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## Permit Evaluation Report

**Turbo Auto Body**  
1711 International Blvd.  
Oakland, CA 94606

Application Number: 21761  
Plant Number: 8755

### **Background:**

Turbo Auto Body, located in Oakland is applying for an Authority to Construct/Permit to Operate for a second spray booth. The site currently has a single booth with a small mixing bench; the site is currently permitted to use 100 gallons of coating and 25 gallons of clean-up solvent. This application will add a modern booth with natural gas fired heating system. As part of this upgrade, the site is expecting an increase in business and therefore is seeking an increase in coating and solvent use to 700 gallons of coating and 300 gallons of clean-up solvent.

The source description is:

S-2 Spray Booth – Sprayzone booth with gas fired dryer and HVLP spray guns

### **Emissions:**

The emission summary for this source (S-2) is in the following table:

#### **Coating Usage and Precursor Organic Compounds (POC) Emissions**

Coating Description	Usage (Gal/y)	VOC Content (lb/gal)	POC Emission Lb/year	POC emission (tpy)
Pretreatment Coating	50	5.5	275	0.14
Primer/Primer Surfacer	75	2.1	158	0.08
Primer Sealer	75	2.1	158	0.08
Color/Single Stage Coating	150	2.8	420	0.21
Clear Coat	175	2.1	368	0.18
Multi-Color Coating	75	5.7	428	0.21
Cleanup Solvent	275	6.5	1788	0.89
Total	875	-----	3595	1.80

The above table includes only the increase in emissions using new and lower VOC limits.

In 1994, this site was initially permitted under A/N 11061 and had allowed emissions of .34 tons per year with the permit condition allowing 100 gallons of coating and 25 gallons of clean-up solvent using old VOC limits. It is important to note that the 0.34 tons per year of emission initially permitted has actually been reduced over the years due

to decreasing VOC limits. Using current VOC limits and applying them to the existing permit coating and clean-up solvent allowances, this site is essentially permitted emission of .22 tons per year, a decrease of 35%.

Therefore it is reasonable to use 0.22 tons per year when calculating the cumulative emissions as a starting point.

### **Natural Gas Usage and NOx Emissions**

Maximum expected firing rate of the booth dryer is 1.0E6 Btu per hour of natural gas. At 8 hrs a day, 5 days per week, 52 weeks per year that translates to 2.08E9 Btu or approximately 20,800.0 therms per year or 2.02E6 ft<sup>3</sup> of natural gas per year (1 ft<sup>3</sup> = 1031 Btu). AP-42 states the NOx emission rate is 100 lbs of NOx per 1.0E6 ft<sup>3</sup> of natural gas used, which means NOx emissions amount to 202.0 lb per year or 0.101 tons per year.

AP-42 states the CO emission rate is 21 lbs of CO per 1.0E6 ft<sup>3</sup> of natural gas used. Using the same firing rate as above, CO emissions amount to 42.4 lb per year or 0.021 tons per year total.

PM, SOx and POC emissions from the combustion of natural gas are negligible.

□ Maximum Daily Average Emissions:

$$\begin{aligned} \text{POC} &= (3,595 \text{ lb/yr}) / (365 \text{ d/yr}) &= 9.86 \text{ lb/d} \\ \text{NOx} &= (202.0 \text{ lb/yr}) / (365 \text{ d/yr}) &= 0.55 \text{ lb/d} \\ \text{CO} &= (42.4 \text{ lb/yr}) / (365 \text{ d/yr}) &= 0.012 \text{ lb/d} \end{aligned}$$

□ Plant Cumulative Increase:

$$\begin{aligned} \text{POC} &= 0.22 \text{ tpy (existing)} + 1.80 \text{ tpy (new)} &= 2.02 \text{ tpy} \\ \text{NOx} &= 0.00 \text{ tpy (existing)} + 0.101 \text{ tpy (new)} &= 0.101 \text{ tpy} \\ \text{CO} &= 0.00 \text{ tpy (existing)} + 0.021 \text{ tpy (new)} &= 0.021 \text{ tpy} \end{aligned}$$

Please note

### **Toxics and NESHAPs Emissions**

The Toxic Air Contaminant (TACs) emitted from this coating operation consist of toluene, xylene, methyl ethyl ketone, ethyl benzene and ethylene glycol methyl butyl ether acetate and various zinc compounds. Also included are the target Hazardous Air Pollutants (HAPs) per National Emission Standards for Hazardous Air Pollutants (NESHAPs), subpart HHHHHH (compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), and cadmium (Cd)). A Health Risk Screen Assessment (HRSA) is carried out when the emissions of these TACs (and target HAPs) exceeds the trigger levels outlined in Regulation 2, Rule 5, Table 1. Below is a table showing the trigger levels of the TAC and target HAPs, as well as the planned emission of each compound under the proposed permit condition.

Please note, none of these TAC and HAPs emissions exceed the trigger level assuming worst-case scenarios (all coatings used are at the high end of TAC and HAP formulation). Thus a HRSA is not required. Also note that per California State ATCM, cadmium and hexavalent chromium are not allowed in any coating.

TAC and target HAP	Trigger level, #/yr	Actual Emission, #/yr
Toluene (primer & topcoat)	12,000 #/yr	<150 #/yr
Xylene (primer & topcoat)	27,000 #/yr	<150 #/yr
Methyl ethyl ketone (primer & topcoat)	39,000 #/yr	<95 #/yr
Ethyl benzene (primer & topcoat)	77,000 #/yr	<65 #/yr
Ethylene GMBEA (topcoat)	2,300 #/yr	<128 #/yr
Zinc compounds (topcoat)	1,400 #/yr	<48 #/yr
Lead	5.4 #.yr	< 0.5 #/yr
Chrome	.0013 #/yr	0.0 #/yr
Cadmium	.045 #/yr	0.0 #/yr
Nickel	.73 #/yr	0.0 #/yr
Manganese	7.7 #/yr	0.0 #/yr

**Statement of compliance:BAAQMD and NESHAPs:**

The source (S-2 Spray Booth) is subject to and in compliance with District Regulation 8, Rule 45, and Section 301 and 302 for VOC Limits, Section 303 for Transfer Efficiency, Section 308 for Surface Prep 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 (PHBK 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.

At this time, BAAQMD is not the delegated authority for the requirements of compliance with the Federal NESHAP for Paint Stripping and Miscellaneous Surface Coating Operation, Subpart HHHHHH (which includes auto body refinishing, painting and repair).

However, per interpretation of the California Health and Safety Code, Chapter 3.5, section 39658, b1, BAAQMD will verify that the site is in compliance with the NESHAP standards and will forward any materials related to the NESHAP subpart HHHHHH requirements to the EPA Region 9 office as they arrive at BAAQMD. Also BAAQMD will also notify the affected plant of the NESHAP subpart HHHHHH requirements as part of their operating conditions.

Per included application documentation and Initial Notification sent to the EPA Region 9 office, this site certifies they are in compliances with the following NESHAPs standards:

- A: Train/certify all painters on spray gun equipment, techniques, maintenance and environmental compliance,
- B: Install filters on booth that achieve 98% capture efficiency,
- C: Spray booths/stations used to refinish complete vehicles will be ventilated at negative pressure or up to 0.05 inches water gauge positive pressure for booths that have seals on 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 HVLP spray gun or other spray equipment with equivalent technology/transfer efficiencies,
- F: Spray gun cleaning must be done so that atomized mist or spray of the cleaning solvent is not created outside a container that collects the spent solvent,
- G: Train/certify all personnel who spray apply coatings no later than 180 days after hiring or by July 7, 2008 (new sources) or by January 10, 2011 (existing sources).

**New Source Review:**

This source does not have the potential to emit more than 10 pounds of POC per day; therefore it does not trigger Best Available Control Technology (BACT) requirements.

Additionally, since emissions for this source are less than 40 lb/day, an add-on control system is not required because it is not economically feasible per BACT guideline 161.3.1 of the BACT Handbook, dated December 16, 1991.

However, being compliance with Regulation 8-45, this site will achieve BACT compliance in practice. BACT is the use of VOC compliant paints, high transfer efficiency sprayguns, proper air filtration media, and a spraygun cleaning unit. This level of control is also considered Toxic Best Available Control Technology (TBACT) for this amount of emissions.

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

**Public Notification:**

St. Anthony School, a K-8 school, is located within 1000 feet from this facility. It is therefore subject to the public notification requirements of Regulation 2-1-412 due to the increase in the emissions from this project.

A public notice will be sent to all parents of students of the above-mentioned schools and all residents within 1000 feet of the facility. There will be a 30-day public comment period

**Conditions for S-1 (Spray Booth Operation) and S-2 (Spray Booth Operation):**

As part of the permitting process, this site will be given updated permit conditions for S-1 and S-2 reflecting the changes of the applicable air quality regulations resulting in facility-wide permit conditions.

Condition Number: 1812

Per California State Air Toxic Control Measure (ATCM), this site shall not use coatings that contain hexavalent chrome or cadmium.

1. Net coating usage at this facility as applied (coating + reducers + catalyst) shall not exceed 700 gallons in any consecutive twelve month period. [Basis: Cumulative Increase]
2. Net surface preparation and cleanup solvent usage (amount purchased minus amount hauled away) at this facility shall not exceed 300 gallons in any consecutive twelve month period. [Basis: Cumulative Increase]
3. Catalysts, hardeners, reducers, thinning solvents and other components shall only be added to coatings in proportions not exceeding the manufacturer's recommendations for coatings complying with Regulation 8, Rule 45. [Basis: Regulation 8 Rule 45]
4. To demonstrate compliance with the above conditions, the owner/operator shall maintain the following daily records:
  - a. Product identification number, and specialty coating category if applicable, of all coatings, catalysts, and reducers used.
  - b. Component mix ratio.
  - c. Volatile organic compound (VOC) content of coating as applied.
  - d. Quantity of coating applied.

The owner/operator shall maintain monthly records of quantity and type of all solvent used for surface prep and cleanup.

All records shall be retained on-site for two years, from the date of entry, and be made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations. [Basis: Cumulative Increase]

Condition Number: 24064

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements, 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. A new site must perform Initial Notification to the delegated authority upon startup after January 9, 2008. Existing sites must perform a notification by January 10, 2011 to the delegated authority. At this time, BAAQMD is NOT the delegated authority; therefore the site must send notification to the EPA Region 9, Director of Air and Toxics Division, 75 Hawthorne St, San Francisco, CA 94105.
2. The notification will certify that they are 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 (consult 73 FR 1738, pg.1762, 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 or by July 7, 2008 (new sources) or by January 10, 2011 (existing sources).
3. Maintain the following records for five year in a form suitable and readily available for expeditious review
  - a. Records to include 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 in coatings, 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. Site may petition the Administrator for an exemption from this subpart if it can demonstrate to the satisfaction of the Administrator that the spray apply no coatings that contain compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd).

**Exemption:**

None

**Recommendation:**

Issue an Authority to Construct for the following source:

**S-2 Spray Booth, Sprayzone booth with gas fired dryer and HVLP spray guns**

*By:*

*Duncan Campbell, Air Quality Technician II*

*May 11, 2010*