ENGINEERING EVALUATION – AUTO BODY

Facility ID No. 200507
Darryl's Collision Center
2505 Debpar Court, STE. C, Antioch, CA 94509
Application No. 419665

Background

Darryl's Collision Center e is applying for an Authority to Construct for the following new source:

S-1 Auto Body Coating Operation (with Dryer)

The owner/operator has been operating without a permit for approximately three years. In addition to the permit to operate fees, the applicant was charged late and back fees.

This facility is within 1,000 feet of Bidwell High School located at 800 Gary Avenue, Antioch, CA 94509 This the project triggers the Public Notice requirements under California Health & Safety Code and the District's Regulation 2, Rule 1, section 412.

This evaluation report will discuss compliance of the proposed project with all applicable rules and regulations.

Emissions

This evaluation will be based on default annual usage limits of 800 gallons of coating and 300 gallons of clean-up solvent.

Basis:

- Operation schedule: 16 hr/day (max), 8 hr/day (typical), 5 day/week, 52 week/yr
- Material usage: 800 gal/yr of coating and 300 gal/yr of clean-up solvent
- For general auto body coating material:
  - 2.4 lb/gal POC content
  - 2.4 lb/gal NPOC content (100% p-chlorobenzotriflouride)
- For general auto body clean-up solvent:
  - 5.0 lb/gal POC content (42% aromatic hydrocarbons, 13% butyl alcohol, 13% butyl acetate, 10% isopropyl alcohol, 14% toluene, 10% xylene)
  - 2.1 lb/gal NPOC content (100% acetone)
- POC is Precursor Organic Compound.
- NPOC is Non-Precursor Organic Compound.
- Organics is the sum of POC and NPOC.
- A gas fired dryer will be utilized.

Summary of the POC and NPOC emissions from use of the coating and clean-up solvent at this source is in Table 1.

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Table 1. POC and NPOC Emissions

Pollutant	Total Emissions (lb/yr)	Total Emissions (ton/yr)	Total Emissions (lb/day)
Organics	5,980	2.99	23.0
POC	3,430	1.72	13.2
NPOC	2,550	1.28	9.8

For purposes of estimating the combustion driven emissions from use of the gas fired dryer, default dryer emissions are applied which assumes a maximum rated heat input of 1.1 MMBtu/hr and annual fuel throughput of 1,100,000 cubic feet. Summary of these combustion driven emissions is in Table 2.

Table 2. Combustion Driven Emissions

Pollutant	Emission Factor (lb/1.000 cu ft)	Annual Emissions (lb/yr)	Annual Emissions (ton/yr)	Daily Emissions (lb/day)
POC	0.00572	6.29	0.00315	0.0242
Particulates (PM_{10})	0.00300	3.30	0.00165	0.0127
Nitrogen oxides	0.140	154	0.0770	0.592
CO	0.0350	38.5	0.0193	0.148
SO_2	0.000568	0.625	0.000312	0.00240
Benzene	0.00000638	0.00702	0.00000351	0.0000270
Formaldehyde	0.0000750	0.0825	0.0000413	0.000317
Toluene	0.00000340	0.00374	0.00000187	0.0000144

Plant Cumulative Increase

POC = 0.00 tpy (existing) + 1.72 tpy (new) = 1.72 tpy
NPOC = 0.00 tpy (existing) + 1.28 tpy (new) = 1.28 tpy
PM_{10} = 0.00 tpy (existing) + 0.00 tpy (new) = 0.00 tpy
NOx = 0.00 tpy (existing) + 0.08 tpy (new) = 0.08 tpy
CO = 0.00 tpy (existing) + 0.02 tpy (new) = 0.02 tpy
SO_2 = 0.00 tpy (existing) + 0.00 tpy (new) = 0.00 tpy

Toxic Emissions

A Health Risk Assessment (HRA) is required when the emissions of toxic air contaminants (TACs) are at or exceed the trigger levels outlined in Regulation 2, Rule 5, Table 2-5-1. An HRA is not required, based on the toxic emissions for this source, summarized in Table 3.

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Table 3. Toxic Emissions

TACs	Category	Total Emissions (lb/year)	Total Emissions (lb/hour)	Exceeding or at Reg. 2-5 Chronic Trigger Level? (Yes/No)	Exceeding or at Reg. 2-5 Acute Trigger Level? (Yes/No)
Isopropyl Alcohol	TAC - other	147	0.0707	No	No
Toluene	TAC - Other	210	0.101	No	No
Xylene	TAC - Other	147	0.0707	No	No
Benzene	Both Carcinogen and Other	0.00702	0.00000337	No	No
Formaldehyde	Both Carcinogen and Other	0.0825	0.0000397	No	No

Best Available Control Technology (BACT)

Per Regulation 2-2-301, BACT is triggered for any new or modified source with the potential to emit 10 pounds or more per highest day of POC, NPOC, NOx, CO, SO_2 or PM_{10}.

S-1 is subject to BACT because POC emissions from the source are estimated to exceed 10 lb/day. BACT requirements for S-1 are provided in the current BAAQMD BACT/TBACT Workbook for "Spray Booth - Coating of Motor Vehicle and Mobile Equipment, Rework or Body Shop - <40 lb/day Emissions (Uncontrolled)", Document #161.3.1, Revision 2 dated 12/16/91.

BACT 1 requires an add-on control system with overall capture/destruction efficiency of at least 90%. Table 4 shows the costs of abatement using EPA Con-Co$t spreadsheets (attached to this evaluation report).

Table 4. Cost Effectiveness by Various Types of Control Devices

Control Device	Annualized Cost ($/year)	Cost Effectiveness ($/ton)
Carbon Adsorber	48,900	31,600
Catalytic Incinerator	75,000	48,400
Thermal Incinerator	102,200	66,000
Regenerative Thermal Oxidizer	181,000	117,000

In the BACT/TBACT workbook, the pollutant maximum cost for POC is $17,500/ton. Any control device with cost effectiveness in excess of $17,500/ton is not cost effective. The costs of the abatement devices in the above table exceed $17,500/ton, and therefore it is not cost effective to implement control device (BACT 1).

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S-1 will satisfy BACT 2 by complying with Regulation 8, Rule 45.

Offsets

Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/year of POC or NOx per Regulation 2-2-302.

POC or NOx offsets are not applicable since the facility wide emissions are less than 10 tons per year.

Statement of Compliance

This owner/operator of source (S-1) is subject to and expected to comply with the following sections in Regulation 8, Rule 45:

- Section 301 for VOC limits;
- Section 303 for transfer efficiency;
- Section 308 for surface preparation and solvent loss minimization; and
- Section 316 for particulate filtration.

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review (Permit Handbook Chapter 5). The engineering review for this project requires only the application of standard permit conditions and standard emissions factors and therefore is not discretionary as defined by CEQA.

There is a K-12 school(s) located within 1,000 feet of this facility. triggering the notification.

- Bidwell High School located at 800 Gary Avenue, Antioch, CA 94509

It is therefore subject to the public notification requirements under California Health & Safety Code and the District Regulation 2, Rule 1, Section 412 due to the increase in the emissions from this project.

Before this project can be approved, a 30-day public comment period will be held. Notice describing the project and announcing the public comment period will be mailed to the parents of students attending the above school(s) and residential and business neighbors within 1,000 feet of the facility. The cost of preparing and distributing this notice will be paid by the applicant. All comments received will be summarized in this evaluation report.

National Emissions Standards for Hazardous Air Pollutants:
The District is not the delegated authority for the requirements of the Federal NESHAP for Paint Stripping and Miscellaneous Surface Coating Operation, Subpart HHHHHH

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(which includes auto body refinishing, painting and repair). To satisfy these requirements, the owner/operator shall comply with Permit Condition 24064.

The owner/operator is subject to the requirements of Title 17, CA Code of Regulations, Section 93112, ATCM for Emissions of Hexavalent Chromium and Cadmium from Motor Vehicle and Mobile Equipment Coatings. To satisfy these requirements, the owner/operator shall comply with Permit Condition 100058.

Conditions for S-1

Condition Number: 100002

The owner/operator of the source shall not exceed the following usage limits during any consecutive rolling twelve-month period:

- 800 Gallons of Auto Body Coating
- 300 Gallons of Auto Body Cleanup Solvent
  (Basis: Cumulative Increase)

Condition Number: 100003

The owner/operator shall:

1. Total net usage of coatings and the net usage of solvent on a monthly basis.
2. Total monthly records on a rolling 12-month basis.
3. Keep records at least two years from the date of creation.
4. Have records readily available to the District upon request.
   (Basis: Cumulative Increase)

Condition Number: 100058

The owner/operator shall not use coatings that contain cadmium or hexavalent chrome. (Basis: Title 17, CA Code of Regulations, Section 93112, ATCM for Motor Vehicle and Mobile Equipment Coatings)

Condition Number: 24064

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements (40 CFR Part 63), subpart HHHHHH, for the controlling of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd) ('target Hazardous Air Pollutants') from Paint Stripping and Miscellaneous Surface Coating Operations (including motor vehicle/mobile equipment/miscellaneous surface coating operations):

1. The owner/operator shall perform an Initial Notification upon startup to the delegated authority: Director, Air and Toxics Division, EPA, Region IX, 75 Hawthorne St, San Francisco, CA 94105.

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2. The owner/operator shall certify that the owner/operator is in compliance with the following provisions of the applicable NESHAP:
    a. Train/certify all painters on spray gun equipment selection, spray techniques, maintenance, and environmental compliance (40 CFR Part 63, section 63.11173(f)(2)(i)-(iv)).
    b. Install/operate filter technology on all spray booths/stations/enclosures to achieve at least 98% capture efficiency.
    c. Spray booths/stations used to refinish complete motor vehicles or mobile equipment must be fully enclosed and ventilated at negative pressure or up to 0.05 inches water gauge positive pressure for booths that have seals on all doors and other openings and an automatic pressure balancing system.
    d. Spray booths/stations used to coat miscellaneous parts or products or vehicle subassemblies must have a full roof, at least three complete walls or side curtains, and is ventilated so that air is drawn into the booth.
    e. Spray-applied coatings must be applied with a high volume, low-pressure (HVLP) spray gun, electrostatic application, airless or air-assisted airless spray gun, or an equivalent technology.
    f. Paint spray gun cleaning must be done so that an atomized mist or spray of the cleaning solvent is not created outside a container that collects used gun cleaning solvent.
    g. Train and certify all personnel who spray apply surface coatings no later than 180 days after hiring.

3. To demonstrate compliance with Parts 1 ,2 and 3, the owner/operator shall maintain the following records for five years from the date of creation and have the records readily available to the District upon request.
    a. Copies of Notifications submitted to EPA.
    b. Painter training certifications.
    c. Spray booth filter efficiency documentation.
    d. Spray gun transfer efficiency.
    e. Target HAP content information such as MSDS.
    f. Annual usage of MeCl for paint stripping, and written MeCl minimization plan if annual usage > 1 ton per year.
    g. Deviation and corrective action documentation.

4. The owner/operator may petition the Administrator for an exemption from Parts 1, 2 and 3, if it can demonstrate to the satisfaction of the Administrator that the coatings that contain compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd) are not applied. The owner/operator shall have the Administrator's approval of the exemption readily available to the District for as long as the exemption is applicable.

    (Basis: 40 CFR part 63, subpart HHHHHH)

End of Conditions

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Recommendation

The District has reviewed the material contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state, and federal air quality-related regulations. The preliminary recommendation is to issue an Authority to Construct/Permit to Operate for the equipment listed below. However, the proposed source will be located within 1,000 feet of a school, which triggers the public notification requirements of District Regulation 2-1-412. After the comments are received and reviewed, the District will make a final determination on the permit.

I recommend that the District initiate a public notice and consider any comments received prior to taking any final action on issuance of an Authority to Construct/Permit to Operate for the following source:

S-1 Auto Body Coating Operation (with Dryer)

Prepared by: Vanessa Hodgson, Air Quality Technician;

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