
SOx	8.0	> 2.0	n/a	Yes
PM_{10}	104.6	> 2.0	n/a	Yes
CO	208.0	> 2.0 and SSPE2 ≥ 200,000 lb/yr	20,800	No
VOC	72.0	> 2.0	n/a	Yes

As shown above, BACT is triggered for NOx, PM_{10}, and VOC emissions from the air curtain incinerator involved with this project.

Ash Handling Emissions:

New Emissions Unit BACT Applicability				
Pollutant	**Daily PE2 (lb/day)**	**BACT Threshold (lb/day)**	**SSPE2 (lb/yr)**	**BACT Triggered?**
PM_{10}	0.6	> 2.0	n/a	No

b. Relocation of emissions units – PE > 2 lb/day

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

c. Modification of emissions units – AIPE > 2 lb/day

As discussed in Section I above, there are no modified emissions units associated with this project. Therefore BACT is not triggered.

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does not constitute an SB 288 and/or Federal Major Modification for any pollutant. Therefore BACT is not triggered for any pollutant.

2. BACT Guideline

BACT Guideline 1.9.17 [Stationary Air Curtain Incinerator], applies to the proposed air curtain incinerator in this project. (See Appendix E.)

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analysis (see Appendix E), BACT has been satisfied with the following:

NOx, SOx, PM_{10}, and VOC:	Air curtain incinerator complying with visible emissions of 10% opacity or less after start-up (per 40 CFR Part 60 Subpart CCCC, sections 60.2250 and 60.2255)

B. Offsets

1. Offset Applicability

Pursuant to District Rule 2201, Section 4.5, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	8,000	800	22,155	20,800	8,651
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets Triggered?	No	No	No	No	No

2. Quantity of District Offsets Required

As discussed above, the SSPE2 is not greater than the offset thresholds for all pollutants, therefore District offsets are not triggered. In addition, as demonstrated above, this project does not trigger Federal Major Modification or New Major Source requirements. In conclusion, offsets will not be required for this project and no further discussion is required.

C. Public Notification

1. Applicability

Pursuant to District Rule 2201, Section 5.4, public noticing is required for:

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed,
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant, and/or
e. Any project which results in a Title V significant permit modification

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

As shown in Section VII.C.5 above, this existing minor source facility is not becoming a Major Source as a result of this project. Therefore, this facility is not a New Major Source and this project does not constitute an SB 288 or a Federal Major Modification. Consequently, public noticing for this project for New Major Source, Federal Major Modification, or SB 288 Major Modification purposes is not required.

b. PE > 100 lb/day

The PE2 for this new unit is compared to the daily PE Public Notice thresholds in the following table:

PE > 100 lb/day Public Notice Thresholds			
Pollutant	**PE2 (lb/day)**	**Public Notice Threshold**	**Public Notice Triggered?**
NO_X	80.0	100 lb/day	No
SO_X	8.0	100 lb/day	No
PM_{10}	104.6	100 lb/day	Yes
CO	208.0	100 lb/day	Yes
VOC	72.0	100 lb/day	No

Therefore, public noticing for PE > 100 lb/day purposes is required.

c. Offset Threshold

Public notification is required if the pre-project Stationary Source Potential to Emit (SSPE1) is increased to a level exceeding the offset threshold levels. The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Thresholds				
Pollutant	**SSPE1 (lb/year)**	**SSPE2 (lb/year)**	**Offset Threshold**	**Public Notice Required?**
NO_X	0	8,000	20,000 lb/year	No
SO_X	0	800	54,750 lb/year	No
PM_{10}	11,700	22,155	29,200 lb/year	No
CO	0	20,800	200,000 lb/year	No
VOC	1,451	8,651	20,000 lb/year	No

As demonstrated above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	**SSPE2 (lb/year)**	**SSPE1 (lb/year)**	**SSIPE (lb/year)**	**SSIPE Public Notice Threshold**	**Public Notice Required?**
NO_x	8,000	0	8,000	20,000 lb/year	No
SO_x	800	0	800	20,000 lb/year	No
PM_{10}	22,155	11,700	10,455	20,000 lb/year	No
CO	20,800	0	20,800	20,000 lb/year	Yes
VOC	8,651	1,451	7,200	20,000 lb/year	No

As demonstrated above, the SSIPE for CO was greater than 20,000 lb/year; therefore public noticing for SSIPE purposes is required.

e. Title V Significant Permit Modification

Since this facility does not have a Title V operating permit, this change is not a Title V significant Modification, and therefore public noticing is not required.

2. Public Notice Action

As discussed above, public noticing is required for this project for PM10 and CO emissions in excess of 100 lb/day and for an SSIPE for CO greater than 20,000 lb/year. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be electronically published on the District's website prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

Proposed Rule 2201 (DEL) Conditions:

- The air curtain incinerator shall burn no more than 80.0 tons of waste material in any one day. [District Rules 2201 and 4102]

- The air curtain incinerator shall burn no more than 8,000 tons of waste material in any year. [District Rules 2201 and 4102]

- The amount of ash handled shall not exceed 2.4 ton in any one day.[2] [District Rules 2201 and 4102]

- The amount of ash handled shall not exceed 240 tons in any year. [District Rules 2201 and 4102]

- Emissions (in units of pounds per ton of waste material) from the air curtain incinerator shall not exceed any of the following limits: 1.0 lb-NOx/ton, 0.1 lb-SOx/ton, 1.3 lb-PM_{10}/ton, 2.6 lb-CO/ton, or 0.9 lb-VOC/ton. [District Rule 2201]

- Emissions from ash handling shall not exceed 0.23 lb-PM_{10}/ton. [District Rule 2201]

- The air curtain incinerator shall be operated according to manufacturer's specifications and in a manner to minimize emissions of air contaminants into the atmosphere. This includes but not limited to the following prohibitions: biomass shall not protrude from the firebox into the air curtain, flames shall not be visible above the air curtain, and plumes of ash shall not be generated due to excessive loading. [District Rules 2201 and 4102]

- The air curtain incinerator shall burn only almond biomass waste material, including almond wood sticks generated onsite as a byproduct of almond processing. [District Rules 2201 and 4102]

- Ash removed from the firebox shall be handled, stored, and disposed of in a manner minimizing entrainment into the atmosphere. [District Rules 2201 and 4102]

- For conducting a cold start, the operator shall use a propane or butane torch, driptorch, or flare to ignite the material inside the air curtain incinerator. No accelerants (e.g. gasoline, diesel fuel, kerosene, turpentine) may be used. [District Rules 2201 and 4102]

E. Compliance Assurance

1. Source Testing

The air curtain incinerator is an unconventional and complex emissions source with no dedicated stack, so it has inherent challenges of conducting an emissions source test. No source testing conducted by an individual facility has been undertaken without substantial involvement by a government entity and/or the manufacturer. Since District Policy APR 1705, Source Test Frequency, makes an allowance for source test feasibility when considering whether or not to require source testing, and since the District selected

[2] The amount of ash residue is assumed to be 3% of the total mass of waste introduced into the firebox, as stated in Section VII.A of this document (Assumptions). The throughput limit for ash is linked to the overall process rate limits of 80.0 ton/day and 8,000 ton/year. To require weighing of the ash handled each day would be to introduce additional handling of this material, thereby additional opportunities for entrainment into the atmosphere.

representative yet conservative emission factors, no source testing will be required for the air curtain incinerator.

2. Monitoring

Opacity monitoring will be required for the air curtain incinerator. The unit is subject to opacity requirements of 40 CFR Subpart CCCC and District Rule 4101. The opacity requirements during startup periods and steady state operation are discussed below:

Opacity Limit during Startup Periods:

- §60.2250(b) of 40 CFR Subpart CCCC requires an opacity limit of 35% or less during the startup period that is within the first 30 minutes of operation.

- District Rule 4101 limits opacity to 20%, which is a more stringent requirement that applies at all times of operation, including during startup

Therefore, the following condition will be listed on the ATC to enforce the most stringent Rule 4101 opacity limit with a reference of Rule 2201:

- During the startup period that is within the first 30 minutes of operation, visible emissions from the air curtain incinerator shall not equal or exceed Ringelmann 1 or 20% opacity for more than 3 minutes in any one hour. [District Rules 2201 and 4101]

Opacity Limit during Steady State Operation:

- §60.2250(a) of 40 CFR Subpart CCCC requires an opacity limit of 10% during steady-state operation, using an averaging period of three 1-hr blocks.

- District Rule 4101 limits opacity to 20% during steady state operation using an averaging period of 3 minutes in any one hour

Since each opacity requirement has different averaging periods with different limits, both requirements are enforced by the following permit condition:

- After the startup period, during steady state operation, visible emissions from the air curtain incinerator shall not equal or exceed either of the following limits: Ringelmann 1 or 20% opacity for more than 3 minutes in any one hour or 10% opacity as determined by the average of three 1-hour blocks consisting of ten 6-minute average opacity values. [District Rules 2201 and 4101]

In addition, the following conditions will be listed on the ATC regarding opacity testing requirements:

- Opacity testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance opacity

testing and an opacity test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]

- The operator shall conduct periodic testing for opacity at least once every 12 calendar months. Opacity testing shall consist of one 30 minute cold start observation, and three 1 hour observations under normal steady state operation. [District Rule 1081]

- Opacity observations shall be made at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. [District Rule 1081]

- The permittee shall submit to the District the opacity test results report in paper or electronic format within 60 days of completion of the field test. The opacity results shall include information regarding the charge rate during opacity observation. [District Rule 1081]

- The operator shall keep records of all initial and annual opacity test results and reports onsite in either paper copy or electronic format for at least 5 years. [District Rule 1070]

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following condition(s) are listed on the permit to operate:

- The permittee shall maintain daily and cumulative annual records of the tons of waste material burned in the air curtain incinerator. [District Rule 2201]

- {3246} All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070]

No records of the tons of ash handled will be required. To require daily weighing of the ash would be to introduce additional ash handling, increasing the probability of entrainment of the ash into the atmosphere, i.e. PM_{10} emissions (see footnote 2 under the DEL section).

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

Section 4.14 of District Rule 2201 requires that an AAQA be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to Appendix F of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_X, CO, and SO_X. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_X, CO, or SO_X.

The proposed location is in a non-attainment area for the state's PM_{10} as well as federal and state $PM_{2.5}$ thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM_{10} and $PM_{2.5}$.

Rule 2410 Prevention of Significant Deterioration

As shown in Section VII.C.9 above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

Rule 2520 Federally Mandated Operating Permits

Per Rule 2520 Section 4.1(6), the air curtain incinerator is exempt from the requirements of this rule as it is classified as a solid waste incineration unit that is required to obtain a Part 70 permit pursuant to section 129(e) of the Clean Air Act (CAA).

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60.

40 CFR 60 Subpart CCCC – Standards of Performance for Commercial and Industrial Solid Waste Incineration Units

The District has not been delegated the authority to implement Subpart CCCC requirements for non-Major Sources; therefore, references to this subpart will not be included on the permit until the operator is issued a Title V permit. However, the substance of the requirements of this subpart will be included on the ATC because they have been determined to be part of the BACT requirements for unit S-3152-13-0, as required by District Rule 2201.

Per District Rule 2201, Section 3.10, BACT is the most stringent emission limitation or control technique of the following: (3.10.3) Contained in an applicable Federal New Source Performance Standard.

INTRODUCTION

§60.2000 What does this subpart do?

This subpart establishes new source performance standards for commercial and industrial solid waste incineration (CISWI) units.

The air curtain incinerator in this project is used for disposal of a byproduct of an industrial/commercial process and is thus considered a CISWI unit; therefore, this subpart is applicable. Whereas, Subpart EEEE (Standards of Performance for Other Solid Waste Incineration Units) which applies to units used for wildfire hazard reduction, is not applicable to this project.

§60.2005 When does this subpart become effective?

This subpart takes effect on August 7, 2013. Some of the requirements in this subpart apply to planning the CISWI unit (i.e., the preconstruction requirements in §60.2045 and 60.2050). Other requirements such as the emission limitations and operating limits apply after the CISWI unit begins operation.

APPLICABILITY

§60.2010 Does this subpart apply to my incineration unit?

Yes, if your incineration unit meets all the requirements specified in paragraphs (a) through (c) of this section.

(a) Your incineration unit is a new incineration unit as defined in §60.2015.
(b) Your incineration unit is a CISWI unit as defined in §60.2265.
(c) Your incineration unit is not exempt under §60.2020.

The sections that apply to an air curtain incinerator are indicated under §60.2020 as below:

§60.2020 What combustion units are exempt from this subpart?

This subpart exempts the types of units described in paragraphs (a), (c) through (i) and (n) of this section, but some units are required to provide notifications. Air curtain incinerators are exempt from the requirements in this subpart except for the provisions in §60.2242, 60.2250, and 60.2260.

(i) Air curtain incinerators. Air curtain incinerators that burn only the materials listed in paragraphs (i)(1) through (3) of this section are only required to meet the requirements under §60.2242 and under “Air Curtain Incinerators” (§60.2245 through 60.2260).

(1) 100 percent wood waste.
(2) 100 percent clean lumber.

(3) 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

The air curtain incinerator in this project will burn only biomass waste material, including almond wood sticks generated onsite as a byproduct of almond processing. Therefore, only sections §60.2242 and §60.2245 through 60.2260 apply.

TITLE V OPERATING PERMITS

§60.2242 Am I required to apply for and obtain a Title V operating permit for my unit?

Yes. Each CISWI unit and air curtain incinerator subject to standards under this subpart must operate pursuant to a permit issued under Section 129(e) and Title V of the Clean Air Act.

Therefore, the following condition will be listed on the ATC for the air curtain incinerator:

- Within 12 months of initial operation of this air curtain incinerator, the operator shall submit a complete application for a Title V operating permit to the District for compliance with New Source Performance Standard Subpart CCCC - Standards of Performance for Commercial and Industrial Solid Waste Incineration Units. [40 CFR 60.2242]

AIR CURTAIN INCINERATORS

§60.2245 What is an air curtain incinerator?

(a) An air curtain incinerator operates by forcefully projecting a curtain of air across an open chamber or open pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. (Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)

(b) Air curtain incinerators that burn only the materials listed in paragraphs (b)(1) through (3) of this section are only required to meet the requirements under §60.2242 and under “Air Curtain Incinerators” (§§60.2245 through 60.2260).

(1) 100 percent wood waste.
(2) 100 percent clean lumber.
(3) 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

The air curtain incinerator in this project will burn only biomass waste material, including almond wood sticks generated onsite as a byproduct of almond processing. Therefore, the following condition will be listed on the ATC to ensure compliance:

- The air curtain incinerator shall burn only almond biomass waste material, including almond wood sticks, that has been generated onsite as a byproduct of almond processing. [District Rules 2201 and 4102]

§60.2250 What are the emission limitations for air curtain incinerators?

Within 60 days after your air curtain incinerator reaches the charge rate at which it will operate, but no later than 180 days after its initial startup, you must meet the two limitations specified in paragraphs (a) and (b) of this section.

(a) Maintain opacity to less than or equal to 10 percent opacity (as determined by the average of three 1-hour blocks consisting of ten 6-minute average opacity values), except as described in paragraph (b) of this section.

(b) Maintain opacity to less than or equal to 35 percent opacity (as determined by the average of three 1-hour blocks consisting of ten 6-minute average opacity values) during the startup period that is within the first 30 minutes of operation.

The following conditions are being applied as a BACT requirement and will be included on the ATC:

- During the startup period that is within the first 30 minutes of operation, visible emissions from the air curtain incinerator shall not equal or exceed Ringelmann 1 or 20% opacity for more than 3 minutes in any one hour. [District Rules 2201 and 4101]

- After the startup period, during steady state operation, visible emissions from the air curtain incinerator shall not equal or exceed either of the following limits: Ringelmann 1 or 20% opacity for more than 3 minutes in any one hour or 10% opacity as determined by the average of three 1-hour blocks consisting of ten 6-minute average opacity values. [District Rules 2201 and 4101]

§60.2255 How must I monitor opacity for air curtain incinerators?

(a) Use Method 9 of appendix A of this part to determine compliance with the opacity limitation.

Therefore, the following conditions, which have a basis from District Rule 4101, will be listed on the ATC to ensure compliance:

- Compliance with the opacity limits on this permit shall be determined by EPA Method 9. [District Rule 4101]

- Observers for the opacity compliance demonstration shall be certified according to the procedure in EPA Method 9. [District Rule 4101]

(b) Conduct an initial test for opacity as specified in §60.8.

As discussed earlier, since District Rule 4101 has a more stringent 20% opacity limit that is applicable at all times, the following condition will be listed on the ATC to ensure compliance:

- During the startup period that is within the first 30 minutes of operation, visible emissions from the air curtain incinerator shall not equal or exceed Ringelmann 1 or 20% opacity for more than 3 minutes in any one hour. [District Rules 2201 and 4101]

(c) After the initial test for opacity, conduct annual tests no more than 12 calendar months following the date of your previous test.

Therefore, the following condition will be listed on the ATC to ensure compliance:

- The operator shall conduct periodic testing for opacity at least once every 12 calendar months. Opacity testing shall consist of one 30 minute cold start observation, and three 1 hour observations under normal steady state operation. [District Rule 1081]

§60.2260 What are the recordkeeping and reporting requirements for air curtain incinerators?

(a) Prior to commencing construction on your air curtain incinerator, submit the three items described in paragraphs (a)(1) through (3) of this section.

(1) Notification of your intent to construct the air curtain incinerators.
(2) Your planned initial startup date.
(3) Types of materials you plan to burn in your air curtain incinerator.

The facility's ATC application satisfies the requirements of sections (a)(1) thru (a)(3) above.

(b) Keep records of results of all initial and annual opacity tests onsite in either paper copy or electronic format, unless the Administrator approves another format, for at least 5 years.

(c) Make all records available for submittal to the Administrator or for an inspector's onsite review.

(d) You must submit the results (as determined by the average of three 1-hour blocks consisting of ten 6-minute average opacity values) of the initial opacity tests no later than 60 days following the initial test. Submit annual opacity test results within 12 months following the previous report.

(e) Submit initial and annual opacity test reports as electronic or paper copy on or before the applicable submittal date.

(f) Keep a copy of the initial and annual reports onsite for a period of 5 years.

Therefore, the following recordkeeping and report submittal requirements will be included on the ATC:

- The permittee shall submit to the District the opacity test results report in paper or electronic format within 60 days of completion of the field test. The opacity results shall

include information regarding the charge rate during opacity observation. [District Rule 1081]

- Opacity observations shall be made at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. [District Rule 1081]

- The operator shall keep records of all initial and annual opacity test results and reports onsite in either paper copy or electronic format for at least 5 years. [District Rule 1070]

- {3246} All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070]

40 CFR 60 Subpart EEEE – Standards of Performance for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006

§60.2880 What does this subpart do?

This subpart establishes new source performance standards for other solid waste incineration (OSWI) units. Other solid waste incineration units are very small municipal waste combustion units and institutional waste incineration units.

§60.2881 When does this subpart become effective?

This subpart takes effect June 16, 2006. Some of the requirements in this subpart apply to planning the incineration unit and must be completed even before construction is initiated on the unit (i.e., the preconstruction requirements in §§60.2894 and 60.2895). Other requirements such as the emission limitations and operating limits apply when the unit begins operation.

Applicability

§60.2885 Does this subpart apply to my incineration unit?

Yes, if your incineration unit meets all the requirements specified in paragraphs (a) through (c) of this section.

(a) Your incineration unit is a new incineration unit as defined in §60.2886.

(b) Your incineration unit is an OSWI unit as defined in §60.2977 or an air curtain incinerator subject to this subpart as described in §60.2888(b). Other solid waste incineration units are very small municipal waste combustion units and institutional waste incineration units as defined in §60.2977.

(c) Your incineration unit is not excluded under §60.2887.

As discussed below, the proposed air curtain incinerator is excluded from this Subpart as it is subject to the requirements of Subpart CCCC.

§60.2887 What combustion units are excluded from this subpart?

This subpart excludes the types of units described in paragraphs (a) through (q) of this section, as long as you meet the requirements of this section:

(Note: only applicable paragraph 'd' of this section is listed below)

(d) Commercial and industrial solid waste incineration units. Your unit is excluded if it is regulated under Subparts CCCC or DDDD of this part and is required to meet the emission limitations established in those subparts.

Since the proposed air curtain incinerator is regulated under Subpart CCCC as discussed above, the air curtain incinerator is excluded from the requirements of Subpart EEEE. Therefore, no further discussion is necessary under this Subpart.

40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Applicable to Permit Exempt 49 bhp IC Engine powering Air Curtain Incinerator

The District has not been delegated the authority to implement Subpart IIII requirements for non-Major Sources. In addition, since the proposed 49 bhp diesel-fired IC engine is exempt from District permit, no Subpart IIII requirements applicable to the permit exempt engine will be listed on the permit for air curtain incinerator. However, since Section 5.1 of District Rule 4702 requires the proposed engine to meet the applicable requirements and emission limits of 40 CFR 60 Subpart IIII, the following breakdown will only address the emission limits applicable to the proposed engine.

§60.4200 - Applicability

Section 60.4200(a)(2)(i) states that the provisions of this subpart apply to owners and operators of stationary compression ignition (CI) internal combustion engines that commence construction after July 11, 2005, where the engines are:

1) Manufactured after April 1, 2006, if not a fire pump engine.
2) Manufactured as a National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

Since the proposed engine will be installed after July 11, 2005 and will be manufactured after April 1, 2006, this subpart applies. In addition, since air curtain incinerator will be permitted as stationary source operation, the permit exempt IC engine will also be considered stationary and this Subpart applies.

Sections 60.4201 through 60.4203 apply to engine manufacturers. Therefore, these sections will not be discussed unless they are referenced later by another section of this subpart.

§60.4204 – Emission Standards for Owners and Operators

Section 60.4204(b) states that owners and operators of 2007 model year and later non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder must comply with the emission standards for new CI engines in §60.4201 for their 2007 model year and later stationary CI ICE, as applicable.

§60.4201(c) states that stationary CI internal combustion engine manufacturers must certify their 2011 model year and later non-emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 bhp) and a displacement of less than 10 liters per cylinder to the certification emission standards for new non-road CI engines in 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable, for all pollutants, for the same maximum engine power. §1039.101 of 40 CFR Part 1039 (Control of Emissions from New and In-Use Non-Road Compression-Ignition Engines) Subpart B (Emission Standards and Related Requirements), lists the exhaust emission standards that apply to the 2014 and later model year engines. Certain of these standards also apply for model year 2014 and earlier. This section presents the full set of emission standards that apply after all the transition and phase-in provisions of §1039.102 and §1039.104 expire. Since the proposed engine is 2018 model year, sections 1039.102 and 1039.104 do not apply.

§1039.101(b) states that the steady-state exhaust emissions from the engine may not exceed the applicable emission standards in Table 1 of this section (see table below). Measure emissions using the applicable steady-state test procedures described in subpart F of this part.

TABLE 1 OF §1039.101—TIER 4 EXHAUST EMISSION STANDARDS AFTER THE 2014 MODEL YEAR, G/KW-HR[1]

Maximum engine power	Application	PM	NO_X	NMHC	NO_X + NMHC	CO
kW <19	All	[2]0.40			7.5	[3]6.6
19 ≤kW <56	All	0.03			4.7	[4]5.0
56 ≤kW <130	All	0.02	0.40	0.19		5.0
130 ≤kW ≤560	All	0.02	0.40	0.19		3.5
	Generator sets	0.03	0.67	0.19		3.5
kW >560	All except generator sets	0.04	3.5	0.19		3.5

[1]Note that some of these standards also apply for 2014 and earlier model years. This table presents the full set of emission standards that apply after all the transition and phase-in provisions of §1039.102 expire.

[2]See paragraph (c) of this section for provisions related to an optional PM standard for certain engines below 8 kW.

[3]The CO standard is 8.0 g/kW-hr for engines below 8 kW.

[4]The CO standard is 5.5 g/kW-hr for engines below 37 kW.

The facility is proposing a 49 bhp (37 kw) Tier 4 Final certified IC engine with emissions summarized in the table below based on ARB certification:

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			NMHC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
37 ≤ kW < 56	Tier 4 Final	STD	N/A	N/A	4.7	5.0	0.03	N/A	N/A	N/A
		CERT	--	--	4.4	0.5	0.01	--	--	--

Therefore, emission requirements of 40 CFR 60 Subpart IIII are satisfied.
§1039.105(a) states smoke standards and these smoke standards do not apply to the following engines:

(1) Single-cylinder engines.

(2) Constant-speed engines.

(3) Engines certified to a PM emission standard or FEL of 0.07 g/kW-hr or lower.

Since proposed engine is certified to a PM emission standard of 0.03 g/kW-hr, the smoke standards of §1039.105(a) do not apply.

§1039.107 lists the evaporative emission standards which are not applicable to the diesel-fueled engines. Therefore, §1039.107 is not applicable to the proposed engine.

As stated earlier, the District has not been delegated the authority to implement Subpart IIII requirements for non-Major Sources; therefore, no Subpart IIII requirements applicable to the permit exempt engine will be discussed in this application review or listed on the permit for air curtain incinerator. Therefore, no further discussion is necessary under this section.

Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to air curtain incinerators.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity).

As discussed under monitoring requirements of Rule 2201 earlier in this document, the unit is subject to opacity requirements of 40 CFR Subpart CCCC in addition to District Rule 4101. Based on that discussion, the following conditions will be listed on the ATC ensure compliance:

- During the startup period that is within the first 30 minutes of operation, visible emissions from the air curtain incinerator shall not equal or exceed Ringelmann 1 or 20% opacity for more than 3 minutes in any one hour. [District Rules 2201 and 4101]

- After the startup period, during steady state operation, visible emissions from the air curtain incinerator shall not equal or exceed either of the following limits: Ringelmann 1 or 20% opacity for more than 3 minutes in any one hour or 10% opacity as determined by the average of three 1-hour blocks consisting of ten 6-minute average opacity values. [District Rules 2201 and 4101]

In addition, section 6.0 of the rule states that the following test methods shall be used unless otherwise approved by the District and EPA:

6.1 US EPA Method 9 for visual determination of the opacity of emissions.

6.2 40 Code of Federal Regulations (CFR) Part 60 Appendix B Performance Specification 1 for determination of certified, calibrated in-stack opacity monitoring system.

Therefore, the following condition will be listed on the ATC to ensure compliance:

- Compliance with the opacity limits on this permit shall be determined by EPA Method 9. [District Rule 4101]

In addition, Section 3.2 defines an 'observer' as a human observer certified and trained by the California Air Resources Board, or a certified in-stack opacity monitoring system calibrated in accordance with the test method specified in Section 6.2. Therefore, the following condition will be listed on the ATC to ensure compliance:

- Observers for the opacity compliance demonstration shall be certified according to the procedure in EPA Method 9. [District Rule 4101]

Therefore, compliance is expected.

Rule 4102 Nuisance

Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

California Health & Safety Code 41700 (Health Risk Assessment)

Discuss whether a Health Risk Assessment is required and/or the results of the HRA, including any special conditions to consider when issuing the ATC(s).

District Policy APR 1905 – *Risk Management Policy for Permitting New and Modified Sources* specifies that for an increase in emissions associated with a proposed new source or

modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification of an existing source shall not result in an increase in cancer risk greater than the District's significance level (20 in a million) and shall not result in acute and/or chronic risk indices greater than 1.

According to the Technical Services Memo for this project, the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The resulting prioritization score, acute hazard index, chronic hazard index, and cancer risk for this project is shown below.

Health Risk Assessment Summary	
	Worst Case Potential
Prioritization Score	0.46
Cancer Risk	2.13 in a million
Acute Hazard Index	0.00
Chronic Hazard Index	0.01
T-BACT Required?	Yes

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is required for this project because the HRA indicates that the risk is above the District's thresholds for triggering T-BACT requirements.

For this project T-BACT is triggered because of emissions of biomass combustion products, which is a PM10. T-BACT is satisfied with BACT for PM10 (see Appendix F), which is the use of an air curtain incinerator with visible emissions of 10% opacity or less after start-up (using NSPS Subpart CCCC procedure and averaging period). Therefore, compliance with the District's Risk Management Policy is expected.

In accordance with District policy APR 1905, no further analysis is required, and compliance with District Rule 4102 requirements is expected.

See Appendix F: Health Risk Assessment Summary

Rule 4103 Open Burning

The purpose of this rule is to permit, regulate, and coordinate the use of open burning while minimizing smoke impacts on the public.

This rule applies to open burning conducted in the San Joaquin Valley Air Basin, with the exception of prescribed burning and hazard reduction burning as defined in Rule 4106 (Prescribed Burning and Hazard Reduction Burning).

Section 3.23 defines open burning as:

> "The combustion of any combustible refuse or other material of any type outdoors in the open air, not in any enclosure, where the products of combustion are not directed through a flue. For the purposes of this rule, prescribed burning and hazard reduction burning are not considered to be open burning."

The air curtain incinerator burns material inside an enclosure with the air curtain serving as a control device that increases the residence time of the products of incomplete combustion (CO, VOC, and PM). The District does not regard air curtain incinerators as a form of open burning. Therefore, this rule is not applicable to the air curtain incinerator.

Rule 4106 Prescribed Burning and Hazard Reduction Burning

The purpose of this rule is to permit, regulate, and coordinate the use of prescribed burning and hazard reduction burning while minimizing smoke impacts on the public.

This rule applies to all prescribed burning and to hazard reduction burning in wildland/urban interface.

The rule defines prescribed burning in Section 3.12 as:

> "The planned application of fire, including natural or accidental ignition, to vegetation on lands selected in advance of such application to meet specific planned resource management objectives as set forth in section 3.11."

Section 3.11 defines planned resource management objectives as including:

> "Forest management, wildlife habitat management, range improvement, fire hazard reduction, wilderness management, weed abatement, watershed rehabilitation, vegetation manipulation, disease and pest prevention, and ecosystem management."

Hazard reduction burning is defined in Section 3.7 as:

> "The burning of flammable vegetation that has been removed and cleared away from buildings or structures in compliance with local ordinances to reduce fire hazard pursuant to Section 4291 of the California Public Resources Code for the purpose of maintaining a firebreak of up to 100 feet from such buildings or structures."

The use of the air curtain incinerator to dispose of almond processing waste material does not qualify as a prescribed burn nor a hazard reduction burn as defined in this rule. Therefore, this rule does not apply to the air curtain incinerator in this project.

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

Assuming 100% of PM is PM_{10} (worst case):

PM emission rate = 104.0 lb-PM/day (as calculated in Section VII.C.2 of this document)
Exhaust Gas Flow [3] = 8,000 cfm

$$\text{PM Conc. (gr/dscf)} = \frac{(104.0 \text{ PM emission rate}) \times (7{,}000 \text{ gr/lb})}{(8{,}000 \text{ scfm}) \times (60 \text{ min/hr}) \times (24 \text{ hr/day})}$$

$$= 0.063 \text{ gr/dscf}$$

Since this is less than 0.1 gr/dscf, compliance with Rule 4201 is expected. Therefore, the following condition will be listed on the ATC to ensure compliance:

- {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Ash Handling Operation

As implied by the test methods in Section 4.0 of this rule, this rule applies to operations where there is a point of measurable exhaust or air flow, such as from a stack or a fan. However, for the ash handling operation, ash will only be collected after the air curtain fan is turned off and the unit is cooled down for a safe ash cleanup. Therefore, no exhaust or air flow is desired or associated with the ash handling operation and this rule is not applicable to ash handling operation.

Rule 4202 Particulate Matter - Emission Rate

The purpose of this rule is to limit particulate matter (PM) emissions by establishing allowable (PM) emission rates.

Per Section 4.1, particulate matter (PM) emissions from any source operation shall not exceed the allowable hourly emission rate (E) as calculated using the following applicable formulas:

$E_{max} = 3.59\ P^{0.62}$ (when, P = process weight rate $\leq$ 30 tons/hr)

$E_{max} = 17.31\ P^{0.16}$ (when, P = process weight rate $>$ 30 tons/hr)

[3] Based on the source test of Air Burners Inc. Model S-119 in Victoria, Australia, which is slightly smaller than Model S-223 in this project. Flow rate range for S-119 are 250 Nm^3/min – 350 Nm^3/min or 9,300 scfm – 13,000 scfm (at 60 ºF). A much lower value of 8,000 is selected for conservative estimate.

Daily process rate is 80 tons per day. Assuming a worst case operation of 24 hours per day (assuming a longer operating time results in smaller hourly rate and smaller E_{max} to comply), the maximum hourly processing rate is:

$$P = 80 \text{ ton/day} \div 24 \text{ hr/day} = 3.33 \text{ ton/hr}$$

The maximum allowable PM hourly emission rate is calculated as follows:

$$E_{max} = 3.59 \times P^{0.62}$$
$$= 3.59 \times 3.33^{0.62}$$
$$= 7.6 \text{ lb-PM/hr}$$

Based on the daily PE2 calculated in Section VII.C.2 of this document and that 100% PM_{10} is PM, the actual emission rate is:

$$E_{actual} = 104 \text{ lb-PM}_{10}\text{/day} \div 24 \text{ hr/day} \times 1 \text{ lb-PM/1 lb-PM}_{10} = 4.3 \text{ lb-PM/hr}$$

Since the actual PM emissions rate (E_{actual}) is less than the maximum allowable PM emission rate (E_{max}), compliance with this rule is expected. The Rule 2201-based DEL conditions are sufficient to ensure compliance with this rule.

Rule 4301 Fuel Burning Equipment

The purpose of this rule is to limit the emission of air contaminants from fuel burning equipment. This rule limits the concentration of combustion contaminants and specifies maximum emission rates for sulfur dioxide, nitrogen oxide and combustion contaminant emissions.

The provisions of this rule shall apply to any fuel burning equipment except air pollution control equipment which is exempted according to Section 4.0.

The rule defines fuel burning equipment as:

> "any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer."

The primary purpose of the air curtain incinerator is to dispose of almond processing waste material, not the production of heat or power by indirect heat transfer. The air curtain incinerator is not *fuel burning equipment* according to the definition in this rule, and, therefore, this rule is not applicable.

Rule 4302 Incinerator Burning

This rule limits air pollution by prohibiting the use of any incinerator except for a multiple-chamber incinerator or one equally effective in controlling air pollution.

From District Rule 1020, Definitions, Section 3.27, a multiple-chamber incinerator is defined as:

> "any source operation, structure, or any part of a structure used to dispose of combustible refuse by burning, consisting of three (3) or more refractory lined combustion furnaces in series, physically separated by refractory walls, interconnected by gas passage ports or ducts, and *employing adequate design parameters necessary for maximum combustion of the material to be burned*. The refractories shall have a pyrometric cone equivalent of at least 17, tested according to the method described in the American Society for Testing Materials, Method C-24.

The purpose of a multiple-chamber incinerator is to minimize the emissions of the products of incomplete combustion, i.e. PM_{10}, CO, and VOC. The secondary and tertiary chambers of a multiple-chamber incinerator accomplish this by re-burning the flue gas from the primary chamber before emitting the exhaust to the atmosphere. The air curtain of the air curtain incinerator performs a function similar to the secondary and tertiary chambers of a multiple-chamber incinerator. Besides oxygenating the fire with forced air and increasing the combustion temperature, the air curtain increases the residency time of the products of incomplete combustion by forming a barrier preventing their immediate escape. The increased residency time causes particles (especially) and gases to be re-burned continually in the flame.

For the disposal of large amounts of agricultural waste material, the District regards the air curtain incinerator as an *equally effective* control device as a multiple-chamber incinerator provided the air curtain is operated according to manufacturer's specifications and operates in compliance with visible emissions limits. Therefore, compliance with this rule is expected.

Rule 4702 Internal Combustion Engines

The purpose of this rule is to limit the emissions of nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOC), and sulfur oxides (SOx) from internal combustion engines. This rule applies to any internal combustion engine rated at 25 brake horsepower (bhp) or greater.

Section 5.1 applies to stationary engines rated at least 25 bhp up to and including 50 bhp and used in non-agricultural operations (non-AO). The facility has proposed a 49 bhp Hatz Tier 4 Final certified diesel-fired IC engine to power fan of the air curtain incinerator (see Appendix B); therefore, this rule is applicable to the IC engine.

Section 5.1.1 states that on and after July 1, 2012, no person shall sell or offer for sale any non-AO spark-ignited engine or any non-AO compression-ignited engine unless the engine meets the applicable requirements and emission limits specified in 40 Code of Federal Regulation (CFR) 60 Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines) and 40 CFR 60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines) for the year in which the ownership of the engine changes.

The proposed 49 bhp diesel-fired IC engine is Tier 4 Final certified, which meets the applicable requirements and emission limits of 40 CFR Subpart IIII for compression ignited IC engines, as discussed under Rule 4001 discussion in Section VIII of this document. Therefore, requirements

of this section are satisfied. In addition, as discussed under Rule 2020, since the proposed engine is less than 50 bhp, it is exempt from District permits. Therefore, compliance with this rule is expected.

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

The air curtain incinerator produces CO_2 (3,616 lb-CO_2/ton-burned) and methane 1.4 lb-CH_4/ton-burned)[4] from the combustion of woody biomass. However, the District regards the burning of biomass as a carbon neutral process. Particularly in the present case, the material to be burned, almond stick debris removed from harvested almonds, is regenerated in full annually.

The air curtain incinerator is powered by a permit exempt (less than 50 bhp) Tier 4 Final certified IC engine. No greenhouse gases are assessed to the permit exempt equipment.

The District's engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

[4] http://www.airburners.com/data-gov/regulating_air_curtain_burners-05.12.2012.pdf, (USDA Fire Sciences Lab source test in Baker, Oregon).

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing or former use. Furthermore, the District determined that the activity will not have a significant effect on the environment. Therefore, the District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15301 (Existing Facilities), and finds that the project is exempt per the common sense exemption that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

The criteria pollutant emissions and toxic air contaminant emissions associated with the proposed project are not significant, and there is minimal potential for public concern for this particular type of facility/operation. Therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATC S-3152-13-0 subject to the permit conditions on the attached draft ATC in Appendix A.

X. Billing Information

Annual Permit Fees			
Permit Number	**Fee Schedule**	**Fee Description**	**Annual Fee**
S-3152-13-0	3020-06	Miscellaneous	$128

Appendixes

A*:* Draft Authority to Construct
B*:* Manufacturer's Specification Sheets
C: Facility Map
D: Quarterly Net Emissions Change (QNEC)
E: BACT Guideline and Analysis
F: HRA and AAQA Summary

APPENDIX A
Draft Authority to Construct

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-3152-13-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: SOUTH VALLEY ALMOND CO LLC
MAILING ADDRESS: 15443 BEECH AVE
WASCO, CA 93280-7604

LOCATION: 15443 BEECH AVE
WASCO, CA 93280-7604

EQUIPMENT DESCRIPTION:
AIR BURNERS INC. MODEL S-223 AIR CURTAIN INCINERATOR WITH A FAN POWERED BY A PERMIT-EXEMPT IC ENGINE (50 BHP OR LESS)

CONDITIONS

1. Within 12 months of initial operation of this air curtain incinerator, the operator shall submit a complete application for a Title V operating permit to the District for compliance with New Source Performance Standard Subpart CCCC - Standards of Performance for Commercial and Industrial Solid Waste Incineration Units. [40 CFR 60.2242]
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The air curtain incinerator shall be operated according to manufacturer's specifications and in a manner to minimize emissions of air contaminants into the atmosphere. This includes but not limited to the following prohibitions: biomass shall not protrude from the firebox into the air curtain, flames shall not be visible above the air curtain, and plumes of ash shall not be generated due to excessive loading. [District Rules 2201 and 4102]
4. The air curtain incinerator shall burn only almond biomass waste material, including almond wood sticks generated onsite as a byproduct of almond processing. [District Rules 2201 and 4102]
5. After operation is completed for a day, the fire in the firebox shall be snuffed out and shall not be allowed to smolder overnight. [District Rule 4102]
6. Ash removed from the firebox shall be handled, stored, and disposed of in a manner minimizing entrainment into the atmosphere. [District Rules 2201 and 4102]
7. The air curtain burner shall burn no more than 80.0 tons of materials in any one day. [District Rule 2201]
8. The air curtain burner shall burn no more than 8,000 tons of material in any calendar year. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Samir Sheikh, Executive Director / APCO

DRAFT

Brian Clements, Director of Permit Services

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308 • (661) 392-5500 • Fax (661) 392-5585

9. The amount of ash handled shall not exceed 2.4 tons in any one day. [District Rules 2201 and 4102]
10. The amount of ash handled shall not exceed 240 tons in any year. [District Rules 2201 and 4102]
11. Emissions from ash handling shall not exceed 0.23 lb-PM10/ton. [District Rule 2201]
12. For conducting a cold start, the operator shall use a propane or butane torch, driptorch, or flare to ignite the material inside the air curtain incinerator. No accelerants (e.g. gasoline, diesel fuel, kerosene, turpentine) may be used. [District Rules 2201 and 4102]
13. Emissions (in units of pounds per ton of waste material) from the air curtain incinerator shall not exceed any of the following limits: 1.0 lb-NOx/ton, 0.1 lb-SOx/ton, 1.3 lb-PM10/ton, 2.6 lb-CO/ton, or 0.9 lb-VOC/ton. [District Rule 2201]
14. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
15. During the startup period that is within the first 30 minutes of operation, visible emissions from the air curtain incinerator shall not equal or exceed Ringelmann 1 or 20% opacity for more than 3 minutes in any one hour. [District Rules 2201 and 4101]
16. After the startup period, during steady state operation, visible emissions from the air curtain incinerator shall not equal or exceed either of the following limits: Ringelmann 1 or 20% opacity for more than 3 minutes in any one hour or 10% opacity as determined by the average of three 1-hour blocks consisting of ten 6-minute average opacity values. [District Rules 2201 and 4101]
17. Opacity testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance opacity testing and an opacity test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
18. The operator shall conduct periodic testing for opacity within 60 days of startup and at least once every 12 calendar months thereafter. Opacity testing shall consist of one 30 minute cold start observation, and three 1 hour observations under normal steady state operation. [District Rule 1081]
19. Compliance with the opacity limits on this permit shall be determined by EPA Method 9. [District Rule 4101]
20. Observers for the opacity compliance demonstration shall be certified according to the procedure in EPA Method 9. [District Rule 4101]
21. Opacity observations shall be made at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. [District Rule 1081]
22. The permittee shall submit to the District the opacity test results report in paper or electronic format within 60 days of completion of the field test. The opacity results shall include information regarding the charge rate during opacity observation. [District Rule 1081]
23. The operator shall keep records of all initial and annual opacity test results and reports onsite in either paper copy or electronic format for at least 5 years. [District Rule 1070]
24. The permittee shall maintain daily and cumulative annual records of the tons of waste material burned in the air curtain incinerator. [District Rule 1070]
25. {3246} All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070]

APPENDIX B
Manufacturer's Specification Sheets

AirBurners

S223
Tier 4 Final

FIREBOX SPECIFICATIONS

General: A self-contained, completely assembled above ground Air Curtain Burner (air curtain incinerator or FireBox) with a refractory lined burn-container for portable and permanent (stationary) applications. Designed for the high temperature burning of forest slash, agricultural green waste, land clearing debris, storm debris, and other waste streams in compliance with the requirements of US EPA 40CFR60.

Shipped from the factory completely assembled ready for immediate use and does not require disassembly for relocation. The FireBox is also used for disaster recovery and Department of Homeland Security contingencies. Electrically powered version (S223E) available for permanent (stationary) installations.

1	Power	Three-cylinder Turbo Diesel Engine approx. 49 HP, HATZ Model 3H50TIC (Does not require DEF) or equivalent engine; Emissions certified US EPA Tier 4 FINAL; Engine mounted PTO	
2	Burn Container (FireBox)	4" (102 mm) thick refractory wall panels filled with proprietary thermal ceramic material; Two full height refractory rear doors; Three ignition holes; FireBox open to the ground	
3	Safety Systems	Engine over temperature and overspeed shut down; Loss of cooling fluid shutdown; Loss of oil pressure shutdown; Lockable steel front deck security enclosure	
4	Instrument Panel	MBW electronic engine control with preset throttle settings: key switch, tachometer, hour meter, fuel gauge, oil pressure and water temperature and safety shutdown features	
5	Air Supply	Custom heavy duty fan	
6	Fuel Tank	58 Gallon (220L) minimum fuel tank capacity	
7	Transportation & Set-up	Shipped completely assembled; Ready for immediate use; Lifting pads provided for crane lifting; Unit can be dragged onsite on its skids	
8	Options	Ash clean-out rake with standard universal quick disconnect for *Skidsteer* or *Bobcat*;	
9	Average Through-put	7-9 Tons per Hour (Average – See Note)	
10	Fuel Consumption	Approx. 2.0 gal/hr. (7.6 L/hr.)	
11	Weight	40,250 lbs. (18,260kg)	
12	Dimensions	Overall Size L × W × H	Fire Box L × W × H
		33' 3" × 8' 6" × 8' 6" (10.2m × 2.6m × 2.6m)	22' 11" × 6' 2" × 7' 1" (7m × 1.9m × 2.2m)

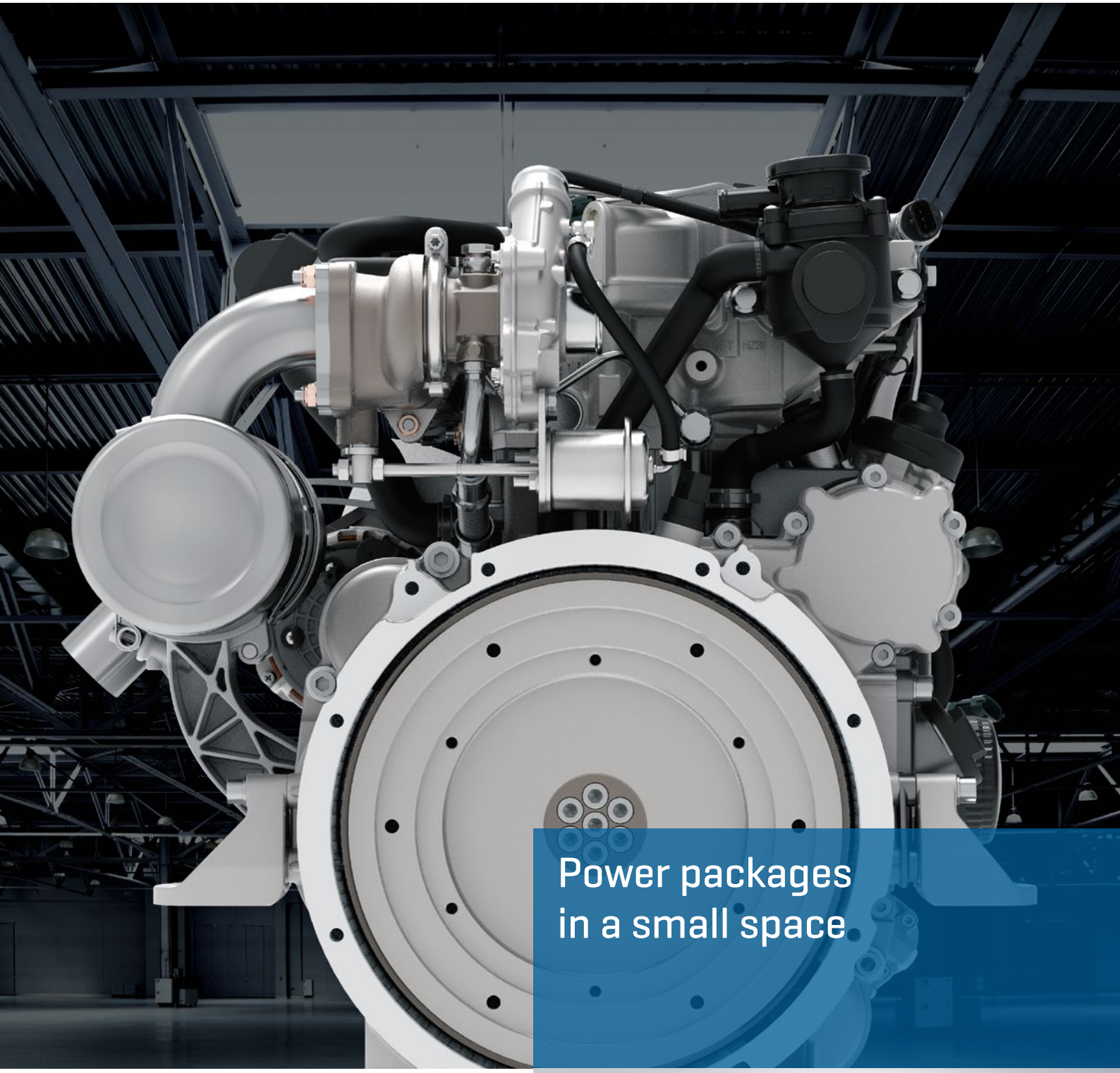
Note:
Achievable through-put depends on several variables, especially the nature of the waste material, the burn chamber temperature and the loading rate.
All weights and dimensions are approximate and metric conversions are rounded. Specifications are subject to change without notice.

AIR BURNERS, INC.
4390 SW Cargo Way • Palm City, FL 34990
Phone 772-220-7303 • FAX 772-220-7302
E-mail: info@airburners.com • www.AirBurners.com

Rev. 03.17.2020

CREATING POWER SOLUTIONS.

HATZ DIESEL



Power packages in a small space

Hatz H-series diesel engines

HATZ QUALITY · GERMAN PRODUCTION STANDARDS · TRADITION SINCE 1880 · KNOW HOW

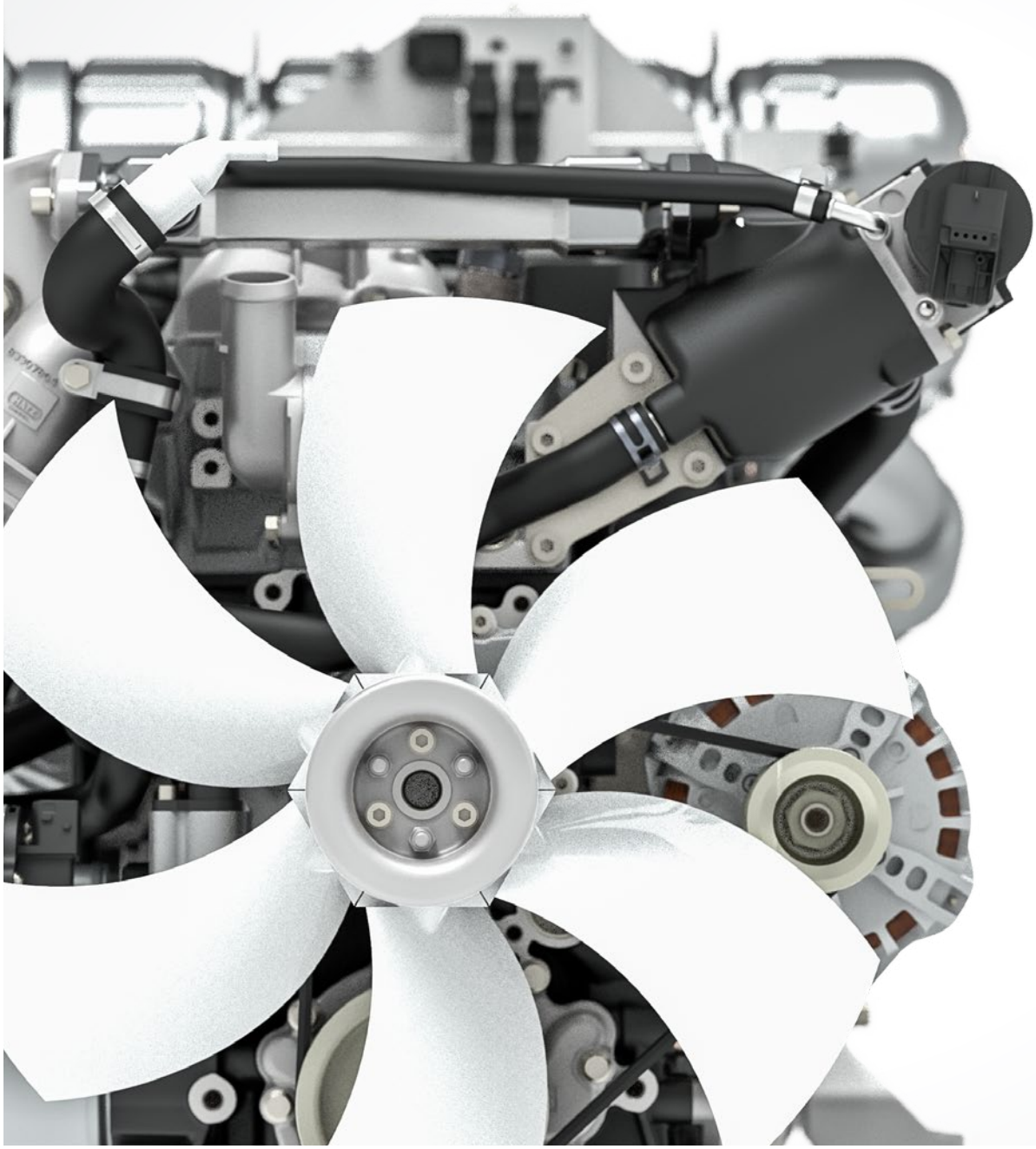
The new generation of efficient Hatz diesel engines.

Supported by:

Federal Ministry
for Economic Affairs
and Energy

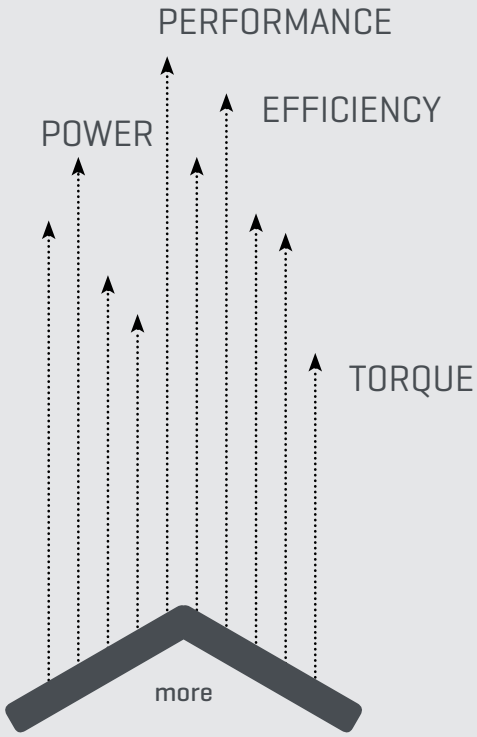
on the basis of a decision
by the German Bundestag

The release of the Hatz H-series started in 2014. Today, the model portfolio embraces various three-cylinder and four-cylinder models. The new generation of compact and efficient industrial engines follows a downsizing approach with common-rail technology and turbocharger.



Downsizing approach
A groundbreaking downsizing approach was adopted in development of the H-series engines. The key objectives were the reduction of size and weight with simultaneously higher power and good exhaust gas values. The results are very convincing: Weight and consumption values are lower than those of any other engine in this class. This could be achieved, among other factors, thanks to the iHACS technology (intelligent Hatz Advanced Combustion Strategy) with its sophisticated combustion chamber geometry, Bosch injection technology, minimised friction and a maximum charge air pressure of 1.7 bar.

Conservative-innovative engine for a long service life
All mechanical components were designed and developed with a conservative-innovative approach. The H-series engines are equipped with two valves per cylinder, achieving high efficiency, mechanical robustness and functional simplicity. This is expressed in turn by the familiar long service life. Use of premium products for all important components also underlines this.

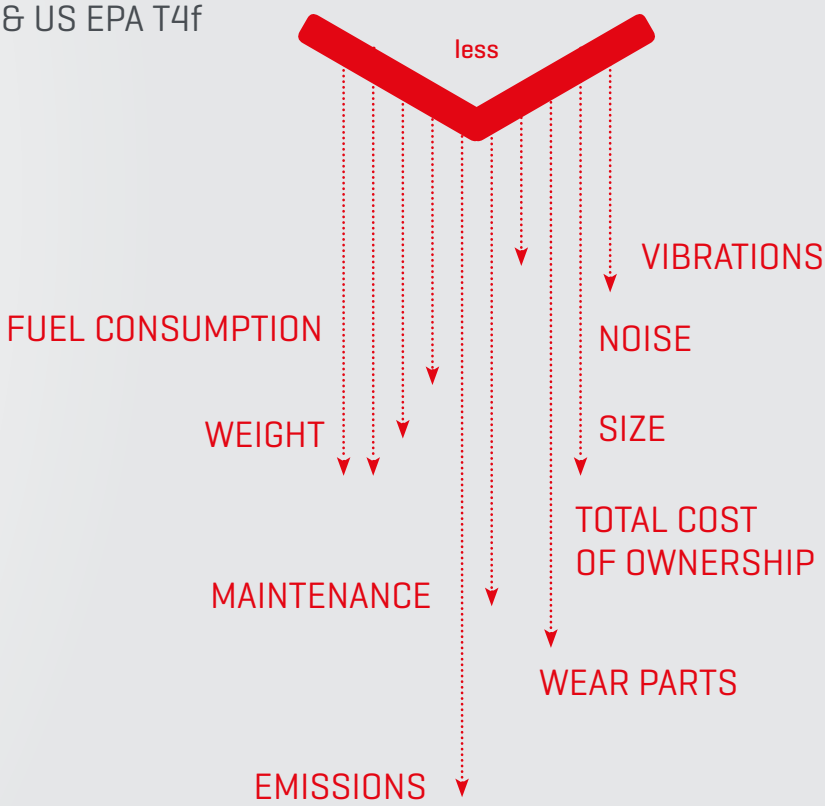


H-series

ROBUST BASIC ENGINE / VARIOUS MODELS

HIGH-QUALITY COMPONENTS ONE FAMILY COVERS ALL EMISSION STANDARDS

ENGINEERED FOR EU STAGE V & US EPA T4f

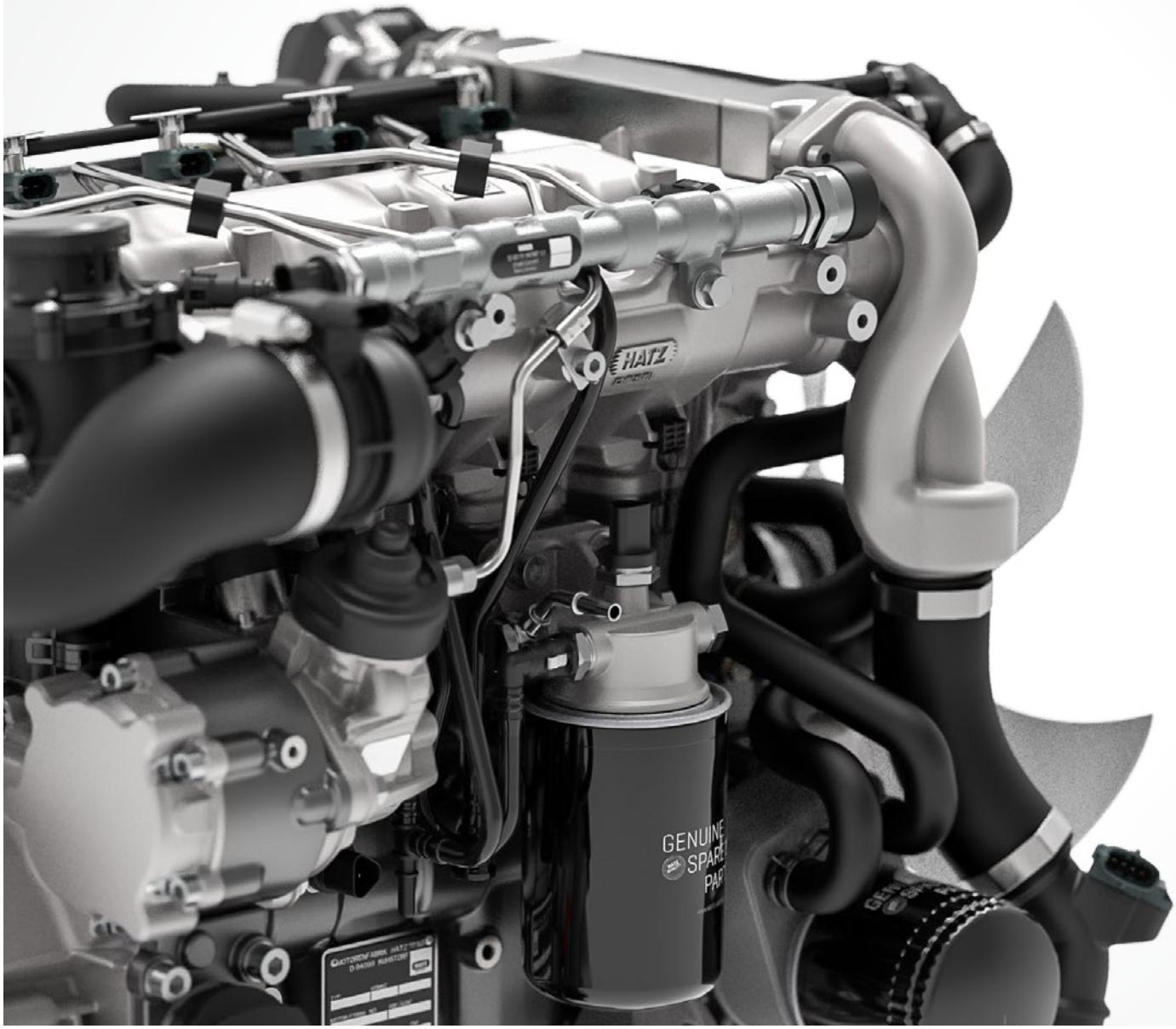


Modern engine family
Compact, light, economical, robust and environmentally friendly: The common-rail diesel engines of the Hatz H-series provide everything expected from powerful and modern industrial engines. They impress through their quiet running, dynamics and maintenance friendliness. Their constantly low fuel consumption over a wide load range sets the benchmark.

Innovation meets reliability.
No contradiction for Hatz.

The H-series contains a whole series of technical refinements. They not only distinguish the engines with the most compact dimensions in its class: They also enable best fuel efficiency compared to the competition. Value was placed in particular on the Hatz well-known reliability for every innovation.

Impressive full package
The Hatz 4H50TIC achieved second place in 2015 at the renowned GreenTec Award in the Automobility category.



Bosch common-rail system for ultimate fuel efficiency
One of the key factors for the high power density of the H-series is the common-rail system. Hatz opted for the Bosch off-highway CRS, a common-rail system with 1800 bar. It works precisely calculated with pre-, main- and post-injection. Together with the other Bosch components matched ideally to each other – high-pressure pump, injector control unit, and off-highway injectors – the perfect balance is achieved between dynamics, quiet combustion noise, low pollutant levels, and economy.

Real drive consumption close to the optimum
When it comes to fuel efficiency, the Hatz H-series sets new standards for the best point with a specific consumption of just 210 and 220 g/kWh. The special feature here is that consumption values close to the optimum operating point are achieved in a wide load and speed range. This is unrivaled today and makes the Hatz H-series the most efficient engine range in its class.

Optimum combustion strategy for every need
The exhaust gas return system was further developed by Hatz engineers to have a positive effect on the exhaust gas values. A pre-cooling unit for the exhaust gas return (EGR) significantly reduces the exhaust gas temperature before the EGR valve, protecting it against thermal damage. An optimized EGR-mixing-nozzle is also used. It uniformly distributes the recirculated exhaust gases together with the fresh combustion air to all four cylinders. Together with the common rail system, the result is an outstanding exhaust gas quality which ensures that the TIC models are only equipped with a diesel oxidation catalytic converter (DOC) and there is no need for an additional particle filter. Furthermore the engines significantly undercut the emission limits of EPA Tier 4 Final and EU Stage IIIB.

Outstanding emission values from the very beginning
Hatz also offers the three-cylinder and four-cylinder TI models that work without EGR and DOC and achieve maximum outputs of 64 kilowatts for countries that do not place special requirements on emission values or in which only fuels with a high sulfur content are available. Compliance with the EPA Tier 2 and EU Stage II emission levels is still achieved without any exhaust gas treatment.

Fit for the strictest limits
The H-family was developed from the very beginning with a focus on fulfilment of tighter regulations, such as EU Stage V that will make a diesel particulate filter (DPF) inevitable. These TICD models are fitted with the customised Hatz diesel particulate filter system optiHEAT that can be optimally adapted to the machine and installation situation.

High maintenance friendliness
A maintenance interval of 500 hours means the engine scores top points with regard to customer friendliness and reliability. The extended intervals are due to hydraulic valve adjustment and large-sized filters. Additionally, the engine has a shut-off sensor system that is able to switch off the engine in an emergency to avoid major damage.
The robust construction and careful selection of all components ensure that the engine is fit for the most demanding applications.

Internal friction
A further key element for the extraordinarily high fuel efficiency is the reduction of internal friction due primarily to the conservative design with only a few moving parts. A major contribution to this is made by the two-valve technology in conjunction with roller tappets as well as the lower camshaft that reduces installation space. Additionally, exclusively high-end materials are used for the conrod and bearings.

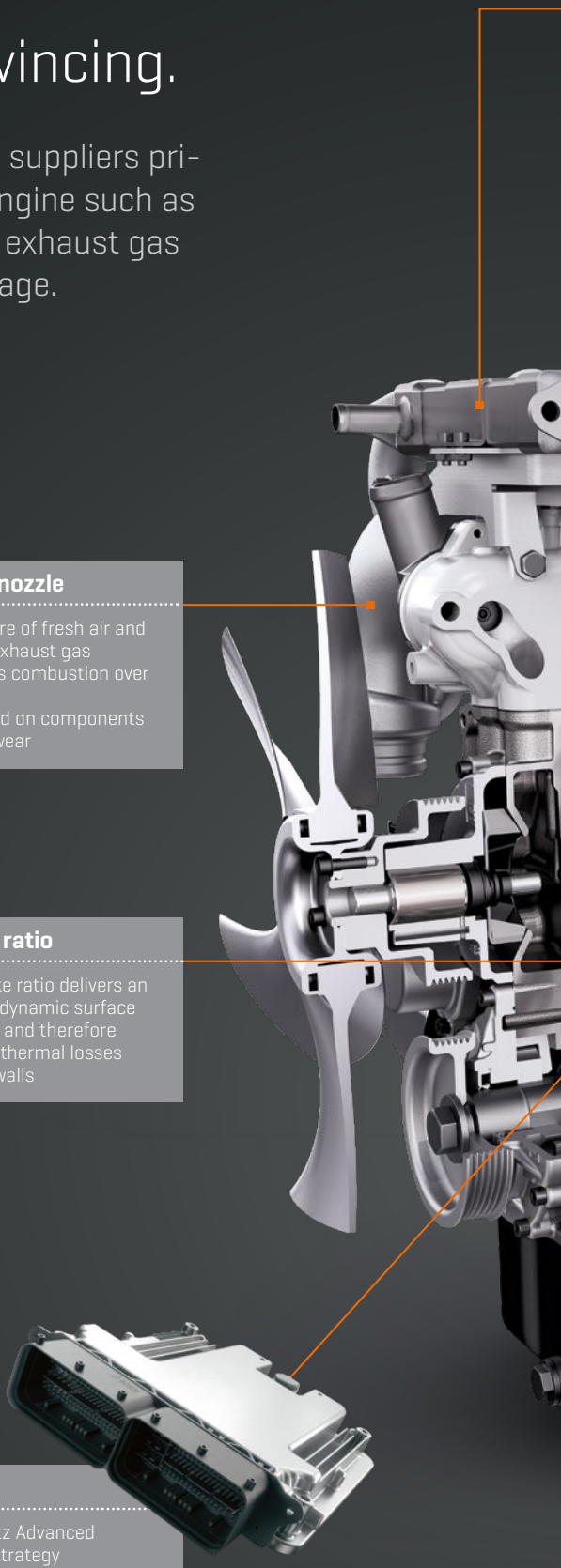
Not only the power counts. The internal values are also convincing.

Hatz has opted for premium products from well-known suppliers primarily from Germany for all the essential parts of the engine such as the injection system, crankcase, crankshaft, camshaft, exhaust gas recirculation valve, catalytic converter and sensor package.

Robust but lightweight construction
The engine crankcase is made from thin-walled gray cast iron, the cylinder head and cylinder head cover from cast aluminum, and the oil sump from sheet metal. All parts are optimised for lightweight construction and structural mechanics.

Basic features

- Three-/four-cylinder turbo common-rail diesel engine with 1.5 or 2.0 litres respectively
- Bosch off-highway common-rail system with 1800 bar
- Bosch injectors (off-highway version)
- Bosch high pressure pump with electrical lift pump
- Bosch rail
- Bosch ECU in 12 V or 24 V version, external
- Bosch starter motor & Bosch alternator
- High-tech cylinder head with optimised cooling and two-valve system
- Hydraulic valve tappets
- Wastegate turbo charger for optimised torque characteristics
- Intercooler (except 3H50T)
- Closed crankcase breather
- Gear wheel driven camshaft, no tooth belt, no chain



EGR mixing nozzle

- Perfect mixture of fresh air and recirculated exhaust gas
- Homogeneous combustion over all cylinders
- Optimised load on components and uniform wear

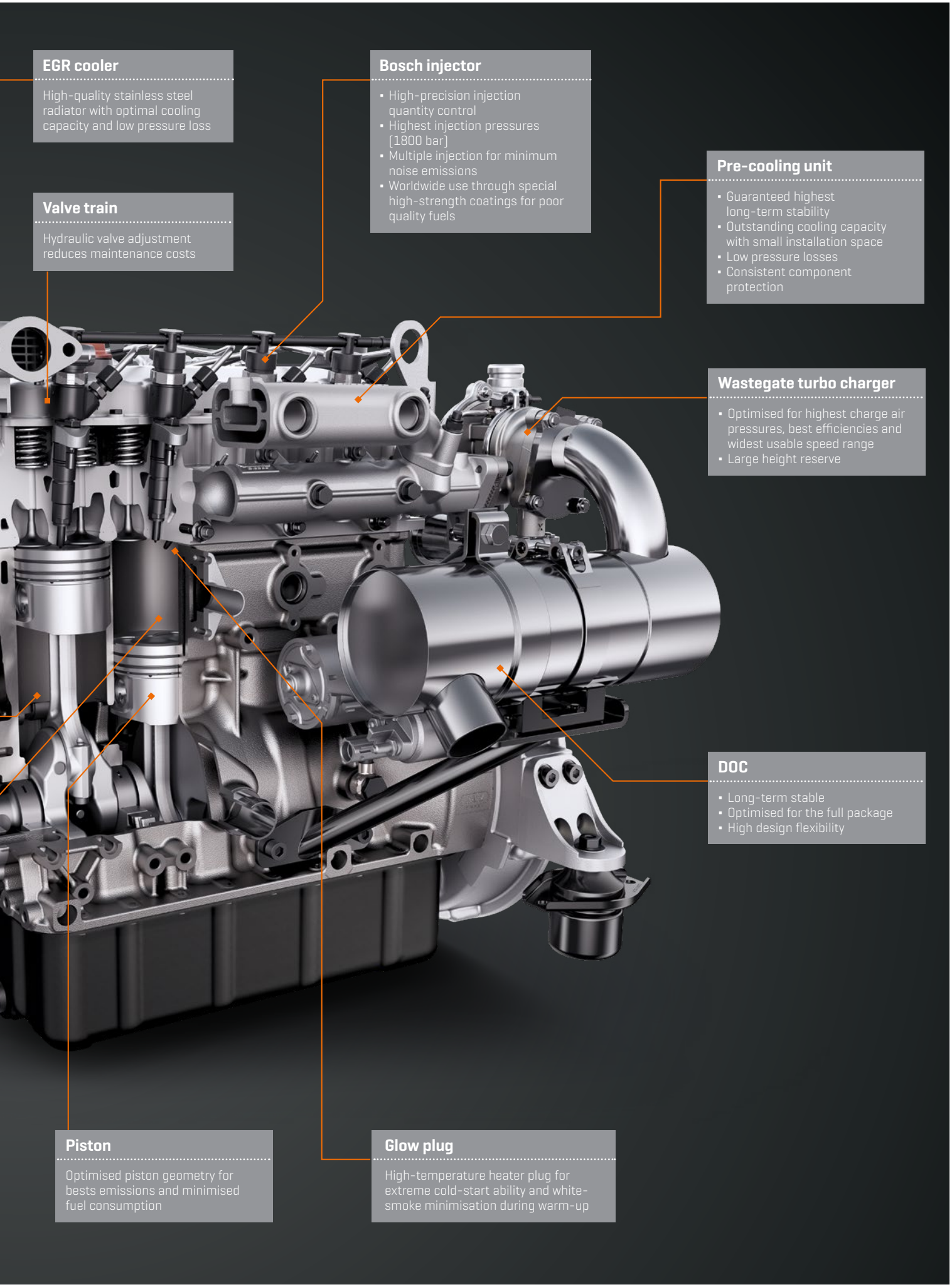
Bore/stroke ratio

Ideal bore/stroke ratio delivers an optimal thermodynamic surface to volume ratio, and therefore results in lower thermal losses at the cylinder walls

iHACS

iHACS

- Intelligent Hatz Advanced Combustion Strategy
- A Bosch ECU controls the torque-optimised combustion process developed by Hatz, with a focus on best real drive consumption and minimised noise emissions



EGR cooler

High-quality stainless steel radiator with optimal cooling capacity and low pressure loss

Valve train

Hydraulic valve adjustment reduces maintenance costs

Bosch injector

- High-precision injection quantity control
- Highest injection pressures (1800 bar)
- Multiple injection for minimum noise emissions
- Worldwide use through special high-strength coatings for poor quality fuels

Pre-cooling unit

- Guaranteed highest long-term stability
- Outstanding cooling capacity with small installation space
- Low pressure losses
- Consistent component protection

Wastegate turbo charger

- Optimised for highest charge air pressures, best efficiencies and widest usable speed range
- Large height reserve

DOC

- Long-term stable
- Optimised for the full package
- High design flexibility

Piston

Optimised piston geometry for bests emissions and minimised fuel consumption

Glow plug

High-temperature heater plug for extreme cold-start ability and white-smoke minimisation during warm-up

The new power package: Hatz 3H50.

Together with the well-established Hatz 4H50 engines, the newly developed three-cylinder engines will form the liquid-cooled product family of the H-series from 2018. Following the family concepts, the various 3H50 models are also orientated on the currently valid and future emission standards.

Developed for compact applications
The three-cylinder engines are the ideal solution for today's compact machine class smaller than 37 kilowatts. The goal is not only to house engines in a compact installation space: The form and operation of the machines must remain unchanged. As soon as exhaust emission after treatment becomes necessary, the little brother of the four-cylinder engine profits in particular from the compactness of the H-family.

Smaller space requirement, increased power
The automotive industry has been successfully practicing the downsizing concept for years. Three-cylinder engines inherited this concept as part of the H-family. Thus, the Hatz 3H50 at just 1.5 litres will replace engines with displacements over 2.5 litres in the future. The torque and response behaviour are considerably superior to the present generation. At the same time the consumption values are significantly reduced. In a word: right-sizing.

Compliant with emission standards
The Hatz 3H50TI doesn't need any exhaust emission after treatment at all. The engine achieves compliance with the EU Stage IIIA and US EPA Tier 4 Interim standards in the power range from 19 to 37 kilowatts.
Primarily for the US market and Canada as well as some Asian countries the Hatz 3H50TIC was developed. In order to ensure compliance with the emission standards US EPA Tier 4 final and EU Stage IIIB, the combination of EGR and DOC reduces substances potentially harmful to the environment to the required level.
In conjunction with the customised Hatz diesel particulate filter system optiHEAT, the Hatz 3H50TICD is optimally equipped for emission requirements such as EU Stage V.
The engine model 3H50T with 18.4 kilowatts completes the range of H-series engines. 130 Newton metres make it the engine with the highest torque in its class in the market today. It fulfils emission standards US EPA Tier 4 final and EU Stage V without exhaust emission after treatment.

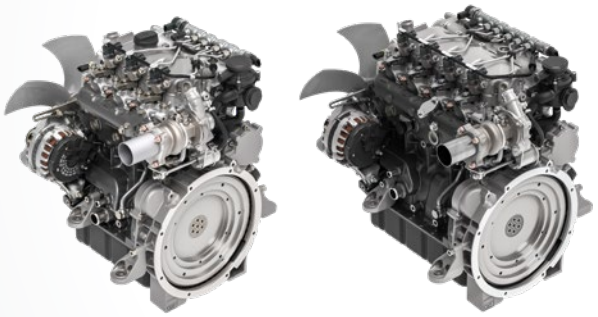
The models of the H-family.

NEW

ENGINEERED FOR EU STAGE V

3H50T

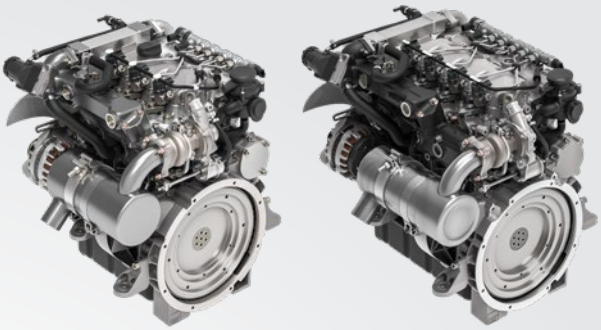
- Developed for performance class under 19 kW
- No intercooler, diesel oxidation catalyst (DOC) and exhaust gas recirculation (EGR) are needed
- Ideal solution for compact machines
- The highest torque in its class with a maximum output of 130 Nm
- Offers more torque than comparable engines in the class up to 37 kW and meets EU Stage V without DPF with less than 19 kW – thanks to downsizing
- Fulfils US EPA Tier 4 final/EU Stage V emissions regulations
- Emits extremely low particle mass (0.4 grams per kilowatt hour for EU Stage V)



3H50TI[1] / 4H50TI

- Basic engine (TIC) further developed for markets with low-quality fuel
- Components which react sensitive to sulfur like exhaust gas recirculation (EGR) and diesel oxidation catalyst (DOC) are avoided
- Fuel with up to 5000 ppm sulfur content possible
- Higher output compared to TIC model
- Higher ambient temperatures possible
- Fulfils US EPA Tier 2/EU Stage II emissions regulations
- Additionally EU Stage IIIA (19–37 kW) certified

[1] Available mid 2020

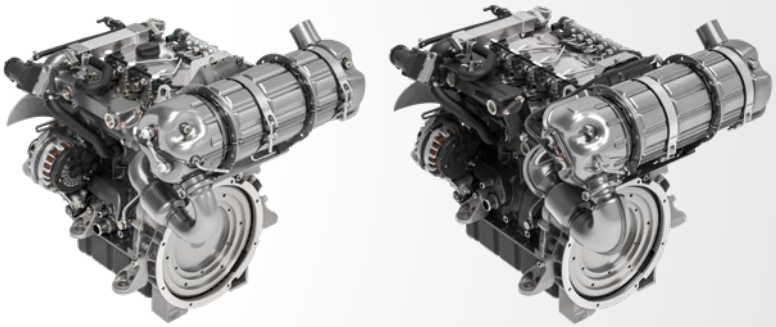


3H50TIC / 4H50TIC

- Turbo common-rail diesel engine
- World first downsizing industrial diesel engine
- Lowest consumption values in its class thanks to iHACS technology (intelligent Hatz Advanced Combustion Strategy)
- Thin-wall molding cylinder block, therefore compact in size and lightweight
- Hydraulic valve adjustment
- US EPA Tier 4 final and EU Stage IIIB compliance
- 3H50TIC also available as high torque version offering 16 Nm more torque

Open Power Unit (OPU)

- Radiator and intercooler mounted vibration-isolated
- Delivery as a complete system ex works
- Just application and all application-based external parts need to be connected
- Available as TICD, TIC, TI or T version



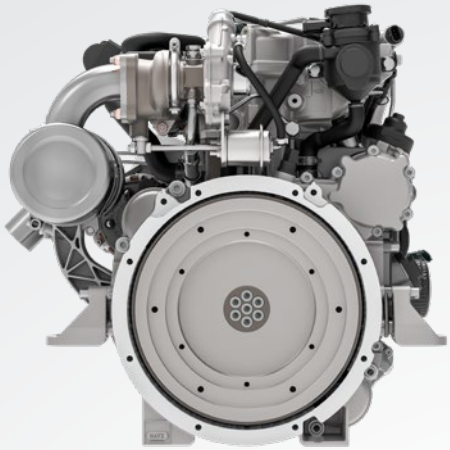
3H50TICD / 4H50TICD

- Basic engine (TIC) additionally equipped with separable DOC/DPF combination filter
- DPF system optiHEAT (optimised Hatz Exhaust After treatment Technology) optimally customisable to vehicle-/machine design
- Optimised for long operating periods between two regeneration intervals
- As complete system ex works or with DPF for chassis mounting
- Engineered for EU Stage V emission regulation

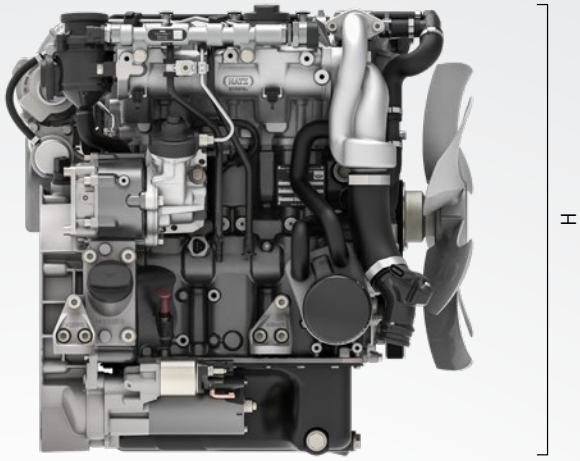
New Silent Pack

- Based on OPU version but up to 60 % quieter
- Efficent weather and touch protection
- Easy accessibility of all control and service points
- Same high release temperature as non-encapsulated version
- Available for TICD, TIC and TI versions

Technical data 3H50



W

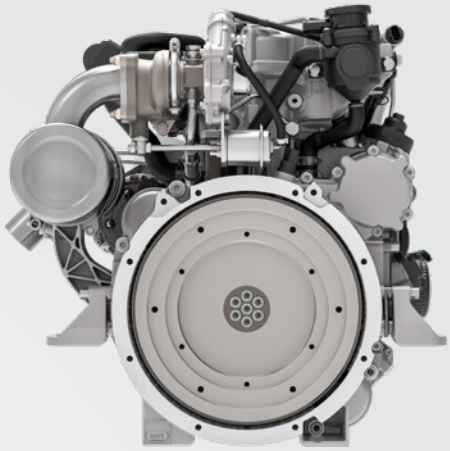


H

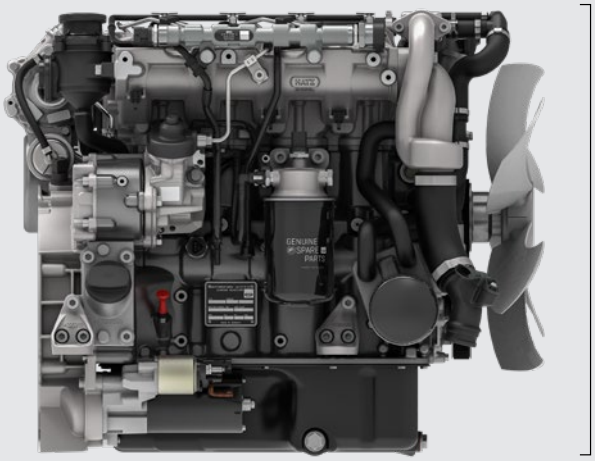
L

Engine type		3H50*T*	3H50*TICD*	3H50*TIC*	3H50*TI* [1]
Cylinders		3			
Displacement [l]		1.464			
After treatment		–	cEGR, DOC, DPF	cEGR, DOC	–
Power class [kW] of certification	EU Stage V	<19	19–56	–	–
	US EPA Tier 4 final	<19	19–56	19–56	–
	Less regulated	19–37	–	19–56	19–56
L x W x H [mm]		583 x 556 x 657	585 x 556 x 601	585 x 601 x 601 [2]	583 x 556 x 601
Weight [kg]		132	140	154 [2]	133
Max. output [kW @ rpm]		30 @ 3000	44 @ 2700–2800		48 @ 2300–2800
Max. torque [Nm @ rpm]		130 @ 1300–2100	203 @ 1800–2000	203 @ 1700–2000	202 @ 2100–2200
Options		OPU		OPU, New Silent Pack	

[1] Available mid 2020 [2] Including engine mounted after treatment



W

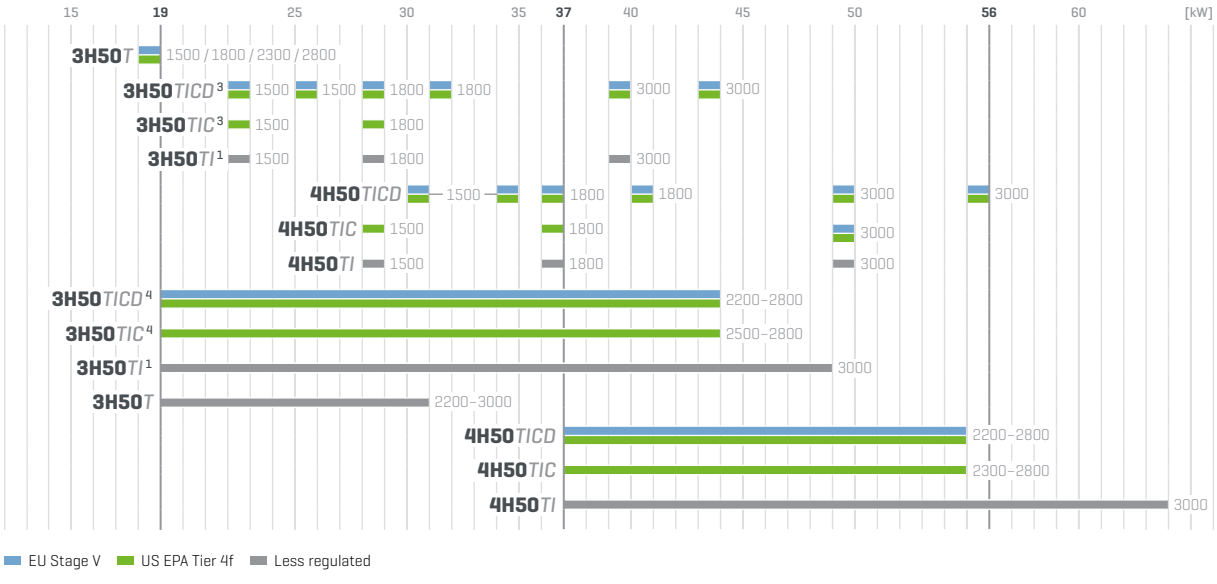


H

L

Engine type		4H50*TICD*	4H50*TIC*	4H50*TI*
Cylinders			4	
Displacement [l]			1.952	
After treatment		cEGR, DOC, DPF	cEGR, DOC	–
Power class [kW] of certification	EU Stage V	19–56	–	–
	US EPA Tier 4 final	19–56	19–56	–
	Less regulated	–	19–56	19–75
L x W x H [mm]		672 x 556 x 598	672 x 601 x 596[2]	670 x 556 x 592
Weight [kg]		158	173[2]	152
Max. output [kW @ rpm]		55 @ 2300–3000	55 @ 2500–2800	64 @ 2800
Max. torque [Nm @ rpm]		244 @ 2100	240 @ 1600–2100	268 @ 2100–2200
Options			OPU, New Silent Pack	

H-series – power ranges, emission classes and rated speeds



[3] Constant speeds are planned to be available from end 2020 [4] Also available with 36.4 kW @ 2500 rpm for use in California without registration requirements

Motorenfabrik Hatz GmbH & Co. KG
Ernst-Hatz-Str. 16
94099 Ruhstorf a. d. Rott
Germany
Phone +49 8531 319-0
marketing@hatz-diesel.de
www.hatz-diesel.com

70254049 EN 02.20 Printed in the USA

HATZ DIESEL

CREATING POWER SOLUTIONS.

APPENDIX C
Facility Map

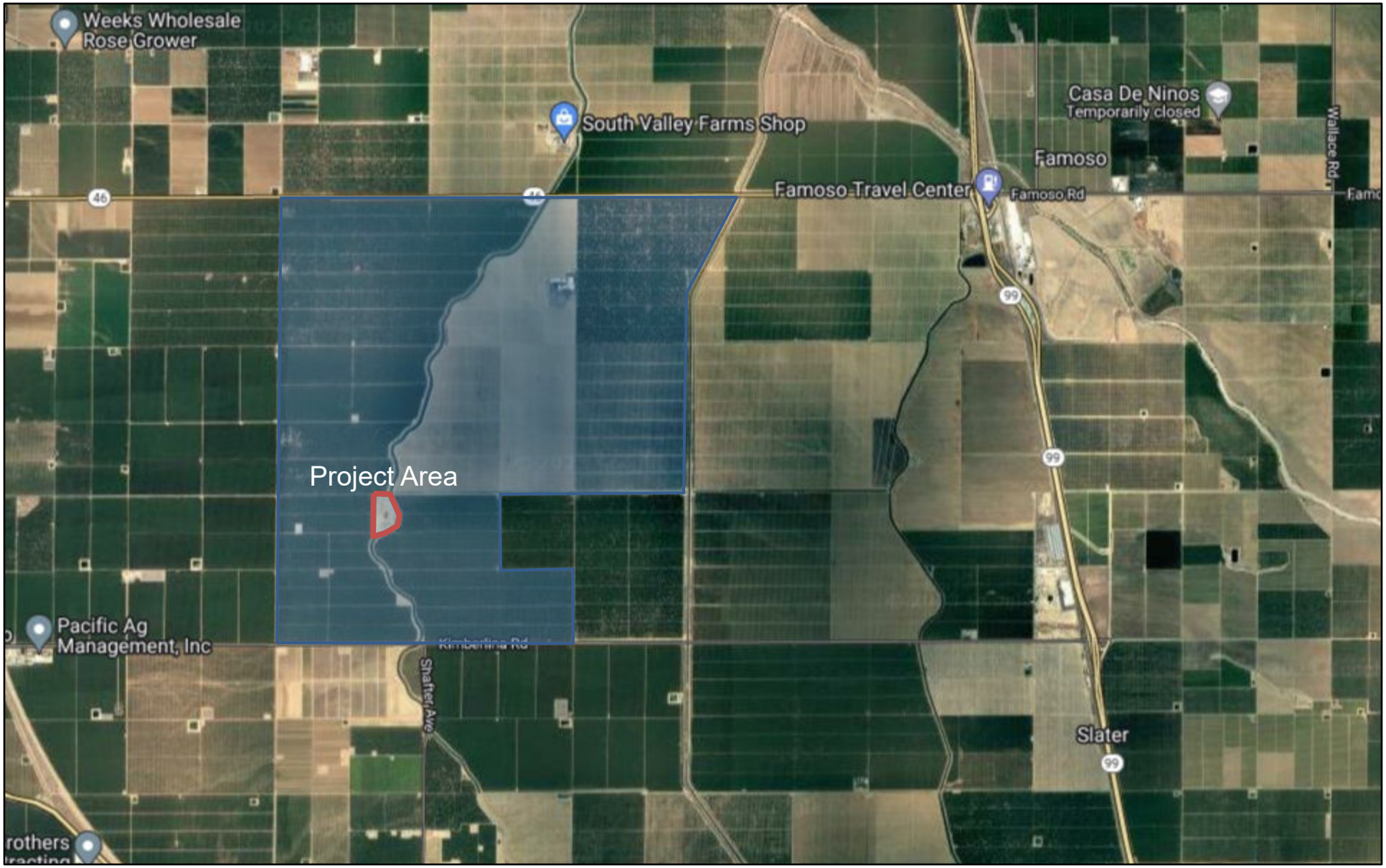
E

N

S

W

South Valley Farms



1/19/2023, 8:43:50 AM

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

Created by MapHub

APPENDIX D
Quarterly Net Emissions Change (QNEC)

Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

QNEC = PE2 - PE1, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
PE2 = Post-Project Potential to Emit for each emissions unit, lb/qtr.
PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.1 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$PE2_{quarterly} = PE2_{annual} \div 4$ quarters/year

$PE1_{quarterly} = PE1_{annual} \div 4$ quarters/year

Quarterly NEC [QNEC]			
Pollutant	**PE2 (lb/qtr)**	**PE1 (lb/qtr)**	**QNEC (lb/qtr)**
NO_X	2,000	0	2,000
SO_X	200	0	200
PM_{10}	2,613.75	0	2,613.75
CO	5,200	0	5,200
VOC	1,800	0	1,800

APPENDIX E
BACT Guideline and Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 1.9.17*

Last Update: 1/30/2017

Stationary Air Curtain Incinerator

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Air curtain incinerator (electric powered), complying with visible emissions of 10% opacity or less after start-up (per 40 CFR Part 60 Subpart CCCC, sections 60.2250 and 60.2255)		1. Biomass Power Plant 2. Landfill 3. Composting
SOx	Air curtain incinerator (electric powered), complying with visible emissions of 10% opacity or less after start-up (per 40 CFR Part 60 Subpart CCCC, sections 60.2250 and 60.2255)		1. Biomass Power Plant 2. Landfill 3. Composting
PM10	Air curtain incinerator (electric powered), complying with visible emissions of 10% opacity or less after start-up (per 40 CFR Part 60 Subpart CCCC, sections 60.2250 and 60.2255)		1. Biomass Power Plant 2. Landfill 3. Composting
NOx	Air curtain incinerator (electric powered), complying with visible emissions of 10% opacity or less after start-up (per 40 CFR Part 60 Subpart CCCC, sections 60.2250 and 60.2255)		1. Biomass Power Plant 2. Landfill 3. Composting

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a State Implementation Plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

***This is a Summary Page for this Class of Source**

Top-Down BACT Analysis

Air Curtain Incinerator Combustion

BACT analysis for NOx, SOx, PM_{10}, and VOC emissions:

The following BACT analysis will evaluate the pollutants triggering BACT collectively since no pollutant specific add-on controls have been identified. In addition, the alternative basic equipment options identified affect the emission rates of all the pollutants. Therefore, a multi-pollutant cost effectiveness threshold (MCET) will be calculated in accordance with the District Policy APR 1305, Best Available Control Technology Policy.

Step 1 - Identify All Possible Control Technologies

District BACT Guideline 1.9.17 (Stationary Air Curtain Incinerator) identifies the following controls for NOx, PM_{10}, and VOC emissions:

Achieved-in-Practice:

- Air curtain incinerator (electric powered), complying with visible emissions of 10% opacity or less after start-up (per 40 CFR Part 60 Subpart CCCC, sections 60.2250 and 60.2255).

  Note that pollutant emission limits are not specified because emissions are known to vary by type of biomass material burned, and this BACT guideline is not specific to the type of biomass.

Technologically Feasible:

- None identified.

Alternate Basic Equipment:

- Biomass Power Plant.
- Landfill Disposal.
- Composting (shipping to offsite facility).

Step 2 - Eliminate Technologically Infeasible Options

Biomass Power Plant

The reason for the facility proposing to operate the air curtain incinerator is that the local biomass plants have recently been shut down and are not accepting this material. Therefore, this option can be eliminated.

Landfill Disposal

Landfills are California's third largest source of methane emissions, and methane is a potent short-lived climate pollutant. As part of California's efforts to mitigate climate change, Senate Bill (SB) 1383 (2016) *Short-Lived Climate Pollutants* was enacted in order to reduce statewide methane emissions by diverting organic waste streams, which includes woody biomass, from landfills. By 2025, SB 1383 requires a 75-percent reduction over the 2014 baseline level of organic waste going to landfills. SB 1383 effectively precludes landfill disposal of large quantities of woody biomass as a feasible option. Therefore, this option will be eliminated.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Composting (Alternate Basic Equipment)
2. Air curtain incinerator complying with visible emissions of 10% opacity or less after start-up (per 40 CFR Part 60 Subpart EEEE, sections 60.2971 and 60.2972).

Step 4 - Cost Effectiveness Analysis

The facility has proposed Option 2 from the Step 3 above. Option 1 is less polluting; therefore, a cost effective analysis will be performed to assess the cost effectiveness of this option.

Because a Multi-Pollutant Cost Effectiveness (MCET) calculation is being performed, the cost of the air curtain incinerator will be a factor. The air curtain cost data is from Air Burners website[5], which gives a cost range for their Firebox 200 series, which includes model S223 proposed in this project, ranging from $148,000 to $163,000. The higher cost will be conservative for the present analysis. The freight and training costs were provided by the manufacturer in project C-1182005 for a smaller unit.

[5] https://airburners.com/products/firebox-series/

Annual Cost of Air Curtain	
Capital Costs	
Air Curtain (Air Burners Inc.)	$163,000
Freight (Air Burners Inc.)	$7,125
Sales Tax at 8%	$13,200
Training	$3,400
Total Capital Costs	$186,725
Annualized Capital Costs (at 4% over 10 years, per APR 1305)	**$23,022**
Annual Operating Costs	
Labor (12 hr/day x $30/hr x 100 day/yr x 1 worker)[6]	**$36,000**
Fuel (diesel) for loader	**$9,400[7]**
Total Annual Cost (annualized capital cost + operating cost)	**$68,422**

The cost of composting involves transporting the material off-site to a composting site that will accept them. As mentioned, under project C-1182005, a local biosolids compost site indicated that the material would be acceptable for composting; however, they do not have space for any of this material at present. A compost operator in Kern County indicated that the problem for composters is a shortage of nitrogenous materials (and water). Taking on more wood waste (a carbonaceous material) would only make the carbon to nitrogen ratio worse (i.e., higher), hence, it would be unlikely that anyone would accept this material at any price given the current imbalance. Nevertheless, a cost analysis will be performed for composting as an alternative.

The District's *2020 Staff Report and Recommendations on Agricultural Burning*[8] *(December 17, 2020)* contained a comprehensive cost analysis to remove an orchard, chip the trees, haul the material, and pay tipping fees to a composting facility (see Table 7-9, Summary of Composting Costs for a Typical 15 Acre Orchard Removal). In the present case, the cost to uproot and stockpile the trees should not be included in the present operation since the trees must be removed and stockpiled regardless, this is not an extra cost imposed by the composting option. Subtracting out the cost of orchard removal and stockpiling of the removed trees, the cost to compost an acre of orchard tree is $1,958 with 1 acre representing 30 tons of biomass material. Thus, the cost to compost per ton is $65.27/ton. The hauling costs for transporting wood from remote forest locations would be expected to be significantly higher than for an orchard on the Valley floor. Therefore, the District's estimate for the cost of composting orchard material is expected to be conservatively low for purposes of this BACT cost estimate.

Cost to compost 8,000 tons of forest biomass = 8,000 tons/yr × $65.27/ton = $552,160/yr

[6] 80 ton/day and 8,000 ton/yr burn limit. Assumes an 12 hour work day to reach the 80 ton/day limit. Also, it is assumed that the new ACI burns 100% of a combined annual burn limit of 8,000 ton/yr and it takes 100 operating days/yr to reach the annual burn limit.

[7] Diesel fuel at 3.9 gal/hr (from loader) × 2 hr/day × $6.0/gal × 200 days/yr = $9,400. The diesel price used is based on the average of the California industrial diesel price during 2022 as published by the U.S. Energy Information Administration in their latest diesel report at: https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=emd_epd2dxl0_pte_sca_dpg&f=a

[8] http://www.valleyair.org/BurnPrograms/open-burn-report-progress/documents/2020-ag-burning-staff-report/2020-Ag-Burn-Report.pdf

Multi-Pollutant Cost Effectiveness Threshold (MCET)

District Policy APR 1305 requires that for control options that affect more than one pollutant, a MCET is calculated. If the difference between the cost of the ABE option (e.g. landfill, composting) and the proposed option (e.g. air curtain) is greater than the MCET, then the option is not cost effective.

Cost effective threshold = CET ($/ton)

$MCET = [CET_{NOx} \times PE_{NOx}] + [CET_{SOx} \times PE_{SOx}] + [CET_{PM10} \times PE_{PM10}] + [CET_{VOC} \times PE_{VOC}]$

As seen above in Section I, although permit units 1 and 3 will have a combined annual throughput of 7,600 ton of forest waste material/year as a result of this project, the new unit (permit unit 3) has the ability to burn 100% of the combined annual throughput. Therefore, the annual PE2 from permit unit 3 for NOx, SOx, PM_{10}, and VOC emissions will be based on the combined annual throughput as seen in the table below:

Annual PE2 Summary		
Pollutant	**lb/year**	**tons/year**
NOx	8,000	4.0
SOx	800	0.4
PM_{10}	10,400	5.2
VOC	7,200	3.6

Thus, MCET = ($32,900/ton x 4.0 ton-NOx/yr) + ($19,000/ton x 0.4 ton-SOx/yr) + ($11,900/ton x 5.2 ton-PM10/yr) + ($23,600/ton x 3.6 ton-VOC/yr)
= **$286,040**

In the present analysis, it is simpler and more conservative to make no deduction to the MCET for emissions caused by composting.

Compare Annual Cost of ABE Option to MCET

Cost to Compost – Cost of air curtain = $552,160/yr – $68,422/yr = **$453,738/yr**

Since the cost difference for the composting option ($453,738/yr) is greater than the MCET ($286,040/yr), composting is not a cost effective option.

Step 5 - Select BACT

BACT for NOx, SOx, PM_{10}, and VOC is the air curtain incinerator with visible emissions of 10% opacity or less after start-up (using NSPS Subpart CCCC procedure and averaging period). The applicant proposes this control.

APPENDIX F
HRA and AAQA Summary

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Homero Ramirez – Permit Services
From:	Matthew Cegielski – Technical Services
Date:	February 6, 2023
Facility Name:	SOUTH VALLEY ALMOND CO LLC
Location:	15443 BEECH AVE, WASCO
Application #(s):	S-3152-13-0
Project #:	S-1224423

1. Summary

1.1 Risk Management Review (RMR)

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
13	0.46	0.00	0.01	2.13E-06	Yes	Yes
Project Totals	0.46	0.00	0.01	2.13E-06		
Facility Totals	13.98	0.133	0.772	3.96E-06		

1.2 Ambient Air Quality Analysis (AAQA)

Pollutant	Air Quality Standard (State/Federal)				
	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass		Pass		
NO_x	Pass				Pass
SO_x	Pass	Pass		Pass	Pass
PM10				Pass[3]	Pass
PM2.5				Pass[4]	Pass

Notes:
1. Results were taken from the attached AAQA Report.
2. The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2) unless otherwise noted below.
3. Modeled PM10 concentrations were below the District SIL for non-fugitive sources of 5 $\mu g/m^3$ for the 24-hour average concentration and 1 $\mu g/m^3$ for the annual concentration.
4. Modeled PM2.5 concentrations were below the District SIL for non-fugitive sources of 1.2 $\mu g/m^3$ for the 24-hour average concentration and 0.2 $\mu g/m^3$ for the annual concentration. A level 2 analysis was conducted.

1.3 Proposed Permit Requirements

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

Unit # 13 - 0

1. The Air Curtain Incinerator will be limited to burning almond biomass to 7 tons/hr, 80 tons/day, and 8,000 tons/yr.
2. After hours of operation are completed, the fire in the firebox will be snuffed out and will not be allowed to smolder overnight. Ash from firebox will be emptied in a manner to minimize emissions.
3. The Air Curtain Incinerator will be operated according to manufacturer's guidelines and to minimize emissions. This includes but not limited to the following prohibitions: biomass shall not protrude from the firebox into the air curtain, flames shall not be visible above the air curtain, and plumes of ash shall not be generated due to excessive loading.

T-BACT is required for this unit because of emissions of Biomass Combustion Products which is a PM10.

2. Project Description

Technical Services received a (revised) request to perform a Risk Management Review (RMR) for the following:

- Unit -13-0: AIR BURNERS INC. MODEL S-223 AIR CURTAIN INCINERATOR WITH A FAN POWERED BY A PERMIT EXEMPT IC ENGINE (50 BHP OR LESS)

3. RMR Report

3.1 Analysis

The District performed an analysis pursuant to the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015) to determine the possible cancer and non-cancer health impact to the nearest resident or worksite. This policy requires that an assessment be performed on a unit by unit basis, project basis, and on a facility-wide basis. If a preliminary prioritization analysis demonstrates that:

- A unit's prioritization score is less than the District's significance threshold and;
- The project's prioritization score is less than the District's significance threshold and;
- The facility's total prioritization score is less than the District's significance threshold

Then, generally no further analysis is required.

The District's significant prioritization score threshold is defined as being equal to or greater than 1.0. If a preliminary analysis demonstrates that either the units', the project's or the facility's total prioritization score is greater than the District threshold, a screening or a refined assessment is required.

If a refined assessment is greater than one in a million but less than 20 in a million for carcinogenic impacts (cancer risk) and less than 1.0 for the acute and chronic hazard indices (non-carcinogenic) on a unit by unit basis, project basis and on a facility-wide basis the proposed application is considered less than significant. For units that exceed a cancer risk of one in a million, Toxic Best Available Control Technology (TBACT) must be implemented.

Toxic emissions for this project were calculated using the following methods:

- Biomass usage rates for the proposed operation were provided by the Permit Engineer. These usage rates were speciated into toxic air contaminants using emission factors derived from Table 19 of the 1999 CARB Report, Development of Toxics Emission Factors from Source Test Data Collected Under the Air Toxics Hot Spots Program.
- Particulate matter emissions from this proposed operation were provided by the Permit Engineer. These emissions were speciated into the toxic air contaminants using emission factors derived from (Biomass) Table 17 of the 2008 Trace Metal Mobilization During Combustion of Biomass Fuels report. (and/or Biosolids) Table 2.2-8 of Section 2, Sewage Sludge Incineration, in the 1995 AP-42 Chapter 2, Solid Waste Disposal, document.

These emissions were input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy, risks from the proposed unit's toxic emissions were prioritized using the procedure in the 2016 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed facility was greater than 1.0 (see RMR Summary Table). Therefore, a refined health risk assessment was required.

The AERMOD model was used, with the parameters outlined below and meteorological data for 2007-2011 from Wasco (rural dispersion coefficient selected) to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Source Process Rates					
Unit ID	**Process ID**	**Process Material**	**Process Units**	**Hourly Process Rate**	**Annual Process Rate**
13	1	Almond Biomass HV	Tons	6.194	7,079
13	2	Almond Biomass LV	Tons	0.806	921
13	3	Almond Biomass Ash	PM10	0.025	55

As based on modeling data from the 2016 Australian Waste Feasibility Study and the 2007 Journal of the Air & Waste Management Association (JAWMA) article, *Emissions from the Burning of Vegetative Debris in Air Curtain Destructors,* a method for transposing the modeling conditions from the fireboxes in these references to the project was developed. The 2007 JAWMA article determined that there is a high velocity and low velocity section in the firebox. These sections were converted to point sources with diameters having circular areas equal to the sections' rectangular areas.

Area Source Parameters					
Unit ID	**Unit Description**	**Release Height (m)**	**X-Length (m)**	**Y -Length (m)**	**Area (m^2)**
3	FB AH	2.47	1.88	2.47	4.64

*Ash handling area parameters were not provided by the engineer, assumed to be the same as the firebox and located adjacent to incinerator.

Point Source Parameters						
Unit ID	**Unit Description**	**Release Height (m)**	**Temp. (°K)**	**Exit Velocity (m/sec)**	**Stack Diameter (m)**	**Vertical/ Horizontal/ Capped**
1	ACD	2.47*	623	2.09	1.98	Vertical
2	ACD	2.47*	723	0.27	3.58	Vertical

*The firebox is rectangular shaped and the area was converted to an equivalent diameter. Source testing provided by the reference for the Air Curtain was done one foot above the lip of the container and this was considered as the release height for the measured average velocity.

4. AAQA Report

The District modeled the impact of the proposed project on the National Ambient Air Quality Standard (NAAQS) and/or California Ambient Air Quality Standard (CAAQS) in accordance with District Policy APR-1925 (Policy for District Rule 2201 AAQA Modeling) and EPA's Guideline for Air Quality Modeling (Appendix W of 40 CFR Part 51). The District uses a progressive three level approach to perform AAQAs. The first level (Level 1) uses a very conservative approach. If this analysis indicates a likely exceedance of an AAQS or Significant Impact Level (SIL), the analysis proceeds to the second level (Level 2) which implements a more refined approach. For the 1-hour NO_2 standard, there is also a third level that can be implemented if the Level 2 analysis indicates a likely exceedance of an AAQS or SIL.

The modeling analyses predicts the maximum air quality impacts using the appropriate emissions for each standard's averaging period. Required model inputs for a refined AAQA include background ambient air quality data, land characteristics, meteorological inputs, a receptor grid, and source parameters including emissions. These inputs are described in the sections that follow.

Ambient air concentrations of criteria pollutants are recorded at monitoring stations throughout the San Joaquin Valley. Monitoring stations may not measure all necessary pollutants, so background data may need to be collected from multiple sources. The following stations were used for this evaluation:

Monitoring Stations				
Pollutant	**Station Name**	**County**	**City**	**Measurement Year**
CO	Bakersfield-Muni	Kern	Bakersfield	2021
NOx	Bakersfield-California	Kern	Bakersfield	2021
PM10	Bakersfield-California	Kern	Bakersfield	2021
PM2.5	Bakersfield-Airport (Planz)	Kern	Bakersfield	2021
SOx	Fresno - Garland	Fresno	Fresno	2021

Technical Services performed modeling for directly emitted criteria pollutants with the emission rates below:

Emission Rates (lbs/hour)						
Unit ID	**Process**	**NOx**	**SOx**	**CO**	**PM10**	**PM2.5**
1	1	6.19	0.62	16.11	3.83	3.83
2	1	0.81	0.08	2.10	0.50	0.50
3	1	0.00	0.00	0.00	0.03	0.03

Emission Rates (lbs/year)						
Unit ID	**Process**	**NOx**	**SOx**	**CO**	**PM10**	**PM2.5**
1	1	7,079	708	141,080	9,203	9,203
2	1	921	092	18,352	1,197	1,197
3	1	000	000	000	055	055

The AERMOD model was used to determine if emissions from the project would cause or contribute to an exceedance of any state of federal air quality standard. The parameters outlined above and meteorological data for 2007-2011 from Wasco (rural dispersion coefficient selected) were used for the analysis.

5. Conclusion

5.1 RMR

The cumulative acute and chronic indices for this facility, including this project, are below 1.0; and the cumulative cancer risk for this facility, including this project, is less than 20 in a million. However, the cancer risk for one or more units in this project is greater than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved with Toxic Best Available Control Technology (T-BACT).**

To ensure that human health risks will not exceed District allowable levels; the permit requirements listed on page 1 of this report must be included for this proposed unit.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

5.2 AAQA

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

6. Attachments

A. Modeling request from the project engineer

B. Additional information from the applicant/project engineer

C. Prioritization score w/ toxic emissions summary

D. Risk Summary

E. Facility Summary

F. AAQA Report

G. Level 2 AAQA PM 2.5 modeling results

San Joaquin Valley AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

RMR REQUEST Form

Please send this request to: HRAModeler@valleyair.org

Facility Name:	South Valley Almond Co LLC	Processing Engineer:	Homero Ramirez
Mailing Address:	15443 Beech Ave Wasco, CA 93280	Tec Svces Processing Staff:	
Location:	same as mailing	Tec Svces Reviewer:	
Contact Name:	Maz Ahmadi		
Telephone:	(661) 599-1503		
Application #:	S-3152-13-0	Completed Date:	
Project #:	S-1224423		

Information Required

Please check which information is provided to Tec. Services:

Information **ALWAYS Required**

- ☒ Receptor Distances
- ☒ Process Rates (hour & annual)
- ☒ Emission Rates (hour & annual)
- ☒ Hours of Operation

Life of Project: Indefinite

Additional Info Required Based on the **Source Category**

Oil Facilities / Glass Plant/ Power Plant
Plasma Cutting / Soil Remediation / Concrete Batch

- ☐ Stack Velocity
- ☐ Stack Height
- ☐ Stack temperature
- ☐ MSDS
- ☐ Other (for area sources)

Source of Information

Please check which form is attached to this HRA request (it can be a combination of any of the following):

- ☐ *Supplemental Application Form*
- ☐ *HRA Request - Project Information Form*
- ☐ *Information supplied by the applicant (attached)*

Notification Requirement

Is it obvious that notification is required?

NSR (Public Notice)	Yes: ☒	No: ☐
COC (EPA Notice)	Yes: ☐	No: ☒
School Notice	Yes: ☐	No: ☒

Please note that in case notification is required, please provide distance to fence line in all four directions. Include hourly and annual emissions of VOC, NOx, SOx, CO, PM10, and PM2.5

Prevention of Significant Deterioration (PSD)

AQE:

1. Based on the prelim review, is the Project subject to PSD for other pollutant than GHG? Yes: ☐ No: ☒
2. Is the facility a PSD Major Source located within 10 km of a Class I area? Yes: ☐ No: ☒

If either "Yes" box is checked, please provide all modeling and impact analyses submitted by the applicant to Technical Services. ***In this case, the project cannot be deemed complete until Technical Services indicates it is complete.***

Tec Svces:

PSD Major Source located within 10 km of a Class I area AND project impact ≥ 1 μg/m^3? Yes: ☐ No: ☐

Supervisor Review: Application Complete for PSD Modeling ☐ Date Returned to AQE: _____.

Reimbursable Overtime

Has the applicant requested reimbursable overtime processing? Yes: ☐ No: ☒

If YES, please send HRA request to Tech Services before deeming complete

Supervisor's signature: _____

Comments and References:
Please contact me at x5616 if you have any questions. Thank you.

RMR REQUEST
PROJECT INFORMATION Form

I. Project Description: The applicant requests ATC S-3152-13-0 for a new air curtain incinerator that will be used to burn stockpiles of almond wood sticks removed during the almond unloading and precleaning operations. Public notification is triggered so an AAQA is also requested.

II Receptor Location(s)

Receptor Description	Distance From Source
Residence	1 mile
Business	1 mile

III. Process Rate to be Modeled

Process Description	Process Rates	
	Hourly Rate	Annual Rate

IV. Emission Rate or Substances to be Modeled

Potential to Emit to be modeled (lb/hr)						
Permit	**NO_X**	**SO_X**	**PM_{10}**	***$PM_{2.5}$**	**CO**	**VOC**
-13-0	10.0	1.0	13.1	13.1	26.0	9.0

Potential to Emit to be modeled (lb/year)						
Permit	**NO_X**	**SO_X**	**PM_{10}**	***$PM_{2.5}$**	**CO**	**VOC**
-13-0	8,000	800	10,455	10,455	20,800	7,200

*For projects triggering AAQA

V. Project Location (*Select One*)

☐ Urban – Area of dense population
☒ Rural – Area of sparse population

VI. Point Sources

Stack Parameters:

Stack Height (Units)	Rain Cap Type	Inside Diameter (Units)	Gas Exit Flowrate (Units)	Exhaust Discharge Direction	Gas Exit Temperature (Units)
	Select Type				

VII. Area Sources[1] Parameters

Release Height[2] (Units)	Length Of Side (Units)

1. An area source is defined as in an area with four equal sides.

2. Release height is defined as the physical height of the source. For example, if a sump has a three meter brim surrounding it. The physical height of the sump is three meters. Height is measured from the ground to the top of the source.

Combustion Emissions:

Daily PE2 for Air Curtain Incinerator					
Pollutant	**Throughput (tons/day)**		**Emission Factor (lb/ton)**		**Daily PE2 (lb/day)**
NOx	80.0	x	1.0	=	80.0
SOx		x	0.1	=	8.0
PM_{10}		x	1.3	=	104.0
CO		x	2.6	=	208.0
VOC		x	0.9	=	72.0

Ash Handling Emissions

Ash handling operation involves with PM_{10} emissions only calculated as below:

Daily PE2 = Amount of Ash Handled (ton/day) x Emission Factor (lb-PM_{10}/ton)
= 2.4 ton/day x 0.23 lb-PM_{10}/ton
= 0.6 lb-PM_{10}/day

Permit Unit Total Emissions:

Permit unit total emissions are calculated by adding emissions from air curtain incinerator and ash handling in the following tables:

Daily PE2 (lb/day)					
Emissions Unit	**NOx**	**SOx**	**PM_{10}**	**CO**	**VOC**
Air Curtain Incinerator	80.0	8.0	104.0	208.0	72.0
Ash Handling	0.0	0.0	0.6	0.0	0.0
Permit Unit Total PE2	**80.0**	**8.0**	**104.6**	**208.0**	**72.0**

Prioritization Score For
South Valley Almond 13-0
Project : S1224423

Device ID	Device Name	Emissions and Potency Method	Dispersion Adjustment Method
1	ACD		

Process ID : 1

CAS#	Pollutant Name	Lbs / Hour	Lbs / Year	Cancer	Chronic	Acute	Cancer	Chronic	Acute
50000	Formaldehyde	8.63E-02	1.66E+02	0.008	0.000	0.002			
50328	Benzo[a]pyrene	4.43E-05	8.50E-02	0.001					
53703	Dibenz[a,h]anthracene	4.43E-05	8.50E-02	0.001					
56553	Benz[a]anthracene	4.43E-05	8.50E-02	0.000					
71432	Benzene	2.84E-03	5.45E+00	0.001	0.000	0.000			
75014	Vinyl chloride	2.00E-03	3.84E+00	0.002		0.000			
83329	Acenaphthene	4.43E-05	8.50E-02						
85018	Phenanthrene	4.17E-04	8.00E-01						
86737	Fluorene	4.43E-05	8.50E-02						
91203	Naphthalene	2.65E-02	5.08E+01	0.013	0.000				
120127	Anthracene	4.43E-05	8.50E-02						
129000	Pyrene	1.82E-04	3.49E-01						
191242	Benzo[g,h,i]perylene	4.43E-05	8.50E-02						
193395	Indeno[1,2,3-cd]pyrene	4.43E-05	8.50E-02	0.000					
205992	Benzo[b]fluoranthene	4.43E-05	8.50E-02	0.000					
206440	Fluoranthene	1.77E-04	3.39E-01						
207089	Benzo[k]fluoranthene	4.43E-05	8.50E-02	0.000					
208968	Acenaphthylene	3.49E-04	6.70E-01						
218019	Chrysene	4.43E-05	8.50E-02	0.000					
1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1.65E-09	3.16E-06	0.001	0.000				
3268879	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	2.14E-07	4.11E-04	0.000	0.000				
7439921	Lead	2.41E-04	4.63E-01	0.000					
7439965	Manganese	1.06E-03	2.02E+00		0.000				

Prioritization Score For
South Valley Almond 13-0
Project : S1224423

Device ID	Device Name			Emissions and Potency Method			Dispersion Adjustment Method
1	ACD						
7439976	Mercury	7.08E-04	1.36E+00		0.001	0.002	
7440020	Nickel	1.66E-04	3.19E-01	0.001	0.000	0.001	
7440382	Arsenic	5.79E-05	1.11E-01	0.003	0.000	0.000	
7440417	Beryllium	7.97E-06	1.53E-02	0.000	0.000		
7440439	Cadmium	3.27E-04	6.28E-01	0.020	0.001		
7440473	Chromium	1.06E-05	2.04E-02				
7440508	Copper	2.27E-04	4.35E-01			0.000	
7440666	Zinc	1.24E-03	2.38E+00				
7647010	Hydrochloric acid	2.66E-01	5.10E+02		0.001	0.000	
7782492	Selenium	7.01E-05	1.35E-01		0.000		
18540299	Chromium, hexavalent (& compounds)	1.58E-04	3.03E-01	0.350	0.000		
19408743	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	4.24E-09	8.14E-06	0.000	0.000		
30402154	Total Pentachlorodibenzofuran	3.17E-07	6.07E-04				
34465468	Total Hexachlorodibenzo-p-dioxin	9.37E-08	1.80E-04				
35822469	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	3.10E-08	5.95E-05	0.000	0.000		
36088229	Total Pentachlorodibenzo-p-dioxin	2.16E-07	4.14E-04				
37871004	Total Heptachlorodibenzo-p-dioxin	6.68E-08	1.28E-04				
38998753	Total Heptachlorodibenzofuran	3.61E-08	6.93E-05				
39001020	1,2,3,4,6,7,8,9-Octachlorodibenzofuran	1.93E-08	3.71E-05	0.000	0.000		
39227286	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	4.50E-09	8.64E-06	0.000	0.000		
40321764	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	4.06E-09	7.79E-06	0.002	0.000		
41903575	Total Tetrachlorodibenzo-p-dioxin	7.97E-07	1.53E-03				
51207319	2,3,7,8-Tetrachlorodibenzofuran	1.18E-08	2.27E-05	0.001	0.000		
55673897	1,2,3,4,7,8,9-Heptachlorodibenzofuran	2.74E-09	5.26E-06	0.000	0.000		
55684941	Total Hexachlorodibenzofuran	1.05E-07	2.02E-04				
55722275	Total Tetrachlorodibenzofuran	1.14E-06	2.19E-03				

Prioritization Score For
South Valley Almond 13-0
Project : S1224423

Device ID	Device Name			Emissions and Potency Method			Dispersion Adjustment Method		
1	ACD								
57117314	2,3,4,7,8-Pentachlorodibenzofuran	1.65E-08	3.17E-05	0.003	0.000				
57117416	1,2,3,7,8-Pentachlorodibenzofuran	1.14E-08	2.19E-05	0.000	0.000				
57117449	1,2,3,6,7,8-Hexachlorodibenzofuran	5.76E-09	1.10E-05	0.000	0.000				
57653857	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	4.69E-09	8.99E-06	0.000	0.000				
60851345	2,3,4,6,7,8-Hexachlorodibenzofuran	6.46E-09	1.24E-05	0.000	0.000				
67562394	1,2,3,4,6,7,8-Heptachlorodibenzofuran	2.70E-08	5.18E-05	0.000	0.000				
70648269	1,2,3,4,7,8-Hexachlorodibenzofuran	5.65E-09	1.08E-05	0.000	0.000				
72918219	1,2,3,7,8,9-Hexachlorodibenzofuran	2.40E-08	4.61E-05	0.001	0.000				
		Prioritization Score for Process 1		4.11E-01	3.72E-03	6.16E-03			
		Prioritization Score for Device 1		4.11E-01	3.72E-03	6.16E-03			

Device ID	Device Name			Emissions and Potency Method			Dispersion Adjustment Method		
2	ACD								

Process ID : 1

CAS#	Pollutant Name	Lbs / Hour	Lbs / Year	Cancer	Chronic	Acute	Cancer	Chronic	Acute
50000	Formaldehyde	1.12E-02	2.15E+01	0.001	0.000	0.000			
50328	Benzo[a]pyrene	5.76E-06	1.10E-02	0.000					
53703	Dibenz[a,h]anthracene	5.76E-06	1.10E-02	0.000					
56553	Benz[a]anthracene	5.76E-06	1.10E-02	0.000					
71432	Benzene	3.70E-04	7.09E-01	0.000	0.000	0.000			
75014	Vinyl chloride	2.61E-04	5.00E-01	0.000		0.000			
83329	Acenaphthene	5.76E-06	1.10E-02						
85018	Phenanthrene	5.42E-05	1.04E-01						
86737	Fluorene	5.76E-06	1.10E-02						
91203	Naphthalene	3.44E-03	6.60E+00	0.002	0.000				

Prioritization Score For
South Valley Almond 13-0
Project : S1224423

Device ID	Device Name			Emissions and Potency Method			Dispersion Adjustment Method
2	ACD						
120127	Anthracene	5.76E-06	1.10E-02				
129000	Pyrene	2.37E-05	4.54E-02				
191242	Benzo[g,h,i]perylene	5.76E-06	1.10E-02				
193395	Indeno[1,2,3-cd]pyrene	5.76E-06	1.10E-02	0.000			
205992	Benzo[b]fluoranthene	5.76E-06	1.10E-02	0.000			
206440	Fluoranthene	2.30E-05	4.41E-02				
207089	Benzo[k]fluoranthene	5.76E-06	1.10E-02	0.000			
208968	Acenaphthylene	4.55E-05	8.72E-02				
218019	Chrysene	5.76E-06	1.10E-02	0.000			
1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin	2.14E-10	4.11E-07	0.000	0.000		
3268879	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	2.79E-08	5.35E-05	0.000	0.000		
7439921	Lead	3.14E-05	6.02E-02	0.000			
7439965	Manganese	1.37E-04	2.63E-01		0.000		
7439976	Mercury	9.22E-05	1.77E-01		0.000	0.000	
7440020	Nickel	2.16E-05	4.14E-02	0.000	0.000	0.000	
7440382	Arsenic	7.54E-06	1.45E-02	0.000	0.000	0.000	
7440417	Beryllium	1.04E-06	1.99E-03	0.000	0.000		
7440439	Cadmium	4.26E-05	8.17E-02	0.003	0.000		
7440473	Chromium	1.38E-06	2.65E-03				
7440508	Copper	2.95E-05	5.66E-02			0.000	
7440666	Zinc	1.61E-04	3.09E-01				
7647010	Hydrochloric acid	3.46E-02	6.64E+01		0.000	0.000	
7782492	Selenium	9.12E-06	1.75E-02		0.000		
18540299	Chromium, hexavalent (& compounds)	2.05E-05	3.94E-02	0.046	0.000		
19408743	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	5.52E-10	1.06E-06	0.000	0.000		
30402154	Total Pentachlorodibenzofuran	4.12E-08	7.90E-05				

Prioritization Score For
South Valley Almond 13-0
Project : S1224423

Device ID 2	Device Name ACD			Emissions and Potency Method		Dispersion Adjustment Method
34465468	Total Hexachlorodibenzo-p-dioxin	1.22E-08	2.34E-05			
35822469	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	4.04E-09	7.74E-06	0.000	0.000	
36088229	Total Pentachlorodibenzo-p-dioxin	2.81E-08	5.39E-05			
37871004	Total Heptachlorodibenzo-p-dioxin	8.69E-09	1.67E-05			
38998753	Total Heptachlorodibenzofuran	4.70E-09	9.01E-06			
39001020	1,2,3,4,6,7,8,9-Octachlorodibenzofuran	2.52E-09	4.82E-06	0.000	0.000	
39227286	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	5.86E-10	1.12E-06	0.000	0.000	
40321764	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	5.28E-10	1.01E-06	0.000	0.000	
41903575	Total Tetrachlorodibenzo-p-dioxin	1.04E-07	1.99E-04			
51207319	2,3,7,8-Tetrachlorodibenzofuran	1.54E-09	2.95E-06	0.000	0.000	
55673897	1,2,3,4,7,8,9-Heptachlorodibenzofuran	3.57E-10	6.84E-07	0.000	0.000	
55684941	Total Hexachlorodibenzofuran	1.37E-08	2.62E-05			
55722275	Total Tetrachlorodibenzofuran	1.48E-07	2.85E-04			
57117314	2,3,4,7,8-Pentachlorodibenzofuran	2.15E-09	4.12E-06	0.000	0.000	
57117416	1,2,3,7,8-Pentachlorodibenzofuran	1.48E-09	2.85E-06	0.000	0.000	
57117449	1,2,3,6,7,8-Hexachlorodibenzofuran	7.49E-10	1.44E-06	0.000	0.000	
57653857	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	6.10E-10	1.17E-06	0.000	0.000	
60851345	2,3,4,6,7,8-Hexachlorodibenzofuran	8.40E-10	1.61E-06	0.000	0.000	
67562394	1,2,3,4,6,7,8-Heptachlorodibenzofuran	3.51E-09	6.74E-06	0.000	0.000	
70648269	1,2,3,4,7,8-Hexachlorodibenzofuran	7.34E-10	1.41E-06	0.000	0.000	
72918219	1,2,3,7,8,9-Hexachlorodibenzofuran	3.12E-09	5.99E-06	0.000	0.000	
		Prioritization Score for Process 1		5.34E-02	4.84E-04	8.01E-04
		Prioritization Score for Device 2		5.34E-02	4.84E-04	8.01E-04

Device ID 3	Device Name FB AH	Emissions and Potency Method	Dispersion Adjustment Method

Prioritization Score For
South Valley Almond 13-0
Project : S1224423

Device ID	Device Name	Emissions and Potency Method	Dispersion Adjustment Method
3	FB AH		

Process ID : 1

CAS#	Pollutant Name	Lbs / Hour	Lbs / Year	Cancer	Chronic	Acute	Cancer	Chronic	Acute
7439921	Lead	7.35E-06	4.90E-03	0.000					
7439965	Manganese	4.07E-05	2.71E-02		0.000				
7440020	Nickel	3.15E-06	2.09E-03	0.000	0.000	0.000			
7440224	Silver	3.28E-08	2.19E-05						
7440280	Thallium	9.92E-09	6.60E-06						
7440360	Antimony	4.45E-07	2.96E-04						
7440382	Arsenic	1.92E-06	1.28E-03	0.000	0.000	0.000			
7440393	Barium	2.94E-05	1.96E-02						
7440417	Beryllium	6.84E-08	4.55E-05	0.000	0.000				
7440439	Cadmium	1.13E-07	7.51E-05	0.000	0.000				
7440473	Chromium	6.43E-06	4.28E-03						
7440484	Cobalt	5.47E-07	3.64E-04	0.000					
7440508	Copper	1.65E-05	1.10E-02			0.000			
7440622	Vanadium (fume or dust)	3.49E-06	2.32E-03			0.000			
7440666	Zinc	3.07E-05	2.04E-02						
7782492	Selenium	4.10E-08	2.73E-05		0.000				
7782505	Chlorine	2.02E-08	1.34E-05		0.000	0.000			
18540299	Chromium, hexavalent (& compounds)	3.21E-07	2.14E-04	0.000	0.000				
		Prioritization Score for Process 1		3.09E-04	9.39E-06	3.84E-05			
		Prioritization Score for Device 3		3.09E-04	9.39E-06	3.84E-05			

Emissions and Potency Method

Prioritization Scores

Cancer	CHRONIC	ACUTE
4.64E-01	4.21E-03	7.00E-03

TS = Total Score
t = Specific Toxic Substance
EYR = Emissions Lbs / Year
EHR = Emissions Lbs / Hour
NF = Normalization Factor (Cancer = 7700, Acute = 1500, Chronic = 150)
URF = Unit Risk Factor
AREL = Acute Reference Exposure Level
CREL = Chronic Reference Exposure Level
RP = Receptor Proximity Adjustment Factor
R = Receptor Distance

	RP
0m < R < 100m	1.0
100m < R < 250m	0.25
250m < R < 500m	0.04
500m < R < 1000m	0.011
1000m < R < 1500m	0.003
1500m < R < 2000m	0.002
R > 2000m	0.001

Cancer Score:
TS(t) = EYR(t) * URF(t) * RP * 7700

Acute Score:
TS(t) = [EHR(t) / AREL(t)] * RP * 1500

Chronic Score:
TS(t) = { ([EYR(t) / Hours Of Operation] / CREL(t)) * RP * 150 }

Dispersion Adjustment Method

Prioritization Scores

Cancer	CHRONIC	ACUTE

TS = Total Score
t = Specific Toxic Substance
EYR = Emissions Lbs / Year
EHR = Emissions Lbs / Hour
NF = Normalization Factor (Cancer = 128, Acute = 25, Chronic = 2.5)
URF = Unit Risk Factor
AREL = Acute Reference Exposure Level
CREL = Chronic Reference Exposure Level
SHA = Stack Height Adjustment (< 20m = 60, < 45m = 9, >= 45m = 1)
RP = Receptor Proximity Adjustment Factor
R = Receptor Distance
H = Stack Height

For Stack - 0m <= H < 20m	RP	For Stack - 20m <= H < 45m	RP	For Stack - H >= 45m	RP
0m < R < 100m	1.0	0m < R < 100m	1.0	0m < R < 100m	1.0
100m < R < 250m	0.25	100m < R < 250m	0.85	100m < R < 250m	1.0
250m < R < 500m	0.04	250m < R < 500m	0.22	250m < R < 500m	0.90
500m < R < 1000m	0.011	500m < R < 1000m	0.064	500m < R < 1000m	0.40
1000m < R < 1500m	0.003	1000m < R < 1500m	0.018	1000m < R < 1500m	0.13
1500m < R < 2000m	0.002	1500m < R < 2000m	0.009	1500m < R < 2000m	0.066
R > 2000m	0.001	R > 2000m	0.006	R > 2000m	0.042

Cancer Score:
TS(t) = EYR(t) * URF(t) * RP * SHA * 128

Acute Score:
TS(t) = [EHR(t) / AREL(t)] * RP * SHA * 25

Chronic Score:
TS(t) = { ([EYR(t) / Hours Of Operation] / CREL(t)) * RP * SHA * 2.5 }

S H A R P

SJV Hazard Assessment and Reporting Program (v. 20220429)

For Permitting / CEQA / AB2588

Toxic & Criteria Emission, Prioritization, Refined HRA & AAQA Tools

Exposure Assessment

Exposure Option: (•) TIER 1 & 2

Harp File Size: (•) Normal Files ( ) Large Files

Combine Unit Processes: (•) Yes ( ) No

Project Life:

Exposure Summary

Maximum Exposed Receptor Summary

Maximum Cancer Risk:

Receptor_Type	X	Y	Cancer
Resident	293568.12	3936742.91	2.13E-06
Worker	291152.8	3936551.22	3.42E-08

Maximum Acute HI:

Receptor_Type	X	Y	HI	Pathway
Ag Worker	294632.53	3938310.98	3.12E-03	REPRO/DEVE
Resident	293568.12	3936742.91	2.85E-03	REPRO/DEVE
Worker	291152.8	3936551.22	2.16E-03	EYE

Maximum Chronic HI:

Receptor_Type	X	Y	HI	Pathway
Resident	293568.12	3936742.91	6.68E-03	REPRO/DEVE
Worker	291152.8	3936551.22	5.08E-04	RESP

Facility Summary: *SOUTH VALLEY ALMO*

REGION: S

FACID: 3152

PROJECT	Unit ID	MOD #	EQUIPMENT	Prioritization Scores CANCER	ACUTE	CHRONIC	HARP2 Risk Scores CANCER	ACUTE	CHRONIC
1030062	3	0	Phostoxin Fumigation	0.000	0.000	1.092	0.00E+00	0.00E+00	0.00E+00
1030062	4	0	Phostoxin Fumigation	0.000	0.000	2.631	0.00E+00	0.00E+00	0.00E+00
1030062	5	0	Phostoxin Fumigation	0.000	0.000	5.241	0.00E+00	0.00E+00	0.00E+00
Project Totals				0.000	0.000	8.964	0.00E+00	0.00E+00	0.00E+00
1031616	3	1	Phostoxin/ECO2fume Fumigation	0.000	0.000	0.177	0.00E+00	0.00E+00	0.00E+00
1031616	4	1	Phostoxin/ECO2fume Fumigation	0.000	0.000	0.472	0.00E+00	0.00E+00	0.00E+00
Project Totals				0.000	0.000	0.649	0.00E+00	0.00E+00	0.00E+00
1032625	2	3	ALMOND HULLING/SHELLING	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
Project Totals				0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
1051223	3	2	Fumigation operation	0.000	0.019	3.265	0.00E+00	1.00E-02	6.70E-01
Project Totals				0.000	0.019	3.265	0.00E+00	1.00E-02	6.70E-01
1085149	11	0	PHOSTOXIN TREE NUTS FUMIGATION	0.000	0.015	0.014	0.00E+00	0.00E+00	0.00E+00
Project Totals				0.000	0.015	0.014	0.00E+00	0.00E+00	0.00E+00
1100269	1	3	Almond Precleaning	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
1100269	2	4	Almond Hulling/Shelling	0.251	0.047	0.255	5.24E-07	8.86E-03	3.91E-02
Project Totals				0.251	0.047	0.255	5.24E-07	8.86E-03	3.91E-02
1110601	3	3	PHOSPHINE FUMIGATION OPERATIO	0.000	1.133	0.000	0.00E+00	5.10E-02	0.00E+00

PROJECT	Unit ID	MOD #	EQUIPMENT	Prioritization Scores CANCER	ACUTE	CHRONIC	HARP2 Risk Scores CANCER	ACUTE	CHRONIC
1110601	4	2	PHOSPHINE FUMIGATION OPERATIO	0.000	1.150	0.015	0.00E+00	4.44E-02	1.37E-05
Project Totals				0.000	2.283	0.015	0.00E+00	9.54E-02	1.37E-05
1143287	3	4	ADD SULFURYL FLUORIDE AS FUMIG	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
1143287	4	3	ADD SULFURYL FLUORIDE AS FUMIG	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
1143287	5	1	ADD SULFURYL FLUORIDE AS FUMIG	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
1143287	11	1	ADD SULFURYL FLUORIDE AS FUMIG	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
Project Totals				0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
1161417	1	4	ALMOND PRECLEANING OPERATION	3.370	0.260	0.812	1.31E-06	1.57E-02	5.63E-02
1161417	2	5	ALMOND HULLING/SHELLING	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
Project Totals				3.370	0.260	0.812	1.31E-06	1.57E-02	5.63E-02
1223051	12	0	Almond Processing Operation	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
Project Totals				0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
1224423	13	0	ACD1	0.464	0.007	0.004	2.13E-06	3.12E-03	6.68E-03
Project Totals				0.464	0.007	0.004	2.13E-06	3.12E-03	6.68E-03
Facility Totals				4.085	2.631	13.979	3.96E-06	1.33E-01	7.72E-01

AAQA Summary

Nattional Ambient Air Quality Standard

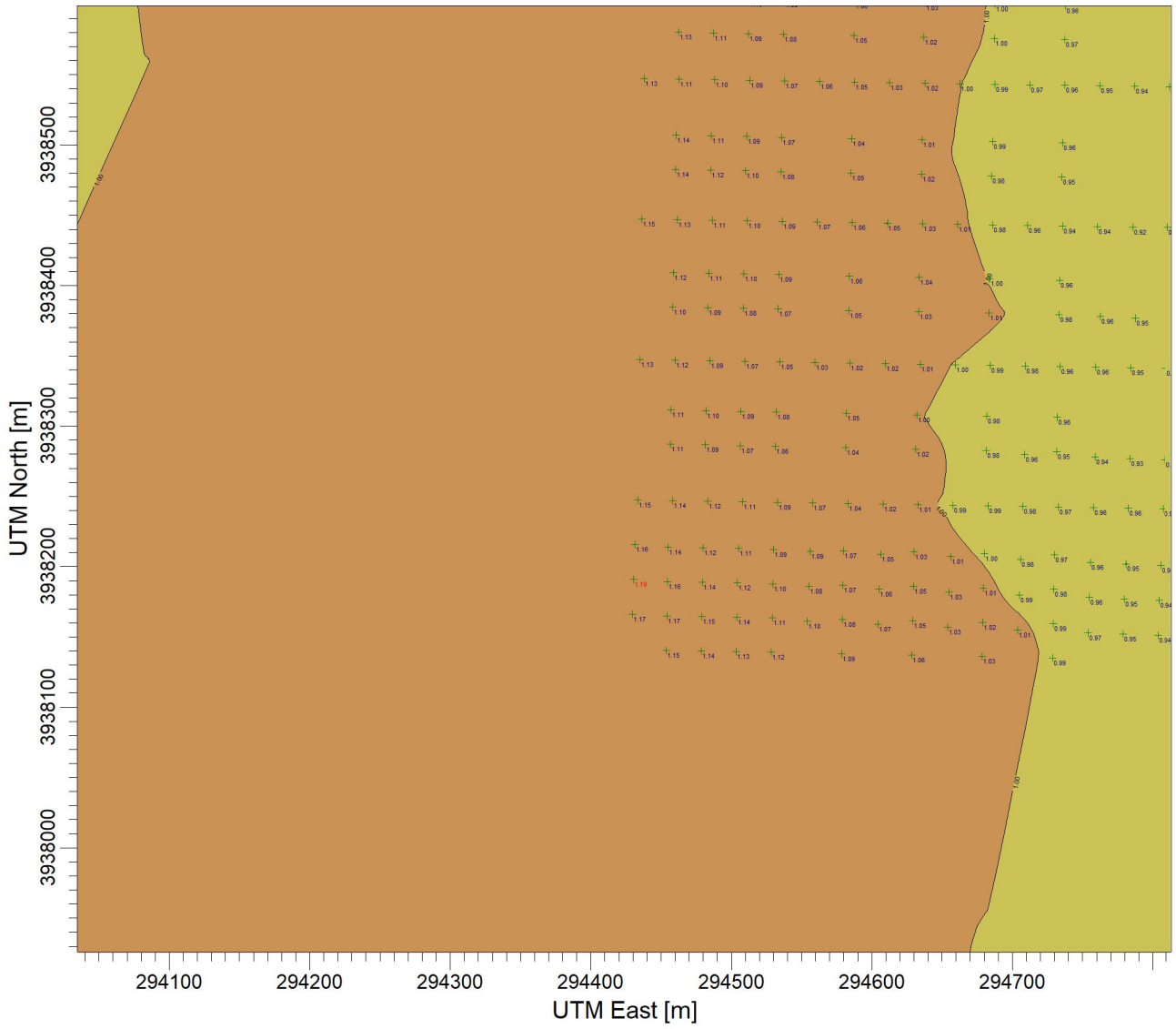
Pollutant	Modeled Conc. (ug/m3)	Background (ug/m3)	Total (ug/m3)	AAQS (ug/m3)	SIL (ug/m3)	Exceeds AAQS	Exceeds SIL
CO, 1_Hour	31.96	2209.7	2241.66	23000	2000	NO	--
CO, 8_Hour	20	1488.4	1508.4	10000	500	NO	--
NO2, 1_Hour	12.29	0	12.29	188	7.5	NO	--
NO2, Annual	0.0721	20.02	20.0921	100	0	NO	--
PM10-24Hr, 24_H	2.3896	185	187.3896	150	5	YES	NO
PM2.5, 24_Hour	2.3896	54.8	57.1896	35	1.2	YES	YES
PM2.5, Annual	0.0961	20.5	20.5961	12	0.2	YES	NO
SOx, 1_Hour	1.229	15.71	16.939	196	7.8	NO	--
SOx, 24_Hour	0.1769	4.98	5.1569	365	5	NO	--
SOx, 3_Hour	0.973	12.3	13.273	1300	25	NO	--
SOx, Annual	0.00721	1.11	1.11721	80	1	NO	--

California Ambient Air Quality Standard

Pollutant	Modeled Conc. (ug/m3)	Background (ug/m3)	Total (ug/m3)	AAQS (ug/m3)	SIL (ug/m3)	Exceeds AAQS	Exceeds SIL
CO, 1_Hour	31.96	3308.82	3340.78	23000	2000	NO	--
CO, 8_Hour	20	1488.4	1508.4	10000	500	NO	--
NO2, 1_Hour	12.29	107.56	119.85	339	7.5	NO	--
NO2, Annual	0.0721	20.02	20.0921	57	0	NO	--
PM10, Annual	0.0961	50.9	50.9961	20	1	YES	NO
PM10-24Hr, 24_H	2.3896	437	439.3896	50	5	YES	NO
PM2.5, Annual	0.0961	20.5	20.5961	12	0.2	YES	NO
SOx, 1_Hour	1.229	19.64	20.869	655	7.8	NO	--
SOx, 24_Hour	0.1769	7.07	7.2469	105	5	NO	--

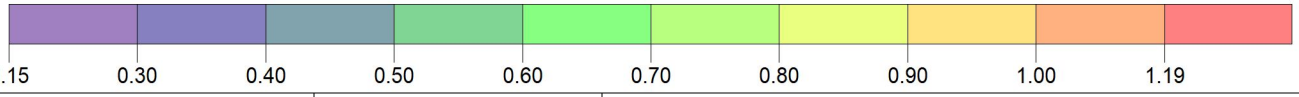
PROJECT TITLE:

C:\Users\CegielsM\Desktop\S1224423PM2\S1224423PM2.isc



PLOT FILE OF 8TH-HIGHEST MAX DAILY 24-HR VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ug/m^3

Max: 1.19 [ug/m^3] at (294430.56, 3938191.01)



COMMENTS: 130 lb PM10/day	SOURCES: **3**	COMPANY NAME:	
	RECEPTORS: **10593**	MODELER:	
	OUTPUT TYPE: **Concentration**	SCALE: 1:4,898 0 0.1 km	
	MAX: **1.19 ug/m^3**	DATE: **1/24/2023**	PROJECT NO.: