



Louisville Metro Air Pollution Control District  
701 West Ormsby Avenue, Suite 303  
Louisville, Kentucky 40203-3137



**15 October 2016**

## **Title V Statement of Basis**

**Owner/Source:** Caldwell Tanks, Inc.

**Plant Location:** 4000 Tower Rd., Louisville, Kentucky 40219

**Date Application Received:** 03 Jun 2016

**Date Admin Complete:** 08 Jun 2016

**Date of Draft Permit:** 15 Oct 2016

**Date of Proposed Permit:** 15 Oct 2016

**District Engineer:** Rick Williams

**Permit No:** O-0034-16-V

**Plant ID:** 0034

**SIC Code:** 3443

**NAICS:** 332313

### **Introduction:**

This permit will be issued pursuant to: (1) Regulation 2.16, (2) Title 40 of the Code of Federal Regulations Part 70, and (3) Title V of the Clean Air Act Amendments of 1990. Its purpose is to identify and consolidate existing District and Federal air requirements and to provide methods of determining continued compliance with these requirements.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), 1 hour and 8 hour ozone (O<sub>3</sub>), and particulate matter less than 10 microns (PM<sub>10</sub>); and is a non-attainment area for the 1997 standard for particulate matter less than 2.5 microns (PM<sub>2.5</sub>), unclassifiable for the 2012 standard for particulate matter less than 2.5 microns (PM<sub>2.5</sub>) and partial non-attainment area for sulfur dioxide (SO<sub>2</sub>).

### **Application Type/Permit Activity:**

- Initial Issuance
- Permit Revision
  - Administrative
  - Minor
  - Significant
- Permit Renewal

### **Compliance Summary:**

- Compliance certification signed
- Compliance schedule included
- Source is out of compliance
- Source is operating in compliance

## I. Source Information

1. **Plantwide Product/Process Description:** Caldwell Tanks Inc. processes steel plates, pipes and other tank components through the shot blast systems to remove rust and scale, then cuts the plates to desired dimensions and forms and fabricates the plates into various parts. The parts are processed through the surface coating operation for application of primer coatings. The parts are then shipped to the consumer's desired location where they are assembled on-site.
2. **Site Determination:** There are no other facilities that are contiguous or adjacent and under common control.
3. **Emission Unit Summary:**

Emission Unit	Equipment Description
U1	Shot blast booths
U2	Paint booths
U3	Non-halogenated solvent parts washers (insignificant activities)
U5	Plasma cutting tables
U7	Emergency generators (insignificant activities)

4. **Fugitive Sources:**
  - a. The bag houses that are integral to the shot blast booths vent indoors.
  - b. There are no vents associated with the parts washers. Evaporative losses from this equipment occur indoors.
  - c. The dust-collecting equipment used with the plasma cutters vents indoors.
5. **Permit Revisions:**

See table on next page

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Description
N/A	134-97-TV	28 Sep 2001	14 Jan 2001	Initial	Initial Permit Issuance
R1	134-97-TV (R1)	06 Dec 2002	N/A	Admin	Incorporate new performance indicator range for Unit U1, control device C5
R2	134-97-TV (R2)	18 Oct 2011	6 Sep 2011	Revision and renewal	Permit renewal; R.O. addition; For U2, add MACT, 40 CFR 63, Subpart Mmmm; for U1, incorporate CAM Plan
Initial	O-0034-16-V	dd MMM 2016	15 Oct 2016	Renewal	Renew permit 134-97-TV (R2), incorporate construction permits 30506-11-C, 36880-13-C, and two emergency generators as an IA emission unit

#### 6. Construction Permit History:

Permit No.	Issue Date	Description
30506-11-C	31 Mar 2011	One burn table with two plasma cutting-heads and associated equipment.
36880-13-C	03 May 2013	One burn table with a single plasma cutting-head and associated equipment.
N/A	Received 16 Apr 2012	Application for two emergency generators classified as insignificant activity (Application number 37803)

## 7. Permit Renewal Related Documents

Document Number	Date Received	Description
79064	03 Jun 2016	Permit renewal application
77686	08 Jun 2016	“Administratively complete” verification letter from APCD
79787	20 Sep 2016	Letter to Caldwell Tanks requesting additional information
79790	26 Sep 2016	‘Certificate of Existence’ transmittal, responsive to 20 Sep request for additional information
79789	27 Sep 2016	MSDS and related data responsive to 20 Sep request for additional information
79788	27 Sep 2016	Potential to Emit calculations and STAR Environmental Acceptability demonstration, responsive to 20 Sep request for additional information
79833	11 Oct 2016	Manufacturer’s certification for Cummins emergency generator engine, responsive to 20 Sep request for additional information

## 8. Emission Summary:

Pollutant	District Calculated Actual Emissions (tpy) 2015 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	0.74	No
NO <sub>x</sub>	3.06	No
SO <sub>2</sub>	0.07	No
PM <sub>10</sub>	0.83	Yes
VOC	13.6	Yes
Total HAPs	6.22	Yes
Single HAP > 1 tpy		
Xylene	4.11	Yes
MIBK	1.15	Yes

**9. Applicable Requirements:**

<input checked="" type="checkbox"/> PSD	<input checked="" type="checkbox"/> 40 CFR 60	<input checked="" type="checkbox"/> SIP	<input checked="" type="checkbox"/> 40 CFR 63
<input checked="" type="checkbox"/> NSR	<input type="checkbox"/> 40 CFR 61	<input checked="" type="checkbox"/> District-Origin	<input checked="" type="checkbox"/> Other

**10. Referenced MACT Federal Regulations:**

40 CFR 63, Subpart ZZZZ: *National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.*

40 CFR 63, Subpart MMMM: *National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products*

**11. Referenced non-MACT Federal Regulations:**

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

40 CFR 64: *Compliance Assurance Monitoring.*

**II. Regulatory Analysis**

1. **Acid Rain Requirements:** Caldwell Tanks is not subject to the Acid Rain program.
2. **Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone-depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. Caldwell Tanks does not manufacture, sell, or distribute any of the listed chemicals. Their use of the listed chemicals is that in fire extinguishers, chillers, air conditioners, and other HVAC equipment
3. **Prevention of Accidental Releases 112(r):** Caldwell Tanks does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, *Chemical Accident Prevention Provisions*, in a quantity in excess of the corresponding specified threshold amount.
4. **40 CFR Part 64 Applicability Determination:** Caldwell Tanks is subject to 40 CFR Part 64 - *Compliance Assurance Monitoring* since PM emissions from the abrasive blast equipment are greater than the major source threshold and control devices are required to achieve compliance with the emission standards
5. **Basis of Regulation Applicability**
  - a. **Plantwide**
    - i. Caldwell Tanks is a Title V major source for VOC, PM, PM<sub>10</sub>, Total

HAP, and Single HAP (xylene, ethylbenzene, trimethyl benzene, ethylene glycol monopropyl ether, and MIBK). Regulation 2.16 - Title V Operating Permits establishes requirements for major sources. Based on the plantwide PTE evaluation, Caldwell Tanks is a PSD major source for PM, PM<sub>10</sub>, and PM<sub>2.5</sub>.

- ii. Regulations 5.00 5.01, 5.20, 5.21, and 5.23 (STAR Program) establishes requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards. Caldwell Tanks submitted their TAC Environmental Acceptability Demonstration to the District on 2 February 2007, 31 March 2008, 9 August 2001, 19 March 2012, 23 June 2014, and 3 June 2016. Revisions were made to the latest submission based on revised TAC concentrations in mild and stainless steel, as provided by Caldwell to APCD on 27 September 2016. SCREEN3 air dispersion modeling was performed for each emission unit that has non-*de minimis* TAC emissions. Based on this revised analysis, several TACs were shown to be non-compliant with STAR goals. Appropriate emission limits were set for non-compliant TACs to ensure that the carcinogen and non-carcinogen risk values comply with the STAR EA goals established in Regulation 5.21.

STAR Environmental Acceptability Compliance, Controlled Emissions																	
		Reg 5.21, §3.1.1														§3.1.2	
		E1		E2		E3		E4 & E5		E11		E14		Goal		All Eqpt total	
		R <sub>c</sub>	HQ	R <sub>c</sub>	HQ	R <sub>c</sub>	HQ	R <sub>c</sub>	HQ	R <sub>c</sub>	HQ	R <sub>c</sub>	HQ	R <sub>c</sub>	HQ	R <sub>c</sub> /HQ	Goal
Industrial	Manganese	---	0.27	---	0.05	---	1.14			---	0.47	---	0.00	10	3	1.93	10
	Nickel	.60	0.16	0.11	0.03	2.50	0.68			1.03	0.28	0.26	0.07			1.22	
	Chromium+3	---	0.01	---	0.00	---	0.02			---	0.00	---	0.01	0.04			
	Chromium+6									4.71	0.05	0.22	0.00	0.05			
	Xylene							0.24						0.24			
	New and existing (§3.1.3)															4.72	75
New (§3.1.4)															1.51	38	
Non-Industrial	Manganese	---	0.04	---	0.01	---	0.17			---	0.03	---	0.00	1	1	0.25	1
	Nickel	0.09	0.02	0.02	0.00	0.38	0.10			0.07	0.02	0.02	0.00			0.14	
	Chromium+3	---	0.00	---	0.00	---	0.00			---	0.00	---	0.00	0.00			
	Chromium+6									.33	0	0.02	0.00	0.00			
	Xylene							0.22						0.22			
	New and existing (§3.1.3)															0.60	7.5
New (§3.1.4)															0.11	3.8	

STAR Environmental Acceptability Compliance, Uncontrolled Emissions																		
		Reg 5.21, §3.1.1														§3.1.2		
		E1		E2		E3		E4 & E5		E11		E14		Goal		All Eqpt total		
		R <sub>c</sub>	HQ	R <sub>c</sub>	HQ	R <sub>c</sub>	HQ	R <sub>c</sub>	HQ	R <sub>c</sub>	HQ	R <sub>c</sub>	HQ	R <sub>c</sub>	HQ	R <sub>c</sub>	HQ	Goal
Industrial	Manganese	---	3.00	---	0.97	---				---	1.00	---	0.14	10	3	5.11		10
	Nickel	6.58	1.79	2.12	0.58	6.58				2.18	0.59	10.00	2.71			5.67		
	Chromium +3	---	0.00	---	0.00	---				---	0.00	---	0.10	0.10		0.19		
	Chromium +6									10.00	0.10	8.32	0.09	0.24				
	Xylene								0.24					0.24				
	New and existing (§3.1.3)															35.78		75
	New (§3.1.4)															20.50		38
Non-Industrial	Manganese	---	0.45	---	0.15	---				---	0.07	---	0.01	1	1	0.68		1
	Nickel	0.99	0.27	0.32	0.09	0.99				0.15	0.04	0.70	0.19			0.59		
	Chromium +3	---	0.01	---	0.00	---				---	0.00	---	0.02	0.03				
	Chromium +6									0.70	0.01	0.58	0.01	0.02				
	Xylene								0.22					0.22				
	New and existing (§3.1.3)															3.73		7.5
	New (§3.1.4)															1.43		3.8

- iii. Regulation 2.16, section 4.1.9.1, 4.1.9.2, 4.1.9.3, and 4.3.1 requires monitoring, record keeping, and testing to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the District upon request.
- iv. Regulation 2.16, section 4.3.5, requires stationary sources for which a Title V permit is issued shall submit an annual compliance certification by April 15 of the following calendar year. In addition, as required by Regulation 2.16, section 4.1.9.3, the source shall submit compliance reports at least every six months to show compliance with the permit. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.16, section 3.5.11.

**b. Emission Unit U1 – Abrasive Blast Equipment**

**i. Equipment:**

<b>Emission Point</b>	<b>Description</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
E1	<p>Process name: Wheelabrator                      One (1) Wheelabrator blast booth, make Wheelabrator, serial # A-122157, capacity 198,000 lb/hr internal circulation rate, equipped with an air wash separator and a storage tank/hopper. Installed 1968</p>	<p>STAR, 6.09                      40 CFR 64</p>	<p>STAR regulations 5.00, 5.01, 5.20, 5.21, 5.22, and 5.23 establish the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1 and 2 TACs which potentially could exceed the <i>de minimis</i> values.</p>
E2	<p>Process name: Blast House                      One (1) shot blast booth, make Clemco, serial# 133231, capacity 825 lb/hr, equipped with a Clemco screened air wash abrasive cleaner and a storage tank/hopper. Installed 1969</p>	<p>STAR, 7.08                      40 CFR 64</p>	<p>Regulation 6.09 establishes opacity and PM emission rate standards for equipment constructed before September 1976 and not regulated by other Chapter 6 regulations.</p> <p>Regulation 7.08 establishes opacity and PM emission rate standards for equipment constructed after September 1976 and not regulated by other Chapter 7 regulations.</p>
E3	<p>Process name: Pipeabrator                      US Filter/BCP, serial # A4-8279, capacity 132,000 lb/hr internal circulation rate, equipped with an air wash separator and a storage tank/hopper. installed 1998</p>	<p>STAR, 7.08                      40 CFR 64</p>	<p>40 CFR 64 establishes compliance assurance monitoring requirements for each unit that has emissions greater than major source threshold and control devices are required to achieve compliance with standards.</p>

**ii. Standards/Operating Limits****(1) Opacity**

- (a) Regulation 6.09, section 3.2 establishes opacity standards for existing equipment.

**(2) PM**

- (a) The emission limit for each affected piece of equipment is set by the equations set forth with Table 1 of the regulation.

- (i) For E1, the process rate is 198,000 lb/hr (99 tons per hour) and the allowable emission rate is given by the equation that establishes Table 1 of regulation 6.09:

$$E = 55(99)^{0.11} - 40 = 51.2(\text{lb/hr})$$

- (ii) For E2, the process rate is 825 lb/hr and the allowable emission rate is given by the rule in Table 1 of Regulation 7.08, which states that for process rates less than 1000 lb/hr the allowable emission rate is 2.34 lb/hr.

- (iii) For E3, the process rate is 132,000 lb/hr (66 tons per hour) and the allowable emission rate is given by the equation that establishes Table 1 of regulation 7.08:

$$E = 17.31(66)^{0.16} = 33.8(\text{lb/hr})$$

- (b) The Federal CAM regulation is applicable to sources that: are subject to an emission limit, use a control device to meet this limit, and can exceed the major-source threshold without use of this control.

**(3) Toxic Air Contaminants**

- (a) SCREEN3 air dispersion modeling was performed for each emission unit that has non-*de minimis* TAC emissions. It was demonstrated that the carcinogen risk and non-carcinogen risk values, calculated using the District-approved PTE for each unit and the SCREEN3 model results from the source's EA Demonstration, comply with the STAR EA goals established in Regulation 5.21.

c. **Emission Unit U2 – Paint Spray Booths**

i. **Equipment:**

Emission Point	Description	Applicable Regulation	Basis for Applicability
E4	Custom-made paint booth, designated as South Paint Booth #1. Installed 1975,; 19,900 cfm exhaust	STAR, 5.02, 6.09, 6.31, 40CFR63, Subpart MMMM	<p>STAR regulations 5.00, 5.01, 5.20, 5.21, 5.22, and 5.23 establish the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1and 2 TACs which potentially could exceed the <i>de minimis</i> values.</p> <p>Regulation 5.02 incorporates 40 CFR 63, subpart MMMM by reference and serves to authorize APCD as the ‘Administrator’ referred to in this regulation.</p> <p>Regulation 6.09 establishes opacity and PM emission rate standards for equipment constructed before September 1976 and not regulated by other Chapter 6 PM regulations.</p>
E5	Custom-made paint booth, designated as North Paint Booth #2. Installed 1975, 19,900 cfm exhaust		<p>Regulation 6.31 establishes VOC emission standards and requirements for facilities that coat (paint) miscellaneous metal surface and were constructed before May 1981.</p> <p>40 CFR 63, subpart MMMM establishes national emission standards for hazardous air pollutants for miscellaneous metal parts and products surface coating facilities. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations.</p>

**ii. Standards/Operating Limits****(1) Hazardous Air Pollutant**

- (a) The NESHAP regulation (40 CFR 63, Subpart M) sets forth HAP emission standards for a source that is part of a major source of HAP that uses more than 250 gallons per year of coating material.

**(2) Opacity**

- (a) Regulation 6.09, section 3.2 establishes opacity standards for existing equipment.

**(3) Particulate Matter**

- (a) For each emission point E4 and E5 the process rate is less than 1000 lb/hr. The allowable emission rate is given by the rule in Table 1 of Regulation 6.09, which states that for process rates less than 1000 lb/hr the allowable emission rate is 2.58 lb/hr.

**(4) Toxic Air Contaminants**

- (a) SCREEN3 air dispersion modeling was performed for each emission unit that has non-*de minimis* TAC emissions. It was demonstrated that the non-carcinogen risk values, calculated using the District-approved PTE for each unit and the SCREEN3 model results from the source's EA Demonstration, comply with the STAR EA goals established in Regulation 5.21. None of the TACs emitted from E4 and E5 have carcinogenic BACs.

**(5) VOC**

- (a) Limits on the VOC content of coating materials are set forth in Regulation 6.31 for facilities constructed before May 1981.

**iii. Monitoring and Recordkeeping**

- (1) Specific monitoring and recordkeeping requirements to assure compliance with the HAP emission standards are set forth in 40 CFR 63, Subpart M.

iv. **Reporting**

- (1) Specific reporting requirements to demonstrate compliance with the HAP emission standards are set forth in 40 CFR 63, Subpart Mmmm.

d. **Emission Unit U3 – Non-halogenated cold solvent parts washer**i. **Equipment**

<b>Emission Point</b>	<b>Description</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
E6	Non-halogenated cold solvent metal parts washer with secondary reservoir, make Selig, rated capacity 30 gallon. Installed 1998 (Insignificant activity)	STAR, <sup>1,2</sup> 6.18	STAR regulations 5.00, 5.01, 5.20, 5.21, 5.22, and 5.23 establish the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1 and 2 TACs which potentially could exceed the <i>de minimis</i> values.  Regulation 6.18 establishes VOC emission standards and equipment requirements for solvent-based cold cleaners regardless of the date of construction.
E7	Non-halogenated cold solvent metal parts washer with secondary reservoir, make Selig, rated capacity 30 gallon. Installed 1998 (Insignificant activity)		

ii. **Standards**(1) **VOC**

- (a) Standards for all solvent-based metal cleaning equipment are set by Regulation 6.18, section 4.
- (b) The PTE for this equipment is less than 5 tons. Under Regulation 2.16, section 1.23.1.2, this allows this equipment to be classified as an insignificant activity.

1 The STAR regulations comprise APCD regulations 5.00, 5.01, 5.20, 5.21, 5.22, and 5.23.

2 The equipment in this emission unit is *de minimis* for STAR by definition per Regulation 5.21, section 2.3.

e. **Emission Unit U5 – Plasma Cutters**

<b>Emission Point</b>	<b>Description</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
E11	“Big Messer”: Messer Cutting Systems, model 4514, incorporating: Two Hypertherm Hyperformance Plasma HPR400XD plasma cutters, cutting table, slagger table. (Installed 2011) [From permit 30506-11-C]	STAR, 2.04, 2.05, 7.08	STAR regulations 5.00, 5.01, 5.20, 5.21, 5.22, and 5.23 establish the requirements for Environmental Acceptability for TACs. The source is a Group I company with Category 1 and 2 TACs which potentially could exceed the <i>de minimis</i> values.
E14	“Little Messer”: Messer Cutting Systems, model 5815, incorporating: 1 Hypertherm Hyperformance Plasma HPR400XD plasma cutters, cutting table, slagger table. (installed 2013) [From Permit 36880-13-C]	STAR, 7.08	Regulations 2.04 and 2.05 apply to emission unit E11, whose potential PM, and PM <sub>10</sub> emissions exceed the corresponding significant-increase thresholds for new construction set forth in those regulations.  Regulation 7.08 establishes opacity and PM emission rate standards for equipment constructed after September 1976 and not regulated by other Chapter 7 regulations.

i. **Standards**

(1) **NO<sub>x</sub>**

- (a) Regulation 7.08 establishes allowable exhaust concentrations for the emissions of NO<sub>x</sub>, for equipment with a construction date after September 1976.

(2) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes opacity standards for for equipment with a construction date after September 1976.

(3) **PM**

- (a) For each emission point E11 and E14 the process rate is less than 1000 lb/hr. The allowable emission rate is given by the rule in Table 1 of Regulation 6.09, which states that for process rates less than 1000 lb/hr the allowable emission rate is 2.58 lb/hr.
- (b) Annual emission limits for PM and PM<sub>10</sub> at E11 are set so the source may avoid PSD/NSR regulation under 2.04 and 2.05.

(4) **TAC**

- (a) SCREEN3 air dispersion modeling was performed for each emission unit that has non-*de minimis* TAC emissions. It was demonstrated that the carcinogen risk and non-carcinogen risk values, calculated using the District-approved PTE for each unit and the SCREEN3 model results from the source's EA Demonstration, comply with the STAR EA goals established in Regulation 5.21.

f. **Emission Unit U7 – Emergency Generators**

i. **Equipment**

Emission Point	Description	Applicable Regulation	Basis for Applicability
I5a	Caterpillar 3360B-DI, 250 kW Diesel engine for emergency generator. 10.45 L, 6 cylinder, 4 stroke. Manufactured 1999, installed 2009 (Insignificant Activity)	STAR, 5.02, 40 CFR 63, subpart ZZZZ	<p>STAR regulations 5.00, 5.01, 5.20, 5.21, 5.22, and 5.23 establish the requirements for Environmental Acceptability for TACs.</p> <p>Regulation 5.02 incorporates 40 CFR 63, subpart ZZZZ by reference and serves to authorize APCD as the ‘Administrator’ referred to in this regulation.</p> <p>Regulation 7.02 incorporates 40 CFR 60, subpart III by reference and serves to authorize APCD as the ‘Administrator’ referred to in this regulation.</p> <p>40 CFR 63, subpart ZZZZ establishes national emission standards for hazardous air pollutants emitted from stationary reciprocating internal combustion engines.</p>
	Cummins DQDAA-6380778 250 kW Diesel engine for emergency generator. 8.9 liter, 6 cylinder, 4 stroke. Manufactured and installed 2011. (Insignificant Activity)	STAR, 5.02, 7.02, 40 CFR 60, subpart III; 40 CFR 63, subpart ZZZZ	<p>This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations</p> <p>40 CFR 60, subpart III establishes performance standards for new stationary compression ignition internal combustion engines.</p>
I5c	500 gallon Diesel fuel storage tank for Cummins engine. (Insignificant Activity)	7.12	Regulation 7.12 establishes construction and monitoring requirements for vessels with a capacity >250 gallons used for the storage on VOCs and constructed after April 1972.

**ii. Standards****(1) Unit Operation**

- (a) Federal New Source Performance Standard 40 CFR 60, Subpart III sets forth requirements for manufacturers and operators of reciprocating engines

**(2) HAP**

- (a) Federal NESHAP 40 CFR 63, Subpart ZZZZ specifies the allowable emissions of HAPs from covered engines. For engines of the size in this permit, this regulation states that meeting the NSPS requirements of 40 CFR 60, Subpart III will assure compliance with these HAP requirements.

**(3) TAC**

- (a) TAC emissions from emergency engines are defined to be *de minimis* in Regulation 5.21.

**(4) VOC**

- (a) Emissions from VOC storage tanks greater than 250 gallons are regulated under Regulation 7.12. If the vapor pressure of the stored fluid is less than 1.5 mmHg, there are no applicable standards.

**iii. Monitoring and Recordkeeping****(1) Unit Operation**

- (a) Specific monitoring and recordkeeping requirements are set forth in 40 CFR 60, Subpart III.

**(2) HAP**

- (a) 40 CFR 63, Subpart ZZZZ specifies that the HAP monitoring and recordkeeping requirements are met by meeting the requirements of 40 CFR 60, Subpart III.

**iv. Reporting**

- (1) Specific reporting requirements are set forth in 40 CFR 60, Subpart III.
- (2) 40 CFR 63, Subpart ZZZZ specifies that the HAP monitoring and recordkeeping requirements are met by meeting the requirements of 40 CFR 60, Subpart III.

### III. Other Requirements

1. **Temporary Sources:** The source did not request to operate any temporary facilities.
2. **Short Term Activities:** The source did not report any short term activities.
3. **Emissions Trading:** N/A
4. **Operational Flexibility:** The company requested an alternative operating scenario for emission unit U1. Emission unit U1, consisting of emission point E1, E2, and E3, normally operates with the baghouses vented inside the building. Under the alternative operating scenario, the owner or operator is allowed to vent the baghouses to the outdoors and the emission points are designated as E1A, E2A, and E3A respectively. The additional conditions needed to demonstrate compliance with this alternative are listed with the emission unit.
5. **Compliance History:** There is no history of non-compliance with any terms of existing permits.
6. **Calculation Methodology or Other Approved Method:**

- a. In general, emissions are calculated by multiplying the process throughput or hours of operation by the emission factor and by the control efficiency of any control device. For example:

$$E_x = \left( \text{throughput} \frac{\text{lb}}{\text{hr}} \right) \cdot \left( \text{Emission factor} \frac{\text{lb emission}}{\text{lb throughput}} \right) \cdot (1 - \text{control efficiency})$$

Alternatively, the mass balance method considers the total throughput and the fraction of that throughput that is made up by the pollutant under consideration. For example:

$$E_x = \left( \text{throughput} \frac{\text{gal}}{\text{yr}} \right) \cdot (\text{pollutant percentage}) \cdot (1 - \text{control efficiency})$$

- b. Blast booths – Calculate PM emissions using the emission factors from approved stack tests. HAP and TAC emissions shall be based on the SDS of the blasting materials and substrates and scaled from the calculated PM emissions.
- c. Paint booths – Mass balance method to determine criteria pollutants and HAP emissions, based on coating material usage and pollutant content according to the SDS of the materials used.
- d. Parts Washers – Mass balance based on product usage and VOC content as published in the solvent's SDS.

- e. Plasma Cutters – Calculate PM emissions using the emission factors from approved stack tests. HAP and TAC emissions shall be based on the SDS of the raw materials and scaled from the calculated PM emissions.
- f. Emergency Generators – Criteria pollutants and HAP emissions based on total volume of Diesel fuel combusted and emission factors certified in the manufacturer’s specification for I5a, the EPA maximum allowable emission specification for I5b, and TANKs or other approved emission estimation for I5c.

Emission Source		Description	Pollutant	Emission factor	Source	Control Effic.	Note (a)
Unit	Point						
U1	E1	Wheelabrator	PM	35.54 lb/hr	Stack test	99.2%	1
			PM <sub>10</sub>	PM/2	AP42-13.2.6	95%	2
			PM <sub>2.5</sub>	PM <sub>10</sub> /10	AP42-13.2.6	95%	2
			Cr	0.1% *PM	Company data, note b.	---	---
			Mn	1.2% *PM			
	Ni	0.2% *PM					
	E2	Clemco Shot Blast Booth	PM	1.14 lb/hr	AP42-13.2.6, note d.	95%	2
			PM <sub>10</sub>	PM/2	AP42-13.2.6	95%	2
			PM <sub>2.5</sub>	PM <sub>10</sub> /10	AP42-13.2.6	95%	2
			Cr	0.1% *PM	Company data, note b.	---	---
			Mn	1.2% *PM			
	Ni	0.2% *PM					
	E3	Pipeabrator	PM	149 lb/hr	Stack test	99.2%	1
			PM <sub>10</sub>	PM/2	AP42-13.2.6	95%	2
			PM <sub>2.5</sub>	PM <sub>10</sub> /10	AP42-13.2.6	95%	2
Cr <sup>+3</sup>			0.1% *PM	Company data, note b.	---	---	
Mn			1.2% *PM				
Ni	0.2% *PM						
U2	E4	South paint booth	VOC TAC	Mass balance method	---	---	
			PM HAP	Mass balance method	95%	2	
	E5	North paint booth	VOC TAC	Mass balance method	---	---	
			PM HAP	Mass balance method	95%	2	
U3	E6	Non-halogenated cold-solvent parts washer	VOC	Mass balance method	---	---	
	E7				---	---	

Emission Source		Description	Pollutant	Emission factor	Source	Control Effic.	Note (a)		
Unit	Point								
U5	E11	Plasma cutter, Messer 4514	PM	22.7 lb/hr	Note c.	99.1%	3		
			PM <sub>10</sub>	PM/2		99.1%			
			PM <sub>2.5</sub>	PM <sub>10</sub> /10		92.5%			
						Cr <sup>+3</sup>	0.1%*PM	Company data: note b.	
						Cr <sup>+6</sup>	0.02%*PM		
						Mn	1.2%*PM		
						Ni	0.2%*PM		
	E14	Plasma cutter, Messer 5815	PM	5.3 lb/hr	Note c.	99.1%	3		
			PM <sub>10</sub>	PM/2		99.1%			
			PM <sub>2.5</sub>	PM <sub>10</sub> /10		92.5%			
						Cr <sup>+3</sup>	19%*PM	Company data: note b.	
						Cr <sup>+6</sup>	0.2%*PM		
					Mn	2.0%*PM			
			Ni	11.%*PM					
U7	I5	Caterpillar 3360B-DI emergency generator engine	NO <sub>x</sub>	3.14 g/HP•hr	Manufacturer's spec				
			CO	0.68 g/HP•hr					
			Hydro carbon	0.17 g/HP•hr					
			PM	0.16 g/HP•hr					
	I5a	Cummins DQDAA emergency generator engine	NMHC +NO <sub>x</sub>	2.98 g/HP•hr	EPA spec: 40 CFR 89.112				
			CO	2.6 g/HP•hr					
			PM	0.15 g/HP•hr					

**Notes:**

- a. Control efficiency determination options:
  1. On-site stack test, 29 March 2011
  2. APCD default control efficiency
  3. Manufacturer's test data, 2003. Updated data required within six months.
- b. EF based on the base emission factor and the TAC content of the raw materials.
- c. EF based on *Emission of Fume, Nitrogen Oxides and Noise in Plasma Cutting of Stainless and Mild Steel* by Bromsen et. al.
- d. AP42 emission factor for sand in an enclosed booth, controlled, is 0.69 lb/(1000 lb). Emissions using steel shot are 10% of sand emissions, from the same source. AP42 control efficiency is assumed to be 95% since no other value is given. Therefore, the uncontrolled emission factor, in an enclosed booth, uncontrolled is:

$$\frac{\left(\frac{0.69 \text{ lb}}{1000 \text{ lb}}\right)(10\%)}{(1-95\%)} = \frac{1.38 \text{ lb}}{(1000 \text{ lb})}$$

## 7. Insignificant Activities

Equipment	Number	PTE (t/yr)	Basis for Exemption
Used oil aboveground storage tank, 250 gal	1	VOC: 0.01	Regulation 1.02, Appendix A, paragraph 3.9.2
Small space heaters and make-up air units, natural gas fired, capacity ranged 0.05-0.395 MMBtu/hr	117	NO <sub>x</sub> : 0.11 CO: 0.05 each	Regulation 1.02, Appendix A, paragraph 1.1
Research and development activities with potential emissions less than 5 tpy	1	0	Regulation 1.02, Appendix A, paragraph 3.27
Closed system solvent distillation unit, make Finish Thompson, model LS-15D	1	0	Regulation 1.02, section 1.38.1.2
VOC storage vessel, capacity 15 gal	1	VOC: 0.01	Regulation 1.02, Appendix A, paragraph 3.24
Internal combustion engines, fixed or mobile	5	NO <sub>x</sub> : 4.7 CO: 1.0 PM <sub>10</sub> : 0.3 VOC: 0.4 each	Regulation 1.02, Appendix A, paragraph 2
Separate and mostly mobile stations for performing welding, cutting, and gouging	54	PM <sub>10</sub> : 1.7	Regulation 1.02, Appendix A, paragraph 3.4
Wood-working operation	1	PM: 0.35	Regulation 1.02, Appendix A, paragraph 3.5
Nitrogen and Oxygen storage tanks	402	0	Regulation 1.02, Appendix A, paragraph 3.26
Paint and solvent storage containers, each less than 250 gallons	500	VOC: 1.3	Regulation 1.02, Appendix A, paragraph 3.24
Portable cylinders of inflammable gases	200	VOC: 0.01	Regulation 1.02, Appendix A, paragraph 3.26
Plate seamer using submerged arc welding	1	PM: 0.1	Regulation 1.02, section 1.38.1.2
Waste storage containers, 55-gallon drums	20	VOC: 0.01	Not regulated

Equipment	Number	PTE (t/yr)	Basis for Exemption
Non-halogenated cold solvent parts washers, Selig, 30 gallon, with secondary reservoir (listed as E6 and E7 in emission unit U3)	2	VOC: 0.02	Regulation 1.02, Appendix A, paragraph 3.22
Direct-fired natural gas roof unit at North Paint Area, make Hartzell, model GR181, with a rated capacity of 1.95 MMBtu/hr. Installed 1968	1	NO <sub>x</sub> : 0.20 CO: 0.17	Regulation 1.02, section 1.38.1.2
Direct-fired natural gas roof unit at Balcony Area, make Hartzell, model GC402, with a rated capacity of 4.0 MMBtu/hr. Installed 1971	1	NO <sub>x</sub> : 0.41 CO: 0.35	Regulation 1.02, section 1.38.1.2
Direct-fired natural gas ground units, with a rated capacity of 3.5 MMBtu/hr for each. Installed 2002	4	NO <sub>x</sub> : 1.44 CO: 1.21	Regulation 1.02, section 1.38.1.2
Caterpillar 3360B-DI, 250 kW Diesel engine for emergency generator. 10.45 L, 6 cylinder, 4 stroke. Manufactured 1999, installed 2009 (listed as I5a in emission unit U7)	1	NO <sub>x</sub> : 2.89 CO: 0.62 PM <sub>10</sub> : 0.20	Regulation 1.02, section 1.38.1.2
Cummins DQDAA-6380778 250 kW Diesel engine for emergency generator. 8.9 liter, 6 cylinder, 4 stroke. Manufactured and installed 2011. (listed as I5b in emission unit U7)	1	NO <sub>x</sub> : 2.69 CO: 0.58 PM <sub>10</sub> : 0.19	Regulation 1.02, section 1.38.1.2
200 gallon Diesel fuel storage tank for Caterpillar engine	1	VOC: 0.01	Regulation 1.02, Appendix A, paragraph 3.25
500 gallon Diesel fuel storage tank for Cummins engine (listed as I5c in emission unit U7)	1	VOC: 0.01	Regulation 1.02, Appendix A, paragraph 3.25

- 1) Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements pursuant to Regulation 2.16 section 3.5.4.1.4.
- 2) Insignificant activities identified in District Regulation 1.02, Appendix A shall comply with generally applicable requirements as required by Regulation 2.16 section 4.1.9.4.

- 3) The Insignificant Activities Table is correct as of the date the permit was proposed for review by U.S. EPA, Region 4.
- 4) The owner or operator shall submit an updated list of insignificant activities that occurred during the preceding year pursuant to Regulation 2.16 section 4.3.5.3.6.
- 5) The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) to be reported on the annual emission inventory.
- 6) The District has determined pursuant to Regulation 2.16 section 4.1.9.4 that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.