Statement of Basis

Permit to Construct No. P-2014.0039
Project ID 61678

OrePac Building Products
Boise, Idaho

Facility ID 001-00302

Final

July 12, 2016
Tom Burnham
Permit Writer

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

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FACILITY INFORMATION

Description

OrePac Building Products (OrePac) proposes to modify their Air Quality Permit to Construct (PTC) for its door, doorframe, and trim coating facility at 5500 South Federal Way in Boise, Idaho. It is currently operating as a synthetic minor source under PTC P-2014.0039. Changes in coating formulations have prompted this application. Existing emission sources at the facility include one natural gas-fired make-up air unit, three natural gas roof top unitheaters, three natural gas unit heaters, four paint booths, and one infrared curing oven.

Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

September 22, 2015	Initial PTC 2014.0039 (S)

Application Scope

This PTC is a revision of an existing PTC. The applicant is requesting a revise to the daily usage of paint.

Application Chronology

March 17, 2016	DEQ received an application and an application fee.
April 4, 2016	DEQ determined that the application was complete.
April 20, 2016	DEQ received supplemental information from the applicant.
May 28, 2016	DEQ made available the draft permit and statement of basis for peer and regional office review.
June 2, 2016	DEQ made available the draft permit and statement of basis for applicant review.
June 21, 2016	DEQ received the permit processing fee.
July 12, 2016	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Emissions units and controls have not changed for this permitting action. To see a table of emissions units and controls see September 22, 2015 Statement of Basis.

Emissions Inventories

Potential to Emit

IDAPA 58.01.01 defines Potential to Emit as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Using this definition of Potential to Emit an emission inventory was developed for the door, door-frame, and trim coating operation which consists of one make-up air unit, three roof-top unit heaters, three unit heaters, four paint booths, and one infrared drying oven. Emissions estimates of criteria pollutant, TAP, HAP, and PTE were based on emission factors from AP-42, operation of 8,760 hours per year, and process information specific to the facility for this proposed project.

Uncontrolled Potential to Emit

Using the definition of Potential to Emit, uncontrolled Potential to Emit is then defined as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. To determine facility classification only, any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall **not** be treated as part of its design **since,** in the context of uncontrolled PTE, the limitation or the effect it would have on emissions **is not** state or federally enforceable.

The uncontrolled Potential to Emit is used to determine if a facility is a "Synthetic Minor" source of emissions. Synthetic Minor sources are facilities that have an uncontrolled Potential to Emit for regulated air pollutants or HAP above the applicable Major Source threshold without permit limits.

The following table presents the uncontrolled Potential to Emit for regulated air pollutants as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit. For this door, door-frame, and trim coating facility, for one make-up air unit, three roof-top unit heaters, and three unit heaters, the uncontrolled Potential to Emit is based upon a worst-case (maximum operation) for operation of the facility of 8,760 hr/yr utilizing the highest polluting mix of paint, namely Example Mix 3 for VOC. For the paint room, the uncontrolled Potential to Emit is based upon a worst-case (maximum operation) for operation of the facility of 8,760 hr/yr. In addition, the paint booth filter control efficiency is 99.43%. With a control efficiency of 99.43 for the filters of the paint booths, PM is reduced from an uncontrolled value of 21.13 T/yr to a controlled value of 0.12 T/yr.

Table 1 UNCONTROLLED POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

	$PM_{2.5}$	PM_{10}	SO_2	NOx	CO	VOC	CO_2e
Emissions Unit	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr
Point Sources							
MAU1	0.17	0.17	0.013	2.20	1.85	0.12	2,627
RTU and UH	0.02	0.02	0.001	0.20	0.09	0.01	260
Paint Rooms	21.13	21.13	0	0.00	0.00	37.36	---
Total, Point Sources	**21.32**	**21.32**	**0.014**	**2.40**	**1.94**	**37.49**	**2,887**

The following table presents the uncontrolled Potential to Emit for HAP pollutants as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit. For this door, doorframe, and trim coating facility, for one make-up air unit, three roof-top units, and three unit heaters, the uncontrolled Potential to Emit is based upon a worst-case (maximum operation) for operation of the facility of 8,760 hr/yr. For the paint room, the uncontrolled Potential to Emit is based upon a worst-case (maximum operation) for operation of the facility of 8,760 hr/yr.

Table 2 UNCONTROLLED POTENTIAL TO EMIT FOR HAZARDOUS AIR POLLUTANTS

Hazardous Air Pollutants	PTE EXAMPLE MIX 1 (T/yr)	PTE EXAMPLE MIX 3 (T/yr)	PTE EXAMPLE MIX 3 (T/yr)
Arsenic	4.84E-06	4.84E-06	4.84E-06
Benzene	5.08E-05	5.08E-05	5.08E-05
Beryllium	2.90E-07	2.90E-07	2.90E-07
Cadmium	2.66E-05	2.66E-05	2.66E-05
Chromium	0.00	0.00	0.00
Cobalt	2.03E-06	2.03E-06	2.03E-06

Cobalt 2-Ethylhexanoate	0.03	0.04	0.05
Cumene	0.02	0.02	0.02
Dichlorobenzene	2.90E-05	2.90E-05	2.90E-05
Ethylbenzene	0.32	0.43	0.46
Formaldehyde	0.00	0.00	0.00
Hexane	0.04	0.04	0.04
Lead	1.21E-05	1.21E-05	1.21E-05
Manganese	9.19E-06	9.19E-06	9.19E-06
Mercury	6.29E-06	6.29E-06	6.29E-06
Methyl Isobutyl Ketone	0.03	0.03	0.06
Methyl Methacrylate	0.10	0.10	0.17
o-Cresol	0.01	0.01	0.01
Naphthalene	1.48E-05	1.48E-05	1.48E-05
Nickel	5.08E-05	5.08E-05	5.08E-05
Polycyclic Organic Matter	2.76E-07	2.76E-07	2.76E-07
Selenium	5.81E-07	5.81E-07	5.81E-07
Toluene	1.53	1.53	2.60
Triethylamine	0.06	0.05	0.05
Xylene	1.82E+00	2.44E+00	2.63E+00
TOTAL =	**3.96**	**4.69**	**6.10**

Pre-Project Potential to Emit

This is an existing facility. Pre-project Potential to Emit is taken from the previous September 22, 2015 Statement of Basis for all criteria pollutants.

Table 3 PRE PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANT

	$PM_{2.5}$	PM_{10}	SO_2	NOx	CO	VOC	CO_2e
Source	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr
Point Sources							
MAU1	0.17	0.17	0.013	2.20	1.85	0.12	2,627
RTU and UH	0.02	0.02	0.001	0.20	0.09	0.01	260
Paint Room	20.67	20.67	0	0.00	0.00	94.36	0.00
Total, Point Sources	**20.86**	**20.86**	**0.014**	**2.40**	**1.94**	**94.49**	**2,887**

Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Post Project Potential to Emit

Post project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility's classification as a result of this project. Post project Potential to Emit includes all permit limits resulting from this project.

The following table presents the post project Potential to Emit for criteria and GHG pollutants from all emissions units at the facility as determined by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 4 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANT

	$PM_{2.5}$	PM_{10}	SO_2	NOx	CO	VOC	CO_2e
Emissions Unit	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr
Point Sources							
MAU1	0.17	0.17	0.013	2.20	1.85	0.12	2,627
RTU and UH	0.02	0.02	0.001	0.20	0.09	0.01	260
Paint Rooms	21.13	21.13	0	0.00	0.00	37.36	---
Total, Point Sources	**21.32**	**21.32**	**0.014**	**2.40**	**1.94**	**37.49**	**2,887**

a) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Change in Potential to Emit

The change in facility-wide potential to emit is used to determine if a public comment period may be required and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

Table 5 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

	$PM_{2.5}$	PM_{10}	SO_2	NOx	CO	VOC	CO_2e
Source	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr
Point Sources							
Pre-Project Potential to Emit	20.86	20.86	0.014	2.40	1.94	94.49	2,887
Post-Project Potential to Emit	21.32	21.32	0.014	2.40	1.94	37.49	2,887
	0.46	**0.46**	**0**	**0**	**0**	**-57.0**	**0**

Non-Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of non-carcinogenic toxic air pollutants (TAP) for example mixes is shown in Appendix A.

None of the PTEs for non-carcinogenic TAP were exceeded as a result of this project. Therefore, modeling is not required for any non-carcinogenic TAP because none of the 24-hour average non-carcinogenic screening ELs identified in IDAPA 58.01.01.585 were exceeded.

Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of carcinogenic toxic air pollutants (TAP) for example mixes is shown in Appendix A.

None of the PTEs for carcinogenic TAP were exceeded as a result of this project. Therefore, modeling is not required for any carcinogenic TAP because none of the annual average carcinogenic screening ELs identified in IDAPA 58.01.01.586 were exceeded.

Post Project HAP Emissions

Table 2 above presents the uncontrolled HAPs and the post project controlled HAP emissions are slightly reduced due to a small number of solid HAPs that are filtered. Appendix A shows post project HAP pollutants from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff.

Ambient Air Quality Impact Analyses

DEQ's modeling guidance includes that if criteria air pollutant emissions are below regulatory concern (less than 10% of what is defined as significant) then modeling of those pollutants is not required. Since no other criteria pollutant exceeds 10% of what is defined as significant modeling is not required for criteria pollutant. Solids limits in permit condition 2.6 protect the BRC modelling threshold.

Additionally, permit conditions 2.3 and 2.4 regulate TAPs such that if any of the EL are exceeded, modeling will be required to meet the ambient air concentrations. If any Emission Levels are exceeded in daily monitoring, Permit condition 2.13 requires the owner/operator to perform modeling and submit it to the department on an annual basis.

REGULATORY ANALYSIS

Facility Classification

The AIRS/AFS facility classification codes are as follows:

For THAPs (Total Hazardous Air Pollutants) Only:

A = Use when any one HAP has actual or potential emissions ≥ 10 T/yr or if the aggregate of all HAPS (Total HAPs) has actual or potential emissions ≥ 25 T/yr.

SM80 = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the permit sets limits ≥ 8 T/yr of a single HAP or ≥ 20 T/yr of THAP.

SM = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the potential HAP emissions are limited to < 8 T/yr of a single HAP and/or < 20 T/yr of THAP.

B = Use when the potential to emit without permit restrictions is below the 10 and 25 T/yr major source threshold

UNK = Class is unknown

For All Other Pollutants:

A = Actual or potential emissions of a pollutant are ≥ 100 T/yr.

SM80 = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are ≥ 80 T/yr.

SM = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are < 80 T/yr.

B = Actual and potential emissions are < 100 T/yr without permit restrictions.

UNK = Class is unknown.

Table 9 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION

Pollutant	Uncontrolled PTE (T/yr)	Permitted PTE (T/yr)	Major Source Thresholds (T/yr)	AIRS/AFS Classification
PM	<100	<1.5	**100**	B
PM_{10}	<100	<1.5	**100**	B
$PM_{2.5}$	<100	<1.0	**100**	B
SO_2	<100	0.0014	**100**	B
NO_X	<100	2.4	**100**	B
CO	<100	1.94	**100**	B
VOC	<100	<100	**100**	SM80
HAP (single)	<10	<10	**10**	SM80
HAP (Total)	<25	<25	**25**	SM80

Facility classification has changed to reflect the total HAPs permitted in permit condition 2.5.

The remaining regulatory analysis has not changed in the scope of this permit. The initial full regulatory analysis is locate in the September 22, 2015 Statement of Basis.

Permit Conditions Review

This section describes the permit conditions for this initial permit or only those permit conditions that have been added, revised, modified or deleted as a result of this permitting action.

Removed Permit Condition 2.3
Table 3 was replaced with daily tracking requirements and limits in permit conditions 2.4 through 2.7.

Added Permit Condition 2.3
For each non-carcinogenic TAP contained in the coating used for the day cannot exceed 24 times the EL listed in IDAPA 58.01.01. 585. This is to protect ambient air concentration (ACC), and if the daily limit is exceeded, the ambient air concentration itself must be demonstrated to be in compliance with ACC listed in IDAPA 58.01.01. 585 through modeling.

Added Permit Condition 2.4
At the applicants request carcinogenic Toxic Air Pollutants are tracked similar to permit condition 2.4, except monthly totals are used and for each carcinogenic TAP listed in IDAPA 58.01.01.586, the consecutive 12-month total cannot exceed 8760 times the EL listed in IDAPA 58.01.01.586. This is to protect the annual average ambient air concentration (ACC), and if the annual average limit is exceeded, the ambient air concentration itself must be demonstrated to be in compliance with ACC listed in IDAPA 58.01.01. 586 through modeling.

Added Permit Condition 2.5
Hazardous Air Pollutant (HAP) T/Yr restriction was added to prevent the facility from being a major source for any individual HAP or for aggregate HAPs. This makes the facility Synthetic Minor 80(SM80) for AIRS/AFS facility classification.

Removed Permit Condition 2.6
Coating Material Use Limit permit condition was removed because it was not enforceable as a practical matter, unless all paints are listed in the permit.

Added Permit Condition 2.6
This permit condition serve to limit annual criteria air pollutant emissions below the air pollution modeling thresholds, which is 10% of what is defined as significant or below 1.5 tons per year of PM_{10} and 1.0 tons per year or 0.23 pounds per hour of $PM_{2.5}$.

Removed Permit Condition 2.8
Removed New Material Use Limit because new permit conditions 2.3, 2.4, and 2.5 rendered this section unnecessary and therefore obsolete.

Added Permit Condition 2.7
An annual VOC limit of less than 100 T/yr of VOC emission was added to prevent the facility from being a major source. The previous permitted VOC emissions (P-2014.0039 September 22, 2015) based on emissions inventory provided by the applicant demonstrated VOC emissions very close to major source levels. This limit makes the facility Synthetic Minor 80(SM80) for AIRS/AFS facility classification.

Revised Permit Condition 2.11
References to HVLPAA were removed as it is not defined anywhere in the permit and is a subset of HVLP spray equipment. The associated reference to minimum 84% transfer efficiency was also removed as it was contradictory to the minimum 60% transfer efficiency requirement. The 60% transfer efficiency and 99.43% filtering efficiencies are adequate

Added Permit Condition 2.13
Requires daily monitoring of all VOC, Solids, HAP and TAP containing materials. The daily monitoring is necessary to demonstrate compliance of non-carcinogenic TAP EL, and as a basis for monthly monitoring of carcinogenic TAP EL, and for criteria pollutants to prevent the 10% significant increase that would require modeling.

Added Permit Condition 2.14 and 2.15

This requires a modelling demonstration anytime a respective TAP emission limit is exceeded. For non-carcinogenic TAP if the daily emissions (pounds per calendar day) exceed the TAP screening emissions multiplied by 24 then the source must model to determine ambient impacts. For carcinogenic TAP, if the monthly emissions (pounds per consecutive12-month period) exceed the screening emissions multiplied by 8760 then the source must model to determine ambient impacts. In accordance with the general provisions all emissions calculations shall remain on-site.

Replaced Permit Conditions 2.11 and 2.12

These two permit conditions were essentially replaced with Permit conditions 2.13 through 2.17. This was done to limit daily usage from exceeding emission levels (EL) for TAPs listed in IDAPA 58.01.01.585 and to limit monthly usage from exceeding emission levels (EL) for TAPs listed in IDAPA 58.01.01.586. This is the better alternative to permitting this number of paints, enamels and lacquers because it will keep all emissions records and totals together. Also, the facility can change coatings at any time, and inspectors don't need to filter through a list of coatings looking for compliance.

Added Permit Condition 2.17

This reporting condition was added to report to DEQ each year on all required modelling performed due to TAPs exceedances as stated in permit conditions 2.14 and 2.15.

PUBLIC REVIEW

Public Comment Opportunity

Because this permitting action does not authorize an increase in emissions, an opportunity for public comment period was not required or provided in accordance with IDAPA 58.01.01.209.04 or IDAPA 58.01.01.404.04.

APPENDIX A – EMISSIONS INVENTORIES

Orepac Building Products
Boise, ID

Table 2-1: MAU1 Combustion Emissions

MakeUp Air Heater Duty =
5.127 MMBtu/hr ÷ 1,020 MMBtu/MMscf = **5.03E-03 MMscf/hr**

Fuel Use:
0.121 MMscf/day
44.032 MMscf/year

Operating Assumptions:
24 hr/day
8,760 hr/yr [3]

Criteria Air Pollutants	Emission Factor[1]	Emissions	
	lb/MMscf	lb/hr	T/yr
NO_2	100	0.50	2.20
CO	84	0.42	1.85
PM_{10}	7.6	0.038	0.17
$PM_{2.5}$	7.6	0.038	0.17
SO_2	0.6	3.0E-03	1.3E-02
VOC	5.5	2.8E-02	1.2E-01
Lead	0.0005	2.5E-06	1.1E-05
		1.8E-03	lb/month
Total Criteria Emissions (ton/yr) =			**4.35**

Hazardous & Toxic Air Pollutants (HAP & TAP)	Emission Factor[1]	Emissions		Modeling Threshold — TAP Screening Emission Level	Modeling Required?
	lb/MMscf	lb/hr[2]	T/yr		
PAH HAPs					
2-Methylnaphthalene	2.40E-05	**1.21E-07**	5.3E-07	9.1E-05 lb/hr	No
3-Methylchloranthrene	1.80E-06	**9.05E-09**	4.0E-08	2.5E-06 lb/hr	No
Acenaphthene	1.80E-06	**9.05E-09**	4.0E-08	9.1E-05 lb/hr	No
Acenaphthylene	1.80E-06	**9.05E-09**	4.0E-08	9.1E-05 lb/hr	No
Anthracene	2.40E-06	**1.21E-08**	5.3E-08	9.1E-05 lb/hr	No
Benzo(a)anthracene	1.80E-06	**9.05E-09**	4.0E-08		See POM
Benzo(a)pyrene	1.20E-06	**6.03E-09**	2.6E-08	2.0E-06 lb/hr	See POM
Benzo(b)fluoranthene	1.80E-06	**9.05E-09**	4.0E-08		See POM
Benzo(g,h,i)perylene	1.20E-06	**6.03E-09**	2.6E-08	9.1E-05 lb/hr	No
Benzo(k)fluoranthene	1.80E-06	**9.05E-09**	4.0E-08		See POM
Chrysene	1.80E-06	**9.05E-09**	4.0E-08		See POM
Dibenzo(a,h)anthracene	1.20E-06	**6.03E-09**	2.6E-08		See POM
Fluoranthene	3.00E-06	**1.51E-08**	6.6E-08	9.1E-05 lb/hr	No
Fluorene	2.80E-06	**1.41E-08**	6.2E-08	9.1E-05 lb/hr	No
Indeno(1,2,3-cd)pyrene	1.80E-06	**9.05E-09**	4.0E-08		See POM
Naphthalene	6.10E-04	3.07E-06	1.3E-05	3.33 lb/hr	No
Naphthalene	6.10E-04	**3.07E-06**	1.3E-05	9.1E-05 lb/hr	No
Phenanathrene	1.70E-05	**8.55E-08**	3.7E-07	9.1E-05 lb/hr	No
Pyrene	5.00E-06	**2.51E-08**	1.1E-07	9.1E-05 lb/hr	No
Polycyclic Org. Matter (POM, 7-PAH Group)		**5.73E-08**	**2.5E-07**	2.0E-06 lb/hr	No
Non-PAH HAPs					
Benzene	2.10E-03	**1.06E-05**	4.6E-05	8.0E-04 lb/hr	No
Dichlorobenzene	1.20E-03	6.03E-06	2.6E-05	20 lb/hr	No
Formaldehyde	7.50E-02	**3.77E-04**	1.7E-03	5.1E-04 lb/hr	No
Hexane	1.80E+00	9.05E-03	4.0E-02	12 lb/hr	No
Toluene	3.40E-03	1.71E-05	7.5E-05	25 lb/hr	No
Non-HAP Organic Compounds					
Pentane	2.60E+00	1.31E-02	5.7E-02	118 lb/hr	No
Metals (HAPs)					
Arsenic	2.00E-04	**1.01E-06**	4.4E-06	1.5E-06 lb/hr	No
Barium	4.40E-03	2.21E-05	9.7E-05	0.033 lb/hr	No
Beryllium	1.20E-05	**6.03E-08**	2.6E-07	2.8E-05 lb/hr	No
Cadmium	1.10E-03	**5.53E-06**	2.4E-05	3.7E-06 lb/hr	YES
Chromium	1.40E-03	7.04E-06	3.1E-05	0.033 lb/hr	No
Cobalt	8.40E-05	4.22E-07	1.8E-06	0.0033 lb/hr	No
Copper	8.50E-04	4.27E-06	1.9E-05	0.013 lb/hr	No
Manganese	3.80E-04	1.91E-06	8.4E-06	0.067 lb/hr	No
Mercury	2.60E-04	1.31E-06	5.7E-06	0.003 lb/hr	No
Molybdenum	1.10E-03	5.53E-06	2.4E-05	0.333 lb/hr	No
Nickel	2.10E-03	**1.06E-05**	4.6E-05	2.7E-05 lb/hr	No
Selenium	2.40E-05	1.21E-07	5.3E-07	0.013 lb/hr	No
Vanadium	2.30E-03	1.16E-05	5.1E-05	0.003 lb/hr	No
Zinc	2.90E-02	1.46E-04	6.4E-04	0.667 lb/hr	No
Total HAP Emissions (ton/yr) =			0.042		

Notes:
1. Emission factors taken from AP-42, Section 1.4 *Natural Gas Combustion* (7/98)
2. TAPs lb/hr emissions are 24-hour averages unless shown in bold. Bold emissions are annual averages for carcinogens.
3. Booth Make-up Air heater is used only during cold weather, so actual on-line rating is significantly less.
4. Polycyclic Organic Matter (POM) is considered as one TAP comprised of: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3-cd)pyrene, benzo(a)pyrene. The total is compared to benzo(a)pyrene.

Orepac Building Products
Boise, ID

Table 2-2: Other Natural Gas Combustion Emissions

Office & Warehouse Indirect Air Heater Duty =

0.506 MMBtu/hr ÷ 1,020 MMBtu/MMscf = **4.96E-04 MMscf/hr**

Fuel Use:

Operating Assumptions: **24** hr/day — 0.012 MMsc

8,760 hr/yr [3] — 4.346 MMsc

Criteria Air Pollutants	Emission Factor[1]	Emissions	
	lb/MMscf	lb/hr	T/yr
NO_2	94	0.0466	0.20
CO	40	0.02	0.09
PM_{10}	7.6	0.004	0.02
$PM_{2.5}$	7.6	0.00377	0.02
SO_2	0.6	3.0E-04	1.3E-03
VOC	5.5	2.7E-03	1.2E-02
Lead	0.0005	2.5E-07	1.1E-06
		1.8E-04	lb/month
Total Criteria Emissions (ton/yr) =			**0.32**

Hazardous & Toxic Air Pollutants (HAP & TAP)	Emission Factor[1]	Emissions		Modeling Threshold — TAP Screening Emission Level	Modeling Required?
	lb/MMscf	lb/hr[2]	T/yr		
PAH HAPs					
2-Methylnaphthalene	2.40E-05	**1.19E-08**	5.2E-08	9.1E-05 lb/hr	No
3-Methylchloranthrene	1.80E-06	**8.93E-10**	3.9E-09	2.5E-06 lb/hr	No
Acenaphthene	1.80E-06	**8.93E-10**	3.9E-09	9.1E-05 lb/hr	No
Acenaphthylene	1.80E-06	**8.93E-10**	3.9E-09	9.1E-05 lb/hr	No
Anthracene	2.40E-06	**1.19E-09**	5.2E-09	9.1E-05 lb/hr	No
Benzo(a)anthracene	1.80E-06	**8.93E-10**	3.9E-09		See POM
Benzo(a)pyrene	1.20E-06	**5.95E-10**	2.6E-09	2.0E-06 lb/hr	See POM
Benzo(b)fluoranthene	1.80E-06	**8.93E-10**	3.9E-09		See POM
Benzo(g,h,i)perylene	1.20E-06	**5.95E-10**	2.6E-09	9.1E-05 lb/hr	No
Benzo(k)fluoranthene	1.80E-06	**8.93E-10**	3.9E-09		See POM
Chrysene	1.80E-06	**8.93E-10**	3.9E-09		See POM
Dibenzo(a,h)anthracene	1.20E-06	**5.95E-10**	2.6E-09		See POM
Fluoranthene	3.00E-06	**1.49E-09**	6.5E-09	9.1E-05 lb/hr	No
Fluorene	2.80E-06	**1.39E-09**	6.1E-09	9.1E-05 lb/hr	No
Indeno(1,2,3-cd)pyrene	1.80E-06	**8.93E-10**	3.9E-09		See POM
Naphthalene	6.10E-04	3.03E-07	1.3E-06	3.33 lb/hr	No
Naphthalene	6.10E-04	**3.03E-07**	1.3E-06	9.1E-05 lb/hr	No
Phenanathrene	1.70E-05	**8.43E-09**	3.7E-08	9.1E-05 lb/hr	No
Pyrene	5.00E-06	**2.48E-09**	1.1E-08	9.1E-05 lb/hr	No
Polycyclic Org. Matter (POM, 7-PAH Group)[4]		**5.66E-09**	**2.5E-08**	2.0E-06 lb/hr	No
Non-PAH HAPs					
Benzene	2.10E-03	**1.04E-06**	4.6E-06	8.0E-04 lb/hr	No
Dichlorobenzene	1.20E-03	5.95E-07	2.6E-06	20 lb/hr	No
Formaldehyde	7.50E-02	**3.72E-05**	1.6E-04	5.1E-04 lb/hr	No
Hexane	1.80E+00	8.93E-04	3.9E-03	12 lb/hr	No
Toluene	3.40E-03	1.69E-06	7.4E-06	25 lb/hr	No
Non-HAP Organic Compounds					
Pentane	2.60E+00	1.29E-03	5.6E-03	118 lb/hr	No
Metals (HAPs)					
Arsenic	2.00E-04	**9.92E-08**	4.3E-07	1.5E-06 lb/hr	No
Barium	4.40E-03	2.18E-06	9.6E-06	0.033 lb/hr	No
Beryllium	1.20E-05	**5.95E-09**	2.6E-08	2.8E-05 lb/hr	No
Cadmium	1.10E-03	**5.46E-07**	2.4E-06	3.7E-06 lb/hr	No
Chromium	1.40E-03	6.95E-07	3.0E-06	0.033 lb/hr	No
Cobalt	8.40E-05	4.17E-08	1.8E-07	0.0033 lb/hr	No
Copper	8.50E-04	4.22E-07	1.8E-06	0.013 lb/hr	No
Manganese	3.80E-04	1.89E-07	8.3E-07	0.067 lb/hr	No
Mercury	2.60E-04	1.29E-07	5.6E-07	0.003 lb/hr	No
Molybdenum	1.10E-03	5.46E-07	2.4E-06	0.333 lb/hr	No
Nickel	2.10E-03	**1.04E-06**	4.6E-06	2.7E-05 lb/hr	No
Selenium	2.40E-05	1.19E-08	5.2E-08	0.013 lb/hr	No
Vanadium	2.30E-03	1.14E-06	5.0E-06	0.003 lb/hr	No
Zinc	2.90E-02	1.44E-05	6.3E-05	0.667 lb/hr	No
Total HAP Emissions (ton/yr) =			0.004		

Notes:

1. Emission factors taken from AP-42, Section 1.4 *Natural Gas Combustion* (7/98)
2. TAPs lb/hr emissions are 24-hour averages unless shown in bold. Bold emissions are annual averages for carcinogens.
3. Office and warehouse heaters are used only during cold weather, so actual on-line rating is significantly less.
4. Polycyclic Organic Matter (POM) is considered as one TAP comprised of: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3-cd)pyrene, benzo(a)pyrene. The total is compared to benzo(a)pyrene.

Potential to Emit Calculations- Coating Operations

Paint Area Manager Allen Johnson estimates a maximum of 36 gallons of Polane T Max paint through the Unit
He also estimates maximum usage of 20 gallons of Kem Aqua BP Enamel through the linear molding sprayer.
He also estimates maximum usage of 4 gallons of SHER-WOOD stain/laquer in the custom spraying booth.
Orepac currently operates M-F, but for PTE will assume 365 day per year operation.

	Polane	Kem	SHER-WOOD			
Daily	36	20	4	gal	===>	60 gal total sprayed per day
Annual	13140	7300	1460	gal		

Table 2-1: Paint Analysis Mix 1

PTE Daily Use (gal/day)	PTE Annual Use (gal/year)	Maker	Coating Material (See Notes)	Density	Solids	VOC (non-exempt)	Formal-dehyde	Ethanol	2-Propanol	Acetone	1-Butanol	2-Methyl-1-propanol	MEK	Methyl Methacrylate	o-Cresol
							50-00-0	64-17-5	67-63-0	67-64-1	71-36-3	78-83-1	78-93-3	80-62-6	95-48-7
				lb/gal	Weight Percentage Content Data										
10	2600	Sherwin Williams	Solvent-Based Enamel Maximum	13.06	77.1%	80.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	27.90%	0.60%	0.00%
45	11700	Sherwin Williams	Water-Based Enamel Maximum	10.35	48.3%	4.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
6	1560	Sherwin Williams	Formaldehyde-Containing Lacquer Maximum	7.86	33.4%	63.0%	0.10%	1.90%	4.00%	10.00%	5.00%	8.00%	0.00%	0.00%	0.10%
6	1560	Sherwin Williams	Non-Formaldehyde Stain / Laquer Maximum	9.65	57.5%	85.0%	0.00%	6.90%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Component Characteristics		If volatile, enter "1" ==>			1	1	1	1	1	1	1	1	1	1
Hourly Spray Calculations (lb/hr) (Based on 24-hr	Maker	Coating Material	Density	Solids	VOC (non-exempt)	Formal-dehyde	Ethanol	2-Propanol	Acetone	1-Butanol	2-Methyl-1-propanol	MEK	Methyl Methacrylate	o-Cresol
			lb/gal	Pounds per Hour										
	Sherwin Williams	Solvent-Based Enamel Maximum	13.06	4.196	4.35	0.000	0.000	0.000	0.000	0.000	0.000	1.518	0.033	0.000
	Sherwin Williams	Water-Based Enamel Maximum	10.35	9.37	0.78	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Sherwin Williams	Formaldehyde-Containing Lacquer Maximum	7.86	0.66	1.24	0.002	0.037	0.079	0.197	0.098	0.157	0.000	0.000	0.002
	Sherwin Williams	Non-Formaldehyde Stain / Laquer Maximum	9.65	1.387	2.05	0.000	0.166	0.002	0.000	0.000	0.000	0.000	0.000	0.000
		Spray Total (lb/hr)		15.612	8.418	0.002	0.204	0.081	0.197	0.098	0.157	1.518	0.033	0.002

Annual Spray Calculations (tons/yr) (See sample	Maker	Coating Material	Density	Solids	VOC (non-exempt)	Formal-dehyde	Ethanol	2-Propanol	Acetone	1-Butanol	2-Methyl-1-propanol	MEK	Methyl Methacrylate	o-Cresol
			lb/gal	Tons per Year										
	Sherwin Williams	Solvent-Based Enamel Maximum	13.06	13.09	13.58	0.000	0.000	0.000	0.000	0.000	0.000	4.737	0.102	0.000
	Sherwin Williams	Water-Based Enamel Maximum	10.35	29.24	2.42	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Sherwin Williams	Formaldehyde-Containing Lacquer Maximum	7.86	2.05	3.86	0.006	0.116	0.245	0.613	0.307	0.490	0.000	0.000	0.006
	Sherwin Williams	Non-Formaldehyde Stain / Laquer Maximum	9.65	4.33	6.40	0.000	0.519	0.008	0.000	0.000	0.000	0.000	0.000	0.000
		Spray Total (tons/yr)		48.71	26.26	0.01	0.64	0.25	0.61	0.31	0.49	4.74	0.10	0.01

HAP/TAP/Solids Example Calculation:
Methyl Ethyl Ketone is present in Solvent-based Polyurethane Enamel

HOURLY SPRAY RATE (24-hr Average)

Max Hourly MEK in Polyurethane Enamel = 65 gal/day * 13.06 lb/gal density * 27.9 wt% MEK in Enamel * 1 day/24 hrs
= 9.87 lb/hr MEK in Polyurethane Enamel

Max Hourly MEK is calculated in a similar manner. Spray Total MEK is calculated by adding all Sherwin Williams MEK.

MEK Hourly Spray Total = 9.87 lb/hr MEK in Solvent-based + 0.00 lb/hr MEK in Water-based + 0.00 lb/hr in Stains/Lacquers
= 9.87 lb/hr MEK in Sherwin Williams coatings

ANNUAL SPRAY RATE

Max 12-mo MEK in Polyurethane Enamel = 323725 gal/yr Polyurethane Enamel * 13.06 lb/gal density * 27.9 wt% MEK in Enamel * 1 ton/2000 lbs
= 43.224 tons/yr MEK in Polyurethane Enamel

Max 12-mo MEK in Sherwin Williams coatings are calculated in a similar manner. Spray Total MEK is calculated by adding all Sherwin coating's MEK.

MEK Annual Spray Total = 43.224 tons/yr MEK in Solvent-based + 0.00 tons/yr MEK in Water-based + 0.00 tons/yr in Stains/Lacquers
= 43.224 tons/yr MEK in Sherwin Williams coatings

Table 2-1: Paint Analysis Mix 1

1,2,4-Trimethyl-benzene	Methyl Ethyl Ketoxime	Cumene	Ethyl-benzene	1-Methoxy-2-propanol	Methyl Isobutyl Ketone	Isopropyl Acetate	1-Methoxy-2-Propanol Acetate	1,3,5-Trimethylbenzene	Toluene	Cyclo-hexanone	n-Propyl Acetate	Methyl n-Amyl Ketone	2-Butoxy-ethanol	2-(2-Ethoxy-ethoxy)-ethanol	2-(2-Butoxy-ethoxy)-ethanol	Triethyl-amine	Diacetone Alcohol
95-63-6	96-29-7	98-82-8	100-41-4	107-98-2	108-10-1	108-21-4	108-65-6	108-67-8	108-88-3	108-94-1	109-60-4	110-43-0	111-76-2	111-90-0	112-34-5	121-44-8	123-42-2
Weight Percentage Content Data																	
0.70%	0.30%	0.00%	0.60%	17.50%	0.20%	11.40%	5.40%	0.10%	9.00%	25.10%	0.00%	21.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.30%	0.00%	1.00%	0.10%	0.00%
1.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.00%	0.00%	0.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1.20%	0.70%	0.20%	2.90%	8.30%	0.00%	0.00%	0.20%	0.30%	0.00%	0.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	9.20%

1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1,2,4-Trimethyl-benzene	Methyl Ethyl Ketoxime	Cumene	Ethyl-benzene	1-Methoxy-2-propanol	Methyl Isobutyl Ketone	Isopropyl Acetate	1-Methoxy-2-Propanol Acetate	1,3,5-Trimethylbenzene	Toluene	Cyclo-hexanone	n-Propyl Acetate	Methyl n-Amyl Ketone	2-Butoxy-ethanol	2-(2-Ethoxy-ethoxy)-ethanol	2-(2-Butoxy-ethoxy)-ethanol	Triethyl-amine	Diacetone Alcohol
Pounds per Hour																	
0.038	0.016	0.000	0.033	0.952	0.011	0.620	0.294	0.005	0.490	1.366	0.000	1.143	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.446	0.000	0.194	0.019	0.000
0.026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000
0.029	0.017	0.005	0.070	0.200	0.000	0.000	0.005	0.007	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.222
0.093	0.033	0.005	0.103	1.153	0.011	0.620	0.299	0.017	0.490	1.366	0.010	1.143	0.446	0.000	0.194	0.019	0.222

1,2,4-Trimethyl-benzene	Methyl Ethyl Ketoxime	Cumene	Ethyl-benzene	1-Methoxy-2-propanol	Methyl Isobutyl Ketone	Isopropyl Acetate	1-Methoxy-2-Propanol Acetate	1,3,5-Trimethylbenzene	Toluene	Cyclo-hexanone	n-Propyl Acetate	Methyl n-Amyl Ketone	2-Butoxy-ethanol	2-(2-Ethoxy-ethoxy)-ethanol	2-(2-Butoxy-ethoxy)-ethanol	Triethyl-amine	Diacetone Alcohol
Tons per Year																	
0.119	0.051	0.000	0.102	2.971	0.034	1.935	0.917	0.017	1.528	4.261	0.000	3.565	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.393	0.000	0.605	0.061	0.000
0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.025	0.000	0.000	0.000	0.000	0.000	0.000
0.090	0.053	0.015	0.218	0.625	0.000	0.000	0.015	0.023	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.692
0.29	0.10	0.02	0.32	3.60	0.03	1.94	0.93	0.05	1.53	4.26	0.03	3.57	1.39	0.00	0.61	0.06	0.69

Table 2-1: Paint Analysis Mix 1

n-Butyl Acetate	2-Amino-2-Methyl-1-Propanol	Cobalt 2-Ethyl-hexanoate	1,2,3-Trimethylbenzene	Amyl Acetate	Xylene	Carbon Black	1-Propoxy-2-propanol	1-Ethoxy-2-Propanol	1-Ethyl-2-Pyrrolidinone	Pine Oil	Titanium Dioxide	Talc	Quartz	Trimethylpentanediol Isobutyrate	Tripropylene Glycol Methyl Ether	Mineral Spirits
123-86-4	124-68-5	136-52-7	526-73-8	628-63-7	1330-20-7	1333-86-4	1569-01-3	1569-02-4	2687-91-4	8002-09-3	13463-67-7	14807-96-6	14808-60-7	25265-77-4	25498-49-1	64742-88-7
Weight Percentage Content Data																
27.00%	0.40%	0.10%	0.00%	0.00%	3.40%	1.30%	0.00%	0.00%	0.00%	0.00%	35.00%	9.00%	0.00%	0.00%	0.00%	0.40%
0.00%	0.20%	0.00%	0.00%	0.00%	0.00%	3.00%	0.00%	0.00%	0.00%	0.00%	25.00%	0.00%	0.00%	0.20%	0.20%	0.00%
31.30%	0.00%	0.00%	0.00%	7.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.20%
0.00%	0.00%	0.20%	0.10%	0.00%	16.40%	10.00%	0.20%	1.00%	0.00%	2.30%	1.00%	27.00%	0.20%	0.00%	0.00%	79.50%

1	1	1	1	1	1			1	1	1				1	1	1
n-Butyl Acetate	2-Amino-2-Methyl-1-Propanol	Cobalt 2-Ethyl-hexanoate	1,2,3-Trimethylbenzene	Amyl Acetate	Xylene	Carbon Black		1-Ethoxy-2-Propanol	1-Ethyl-2-Pyrrolidinone	Pine Oil	Titanium Dioxide	Talc	Quartz	Trimethylpentanediol Isobutyrate	Tripropylene Glycol Methyl Ether	Mineral Spirits
Pounds per Hour																
1.469	0.022	0.005	0.000	0.000	0.185	0.071	0.000	0.000	0.000	0.000	1.905	0.490	0.000	0.000	0.000	0.022
0.000	0.039	0.000	0.000	0.000	0.000	0.582	0.000	0.000	0.000	0.000	4.852	0.000	0.000	0.039	0.039	0.000
0.615	0.000	0.000	0.000	0.138	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.004
0.000	0.000	0.005	0.002	0.000	0.396	0.241	0.005	0.024	0.000	0.055	0.024	0.651	0.005	0.000	0.000	1.918
2.084	0.061	0.010	0.002	0.138	0.583	0.894	0.005	0.024	0.000	0.055	6.780	1.141	0.005	0.039	0.043	1.944

n-Butyl Acetate	2-Amino-2-Methyl-1-Propanol	Cobalt 2-Ethyl-hexanoate	1,2,3-Trimethylbenzene	Amyl Acetate	Xylene	Carbon Black		1-Ethoxy-2-Propanol	1-Ethyl-2-Pyrrolidinone	Pine Oil	Titanium Dioxide	Talc	Quartz	Trimethylpentanediol Isobutyrate	Tripropylene Glycol Methyl Ether	Mineral Spirits
Tons per Year																
4.584	0.068	0.017	0.000	0.000	0.577	0.221	0.000	0.000	0.000	0.000	5.942	1.528	0.000	0.000	0.000	0.068
0.000	0.121	0.000	0.000	0.000	0.000	1.816	0.000	0.000	0.000	0.000	15.137	0.000	0.000	0.121	0.121	0.000
1.919	0.000	0.000	0.000	0.429	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.012
0.000	0.000	0.015	0.008	0.000	1.234	0.753	0.015	0.075	0.000	0.173	0.075	2.032	0.015	0.000	0.000	5.984
6.50	0.19	0.03	0.01	0.43	1.82	2.79	0.02	0.08	0.00	0.17	21.15	3.56	0.02	0.12	0.13	6.06

Table 2-1: Paint Analysis Mix 1

V. M. & P. Naphtha	Light Aromatic Hydrocarbons	Amorphous Precipitated Silica	Heavy Aliphatic Naphtha	Chromium III (as Cr)
64742-89-8	64742-95-6	112926-00-8	Proprietary	
Weight Percentage Content Data				
6.40%	0.40%	3.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.20%	2.00%	0.00%	0.00%
20.20%	0.80%	0.00%	0.70%	0.04%

1	1		1	
V. M. & P. Naphtha	Light Aromatic Hydrocarbons	Amorphous Precipitated Silica	Heavy Aliphatic Naphtha	Chromium III (as Cr)
Pounds per Hour				
0.348	0.022	0.163	0.000	0.000
0.000	0.000	0.000	0.000	0.000
0.000	0.004	0.039	0.000	0.000
0.487	0.019	0.000	0.017	0.001
0.836	0.045	0.203	0.017	0.001

V. M. & P. Naphtha	Light Aromatic Hydrocarbons	Amorphous Precipitated Silica	Heavy Aliphatic Naphtha	Chromium III (as Cr)
Tons per Year				
1.087	0.068	0.509	0.000	0.000
0.000	0.000	0.000	0.000	0.000
0.000	0.012	0.123	0.000	0.000
1.520	0.060	0.000	0.053	0.003
2.61	0.14	0.63	0.05	0.00

Table 2-1: Paint Analysis Mix 2

PTE Daily Use (gal/day)	PTE Annual Use (gal/year)	Maker	Coating Material (See Notes)	Density	Solids	VOC (non-exempt)	Formal-dehyde	Ethanol	2-Propanol	Acetone	1-Butanol	2-Methyl-1-propanol	MEK	Methyl Methacrylate	o-Cresol
							50-00-0	64-17-5	67-63-0	67-64-1	71-36-3	78-83-1	78-93-3	80-62-6	95-48-7
				lb/gal	Weight Percentage Content Data										
10	2600	Sherwin Williams	Solvent-Based Enamel Maximum	13.06	77.1%	80.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	27.90%	0.60%	0.00%
35	9100	Sherwin Williams	Water-Based Enamel Maximum	10.35	48.3%	4.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
6	1560	Sherwin Williams	Formaldehyde-Containing Lacquer Maximum	7.86	33.4%	63.0%	0.10%	1.90%	4.00%	10.00%	5.00%	8.00%	0.00%	0.00%	0.10%
9	2340	Sherwin Williams	Non-Formaldehyde Stain / Laquer Maximum	9.65	57.5%	85.0%	0.00%	6.90%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Component Characteristics	If volatile, enter "1" ==>				1	1	1	1	1	1	1	1	1	1
Hourly Spray Calculations (lb/hr) (Based on 24-hr	Maker	Coating Material	Density	Solids	VOC (non-exempt)	Formal-dehyde	Ethanol	2-Propanol	Acetone	1-Butanol	2-Methyl-1-propanol	MEK	Methyl Methacrylate	o-Cresol
			lb/gal	Pounds per Hour										
	Sherwin Williams	Solvent-Based Enamel Maximum	13.06	4.196	4.35	0.000	0.000	0.000	0.000	0.000	0.000	1.518	0.033	0.000
	Sherwin Williams	Water-Based Enamel Maximum	10.35	7.29	0.60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Sherwin Williams	Formaldehyde-Containing Lacquer Maximum	7.86	0.66	1.24	0.002	0.037	0.079	0.197	0.098	0.157	0.000	0.000	0.002
	Sherwin Williams	Non-Formaldehyde Stain / Laquer Maximum	9.65	2.081	3.08	0.000	0.250	0.004	0.000	0.000	0.000	0.000	0.000	0.000
		Spray Total (lb/hr)		14.223	9.271	0.002	0.287	0.082	0.197	0.098	0.157	1.518	0.033	0.002

Annual Spray Calculations (tons/yr) (See sample	Maker	Coating Material	Density	Solids	VOC (non-exempt)	Formal-dehyde	Ethanol	2-Propanol	Acetone	1-Butanol	2-Methyl-1-propanol	MEK	Methyl Methacrylate	o-Cresol
			lb/gal	Tons per Year										
	Sherwin Williams	Solvent-Based Enamel Maximum	13.06	13.09	13.58	0.000	0.000	0.000	0.000	0.000	0.000	4.737	0.102	0.000
	Sherwin Williams	Water-Based Enamel Maximum	10.35	22.75	1.88	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Sherwin Williams	Formaldehyde-Containing Lacquer Maximum	7.86	2.05	3.86	0.006	0.116	0.245	0.613	0.307	0.490	0.000	0.000	0.006
	Sherwin Williams	Non-Formaldehyde Stain / Laquer Maximum	9.65	6.49	9.60	0.000	0.779	0.011	0.000	0.000	0.000	0.000	0.000	0.000
		Spray Total (tons/yr)		44.38	28.93	0.01	0.90	0.26	0.61	0.31	0.49	4.74	0.10	0.01

HAP/TAP/Solids Example Calculation:
Methyl Ethyl Ketone is present in Solvent-based Polyurethane Enamel

HOURLY SPRAY RATE (24-hr Average)

Max Hourly MEK in Polyurethane Enamel = 65 gal/day * 13.06 lb/gal density * 27.9 wt% MEK in Enamel * 1 day/24 hrs
= 9.87 lb/hr MEK in Polyurethane Enamel

Max Hourly MEK is calculated in a similar manner. Spray Total MEK is calculated by adding all Sherwin Williams MEK.

MEK Hourly Spray Total = 9.87 lb/hr MEK in Solvent-based + 0.00 lb/hr MEK in Water-based + 0.00 lb/hr in Stains/Lacquers
= 9.87 lb/hr MEK in Sherwin Williams coatings

ANNUAL SPRAY RATE

Max 12-mo MEK in Polyurethane Enamel = 323725 gal/yr Polyurethane Enamel * 13.06 lb/gal density * 27.9 wt% MEK in Enamel * 1 ton/2000 lbs
= 43.224 tons/yr MEK in Polyurethane Enamel

Max 12-mo MEK in Sherwin Williams coatings are calculated in a similar manner. Spray Total MEK is calculated by adding all Sherwin coating's MEK.

MEK Annual Spray Total = 43.224 tons/yr MEK in Solvent-based + 0.00 tons/yr MEK in Water-based + 0.00 tons/yr in Stains/Lacquers
= 43.224 tons/yr MEK in Sherwin Williams coatings

Table 2-1: Paint Analysis Mix 2

1,2,4-Trimethyl-benzene	Methyl Ethyl Ketoxime	Cumene	Ethyl-benzene	1-Methoxy-2-propanol	Methyl Isobutyl Ketone	Isopropyl Acetate	1-Methoxy-2-Propanol Acetate	1,3,5-Trimethylbenzene	Toluene	Cyclo-hexanone	n-Propyl Acetate	Methyl n-Amyl Ketone	2-Butoxy-ethanol	2-(2-Ethoxy-ethoxy)-ethanol	2-(2-Butoxy-ethoxy)-ethanol	Triethyl-amine	Diacetone Alcohol
95-63-6	96-29-7	98-82-8	100-41-4	107-98-2	108-10-1	108-21-4	108-65-6	108-67-8	108-88-3	108-94-1	109-60-4	110-43-0	111-76-2	111-90-0	112-34-5	121-44-8	123-42-2
Weight Percentage Content Data																	
0.70%	0.30%	0.00%	0.60%	17.50%	0.20%	11.40%	5.40%	0.10%	9.00%	25.10%	0.00%	21.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.30%	0.00%	1.00%	0.10%	0.00%
1.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.00%	0.00%	0.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1.20%	0.70%	0.20%	2.90%	8.30%	0.00%	0.00%	0.20%	0.30%	0.00%	0.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	9.20%

1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1,2,4-Trimethyl-benzene	Methyl Ethyl Ketoxime	Cumene	Ethyl-benzene	1-Methoxy-2-propanol	Methyl Isobutyl Ketone	Isopropyl Acetate	1-Methoxy-2-Propanol Acetate	1,3,5-Trimethylbenzene	Toluene	Cyclo-hexanone	n-Propyl Acetate	Methyl n-Amyl Ketone	2-Butoxy-ethanol	2-(2-Ethoxy-ethoxy)-ethanol	2-(2-Butoxy-ethoxy)-ethanol	Triethyl-amine	Diacetone Alcohol
Pounds per Hour																	
0.038	0.016	0.000	0.033	0.952	0.011	0.620	0.294	0.005	0.490	1.366	0.000	1.143	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.347	0.000	0.151	0.015	0.000
0.026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000
0.043	0.025	0.007	0.105	0.300	0.000	0.000	0.007	0.011	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.333
0.107	0.042	0.007	0.138	1.253	0.011	0.620	0.301	0.020	0.490	1.366	0.011	1.143	0.347	0.000	0.151	0.015	0.333

1,2,4-Trimethyl-benzene	Methyl Ethyl Ketoxime	Cumene	Ethyl-benzene	1-Methoxy-2-propanol	Methyl Isobutyl Ketone	Isopropyl Acetate	1-Methoxy-2-Propanol Acetate	1,3,5-Trimethylbenzene	Toluene	Cyclo-hexanone	n-Propyl Acetate	Methyl n-Amyl Ketone	2-Butoxy-ethanol	2-(2-Ethoxy-ethoxy)-ethanol	2-(2-Butoxy-ethoxy)-ethanol	Triethyl-amine	Diacetone Alcohol
Tons per Year																	
0.119	0.051	0.000	0.102	2.971	0.034	1.935	0.917	0.017	1.528	4.261	0.000	3.565	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.083	0.000	0.471	0.047	0.000
0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.025	0.000	0.000	0.000	0.000	0.000	0.000
0.135	0.079	0.023	0.327	0.937	0.000	0.000	0.023	0.034	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.000	1.039
0.33	0.13	0.02	0.43	3.91	0.03	1.94	0.94	0.06	1.53	4.26	0.04	3.57	1.08	0.00	0.47	0.05	1.04

Table 2-1: Paint Analysis Mix 2

n-Butyl Acetate	2-Amino-2-Methyl-1-Propanol	Cobalt 2-Ethyl-hexanoate	1,2,3-Trimethylbenzene	Amyl Acetate	Xylene	Carbon Black	1-Propoxy-2-propanol	1-Ethoxy-2-Propanol	1-Ethyl-2-Pyrrolidinone	Pine Oil	Titanium Dioxide	Talc	Quartz	Trimethylpentanediol Isobutyrate	Tripropylene Glycol Methyl Ether	Mineral Spirits
123-86-4	124-68-5	136-52-7	526-73-8	628-63-7	1330-20-7	1333-86-4	1569-01-3	1569-02-4	2687-91-4	8002-09-3	13463-67-7	14807-96-6	14808-60-7	25265-77-4	25498-49-1	64742-88-7
Weight Percentage Content Data																
27.00%	0.40%	0.10%	0.00%	0.00%	3.40%	1.30%	0.00%	0.00%	0.00%	0.00%	35.00%	9.00%	0.00%	0.00%	0.00%	0.40%
0.00%	0.20%	0.00%	0.00%	0.00%	0.00%	3.00%	0.00%	0.00%	0.00%	0.00%	25.00%	0.00%	0.00%	0.20%	0.20%	0.00%
31.30%	0.00%	0.00%	0.00%	7.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.20%
0.00%	0.00%	0.20%	0.10%	0.00%	16.40%	10.00%	0.20%	1.00%	0.00%	2.30%	1.00%	27.00%	0.20%	0.00%	0.00%	79.50%

1	1	1	1	1	1			1	1	1				1	1	1
n-Butyl Acetate	2-Amino-2-Methyl-1-Propanol	Cobalt 2-Ethyl-hexanoate	1,2,3-Trimethylbenzene	Amyl Acetate	Xylene	Carbon Black		1-Ethoxy-2-Propanol	1-Ethyl-2-Pyrrolidinone	Pine Oil	Titanium Dioxide	Talc	Quartz	Trimethylpentanediol Isobutyrate	Tripropylene Glycol Methyl Ether	Mineral Spirits
Pounds per Hour																
1.469	0.022	0.005	0.000	0.000	0.185	0.071	0.000	0.000	0.000	0.000	1.905	0.490	0.000	0.000	0.000	0.022
0.000	0.030	0.000	0.000	0.000	0.000	0.453	0.000	0.000	0.000	0.000	3.773	0.000	0.000	0.030	0.030	0.000
0.615	0.000	0.000	0.000	0.138	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.004
0.000	0.000	0.007	0.004	0.000	0.593	0.362	0.007	0.036	0.000	0.083	0.036	0.977	0.007	0.000	0.000	2.877
2.084	0.052	0.013	0.004	0.138	0.780	0.885	0.007	0.036	0.000	0.083	5.714	1.467	0.007	0.030	0.034	2.903

n-Butyl Acetate	2-Amino-2-Methyl-1-Propanol	Cobalt 2-Ethyl-hexanoate	1,2,3-Trimethylbenzene	Amyl Acetate	Xylene	Carbon Black		1-Ethoxy-2-Propanol	1-Ethyl-2-Pyrrolidinone	Pine Oil	Titanium Dioxide	Talc	Quartz	Trimethylpentanediol Isobutyrate	Tripropylene Glycol Methyl Ether	Mineral Spirits
Tons per Year																
4.584	0.068	0.017	0.000	0.000	0.577	0.221	0.000	0.000	0.000	0.000	5.942	1.528	0.000	0.000	0.000	0.068
0.000	0.094	0.000	0.000	0.000	0.000	1.413	0.000	0.000	0.000	0.000	11.773	0.000	0.000	0.094	0.094	0.000
1.919	0.000	0.000	0.000	0.429	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.012
0.000	0.000	0.023	0.011	0.000	1.852	1.129	0.023	0.113	0.000	0.260	0.113	3.048	0.023	0.000	0.000	8.976
6.50	0.16	0.04	0.01	0.43	2.44	2.76	0.02	0.11	0.00	0.26	17.83	4.58	0.02	0.09	0.11	9.06

Table 2-1: Paint Analysis Mix 2

V. M. & P. Naphtha	Light Aromatic Hydrocarbons	Amorphous Precipitated Silica	Heavy Aliphatic Naphtha	Chromium III (as Cr)
64742-89-8	64742-95-6	112926-00-8	Proprietary	
Weight Percentage Content Data				
6.40%	0.40%	3.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.20%	2.00%	0.00%	0.00%
20.20%	0.80%	0.00%	0.70%	0.04%

1	1		1	
V. M. & P. Naphtha	Light Aromatic Hydrocarbons	Amorphous Precipitated Silica	Heavy Aliphatic Naphtha	Chromium III (as Cr)
Pounds per Hour				
0.348	0.022	0.163	0.000	0.000
0.000	0.000	0.000	0.000	0.000
0.000	0.004	0.039	0.000	0.000
0.731	0.029	0.000	0.025	0.001
1.079	0.055	0.203	0.025	0.001

V. M. & P. Naphtha	Light Aromatic Hydrocarbons	Amorphous Precipitated Silica	Heavy Aliphatic Naphtha	Chromium III (as Cr)
Tons per Year				
1.087	0.068	0.509	0.000	0.000
0.000	0.000	0.000	0.000	0.000
0.000	0.012	0.123	0.000	0.000
2.281	0.090	0.000	0.079	0.005
3.37	0.17	0.63	0.08	0.00

Table 2-1: Paint Analysis Mix 2

PTE Daily Use (gal/day)	PTE Annual Use (gal/year)	Maker	Coating Material (See Notes)	Density	Solids	VOC (non-exempt)	Formal-dehyde	Ethanol	2-Propanol	Acetone	1-Butanol	2-Methyl-1-propanol	MEK	Methyl Methacrylate	o-Cresol
							50-00-0	64-17-5	67-63-0	67-64-1	71-36-3	78-83-1	78-93-3	80-62-6	95-48-7
				lb/gal	Weight Percentage Content Data										
17	4420	Sherwin Williams	Solvent-Based Enamel Maximum	13.06	77.1%	80.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	27.90%	0.60%	0.00%
35	9100	Sherwin Williams	Water-Based Enamel Maximum	10.35	48.3%	4.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
6	1560	Sherwin Williams	Formaldehyde-Containing Lacquer Maximum	7.86	33.4%	63.0%	0.10%	1.90%	4.00%	10.00%	5.00%	8.00%	0.00%	0.00%	0.10%
8	2080	Sherwin Williams	Non-Formaldehyde Stain / Laquer Maximum	9.65	57.5%	85.0%	0.00%	6.90%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Component Characteristics		If volatile, enter "1" ==>			1	1	1	1	1	1	1	1	1	1
Hourly Spray Calculations (lb/hr) (Based on 24-hr	Maker	Coating Material	Density	Solids	VOC (non-exempt)	Formal-dehyde	Ethanol	2-Propanol	Acetone	1-Butanol	2-Methyl-1-propanol	MEK	Methyl Methacrylate	o-Cresol
			lb/gal	Pounds per Hour										
	Sherwin Williams	Solvent-Based Enamel Maximum	13.06	7.132	7.40	0.000	0.000	0.000	0.000	0.000	0.000	2.581	0.056	0.000
	Sherwin Williams	Water-Based Enamel Maximum	10.35	7.29	0.60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Sherwin Williams	Formaldehyde-Containing Lacquer Maximum	7.86	0.66	1.24	0.002	0.037	0.079	0.197	0.098	0.157	0.000	0.000	0.002
	Sherwin Williams	Non-Formaldehyde Stain / Laquer Maximum	9.65	1.850	2.73	0.000	0.222	0.003	0.000	0.000	0.000	0.000	0.000	0.000
		Spray Total (lb/hr)		16.929	11.977	0.002	0.259	0.082	0.197	0.098	0.157	2.581	0.056	0.002

Annual Spray Calculations (tons/yr) (See sample	Maker	Coating Material	Density	Solids	VOC (non-exempt)	Formal-dehyde	Ethanol	2-Propanol	Acetone	1-Butanol	2-Methyl-1-propanol	MEK	Methyl Methacrylate	o-Cresol
			lb/gal	Tons per Year										
	Sherwin Williams	Solvent-Based Enamel Maximum	13.06	22.25	23.09	0.000	0.000	0.000	0.000	0.000	0.000	8.053	0.173	0.000
	Sherwin Williams	Water-Based Enamel Maximum	10.35	22.75	1.88	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Sherwin Williams	Formaldehyde-Containing Lacquer Maximum	7.86	2.05	3.86	0.006	0.116	0.245	0.613	0.307	0.490	0.000	0.000	0.006
	Sherwin Williams	Non-Formaldehyde Stain / Laquer Maximum	9.65	5.77	8.53	0.000	0.692	0.010	0.000	0.000	0.000	0.000	0.000	0.000
		Spray Total (tons/yr)		52.82	37.37	0.01	0.81	0.26	0.61	0.31	0.49	8.05	0.17	0.01

HAP/TAP/Solids Example Calculation:
Methyl Ethyl Ketone is present in Solvent-based Polyurethane Enamel

HOURLY SPRAY RATE (24-hr Average)

Max Hourly MEK in Polyurethane Enamel = 65 gal/day * 13.06 lb/gal density * 27.9 wt% MEK in Enamel * 1 day/24 hrs
= 9.87 lb/hr MEK in Polyurethane Enamel

Max Hourly MEK is calculated in a similar manner. Spray Total MEK is calculated by adding all Sherwin Williams MEK.

MEK Hourly Spray Total = 9.87 lb/hr MEK in Solvent-based + 0.00 lb/hr MEK in Water-based + 0.00 lb/hr in Stains/Lacquers
= 9.87 lb/hr MEK in Sherwin Williams coatings

ANNUAL SPRAY RATE

Max 12-mo MEK in Polyurethane Enamel = 323725 gal/yr Polyurethane Enamel * 13.06 lb/gal density * 27.9 wt% MEK in Enamel * 1 ton/2000 lbs
= 43.224 tons/yr MEK in Polyurethane Enamel

Max 12-mo MEK in Sherwin Williams coatings are calculated in a similar manner. Spray Total MEK is calculated by adding all Sherwin coating's MEK.

MEK Annual Spray Total = 43.224 tons/yr MEK in Solvent-based + 0.00 tons/yr MEK in Water-based + 0.00 tons/yr in Stains/Lacquers
= 43.224 tons/yr MEK in Sherwin Williams coatings

Table 2-1: Paint Analysis Mix 2

1,2,4-Trimethyl-benzene	Methyl Ethyl Ketoxime	Cumene	Ethyl-benzene	1-Methoxy-2-propanol	Methyl Isobutyl Ketone	Isopropyl Acetate	1-Methoxy-2-Propanol Acetate	1,3,5-Trimethylbenzene	Toluene	Cyclo-hexanone	n-Propyl Acetate	Methyl n-Amyl Ketone	2-Butoxy-ethanol	2-(2-Ethoxy-ethoxy)-ethanol	2-(2-Butoxy-ethoxy)-ethanol	Triethyl-amine	Diacetone Alcohol
95-63-6	96-29-7	98-82-8	100-41-4	107-98-2	108-10-1	108-21-4	108-65-6	108-67-8	108-88-3	108-94-1	109-60-4	110-43-0	111-76-2	111-90-0	112-34-5	121-44-8	123-42-2
Weight Percentage Content Data																	
0.70%	0.30%	0.00%	0.60%	17.50%	0.20%	11.40%	5.40%	0.10%	9.00%	25.10%	0.00%	21.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.30%	0.00%	1.00%	0.10%	0.00%
1.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.00%	0.00%	0.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1.20%	0.70%	0.20%	2.90%	8.30%	0.00%	0.00%	0.20%	0.30%	0.00%	0.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	9.20%

1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1,2,4-Trimethyl-benzene	Methyl Ethyl Ketoxime	Cumene	Ethyl-benzene	1-Methoxy-2-propanol	Methyl Isobutyl Ketone	Isopropyl Acetate	1-Methoxy-2-Propanol Acetate	1,3,5-Trimethylbenzene	Toluene	Cyclo-hexanone	n-Propyl Acetate	Methyl n-Amyl Ketone	2-Butoxy-ethanol	2-(2-Ethoxy-ethoxy)-ethanol	2-(2-Butoxy-ethoxy)-ethanol	Triethyl-amine	Diacetone Alcohol
Pounds per Hour																	
0.065	0.028	0.000	0.056	1.619	0.019	1.055	0.500	0.009	0.833	2.322	0.000	1.943	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.347	0.000	0.151	0.015	0.000
0.026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000
0.039	0.023	0.006	0.093	0.267	0.000	0.000	0.006	0.010	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.296
0.129	0.050	0.006	0.149	1.886	0.019	1.055	0.506	0.023	0.833	2.322	0.011	1.943	0.347	0.000	0.151	0.015	0.296

1,2,4-Trimethyl-benzene	Methyl Ethyl Ketoxime	Cumene	Ethyl-benzene	1-Methoxy-2-propanol	Methyl Isobutyl Ketone	Isopropyl Acetate	1-Methoxy-2-Propanol Acetate	1,3,5-Trimethylbenzene	Toluene	Cyclo-hexanone	n-Propyl Acetate	Methyl n-Amyl Ketone	2-Butoxy-ethanol	2-(2-Ethoxy-ethoxy)-ethanol	2-(2-Butoxy-ethoxy)-ethanol	Triethyl-amine	Diacetone Alcohol
Tons per Year																	
0.202	0.087	0.000	0.173	5.051	0.058	3.290	1.559	0.029	2.598	7.245	0.000	6.061	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.083	0.000	0.471	0.047	0.000
0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.025	0.000	0.000	0.000	0.000	0.000	0.000
0.120	0.070	0.020	0.291	0.833	0.000	0.000	0.020	0.030	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.923
0.40	0.16	0.02	0.46	5.88	0.06	3.29	1.58	0.07	2.60	7.24	0.03	6.06	1.08	0.00	0.47	0.05	0.92

Table 2-1: Paint Analysis Mix 2

n-Butyl Acetate	2-Amino-2-Methyl-1-Propanol	Cobalt 2-Ethyl-hexanoate	1,2,3-Trimethylbenzene	Amyl Acetate	Xylene	Carbon Black	1-Propoxy-2-propanol	1-Ethoxy-2-Propanol	1-Ethyl-2-Pyrrolidinone	Pine Oil	Titanium Dioxide	Talc	Quartz	Trimethylpentanediol Isobutyrate	Tripropylene Glycol Methyl Ether	Mineral Spirits
123-86-4	124-68-5	136-52-7	526-73-8	628-63-7	1330-20-7	1333-86-4	1569-01-3	1569-02-4	2687-91-4	8002-09-3	13463-67-7	14807-96-6	14808-60-7	25265-77-4	25498-49-1	64742-88-7
Weight Percentage Content Data																
27.00%	0.40%	0.10%	0.00%	0.00%	3.40%	1.30%	0.00%	0.00%	0.00%	0.00%	35.00%	9.00%	0.00%	0.00%	0.00%	0.40%
0.00%	0.20%	0.00%	0.00%	0.00%	0.00%	3.00%	0.00%	0.00%	0.00%	0.00%	25.00%	0.00%	0.00%	0.20%	0.20%	0.00%
31.30%	0.00%	0.00%	0.00%	7.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.20%
0.00%	0.00%	0.20%	0.10%	0.00%	16.40%	10.00%	0.20%	1.00%	0.00%	2.30%	1.00%	27.00%	0.20%	0.00%	0.00%	79.50%

1	1	1	1	1	1			1	1	1				1	1	1
n-Butyl Acetate	2-Amino-2-Methyl-1-Propanol	Cobalt 2-Ethyl-hexanoate	1,2,3-Trimethylbenzene	Amyl Acetate	Xylene	Carbon Black		1-Ethoxy-2-Propanol	1-Ethyl-2-Pyrrolidinone	Pine Oil	Titanium Dioxide	Talc	Quartz	Trimethylpentanediol Isobutyrate	Tripropylene Glycol Methyl Ether	Mineral Spirits
Pounds per Hour																
2.498	0.037	0.009	0.000	0.000	0.315	0.120	0.000	0.000	0.000	0.000	3.238	0.833	0.000	0.000	0.000	0.037
0.000	0.030	0.000	0.000	0.000	0.000	0.453	0.000	0.000	0.000	0.000	3.773	0.000	0.000	0.030	0.030	0.000
0.615	0.000	0.000	0.000	0.138	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.004
0.000	0.000	0.006	0.003	0.000	0.528	0.322	0.006	0.032	0.000	0.074	0.032	0.869	0.006	0.000	0.000	2.557
3.113	0.067	0.016	0.003	0.138	0.844	0.895	0.006	0.032	0.000	0.074	7.043	1.701	0.006	0.030	0.034	2.598

n-Butyl Acetate	2-Amino-2-Methyl-1-Propanol	Cobalt 2-Ethyl-hexanoate	1,2,3-Trimethylbenzene	Amyl Acetate	Xylene	Carbon Black		1-Ethoxy-2-Propanol	1-Ethyl-2-Pyrrolidinone	Pine Oil	Titanium Dioxide	Talc	Quartz	Trimethylpentanediol Isobutyrate	Tripropylene Glycol Methyl Ether	Mineral Spirits
Tons per Year																
7.793	0.115	0.029	0.000	0.000	0.981	0.375	0.000	0.000	0.000	0.000	10.102	2.598	0.000	0.000	0.000	0.115
0.000	0.094	0.000	0.000	0.000	0.000	1.413	0.000	0.000	0.000	0.000	11.773	0.000	0.000	0.094	0.094	0.000
1.919	0.000	0.000	0.000	0.429	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.012
0.000	0.000	0.020	0.010	0.000	1.646	1.004	0.020	0.100	0.000	0.231	0.100	2.710	0.020	0.000	0.000	7.979
9.71	0.21	0.05	0.01	0.43	2.63	2.79	0.02	0.10	0.00	0.23	21.98	5.31	0.02	0.09	0.11	8.11

Table 2-1: Paint Analysis Mix 2

V. M. & P. Naphtha	Light Aromatic Hydrocarbons	Amorphous Precipitated Silica	Heavy Aliphatic Naphtha	Chromium III (as Cr)
64742-89-8	64742-95-6	112926-00-8	Proprietary	
Weight Percentage Content Data				
6.40%	0.40%	3.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.20%	2.00%	0.00%	0.00%
20.20%	0.80%	0.00%	0.70%	0.04%

1	1		1	
V. M. & P. Naphtha	Light Aromatic Hydrocarbons	Amorphous Precipitated Silica	Heavy Aliphatic Naphtha	Chromium III (as Cr)
Pounds per Hour				
0.592	0.037	0.278	0.000	0.000
0.000	0.000	0.000	0.000	0.000
0.000	0.004	0.039	0.000	0.000
0.650	0.026	0.000	0.023	0.001
1.242	0.067	0.317	0.023	0.001

V. M. & P. Naphtha	Light Aromatic Hydrocarbons	Amorphous Precipitated Silica	Heavy Aliphatic Naphtha	Chromium III (as Cr)
Tons per Year				
1.847	0.115	0.866	0.000	0.000
0.000	0.000	0.000	0.000	0.000
0.000	0.012	0.123	0.000	0.000
2.027	0.080	0.000	0.070	0.004
3.87	0.21	0.99	0.07	0.00

Table 2-2: Paint Operations Emissions Summary Mix 1

Toxic Air Pollutants	CAS	Pre Project Maximum Spray Rate[1] (lb/hr)	Post Project Maximum Spray Rate[1] (lb/hr)	Change in Maximum Spray Rate[1] (lb/hr)	Spray Retention Rate[2] (%)	Change in Potential to Emit (lb/hr)	Paint Filter Efficiency[3] (%)	UnControlled Emission Rate (lb/hr)
Formaldehyde	50-0-0	0.00161	0.00197	0.00036	0%	0.00036	0%	0.00036
Ethanol	64-17-5	0.111	0.204	0.093	0%	0.093	0%	0.093
2-Propanol	67-63-0	0.063	0.081	0.018	0%	0.018	0%	0.018
Acetone	67-64-1	0.161	0.197	0.036	0%	0.036	0%	0.036
1-Butanol	71-36-3	0.079	0.098	0.019	0%	0.019	0%	0.019
2-Methyl-1-propanol	78-83-1	0.122	0.157	0.035	0%	0.035	0%	0.035
MEK	78-93-3	5.466	1.518	-3.947	0%	-3.947	0%	-3.947
Methyl Methacrylate	80-62-6	0.118	0.033	-0.085	0%	-0.085	0%	-0.085
o-Cresol	95-48-7	0.002	0.002	0.000	0%	0.000	0%	0.000
Cumene	98-82-8	0.003	0.005	0.002	0%	0.0016	0%	0.0016
Ethylbenzene	100-41-4	0.124	0.103	-0.021	0%	-0.021	0%	-0.021
1-Methoxy-2-propanol	107-98-2	3.562	1.153	-2.409	0%	-2.409	0%	-2.409
Methyl Isobutyl Ketone	108-10-1	0.039	0.011	-0.028	0%	-0.028	0%	-0.028
Isopropyl Acetate	108-21-4	2.233	0.620	-1.613	0%	-1.613	0%	-1.613
1-Methoxy-2-Propanol Acetate	108-65-6	0.493	0.299	-0.194	0%	-0.194	0%	-0.194
Toluene	108-88-3	1.763	0.490	-1.273	0%	-1.273	0%	-1.273
Cyclohexanone	108-94-1	4.917	1.366	-3.551	0%	-3.551	0%	-3.551
n-Propyl Acetate	109-60-4	0.006	0.010	0.004	0%	0.004	0%	0.004
Methyl n-Amyl Ketone	110-43-0	4.114	1.143	-2.971	0%	-2.971	0%	-2.971
2-Butoxyethanol	111-76-2	0.198	0.446	0.248	0%	0.248	0%	0.248
Triethylamine	121-44-8	0.009	0.019	0.011	0%	0.011	0%	0.011
Diacetone Alcohol	123-42-2	0.148	0.222	0.074	0%	0.0740	0%	0.0740
n-Butyl Acetate	123-86-4	5.793	2.084	-3.708	0%	-3.708	0%	-3.708
Amyl Acetate	628-63-7	0.111	0.138	0.027	0%	0.027	0%	0.027
Xylene	1330-20-7	0.697	0.583	-0.114	0%	-0.114	0%	-0.114
Carbon Black	1333-86-4	0.325	0.894	0.569	60%	0.2275	0%	0.227
Quartz	14808-60-7	0.003	0.005	0.002	60%	0.001	0%	0.001
V. M. & P. Naphtha	64742-89-8	0.325	0.836	0.511	0%	0.511	0%	0.511
Amorphous Precipitated Silica	112926-00-8	0.032	0.203	0.170	60%	0.068	0%	0.068
Chromium III (as Cr)	0	0.001	0.001	0.000	60%	0.000	0%	0.000

Criteria Air Pollutants	Maximum Spray Rate[1]		Spray Retention Rate[2]	Potential to Emit		Paint Filter Efficiency[3]	Controlled Emissions	
	lb/hr	ton/yr	%	lb/hr	ton/yr	%	lb/hr	ton/yr
PM_{10}	15.61	48.71	60%	6.24	19.48	99.43%	0.036	0.111
$PM_{2.5}$	15.61	48.71	60%	6.24	19.48	99.43%	0.036	0.111
VOC	8.42	26.26	0%	8.42	26.26	0%	8.42	26.26

Hazardous Air Pollutants (HAP)	CAS	Maximum Spray Rate[1] (ton/yr)	Spray Retention Rate (%)	Potential to Emit (ton/yr)
Formaldehyde	50-00-0	0.0061	0%	0.0061
Methyl Methacrylate	80-62-6	0.10	0%	0.1019
o-Cresol	95-48-7	0.0061	0%	0.0061
Cumene	98-82-8	0.015	0%	0.0151
Ethylbenzene	100-41-4	0.32	0%	0.3202
Methyl Isobutyl Ketone	108-10-1	0.03	0%	0.0340
Toluene	108-88-3	1.53	0%	1.5280
Triethylamine	121-44-8	0.061	0%	0.0605
Cobalt 2-Ethylhexanoate	136-52-7	0.032	0%	0.0320
Xylene	1330-20-7	1.82	0%	1.8178
Chromium III (as Cr)	n/a	0.003	60%	0.0012
			Total HAPs =	3.9

Notes:

1. The maximum hourly or annual Spray Total of the Solvent-based, Water-based, Formaldehyde-containing, and Non-formaldehyde-containing coa
2. Non-volatile emissions are calculated using a coating retention rate of 60% (LPH-200 HVLP spray gun).
3. Controlled non-volatile emissions are calculated without the exhaust filter removal efficiency of 99.43% in order to

Table 2-2: Paint Operations Emissions Summary Mix 2

Toxic Air Pollutants	CAS	Pre Project Maximum Spray Rate[1] (lb/hr)	Post Project Maximum Spray Rate[1] (lb/hr)	Change in Maximum Spray Rate[1] (lb/hr)	Spray Retention Rate[2] (%)	Change in Potential to Emit (lb/hr)	Paint Filter Efficiency[3] (%)	UnControlled Emission Rate (lb/hr)
Formaldehyde	50-0-0	0.00161	0.00197	0.00036	0%	0.00036	0%	0.00036
Ethanol	64-17-5	0.111	0.287	0.176	0%	0.176	0%	0.176
2-Propanol	67-63-0	0.063	0.082	0.019	0%	0.019	0%	0.019
Acetone	67-64-1	0.161	0.197	0.036	0%	0.036	0%	0.036
1-Butanol	71-36-3	0.079	0.098	0.019	0%	0.019	0%	0.019
2-Methyl-1-propanol	78-83-1	0.122	0.157	0.035	0%	0.035	0%	0.035
MEK	78-93-3	5.466	1.518	-3.947	0%	-3.947	0%	-3.947
Methyl Methacrylate	80-62-6	0.118	0.033	-0.085	0%	-0.085	0%	-0.085
o-Cresol	95-48-7	0.002	0.002	0.000	0%	0.000	0%	0.000
Cumene	98-82-8	0.003	0.007	0.004	0%	0.0040	0%	0.0040
Ethylbenzene	100-41-4	0.124	0.138	0.014	0%	0.014	0%	0.014
1-Methoxy-2-propanol	107-98-2	3.562	1.253	-2.309	0%	-2.309	0%	-2.309
Methyl Isobutyl Ketone	108-10-1	0.039	0.011	-0.028	0%	-0.028	0%	-0.028
Isopropyl Acetate	108-21-4	2.233	0.620	-1.613	0%	-1.613	0%	-1.613
1-Methoxy-2-Propanol Acetate	108-65-6	0.493	0.301	-0.192	0%	-0.192	0%	-0.192
Toluene	108-88-3	1.763	0.490	-1.273	0%	-1.273	0%	-1.273
Cyclohexanone	108-94-1	4.917	1.366	-3.551	0%	-3.551	0%	-3.551
n-Propyl Acetate	109-60-4	0.006	0.011	0.005	0%	0.005	0%	0.005
Methyl n-Amyl Ketone	110-43-0	4.114	1.143	-2.971	0%	-2.971	0%	-2.971
2-Butoxyethanol	111-76-2	0.198	0.347	0.149	0%	0.149	0%	0.149
Triethylamine	121-44-8	0.009	0.015	0.006	0%	0.006	0%	0.006
Diacetone Alcohol	123-42-2	0.148	0.333	0.185	0%	0.1850	0%	0.1850
n-Butyl Acetate	123-86-4	5.793	2.084	-3.708	0%	-3.708	0%	-3.708
Amyl Acetate	628-63-7	0.111	0.138	0.027	0%	0.027	0%	0.027
Xylene	1330-20-7	0.697	0.780	0.084	0%	0.084	0%	0.084
Carbon Black	1333-86-4	0.325	0.885	0.560	60%	0.2240	0%	0.223
Quartz	14808-60-7	0.003	0.007	0.004	60%	0.002	0%	0.002
V. M. & P. Naphtha	64742-89-8	0.325	1.079	0.754	0%	0.754	0%	0.754
Amorphous Precipitated Silica	112926-00-8	0.032	0.203	0.170	60%	0.068	0%	0.068
Chromium III (as Cr)	0	0.001	0.001	0.001	60%	0.000	0%	0.000

Criteria Air Pollutants	Maximum Spray Rate[1]		Spray Retention Rate[2]	Potential to Emit		Paint Filter Efficiency[3]	Controlled Emissions	
	lb/hr	ton/yr	%	lb/hr	ton/yr	%	lb/hr	ton/yr
PM_{10}	14.22	44.38	60%	5.69	17.75	99.43%	0.032	0.101
$PM_{2.5}$	14.22	44.38	60%	5.69	17.75	99.43%	0.032	0.101
VOC	9.27	28.93	0%	9.27	28.93	0%	9.27	28.93

Hazardous Air Pollutants (HAP)	CAS	Maximum Spray Rate[1] (ton/yr)	Spray Retention Rate (%)	Potential to Emit (ton/yr)
Formaldehyde	50-00-0	0.0061	0%	0.0061
Methyl Methacrylate	80-62-6	0.10	0%	0.1019
o-Cresol	95-48-7	0.0061	0%	0.0061
Cumene	98-82-8	0.023	0%	0.0226
Ethylbenzene	100-41-4	0.43	0%	0.4293
Methyl Isobutyl Ketone	108-10-1	0.03	0%	0.0340
Toluene	108-88-3	1.53	0%	1.5280
Triethylamine	121-44-8	0.047	0%	0.0471
Cobalt 2-Ethylhexanoate	136-52-7	0.040	0%	0.0396
Xylene	1330-20-7	2.44	0%	2.4350
Chromium III (as Cr)	n/a	0.005	60%	0.0018
			Total HAPs =	4.7

Notes:

1. The maximum hourly or annual Spray Total of the Solvent-based, Water-based, Formaldehyde-containing, and Non-formaldehyde-containing coa
2. Non-volatile emissions are calculated using a coating retention rate of 60% (LPH-200 HVLP spray gun).
3. Controlled non-volatile emissions are calculated without the exhaust filter removal efficiency of 99.43% in order to

Table 2-2: Paint Operations Emissions Summary Mix 3

Toxic Air Pollutants	CAS	Pre Project Maximum Spray Rate[1] (lb/hr)	Post Project Maximum Spray Rate[1] (lb/hr)	Change in Maximum Spray Rate[1] (lb/hr)	Spray Retention Rate[2] (%)	Change in Potential to Emit (lb/hr)	Paint Filter Efficiency[3] (%)	UnControlled Emission Rate (lb/hr)
Formaldehyde	50-0-0	0.00161	0.00197	0.00036	0%	0.00036	0%	0.00036
Ethanol	64-17-5	0.111	0.259	0.148	0%	0.148	0%	0.148
2-Propanol	67-63-0	0.063	0.082	0.019	0%	0.019	0%	0.019
Acetone	67-64-1	0.161	0.197	0.036	0%	0.036	0%	0.036
1-Butanol	71-36-3	0.079	0.098	0.019	0%	0.019	0%	0.019
2-Methyl-1-propanol	78-83-1	0.122	0.157	0.035	0%	0.035	0%	0.035
MEK	78-93-3	5.466	2.581	-2.885	0%	-2.885	0%	-2.885
Methyl Methacrylate	80-62-6	0.118	0.056	-0.062	0%	-0.062	0%	-0.062
o-Cresol	95-48-7	0.002	0.002	0.000	0%	0.000	0%	0.000
Cumene	98-82-8	0.003	0.006	0.003	0%	0.0032	0%	0.0032
Ethylbenzene	100-41-4	0.124	0.149	0.025	0%	0.025	0%	0.025
1-Methoxy-2-propanol	107-98-2	3.562	1.886	-1.676	0%	-1.676	0%	-1.676
Methyl Isobutyl Ketone	108-10-1	0.039	0.019	-0.021	0%	-0.021	0%	-0.021
Isopropyl Acetate	108-21-4	2.233	1.055	-1.179	0%	-1.179	0%	-1.179
1-Methoxy-2-Propanol Acetate	108-65-6	0.493	0.506	0.013	0%	0.013	0%	0.013
Toluene	108-88-3	1.763	0.833	-0.931	0%	-0.931	0%	-0.931
Cyclohexanone	108-94-1	4.917	2.322	-2.595	0%	-2.595	0%	-2.595
n-Propyl Acetate	109-60-4	0.006	0.011	0.005	0%	0.005	0%	0.005
Methyl n-Amyl Ketone	110-43-0	4.114	1.943	-2.171	0%	-2.171	0%	-2.171
2-Butoxyethanol	111-76-2	0.198	0.347	0.149	0%	0.149	0%	0.149
Triethylamine	121-44-8	0.009	0.015	0.006	0%	0.006	0%	0.006
Diacetone Alcohol	123-42-2	0.148	0.296	0.148	0%	0.1480	0%	0.1480
n-Butyl Acetate	123-86-4	5.793	3.113	-2.680	0%	-2.680	0%	-2.680
Amyl Acetate	628-63-7	0.111	0.138	0.027	0%	0.027	0%	0.027
Xylene	1330-20-7	0.697	0.844	0.147	0%	0.147	0%	0.147
Carbon Black	1333-86-4	0.325	0.895	0.569	60%	0.2277	0%	0.227
Quartz	14808-60-7	0.003	0.006	0.003	60%	0.001	0%	0.001
V. M. & P. Naphtha	64742-89-8	0.325	1.242	0.917	0%	0.917	0%	0.917
Amorphous Precipitated Silica	112926-00-8	0.032	0.317	0.285	60%	0.114	0%	0.114
Chromium III (as Cr)	0	0.001	0.001	0.001	60%	0.000	0%	0.000

Criteria Air Pollutants	Maximum Spray Rate[1]		Spray Retention Rate[2]	Potential to Emit		Paint Filter Efficiency[3]	Controlled Emissions	
	lb/hr	ton/yr	%	lb/hr	ton/yr	%	lb/hr	ton/yr
PM_{10}	16.93	52.82	60%	6.77	21.13	99.43%	0.039	0.120
$PM_{2.5}$	16.93	52.82	60%	6.77	21.13	99.43%	0.039	0.120
VOC	11.98	37.37	0%	11.98	37.37	0%	11.98	37.37

Hazardous Air Pollutants (HAP)	CAS	Maximum Spray Rate[1] (ton/yr)	Spray Retention Rate (%)	Potential to Emit (ton/yr)
Formaldehyde	50-00-0	0.0061	0%	0.0061
Methyl Methacrylate	80-62-6	0.17	0%	0.1732
o-Cresol	95-48-7	0.0061	0%	0.0061
Cumene	98-82-8	0.020	0%	0.0201
Ethylbenzene	100-41-4	0.46	0%	0.4642
Methyl Isobutyl Ketone	108-10-1	0.06	0%	0.0577
Toluene	108-88-3	2.60	0%	2.5976
Triethylamine	121-44-8	0.047	0%	0.0471
Cobalt 2-Ethylhexanoate	136-52-7	0.049	0%	0.0489
Xylene	1330-20-7	2.63	0%	2.6334
Chromium III (as Cr)	n/a	0.004	60%	0.0016
			Total HAPs =	6.1

Notes:

1. The maximum hourly or annual Spray Total of the Solvent-based, Water-based, Formaldehyde-containing, and Non-formaldehyde-containing coa
2. Non-volatile emissions are calculated using a coating retention rate of 60% (LPH-200 HVLP spray gun).
3. Controlled non-volatile emissions are calculated without the exhaust filter removal efficiency of 99.43% in order to

Table 3-2:
Facility-Wide Toxic Air Pollutant Emissions Mix 1

Non-Carcinogenic Toxic Air Pollutant (24 hr Average)	CAS	UnControlled Hourly Emissions		Emission Change (lb/hr)	Screening Emission Level (lb/hr)	Exceeds Screening Emission Level?
		Pre-Project (lb/hr)	Post Project (lb/hr)			
Ethanol	64-17-5	0.111	0.204	0.093	125	No
2-Propanol	67-63-0	0.063	0.081	0.018	65.3	No
Acetone	67-64-1	0.161	0.197	0.036	119	No
1-Butanol	71-36-3	0.079	0.098	0.019	10	No
2-Methyl-1-propanol	78-83-1	0.122	0.157	0.035	10	No
MEK	78-93-3	5.466	1.518	-3.947	39.3	No
Methyl Methacrylate	80-62-6	0.118	0.033	-0.085	27.3	No
Naphthalene	91-20-3	0.000	0.000	0.000	3.33	No
o-Cresol	95-48-7	0.002	0.002	0.000	1.47	No
Cumene	98-82-8	0.003	0.005	0.002	16.3	No
Ethylbenzene	100-41-4	0.124	0.103	-0.021	29	No
1-Methoxy-2-propanol	107-98-2	3.562	1.153	-2.409	24	No
Methyl Isobutyl Ketone	108-10-1	0.039	0.011	-0.028	13.7	No
Isopropyl Acetate	108-21-4	2.233	0.620	-1.613	69.3	No
1-Methoxy-2-Propanol Acetate	108-65-6	0.493	0.299	-0.194	24	No
Toluene	108-88-3	1.763	0.490	-1.273	25	No
Cyclohexanone	108-94-1	4.917	1.366	-3.551	6.67	No
n-Propyl Acetate	109-60-4	0.006	0.010	0.004	56	No
Pentane	109-66-0	0.014	0.014	0.000	118	No
Methyl n-Amyl Ketone	110-43-0	4.114	1.143	-2.971	15.7	No
Hexane	110-54-3	0.010	0.010	0.000	12	No
2-Butoxyethanol	111-76-2	0.198	0.446	0.248	8	No
Triethylamine	121-44-8	0.009	0.019	0.011	0.27	No
Diacetone Alcohol	123-42-2	0.148	0.222	0.074	16	No
n-Butyl Acetate	123-86-4	5.793	2.084	-3.708	47.3	No
Amyl Acetate	628-63-7	0.111	0.138	0.027	35.3	No
Xylene	1330-20-7	0.697	0.583	-0.114	29	No
Carbon Black	1333-86-4	0.130	0.358	0.227	0.23	No
Manganese	7439-96-5	0.000	0.000	0.000	0.067	No
Molybdenum	7439-98-7	0.000	0.000	0.000	0.333	No
Barium	7440-39-3	0.000	0.000	0.000	0.033	No
Chromium	7440-47-3	0.000	0.000	0.000	0.033	No
Cobalt	7440-48-4	0.000	0.000	0.000	0.0033	No
Copper	7440-50-8	0.000	0.000	0.000	0.013	No
Zinc	7440-66-6	0.000	0.000	0.000	0.667	No
Selenium	7782-49-2	0.000	0.000	0.000	0.013	No
Quartz	14808-60-7	0.001	0.002	0.001	0.0067	No
V. M. & P. Naphtha	64742-89-8	0.325	0.836	0.511	91.3	No
Amorphous Precipitated Silica	112926-00-8	0.013	0.081	0.068	0.667	No
Chromium III (as Cr)	0	0.000	0.000	0.000	0.033	No
Carcinogenic Toxic Air Pollutant (Annual Average)	**CAS**	**Controlled Hourly Emissions**		**Emission Change (lb/hr)**	**Screening Emission Level (lb/hr)**	**Exceeds Screening Emission Level?**
		Pre-Project (lb/hr)	Post Project (lb/hr)			
Formaldehyde	50-00-0	2.023E-03	2.379E-03	3.57E-04	5.1E-04	No
Benzo(a)pyrene	50-32-8	6.6E-09	6.6E-09	0.0E+00	2.0E-06	No
3-Methylchloranthene	56-49-5	9.9E-09	9.9E-09	0.0E+00	2.5E-06	No
Benzene	71-43-2	1.2E-05	1.2E-05	0.0E+00	8.0E-04	No
Arsenic	7440-38-2	1.1E-06	1.1E-06	0.0E+00	1.5E-06	No
Beryllium	7440-41-7	6.6E-08	6.6E-08	0.0E+00	2.8E-05	No
Cadmium	7440-43-9	6.1E-06	6.1E-06	0.0E+00	3.7E-06	No
Nickel	7440-02-0	1.2E-05	1.2E-05	0.0E+00	2.7E-05	No
Polyaromatic Hydrocarbon (Max)		3.7E-06	3.7E-06	0.0E+00	9.1E-05	No
Polycyclic Organics: 7-PAH Group[1]		6.3E-08	6.3E-08	0.0E+00	2.0E-06	No

1. Polycyclic Organic Matter (POM) is considered as one TAP comprised of: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3-cd)pyrene, benzo(a)pyrene. The total is compared to benzo(a)pyrene.

Table 3-2:
Facility-Wide Toxic Air Pollutant Emissions Mix 2

Non-Carcinogenic Toxic Air Pollutant (24 hr Average)	CAS	UnControlled Hourly Emissions		Emission Change (lb/hr)	Screening Emission Level (lb/hr)	Exceeds Screening Emission Level?
		Pre-Project (lb/hr)	Post Project (lb/hr)			
Ethanol	64-17-5	0.111	0.287	0.176	125	No
2-Propanol	67-63-0	0.063	0.082	0.019	65.3	No
Acetone	67-64-1	0.161	0.197	0.036	119	No
1-Butanol	71-36-3	0.079	0.098	0.019	10	No
2-Methyl-1-propanol	78-83-1	0.122	0.157	0.035	10	No
MEK	78-93-3	5.466	1.518	-3.947	39.3	No
Methyl Methacrylate	80-62-6	0.118	0.033	-0.085	27.3	No
Naphthalene	91-20-3	0.000	0.000	0.000	3.33	No
o-Cresol	95-48-7	0.002	0.002	0.000	1.47	No
Cumene	98-82-8	0.003	0.007	0.004	16.3	No
Ethylbenzene	100-41-4	0.124	0.138	0.014	29	No
1-Methoxy-2-propanol	107-98-2	3.562	1.253	-2.309	24	No
Methyl Isobutyl Ketone	108-10-1	0.039	0.011	-0.028	13.7	No
Isopropyl Acetate	108-21-4	2.233	0.620	-1.613	69.3	No
1-Methoxy-2-Propanol Acetate	108-65-6	0.493	0.301	-0.192	24	No
Toluene	108-88-3	1.763	0.490	-1.273	25	No
Cyclohexanone	108-94-1	4.917	1.366	-3.551	6.67	No
n-Propyl Acetate	109-60-4	0.006	0.011	0.005	56	No
Pentane	109-66-0	0.014	0.014	0.000	118	No
Methyl n-Amyl Ketone	110-43-0	4.114	1.143	-2.971	15.7	No
Hexane	110-54-3	0.010	0.010	0.000	12	No
2-Butoxyethanol	111-76-2	0.198	0.347	0.149	8	No
Triethylamine	121-44-8	0.009	0.015	0.006	0.27	No
Diacetone Alcohol	123-42-2	0.148	0.333	0.185	16	No
n-Butyl Acetate	123-86-4	5.793	2.084	-3.708	47.3	No
Amyl Acetate	628-63-7	0.111	0.138	0.027	35.3	No
Xylene	1330-20-7	0.697	0.780	0.084	29	No
Carbon Black	1333-86-4	0.130	0.354	0.224	0.23	No
Manganese	7439-96-5	0.000	0.000	0.000	0.067	No
Molybdenum	7439-98-7	0.000	0.000	0.000	0.333	No
Barium	7440-39-3	0.000	0.000	0.000	0.033	No
Chromium	7440-47-3	0.000	0.000	0.000	0.033	No
Cobalt	7440-48-4	0.000	0.000	0.000	0.0033	No
Copper	7440-50-8	0.000	0.000	0.000	0.013	No
Zinc	7440-66-6	0.000	0.000	0.000	0.667	No
Selenium	7782-49-2	0.000	0.000	0.000	0.013	No
Quartz	14808-60-7	0.001	0.003	0.002	0.0067	No
V. M. & P. Naphtha	64742-89-8	0.325	1.079	0.754	91.3	No
Amorphous Precipitated Silica	112926-00-8	0.013	0.081	0.068	0.667	No
Chromium III (as Cr)	0	0.000	0.001	0.001	0.033	No
Carcinogenic Toxic Air Pollutant (Annual Average)	**CAS**	**Controlled Hourly Emissions**		**Emission Change (lb/hr)**	**Screening Emission Level (lb/hr)**	**Exceeds Screening Emission Level?**
		Pre-Project (lb/hr)	Post Project (lb/hr)			
Formaldehyde	50-00-0	2.023E-03	2.379E-03	3.567E-04	5.1E-04	No
Benzo(a)pyrene	50-32-8	6.6E-09	6.6E-09	0.0E+00	2.0E-06	No
3-Methylchloranthene	56-49-5	9.9E-09	9.9E-09	0.0E+00	2.5E-06	No
Benzene	71-43-2	1.2E-05	1.2E-05	0.0E+00	8.0E-04	No
Arsenic	7440-38-2	1.1E-06	1.1E-06	0.0E+00	1.5E-06	No
Beryllium	7440-41-7	6.6E-08	6.6E-08	0.0E+00	2.8E-05	No
Cadmium	7440-43-9	6.1E-06	6.1E-06	0.0E+00	3.7E-06	No
Nickel	7440-02-0	1.2E-05	1.2E-05	0.0E+00	2.7E-05	No
Polyaromatic Hydrocarbon (Max)		3.7E-06	3.7E-06	0.0E+00	9.1E-05	No
Polycyclic Organics: 7-PAH Group[1]		6.3E-08	6.3E-08	0.0E+00	2.0E-06	No

1. Polycyclic Organic Matter (POM) is considered as one TAP comprised of: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3-cd)pyrene, benzo(a)pyrene. The total is compared to benzo(a)pyrene.

Table 3-2:
Facility-Wide Toxic Air Pollutant Emissions Mix 3

Non-Carcinogenic Toxic Air Pollutant (24 hr Average)	CAS	UnControlled Hourly Emissions		Emission Change (lb/hr)	Screening Emission Level (lb/hr)	Exceeds Screening Emission Level?
		Pre-Project (lb/hr)	Post Project (lb/hr)			
Ethanol	64-17-5	0.111	0.259	0.148	125	No
2-Propanol	67-63-0	0.063	0.082	0.019	65.3	No
Acetone	67-64-1	0.161	0.197	0.036	119	No
1-Butanol	71-36-3	0.079	0.098	0.019	10	No
2-Methyl-1-propanol	78-83-1	0.122	0.157	0.035	10	No
MEK	78-93-3	5.466	2.581	-2.885	39.3	No
Methyl Methacrylate	80-62-6	0.118	0.056	-0.062	27.3	No
Naphthalene	91-20-3	0.000	0.000	0.000	3.33	No
o-Cresol	95-48-7	0.002	0.002	0.000	1.47	No
Cumene	98-82-8	0.003	0.006	0.003	16.3	No
Ethylbenzene	100-41-4	0.124	0.149	0.025	29	No
1-Methoxy-2-propanol	107-98-2	3.562	1.886	-1.676	24	No
Methyl Isobutyl Ketone	108-10-1	0.039	0.019	-0.021	13.7	No
Isopropyl Acetate	108-21-4	2.233	1.055	-1.179	69.3	No
1-Methoxy-2-Propanol Acetate	108-65-6	0.493	0.506	0.013	24	No
Toluene	108-88-3	1.763	0.833	-0.931	25	No
Cyclohexanone	108-94-1	4.917	2.322	-2.595	6.67	No
n-Propyl Acetate	109-60-4	0.006	0.011	0.005	56	No
Pentane	109-66-0	0.014	0.014	0.000	118	No
Methyl n-Amyl Ketone	110-43-0	4.114	1.943	-2.171	15.7	No
Hexane	110-54-3	0.010	0.010	0.000	12	No
2-Butoxyethanol	111-76-2	0.198	0.347	0.149	8	No
Triethylamine	121-44-8	0.009	0.015	0.006	0.27	No
Diacetone Alcohol	123-42-2	0.148	0.296	0.148	16	No
n-Butyl Acetate	123-86-4	5.793	3.113	-2.680	47.3	No
Amyl Acetate	628-63-7	0.111	0.138	0.027	35.3	No
Xylene	1330-20-7	0.697	0.844	0.147	29	No
Carbon Black	1333-86-4	0.130	0.358	0.228	0.23	No
Manganese	7439-96-5	0.000	0.000	0.000	0.067	No
Molybdenum	7439-98-7	0.000	0.000	0.000	0.333	No
Barium	7440-39-3	0.000	0.000	0.000	0.033	No
Chromium	7440-47-3	0.000	0.000	0.000	0.033	No
Cobalt	7440-48-4	0.000	0.000	0.000	0.0033	No
Copper	7440-50-8	0.000	0.000	0.000	0.013	No
Zinc	7440-66-6	0.000	0.000	0.000	0.667	No
Selenium	7782-49-2	0.000	0.000	0.000	0.013	No
Quartz	14808-60-7	0.001	0.003	0.001	0.0067	No
V. M. & P. Naphtha	64742-89-8	0.325	1.242	0.917	91.3	No
Amorphous Precipitated Silica	112926-00-8	0.013	0.127	0.114	0.667	No
Chromium III (as Cr)	0	0.000	0.001	0.001	0.033	No
Carcinogenic Toxic Air Pollutant (Annual Average)	**CAS**	**Controlled Hourly Emissions**		**Emission Change (lb/hr)**	**Screening Emission Level (lb/hr)**	**Exceeds Screening Emission Level?**
		Pre-Project (lb/hr)	Post Project (lb/hr)			
Formaldehyde	50-00-0	2.023E-03	2.379E-03	3.567E-04	5.1E-04	No
Benzo(a)pyrene	50-32-8	6.6E-09	6.6E-09	0.0E+00	2.0E-06	No
3-Methylchloranthene	56-49-5	9.9E-09	9.9E-09	0.0E+00	2.5E-06	No
Benzene	71-43-2	1.2E-05	1.2E-05	0.0E+00	8.0E-04	No
Arsenic	7440-38-2	1.1E-06	1.1E-06	0.0E+00	1.5E-06	No
Beryllium	7440-41-7	6.6E-08	6.6E-08	0.0E+00	2.8E-05	No
Cadmium	7440-43-9	6.1E-06	6.1E-06	0.0E+00	3.7E-06	No
Nickel	7440-02-0	1.2E-05	1.2E-05	0.0E+00	2.7E-05	No
Polyaromatic Hydrocarbon (Max)		3.7E-06	3.7E-06	0.0E+00	9.1E-05	No
Polycyclic Organics: 7-PAH Group[1]		6.3E-08	6.3E-08	0.0E+00	2.0E-06	No

1. Polycyclic Organic Matter (POM) is considered as one TAP comprised of: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3-cd)pyrene, benzo(a)pyrene. The total is compared to benzo(a)pyrene.

Table 3-3:
Facility-Wide Hazardous Air Pollutant Emissions Mix 1

Hazardous Air Pollutant	CAS	Potential to Emit (tons/yr)
Arsenic	7440-38-2	4.8E-06
Benzene	71-43-2	5.1E-05
Beryllium	7440-41-7	2.9E-07
Cadmium	7440-43-9	2.7E-05
Chromium	7440-47-3	1.2E-03
Cobalt	7440-48-4	2.0E-06
Cobalt 2-Ethylhexanoate	136-52-7	3.2E-02
Cumene	98-82-8	1.5E-02
Dichlorobenzene	25321-22-6	2.9E-05
Ethylbenzene	100-41-4	0.3
Formaldehyde	50-00-0	1.8E-03
Hexane	110-54-3	0.04
Lead		1.2E-05
Manganese	7439-96-5	9.2E-06
Mercury	7439-97-6	6.3E-06
Methyl Isobutyl Ketone	108-10-1	0.03
Methyl Methacrylate	80-62-6	0.10
o-Cresol	95-48-7	0.006
Naphthalene	91-20-3	1.5E-05
Nickel	7440-02-0	5.1E-05
Polycyclic Organic Matter		2.8E-07
Selenium	7782-49-2	5.8E-07
Toluene	108-88-3	1.5
Triethylamine	121-44-8	0.06
Xylene	1330-20-7	1.8
TOTAL =		**4.0**

Table 3-3:
Facility-Wide Hazardous Air Pollutant Emissions Mix 2

Hazardous Air Pollutant	CAS	Potential to Emit (tons/yr)
Arsenic	7440-38-2	4.8E-06
Benzene	71-43-2	5.1E-05
Beryllium	7440-41-7	2.9E-07
Cadmium	7440-43-9	2.7E-05
Chromium	7440-47-3	1.8E-03
Cobalt	7440-48-4	2.0E-06
Cobalt 2-Ethylhexanoate	136-52-7	4.0E-02
Cumene	98-82-8	2.3E-02
Dichlorobenzene	25321-22-6	2.9E-05
Ethylbenzene	100-41-4	0.4
Formaldehyde	50-00-0	1.8E-03
Hexane	110-54-3	0.04
Lead		1.2E-05
Manganese	7439-96-5	9.2E-06
Mercury	7439-97-6	6.3E-06
Methyl Isobutyl Ketone	108-10-1	0.03
Methyl Methacrylate	80-62-6	0.10
o-Cresol	95-48-7	0.006
Naphthalene	91-20-3	1.5E-05
Nickel	7440-02-0	5.1E-05
Polycyclic Organic Matter		2.8E-07
Selenium	7782-49-2	5.8E-07
Toluene	108-88-3	1.5
Triethylamine	121-44-8	0.05
Xylene	1330-20-7	2.4
TOTAL =		**4.7**

Table 3-3:
Facility-Wide Hazardous Air Pollutant Emissions Mix 3

Hazardous Air Pollutant	CAS	Potential to Emit (tons/yr)
Arsenic	7440-38-2	4.8E-06
Benzene	71-43-2	5.1E-05
Beryllium	7440-41-7	2.9E-07
Cadmium	7440-43-9	2.7E-05
Chromium	7440-47-3	1.6E-03
Cobalt	7440-48-4	2.0E-06
Cobalt 2-Ethylhexanoate	136-52-7	4.9E-02
Cumene	98-82-8	2.0E-02
Dichlorobenzene	25321-22-6	2.9E-05
Ethylbenzene	100-41-4	0.5
Formaldehyde	50-00-0	1.8E-03
Hexane	110-54-3	0.04
Lead		1.2E-05
Manganese	7439-96-5	9.2E-06
Mercury	7439-97-6	6.3E-06
Methyl Isobutyl Ketone	108-10-1	0.06
Methyl Methacrylate	80-62-6	0.17
o-Cresol	95-48-7	0.006
Naphthalene	91-20-3	1.5E-05
Nickel	7440-02-0	5.1E-05
Polycyclic Organic Matter		2.8E-07
Selenium	7782-49-2	5.8E-07
Toluene	108-88-3	2.6
Triethylamine	121-44-8	0.05
Xylene	1330-20-7	2.6
TOTAL =		**6.1**

Tables 3-1a to 3-1c:
Facility-Wide NSR Regulated Pollutant Emissions

Table 3-1a: Pre-Project Potential to Emit (based on existing permit conditions)

Emissions Unit	$PM_{2.5}$[1]	PM_{10}[1]	SO_2	NO_2	CO	VOC	Lead
	tons/yr						
MAU1	0.167	0.167	0.013	2.20	1.85	0.12	0.000011
RTU + UH	0.017	0.017	0.001	0.20	0.09	0.01	0.000001
Paint Room	0.032	0.032	0.000	0.00	0.00	94.36	0.000000
Total =	**0.31**	**0.31**	**0.015**	**2.41**	**1.94**	**94.5**	**1.2E-05**

Table 3-1b: Post-Project Potential to Emit (based on requested permit conditions)

Emissions Unit	$PM_{2.5}$[1]	PM_{10}[1]	SO_2	NO_2	CO	VOC	Lead
	tons/yr						
MAU1	0.167	0.17	0.013	2.20	1.85	0.12	0.000011
RTU + UH	0.017	0.02	0.001	0.20	0.09	0.01	0.000001
Paint Room	0.120	0.12	0.00	0.00	0.00	37.37	0.000000
Total =	**0.401**	**0.40**	**0.015**	**2.41**	**1.94**	**37.50**	**1.2E-05**

Table 3-1c: Changes in Potential to Emit

Emissions Unit	$PM_{2.5}$[1]	PM_{10}[1]	SO_2	NO_2	CO	VOC	Lead	Total[2]
	tons/yr							
MAU1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RTU + UH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paint Room	0.09	0.09	0.00	0.00	0.00	-56.99	0.00	-56.90
Total =	**0.09**	**0.09**	**0.00**	**0.00**	**0.00**	**-56.99**	**0.00**	-56.90

[1] Includes 0.0972 tons/yr (16.2 lbs/mo) of PM from door shaping sawdust. See table 3-4.

[2] PM_{10} and $PM_{2.5}$ counted as 1 pollutant in the Changes in Potential to Emit Total.

Orepac Building Products
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Table 3-4: Site-wide NSR Criteria Summary

Criteria Air Pollutants	PTE Emissions				Significance Threshold		Below Regulatory	
	lb/hr	Pre (T/yr)	Post (T/yr)	Chg (T/yr)	T/yr	Exceed?	T/yr	Exceed?
NO_2	0.55	2.41	2.41	0.00	40	No	4	No
CO	0.44	1.94	1.94	0.00	100	No	10	No
PM_{10} [1]	0.100	0.312	0.401	0.09	15	No	1.5	No
$PM_{2.5}$ [1]	0.100	0.312	0.401	0.09	10	No	1	No
SO_2	3.3E-03	1.5E-02	1.5E-02	0.00	40	No	4	No
VOC	8.45	94.49	37.50	-56.99	40	No	4	No
Lead	2.8E-06	1.2E-05	1.2E-05	0.00	0.6	No	0.06	No
	2.0E-03	lb/month						
Total Criteria Emissions (ton/yr) =		**99.16**	**42.26**	**-56.90**				

[1] Includes 0.022 lbs per hour of PM_{10} and $PM_{2.5}$ from sawdust generated from door shaping

Sawdust PM

Eight 55-gallon barrels of sawdust/month = 59 cubic ft = 870.3 lbs x 1.86% = 16.2 lbs/mo = 0.0222 lbs/hr

Conversions:

1.86% of sawdust is <100 micrometers; will assume all 1.86% is PM_{10} and $PM_{2.5}$

source: Vítěz T., Trávníček P., 2010. Particle size distribution of sawdust and wood shavings mixtures. *Res. Agr. Eng.*, 56: 154-158. www.agriculturejournals.cz/publicFiles/31258.pdf

14.75 lbs. of sawdust per cubic foot

source: Harris R., Phillips D., Feb. 1986. Density of Selected Wood Fuels. *Georgia Forest Research Paper*, 61. http://www.gfc.state.ga.us/resources/publications/research-papers/gfrp61.pdf

APPENDIX B – PROCESSING FEE

PTC Fee Calculation

Instructions:
Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.

Company: **OrePac Building Products**
Address: **5500 South Federal Way**
City: **Boise**
State: **ID**
Zip Code: **86716-9617**
Facility Contact: **Blair Raymond**
Title: **Facility permitting contact**
AIRS No.: **001-00302**

N Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N

Y Did this permit require engineering analysis? Y/N

N Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO_X	0.0	0	0.0
SO_2	0.0	0	0.0
CO	0.0	0	0.0
PM10	0.5	0	0.5
VOC	0.0	57	-57.0
TAPS/HAPS	0.0	0	0.0
Total:	0.0	57	**-56.5**
Fee Due	**$ 1,000.00**		