

October 20, 2021

Jordan Bottorff
Tesla, Inc.
700 D'Arcy Parkway
Lathrop, CA 95330

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: N-10031
Project Number: N-1212584

Dear Ms. Bottorff:

Enclosed for your review and comment is the District's analysis of Tesla, Inc.'s application for an Authority to Construct for an energy storage products manufacturing operation, at 700 D'Arcy Parkway in Lathrop.

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. Kevin Perez of Permit Services at (209) 557-6458.

Sincerely,



Brian Clements
Director of Permit Services

BC:kp

Enclosures

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

Samir Sheikh
Executive Director/Air Pollution Control Officer

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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Energy Storage Products Manufacturing

Facility Name: Tesla, Inc. Date: October 12, 2021
Mailing Address: 700 D'Arcy Parkway Engineer: Kevin Perez
Lathrop, CA 95330 Lead Engineer: James Harader
Contact Person: Jordan Bottorff
Telephone: (510) 904-7314
E-Mail: jbottorff@tesla.com
Application #(s): N-10031-1-0, N-10031-2-0
Project #: N-1212584
Deemed Complete: July 28, 2021

I. Proposal

Tesla, Inc. has requested an Authority to Construct (ATC) permit for a new energy storage products facility which will include final assembly and enclosure of the energy storage products. Draft ATCs are included in Appendix A.

II. Applicable Rules

Rule 2020 Exemptions (12/18/14)
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 4201 Particulate Matter Concentration (12/17/92)
Rule 4309 Dryers, Dehydrators and Ovens (12/15/05)
Rule 4653 Adhesives and Sealants (9/16/10)
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 700 D'Arcy Parkway in Lathrop, 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 proposed facility will produce large scale energy storage products. The facility will take incoming battery modules from offsite sources and install them along with other key components into the energy storage products. The facility will be simultaneously fabricating and powder coating the product housing enclosures used in assembling the energy storage products.

V. Equipment Listing

N-10031-1-0: 37 MMBTU/HR POWDER COATING SYSTEM CONSISTING OF ONE (1) 10.5 MMBTU/HR FOUR-STAGE PRETREATMENT WASHER WITH A 0.4 MMBTU/HR ZERO DISCHARGE SYSTEM BURNER, ONE (1) 10.5 MMBTU/HR DRY OFF OVEN, ONE (1) 7.0 MMBTU/HR PRIMER CURE OVEN, ONE (1) 7.0 MMBTU/HR TOPCOAT CURE OVEN AND ONE (1) 1.6 MMBTU/HR BURN OFF OVEN

N-10031-2-0: BATTERY MODULES ASSEMBLY OPERATION EQUIPPED WITH ADHESIVE, SEALANT, AND PRETREATMENT CHEMICAL APPLICATION EQUIPMENT

VI. Emission Control Technology Evaluation

The Powder Coating System is equipped with low-NOx burners. Low-NOx burners reduce NOx formation by producing lower flame temperatures (and longer flames) than conventional burners.

Powder Coating operations only emit low levels of Volatile Organic Compounds (VOCs) as the powder coatings are nearly 100% solids. The VOC content of the powder is based on a weight loss during cure. Per the manufacturer the VOC content is 0.005% (utilizing a 0.5% weight loss during cure, and 90% of that being attributed to water and carbon dioxide (CO₂)).

To reduce PM emissions from the proposed powder coating operations, exhaust from powder coat booths will be routed to a two-fold filtration system with a PM₁₀ control efficiency of 99% on the pre-filter and 99.9% on the after-filter. The filtration systems vent inside of the building and are not routed to the atmosphere directly.

The applicant is proposing Rule 4653 compliant adhesive materials for the battery module assembly operation.

VII. General Calculations

A. Assumptions

- 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.
- VOC emissions are calculated using a mass balance approach.
- Facility operates 24 hour/day and 365 day/year
- Heating value of natural gas is 1,000 BTU/scf (AP 42 Section 1.4)
- F-factor for natural gas is 8,578 dscf/MMBTU @ 60 °F
- Transfer efficiency (TE) of powder coating is 65%, pre filter control efficiency ($CE_{filter1}$) is 99% and after filter control efficiency ($CE_{filter2}$) is 99.9%

For the powder coating operation (1-0), the applicant has proposed the following material throughputs:

Chemical	Daily Usage
Powder Coating Primer [REDACTED]	[REDACTED]
Top-Coat [REDACTED]	[REDACTED]

For the assembly operation (2-0), the applicant has proposed the following material throughputs:

Chemical	Daily Usage
[REDACTED] Part A	[REDACTED]
[REDACTED] Part B	[REDACTED]
[REDACTED] Adhesive	[REDACTED]

Additionally, pretreatment chemicals are mixed with water in tanks to maintain concentration stated in the TDSs.

Stage	Chemical	Daily Usage (gallon/day)
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

B. Emission Factors

Emission factors for emissions from the natural gas burners will be stated per MMBTU from combustion as follows:

N-10031-1-0

Powder Coating System Burners (Natural Gas Combustion)		
Pollutant	EF (lb/MMBTU)	Source
NO _x	0.048	Applicant/District Rule 4309
SO _x	0.00285	APR 1720
PM ₁₀	0.003	FYI 328
CO	0.286	Applicant/District Rule 4309
VOC	0.0055	AP-42 Table 1.4-2

Emission factors for the powder coating of the primer and top-coat are stated as VOC and PM10 weight fractions as follows:

$EF_{PM10} = 1 \text{ lb-PM10/lb-coating} \times (1-TE) \times (1-CE_{filter1}) \times (1-CE_{filter2})$
 $EF_{PM10} = 1 \text{ lb-PM10/lb-coating} \times (1-0.65)(1-0.99)(1-0.999) = 3.5E-06 \text{ lb-PM10/lb-coating}$

Powder Coating		
Product	EF (lb-VOC/lb-coating)	EF (lb-PM10/lb-coating)
Primer	0.005	3.5E-06
Top-Coat	0.005	3.5E-06

N-10031-2-0

Emission factors for the adhesives, sealants and pretreatment chemicals are stated in pounds of VOC per gallon.

Adhesives, Sealants and Pretreatment Chemicals	
Product	VOC Content (lb/gallon)
██████████	0.186
██████████	0.43
██████████	0.179
██████████ Part A	0.168
██████████ Part B	0.168

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since these are new emissions units, PE1 = 0 for all pollutants.

2. Post-Project Potential to Emit (PE2)

N-10031-1-0

Powder coating burners

Potential to emit from combustion is calculated as follows and summarized in the table below:

$$\begin{aligned} \text{PE2} &= (\text{Emission Factor}) \times (\text{Heat Input Rating}) \times (24 \text{ hour/day}) \\ &= (\text{Emission Factor}) \times (\text{Heat Input Rating}) \times (24 \text{ hour/day}) \times (365 \text{ day/year}) \end{aligned}$$

Emission Unit	PE2 (lb/day, lb/year)				
	NO _x	SO _x	PM ₁₀	CO	VOC
10.5 MMBtu/hr Pretreatment Washer	12.1, 4,415	0.7, 262	0.8, 276	72.1, 26,306	1.4, 506
10.5 MMBtu/hr Dry Off Oven	12.1, 4,415	0.7, 262	0.8, 276	72.1, 26,306	1.4, 506
7.0 MMBtu Top Coat Cure Oven	8.1, 2,943	0.5, 175	0.5, 184	48.0, 17,583	0.9, 337
7.0 MMBtu Primer Cure Oven	8.1, 2,943	0.5, 175	0.5, 184	48.0, 17,583	0.9, 337
1.6 MMBtu Burn Off Oven	1.8, 673	0.1, 40	0.1, 42	11.0, 4,009	0.2, 77
0.4 MMBtu Burner	0.5, 168	0.0, 10	0.0, 11	2.7, 1,002	0.1, 19

Powder Coating

$$\begin{aligned} \text{PE2}_{\text{VOC}} &= \text{Daily Powder Usage} \times \text{Emission Factor} \\ &= (\text{██████████}) \text{ lb-powder/day} \times 0.005 \text{ lb-VOC/lb-powder} \\ &= 28.0 \text{ lb-VOC/day} \end{aligned}$$

$$\begin{aligned} &= \text{Daily Powder Usage} \times \text{Emission Factor} \times 365 \text{ days/year} \\ &= (\text{██████████}) \text{ lb-powder/day} \times 0.005 \text{ lb-VOC/lb-powder} \times 365 \text{ days/year} \\ &= 10,220 \text{ lb-VOC/year} \end{aligned}$$

$$\begin{aligned} \text{PE2}_{\text{PM}_{10}} &= \text{Daily Powder Usage} \times \text{Emission Factor} \\ &= (\text{██████████}) \text{ lb-powder/day} \times 3.5 \times 10^{-6} \text{ lb-PM}_{10}/\text{lb-powder} \\ &= 0.0 \text{ lb-PM}_{10}/\text{day} \end{aligned}$$

$$\begin{aligned} &= \text{Daily Powder Usage} \times \text{Emission Factor} \times 365 \text{ days/year} \\ &= (\text{██████████}) \text{ lb-powder/day} \times 3.5 \times 10^{-6} \text{ lb-PM}_{10}/\text{lb-powder} \times 365 \text{ days/year} \\ &= 7 \text{ lb-PM}_{10}/\text{year} \end{aligned}$$

N-10031-2-0

[REDACTED]

$$\begin{aligned} \text{PE}_{2\text{voc}} &= \text{Daily Usage} \times \text{Emission Factor} \\ &= \text{[REDACTED]} \text{ gal/day} \times 0.186 \text{ lb-VOC/gal} \\ &= 4.6 \text{ lb-VOC/day} \end{aligned}$$

[REDACTED]

$$\begin{aligned} \text{PE}_{2\text{voc}} &= \text{Daily Usage} \times \text{Emission Factor} \\ &= \text{[REDACTED]} \text{ gal/day} \times 0.43 \text{ lb-VOC/gal} \\ &= 5.3 \text{ lb-VOC/day} \end{aligned}$$

[REDACTED] Adhesive

$$\begin{aligned} \text{PE}_{2\text{voc}} &= \text{Daily Usage} \times \text{Emission Factor} \\ &= \text{[REDACTED]} \text{ gal/day} \times 0.179 \text{ lb-VOC/gal} \\ &= 5.0 \text{ lb-VOC/day} \end{aligned}$$

[REDACTED] Part A

$$\begin{aligned} \text{PE}_{2\text{voc}} &= \text{Daily Usage} \times \text{Emission Factor} \\ &= \text{[REDACTED]} \text{ gal/day} \times 0.168 \text{ lb-VOC/gal} \\ &= 0.4 \text{ lb-VOC/day} \end{aligned}$$

[REDACTED] Part B

$$\begin{aligned} \text{PE}_{2\text{voc}} &= \text{Daily Usage} \times \text{Emission Factor} \\ &= \text{[REDACTED]} \text{ gal/day} \times 0.168 \text{ lb-VOC/gal} \\ &= 3.5 \text{ lb-VOC/day} \end{aligned}$$

Total Emissions

$$\begin{aligned} \text{PE}_{2\text{voc}} &= 4.6 \text{ lb/day} + 5.3 \text{ lb/day} + 5.0 \text{ lb/day} + 0.4 \text{ lb/day} + 3.5 \text{ lb/day} \\ \text{PE}_{2\text{voc}} &= 18.8 \text{ lb/day} \end{aligned}$$

$$\begin{aligned} \text{PE}_{2\text{voc}} &= 18.8 \text{ lb/day} \times 365 \text{ days/year} \\ \text{PE}_{2\text{voc}} &= 6,862 \text{ lb/year} \end{aligned}$$

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.

Since this is a new facility, there are no valid ATCs, PTOs, or ERCs at the Stationary Source; therefore, the SSPE1 is equal to zero.

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
N-10031-1-0	15,557	924	980	92,789	12,002
N-10031-2-0	0	0	0	0	6,862
SSPE2	15,557	924	980	92,789	18,864

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	0	0	0	0
SSPE2	15,557	924	980	980	92,789	18,864
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	0	0	0	0
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.

As shown in Section VII.C.5 above, the facility is not a Major Source for any pollutant.

Therefore BE = PE1.

N-10031-1-0 & N-10031-2-0:

Since these are a new emissions units, BE = PE1 = 0 for all pollutants.

7. SB 288 Major Modification

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.

New Major Source

As demonstrated above, this facility is not becoming a Major Source as a result of this project, therefore, this facility is not a New Major Source pursuant to 40 CFR 51.165 a(1)(iv)(A)(3).

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)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO₂	VOC	SO₂	CO	PM	PM₁₀
Total PE from New and Modified Units	7.8	9.4	0.5	46.4	0.5	0.5
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 E.

VIII. Compliance Determination

Rule 2020 Exemptions

Pursuant to District Rule 2020, Section 6.6, no Authority to Construct or Permit to Operate shall be required for containers, reservoirs or tanks used exclusively for the unheated storage of organic material with an initial boiling point of 302 °F or greater as measured by test method ASTM D-86.

The facility will use 330-gallon tanks to store an [REDACTED] and water mixture. This mixture will be transferred into the energy storage products through a closed-loop filling system. [REDACTED] has a boiling point above 302 °F. Therefore, the storage tanks will be exempt from permits.

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

As shown in Section VII.C.2, the PE is greater than 2 lb/day for NO_x and CO for both the oven and washer with burners rated at 10.5 MMBtu and both ovens with burners rated at 7.0 MMBtu from the powder coating system burners. Additionally, VOC emissions from the powder coating operation are greater than 2.0 lb/day. BACT is triggered for NO_x from the powder coating burners and for VOC from the powder coating. However BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lb/year, as demonstrated in Section VII.C.5 above.

VOC emissions from the adhesives/sealants application are greater than 2.0 lb/day. Thus, BACT is triggered for VOC emissions from this operation.

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 4.3.7, applies to Powder Coating Operations with a Curing Oven (See Appendix B)

BACT Guideline 4.9.4, applies to the Adhesive and Sealants application process (See Appendix B)

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 C), BACT has been satisfied with the following:

NO_x: Use of natural gas-fired curing oven.

VOC: Low VOC content powder coating with < 1.5% VOC by weight and use of natural gas-fired curing oven; Using adhesives with VOC Content of less than 400 grams per liter (less water and exempt compounds)

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	15,557	924	980	92,789	18,864
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, the SSPE2 of this new facility is not greater than the Major Source threshold for any pollutant. Therefore, this new facility is not a New Major Source and 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

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. This project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not 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	15,557	20,000 lb/year	No
SO _x	0	924	54,750 lb/year	No
PM ₁₀	0	980	29,200 lb/year	No
CO	0	92,	200,000 lb/year	No
VOC	0	18,864	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	15,557	0	15,557	20,000 lb/year	No
SO _x	924	0	924	20,000 lb/year	No
PM ₁₀	980	0	980	20,000 lb/year	No
CO	92,789	0	92,789	20,000 lb/year	Yes
VOC	18,864	0	18,864	20,000 lb/year	No

As demonstrated above, the SSIPE for CO is 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 the SSIPE for CO in excess of 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.

For the powder coating system burners, the DELs are stated in the form of emission factors (lb/MMBtu).

Proposed Rule 2201 (DEL) Conditions:

N-10031-1-0

- Emission rates from each of the powder coating system burners shall not exceed any of the following limits: NO_x - 0.048 lb/MMBtu; VOC - 0.0055 lb/MMBtu; CO - 0.286 lb/MMBtu; PM₁₀ - 0.003 lb/MMBtu; or SO_x - 0.00285 lb/MMBtu. [District Rule 2201]

For the powder coating application, the DELs are stated in the form of VOC and PM10 emissions

- Emissions from the powder coating application shall not exceed 28.0 pounds of VOC on any given day. [District Rule 2201]
- Emissions from the powder coating application shall not exceed 0.1 pounds of PM10 on any given day and 7 pounds of PM10 in any rolling 12-month period. [District Rule 2201]

N-10031-2-0

For the adhesives, sealants and pretreatment chemicals operation the DELs are stated in usage volume of product used.

- Emissions from the application of adhesives, sealants, and pretreatment chemicals shall not exceed 18.8 pounds of VOC on any given day. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

The District will require initial source testing within 60 days of startup for NO_x and CO from each of the curing ovens. Annual testing for units subject to Rule 4309 is required. Further details on testing requirement is discussed in detail in the section for Rule 4309.

- Source testing to measure NO_x and CO emissions from the ovens and burners rated less than 5 MMBtu/hr shall be conducted within 60 days of initial start-up. [District Rule 2201]
- Source testing to measure NO_x and CO emissions from the ovens and washers rated at 5 MMBtu/hr or greater shall be conducted within 60 days of initial start-up and at least once every 24 months thereafter. [District Rules 2201 and 4309]

2. Monitoring

District Rule 4309 requires the operator of any unit subject to the applicable emissions limits to monitor emissions by installing and maintaining an APCO-approved CEMS system for NO_x and oxygen or an alternate emissions monitoring method. Monitoring requirements are discussed in detail in the section for Rule 4309.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201.

For operators using an alternate emission monitoring system, the following records shall be kept on a periodic basis

- The permittee shall maintain records sufficient to demonstrate compliance with the daily emission limit. These records shall contain each calculated emission quantity as well as each process variable used in the respective calculations. [District Rules 1070 and 2201]
- All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rule 2201]

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 D of this document for the AAQA summary sheet.

As shown by the AAQA summary sheet the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

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

Since this facility's potential emissions do not exceed any major source thresholds of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.

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. However, no subparts of 40 CFR Part 60 apply to Energy Storage Products Manufacturing.

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 Energy Storage Products Manufacturing operations.

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 the Powder Coating System Burners fired solely on natural gas and the powder coating operation is served by a filtration system capable of >99% control for particulate matter emissions, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity. Compliance is expected with this rule.

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)

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	2.75
Cancer Risk	2.47E-08
Acute Hazard Index	0.02
Chronic Hazard Index	0.02
T-BACT Required?	No

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 not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; 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 D: Health Risk Assessment Summary

The following permit conditions are required to ensure compliance with the assumptions made for the risk management review:

Unit # 1-0

- The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction.

Unit # 2-0

- No special requirements.

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.

For Powder Coating System Burners,

F-factor of natural gas = 8,578 dscf/MMBtu
 $EF_{PM10} = 0.003 \text{ lb/MMBtu}$

$$\begin{aligned}
 \text{PM Conc. (gr/scf)} &= (EF_{PM10}) \times (7,000 \text{ gr/lb}) / (F\text{-factor}_{\text{natural gas}}) \\
 &= (0.003 \text{ lb/MMBtu}) \times (7,000 \text{ gr/lb}) / (8,578 \text{ dscf/MMBtu}) \\
 &= 0.002 \text{ gr/dscf}
 \end{aligned}$$

Compliance is expected with this rule.

For Powder Coating application,

$$\text{PM Conc. (gr/scf)} = \frac{(\text{PM emission rate}) \times (7,000 \text{ gr/lb})}{(\text{Air flow rate}) \times (60 \text{ min/hr}) \times (24 \text{ hr/day})}$$

PM₁₀ emission rate = 0.02 lb/day. Assuming 100% of PM is PM₁₀

The equipment under this operation has multiple airflow rates, with the minimum airflow rate through the cooling tunnel being 6,200 cfm; therefore:

$$\begin{aligned} \text{PM Conc. (gr/scf)} &= (0.02 \text{ lb-PM/day} \times 7,000 \text{ gr/lb}) / (6,200 \text{ ft}^3/\text{min} \times 1,440 \text{ min/day}) \\ &= 0.00002 \text{ gr/dscf} \end{aligned}$$

Compliance is expected with this rule.

Rule 4309 Dryers, Dehydrators and Ovens

The purpose of this rule is to limit emissions of oxides of nitrogen (NO_x) and carbon monoxide (CO) from dryers, dehydrators, and ovens.

This rule applies to any dryer, dehydrator, and oven that the total rated heat input for the unit is rated 5 MMBtu/hr or greater.

Both 10.5 MMBtu ovens and both 7.0 MMBtu ovens are subject to this rule.

Pursuant to Section 5.0 of this rule, NO_x and CO emissions shall not exceed the following limits:

NO _x Limit (ppmv)	4.3
CO Limit (ppmv)	42

As stated in Section VII.B the NO_x and CO emission factors are calculated using these limits as shown below,

F-factor for natural gas is 8,578 ft³-exhaust/MMBtu

Molar Specific Volume (MSV) is 379.5 ft³/lb-mol

Molecular weight of NO_x (as NO₂) is 46 lb/lb-mol

Molecular Weight of CO is 28 lb/lb-mol

Above Emission Limits are referenced at 19 volume % O₂

So the above limits can be converted emission factor limits,

$$\begin{aligned}
 EF_{NO_x} \text{ Limit} &= (\text{ppmv}) \times (\text{F-factor}) \times (MW_{NO_2}) \div [(\text{MSV}) \times (20.95 - \text{reference } O_2) \div (20.95)] \\
 &= (4.3 \text{ ft}^3 \text{ NO}_x / 10^6 \text{ ft}^3 \text{ exhaust}) \times (8,578 \text{ ft}^3\text{-exhaust/MMBtu}) \times (46 \text{ lb/lb-mol}) \\
 &\quad \div [(379.5 \text{ ft}^3 \text{ NO}_x/\text{lb-mol}) \times (20.95 - 19.0) \div (20.95)] \\
 &= 0.048 \text{ lb-NO}_x/\text{MMBtu}
 \end{aligned}$$

$$\begin{aligned}
 EF_{CO} \text{ Limit} &= (\text{ppmv}) \times (\text{F-factor}) \times (MW_{CO}) \div [(\text{MSV}) \times (20.95 - \text{reference } O_2) \div (20.95)] \\
 &= (42 \text{ ft}^3 \text{ NO}_x / 10^6 \text{ ft}^3 \text{ exhaust}) \times (8,578 \text{ ft}^3\text{-exhaust/MMBtu}) \times (28 \text{ lb/lb-mol}) \\
 &\quad \div [(379.5 \text{ ft}^3 \text{ NO}_x/\text{lb-mol}) \times (20.95 - 19.0) \div (20.95)] \\
 &= 0.286 \text{ lb-CO/MMBtu}
 \end{aligned}$$

Because the NO_x and CO emission factors are calculated using the emission limits from this rule compliance is expected and will be enforced via the DELs from the Rule 2201 section.

Section 5.4.1 states that except for dehydrators, the operator of any unit subject to the applicable emission limits in Sections 4.3.2, or 5.2 shall monitor emissions using one of the techniques specified in Sections 5.4.1.1 or 5.4.1.2.

Section 5.4.1.1 states the first technique as the installation and maintenance of an APCO-approved CEMS for NO_x, and oxygen that meets the following requirements: 1) 40 CFR Part 51, and 2) 40 CFR Parts 60.7 and 60.13 (except subsection h), and 3) 40 CFR Part 60 Appendix B (Performance Specifications), and 4) 40 CFR Part 60 Appendix F (Quality Assurance Procedures), and 5) The applicable provisions of District Rule 1080 (Stack Monitoring). 6) The APCO shall only approve CEMS that meets the requirements of Sections 5.4.1.1.1 through 5.4.1.1.5 of this rule.

Section 5.4.1.2 states the second technique as the installation and maintenance of an alternate emissions monitoring method that meets the requirements as follow: 1) the APCO shall not approve an alternative monitoring system unless it is documented that continued operation within ranges of specified emissions-related performance indicators or operational characteristics provides a reasonable assurance of compliance with applicable emission limits, 2) the approved alternate emission monitoring system shall monitor operational characteristics necessary to assure compliance with the emission limit. Operational characteristics shall be one or more of the following: a) Periodic NO_x exhaust emission concentrations, b) Periodic exhaust oxygen concentration, c) Flow rate of reducing agent added to exhaust, d) Catalyst inlet and exhaust temperature, e) Catalyst inlet and exhaust oxygen concentration, f) Periodic flue gas recirculation rate, g) Other surrogate operating parameter(s) that demonstrate compliance with the emission limit.

The applicant has proposed to use a portable handheld analyzer for periodic monitoring for NO_x, CO and O₂ emissions on a quarterly basis. The following conditions shall be added to permit N-10031-1-0:

- For each of the ovens and washers rated at 5 MMBtu/hr or greater, the permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed

within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rule 4309]

- If either the NO_x or CO concentrations corrected to 19% O₂ (or no correction if measured above 19% O₂), as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rule 4309]

Section 5.4.1.2.3 states that the operator shall source test over the proposed range of surrogate operating parameter(s) to demonstrate compliance with the applicable emission limits.

Section 5.5.1 states that all emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the PTO. Section 5.5.2 states that except for as provided in Section 5.5.3, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0. Therefore, the following condition will be included on the permit to ensure compliance:

- All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4309. [District Rule 4309]

Section 5.5.5 states that for emissions monitoring pursuant to Section 5.4.1.2.2.1, emission readings shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15-consecutive-minute sample reading or by taking at least five (5) readings evenly spaced out over the 15-consecutive-minute period. Therefore, the following condition will be included on the permit to ensure compliance:

- All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample

reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4309]

Section 6.1.2 states that operators using an alternate emissions monitoring system shall maintain the following records on a periodic basis: 1) Total hours of operation, 2) Type and quantity of fuel used during operations, 3) Measurement for each surrogate parameter, 4) Range of allowed values for each surrogate parameter, and 5) The period for recordkeeping shall be specified in the PTO conditions. Therefore, the following condition will be included on the permit to ensure compliance:

- The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 19% O₂ (or no correction if measured above 19% O₂), (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4309]

Section 6.1.6 states the records and manufacturer's specifications required by this section shall meet all of the following requirements: 1) The records shall be maintained for five calendar years, 2) The records shall be made available on-site during normal business hours, and 3) The records shall be submitted to the APCO upon request. Therefore, the following condition will be included on the permit to ensure compliance:

- Records of monthly natural gas consumption shall be maintained, retained on-site for a period of at least five years and made available for District inspection upon request. [District Rule 4309]
- Permittee shall maintain records which demonstrate the unit is fired exclusively on PUC quality natural gas. [District Rule 4309]
- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201 and 4309]

Section 6.2 lists the test methods required by the rule. In lieu of the test methods listed below the facility can utilize alternative APCO and US EPA approved test methods.

Fuel hhv shall be certified by third party fuel supplier or determined by the following method:		
Fuel Gaseous	ASTM D 1826-88 or D 1945-81 in conjunction with ASTM D 3588-89	
Pollutant	Units	Test Method Required
NO _x	ppmv	EPA Method 7E or ARB Method 100
CO	ppmv	EPA Method 10 or ARB Method 100
Stack Gas O ₂	%	EPA Method 3 or 3A, or ARB Method 100
Stack Gas Velocities	ft/min	EPA Method 2
Stack Gas Moisture Content	%	EPA Method 4

Therefore, the following conditions will be included on the permit to ensure compliance:

- {3718} NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis. [District Rule 4309]
- {3719} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rule 4309]
- {3720} Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rule 4309]

Section 6.3.2 requires that each unit subject to the applicable emission limits shall be initially source tested to determine compliance with the applicable NO_x and CO limits within 60 days of startup and thereafter each unit is tested at least once every 24 months. The following condition will be included on the permit to ensure compliance:

- Source testing to measure NO_x and CO emissions from the ovens and washers rated at 5 MMBtu/hr or greater shall be conducted within 60 days of initial start-up and at least once every 24 months thereafter. [District Rules 2201 and 4309] N

Section 6.3.5 states that the APCO shall be notified according to the provisions of Rule 1081 (Source Sampling). Therefore, the following conditions will be included on the permit to ensure compliance:

- {109} Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
- {3721} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

Section 6.3.7 states that all test results for NO_x and CO shall be reported in ppmv, corrected to dry stack conditions and adjusted using the oxygen correction factor. Therefore, the following condition will be included on the permit to ensure compliance:

- {3722} All test results for NO_x and CO shall be reported in ppmv @ 19% O₂ (or no correction if measured above 19% O₂), corrected to dry stack conditions. [District Rule 4309]

Compliance with the requirements of this rule is expected.

Rule 4653 Adhesives and Sealants

This rule is applicable to any person who supplies, sells, offers for sale, or applies any adhesive product, sealant product, or associated solvent, used within the District. The proposed modified emission units apply adhesives and use associated solvents. Therefore, these permit units are subject to the requirements of this rule.

The purpose of this rule is to reduce emissions of volatile organic compounds (VOCs) from the application of adhesive products, sealant products, and associated solvent cleaning operations. This rule is applicable to any person who supplies, sells, offers for sale, or applies any adhesive product, sealant product, or associated solvent, used within the District.

Sections 5.1.1 through 5.1.4 list the VOC content limits for various adhesives and sealants. The VOC limits for Specialty Contact adhesives and non-specified Sealants are stated as 250 g/L and 420 g/L respectively. VOC content of the proposed adhesives and sealants are less than 25 g/L which meets all the applicable VOC limits. The following condition will be included on the permit to ensure compliance.

- VOC Content of adhesives and sealants applied shall not exceed 250 g/L (2.086 lb/gal). [District Rule 4653]

Section 5.2 lists the following acceptable application methods for adhesives and sealants:

- Electrostatic Application
- Flow Coater
- Roll Coater
- Dip Coater
- Hand Application Methods
- Airless Spray
- HVLP Spray

The applicant has proposed to apply adhesives and sealants as a bead by dispensing robots in an enclosed cell and no spray, dip or roller coating will be utilized. The following condition will be included on the permit to ensure compliance.

- Adhesives and sealants shall be applied only utilizing hand application methods, sponge application, brush or equivalent application. [District Rules 4653]

Section 5.3.1 requires an operator to store all VOC-containing coatings, thinners, cleaning materials, and waste materials in closed non-absorbent and non-leaking containers. The containers shall remain closed at all times, except when specifically in use.

Section 5.3.2 requires an operator to ensure that mixing containers for used VOC-containing adhesive products and sealant products and process-related waste materials are kept closed at all times except when depositing or removing these materials.

Section 5.3.3 requires that all spills of VOC-containing adhesive products, and sealant products, and process-related waste materials are minimized.

Section 5.3.4 requires that all VOC-containing adhesive products, sealant products, and process-related waste materials conveyed from one location to another are done so in closed containers or pipes.

Therefore the following condition will be included on the ATC as a mechanism to ensure compliance:

- {4690} The operator shall comply with the following work practice standards: 1) store and dispose all VOC-containing coatings, thinners, cleaning materials, adhesive products, sealant products, catalysts, thinners, fresh or spent solvents, and waste materials in closed non-absorbent and non-leaking containers, keeping the containers closed at all times except when specifically in use; 2) close mixing vessels that contain VOC coatings, adhesive products and sealant products and other materials, except when specifically in use; 3) minimize spills of any VOC-containing materials and clean up spills immediately; and 4) convey VOC-containing materials in closed containers or pipes. [District Rule 4653]

Section 5.4 states that in lieu of complying with applicable provisions of Sections 5.1, 5.2, or 5.5, an operator may use a VOC emission control system that controls emissions from the source operation and meets the requirements of Sections 5.4.2 through 5.4.4.

5.4.2 The VOC emission control system shall be approved by the APCO.

5.4.3 The VOC emission control system shall be operated with an overall capture and control efficiency of at least 85 percent by weight as determined in Section 6.3.

5.4.4 Use of a VOC emission control system shall not result in emissions in excess of those that would have been emitted had the operator complied with the applicable provisions of Sections 5.1, 5.2, or 5.5.

No control device is required because the materials used and application methods are compliant with the requirements of Sections 5.1, 5.2 and 5.5

Section 5.5.1 states that an owner or operator shall not use organic solvents for cleaning operations that exceed the VOC content limits specified in the following table:

Table 6 - Rule 4653 VOC Content Limits for Organic Solvents Used in Cleaning Operations Limits are expressed as grams of VOC/liter (or pounds of VOC/gallon) of material	
Type of Solvent Cleaning Operation	VOC Content Limit
A. Product Cleaning During Manufacturing Process or Surface Preparation for Adhesive Application	
1. General	25 (0.21)
2. Surface Preparation Prior to Rubber Vulcanization Process	850 (7.1)
B. Repair and Maintenance Cleaning	25 (0.21)
C. Cleaning of Adhesive Application Equipment	25 (0.21)

Because the applicant is not proposing to use any VOC containing solvents, the following condition will be listed on the ATC as a mechanism to ensure compliance with this rule:

- Only solvents containing no Volatile Organic Compounds (VOCs) shall be utilized. [District Rules 2201 & 4653]

Section 6.1.1 requires that any person subject to Sections 5.1 or 5.5 shall maintain the following records:

- 6.1.1.1 Records of the VOC content, in grams VOC per liter, of all adhesive materials used or stored at the stationary source.
- 6.1.1.2 Records of the VOC content of all solvents used and stored at the stationary source.
- 6.1.1.3 Records of the VOC content, in grams VOC per liter, of all sealant materials used and stored at a stationary source.

The following condition will be included on the ATC as a mechanism to ensure compliance:

- Daily usage of adhesives, sealants and pretreatment chemicals shall be recorded, in gallons. Permittee shall keep a corresponding safety data sheet for each sealant and adhesive stored at the site, stating the VOC content in grams-VOC/liter. [District Rule 4653]

Section 6.1.5 requires that records required by Section 6.1.1 and Section 6.1.4 shall be retained at the stationary source for a period of at least five years and be made available to the District upon request. Therefore, the following condition will be included on the ATC as a mechanism to ensure compliance:

- All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 2201 and 4653]

Section 6.2 requires that adhesive and sealant products and solvents subject to this rule shall be labeled pursuant to 6.2.1 through 6.2.3 as appropriate; therefore, the following conditions will be included on the ATC as a mechanism to ensure compliance.

- Each container of adhesive product shall display a statement of the manufacturer's recommendations regarding thinning, reducing, or mixing of the adhesive product with any other VOC containing material. Mixing recommendations shall specify a ratio which results in a compliant, as applied, adhesive product, or sealant product. [District Rule 4653]
- Each container of adhesive product shall display the maximum VOC content of the adhesive product as applied in grams of VOC per liter of adhesive product, excluding water and exempt compounds, or grams of VOC per liter of material for low-solids adhesive products. Each container of solvent subject to this rule shall display the maximum VOC content in grams of VOC per liter of material as supplied. [District Rule 4653]

Compliance is expected with the requirements of this rule.

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

District is a Responsible Agency

It is determined that another agency has prepared an environmental review document for the project. The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). As a Responsible Agency, the District is limited to mitigating or avoiding impacts for which it has statutory authority. The District does not have statutory authority for regulating greenhouse gas emissions. The District has determined that the applicant is responsible for implementing greenhouse gas mitigation measures, if any, imposed by the Lead Agency.

District CEQA Findings

The City of Lathrop (City) is the public agency having principal responsibility for approving the Project. As such, the City served as the Lead Agency for the Project. The City determined the project to be exempt from CEQA according to CEQA Guidelines §15301 (Existing Facilities). Consistent with CEQA Guidelines §15062, a Notice of Exemption was prepared and adopted by the City.

The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381).

The District's engineering evaluation of the project (this document) demonstrates that compliance with District rules and permit conditions would reduce Stationary Source emissions from the project to levels below the District's thresholds of significance for criteria pollutants. Thus, the District concludes that through a combination of project design elements and permit conditions, project specific stationary source emissions will be reduced to less than significant levels. The District does not have authority over any of the other project impacts and has, therefore, determined that no additional findings are required (CEQA Guidelines §15096(h)).

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 ATCs N-10031-1-0 and N-10031-2-0 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
N-10031-1-0	3020-02-H	37 MMBtu/hr Ovens and Burners	\$1,238
N-10031-2-0	3020-06	Miscellaneous	\$128

Appendices

- A: Draft ATC
- B: BACT Guideline
- C: BACT Analysis
- D: HRA Summary
- E: Quarterly Net Emissions Change

APPENDIX A

Draft ATCs

*San Joaquin Valley
Air Pollution Control District*

AUTHORITY TO CONSTRUCT

DRAFT

ISSUANCE DATE: DRAFT

PERMIT NO: N-10031-1-0

LEGAL OWNER OR OPERATOR: TESLA, INC.
MAILING ADDRESS: 700 D'ARCY PARKWAY
LATHROP, CA 95330

LOCATION: 700 D'ARCY PARKWAY
LATHROP, CA 95330

EQUIPMENT DESCRIPTION:

37 MMBTU/HR POWDER COATING SYSTEM CONSISTING OF ONE (1) 10.5 MMBTU/HR FOUR-STAGE PRETREATMENT WASHER WITH A 0.4 MMBTU/HR ZERO DISCHARGE SYSTEM BURNER, ONE (1) 10.5 MMBTU/HR DRY OFF OVEN, ONE (1) 7.0 MMBTU/HR PRIMER CURE OVEN, ONE (1) 7.0 MMBTU/HR TOPCOAT CURE OVEN AND ONE (1) 1.6 MMBTU/HR BURN OFF OVEN

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
3. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
5. {3725} The unit shall only be fired on PUC quality natural gas. [District Rules 2201 and 4309]
6. Emission rates from each of the powder coating system burners shall not exceed any of the following limits: NO_x - 0.048 lb/MMBtu; VOC - 0.0055 lb/MMBtu; CO - 0.286 lb/MMBtu; PM₁₀ - 0.003 lb/MMBtu; or SO_x - 0.00286 lb/MMBtu [District Rule 2201]
7. Emissions from the powder coating application shall not exceed 28.0 pounds of VOC on any given day. [District Rule 2201]
8. Emissions from the powder coating application shall not exceed 0.1 pounds of PM₁₀ on any given day and 7 pounds of PM₁₀ in a year. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 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

Brian Clements, Director of Permit Services

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9. Source testing to measure NO_x and CO emissions from the ovens and burners rated less than 5 MMBtu/hr shall be conducted within 60 days of initial start-up. [District Rule 2201]
10. Source testing to measure NO_x and CO emissions from the ovens and washers rated at 5 MMBtu/hr or greater shall be conducted within 60 days of initial start-up and at least once every 24 months thereafter. [District Rules 2201 and 4309]
11. {3722} All test results for NO_x and CO shall be reported in ppmv @ 19% O₂ (or no correction if measured above 19% O₂), corrected to dry stack conditions. [District Rule 4309]
12. {109} Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
13. {3721} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
14. {3715} For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rule 4309]
15. {3718} NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis. [District Rule 4309]
16. {3719} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rule 4309]
17. {3720} Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rule 4309]
18. For each of the ovens and washers rated at 5 MMBtu/hr or greater, the permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rule 4309]
19. {3742} If either the NO_x or CO concentrations corrected to 19% O₂ (or no correction if measured above 19% O₂), as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rule 4309]
20. {3713} All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4309. [District Rule 4309]
21. {3743} All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4309]

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CONDITIONS CONTINUE ON NEXT PAGE

22. {3744} The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 19% O₂ (or no correction if measured above 19% O₂), (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4309]
23. {3760} Permittee shall maintain records which demonstrate the unit is fired exclusively on PUC quality natural gas. [District Rule 4309]
24. Records of monthly natural gas consumption shall be maintained, retained on-site for a period of at least five years and made available for District inspection upon request. [District Rule 4309]
25. The permittee shall maintain records sufficient to demonstrate compliance with the daily and annual emission limits. These records shall contain each calculated emission quantity as well as each process variable used in the respective calculations. [District Rules 1070 and 2201]
26. All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 2201 and 4309]

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*San Joaquin Valley
Air Pollution Control District*

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
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PERMIT NO: N-10031-2-0

LEGAL OWNER OR OPERATOR: TESLA, INC.
MAILING ADDRESS: 700 D'ARCY PARKWAY
LATHROP, CA 95330

LOCATION: 700 D'ARCY PARKWAY
LATHROP, CA 95330

EQUIPMENT DESCRIPTION:
BATTERY MODULES ASSEMBLY OPERATION EQUIPPED WITH ADHESIVE, SEALANT, AND PRETREATMENT CHEMICAL APPLICATION EQUIPMENT

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. Emissions from adhesives, sealants and pretreatment chemicals shall not exceed 18.8 pounds of VOC on any given day. [District Rule 2201]
4. VOC Content of the adhesives and sealants applied shall not exceed 250 g/L (2.086 lb/gal). [District Rule 4653]
5. Adhesives and sealants shall be applied only utilizing hand application methods, sponge application, brush or equivalent application. [District Rule 4653]
6. The operator shall comply with the following work practice standards: 1) store and dispose all VOC-containing coatings, thinners, cleaning materials, adhesive products, sealant products, catalysts, thinners, fresh or spent solvents, and waste materials in closed non-absorbent and non-leaking containers, keeping the containers closed at all times except when specifically in use; 2) close mixing vessels that contain VOC coatings, adhesive products and sealant products and other materials, except when specifically in use; 3) minimize spills of any VOC-containing materials and clean up spills immediately; and 4) convey VOC-containing materials in closed containers or pipes. [District Rule 4653]
7. Only solvents containing no Volatile Organic Compounds (VOCs) shall be utilized [District Rules 2201 & 4653]

CONDITIONS CONTINUE ON NEXT PAGE

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Samir Sheikh, Executive Director / APCO

Brian Clements, Director of Permit Services

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8. Each container of adhesive product shall display a statement of the manufacturer's recommendations regarding thinning, reducing, or mixing of the adhesive product with any other VOC containing material. Mixing recommendations shall specify a ratio which results in a compliant, as applied, adhesive product, or sealant product. [District Rule 4653]
9. Each container of adhesive product shall display the maximum VOC content of the adhesive product as applied in grams of VOC per liter of adhesive product, excluding water and exempt compounds, or grams of VOC per liter of material for low-solids adhesive products. Each container of solvent subject to this rule shall display the maximum VOC content in grams of VOC per liter of material as supplied. [District Rule 4653]
10. Daily usage of adhesives, sealants and pretreatment chemicals shall be recorded, in gallons. Permittee shall keep a corresponding safety data sheet for each solvent and adhesive stored at the site, stating the VOC content in grams-VOC/liter. [District Rule 4653]
11. The permittee shall maintain records sufficient to demonstrate compliance with the daily emission limit. These records shall contain each calculated emission quantity as well as each process variable used in the respective calculations. [District Rule 2201]
12. VOC emissions shall be calculated for each product as follows: Daily Emissions (pounds per day) = VOC Content (pounds per gallon) x Daily Usage (gallons per day) [District Rule 2201]
13. All records shall be retained for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 2201 and 4653]

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APPENDIX B

BACT Guidelines

Best Available Control Technology (BACT) Guideline 4.3.7
Last Update: 5/1/2020

Powder Coating Operation with Curing Oven

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
NOX	Use natural gas-fired curing oven		
SOX	Use natural gas-fired curing oven		
CO	Use natural gas-fired curing oven		
PM10	Enclosed booth with 99% control efficiency, and use natural gas-fired curing oven		
VOC	Low VOC content coating with < 1.5% by weight, and use natural gas-fired curing oven	1) Thermal or Catalytic Incineration 2) Carbon Adsorption	

Best Available Control Technology (BACT) Guideline 4.9.4
Last Update: 4/3/2000

Adhesive Application Process - Non-Porous Materials, Specialty Contact Adhesives, Spray Application

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Using adhesives with a VOC content of 540 grams/liter or less (less water and exempt compounds) until July 1, 2000. Using adhesives with a VOC content of 400 grams/liter or less (less water and exempt compounds) after July 1, 2000.	1. VOC capture and control with thermal or catalytic incineration 2. VOC capture and control with carbon adsorption	

APPENDIX C BACT ANALYSIS

Top-Down BACT Analysis

For NO_x

Step 1: Identify All Possible Control Technologies

BACT Guideline 4.3.7 lists the following control technologies to reduce NO_x emissions:

Achieved-In-Practice (AIP):

Use a natural gas-fired curing oven.

Technologically Feasible:

None

Alternate Basic Equipment:

None

Step 2: Eliminate Technologically Infeasible Options

All control technologies in step 1 are technologically feasible.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

1. Use a natural gas-fired curing oven.

Step 4: Cost Effectiveness Analysis

Option 1: Use a natural gas-fired curing oven

Based on the proposal this option is already implemented and will result in no supplemental cost to the project.

Step 5: Select BACT

BACT for NO_x emissions from the powder coating system burners is using a natural gas-fired curing oven.

For VOC from Powder Coating

Step 1: Identify All Possible Control Technologies

BACT Guideline 4.3.7 lists the following control technologies to reduce VOC emissions:

Achieved-In-Practice (AIP):

Low VOC content coating with < 1.5% by weight and use of natural gas-fired curing oven

Technologically Feasible:

- 1) Thermal or Catalytic incineration.
- 2) Carbon adsorption.

Alternate Basic Equipment:

None

Step 2: Eliminate Technologically Infeasible Options

All control options listed in step 1 are technologically feasible.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

1. Thermal or Catalytic incineration.
2. Carbon adsorption.
3. Low VOC content coating with < 1.5% by weight and use of natural gas-fired curing oven

Step 4: Cost Effectiveness Analysis

Option 1: Thermal/Catalytic Incineration (100% Capture)

The exhaust flow rate of the curing ovens is proposed at 5,713 scfm at 400°F. The cost of a thermal recuperative incinerator with 98% control efficiency that corresponds to this exhaust volume is estimated at \$185,542 per Figure 2.4 of chapter 2 section 3.2 of EPA's Office of Air Quality Planning and Standards (OAQPS) document EPA/452/B-02-001.

The direct and indirect costs, shown in the following table, are taken from EPA's Office of Air Quality Planning and Standards (OAQPS) document EPA/452/B-02-001, page 42; OAQPS numbers are based on 1999 dollar value.

Cost Item	Cost, \$
Direct Costs	
Purchased equipment costs	
FBCI cost, A	185,542
Sales tax, 8.63%A	16,012
Freight, 0.05A	9,277
Purchased equipment cost, B	<u>\$210,831</u>
Direct installation costs	
Foundations & supports, 0.08B	16,867
Handling & erection, 0.14B	29,516
Electrical, 0.04B	8,433
Piping, 0.02B	4,217
Insulation for duct work, 0.01B	2,108
Painting, 0.01B	2,108
Direct installation costs	<u>\$63,249</u>
Site preparation	--
Total Direct	<u>\$63,249</u>
Indirect Costs (installation)	
Engineering, 0.1B	21,083
Construction & field expenses, 0.05B	10,542
Contractor fees, 0.1B	21,083
Start-up, 0.02B	4,217
¹ Performance test, 0.01B	--
Contingencies, 0.03B	6,325
Total Indirect Costs	<u>\$63,249</u>
Total Capital Investment (TCI)	<u>\$337,330</u>

The total capital investment is annualized over 10 years assuming 4% interest. The following formula is used to determine the annualized cost:

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

Amortization Factor = $0.04(1.04)^{10} \div (1.04^{10} - 1) = 0.123$ per District policy, amortizing over 10 years at 4%

Therefore,

Annualized Capital Investment = $\$337,330 \times 0.123 = \mathbf{\$41,590/year}$

Fuel Cost

Fuel Cost = $[(Q \times C_{pAir} \times \Delta T \times (1 - HR) \times O] - \{VOC \times HC\}$ (Natural gas cost)

¹ A performance test price is not included because it would have been required even if a company voluntarily proposes to install an RTO.

Where,

- Q: Airflow rate 5,713 CFM
 Cp_{Air}: Specific heat of air (0.0194 Btu/scf - °F)
 ΔT: Change in temperature required 830 °F
 HR: Heat recovery (0.7)
 O: Operational time, 525,600 min/yr (60 min/hr x 8,760 hr/yr)
 VOC: Total amount of VOC 10,220 lb/yr
 HC: Heat content of the VOCs in the contaminated air stream. The heat content of MEK, which is 13,729 Btu/lb, will be assumed.

Natural gas cost: \$8.80/MMBtu (average) for the past 12-months per U.S. Energy Information Administration⁽²⁾.

Fuel Cost = \$111,670/year

Electricity Cost:

$$\text{Power}_{\text{fan}} = \frac{1.17 \cdot 10^{-4} \cdot Q \cdot \Delta P}{\epsilon}$$

Where,

- ΔP: Pressure drop across system = 4 in. H₂O
 ε: Efficiency for fan and motor = 0.8
 Q: 5,713 cfm

$$\text{Power}_{\text{fan}} = 2.1 \text{ kW}$$

MID's electric rate schedule GS-3 (General Service industrial) for off-peak are \$0.0526/kWH³. Thus,

$$\begin{aligned} \text{Electric cost} &= (\$0.0526/\text{kWH})(2.1 \text{ kW})(24 \text{ hr/day})(365 \text{ days/yr}) \\ &= \mathbf{\$967 /year} \end{aligned}$$

Total Cost

$$\begin{aligned} \text{Total Cost} &= \$41,590/\text{yr} + \$111,670/\text{yr} + \$967/\text{yr} \\ &= \$154,227/\text{yr} \end{aligned}$$

This technology is expected to reduce an overall of 98% of VOC emissions. Thus,

$$\text{Controlled VOC emissions} = 10,220 \text{ lb-VOC/year} \times 1 \text{ tons-VOC}/2,000 \text{ lb-VOC} \times 0.98$$

$$\begin{aligned} \text{Cost of VOC reduction} &= \$154,227/\text{year} \div 5.0 \text{ ton-VOC/year} \\ &= \$30,845/\text{ton-VOC} \end{aligned}$$

² <https://www.eia.gov/dnav/ng/hist/n3035ca3m.htm>

³ https://www.mid.org/tariffs/rates/g3_industrial.pdf

The cost of reductions, not including maintenance costs and other overheads (e.g., property taxes, insurance, administrative costs), is more than the cost effectiveness threshold of \$22,600/ton. Therefore, use of a thermal recuperative incinerator is not required for this project. Note that the equipment cost of a thermal oxidizer is expected to be greater that of a catalytic oxidizer.

Option 2: Carbon Adsorption (100% Capture)

Assuming the carbon would be able to capture 20% of its weight in VOC, the annual carbon requirement would be 51,100 pounds (10,220/0.2).

Per EnviroSupply & Service Inc. (<http://envirosupply.net>, July 25, 2017), the cost of carbon replacement for a paint spray booth is \$5.00/lb for standard carbon. Thus,

$$\begin{aligned} \text{Carbon cost} &= 51,100 \text{ lb-carbon/year} \times \$5.00/\text{lb-carbon} \\ &= \mathbf{\$255,500/\text{year}} \end{aligned}$$

This technology is expected to reduce an overall of 95% of VOC emissions. Thus,

$$\begin{aligned} \text{Controlled VOC emissions} &= 10,220 \text{ lb-VOC/yr} \times 1 \text{ tons-VOC}/2,000 \text{ lb-VOC} \times 0.95 \\ &= 5.0 \text{ ton-VOC/yr} \end{aligned}$$

$$\begin{aligned} \text{Cost of VOC reduction} &= \$255,500/\text{year} \div 5.0 \text{ ton-VOC/year} \\ &= \$51,100/\text{ton-VOC} \end{aligned}$$

The cost of reductions, not including equipment costs, installation costs, maintenance costs and other overheads (e.g., property taxes, insurance, administrative costs), is more than the cost effectiveness threshold of \$22,600/ton. Therefore, use of this technology is not required for this project.

Option 3: Low VOC content coating with < 1.5% by weight and use of natural gas-fired curing oven

Based on the proposal this option is already implemented and will result in no supplemental cost to the operation.

Step 5: Select BACT

BACT is utilizing Low VOC content coating with < 1.5% by weight and use of natural gas-fired curing oven.

For VOC from Adhesives and Sealants

Step 1: Identify All Possible Control Technologies

BACT Guideline 4.4.1 lists the following control technologies to reduce VOC emissions:

Achieved-In-Practice (AIP):

Using Adhesives with VOC Content less than 400 grams per liter or less (less water and exempt compounds)

Technologically Feasible:

- 1) Thermal or Catalytic incineration.
- 2) Carbon adsorption.

Alternate Basic Equipment:

None

Step 2: Eliminate Technologically Infeasible Options

All control options listed in step 1 are technologically feasible.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

1. Thermal or Catalytic incineration.
2. Carbon adsorption.
3. Using adhesives with VOC Content less than 400 grams per liter (less water and exempt compounds)

Step 4: Cost Effectiveness Analysis

Option 1: Thermal/Catalytic Incineration (100% Capture)

Costs will be the same as those calculated for the powder coating operation. Because there will be less emissions controlled, the cost per ton of controlled VOC emissions will be greater than the value calculated for the powder coating operation. The use of this technology is therefore not required for this project.

Option 2: Carbon Adsorption (100% Capture)

Assuming the carbon would be able to capture 20% of its weight in VOC, the annual carbon requirement would be 34,310 pounds (6,862/0.2).

Per EnviroSupply & Service Inc. (<http://envirosupply.net>, July 25, 2017), the cost of carbon replacement for a paint spray booth is \$5.00/lb for standard carbon.

$$\begin{aligned}\text{Carbon cost} &= 34,310 \text{ lb-carbon/year} \times \$5.00/\text{lb-carbon} \\ &= \mathbf{\$171,550/\text{year}}\end{aligned}$$

This technology is expected to reduce an overall of 95% of VOC emissions. Thus,

$$\begin{aligned}\text{Controlled VOC emissions} &= 6,862 \text{ lb-VOC/yr} \times 1 \text{ tons-VOC}/2,000 \text{ lb-VOC} \times 0.95 \\ &= 3.3 \text{ ton-VOC/yr}\end{aligned}$$

$$\begin{aligned}\text{Cost of VOC reduction} &= \$171,550/\text{year} \div 3.3 \text{ ton-VOC/year} \\ &= \$51,984/\text{ton-VOC}\end{aligned}$$

The cost of reductions, not including equipment costs, installation costs, maintenance costs and other overheads (e.g., property taxes, insurance, administrative costs), is more than the cost effectiveness threshold of \$22,600/ton. Therefore, use of this technology is not required for this project.

Option 3: Using adhesives with VOC Content less than 400 grams per liter (less water and exempt compounds)

Based on the proposal this option is already implemented and will result in no supplemental cost to the operation.

Step 5: Select BACT

BACT is utilizing adhesives with VOC Content less than 400 grams per liter or less (less water and exempt compounds)

APPENDIX D
HRA Summary & AAQA

San Joaquin Valley Air Pollution Control District

Risk Management Review and Ambient Air Quality Analysis

To: Kevin Perez – Permit Services
 From: Will Worthley – Technical Services
 Date: August 30, 2021
 Facility Name: TESLA, INC.
 Location: 700 D'ARCY PARKWAY, LATHROP
 Application #(s): N-10031-1-0, -2-0
 Project #: N-1212584

1. Summary

1.1 RMR

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
1-0	0.07	0.00	0.00	2.42E-08	No	Yes
2-0	2.68	0.02	0.02	5.20E-10	No	No
Project Totals	2.75	0.02	0.02	2.47E-08		
Facility Totals	>1	0.02	0.02	2.47E-08		

1.2 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 ³
PM_{2.5}				Pass ⁴	Pass ⁴

Notes:

- Results were taken from the attached AAQA Report.
- The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2) unless otherwise noted below.
- Modeled PM₁₀ concentrations were below the District SIL for non-fugitive sources of 5 µg/m³ for the 24-hour average concentration and 1 µg/m³ for the annual concentration.
- Modeled PM_{2.5} concentrations were below the District SIL for non-fugitive sources of 1.2 µg/m³ for the 24-hour average concentration and 0.2 µg/m³ for the annual concentration.

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

Unit # 2-0

- No special requirements.

Unit # 1-0

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction.

2. Project Description

Technical Services received a request on July 27, 2021 to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for the following:

- Unit -1-0: 37 MMBTU/HR POWDER COATING SYSTEM CONSISTING OF ONE (1) 10.5 MMBTU/HR FOUR-STAGE PRETREATMENT WASHERS WITH A 0.4 MMBTU/HR ZERO DISCHARGE SYSTEM BURNER, ONE (1) 10.5 MMBTU/HR DRY OFF OVEN, ONE (1) 7.0 MMBTU/HR PRIMER CURE OVEN, ONE (1) 7.0 MMBTU/HR TOPCOAT CURE OVEN AND ONE (1) 1.6 MMBTU/HR BURN OFF OVEN
- Unit -2-0: BATTERY MODULES ASSEMBLY OPERATION EQUIPPED WITH ADHESIVE, SEALANT, AND PRETREATMENT CHEMICAL APPLICATION EQUIPMENT

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 unit's or 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 one 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 unit's that exceed a cancer risk of 1 in one million, Toxic Best Available Control Technology (TBACT) must be implemented.

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

- Toxic emissions for this proposed unit were calculated using 2001 Ventura County's Air Pollution Control District's emission factors for Natural Gas Fired external combustion.
- The SDS sheets for the coatings used in the operation were reviewed by CAS# for Toxic Air Contaminants (TACs). The values were entered into the coating spreadsheet to calculate the TAC's emissions.

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 2013-2017 from Stockton (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
1	1	VOC	LBS	1.95	17082
1	1	PM10	LBS	0.0025	7
1	2	NG Usage	MMscf	0.037	324.12
2	1	VOC	LBS	0.78	6862

Point Source Parameters						
Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/Horizontal/Capped
1	Burn Off Oven	12.19	477	5.17	0.31	Vertical
1	Zero Discharge Burner	12.19	339	6.47	0.31	Vertical
1	Pretreatment Washers	12.19	700	6.29	0.25	Vertical
1	Pretreatment Washers	12.19	700	6.29	0.25	Vertical
1	Pretreatment Washers	12.19	700	6.29	0.25	Vertical
1	TopCoat Cure Oven	12.19	477	12.57	0.25	Vertical
1	TopCoat Cure Oven	12.19	477	12.57	0.25	Vertical
1	Primer Cure Oven	12.19	477	12.57	0.25	Vertical
1	Primer Cure Oven	12.19	477	12.57	0.25	Vertical
1	Dry Off Oven	12.19	477	12.57	0.25	Vertical
1	Dry Off Oven	12.19	477	12.57	0.25	Vertical
1	Dry Off Oven	12.19	477	12.57	0.25	Vertical
2	Assembly Operation	10.36	0	1.29	0.61	Capped

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 NO₂ 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	HAZELTON-HD, STOCKTON	San Joaquin	Stockton	2018
NOx	HAZELTON-HD, STOCKTON	San Joaquin	Stockton	2018
PM10	Manteca	San Joaquin	Manteca	2018
PM2.5	Manteca	San Joaquin	Manteca	2018
SOx	Fresno - Garland	Fresno	Fresno	2018

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	0.50	0.03	3.00	0.03	0.03
1	2	0.02	0.00	0.11	0.00	0.00
1	3	0.50	0.03	3.00	0.03	0.03
1	4	0.34	0.02	2.00	0.02	0.02
1	5	0.34	0.02	2.00	0.02	0.02
1	6	0.08	0.00	0.46	0.00	0.00
2	1	0.00	0.00	0.00	0.00	0.00

Emission Rates (lbs/year)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
1	1	4,415	262	26,306	276	276
1	2	168	010	1,002	11	11
1	3	4,415	262	26,306	276	276
1	4	2,943	175	17,538	184	184
1	5	2,943	175	17,538	184	184
1	6	673	040	4,009	42	42
2	1	0	0	0	7	7

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 below and meteorological data for 2013-2017 from Stockton (rural dispersion coefficient selected) were used for the analysis:

The following parameters were used for the review:

Point Source Parameters						
Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/Horizontal/Capped
1	Burn Off Oven	12.19	477	5.17	0.31	Vertical
1	Zero Discharge Burner	12.19	339	6.47	0.31	Vertical
1	Pretreatment Washers	12.19	700	6.29	0.25	Vertical
1	Pretreatment Washers	12.19	700	6.29	0.25	Vertical
1	Pretreatment Washers	12.19	700	6.29	0.25	Vertical
1	TopCoat Cure Oven	12.19	477	12.57	0.25	Vertical
1	TopCoat Cure Oven	12.19	477	12.57	0.25	Vertical
1	Primer Cure Oven	12.19	477	12.57	0.25	Vertical
1	Primer Cure Oven	12.19	477	12.57	0.25	Vertical
1	Dry Off Oven	12.19	477	12.57	0.25	Vertical
1	Dry Off Oven	12.19	477	12.57	0.25	Vertical
1	Dry Off Oven	12.19	477	12.57	0.25	Vertical
2	Assembly Operation	10.36	0	1.29	0.61	Capped

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. In addition, the cancer risk for each unit in this project is less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved without 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. Facility Summary
- E. AAQA results

APPENDIX E
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:

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

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

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Quarterly NEC [QNEC]			
Pollutant	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO _x	3,889	0	3,889
SO _x	231	0	231
PM ₁₀	245	0	245
CO	23,175	0	23,175
VOC	3,001	0	3,001

N-10031-2-0

Quarterly NEC [QNEC]			
Pollutant	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	1,715.5	0	1,715.5