

Statement of Basis

**Permit to Construct No. P-2016.0059
Project ID 61799**

**Quest Aircraft Company, LLC
Sandpoint, Idaho**

Facility ID 017-00067

Final

**June 14, 2017
Tom Burnham
Permit Writer**

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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.

FACILITY INFORMATION	3
Description	3
Permitting History	3
Application Scope	3
Application Chronology	3
TECHNICAL ANALYSIS	4
Emissions Unit and Control Equipment	4
Emissions Inventories	5
Ambient Air Quality Impact Analyses	9
REGULATORY ANALYSIS	9
Attainment Designation (40 CFR 81.313)	9
Facility Classification.....	9
Permit to Construct (IDAPA 58.01.01.201).....	10
Visible Emissions (IDAPA 58.01.01.625).....	10
Standards for New Sources (IDAPA 58.01.01.676).....	11
Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70).....	11
PSD Classification (40 CFR 52.21)	11
NSPS Applicability (40 CFR 60).....	11
NESHAP Applicability (40 CFR 61).....	11
MACT Applicability (40 CFR 63).....	11
Permit Conditions Review	11
PUBLIC REVIEW	13
Public Comment Opportunity	13
Public Comment Period	13
APPENDIX A – EMISSIONS INVENTORIES	14
APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES	15
APPENDIX C – SUBPART HHHHHH ANALYSIS	16
APPENDIX D – RESPONSE TO FACILITY COMMENTS	17
APPENDIX E – PROCESSING FEE	18

FACILITY INFORMATION

Description

The airplanes are manufactured in an assembly line consisting of metal fabrication, chem-film, painting, assembly, and equipment testing. More specifically, machined aircraft parts are rolled into the paint booth on carts and an aircraft primer (PPG primer, epoxy primer, or fuel tank primer) is sprayed by a paint employee. Carts are rolled back out and parts are dried for up to 14 days for parts with fuel tank primer. Most other primed or painted parts need to set for 7 days. Landing gear, nose gear, composite parts, and aircraft doors are also painted in the paint booth with aircraft paint. Primed or painted parts are taken to Inventory and added as a stockroom item. Stockroom fills carts of aircraft parts and delivers to each stage for aircraft manufacturing. The Kodiaks are built using rivets and fully assembled on-site.

Permitting History

This is the initial PTC for a new facility thus there is no permitting history.

Application Scope

This permit is the initial PTC for this existing facility.

Application Chronology

October 20, 2016	DEQ received an application and an application fee.
October 26 – November 10, 2016	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
November 21, 2016	DEQ determined that the application was incomplete.
December 22, 2016	DEQ received supplemental information from the applicant.
December 23, 2016	DEQ determined that the application was complete.
February 9, 2017	DEQ made available the draft permit and statement of basis for peer and regional office review.
February 17, 2017	DEQ made available the draft permit and statement of basis for applicant review.
March 20, 2017	DEQ made available the draft permit and statement of basis for peer and regional office second review.
March 20, 2017	DEQ received the permit processing fee.
March 23, 2017	DEQ made available the draft permit and statement of basis for applicant review.
May 9 – June 8, 2017	DEQ provided a public comment period on the proposed action.
June 14, 2017	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Unit and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Permit Section	Source	Control Equipment
2	<u>Manufacturing Building Boiler 1</u> Manufacturer: Viessmann Model: VSB-28 Serial#: 7223357400104 Heat input rating: 1.0 MMBtu/hr Manufacture Year: 2004	None
2	<u>Manufacturing Building Boiler 2</u> Manufacturer: Fonderie Sime Model: RS-8 Serial#: 7133837-00046 Heat input rating: 0.55 MMBtu/hr Manufacture Year: 2001	None
2	<u>Customer Service Building Boilers 3 and 4</u> Manufacturer: Munchkin Model: 199M Serial#s: H30J0636 and H30J0637 Heat input rating: 0.199 MMBtu/hr each Manufacture Year: 2003	None
2	<u>Engineering Building Boiler 2</u> Manufacturer: Gordan Ray Model: BH-150 Serial#: 0311-071-150-0049 Heat input rating: 0.15 MMBtu/hr Manufacture Year: 2003	None
2	<u>Make-up air unit, Paint Booth 2</u> Manufacturer: Global Finishing Solutions (GFS) Model: RAM-25 Heat input rating: 2.3 MMBTU/hr Manufacture Year: 2016	None
2	<u>Make-up air unit for Cure Booth</u> Manufacturer: Global Finishing Solutions (GFS) Model: RAM-20 Heat input rating: 1.5 MMBTU/hr Manufacture Year: 2017	None
3	<u>Paint Booth: PB1</u> Manufacturer – Col-Met Construction Date: 2006 Make-up Air: Electric	<u>Paint Spray Booths</u> down draft Filter, Control Efficiency: 98% or greater <u>Spray Gun:</u> Manufacturer: SATAjet Model: 4000B Type: HVLP Transfer Efficiency: >65%
3	<u>Paint Booth: PB2</u> Manufacturer: Global Finishing Solutions (GFS) Construction Date: June 2016	<u>Spray Gun:</u> Manufacturer: SATAjet Model: 3000K Type: HVLP Transfer Efficiency: >65%
		<u>Spray Gun:</u> Manufacturer: SATAjet Model: 100BF Type: HVLP Transfer Efficiency: >65%

3	<u>Cure Booth</u> Manufacturer: Global Finishing Solutions (GFS) Construction Date: June 2016	None
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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 Aircraft coating operations at the facility (see Appendix A) associated with this proposed project. Emissions estimates of criteria pollutant, GHG, HAP PTE were based on emission factors from AP-42, operation of 8760 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. 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** 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 Aircraft coating manufacturing operation uncontrolled Potential to Emit is based upon a worst-case for operation of the facility of 8760 hr/yr.

Table 2 UNCONTROLLED POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	PM ₁₀ /PM _{2.5}	SO ₂	NO _x	CO	VOC	Lead
	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr
Point Sources						
Paint Booths	1.4	--	--	--	4.0	--
Paint Booth Combustion	0.1	0.0	0.5	0.9	0.1	0.0
Boiler	0.1	0.0	0.5	0.8	0.1	0.0
Cure Booth	0.1	0.0	0.3	0.6	0.0	0.0
Wire Welding	0.0	--	--	--	--	--
Chem Film	--	--	--	--	--	--
Total	1.70	0.00	1.40	2.30	4.20	0.00

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 Aircraft coating manufacturing operation uncontrolled Potential to Emit is based upon a worst-case for operation of the facility of 4178 hr/yr.

Table 3 UNCONTROLLED POTENTIAL TO EMIT FOR HAZARDOUS AIR POLLUTANTS

Hazardous Air Pollutants	PTE (T/yr)
1,2,4-Trimethylbenzene	0.01
2-Butoxyethanol	0.00
4-methylpentan-2-one	0.75
Barium chromate	0.03
Barium Sulfate	0.04
Butan-1-ol	0.18
Butanone (Methyl Ethyl Ketone)	1.65
Carbon Black	0.02
Cristobalite	0.01
Crystalline Silica	0.58
Cyclohexanone	0.69
Ethylbenzene	0.13
Fatty acids, dimers, polymers, etc.	0.46
Formaldehyde Polymer	0.06
Heptan-2-one	0.20
Light Aromatic Hydrocarbons	0.00
Manganese Carbonate	0.00
n-Butyl Acetate	1.52
Pentan-2-one	0.01
Polyester Resin	0.04
Silicon Dioxide	0.00
Strontium Chromate	0.67
Talc	0.24
Titanium Dioxide	0.03
Toluene	0.04
Trimethoxysilane	0.01
Xylene	0.74
Total	8.10

Pre-Project Potential to Emit

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project. This is an existing facility. However, since this is the first time the facility is receiving a permit, pre-project emissions are set to zero for all criteria pollutants.

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 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 POLLUTANTS

Source	PM ₁₀ /PM _{2.5}		SO ₂		NO _x		CO		VOC	
	lb/hr ^(a)	T/yr ^(b)	lb/hr ^(a)	T/yr ^(b)	lb/hr ^(a)	T/yr ^(b)	lb/hr ^(a)	T/yr ^(b)	lb/hr ^(a)	T/yr ^(b)
Paint Booth	0.1	0.03	--	--	--	--	--	--	3.8	4.0
Paint Booth Combustion	0.0	0.08	0.0	0.0	0.1	0.5	0.2	0.9	0.0	0.1
Boiler	0.0	0.07	0.0	0.0	0.1	0.5	0.2	0.8	0.0	0.1
Cure Booth	0.0	0.05	0.0	0.0	0.1	0.3	0.1	0.6	0.0	0.0

Wire Welding	0.0	0.00	--	--	--	--	--	--	--	--
Chem Film	--	--	--	--	--	--	--	--	--	--
Post Project Totals	0.10	0.23	0.00	0.00	0.30	1.40	0.50	2.30	3.80	4.20

- a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
b) 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

Source	PM ₁₀ /PM _{2.5}		SO ₂		NO _x		CO		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Pre-Project Potential to Emit	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Post Project Potential to Emit	0.10	0.23	0.00	0.00	0.30	1.40	0.50	2.30	3.80	4.20
Changes in Potential to Emit	0.10	0.23	0.00	0.00	0.30	1.40	0.50	2.30	3.80	4.20

TAP Emissions

A summary of the estimated PTE for emissions increase of toxic air pollutants (TAP) is provided in the following table.

Pre- and post-project, as well as the change in TAP emissions are presented in the following table:

Table 6 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR TOXIC AIR POLLUTANTS

Toxic Air Pollutants	Pre Project Emissions Rates for Units at the Facility (lb/hr)	Post Project Emissions Rates for Units at the Facility (lb/hr)	Change in Emissions Rates for Units at the Facility (lb/hr)	Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
2-Butoxyethanol	0.0000	8.98E-02	8.98E-02	8.00E+00	no
3-Methylcholanthrene	0.0000	1.11E-08	1.11E-08	2.50E-06	no
4-methylpentan-2-one	0.0000	1.56E+00	1.56E+00	1.37E+01	no
7-PAH group	0.0000	7.05E-08	7.05E-08	2.00E-06	no
Total POM/PAH (except 7-PAH)	0.0000	4.14E-06	4.14E-06	9.10E-05	no
Aluminum	0.0000	1.52E-10	1.52E-10	6.67E-01	no
Arsenic	0.0000	1.24E-06	1.24E-06	1.50E-06	no
Barium	0.0000	2.72E-05	2.72E-05	3.30E-02	no
Benzene	0.0000	1.30E-05	1.30E-05	8.00E-04	no
Benzo[a]pyrene	0.0000	7.42E-09	7.42E-09	2.00E-06	no
Beryllium	0.0000	7.42E-08	7.42E-08	2.80E-05	no
Butan-1-ol	0.0000	2.70E-01	2.70E-01	1.00E+01	no
Butanone (Methyl Ethyl Ketone)	0.0000	2.70E-01	2.70E-01	3.93E+01	no
Cadmium	0.0000	6.81E-06	6.81E-06	3.70E-06	yes
Carbon Black	0.0000	3.67E-03	3.67E-03	2.30E-01	no
Chromium	0.0000	8.86E-06	8.86E-06	3.30E-02	no
Cobalt	0.0000	5.20E-07	5.20E-07	3.30E-03	no
Copper	0.0000	5.26E-06	5.26E-06	1.30E-02	no
Cristobalite	0.0000	1.58E-03	1.58E-03	3.30E-03	no
Crystalline Silica	0.0000	2.10E-02	2.10E-02	6.70E-03	yes
Cyclohexanone	0.0000	1.63E+00	1.63E+00	6.67E+00	no

Dichlorobenzene	0.0000	7.42E-06	7.42E-06	2.00E+01	no
Ethylbenzene	0.0000	3.36E-01	3.36E-01	2.90E+01	no
Fluorides (Hydrogen Fluoride)	0.0000	1.55E-05	1.55E-05	0.167	no
Formaldehyde	0.0000	4.64E-04	4.64E-04	5.10E-04	yes
Heptan-2-one	0.0000	4.03E+00	4.03E+00	1.57E+01	no
Hexane	0.0000	1.11E-02	1.11E-02	1.20E+01	no
Manganese	0.0000	2.37E-06	2.37E-06	6.70E-02	no
Mercury	0.0000	1.61E-06	1.61E-06	2.85E-03	no
Molybdenum	0.0000	6.81E-06	6.81E-06	3.33E-01	no
Naphthalene	0.0000	3.77E-06	3.77E-06	3.33E+00	no
n-Butyl Acetate	0.0000	2.55E+00	2.55E+00	4.73E+01	no
Nickel	0.0000	1.30E-05	1.30E-05	2.70E-05	no
Nitric Acid	0.0000	2.26E-05	2.26E-05	0.333	no
Pentan-2-one	0.0000	2.52E-01	2.52E-01	4.67E+01	no
Pentane	0.0000	1.61E-02	1.61E-02	1.18E+02	no
Selenium	0.0000	1.48E-07	1.48E-07	1.30E-02	no
Silicon	0.0000	1.17E-09	1.17E-09	6.67E-01	no
Sulfuric Acid	0.0000	1.09E-08	1.09E-08	0.067	no
Toluene	0.0000	4.34E-01	4.34E-01	2.50E+01	no
Xylene	0.0000	1.86E+00	1.86E+00	2.90E+01	no
Zinc	0.0000	1.79E-04	1.79E-04	6.67E-01	no

The PTEs for the non-carcinogenic TAP crystalline silica exceeded the (EL) as a result of this project. However, modeling performed by the facility and checked by DEQ staff demonstrated compliance for the 24-hour average non-carcinogenic acceptable ambient concentration (AAC) identified in IDAPA 58.01.01.585.

Some carcinogenic TAPs have estimated (lb/hr) annual average potential emissions greater than the carcinogenic screening emission levels IDAPA 58.01.01.586. These TAPs, formaldehyde and cadmium, are also HAPs and it is presumed that EPA evaluated the 187 HAPs when developing the emission standards for new, modified or existing stationary sources regulated by 40 CFR Part 63; therefore, no further review is required under IDAPA 58.01.01.210 for these pollutants for sources subject to 40 CFR Part 63, including sources specifically exempted within the subpart. The Toxic Air Pollutants that are not one of the 187 Hazardous Air Pollutants will still need to be evaluated for compliance with IDAPA 210. Regardless, DEQ may also require a source to evaluate any pollutant under IDAPA Section 161 to ensure that pollutant alone, or in combination with any other contaminants, does not injure or unreasonably affect human or animal life or vegetation.

Post Project HAP Emissions

The following table presents the post project potential to emit for HAP pollutants from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 7 HAZARDOUS AIR POLLUTANTS EMISSIONS POTENTIAL TO EMIT SUMMARY

Hazardous Air Pollutants	PTE (T/yr)
1,2,4-Trimethylbenzene	5.00E-03
2-Butoxyethanol	3.34E-03
4-methylpentan-2-one	7.54E-01
Barium chromate	5.30E-04
Barium Sulfate	7.20E-04
Butan-1-ol	1.84E-01
Butanone (Methyl Ethyl Ketone)	1.65E+00
Carbon Black	3.25E-04
Cristobalite	2.45E-04
Crystalline Silica	1.16E-02

Cyclohexanone	6.87E-01
Ethylbenzene	1.25E-01
Fatty acids, dimers, polymers, etc.	9.27E-03
Formaldehyde Polymer	1.23E-03
Heptan-2-one	2.03E-01
Light Aromatic Hydrocarbons	3.34E-03
Manganese Carbonate	9.97E-06
n-Butyl Acetate	1.52E+00
Pentan-2-one	9.37E-03
Polyester Resin	1.07E-01
Silicon Dioxide	1.58E-05
Strontium Chromate	1.33E-02
Talc	4.87E-03
Titanium Dioxide	1.35E-03
Toluene	3.73E-02
Trimethoxysilane	2.10E-02
Xylene	7.40E-01
Total	6.09

Ambient Air Quality Impact Analyses

An ambient air impact analysis was required for this project because the EL listed in IDAPA 58.01.01.585 for crystalline silica were exceeded. The modeled concentrations for crystalline silica met the AACs listed in IDAPA 58.01.01.585 as presented in the application. DEQ verified that appropriate emissions rates were used in the air impact analyses and verified that modeled impact values were below applicable AACs. Details of other data and parameters used in the atmospheric dispersion modeling analyses are listed in Appendix B.

The estimated emission rates of PM₁₀, PM_{2.5}, SO₂, NO_x, CO, VOC, HAP, and other TAPs from this project were below applicable screening emission levels (EL) and published DEQ modeling thresholds established in IDAPA 58.01.01.585-586 and in the State of Idaho Air Quality Modeling Guideline. Refer to the Emissions Inventories section for additional information concerning the emission inventories.

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Bonner County, which is designated as attainment or unclassifiable for PM_{2.5}, PM₁₀, SO₂, NO₂, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

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 8 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION

Pollutant	Uncontrolled PTE (T/yr)	Permitted PTE (T/yr)	Major Source Thresholds (T/yr)	AIRS/AFS Classification
PM	1.7	0.23	100	B
PM ₁₀	1.7	0.23	100	B
PM _{2.5}	1.7	0.23	100	B
SO ₂	0.0	0.0	100	B
NO _x	1.4	1.4	100	B
CO	2.3	2.3	100	B
VOC	4.2	4.2	100	B
HAP (single)	1.65	1.65	10	B
HAP (total)	7.1	6.1	25	B
Pb	0.00	0.00	100	B

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201 Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the proposed new emissions source. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625..... Visible Emissions

The sources of PM emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Condition 2.8.

Standards for New Sources (IDAPA 58.01.01.676)

IDAPA 58.01.01.676 Standards for New Sources

The fuel burning equipment located at this facility, with a maximum rated input of ten (10) million BTU per hour or more, are subject to a particulate matter limitation of 0.015 gr/dscf of effluent gas corrected to 3% oxygen by volume when combusting gaseous fuels. Fuel-Burning Equipment is defined as any furnace, boiler, apparatus, stack and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer. This requirement is assured by Permit Condition 2.10.

Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

IDAPA 58.01.01.301 Requirement to Obtain Tier I Operating Permit

Post project facility-wide emissions from this facility do not have a potential to emit greater than 100 tons per year for PM₁₀, SO₂, NO_x, CO, VOC, or 10 tons per year for any one HAP or 25 tons per year for all HAP combined as demonstrated previously in the Emissions Inventories Section of this analysis. Therefore, the facility is not a Tier I source in accordance with IDAPA 58.01.01.006 and the requirements of IDAPA 58.01.01.301 do not apply.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

NSPS Applicability (40 CFR 60)

The facility is not subject to any NSPS requirements 40 CFR Part 60.

NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements in 40 CFR 61.

MACT Applicability (40 CFR 63)

The facility has proposed to operate as a minor source of hazardous air pollutant (HAP) emissions, and is subject to the requirements of 40 CFR 63, Subpart HHHHHH–National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources. DEQ is not delegated this Subpart. Refer to the Title V Classification section for additional information.

40 CFR 63, Subpart HHHHHH National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources

See Appendix C for a complete breakdown of 40 CFR 63, Subpart HHHHHH

Permit Conditions Review

This section describes the permit conditions for this initial permit.

Initial Permit Condition 1.1

This permit condition describes the permitting action and regulated sources.

Initial Permit Condition 2.1 through 2.4

These permit conditions regulate 7 natural gas combustion sources at the facility. Three of the boilers in the customer service and engineering buildings are used only for heat and hot water. The remainder of the boilers and the make-up air units are in the manufacturing building heat, hot water, and drying. All sources are regulated by restricting fuel to natural gas and using a monthly 12-month rolling total to limit the annual usage as presented in the emissions inventory (EI). See Appendix A for combustion emission details.

Initial Permit Condition 3.1 and 3.2

This describes the process and the Aircraft Coating Equipment.

Initial Permit Condition 3.3 and 3.4

These permit conditions incorporate opacity limits in accordance with IDAPA 58.01.01.625 and odor requirements in accordance with IDAPA 58.01.01.776.

Initial Permit Condition 3.5 and 3.6

Criteria pollutants in coating materials are limited to the amounts presented in the emissions inventory for this project. HAPs limits are set to HAP total for the Aggregate HAPs from aggregate coating operations and VOC's to 3.98 tons per year as presented in the EI for this project. PM is presumed to be inherently limited by the VOC limit and is therefore not included.

Initial Permit Condition 3.7 and 3.8

Coating material use limit by gallons of specific individual materials was included in Table 3.2 in lieu of tracking daily TAPs. The potential use of future alternate coatings would be allowed if the amounts and types of alternate coatings qualify for exemption (IDAPA 58.01.01.220-223) or would exhibit emissions that do not exceed 585 or 586 TAP ELs.

Initial Permit Condition 3.9

The permit conditions also require HVLP or equivalent spray guns be used and the filter systems to be operated at all times and in accordance with manufacturer's specifications when paint spray booths are operated. The particulate filtration efficiency and the coating transfer efficiency for this control equipment were used in developing the particulate emissions and were relied upon to demonstrate preconstruction compliance with BRC levels for PM₁₀.

Initial Permit Condition 3.10

Using the purchase records, SDSs, and material usage records, the permittee shall monitor and record the daily use amounts of specified coatings to demonstrate compliance with Permit Table 3.2 limits.

Initial Permit Condition 3.11 through 3.14

In addition, the permittee shall develop records demonstrating that possible future alternate coatings are either exempt from permitting requirements (IDAPA 58.01.01.220-223) or the maximum amounts that do not exceed 585 or 586 TAP ELs and record the amounts of alternate coatings used. Formulae to use to calculate the maximum amounts are listed in the Permit. For volatile non-carcinogenic TAP; the allowable gallons per day daily emissions (pounds per calendar day) is the TAP screening emissions multiplied by 24; for solid TAPs, the application and filtering are taken into account. For volatile carcinogenic TAPs, allowable gallons per month monthly emissions (pounds per consecutive 12-month period) is the screening emissions multiplied by 8760; for solid carcinogenic TAPs, the application and filtering are taken into account. Monitoring alternative coating by gallons per week, the emissions for non-carcinogenic and carcinogenic TAPs shall use the equations from Permit Condition 3.11 by dividing the gallons per week by the number of operating days. This requires a modeling demonstration anytime a respective TAP EL is exceeded and will require the permittee to have SDS or MSDS available on site for each TAP containing material. If a range is listed for the TAP, the highest value of the range is to be used for worst case. In accordance with the general provisions all emissions calculations shall remain on-site. Permit Condition 3.14 was added to report to DEQ each year on all required modeling performed due to TAPs exceedances as stated in permit conditions 3.11 and 2.12.

Initial Permit Condition 3.14 through 3.19

The sole purpose of these permit conditions are to include the provisions of the National Emissions Standards for Hazardous Air Pollutants for Subpart HHHHHH– Stripping and Miscellaneous Surface Coating Operations at Area Sources. A detailed analysis of this regulation is provided in Appendix C.

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c or IDAPA 58.01.01.404.01.c. During this time there was a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

Public Comment Period

A public comment period was made available to the public in accordance with IDAPA 58.01.01.209.01.c. During this time, no comments were received in response to DEQ's proposed action. Refer to the chronology for public comment period dates.

APPENDIX A – EMISSIONS INVENTORIES

Facility Criteria Emissions Summary

Source	PM10 ¹		PM2.5 ¹		CO		NO _x		SO ₂		Pb		VOC ²		Source	Other Pollutants					
	lb/hr		ton/yr		lb/hr		ton/yr		lb/hr		ton/yr		lb/hr			ton/yr		HAP		CO ₂ e	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/mon	ton/yr	lb/hr	ton/yr		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Uncontrolled Emissions																					
Paint Booth	5.1	1.4	5.1	1.4	--	--	--	--	--	--	--	--	3.8	4.0	Paint Booth	5.7	1.7	--	--		
Paint Booth Combustion	0.0	0.1	0.0	0.1	0.2		0.1	0.5	0.0	0.0	0.0	0.0	0.0	0.1	Paint Booth Combustion	4.5E-03	2.0E-02	2.9E+02	1.3E+03		
Boiler	0.0	0.1	0.0	0.1	0.2	0.8	0.1	0.5	0.0	0.0	0.0	0.00	0.0	0.1	Boiler	4.2E-03	1.8E-02	2.7E+02	1.2E+03		
Cure Booth	0.0	0.1	0.0	0.1	0.1	0.6	0.1	0.3	0.0	0.0	0.0	0.00	0.0	0.0	Cure Booth	3.0E-03	1.3E-02	1.9E+02	8.4E+02		
Wire Welding	0.0	0.0	0.0	0.0	--	--	--	--	--	--	--	--	--	--	Wire Welding	1.6E-08	6.8E-08	--	--		
Chem Film	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Chem Film	1.6E-05	6.9E-05	--	--		
Total	5.2	1.6	5.2	1.6	0.5	1.4	0.3	1.4	0.0	0.0	0.0	0.0	3.8	4.1	Total	5.8	1.7	744	3259		
Permitting Threshold:																					
BRC	0.34	1.5	0.23	1	2.28	10	0.91	4	0.91	4	--	0.06	--	4.0							
At or Exceed?	yes	yes	yes	yes	no	no	no	no	no	no	--	no	--	no							
Controlled Emissions																					
Paint Booth	0.1	0.03	0.10	0.0	--	--	--	--	--	--	--	--	3.8	4.0							
Combustion	0.0	0.08	0.02	0.1	0.2	0.0	0.1	0.5	0.0	0.0	0.0	0.0	0.0	0.1							
Boiler	0.0	0.07	0.02	0.1	0.2	0.8	0.1	0.5	0.0	0.0	0.0	0.0	0.0	0.1							
Cure Booth	0.0	0.05	0.01	0.1	0.1	0.6	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0							
Wire Welding	0.0	0.00	0.00	0.0	--	--	--	--	--	--	--	--	--	--							
Chem Film	--	--	--	--	--	--	--	--	--	--	--	--	--	--							
Total	0.1	0.23	0.15	0.2	0.5	1.4	0.3	1.4	0.0	0.0	0.0	0.0	3.8	4.1							
Modeling Thresholds:																					
Tier I	--	0.22	0.054	0.35	--	--	--	--	--	--	--	--	--	--							
Tier II	--	2.6	0.63	4.1	--	--	--	--	--	--	--	--	--	--							
Exceed?	--	Yes (Tier I)	Yes (Tier I)	No	--	--	--	--	--	--	--	--	--	--							

1) It is assumed that PM₁₀ = PM_{2.5}.

2) There is no modeling threshold for VOC.

Toxic Air Pollutant Emissions Summary

CAS#	Chemical	Paint Booth	Paint Booth Combustion	Boiler	Cure Booth	Wire Welding	Chem Film	Emissions (lb/hr)			EL ¹ (lb/hr)	BRC ² Exceedance	EL Exceedance
								Uncontrolled	Paint Controlled	Controlled			
111-76-2	2-Butoxyethanol	8.98E-02						8.98E-02	8.98E-02	8.98E-02	8.00E+00	no	--
56-49-5	3-Methylcholanthrene		4.3E-09	4.0E-09	2.9E-09			1.11E-08		1.11E-08	2.50E-06	no	--
108-10-1	4-methylpentan-2-one	1.56E+00						1.56E+00	1.56E+00	1.56E+00	1.37E+01	yes	no
NA	7-PAH group		2.7E-08	2.5E-08	1.8E-08			7.05E-08		7.05E-08	2.00E-06	no	--
NA	Total POM/PAH (except 7-PAH)		1.6E-06	1.5E-06	1.1E-06			4.14E-06		4.14E-06	9.10E-05	no	--
7429-80-5	Aluminum					1.5E-10		1.52E-10		1.52E-10	6.67E-01	no	--
7440-38-2	Arsenic		4.8E-07	4.4E-07	3.2E-07			1.24E-06		1.24E-06	1.50E-06	yes	no
7440-39-3	Barium		1.1E-05	9.7E-06	7.0E-06			2.72E-05		2.72E-05	3.30E-02	no	--
71-43-2	Benzene		5.0E-06	4.6E-06	3.3E-06			1.30E-05		1.30E-05	8.00E-04	no	--
50-32-8	Benzo[a]pyrene		2.9E-09	2.7E-09	1.9E-09			7.42E-09		7.42E-09	2.00E-06	no	--
7440-41-7	Beryllium		2.9E-08	2.7E-08	1.9E-08			7.42E-08		7.42E-08	2.80E-05	no	--
71-36-3	Butan-1-ol	2.70E-01						2.70E-01	2.70E-01	2.70E-01	1.00E+01	no	--
78-93-3	Butanone (Methyl Ethyl Ketone)	2.70E-01						2.70E-01	2.70E-01	2.70E-01	3.93E+01	no	--
7440-43-9	Cadmium		2.6E-06	2.4E-06	1.8E-06			6.81E-06		6.81E-06	3.70E-06	yes	yes
1333-86-4	Carbon Black	1.83E-01						1.83E-01	3.67E-03	3.67E-03	2.30E-01	yes	no
7440-47-3	Chromium		3.3E-06	3.1E-06	2.2E-06		2.0E-07	8.86E-06		8.86E-06	3.30E-02	no	--
7440-48-4	Cobalt		2.0E-07	1.9E-07	1.3E-07			5.20E-07		5.20E-07	3.30E-03	no	--
7440-50-8	Copper		2.0E-06	1.9E-06	1.4E-06	5.1E-10		5.26E-06		5.26E-06	1.30E-02	no	--
14464-46-1	Cristobalite	7.92E-02						7.92E-02	1.58E-03	1.58E-03	3.30E-03	yes	no
14808-60-7	Crystalline Silica	1.05E+00						1.05E+00	2.10E-02	2.10E-02	6.70E-03	yes	yes
108-94-1	Cyclohexanone	1.63E+00						1.63E+00	1.63E+00	1.63E+00	6.67E+00	yes	no
25321-22-6	Dichlorobenzene		2.9E-06	2.7E-06	1.9E-06			7.42E-06		7.42E-06	2.00E+01	no	--
100-41-4	Ethylbenzene	3.36E-01						3.36E-01	3.36E-01	3.36E-01	2.90E+01	no	--
	Fluorides (Hydrogen Fluoride)						1.6E-05	1.55E-05		1.55E-05	0.167	no	--
50-00-0	Formaldehyde		1.8E-04	1.7E-04	1.2E-04			4.64E-04		4.64E-04	5.10E-04	yes	no
110-43-0	Heptan-2-one	4.03E+00						4.03E+00	4.03E+00	4.03E+00	1.57E+01	yes	no
110-54-3	Hexane		4.3E-03	4.0E-03	2.9E-03			1.11E-02		1.11E-02	1.20E+01	no	--
7439-96-5	Manganese		9.1E-07	8.4E-07	6.0E-07	1.6E-08		2.37E-06		2.37E-06	6.70E-02	no	--
7439-97-6	Mercury		6.2E-07	5.7E-07	4.1E-07			1.61E-06		1.61E-06	2.85E-03	no	--
7439-98-7	Molybdenum		2.6E-06	2.4E-06	1.8E-06			6.81E-06		6.81E-06	3.33E-01	no	--
91-20-3	Naphthalene		1.5E-06	1.3E-06	9.7E-07			3.77E-06		3.77E-06	3.33E+00	no	--
123-86-4	n-Butyl Acetate	2.55E+00						2.55E+00	2.55E+00	2.55E+00	4.73E+01	no	--
7440-02-0	Nickel		5.0E-06	4.6E-06	3.3E-06			1.30E-05		1.30E-05	2.70E-05	yes	no
7697-37-2	Nitric Acid						2.3E-05	2.26E-05		2.26E-05	0.333	no	--
107-87-9	Pentan-2-one	2.52E-01						2.52E-01	2.52E-01	2.52E-01	4.67E+01	no	--
109-66-0	Pentane		6.2E-03	5.7E-03	4.1E-03			1.61E-02		1.61E-02	1.18E+02	no	--
7782-49-2	Selenium		5.7E-08	5.3E-08	3.8E-08			1.48E-07		1.48E-07	1.30E-02	no	--
7440-21-3	Silicon					1.2E-09		1.17E-09		1.17E-09	6.67E-01	no	--
7664-93-9	Sulfuric Acid						1.1E-08	1.09E-08		1.09E-08	0.067	no	--
108-88-3	Toluene	4.34E-01	8.1E-06	7.5E-06	5.4E-06			4.34E-01	4.34E-01	4.34E-01	2.50E+01	no	--
1330-20-7	Xylene	1.86E+00						1.86E+00	1.86E+00	1.86E+00	2.90E+01	no	--
7440-66-6	Zinc		6.9E-05	6.4E-05	4.6E-05			1.79E-04		1.79E-04	6.67E-01	no	--

1. Screening emission level (EL): IDAPA 58.01.01 Sections 585 and 586.

2. Below Regulatory Concern (BRC): Uncontrolled emission rate below or equal to 10% of EL.

QUEST AIRCRAFT CO. PAINT BOOTH CHEMICAL USAGE & EMISSION INVENTORY: Coating Information and Emissions Calculations (uncontrolled)

	Production (Planes)	Painting Hours ¹			Paint Use (gal/yr)	Rate (gal/hr)
		daily	monthly	annual		
2014	27	9.00	156.67	1880.00	810.00	0.43
Estimated 2015	60	20.00	348.15	4177.78	1800.00	0.43

Transfer Efficiency	65%
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PRODUCT	Coating Information				Uncontrolled PTE														
	COMPOSITION	CAS #	%	Max %	PTE			VOC ²			HAP			TAP					
					lbs/hr	lbs/year	tons/yr	Y/N	lb/hr	tons/yr	Y/N	lb/hr	tons/yr	Y/N	lb/hr	tons/yr			
513X384 Primer VOC (g/l) 547 Density (lbs/gal) 9.93 2014 Usage (gal/yr) 480 Projected Usage (gal/yr) 1067 Percent of Total Use 59.26% VOC emitted (ton/yr) 2,434,641,341	Fatty acids, dimers, polymers, etc.	119796-38-2	18-25%	25.0%	0.37	926.80	0.46	N				N				N			
	Butanone	78-93-3	14-25%	25.0%	1.07	2648.00	1.32	Y	1.07	1.32	N					Y	1.07	1.32	
	N-Butyl Acetate	123-86-4	10-25%	25.0%	1.07	2648.00	1.32	Y	1.07	1.32	N					Y	1.07	1.32	
	Crystalline Silica	14808-60-7	10-25%	25.0%	0.37	926.80	0.46	N				N				Y	0.37	0.46	
	Strontium Chromate	7789-06-2	10-25%	25.0%	0.37	926.80	0.46	N				N				N			
	Cyclohexanone	108-94-1	7-10%	10.0%	0.43	1059.20	0.53	Y	0.43	0.53	N					Y	0.43	0.53	
	Butan-1-ol	71-36-3	2.2-3%	3.0%	0.13	317.76	0.16	Y	0.13	0.16	N					Y	0.13	0.16	
	Barium chromate	10294-40-3	0.3-1%	1.0%	0.01	37.07	0.02	N				N				N			
										2.70	3.34						3.07	3.80	
513X419 Epoxy Primer VOC (g/l) 353 Density (lbs/gal) 12.6 2014 Usage (gal/yr) 50 Projected Usage (gal/yr) 111 Percent of Total Use 6.17% VOC emitted (ton/yr) 0.163663238	Strontium Chromate	7789-06-2	25-50%	50.0%	0.95	245.00	0.12	N				N				N			
	Formaldehyde	9003-36-5	10-25%	25.0%	0.48	122.50	0.06	N				N				N			
	Crystalline Silica	14808-60-7	10-25%	25.0%	0.48	122.50	0.06	N				N				Y	0.48	0.06	
	Heptan-2-one	110-43-0	8.2-10%	10.0%	0.54	140.00	0.07	Y	0.54	0.07	N					Y	0.54	0.07	
	4-methylpentan-2-one	108-10-1	6-10%	10.0%	0.54	140.00	0.07	Y	0.54	0.07	Y	0.54	0.07	Y	0.54	0.07	0.54	0.07	
	Cristobalite	14464-46-1	3-5%	5.0%	0.10	24.50	0.01	N				N				Y	0.10	0.01	
	Titanium Dioxide	13463-67-7	3-5%	5.0%	0.10	24.50	0.01	N				N				N			
	Cyclohexanone	108-94-1	3.4-5%	5.0%	0.27	70.00	0.04	Y	0.27	0.04	N					Y	0.27	0.04	
	Toluene	108-88-3	1-3%	3.0%	0.16	42.00	0.02	Y	0.16	0.02	Y	0.16	0.02	Y	0.16	0.02	Y	0.16	0.02
	Butanone	78-93-3	1-3%	3.0%	0.16	42.00	0.02	Y	0.16	0.02	N					Y	0.16	0.02	
Trimethoxysilane	2530-83-8	1-3%	3.0%	0.06	14.70	0.01	N				N				N				
Ethylbenzene	100-41-4	1.3-3%	3.0%	0.02	4.20	0.00	Y	0.02	0.00	Y	0.02	0.00	Y	0.02	0.00	Y	0.02	0.00	
									1.70	0.22						2.27	0.29		
823-011 Fuel Tank Primer VOC (g/l) 518 Density (lbs/gal) 10.26 2014 Usage (gal/yr) 200 Projected Usage (gal/yr) 444 Percent of Total Use 24.69% VOC emitted (ton/yr) 0.960652205	Talc	14807-96-6	10-30%	30.0%	0.46	478.80	0.24	N				N				N			
	4-methylpentan-2-one	108-10-1	10-30%	30.0%	1.33	1368.00	0.68	Y	1.33	0.68	Y	1.33	0.68	Y	1.33	0.68	Y	1.33	0.68
	Xylene	1330-20-7	10-30%	30.0%	1.33	1368.00	0.68	Y	1.33	0.68	Y	1.33	0.68	Y	1.33	0.68	Y	1.33	0.68
	Strontium Chromate	7789-06-2	5-10%	10.0%	0.15	159.60	0.08	N				N				N			
	Butanone	78-93-3	5-10%	10.0%	0.44	456.00	0.23	Y	0.44	0.23	N					Y	0.44	0.23	
	Ethylbenzene	100-41-4	1-5%	5.0%	0.22	228.00	0.11	Y	0.22	0.11	Y	0.22	0.11	Y	0.22	0.11	Y	0.22	0.11
	Barium chromate	10294-40-3	1-1%	1.0%	0.02	15.96	0.01	N				N				N			
									3.32	1.71						3.32	1.71		
528X310 Base Component VOC (g/l) 611 Density (lbs/gal) 9.1 2014 Usage (gal/yr) 50 Projected Usage (gal/yr) 111 Percent of Total Use 6.17% VOC emitted (ton/yr) 0.283281128	n-Butyl Acetate	123-86-4	10-30%	30.0%	1.18	303.33	0.15	Y	1.18	0.15	N				Y	1.18	0.15		
	Crystalline Silica	14808-60-7	10-30%	30.0%	0.41	106.17	0.05	N				N				Y	0.41	0.05	
	Butanone	78-93-3	7-13%	13.0%	0.51	131.44	0.07	Y	0.51	0.07	N				Y	0.51	0.07		
	Cyclohexanone	108-94-1	7-13%	13.0%	0.51	131.44	0.07	Y	0.51	0.07	N				Y	0.51	0.07		
	Carbon Black	1333-86-4	3-7%	7.0%	0.10	24.77	0.01	N				N				Y	0.10	0.01	
	Butan-1-ol	71-36-3	1-5%	5.0%	0.20	50.56	0.03	Y	0.20	0.03	N				Y	0.20	0.03		
	Xylene	1330-20-7	1-1%	1.0%	0.04	10.11	0.01	Y	0.04	0.01	Y	0.04	0.01	Y	0.04	0.01	Y	0.04	0.01
										2.43	0.31						2.94	0.38	
Polane Enamel, Black, Sherwin Williams VOC (g/l) 624 Density (lbs/gal) 8.65 2014 Usage (gal/yr) 12 Projected Usage (gal/yr) 27 Percent of Total Use 1.48% VOC emitted (ton/yr) 0.069434013	Toluene	108-88-3	7.0%	7.0%	0.26	16.15	0.01	Y	0.26	0.01	Y	0.26	0.01	Y	0.26	0.01	Y	0.26	0.01
	Ethylbenzene	100-41-4	0.6%	0.6%	0.02	1.38	0.00	Y	0.02	0.00	Y	0.02	0.00	Y	0.02	0.00	Y	0.02	0.00
	Xylene	1330-20-7	4.0%	4.0%	0.15	9.23	0.00	Y	0.15	0.00	Y	0.15	0.00	Y	0.15	0.00	Y	0.15	0.00
	Methyl Ethyl Ketone	78-93-3	7.0%	7.0%	0.26	16.15	0.01	Y	0.26	0.01	N				Y	0.26	0.01		
	Cyclohexanone	108-94-1	20.0%	20.0%	0.75	46.13	0.02	Y	0.75	0.02	N				Y	0.75	0.02		
	n-Butyl Acetate	123-86-4	22.0%	22.0%	0.82	50.75	0.03	Y	0.82	0.03	N				Y	0.82	0.03		
	Talc	14807-96-6	10.0%	10.0%	0.13	8.07	0.00	N				N				N			
Carbon Black	1333-86-4	3.0%	3.0%	0.04	2.42	0.00	N				N				Y	0.04	0.00		
									2.26	0.07						2.30	0.07		

QUEST AIRCRAFT CO. PAINT BOOTH CHEMICAL USAGE & EMISSION INVENTORY: Coating Information and Emissions Calculations (uncontrolled)

Toxic and Hazardous Air Pollutant Summary

Summary		PTE Per Paintbooth			Worst Case PTE	
Chemical	CAS#	(lbs/yr)	(tons/yr)	(lb/hr)	24-Hr Avg	
					(lb/hr)	
1,2,4-Trimethylbenzene	95-63-6	10.01	0.01	0.16	0.13	
2-Butoxyethanol	111-76-2	6.67	0.00	0.11	0.09	
4-methylpentan-2-one	108-10-1	1508.00	0.75	1.87	1.56	
Barium chromate	10294-40-3	53.03	0.03	0.03	0.03	
Barium Sulfate	7727-43-7	71.98	0.04	1.16	0.97	
Butan-1-ol	71-36-3	368.32	0.18	0.32	0.27	
Butanone (Methyl Ethyl Ketone)	78-93-3	3905.20	1.65	2.45	2.04	
Carbon Black	1333-86-4	32.45	0.02	0.22	0.18	
Cristobalite	14464-46-1	24.50	0.01	0.10	0.08	
Crystalline Silica	14808-60-7	1155.47	0.58	1.26	1.05	
Cyclohexanone	108-94-1	1373.15	0.69	1.95	1.63	
Ethylbenzene	100-41-4	250.31	0.13	0.40	0.34	
Fatty acids, dimers, polymers, etc.	119796-38-2	926.80	0.46	0.37	0.31	
Formaldehyde Polymer	9003-36-5	122.50	0.06	0.48	0.40	
Heptan-2-one	110-43-0	405.76	0.20	4.84	4.03	
Light Aromatic Hydrocarbons	64742-95-6	6.67	0.00	0.11	0.09	
Manganese Carbonate	598-62-9	1.00	0.00	0.02	0.01	
n-Butyl Acetate	123-86-4	3037.20	1.52	3.07	2.55	
Pentan-2-one	104-87-9	18.75	0.01	0.30	0.25	
Polyester Resin	-	75.13	0.04	1.21	1.01	
Silicon Dioxide	7631-86-9	1.58	0.00	0.03	0.02	
Strontium Chromate	7789-06-2	1331.40	0.67	1.48	1.23	
Talc	14807-96-6	486.87	0.24	0.59	0.50	
Titanium Dioxide	13463-67-7	66.57	0.03	0.77	0.65	
Toluene	108-88-3	74.57	0.04	0.52	0.43	
Trimethoxysilane	2530-83-8	14.70	0.01	0.06	0.05	
Xylene	1330-20-7	1460.95	0.74	2.23	1.86	
		lb/hr			tpy	
PM (2.5 µm & 10 µm)		3347.35	1.67	6.13	5.11	1.39

QUEST AIRCRAFT CO. PAINT BOOTH CHEMICAL USAGE & EMISSION INVENTORY: Coating Information and Emissions Calculations (controlled)

CAS#	Composition	CAS #	Max %	Emissions			VOC ⁴		HAP		TAP		EL lb/hr	Exceed?
				lbs/hr	lbs/year	tons/yr	Y/N	lb/hr	tons/yr	Y/N	lb/hr	tons/yr		
CA8800 1073	VOC (g/l) 337 Density (lbs/gal) 11.27 2014 Usage (gal/yr) 7 Projected Usage (gal/yr) 15.5555556 Percent of Total Use 0.86% VOC emitted (ton/yr) 0.02187431	Titanium Dioxide 13463-67-7 Heptan-2-one 110-43-0 Polyester Resin ⁵ NA Xylene 1330-20-7 Silicon Dioxide 7631-88-9 Ethylbenzene 100-41-4 Toluene 108-88-3	40% 30% 30% 5% 1.5% 1% 1%	1.36E-02 1.46 1.46 0.24 5.10E-04 4.86E-02 4.86E-02	0.84 90.16 90.16 15.03 3.16E-02 3.01 3.01	4.21E-04 4.51E-02 4.51E-02 7.51E-03 1.58E-05 1.50E-03 1.50E-03	N Y Y Y N Y Y	-- 1.46 1.46 0.24 -- -- 4.86E-02 4.86E-02	-- 4.51E-02 4.51E-02 7.51E-03 -- -- 1.50E-03 1.50E-03	N N N Y N Y Y	-- -- -- 0.24 -- -- 4.86E-02 4.86E-02	-- 4.51E-02 4.51E-02 7.51E-03 -- -- 1.50E-03 1.50E-03	15.7 -- -- 29 -- 29 25	NO -- -- NO -- NO NO
CA8800 3017	VOC (g/l) 347 Density (lbs/gal) 10.68 2014 Usage (gal/yr) 1 Projected Usage (gal/yr) 2.22222222 Percent of Total Use 0.12% VOC emitted (ton/yr) 0.00321763	Barium Sulfate 7727-43-7 Heptan-2-one 110-43-0 Polyester Resin ⁵ NA Xylene 1330-20-7 Pentane-2-one 107-87-9 Manganese Carbonate 598-82-9 Ethylbenzene 100-41-4	30% 30% 30% 5% 5% 1% 1%	9.66E-03 1.38 1.38 0.23 0.23 3.22E-04 4.60E-02	0.60 85.44 85.44 14.24 14.24 1.99E-02 2.85	2.99E-04 4.27E-02 4.27E-02 7.12E-03 7.12E-03 9.97E-05 1.42E-03	N Y Y Y Y N Y	-- 1.38 1.38 0.23 0.23 -- 4.60E-02 4.60E-02	-- 4.27E-02 4.27E-02 7.12E-03 7.12E-03 -- 1.42E-03 1.42E-03	N N N Y N N Y	-- -- -- 0.23 -- -- 4.60E-02 4.60E-02	-- 4.27E-02 4.27E-02 7.12E-03 7.12E-03 -- 1.42E-03 1.42E-03	15.7 -- -- 29 46.7 -- 29	NO -- -- NO NO -- NO
CA8800/B701 Base Component	VOC (g/l) 336 Density (lbs/gal) 11.27 2014 Usage (gal/yr) 3 Projected Usage (gal/yr) 6.68666667 Percent of Total Use 0.37% VOC emitted (ton/yr) 0.00934689	Barium Sulfate 7727-43-7 Heptan-2-one 110-43-0 Polyester Resin ⁵ NA Xylene 1330-20-7 Carbon Black Respirable 1333-86-4 Pentane-2-one 107-87-9 Ethylbenzene 100-41-4 Toluene 108-88-3	40% 30% 13% 5% 5% 1.5% 1% 1%	1.36E-02 1.46 0.63 0.24 1.70E-03 7.28E-02 4.86E-02 4.86E-02	0.84 90.16 39.07 15.03 0.11 4.51 3.01 3.01	4.21E-04 4.51E-02 1.95E-02 7.51E-03 5.26E-05 2.25E-03 1.50E-03 1.50E-03	N Y Y Y N Y Y Y	-- 1.46 0.63 0.24 -- 7.28E-02 4.86E-02 4.86E-02	-- 4.51E-02 1.95E-02 7.51E-03 -- 2.25E-03 1.50E-03 1.50E-03	N N N Y N Y Y Y	-- -- -- 0.24 -- -- 4.86E-02 4.86E-02	-- 4.51E-02 1.95E-02 7.51E-03 -- 5.26E-05 2.25E-03 1.50E-03 1.50E-03	15.7 -- -- 29 0.23 46.7 29 25	NO -- -- NO NO NO NO NO
Polane Enamel Stucco, Sherman Williams	VOC (g/l) 671 Density (lbs/gal) 11.16086 2014 Usage (gal/yr) 3 Projected Usage (gal/yr) 6.68666667 Percent of Total Use 0.37% VOC emitted (ton/yr) 0.01866595	Titanium Dioxide 13463-67-7 Cyclohexanone 108-94-1 n-Butyl Acetate 123-86-4 Methyl Ethyl Ketone 78-93-3 Toluene 108-88-3 Xylene 1330-20-7 Ethylbenzene 100-41-4	29.0% 22.3% 11.8% 3.9% 3.5% 2.0% 0.4%	9.76E-03 1.07 0.57 0.19 0.17 9.62E-02 1.92E-02	0.60 66.37 35.12 11.61 10.42 5.95 1.19	3.02E-04 3.32E-02 1.76E-02 5.80E-03 5.21E-03 2.98E-03 5.95E-04	N Y Y Y Y Y Y	-- 1.07 0.57 0.19 0.17 9.62E-02 1.92E-02	-- 3.32E-02 1.76E-02 5.80E-03 5.21E-03 2.98E-03 5.95E-04	N Y Y Y Y Y Y	-- -- -- 0.17 -- 9.62E-02 1.92E-02	-- 3.32E-02 1.76E-02 5.80E-03 5.21E-03 2.98E-03 5.95E-04	6.67 47.3 39.3 25 29 29	NO NO NO NO NO NO NO
Tile Clad II, Gray Primer	VOC (g/l) 378 Density (lbs/gal) 12.51 2014 Usage (gal/yr) 4 Projected Usage (gal/yr) 8.88888889 Percent of Total Use 0.49% VOC emitted (ton/yr) 0.01402033	Titanium Dioxide 13463-67-7 Polyamide ⁵ NA Xylene 1330-20-7 1,2,4-Trimethylbenzene 95-63-6 2-Butoxyethanol 111-76-2 Ethylbenzene 100-41-4 Light Aromatic Hydrocarbons 64742-95-6	33.0% 18.0% 13.0% 3.0% 2.0% 2.0% 2.0%	1.25E-02 6.79E-03 0.70 0.16 0.11 0.11 0.11	0.77 0.42 43.37 10.01 6.67 6.67 6.67	3.85E-04 2.10E-04 2.17E-02 5.00E-03 3.34E-03 3.34E-03 3.34E-03	N N Y Y Y Y Y	-- -- 0.70 0.16 0.11 0.11 0.11	-- -- 2.17E-02 5.00E-03 3.34E-03 3.34E-03 3.34E-03	N N Y N N Y N	-- -- 0.70 -- -- 0.11 --	-- -- 2.17E-02 5.00E-03 3.34E-03 3.34E-03 3.34E-03	29 -- 8 29 -- --	NO -- NO NO -- --
3.97879703							Total 6.05		Total 1.66		Total 5.93			

- Notes
1. Based on average 261 business days a year, 21.75 business days a month
 2. Control efficiency required by NESHAPs Subpart 6H.
 3. Transfer efficiency per vendor documentation. See Appendix C: Spray Gun Vendor Documents
 4. Boiling point < 250 °C
 5. "Polyester Resin" and "Polyamide" are assumed to not be VOC for the purpose of emission rate.

QUEST AIRCRAFT CO. PAINT BOOTH CHEMICAL USAGE & EMISSION INVENTORY: Coating Information and Emissions Calculations (controlled)

Toxic and Hazardous Air Pollutant Summary

Summary		PTE				Compliance	
Chemical	CAS#	Total		24-Hr Avg		EL	Exceed?
		(lbs/yr)	(tons/yr)	(lb/hr)	(lb/hr)	(lb/hr)	(y/n)
1,2,4-Trimethylbenzene	95-83-6	10.01	5.00E-03	0.18	0.13	--	--
2-Butoxyethanol	111-76-2	6.67	3.34E-03	0.11	8.98E-02	8.0	no
4-methylpentan-2-one	108-10-1	1508.00	0.75	1.33	1.11	13.7	no
Barium chromate	10294-40-3	1.06	5.30E-04	3.09E-04	2.58E-04	--	--
Barium Sulfate	7727-43-7	1.44	7.20E-04	1.38E-02	1.13E-02	--	--
Butan-1-ol	71-36-3	368.32	0.18	0.20	0.16	10.0	no
Butanone (Methyl Ethyl Ketone)	78-93-3	3305.20	1.65	1.07	0.89	39.3	no
Carbon Black	1333-86-4	0.65	3.25E-04	1.92E-03	1.60E-03	0.2	no
Cristobalite	14464-46-1	0.49	2.45E-04	1.90E-03	1.58E-03	0.0033	no
Crystalline Silica	14808-60-7	23.11	1.16E-02	9.50E-03	7.92E-03	0.0067	yes
Cyclohexanone	108-94-1	1373.15	0.69	1.07	0.89	6.7	no
Ethylbenzene	100-41-4	250.31	0.13	0.22	0.18	29.0	no
Fatty acids, dimers, polymers, etc.	119796-38-2	18.54	9.27E-03	7.49E-03	6.24E-03	--	--
Formaldehyde Polymer	9003-36-5	2.45	1.23E-03	9.50E-03	7.92E-03	--	--
Heptan-2-one	110-43-0	405.76	0.20	1.46	1.21	15.7	no
Light Aromatic Hydrocarbons	64742-95-6	6.67	3.34E-03	0.11	8.98E-02	--	--
Manganese Carbonate	598-62-9	1.99E-02	9.97E-06	3.22E-04	2.68E-04	--	--
n-Butyl Acetate	123-86-4	3037.20	1.52	1.18	0.98	47.3	no
Pentan-2-one	107-87-9	18.75	9.37E-03	0.23	0.19	46.7	no
Polyester Resin	--	214.67	0.11	1.46	1.21	--	no
Silicon Dioxide	7631-86-9	3.16E-02	1.58E-05	5.10E-04	4.25E-04	--	--
Strontium Chromate	7789-06-2	26.83	1.33E-02	1.90E-02	1.58E-02	--	--
Talc	14807-96-6	9.74	4.87E-03	9.28E-03	7.74E-03	--	--
Titanium Dioxide	13463-67-7	2.71	1.35E-03	1.36E-02	1.13E-02	--	--
Toluene	108-88-3	74.57	3.73E-02	0.26	0.22	25.0	no
Trimethoxysilane	2530-83-8	42.00	2.10E-02	0.16	0.14	--	--
Xylene	1330-20-7	1480.95	0.74	1.33	1.11	29.0	no
		Total		24-Hr Avg			
PM (2.5 µm & 10 µm)		68.32	0.03	0.02	0.02		

Note: Solid pollutants in bold.

QUEST AIRCRAFT CO. PAINT BOOTH CHEMICAL USAGE & EMISSION INVENTORY: Paint Booth #2

Operating Hours: 8760 hr/yr
 NG LHV: 950 Btu/ft³

Paint Booth	Make	Model ¹	Serial	Year	Energy ¹ (MMBtu/hr)	Fuel Use ² (ft ³ /yr)
2	Global Finishing Solutions	RAM-25	New	2016	2.268	2.09E+07

Note: 1 From Paint Booth AMU Placard, M. Alward 1/23/2017

2 100% fuel efficiency per 9/28/2015 proposal, p. 3 of 12

Annual Max Fuel Use: 20.9 MMscf

Criteria Pollutant	Emission Factor (lb/MMscf)	Max. Annual Emissions	
		(lb/yr)	(ton/yr)
PM	7.6	158.9	0.1
VOC	5.5	115.0	0.1
CO	84	1756.7	0.9
NO _x	50	1045.7	0.5
SO ₂	0.6	12.5	6.3E-03
Lead	0.0005	1.0E-02	5.2E-06
CO ₂ e	120,248	2,514,793	1,257
Idaho TAP	—	95	4.7E-02
HAP	—	39	2.0E-02

Greenhouse Gases

Pollutant	Emission Factor (lb/MM scf)	GWP
CO ₂	120,000	1
N ₂ O	0.64	298
Methane	2.3	25

Note: Emission Factors per AP-42 Tables 1.4-1 and 1.4-2, July 1998. Total PM is considered less than 1.0µm in diameter. Therefore PM=PM₁₀+PM_{2.5}

Toxic and Hazardous Air Pollutants						
CAS#	Air Pollutant	EF (lb/MMscf)		Emissions (lb/hr)	Emissions (tpy)	
Organics						
56-49-5	3-Methylcholanthrene	< 1.8E-06	HAP/TAP	4.30E-09	1.88E-08	
—	7,12-Dimethylbenz(a)anthracene	< 1.6E-05	HAP	3.82E-08	1.67E-07	
71-43-2	Benzene	2.1E-03	HAP/TAP	5.01E-06	2.20E-05	
106-97-8	Butane	2.1E+00		5.01E-03	2.20E-02	
25321-22-6	Dichlorobenzene	1.2E-03	HAP/TAP	2.86E-06	1.25E-05	
74-84-0	Ethane	3.1E+00		7.40E-03	3.24E-02	
50-00-0	Formaldehyde	0.075	HAP/TAP	1.79E-04	7.84E-04	
110-54-3	Hexane	1.8	HAP/TAP	4.30E-03	1.88E-02	
109-66-0	Pentane	2.6	TAP	6.21E-03	2.72E-02	
74-98-6	Propane	1.7E-05		4.06E-08	1.78E-07	
108-88-3	Toluene	3.4E-03	HAP/TAP	8.12E-06	3.56E-05	
Polycyclic Aromatic Hydrocarbons						
91-57-6	2-Methylnaphthalene	2.4E-05	HAP	5.73E-08	2.51E-07	
83-32-9	Acenaphthene	< 1.8E-06	HAP	4.30E-09	1.88E-08	
203-96-8	Acenaphthylene	< 1.8E-06	HAP	4.30E-09	1.88E-08	
120-12-7	Anthracene	< 2.4E-06	HAP	5.73E-09	2.51E-08	
56-55-3	Benzo[a]anthracene	< 1.8E-06	HAP	4.30E-09	1.88E-08	
50-32-8	Benzo[a]pyrene	< 1.2E-06	HAP/TAP	2.86E-09	1.25E-08	
205-99-2	Benzo[b]fluoranthene	< 1.8E-06	HAP	4.30E-09	1.88E-08	
191-24-2	Benzo[ghi]perylene	< 1.2E-06	HAP	2.86E-09	1.25E-08	
207-08-9	Benzo[k]fluoranthene	< 1.8E-06	HAP	4.30E-09	1.88E-08	
218-01-9	Chrysene	< 1.8E-06	HAP	4.30E-09	1.88E-08	
53-70-3	Dibenzo[a,h]anthracene	1.2E-06	HAP	2.86E-09	1.25E-08	
206-44-0	Fluoranthene	3.0E-06	HAP	7.16E-09	3.14E-08	
86-73-7	Fluorene	2.8E-06	HAP	6.68E-09	2.93E-08	
193-39-5	Indeno[1,2,3-cd]pyrene	< 1.8E-06	HAP	4.30E-09	1.88E-08	
91-20-3	Naphthalene	6.1E-04	HAP/TAP	1.46E-06	6.38E-06	
85-01-8	Phenanthrene	1.7E-05	HAP	4.06E-08	1.78E-07	
129-00-0	Pyrene	5.0E-06	HAP	1.19E-08	5.23E-08	
	7-PAH group		TAP	2.72E-08	1.19E-07	
	Total POM/PAH (except 7-PAH)		HAP/TAP	1.60E-06	7.00E-06	
Metals						
7440-38-2	Arsenic	2.0E-04	HAP/TAP	4.77E-07	2.09E-06	
7440-39-3	Barium	4.4E-03	TAP	1.05E-05	4.60E-05	
7440-41-7	Beryllium	< 1.2E-05	HAP/TAP	2.86E-08	1.25E-07	
7440-43-9	Cadmium	1.1E-03	HAP/TAP	2.63E-06	1.15E-05	
7440-47-3	Chromium	1.4E-03	HAP/TAP	3.34E-06	1.46E-05	
7440-48-4	Cobalt	8.4E-05	HAP	2.01E-07	8.78E-07	
7440-50-8	Copper	8.5E-04	TAP	2.03E-06	8.89E-06	
7439-98-5	Manganese	3.8E-04	HAP/TAP	9.07E-07	3.97E-06	
7439-97-6	Mercury	2.6E-04	HAP/TAP	6.21E-07	2.72E-06	
7439-98-7	Molybdenum	1.1E-03	TAP	2.63E-06	1.15E-05	
7440-02-0	Nickel	2.1E-03	HAP/TAP	5.01E-06	2.20E-05	
7782-49-2	Selenium	< 2.4E-05	HAP/TAP	5.73E-08	2.51E-07	
7440-62-2	Vanadium	2.3E-03		5.49E-06	2.41E-05	
7440-66-6	Zinc	0.029	TAP	6.92E-05	3.03E-04	

Note: Emission Factors from AP-42 Table 1.4-3 and Table 1.4-4, July 1998.

QUEST AIRCRAFT CO. PAINT BOOTH CHEMICAL USAGE & EMISSION INVENTORY: Boiler

Operating Hours: 8760 hr/yr
 NG LHV: 950 Btu/ft³

Building	Make	Number	Model	Serial	Year	Energy (MMBtu/hr)	Fuel Use (ft ³ /yr)
Manufacturing	Viessmann	1	VSB-28	7223357400104	2004	1.000	9.22E+06
	Fonderie Sime	2	RS-8	7133837-00046	2001	0.550	5.07E+06
Customer Service	Munchkin	3	199M	H30J0636	2003	0.199	1.83E+06
	Munchkin	4	199M	H30J0637	2003	0.199	1.83E+06
Engineering	Gordan Ray	5	BH-150	0311-071-150-0049	2003	0.150	1.38E+06

Note: 100% fuel efficiency per 9/28/2015 proposal, p. 3 of 12

Total= 2.098

Annual Max Fuel Use: 19.3 MMscf

Criteria Pollutant	Emission Factor (lb/MMscf)	Max. Annual Emissions	
		(lb/yr)	(ton/yr)
PM	7.6	147.0	0.1
VOC	5.5	106.4	0.1
CO	84	1625.0	0.8
NO _x	50	967.3	0.5
SO ₂	0.6	11.6	5.8E-03
Lead	0.0005	9.7E-03	4.8E-06
CO ₂ e	120,248	2,326,294	1,163
Idaho TAP	—	88	4.4E-02
HAP	—	37	1.8E-02

Note: Emission Factors per AP-42 Tables 1.4-1 and 1.4-2, July 1998. Total PM is considered less than 1.0µm in diameter. Therefore PM=PM₁₀=PM_{2.5}

Greenhouse Gases

Pollutant	Emission Factor (lb/MM scf)	GWP
CO ₂	120,000	1
N ₂ O	0.64	298
Methane	2.3	25

Toxic and Hazardous Air Pollutants

CAS#	Air Pollutant	EF (lb/MMscf)		Emissions (lb/hr)	Emissions (tpy)
Organics					
56-49-5	3-Methylcholanthrene	< 1.8E-06	HAP/TAP	3.98E-09	1.74E-08
—	7,12-Dimethylbenz(a)anthracene	< 1.6E-05	HAP	3.53E-08	1.55E-07
71-43-2	Benzene	2.1E-03	HAP/TAP	4.64E-06	2.03E-05
106-97-8	Butane	2.1E+00		4.64E-03	2.03E-02
25321-22-6	Dichlorobenzene	1.2E-03	HAP/TAP	2.65E-06	1.16E-05
74-84-0	Ethane	3.1E+00		6.85E-03	3.00E-02
50-00-0	Formaldehyde	0.075	HAP/TAP	1.66E-04	7.25E-04
110-54-3	Hexane	1.8	HAP/TAP	3.98E-03	1.74E-02
109-66-0	Pentane	2.6	TAP	5.74E-03	2.51E-02
74-98-6	Propane	1.7E-05		3.75E-08	1.64E-07
108-88-3	Toluene	3.4E-03	HAP/TAP	7.51E-06	3.29E-05
Polycyclic Aromatic Hydrocarbons					
91-57-6	2-Methylnaphthalene	2.4E-05	HAP	5.30E-08	2.32E-07
83-32-9	Acenaphthene	< 1.8E-06	HAP	3.98E-09	1.74E-08
203-96-8	Acenaphthylene	< 1.8E-06	HAP	3.98E-09	1.74E-08
120-12-7	Anthracene	< 2.4E-06	HAP	5.30E-09	2.32E-08
56-55-3	Benzo[a]anthracene	< 1.8E-06	HAP	3.98E-09	1.74E-08
50-32-8	Benzo[a]pyrene	< 1.2E-06	HAP/TAP	2.65E-09	1.16E-08
205-99-2	Benzo[b]fluoranthene	< 1.8E-06	HAP	3.98E-09	1.74E-08
191-24-2	Benzo[ghi]perylene	< 1.2E-06	HAP	2.65E-09	1.16E-08
207-08-9	Benzo[k]fluoranthene	< 1.8E-06	HAP	3.98E-09	1.74E-08
218-01-9	Chrysene	< 1.8E-06	HAP	3.98E-09	1.74E-08
53-70-3	Dibenzo[a,h]anthracene	1.2E-06	HAP	2.65E-09	1.16E-08
206-44-0	Fluoranthene	3.0E-06	HAP	6.63E-09	2.90E-08
86-73-7	Fluorene	2.8E-06	HAP	6.18E-09	2.71E-08
193-39-5	Indeno[1,2,3-cd]pyrene	< 1.8E-06	HAP	3.98E-09	1.74E-08
91-20-3	Naphthalene	6.1E-04	HAP/TAP	1.35E-06	5.90E-06
85-01-8	Phenanthrene	1.7E-05	HAP	3.75E-08	1.64E-07
129-00-0	Pyrene	5.0E-06	HAP	1.10E-08	4.84E-08
	7-PAH group		TAP	2.52E-08	1.10E-07
	Total POM/PAH (except 7-PAH)		HAP/TAP	1.48E-06	6.47E-06
Metals					
7440-38-2	Arsenic	2.0E-04	HAP/TAP	4.42E-07	1.93E-06
7440-39-3	Barium	4.4E-03	TAP	9.72E-06	4.26E-05
7440-41-7	Beryllium	< 1.2E-05	HAP/TAP	2.65E-08	1.16E-07
7440-43-9	Cadmium	1.1E-03	HAP/TAP	2.43E-06	1.06E-05
7440-47-3	Chromium	1.4E-03	HAP/TAP	3.09E-06	1.35E-05
7440-48-4	Cobalt	8.4E-05	HAP	1.86E-07	8.13E-07
7440-50-8	Copper	8.5E-04	TAP	1.88E-06	8.22E-06
7439-96-5	Manganese	3.8E-04	HAP/TAP	8.39E-07	3.68E-06
7439-97-6	Mercury	2.6E-04	HAP/TAP	5.74E-07	2.51E-06
7439-98-7	Molybdenum	1.1E-03	TAP	2.43E-06	1.06E-05
7440-02-0	Nickel	2.1E-03	HAP/TAP	4.64E-06	2.03E-05
7782-49-2	Selenium	< 2.4E-05	HAP/TAP	5.30E-08	2.32E-07
7440-62-2	Vanadium	2.3E-03		5.08E-06	2.22E-05
7440-66-6	Zinc	0.029	TAP	6.40E-05	2.81E-04

Note: Emission Factors from AP-42 Table 1.4-3 and Table 1.4-4, July 1998.

QUEST AIRCRAFT CO. PAINT BOOTH CHEMICAL USAGE & EMISSION INVENTORY: Cure Booth

Operating Hours: 8760 hr/yr
 NG LHV: 950 Btu/ft³

Cure Booth	Make	Model ¹	Serial	Year	Energy ¹ (MMBtu/hr)	Fuel Use ² (ft ³ /yr)
1	Global Finishing Solutions	RAM-20	New	2016	1.512	1.39E+07

Note: 1 From Cure Booth AMU Placard, M. Alward 1/23/2017

2 100% fuel efficiency per 9/28/2015 proposal, p. 3 of 12

Annual Max Fuel Use: 13.9 MMscf

Criteria Pollutant	Emission Factor (lb/MMscf)	Max. Annual Emissions	
		(lb/yr)	(ton/yr)
PM	7.6	106.0	0.1
VOC	5.5	76.7	0.0
CO	84	1171.1	0.6
NO _x	50	697.1	0.3
SO ₂	0.6	8.4	4.2E-03
Lead	0.0005	7.0E-03	3.5E-06
CO ₂ e	120,248	1,676,529	838
Idaho TAP	—	63	3.2E-02
HAP	—	26	1.3E-02

Greenhouse Gases

Pollutant	Emission Factor (lb/MM scf)	GWP
CO ₂	120,000	1
N ₂ O	0.64	298
Methane	2.3	25

Note: Emission Factors per AP-42 Tables 1.4-1 and 1.4-2, July 1998. Total PM is considered less than 1.0µm in diameter. Therefore PM=PM₁₀=PM_{2.5}

Toxic and Hazardous Air Pollutants					
CAS#	Air Pollutant	EF (lb/MMscf)		Emissions (lb/hr)	Emissions (tpy)
Organics					
56-49-5	3-Methylcholanthrene	< 1.8E-06	HAP/TAP	2.86E-09	1.25E-08
--	7,12-Dimethylbenz(a)anthracene	< 1.6E-05	HAP	2.55E-08	1.12E-07
71-43-2	Benzene	2.1E-03	HAP/TAP	3.34E-06	1.46E-05
106-97-8	Butane	2.1E+00		3.34E-03	1.46E-02
25321-22-6	Dichlorobenzene	1.2E-03	HAP/TAP	1.91E-06	8.37E-06
74-84-0	Ethane	3.1E+00		4.93E-03	2.16E-02
50-00-0	Formaldehyde	0.075	HAP/TAP	1.19E-04	5.23E-04
110-54-3	Hexane	1.8	HAP/TAP	2.86E-03	1.25E-02
109-66-0	Pentane	2.6	TAP	4.14E-03	1.81E-02
74-98-6	Propane	1.7E-05		2.71E-08	1.19E-07
108-88-3	Toluene	3.4E-03	HAP/TAP	5.41E-06	2.37E-05
Polycyclic Aromatic Hydrocarbons					
91-57-6	2-Methylnaphthalene	2.4E-05	HAP	3.82E-08	1.67E-07
83-32-9	Acenaphthene	< 1.8E-06	HAP	2.86E-09	1.25E-08
203-96-8	Acenaphthylene	< 1.8E-06	HAP	2.86E-09	1.25E-08
120-12-7	Anthracene	< 2.4E-06	HAP	3.82E-09	1.67E-08
56-55-3	Benzo[a]anthracene	< 1.8E-06	HAP	2.86E-09	1.25E-08
50-32-8	Benzo[a]pyrene	< 1.2E-06	HAP/TAP	1.91E-09	8.37E-09
205-99-2	Benzo[b]fluoranthene	< 1.8E-06	HAP	2.86E-09	1.25E-08
191-24-2	Benzo[ghi]perylene	< 1.2E-06	HAP	1.91E-09	8.37E-09
207-08-9	Benzo[k]fluoranthene	< 1.8E-06	HAP	2.86E-09	1.25E-08
218-01-9	Chrysene	< 1.8E-06	HAP	2.86E-09	1.25E-08
53-70-3	Dibenzo[a,h]anthracene	1.2E-06	HAP	1.91E-09	8.37E-09
206-44-0	Fluoranthene	3.0E-06	HAP	4.77E-09	2.09E-08
86-73-7	Fluorene	2.8E-06	HAP	4.46E-09	1.95E-08
193-39-5	Indeno[1,2,3-cd]pyrene	< 1.8E-06	HAP	2.86E-09	1.25E-08
91-20-3	Naphthalene	6.1E-04	HAP/TAP	9.71E-07	4.25E-06
85-01-8	Phenanthrene	1.7E-05	HAP	2.71E-08	1.19E-07
129-00-0	Pyrene	5.0E-06	HAP	7.96E-09	3.49E-08
	7-PAH group		TAP	1.81E-08	7.95E-08
	Total POM/PAH (except 7-PAH)		HAP/TAP	1.06E-06	4.66E-06
Metals					
7440-38-2	Arsenic	2.0E-04	HAP/TAP	3.18E-07	1.39E-06
7440-39-3	Barium	4.4E-03	TAP	7.00E-06	3.07E-05
7440-41-7	Beryllium	< 1.2E-05	HAP/TAP	1.91E-08	8.37E-08
7440-43-9	Cadmium	1.1E-03	HAP/TAP	1.75E-06	7.67E-06
7440-47-3	Chromium	1.4E-03	HAP/TAP	2.23E-06	9.76E-06
7440-48-4	Cobalt	8.4E-05	HAP	1.34E-07	5.86E-07
7440-50-8	Copper	8.5E-04	TAP	1.35E-06	5.93E-06
7439-96-5	Manganese	3.8E-04	HAP/TAP	6.05E-07	2.65E-06
7439-97-6	Mercury	2.6E-04	HAP/TAP	4.14E-07	1.81E-06
7439-98-7	Molybdenum	1.1E-03	TAP	1.75E-06	7.67E-06
7440-02-0	Nickel	2.1E-03	HAP/TAP	3.34E-06	1.46E-05
7782-49-2	Selenium	< 2.4E-05	HAP/TAP	3.82E-08	1.67E-07
7440-62-2	Vanadium	2.3E-03		3.66E-06	1.60E-05
7440-66-6	Zinc	0.029	TAP	4.62E-05	2.02E-04

Note: Emission Factors from AP-42 Table 1.4-3 and Table 1.4-4, July 1998.

QUEST AIRCRAFT CO. PAINT BOOTH CHEMICAL USAGE & EMISSION INVENTORY: Wire Welding
--

Production:

Annual Usage ¹	100 ft/yr
Diameter ²	0.0625 in
Density ³	0.2904 lb/in ³
Annual Usage	1.07 lb/yr

80% Control factor for indoor welding operations per SWCAA Technical Support Document for "Imperial Fabricating of WA" (November 6, 2012)

Welding Fume Pollutants	Weldwire Composition (wt%) ⁴	EF (lb/1000 lb) electrode consumed ⁵	Uncontrolled PTE		Controlled PTE	
			(lb/yr) ⁶	(lb/hr)	(lb/yr)	(lb/hr)
PM ₁₀		5.2	5.56E-03	6.35E-07	2.22E-03	2.54E-07
PM _{2.5}			5.56E-03	6.35E-07	2.22E-03	2.54E-07
Manganese*	2.0%	0.318	3.40E-04	3.88E-08	1.36E-04	1.55E-08
Silicon	1.15%		2.56E-05	2.92E-09	1.02E-05	1.17E-09
Copper	0.5%		1.11E-05	1.27E-09	4.45E-06	5.08E-10
Carbon	0.18%		4.00E-06	4.57E-10	1.60E-06	1.83E-10
Titanium	0.17%		3.78E-06	4.32E-10	1.51E-06	1.73E-10
Aluminum	0.15%		3.34E-06	3.81E-10	1.33E-06	1.52E-10

*HAP, evaluated based emission factor since it is more conservative than wire composition calculation

Notes:

- 1) Annual usage per Tiffany Goodvin email, February 15, 2017.
- 2) Diameter most conservative diameter from Weldwire Company, Inc. spec sheet.
- 3) Density of steel = 0.2904 lbs/in³
- 4) From SDS for Carbon Steel & Low Alloy Wire
- 5) PM₁₀ and Manganese Emission Factors from AP-42 Table 12-19-1 and 12-19-2 for GMAW welding using E70S, January 1995
- 6) Emissions for Silicon, Copper, Carbon, Titanium, and Aluminum based on PM₁₀ emissions and worst-case material composition. Assume PM_{2.5}=PM₁₀ for most conservative estimate

$$\text{Working Loss (pounds/hour)} = L_w = 2.741 \times 10^{-9} \times MW \times P_v \times V \times N \times K_N \times K_C \times C_x \times \#_T$$

$$\text{Breathing Loss (pounds/hour)} = L_b = 2.580 \times 10^{-6} \times MW \times [P_v / (P_A - P_v)]^{0.68} \times D^{1.73} \times H^{0.51} \times \Delta T^{0.5} \times F_p \times C \times K_C \times C_x \times \#_T$$

$$\text{Process Emissions (pounds/hour)} = (L_w + L_b) \times ((100 - CE) / 100)$$

where:

MW= Molecular weight of vapor in storage vessel (pound per pound mole)

P_v = True vapor pressure of the HAP at liquid storage temperature (pounds per square inch absolute)

V = Tank capacity (gallon)

N = Number of turnovers per year

K_N = Turnover factor (dimensionless) = (180 + N)/6N, for turnovers > 36 = 1, for turnovers ≤ 36

K_C = Product factor (dimensionless) = 1.0

P_A = Average atmospheric pressure (pounds per square inch absolute) = 14.969 psi

D = Tank diameter [or equivalent diameter = 1.3 × (L×W)0.625 / (L+W)0.25] (feet)

L = Tank Length (feet)

W = Tank Width (feet)

H = Average vapor space height (feet)

ΔT = Average ambient diurnal temperature change (°F). Assume = 10°F

F_p = Paint factor (dimensionless) = 1 for vessels located indoors

C = Adjustment factor for small diameter tanks (dimensionless) = 0.0771 × D - 0.0013 × D² - 0.1334, for diameter <30 feet. Assumed to be = 1 for tanks diameters so small that formula yields a negative result.

C_x = Concentration of chemical in tank

CE = 0 (No controls)

#_T = number of tanks = 1 tank per line for L_w = total number of tanks minus 1 tank per line for L_b

Assumptions

- Breathing loss and working loss equations from 40 CFR 63 Subpart G [63.150(g)(3)(i)], converted to pounds per hour.

- Breathing loss assumes tanks are in use 870 hours per year.

- Number of turnovers (N) assumed at twice the reported frequency of turnovers per year for PTE.

Process	Total # of Tanks	Tank Volume (gal)	Tank Chemical	Chemical Concentration	MW (lb/lb-mol)	Pv (psi) ¹	Tank Turnover		Equival Diamete
							Reported Frequency	# Turnovers / year PTE	
Cleaner Tank (1)	1	1350	Proprietary	2%	--	--		8	6.3
Deoxidizer Tank (3)	1	1350	Ferric Sulfate	5%	400	2.88E-01	4 times per year	8	6.3
			Sulfuric Acid	2%	98	1.97E-05			
			Nitric Acid	1%	63	0.95			
			Hydrogen Fluoride	0.1%	20	15			
Chem Film Tank (6)	1	1350	Chromic Trioxide	3%	118	1.45E-03	8	6.3	
			Sodium Fluorosilicate	1%	188	1.97E-02			

Emissions	HAP/TAP?	Emission Rate (lb/hr)	EL (lb/hr)	BRC Exceedance?	EL Exceedance?
Sulfuric Acid	TAP	1.09E-08	0.067	N	N
Nitric Acid	TAP	2.26E-05	0.333	N	N
Hydrogen Fluoride ⁴	HAP/TAP	1.55E-05	0.167	N	N
Chromium ⁵	HAP/TAP	1.97E-07	0.033	N	N

Chemical	Pv ¹	Vapor Pressure Citation
Ferric Sulfate	14.6 mmHg	http://www.chemicalbook.com/ChemicalProductProperty_EN_CB9232125.htm
Sulfuric Acid	.001 mmHg	NIOSH Pocket Guide
Nitric Acid	46 mmHg	NIOSH Pocket Guide
Hydrogen Fluoride:	763 mmHg	NIOSH Pocket Guide
Chromic Acid	<0.1 hPa	Lab Chem SDS 10/18/2013
Sodium Fluoride ⁶	1 mmHg	https://www.atsdr.cdc.gov/toxprofiles/tp11-c4.pdf

Notes

- 2) Assume vapor space is 15% of the total depth
- 3) Stone Chemical Company, attached in PDF
- 4) Hydrogen Fluoride = "Fluorides" under IDAF
- 5) Chromium calculated based on proportion c
- 6) Vapor pressure for sodium fluorosilicate not

Tank Dimensions (feet)				Emissions			
Length	Width	Depth	Vapor Space Height ²	Working Loss (lb/hr)	Breathing Loss (lb/hr)	Process Emissions (lb/hr)	Process Emissions (lb/yr)
16.0	2.5	4.75	0.71	Non-hazardous per supplier's 2/16/2017 email. ³			
16.0	2.5	4.75	0.71	1.70E-04	6.8E-05	2.38E-04	2.09
				1.14E-09	9.7E-09	1.09E-08	9.53E-05
				1.76E-05	5.0E-06	2.26E-05	1.98E-01
				9.14E-06	6.4E-06	1.55E-05	1.36E-01
16.0	2.5	4.75	0.71	1.42E-07	3.1E-07	4.47E-07	3.92E-03
				8.77E-07	8.2E-07	1.70E-06	1.49E-02

01.01(585)

molecular weight of chromic trioxide. Chromium is 44% of chromic trioxide

3.e. Vapor pressure for sodium fluoride used instead, due to similar properties

APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES

MEMORANDUM DRAFT

DATE: May 2, 2016

TO: Tom Burnham, Permit Writer, Air Program

FROM: Kevin Schilling, Stationary Source Modeling Coordinator, Air Program

PROJECT: P-2016.0059 PROJ 61799, PTC for Quest Aircraft Company

SUBJECT: Demonstration of Compliance with IDAPA 58.01.01.203.02 (NAAQS) and 203.03 (TAPs) as it relates to air quality impact analyses.

Contents

Acronyms, Units, and Chemical Nomenclature 2

1.0 Summary 3

2.0 Background Information 4

 2.1 Air Impact Analysis Required for All Permits to Construct.....4

 2.2 Significant Impact Level and Cumulative NAAQS Impact Analyses.....5

 2.3 Toxic Air Pollutant Analysis5

3.0 Analytical Methods and Data 7

 3.1 Emissions Source Data..... 7

 3.1.1. Modeling Applicability and Modeled Criteria Pollutant Emissions Rates 7

 3.1.2. Toxic Air Pollutant Emissions Rates.....9

 3.1.3. DEQ Review 10

4.0 NAAQS Impact Modeling Results 11

 4.1 Results for NAAQS Analyses 11

 4.2 Results for TAPs Impact Analyses 11

5.0 Conclusions 11

References 12

Acronyms, Units, and Chemical Nomenclature

AAC	Acceptable Ambient Concentration of a non-carcinogenic TAP
AACC	Acceptable Ambient Concentration of a Carcinogenic TAP
Appendix W	40 CFR 51, Appendix W – Guideline on Air Quality Models
BPIP	Building Profile Input Program
BRC	Below Regulatory Concern
CFR	Code of Federal Regulations
CMAQ	Community Multi-Scale Air Quality modeling system
CO	Carbon Monoxide
DEQ	Idaho Department of Environmental Quality
EL	Emissions Screening Level of a TAP
EPA	United States Environmental Protection Agency
Idaho Air Rules	Rules for the Control of Air Pollution in Idaho, located in the Idaho Administrative Procedures Act 58.01.01
lb/hr	Pounds per hour
NAAQS	National Ambient Air Quality Standards
NO ₂	Nitrogen Dioxide
NO _x	Oxides of Nitrogen
O ₃	Ozone
Pb	Lead
PM ₁₀	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 10 micrometers
PM _{2.5}	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 2.5 micrometers
ppb	parts per billion
PTC	Permit to Construct
PTE	Potential to Emit
Quest	Quest Aircraft Company
SIL	Significant Impact Level
SO ₂	Sulfur Dioxide
Spring Env.	Spring Environmental, Inc.
TAP	Toxic Air Pollutant
VOC	Volatile Organic Compounds
µg/m ³	Micrograms per cubic meter of air

1.0 Summary

Quest Aircraft Company (Quest) submitted a Permit to Construct (PTC) application for their existing aircraft coating operation in response to emissions concerns raised during a DEQ inspection of the facility. Project-specific air quality analyses involving atmospheric dispersion modeling of estimated emissions associated with the proposed modification were submitted to DEQ to demonstrate that emissions increases associated with the modification would not cause or significantly contribute to a violation of any applicable ambient air quality standard as required by the Idaho Administrative Procedures Act 58.01.01.203.02 and 203.03 (Idaho Air Rules Section 203.02 and 203.03). This memorandum provides a summary of DEQ's review of the ambient air impact analyses submitted with the permit application.

Spring Environmental, Inc. (Spring Env.), on behalf of Quest, prepared the PTC application and performed the ambient air impact analyses for this project to demonstrate compliance with applicable National Ambient Air Quality Standards (NAAQS) and Toxic Air Pollutant (TAP) increments. The DEQ review of submitted data and analyses summarized by this memorandum addressed only the rules, policies, methods, and data pertaining to the air impact analyses used to demonstrate that estimated emissions associated with operation of the facility will not cause or significantly contribute to a violation of any applicable air quality standard. This review did not address/evaluate compliance with other rules or analyses not pertaining to the air impact analyses. Evaluation of emissions estimates was the responsibility of the DEQ permit writer and is addressed in the main body of the DEQ Statement of Basis, and emissions calculation methods were not evaluated in this modeling review memorandum.

The submitted information and analyses: 1) showed either a) that estimated potential/allowable emissions are at a level defined as below regulatory concern (BRC) and do not require a NAAQS compliance demonstration, or b) that criteria pollutant emissions increases resulting from the proposed project are below site-specific modeling applicability thresholds, developed to assure that emissions below such levels will not result in ambient air impacts exceeding Significant Impact Levels (SILs); 2) showed that TAP emissions increases associated with the project will not result in increased ambient air impacts exceeding allowable TAP increments.

Table 1 presents key assumptions and results to be considered in the development of the permit.

Idaho Air Rules require air impact analyses be conducted in accordance with methods outlined in 40 CFR 51, Appendix W *Guideline on Air Quality Models* (Appendix W). Appendix W requires air quality impacts be assessed using atmospheric dispersion models with emissions and operations representative of design capacity or as limited by a federally enforceable permit condition. The submitted information and analyses demonstrated to DEQ's satisfaction that operation of the proposed project will not cause or significantly contribute to a violation of any ambient air quality standard, provided the key conditions in Table 1 are representative of facility design capacity or operations as limited by a federally enforceable permit condition. The DEQ permit writer should use Table 1 and other information presented in this memorandum to generate appropriate permit provisions/restrictions to assure that emissions are representative of design capacity or permit allowable rates, as required by Appendix W.

Table 1. KEY ASSUMPTIONS USED IN MODELING ANALYSES	
Criteria/Assumption/Result	Explanation/Consideration
General Emissions Rates. Emissions rates used in the air impact analyses, as listed in this memorandum, must represent maximum potential emissions as given by design capacity, inherently limited by the nature of the process or configuration of the facility, or as limited by the issued permit for the specific pollutant and averaging period.	Compliance has not been demonstrated for emissions rates greater than those used in the air impact analyses.
TAP Emissions Sources. TAP emissions sources, as constructed and operated, must be accurately represented by the analyses submitted with the PTC application.	Important parameters include release point locations, release height, stack flow rates, and stack release temperature.

Summary of Submittals and Actions

- June 9, 2016: Modeling protocol received by DEQ.
- June 28, 2016: DEQ issues modeling protocol conditional approval letter to Spring Env.
- October 20, 2016: Application received by DEQ.
- November 21, 2016: Application determined as incomplete by DEQ.
- December 22, 2016: Information addressing incompleteness issues received by DEQ.
- December 23, 2016: Application determined complete by DEQ.

2.0 Background Information

Background information on the project and the air impact analyses was provided in the Modeling Analysis Report submitted with the application.

2.1 Air Impact Analyses Required for All Permits to Construct

Idaho Air Rules Sections 203.02 and 203.03:

No permit to construct shall be granted for a new or modified stationary source unless the applicant shows to the satisfaction of the Department all of the following:

02. NAAQS. *The stationary source or modification would not cause or significantly contribute to a violation of any ambient air quality standard.*

03. Toxic Air Pollutants. *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.*

Atmospheric dispersion modeling, using computerized simulations, is used to demonstrate compliance with both NAAQS and TAPs. Idaho Air Rules Section 202.02 states:

02. Estimates of Ambient Concentrations. All estimates of ambient concentrations shall be based on the applicable air quality models, data bases, and other requirements specified in 40 CFR 51 Appendix W (Guideline on Air Quality Models).

2.2 Significant Impact Level and Cumulative NAAQS Impact Analyses

The Significant Impact Level (SIL) analysis for a new facility or proposed facility modification involves modeling allowable air pollutant emissions from the facility or modification to determine the potential impacts to ambient air. A facility or modification is considered to have a significant impact on air quality if maximum modeled impacts to ambient air exceed the established SIL listed in Idaho Air Rules Section 006 (referred to as a “significant contribution” in Idaho Air Rules) or as incorporated by reference as per Idaho Air Rules Section 107.03.b. Table 2 lists the applicable SILs.

If modeled maximum pollutant impacts to ambient air from the emissions sources associated with a new facility or modification exceed the SILs, then a cumulative NAAQS impact analysis is necessary to demonstrate compliance with NAAQS and Idaho Air Rules Section 203.02.

A cumulative NAAQS impact analysis for attainment area pollutants involves assessing ambient impacts (typically the design values consistent with the form of the standard) from facility-wide potential/allowable emissions, and emissions from any nearby co-contributing sources, and then adding a DEQ-approved background concentration value to the modeled result that is appropriate for the criteria pollutant/averaging-period at the facility location and the area of significant impact. The resulting pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 2. Table 2 also lists SILs and specifies the modeled design value that must be used for comparison to the NAAQS. NAAQS compliance is evaluated on a receptor-by-receptor basis for the modeling domain.

If the cumulative NAAQS impact analysis indicates a violation of the standard, the permit may not be issued if the proposed project has a significant contribution (exceeding the SIL) to the modeled violation. If project-specific impacts are below the SIL, then the project does not have a significant contribution to the specific violations.

2.3 Toxic Air Pollutant Analyses

Emissions of toxic substances are generally addressed by Idaho Air Rules Section 161:

Any contaminant which is by its nature toxic to human or animal life or vegetation shall not be emitted in such quantities or concentrations as to alone, or in combination with other contaminants, injure or unreasonably affect human or animal life or vegetation.

Pollutant	Averaging Period	Significant Impact Levels^a (µg/m³)^b	Regulatory Limit^c (µg/m³)	Modeled Design Value Used^d
PM ₁₀ ^e	24-hour	5.0	150 ^f	Maximum 6 th highest ^g
PM _{2.5} ^h	24-hour	1.2	35 ⁱ	Mean of maximum 8 th highest ^j
	Annual	0.3	12 ^k	Mean of maximum 1 st highest ^l
Carbon monoxide (CO)	1-hour	2,000	40,000 ^m	Maximum 2 nd highest ⁿ
	8-hour	500	10,000 ^m	Maximum 2 nd highest ⁿ
Sulfur Dioxide (SO ₂)	1-hour	3 ppb ^o (7.8 µg/m ³)	75 ppb ^p (196 µg/m ³)	Mean of maximum 4 th highest ^q
	3-hour	25	1,300 ^m	Maximum 2 nd highest ⁿ
	24-hour	5	365 ^m	Maximum 2 nd highest ⁿ
	Annual	1.0	80 ^r	Maximum 1 st highest ⁿ
Nitrogen Dioxide (NO ₂)	1-hour	4 ppb (7.5 µg/m ³)	100 ppb ^s (188 µg/m ³)	Mean of maximum 8 th highest ^t
	Annual	1.0	100 ^r	Maximum 1 st highest ⁿ
Lead (Pb)	3-month ^u	NA	0.15 ^r	Maximum 1 st highest ⁿ
	Quarterly	NA	1.5 ^r	Maximum 1 st highest ⁿ
Ozone (O ₃)	8-hour	40 TPY VOC ^v	70 ppb ^w	Not typically modeled

- a. Idaho Air Rules Section 006 (definition for significant contribution) or as incorporated by reference as per Idaho Air Rules Section 107.03.b.
- b. Micrograms per cubic meter.
- c. Incorporated into Idaho Air Rules by reference, as per Idaho Air Rules Section 107.
- d. The maximum 1st highest modeled value is always used for the significant impact analysis unless indicated otherwise. Modeled design values are calculated for each ambient air receptor.
- e. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
- f. Not to be exceeded more than once per year on average over 3 years.
- g. Concentration at any modeled receptor when using five years of meteorological data.
- h. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
- i. 3-year mean of the upper 98th percentile of the annual distribution of 24-hour concentrations.
- j. 5-year mean of the 8th highest modeled 24-hour concentrations at the modeled receptor for each year of meteorological data modeled. For the SIL analysis, the 5-year mean of the 1st highest modeled 24-hour impacts at the modeled receptor for each year.
- k. 3-year mean of annual concentration.
- l. 5-year mean of annual averages at the modeled receptor.
- m. Not to be exceeded more than once per year.
- n. Concentration at any modeled receptor.
- o. Interim SIL established by EPA policy memorandum.
- p. 3-year mean of the upper 99th percentile of the annual distribution of maximum daily 1-hour concentrations.
- q. 5-year mean of the 4th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of 1st highest modeled 1-hour impacts for each year is used.
- r. Not to be exceeded in any calendar year.
- s. 3-year mean of the upper 98th percentile of the annual distribution of maximum daily 1-hour concentrations.
- t. 5-year mean of the 8th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of maximum modeled 1-hour impacts for each year is used.
- u. 3-month rolling average.
- v. An annual emissions rate of 40 ton/year of VOCs is considered significant for O₃.
- w. Annual 4th highest daily maximum 8-hour concentration averaged over three years.

Permitting requirements for toxic air pollutants (TAPs) from new or modified sources are specifically addressed by Idaho Air Rules Section 203.03 and require the applicant to demonstrate to the satisfaction of DEQ the following:

Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also

demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.

Per Section 210, if the total project-wide emissions increase of any TAP associated with a new source or modification exceeds screening emission levels (ELs) of Idaho Air Rules Section 585 or 586, then the ambient impact of the emissions increase must be estimated. If ambient impacts are less than applicable Acceptable Ambient Concentrations (AACs) for non-carcinogens of Idaho Air Rules Section 585 and Acceptable Ambient Concentrations for Carcinogens (AACCs) of Idaho Air Rules Section 586, then compliance with TAP requirements has been demonstrated.

Idaho Air Rules Section 210.20 states that if TAP emissions from a specific source are regulated by the Department or EPA under 40 CFR 60, 61, or 63, then a TAP impact analysis under Section 210 is not required for that TAP.

3.0 Analytical Methods and Data

The submitted modeling report provides a detailed discussion of the methods and data used to demonstrate compliance with applicable standards.

3.1 Emission Source Data

Criteria pollutant and TAP emissions increases resulting from the proposed modification were estimated by Spring Env. for various applicable averaging periods.

Emissions rates used in the dispersion modeling analyses, as listed in this memorandum, should be reviewed by the DEQ permit writer and compared with those in the final emissions inventory. All modeled criteria air pollutant and TAP emissions rates must be equal to or greater than the modification's potential emissions increase calculated in the PTC emissions inventory or proposed permit allowable emissions rates.

3.1.1 Modeling Applicability and Modeled Criteria Pollutant Emissions Rates

If project-specific emission increases for criteria pollutants would qualify for a below regulatory concern (BRC) permit exemption as per Idaho Air Rules Section 221 if it were not for potential emissions of one or more pollutants exceeding the BRC threshold (10 percent of emissions defined by Idaho Air Rules as significant), then a NAAQS compliance demonstration may not be required for those pollutants with emissions below BRC levels. DEQ's regulatory interpretation policy of exemption provisions of Idaho Air Rules is that: "A DEQ NAAQS compliance assertion will not be made by the DEQ modeling group for specific criteria pollutants having a project emissions increase below BRC levels, provided the proposed project would have qualified for a Category I Exemption for BRC emissions quantities except for the emissions of another criteria pollutant."¹ Idaho Air Rules Section 220.01.a.i also states that uncontrolled potential to emit (PTE) must not exceed 100 ton/year to qualify for a PTC exemption. The DEQ BRC interpretation policy clarified that this criterion is not applicable when evaluating whether a NAAQS impact analyses is required. A permit will be issued limiting PTE below 100 ton/year, thereby negating the need to maintain calculated uncontrolled PTE under 100 ton/year.

The BRC exemption cannot exempt a project from a pollutant-specific NAAQS compliance demonstration in cases where a PTC is required for the proposed action regardless of emissions quantities, such as the modification of an existing emissions or throughput limit.

A NAAQS compliance demonstration must be performed for pollutant increases that would not qualify for the BRC exemption from the requirement to demonstrate compliance with NAAQS. NAAQS compliance demonstrations were not required for this proposed project because facility-wide emissions of all criteria pollutants were below levels defined as BRC. Table 3 provides a summary of the NAAQS compliance demonstration applicability evaluation.

Table 3. NAAQS COMPLIANCE DEMONSTRATION APPLICABILITY ANALYSIS RESULTS			
Pollutant	Annual Allowable Emissions^a (tons/year)	BRC Level (tons/year)	NAAQS Compliance Demonstration Required
PM _{2.5} ^b	0.23	1.0	No
PM ₁₀ ^c	0.23	1.5	No
oxides of nitrogen (NO _x)	1.4	4	No
carbon monoxide (CO)	2.3	10	No
sulfur dioxide (SO ₂)	0.02	4	No
lead (Pb)	NA ^d	0.06	No

^a As stated in the DEQ Statement of Basis.

^b Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.

^c Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.

^d Assumed to be negligible because not addressed in the application or DEQ permitting Statement of Basis

Site-specific air impact modeling analyses may not be necessary for some pollutants, even where such emissions do not qualify for the BRC exemption. DEQ has developed modeling applicability thresholds, below which a site-specific modeling analysis is not required. DEQ generic air impact modeling analyses that were used to develop the modeling thresholds provide a conservative SIL analysis for projects with emissions below identified threshold levels. Project-specific modeling applicability thresholds are provided in the *Idaho Air Modeling Guideline*². These thresholds were based on assuring an ambient impact of less than the established SIL for specific pollutants and averaging periods.

If project-specific total emissions rate increases of a pollutant are below Level I Modeling Thresholds, then project-specific air impact analyses are not necessary for permitting. Use of Level II Modeling Thresholds are conditional, requiring DEQ approval. DEQ approval is based on dispersion-affecting characteristics of the emissions sources such as stack height, stack gas exit velocity, stack gas temperature, distance from sources to ambient air, presence of elevated terrain, and potential exposure to sensitive public receptors.

The initial emissions inventory submitted with the PTC application for the Quest facility indicated that PM_{2.5} and PM₁₀ emissions could exceed BRC levels and Level I Modeling Applicability Thresholds, thereby requiring a NAAQS compliance demonstration. The submitted application included air impact analyses for PM_{2.5} and PM₁₀ to demonstrate compliance with the NAAQS. Spring Env. performed PM_{2.5} and PM₁₀ air impact modeling because uncontrolled emissions exceeded the BRC threshold. DEQ's final

inventory indicated that controlled PM_{2.5} and PM₁₀ emissions were below BRC levels, and DEQ determined that controlled emissions can be used to evaluate applicability of NAAQS compliance demonstration requirements. Since DEQ determined that PM_{2.5} and PM₁₀ emissions meet BRC requirement, no further assessment was needed and DEQ did not review the submitted air impact analyses for PM_{2.5} and PM₁₀.

Ozone (O₃) differs from other criteria pollutants in that it is not typically emitted directly into the atmosphere. O₃ is formed in the atmosphere through reactions of VOCs, NO_x, and sunlight. Atmospheric dispersion models used in stationary source air permitting analyses cannot be used to estimate O₃ impacts resulting from VOC and NO_x emissions from an industrial facility. O₃ concentrations resulting from area-wide emissions are predicted by using more complex airshed models such as the Community Multi-Scale Air Quality (CMAQ) modeling system. Use of the CMAQ model is very resource intensive and DEQ asserts that performing a CMAQ analysis for a particular permit application is not typically a reasonable or necessary requirement for air quality permitting. Addressing secondary formation of O₃ within the context of permitting a new stationary source has been somewhat addressed in EPA regulation and policy. As stated in a letter from Gina McCarthy of EPA to Robert Ukeiley, acting on behalf of the Sierra Club (letter from Gina McCarthy, Assistant Administrator, United States Environmental Protection Agency, to Robert Ukeiley, January 4, 2012):

... footnote 1 to sections 51.166(I)(5)(I) of the EPA's regulations says the following: "No de minimis air quality level is provided for ozone. However, any net emission increase of 100 tons per year or more of volatile organic compounds or nitrogen oxides subject to PSD would be required to perform an ambient impact analysis, including the gathering of air quality data."

The EPA believes it unlikely a source emitting below these levels would contribute to such a violation of the 8-hour ozone NAAQS, but consultation with an EPA Regional Office should still be conducted in accordance with section 5.2.1.c. of Appendix W when reviewing an application for sources with emissions of these ozone precursors below 100 TPY."

DEQ determined it was not appropriate or necessary to require a quantitative source specific O₃ impact analysis because allowable emissions estimates of VOCs and NO_x are below the 100 tons/year threshold.

Secondary Particulate Formation

The impact from secondary particulate formation resulting from emissions of NO_x, SO₂, and/or VOCs was assumed by DEQ to be negligible based on the magnitude of emissions and the short distance from emissions sources to locations where maximum PM₁₀ and PM_{2.5} impacts are anticipated.

3.1.2 Toxic Air Pollutant Emissions Rates

TAP emissions regulations under Idaho Air Rules Section 210 are only applicable to new or modified sources constructed after July 1, 1995.

Table 4 provides a summary of TAP emissions increases for the project for those TAPs that had an increase exceeding the ELs of Idaho Air Rules Section 585 or 586. Table 5 lists source-specific emissions of TAPs used in the impact analyses.

Toxic Air Pollutant	Emissions Increase (pound/hour)	Screening Emissions Level (pound/hour)
Crystalline silica ^a	0.021	0.0067
Cadmium ^b	6.81E-6	3.70E-6

^a. Non-carcinogenic TAP. ELs are a daily maximum expressed as pound/hour. The emissions increase is the daily emissions divided by 24 hour/day.

^b. Carcinogenic TAP. ELs are an annual maximum expressed as pound/hour. The emissions increase is the annual emissions divided by 8760 hour/year.

Source ID	Source Description	Emissions Rates (pounds/hour)	
		Crystalline silica ^a	Cadmium ^b
Stack 1-1	Left stack of existing, electric paint booth.	5.25E-3	0.0
Stack 1-2	Right stack of existing, electric paint booth.	5.25E-3	0.0
Stack 2-1	Left stack of new, natural gas fired paint booth	5.25E-3	1.31E-6
Stack 2-2	Right stack of new, natural gas fired paint booth	5.25E-3	1.31E-6
Stack 3	Stack from the cure booth.	0.0	1.75E-6

^a. 24-hour average emissions rate in pound/ hour.

^b. annual average emissions rate in pound/ hour.

3.1.3 DEQ Review

DEQ determined the following from review of the Modeling Protocol and the Air Modeling Analysis Report submitted with the application:

- The appropriate atmospheric dispersion model was used for the proposed project.
- The Quest facility was properly represented in the model, regarding geographical location, terrain, structures, emission point locations, and areas of potential exposure.
- Appropriate meteorological data were used with the dispersion model.
- Appropriate averaging periods were selected for model output, corresponding to the form of applicable standards.
- The modeling report indicates that all TAPs with project-wide emissions increases above the ELs of Idaho Air Rules Section 585 and 586 were modeled to evaluate compliance with applicable AACs and AACCs.
- Through review of the submitted Air Modeling Analysis Report, it appears that the TAPs air impact analyses were performed using recommended data and methods prescribed in the *Idaho Air Quality Modeling Guideline*².

DEQ's technical review of the submitted air impact analyses was appropriate considering the type and quantity of pollutant emissions and the low potential for such emissions to cause an exceedance of air quality standards or TAP concentration increment limits.

4.0 NAAQS and TAPs Air Impact Modeling Results

4.1 Results for NAAQS Analyses

A NAAQS compliance demonstration was not required for permit issuance because allowable emissions of all criteria pollutants were below levels identified as BRC.

4.2 Results for TAPs Impact Analyses

Table 6 lists the maximum modeled impacts for specific TAPs. All modeled impacts are below applicable AACs and AACCs.

Table 6. TAP AIR IMPACT ANALYSIS RESULTS			
TAP	Maximum Modeled Impact ($\mu\text{g}/\text{m}^3$)^a	AAC or AACC ($\mu\text{g}/\text{m}^3$)	Percent of AAC/AACC
Crystalline Silica ^b	0.73	5	15
Cadmium ^c	2.0E-5	5.6E-4	4

^a Micrograms per cubic meter.

^b Non-carcinogenic TAP. Modeled impact and AAC represent a 24-hour averaged concentration.

^c Carcinogenic TAP. Modeled impact and AACC represent an annual averaged concentration.

5.0 Conclusions

The information submitted with the PTC application demonstrated to DEQ's satisfaction that applicable emissions resulting from the proposed modifications at the Quest facility will not cause or significantly contribute to a violation of any ambient air quality standard or TAPs increment.

References

1. *Policy on NAAQS Compliance Demonstration Requirements*. Idaho Department of Environmental Quality Policy Memorandum. July 11, 2014.
2. *State of Idaho Guideline for Performing Air Quality Impact Analyses*. Idaho Department of Environmental Quality. September 2013. State of Idaho DEQ Air Doc. ID AQ-011. Available at <http://www.deq.idaho.gov/media/1029/modeling-guideline.pdf>.

APPENDIX C – SUBPART HHHHHH ANALYSIS

Attachment 1

NESHAP 40 CFR 63, Subpart HHHHHH Applicability

40 CFR 63, Subpart HHHHHH
National Emission Standard for Hazardous Air Pollutants:
Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources

What This Subpart Covers

§63.11169 What is the purpose of this subpart?

Except as provided in paragraph (d) of this section, this subpart establishes national emission standards for hazardous air pollutants (HAP) for area sources involved in any of the activities in paragraphs (a) through (c) of this section. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission standards contained herein.

(a) Paint stripping operations that involve the use of chemical strippers that contain methylene chloride (MeCl), Chemical Abstract Service number 75092, in paint removal processes;

(b) Autobody refinishing operations that encompass motor vehicle and mobile equipment spray-applied surface coating operations;

(c) Spray application of coatings containing compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd), collectively referred to as the target HAP to any part or product made of metal or plastic, or combinations of metal and plastic that are not motor vehicles or mobile equipment.

Quest Aircraft Company performs spray application of coatings containing compounds of chromium and manganese. Therefore, 40 CFR 63, Subpart HHHHHH is applicable.

(d) This subpart does not apply to any of the activities described in paragraph (d)(1) through (6) of this section.

(1) Surface coating or paint stripping performed on site at installations owned or operated by the Armed Forces of the United States (including the Coast Guard and the National Guard of any such State), the National Aeronautics and Space Administration, or the National Nuclear Security Administration.

(2) Surface coating or paint stripping of military munitions, as defined in §63.11180, manufactured by or for the Armed Forces of the United States (including the Coast Guard and the National Guard of any such State) or equipment directly and exclusively used for the purposes of transporting military munitions.

(3) Surface coating or paint stripping performed by individuals on their personal vehicles, possessions, or property, either as a hobby or for maintenance of their personal vehicles, possessions, or property. This subpart also does not apply when these operations are performed by individuals for others without compensation. An individual who spray applies surface coating to more than two motor vehicles or pieces of mobile equipment per year is subject to the

requirements in this subpart that pertain to motor vehicle and mobile equipment surface coating regardless of whether compensation is received.

(4) Surface coating or paint stripping that meets the definition of “research and laboratory activities” in §63.11180.

(5) Surface coating or paint stripping that meets the definition of “quality control activities” in §63.11180.

(6) Surface coating or paint stripping activities that are covered under another area source NESHAP.

Quest Aircraft Company does not perform work at facilities owned by the Armed Forces, does not coat military munitions, is not a research or laboratory facility, does not perform surface coating on personal vehicles, and does not perform surface coating limited to quality control activities. Therefore, §63.11169 (d)(1) through (6) are not applicable.

§63.11170 Am I subject to this subpart?

(a) You are subject to this subpart if you operate an area source of HAP as defined in paragraph (b) of this section, including sources that are part of a tribal, local, State, or Federal facility and you perform one or more of the activities in paragraphs (a)(1) through (3) of this section:

(1) Perform paint stripping using MeCl for the removal of dried paint (including, but not limited to, paint, enamel, varnish, shellac, and lacquer) from wood, metal, plastic, and other substrates.

(2) Perform spray application of coatings, as defined in §63.11180, to motor vehicles and mobile equipment including operations that are located in stationary structures at fixed locations, and mobile repair and refinishing operations that travel to the customer's location, except spray coating applications that meet the definition of facility maintenance in §63.11180. However, if you are the owner or operator of a motor vehicle or mobile equipment surface coating operation, you may petition the Administrator for an exemption from this subpart if you can demonstrate, to the satisfaction of the Administrator, that you spray apply no coatings that contain the target HAP, as defined in §63.11180. Petitions must include a description of the coatings that you spray apply and your certification that you do not spray apply any coatings containing the target HAP. If circumstances change such that you intend to spray apply coatings containing the target HAP, you must submit the initial notification required by 63.11175 and comply with the requirements of this subpart.

(3) Perform spray application of coatings that contain the target HAP, as defined in §63.11180, to a plastic and/or metal substrate on a part or product, except spray coating applications that meet the definition of facility maintenance or space vehicle in §63.11180.

(b) An area source of HAP is a source of HAP that is not a major source of HAP, is not located at a major source, and is not part of a major source of HAP emissions. A major source of HAP emissions is any stationary source or group of stationary sources located within a contiguous area

and under common control that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (Mg) (10 tons) or more per year, or emit any combination of HAP at a rate of 22.68 Mg (25 tons) or more per year.

Quest Aircraft Company is an area source of HAP's and performs spray coating operations on airplane parts using coatings that contain target HAP's. Therefore, §63.11170(a)(3) through (b) is applicable.

§63.11171 How do I know if my source is considered a new source or an existing source?

(a) This subpart applies to each new and existing affected area source engaged in the activities listed in §63.11170, with the exception of those activities listed in §63.11169(d) of this subpart.

Quest Aircraft Company is an existing area source engaged in one or more activities listed in §63.11170, none of which are excepted as defined by §63.11169(d) of this subpart.

(b) The affected source is the collection of all of the items listed in paragraphs (b)(1) through (6) of this section. Not all affected sources will have all of the items listed in paragraphs (b)(1) through (6) of this section.

(1) Mixing rooms and equipment;

(2) Spray booths, ventilated prep stations, curing ovens, and associated equipment;

(3) Spray guns and associated equipment;

(4) Spray gun cleaning equipment;

(5) Equipment used for storage, handling, recovery, or recycling of cleaning solvent or waste paint; and

(6) Equipment used for paint stripping at paint stripping facilities using paint strippers containing MeCl.

Quest Aircraft Company contains items listed in §63.11171(b)(1) through (5). Therefore, it is an affected source.

(c) An affected source is a new source if it meets the criteria in paragraphs (c)(1) and (c)(2) of this section.

(1) You commenced the construction of the source after September 17, 2007 by installing new paint stripping or surface coating equipment. If you purchase and install spray booths, enclosed spray gun cleaners, paint stripping equipment to reduce MeCl emissions, or purchase new spray guns to comply with this subpart at an existing source, these actions would not make your existing source a new source.

(2) The new paint stripping or surface coating equipment is used at a source that was not actively engaged in paint stripping and/or miscellaneous surface coating prior to September 17, 2007.

(d) An affected source is reconstructed if it meets the definition of reconstruction in §63.2.

(e) An affected source is an existing source if it is not a new source or a reconstructed source.

Quest Aircraft Company was constructed prior to September 17, 2007 and it was not reconstructed subsequent to that date. Therefore, it is an existing affected source.

General Compliance Requirements

§63.11172 When do I have to comply with this subpart?

The date by which you must comply with this subpart is called the compliance date. The compliance date for each type of affected source is specified in paragraphs (a) and (b) of this section.

(a) For a new or reconstructed affected source, the compliance date is the applicable date in paragraph (a)(1) or (2) of this section:

(1) If the initial startup of your new or reconstructed affected source is after September 17, 2007, the compliance date is January 9, 2008.

(2) If the initial startup of your new or reconstructed affected source occurs after January 9, 2008, the compliance date is the date of initial startup of your affected source.

(b) For an existing affected source, the compliance date is January 10, 2011.

Quest Aircraft Company acknowledges the compliance date requirement.

§63.11173 What are my general requirements for complying with this subpart?

(a) Each paint stripping operation that is an affected area source must implement management practices to minimize the evaporative emissions of MeCl. The management practices must address, at a minimum, the practices in paragraphs (a)(1) through (5) of this section, as applicable, for your operations.

(1) Evaluate each application to ensure there is a need for paint stripping (e.g., evaluate whether it is possible to re-coat the piece without removing the existing coating).

(2) Evaluate each application where a paint stripper containing MeCl is used to ensure that there is no alternative paint stripping technology that can be used.

(3) Reduce exposure of all paint strippers containing MeCl to the air.

(4) Optimize application conditions when using paint strippers containing MeCl to reduce MeCl evaporation (e.g., if the stripper must be heated, make sure that the temperature is kept as low as possible to reduce evaporation).

(5) Practice proper storage and disposal of paint strippers containing MeCl (e.g., store stripper in closed, air-tight containers).

(b) Each paint stripping operation that has annual usage of more than one ton of MeCl must develop and implement a written MeCl minimization plan to minimize the use and emissions of MeCl. The MeCl minimization plan must address, at a minimum, the management practices specified in paragraphs (a)(1) through (5) of this section, as applicable, for your operations. Each operation must post a placard or sign outlining the MeCl minimization plan in each area where paint stripping operations subject to this subpart occur. Paint stripping operations with annual usage of less than one ton of MeCl, must comply with the requirements in paragraphs (a)(1) through (5) of this section, as applicable, but are not required to develop and implement a written MeCl minimization plan.

(c) Each paint stripping operation must maintain copies of annual usage of paint strippers containing MeCl on site at all times.

(d) Each paint stripping operation with annual usage of more than one ton of MeCl must maintain a copy of their current MeCl minimization plan on site at all times.

Quest Aircraft Company does not perform paint stripping operations using MeCl. Therefore, §63.11173(a) through (d) is not applicable.

(e) Each motor vehicle and mobile equipment surface coating operation and each miscellaneous surface coating operation must meet the requirements in paragraphs (e)(1) through (e)(5) of this section.

(1) All painters must be certified that they have completed training in the proper spray application of surface coatings and the proper setup and maintenance of spray equipment. The minimum requirements for training and certification are described in paragraph (f) of this section. The spray application of surface coatings is prohibited by persons who are not certified as having completed the training described in paragraph (f) of this section. The requirements of this paragraph do not apply to the students of an accredited surface coating training program who are under the direct supervision of an instructor who meets the requirements of this paragraph.

Quest Aircraft Company acknowledges that personnel who spray apply paints must be trained using a program that includes items listed in §63.11173(f).

(2) All spray-applied coatings must be applied in a spray booth, preparation station, or mobile enclosure that meets the requirements of paragraph (e)(2)(i) of this section and either paragraph (e)(2)(ii), (e)(2)(iii), or (e)(2)(iv) of this section.

(i) All spray booths, preparation stations, and mobile enclosures must be fitted with a type of filter technology that is demonstrated to achieve at least 98-percent capture of paint overspray. The procedure used to demonstrate filter efficiency must be consistent with the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Method 52.1, "Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter, June 4, 1992" (incorporated by reference, see §63.14 of subpart A of this part). The test coating for measuring filter efficiency shall be a high solids bake enamel delivered at a rate of at least 135 grams per minute from a conventional (non-HVLP) air-atomized spray gun operating at 40 pounds per square inch (psi) air pressure; the air flow rate across the filter shall be 150 feet per minute. Owners and operators may use published filter efficiency data provided by filter vendors to demonstrate compliance with this requirement and are not required to perform this measurement. The requirements of this paragraph do not apply to waterwash spray booths that are operated and maintained according to the manufacturer's specifications.

Quest Aircraft Company acknowledges the 98% filter removal efficiency requirement for paint booth solids and has applied for a permit to construct for two paint booths which meet this requirement.

(ii) Spray booths and preparation stations used to refinish complete motor vehicles or mobile equipment must be fully enclosed with a full roof, and four complete walls or complete side curtains, and must be ventilated at negative pressure so that air is drawn into any openings in the booth walls or preparation station curtains. However, if a spray booth is fully enclosed and has seals on all doors and other openings and has an automatic pressure balancing system, it may be operated at up to, but not more than, 0.05 inches water gauge positive pressure.

(iii) Spray booths and preparation stations that are used to coat miscellaneous parts and products or vehicle subassemblies must have a full roof, at least three complete walls or complete side curtains, and must be ventilated so that air is drawn into the booth. The walls and roof of a booth may have openings, if needed, to allow for conveyors and parts to pass through the booth during the coating process.

Quest Aircraft Company performs all painting operations in an enclosed paint booth under negative pressure. Air is drawn into the booth, ventilated through the floor, and leaves through a filtered vent.

(iv) Mobile ventilated enclosures that are used to perform spot repairs must enclose and, if necessary, seal against the surface around the area being coated such that paint overspray is retained within the enclosure and directed to a filter to capture paint overspray.

(3) All spray-applied coatings must be applied with a high volume, low pressure (HVLP) spray gun, electrostatic application, airless spray gun, air-assisted airless spray gun, or an equivalent technology that is demonstrated by the spray gun manufacturer to achieve transfer efficiency comparable to one of the spray gun technologies listed above for a comparable operation, and for which written approval has been obtained from the Administrator. The procedure used to demonstrate that spray gun transfer efficiency is equivalent to that of an HVLP spray gun must

be equivalent to the California South Coast Air Quality Management District's "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989" and "Guidelines for Demonstrating Equivalency with District Approved Transfer Efficient Spray Guns, September 26, 2002" (incorporated by reference, see §63.14 of subpart A of this part). The requirements of this paragraph do not apply to painting performed by students and instructors at paint training centers. The requirements of this paragraph do not apply to the surface coating of aerospace vehicles that involves the coating of components that normally require the use of an airbrush or an extension on the spray gun to properly reach limited access spaces; to the application of coatings on aerospace vehicles that contain fillers that adversely affect atomization with HVLP spray guns; or to the application of coatings on aerospace vehicles that normally have a dried film thickness of less than 0.0013 centimeter (0.0005 in.).

Quest Aircraft Company uses HVLP spray guns.

(4) All paint spray gun cleaning must be done so that an atomized mist or spray of gun cleaning solvent and paint residue is not created outside of a container that collects used gun cleaning solvent. Spray gun cleaning may be done with, for example, hand cleaning of parts of the disassembled gun in a container of solvent, by flushing solvent through the gun without atomizing the solvent and paint residue, or by using a fully enclosed spray gun washer. A combination of non-atomizing methods may also be used.

Quest Aircraft Company cleans paint spray guns in a manner that collects solvent and paint residue in a container such that atomized mist of solvent and paint residues are not created outside of the container.

(5) As provided in §63.6(g), we, the U.S. Environmental Protection Agency, may choose to grant you permission to use an alternative to the emission standards in this section after you have requested approval to do so according to §63.6(g)(2).

(f) Each owner or operator of an affected miscellaneous surface coating source must ensure and certify that all new and existing personnel, including contract personnel, who spray apply surface coatings, as defined in §63.11180, are trained in the proper application of surface coatings as required by paragraph (e)(1) of this section. The training program must include, at a minimum, the items listed in paragraphs (f)(1) through (f)(3) of this section.

(1) A list of all current personnel by name and job description who are required to be trained;

(2) Hands-on and classroom instruction that addresses, at a minimum, initial and refresher training in the topics listed in paragraphs (f)(2)(i) through (2)(iv) of this section.

(i) Spray gun equipment selection, set up, and operation, including measuring coating viscosity, selecting the proper fluid tip or nozzle, and achieving the proper spray pattern, air pressure and volume, and fluid delivery rate.

(ii) Spray technique for different types of coatings to improve transfer efficiency and minimize coating usage and overspray, including maintaining the correct spray gun distance and angle to

the part, using proper banding and overlap, and reducing lead and lag spraying at the beginning and end of each stroke.

(iii) Routine spray booth and filter maintenance, including filter selection and installation.

(iv) Environmental compliance with the requirements of this subpart.

Quest Aircraft Company acknowledges that personnel who spray apply paints must be trained using a program that includes items listed in §63.11173 (f)(1) through (2).

(3) A description of the methods to be used at the completion of initial or refresher training to demonstrate, document, and provide certification of successful completion of the required training. Owners and operators who can show by documentation or certification that a painter's work experience and/or training has resulted in training equivalent to the training required in paragraph (f)(2) of this section are not required to provide the initial training required by that paragraph to these painters.

(g) As required by paragraph (e)(1) of this section, all new and existing personnel at an affected motor vehicle and mobile equipment or miscellaneous surface coating source, including contract personnel, who spray apply surface coatings, as defined in §63.11180, must be trained by the dates specified in paragraphs (g)(1) and (2) of this section. Employees who transfer within a company to a position as a painter are subject to the same requirements as a new hire.

(1) If your source is a new source, all personnel must be trained and certified no later than 180 days after hiring or no later than July 7, 2008, whichever is later. Painter training that was completed within five years prior to the date training is required, and that meets the requirements specified in paragraph (f)(2) of this section satisfies this requirement and is valid for a period not to exceed five years after the date the training is completed.

(2) If your source is an existing source, all personnel must be trained and certified no later than 180 days after hiring or no later than January 10, 2011, whichever is later. Painter training that was completed within five years prior to the date training is required, and that meets the requirements specified in paragraph (f)(2) of this section satisfies this requirement and is valid for a period not to exceed five years after the date the training is completed.

(3) Training and certification will be valid for a period not to exceed five years after the date the training is completed, and all personnel must receive refresher training that meets the requirements of this section and be re-certified every five years.

[73 FR 1760, Jan. 9, 2008; 73 FR 8408, Feb. 13, 2008]

Quest Aircraft Company acknowledges the training record, training date, and re-certification requirement in §63.11173 (f)(3) and (g)(2) through (3).

§63.11174 What parts of the General Provisions apply to me?

(a) Table 1 of this subpart shows which parts of the General Provisions in subpart A apply to you.

(b) If you are an owner or operator of an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart applicable to area sources.

Quest Aircraft Company is an area source subject to this subpart. Therefore it is exempt from an obligation to obtain a Title V operating permit.

Notifications, Reports, and Records

§63.11175 What notifications must I submit?

(a) Initial Notification. If you are the owner or operator of a paint stripping operation using paint strippers containing MeCl and/or a surface coating operation subject to this subpart, you must submit the initial notification required by §63.9(b). For a new affected source, you must submit the Initial Notification no later than 180 days after initial startup or July 7, 2008, whichever is later. For an existing affected source, you must submit the initial notification no later than January 11, 2010. The initial notification must provide the information specified in paragraphs (a)(1) through (8) of this section.

(1) The company name, if applicable.

(2) The name, title, street address, telephone number, e-mail address (if available), and signature of the owner and operator, or other certifying company official;

(3) The street address (physical location) of the affected source and the street address where compliance records are maintained, if different. If the source is a motor vehicle or mobile equipment surface coating operation that repairs vehicles at the customer's location, rather than at a fixed location, such as a collision repair shop, the notification should state this and indicate the physical location where records are kept to demonstrate compliance;

(4) An identification of the relevant standard (i.e., this subpart, 40 CFR part 63, subpart HHHHHH);

(5) A brief description of the type of operation as specified in paragraph (a)(5)(i) or (ii) of this section.

(i) For all surface coating operations, indicate whether the source is a motor vehicle and mobile equipment surface coating operation or a miscellaneous surface coating operation, and include

the number of spray booths and preparation stations, and the number of painters usually employed at the operation.

(ii) For paint stripping operations, identify the method(s) of paint stripping employed (e.g., chemical, mechanical) and the substrates stripped (e.g., wood, plastic, metal).

(6) Each paint stripping operation must indicate whether they plan to annually use more than one ton of MeCl after the compliance date.

(7) A statement of whether the source is already in compliance with each of the relevant requirements of this subpart, or whether the source will be brought into compliance by the compliance date. For paint stripping operations, the relevant requirements that you must evaluate in making this determination are specified in §63.11173(a) through (d) of this subpart. For surface coating operations, the relevant requirements are specified in §63.11173(e) through (g) of this subpart.

(8) If your source is a new source, you must certify in the initial notification whether the source is in compliance with each of the requirements of this subpart. If your source is an existing source, you may certify in the initial notification that the source is already in compliance. If you are certifying in the initial notification that the source is in compliance with the relevant requirements of this subpart, then include also a statement by a responsible official with that official's name, title, phone number, e-mail address (if available) and signature, certifying the truth, accuracy, and completeness of the notification, a statement that the source has complied with all the relevant standards of this subpart, and that this initial notification also serves as the notification of compliance status.

(b) Notification of Compliance Status. If you are the owner or operator of a new source, you are not required to submit a separate notification of compliance status in addition to the initial notification specified in paragraph (a) of this subpart provided you were able to certify compliance on the date of the initial notification, as part of the initial notification, and your compliance status has not since changed. If you are the owner or operator of any existing source and did not certify in the initial notification that your source is already in compliance as specified in paragraph (a) of this section, then you must submit a notification of compliance status. You must submit a Notification of Compliance Status on or before March 11, 2011. You are required to submit the information specified in paragraphs (b)(1) through (4) of this section with your Notification of Compliance Status:

(1) Your company's name and the street address (physical location) of the affected source and the street address where compliance records are maintained, if different.

(2) The name, title, address, telephone, e-mail address (if available) and signature of the owner and operator, or other certifying company official, certifying the truth, accuracy, and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of this subpart or an explanation of any noncompliance and a description of corrective actions being taken to achieve compliance. For paint stripping operations, the relevant requirements that you must evaluate in making this

determination are specified in §63.11173(a) through (d). For surface coating operations, the relevant requirements are specified in §63.11173(e) through (g).

(3) The date of the Notification of Compliance Status.

(4) If you are the owner or operator of an existing affected paint stripping source that annually uses more than one ton of MeCl, you must submit a statement certifying that you have developed and are implementing a written MeCl minimization plan in accordance with §63.11173(b).

Quest Aircraft Company acknowledges the notification requirements of §63.11175(a) (1) through (5)(i), (a)(1)(7) through (8) and (b)(1)through (3).

§63.11176 What reports must I submit?

(a) Annual Notification of Changes Report. If you are the owner or operator of a paint stripping, motor vehicle or mobile equipment, or miscellaneous surface coating affected source, you are required to submit a report in each calendar year in which information previously submitted in either the initial notification required by §63.11175(a), Notification of Compliance, or a previous annual notification of changes report submitted under this paragraph, has changed. Deviations from the relevant requirements in §63.11173(a) through (d) or §63.11173(e) through (g) on the date of the report will be deemed to be a change. This includes notification when paint stripping affected sources that have not developed and implemented a written MeCl minimization plan in accordance with §63.11173(b) used more than one ton of MeCl in the previous calendar year. The annual notification of changes report must be submitted prior to March 1 of each calendar year when reportable changes have occurred and must include the information specified in paragraphs (a)(1) through (2) of this section.

(1) Your company's name and the street address (physical location) of the affected source and the street address where compliance records are maintained, if different.

(2) The name, title, address, telephone, e-mail address (if available) and signature of the owner and operator, or other certifying company official, certifying the truth, accuracy, and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of this subpart or an explanation of any noncompliance and a description of corrective actions being taken to achieve compliance.

(b) If you are the owner or operator of a paint stripping affected source that has not developed and implemented a written MeCl minimization plan in accordance with §63.11173(b) of this subpart, you must submit a report for any calendar year in which you use more than one ton of MeCl. This report must be submitted no later than March 1 of the following calendar year. You must also develop and implement a written MeCl minimization plan in accordance with §63.11173(b) no later than December 31. You must then submit a Notification of Compliance Status report containing the information specified in §63.11175(b) by March 1 of the following year and comply with the requirements for paint stripping operations that annually use more than one ton of MeCl in §§63.11173(d) and 63.11177(f).

Quest Aircraft Company acknowledges the reporting requirements of §63.11176(a)(1) through (2).

§63.11177 What records must I keep?

If you are the owner or operator of a surface coating operation, you must keep the records specified in paragraphs (a) through (d) and (g) of this section. If you are the owner or operator of a paint stripping operation, you must keep the records specified in paragraphs (e) through (g) of this section, as applicable.

(a) Certification that each painter has completed the training specified in §63.11173(f) with the date the initial training and the most recent refresher training was completed.

(b) Documentation of the filter efficiency of any spray booth exhaust filter material, according to the procedure in §63.11173(e)(3)(i).

(c) Documentation from the spray gun manufacturer that each spray gun with a cup capacity equal to or greater than 3.0 fluid ounces (89 cc) that does not meet the definition of an HVLP spray gun, electrostatic application, airless spray gun, or air assisted airless spray gun, has been determined by the Administrator to achieve a transfer efficiency equivalent to that of an HVLP spray gun, according to the procedure in §63.11173(e)(4).

(d) Copies of any notification submitted as required by §63.11175 and copies of any report submitted as required by §63.11176.

(e) Records of paint strippers containing MeCl used for paint stripping operations, including the MeCl content of the paint stripper used. Documentation needs to be sufficient to verify annual usage of paint strippers containing MeCl (e.g., material safety data sheets or other documentation provided by the manufacturer or supplier of the paint stripper, purchase receipts, records of paint stripper usage, engineering calculations).

(f) If you are a paint stripping source that annually uses more than one ton of MeCl you are required to maintain a record of your current MeCl minimization plan on site for the duration of your paint stripping operations. You must also keep records of your annual review of, and updates to, your MeCl minimization plan.

(g) Records of any deviation from the requirements in §63.11173, §63.11174, §63.11175, or §63.11176. These records must include the date and time period of the deviation, and a description of the nature of the deviation and the actions taken to correct the deviation.

(h) Records of any assessments of source compliance performed in support of the initial notification, notification of compliance status, or annual notification of changes report.

Quest Aircraft Company acknowledges the recordkeeping requirements of §63.11177(a) through (b),(d) and (g).

§63.11178 In what form and for how long must I keep my records?

(a) If you are the owner or operator of an affected source, you must maintain copies of the records specified in §63.11177 for a period of at least five years after the date of each record. Copies of records must be kept on site and in a printed or electronic form that is readily accessible for inspection for at least the first two years after their date, and may be kept off-site after that two year period.

Quest Aircraft Company acknowledges the records retention requirements specified in §63.11177.

Other Requirements and Information

§63.11179 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by us, the U.S. Environmental Protection Agency (EPA), or a delegated authority such as your State, local, or tribal agency. If the Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the EPA) has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator and are not transferred to the State, local, or tribal agency.

(c) The authority in §63.11173(e)(5) will not be delegated to State, local, or tribal agencies.

Quest Aircraft Company acknowledges the provisions in §63.11179(a) through (b) for implementation and enforcement of this subpart.

APPENDIX D – RESPONSE TO FACILITY COMMENTS

The following comments were received from the facility on March 10, 2017 on the first facility draft:

Facility Comment: The boilers are exempt from NSR per IDAPA 58.01.01.221 therefore, should not be listed as regulated sources. Furthermore, 3 of them are not on the subject property (boilers 3, 4 & 5). (see comment A1)

DEQ Response: Idaho exemptions in IDAPA 58.01.01.220-223 are for exempting a facility installing units with insignificant air quality impacts from obtaining an air permit. Specifically, IDAPA 58.01.01.220 in part describe this as "...No permit to construct is required for a source that satisfies all of the following criteria, in addition to the criteria set forth at Sections 221 and 223 or 222 and 223.

Regarding boilers 3, 4, and 5, the application describes the facility property as a 30.7 acre plot and has the buildings included in the highlighted area. The definition of a facility in IDAPA 58.01.01.006 (40) describes a facility as "All of the pollutant-emitting activities which belong to the same industrial grouping, are located on one (1) or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control)." Being part of the facility, and included in the emissions inventory, they will remain as regulated sources.

**Production Growth Strategy –
Phase II**



- Quest has 1433 ft of runway frontage associated with 30.7 Acres of land.
- Phase II plans will take advantage of Quest's available footprint

Facility Comment: This is an excessive and onerous compliance requirement. The only references provided were for other permits developed by T. Burnham. Daily monitoring and calculations would be performed by different people depending on how late the operation ran, and who was working. Furthermore, multiple people would have the opportunity to create errors in the editable fields of the spreadsheet. The intention was to provide flexibility to change coating formulations but the formulation change causes less than an EL emission rate, no permit modification is required anyway. Recommend a rolling 12-month production limit based on calculations and modeling submitted with the application.

Under IDAPA 58.01.01 IDEQ only requires a source to obtain an initial permit unless contaminants change or capabilities increase. This condition makes compliance requirements applicable whenever IDEQ changes .586 and assumes that the facility would monitor and be familiar with any changes in the toxics list each year. Recommend adding an effective date of 07/01/2016 after the regulatory references. (see comments A2 through A5, A10, A11, A13, A14, and A16)

DEQ Response: The daily monitoring requirement for non-carcinogenic toxic air pollutants is derived from the 24-hour averaging requirement of IDAPA 58.01.01.585. This requires daily monitoring to ensure compliance, as there are some toxic components of the paints that are very near the screening emission limits (EL). Specifically, based on the proposed daily usage in the application, silica was demonstrated to be over the EL, but was shown to be in compliance with the acceptable ambient concentrations (AAC) through modeling analysis.

To make this less onerous, the TAPs tracking previously discussed with the facility will be replaced with daily coating tracking, with a clause allowing for analysis of alternative coatings to the ones currently being used. This will still allow flexibility, yet still require monitoring daily usage records.

Facility Comment: These boilers only produce natural gas combustion products and are not directly associated with the coating operation. Per discussion with T. Burnham 3/3/2017 only intended to include coating sources and should exclude combustion products for purposes of emission limits.

There is no dryer in the process; the closest in description would be the Cure Booth but it is operated at a lower temperature than a dryer would be and it is already included above. (see comments A5 through A9)

DEQ Response: A separate section of the permit will include only combustion sources and will be regulated by the type (natural gas) and quantity (MMscf/yr) of fuel usage and monitoring

Facility Comment: Particulate matter has been calculated and evaluated for modeling in the application. The amount of solids is inversely related to the amount of VOC so duplicative with next condition. Recommend removing condition. (see comment A12)

DEQ Response: This is a reasonable request. The particulate will be considered to be inherently regulated by the VOC limit and the particulate limit will be removed from the permit.

Facility Comment: Based on the emissions calculations submitted with the application, this condition requires that Quest engage a consultant annually to perform modeling for crystalline silica, cadmium and formaldehyde. If the natural gas combustion is removed from Table 2.1, Quest will still have to perform modeling annually for crystalline silica and that has already been proven. Recommends removal of this condition and use of 12-month rolling production usage. (see comment A15)

DEQ Response: With the revised permit, modeling will only be required if alternative coating are demonstrated to be over the (EL) for TAPs. The 12-month rolling average will remain for coating and natural gas usage to ensure levels of pollutants are maintained at levels presented in the emissions inventory of the application.

Facility Comment: In the application regulatory review, we identified sections a,b,d,and g from this subpart. Why did this change? (see comment A17)

DEQ Response: The inclusion of sections in 40 CFR 63, subpart HHHHHH for sections 11177 (a), (b),(d), and (g) due to the certified statement that paint-stripping activities do not occur at the facility; however, the record keeping requirements of section 11177 (h) relating to source compliance will still be included in accordance with the federal code as applicable.

The following comments were received from the facility on April 5, 2017, on the second facility draft:

Facility Comment: Duplicate from sentence immediately preceding. (see comment A1, referring to Permit Condition 3.9)

DEQ Response: Duplicate sentence has been removed.

Facility Comment: SDS are not needed to record volume; this was residual from previous draft requiring calculations. (see comment A2 referring to Permit Condition 3.10)

DEQ Response: The reference to SDS has been removed.

Facility Comment: Will any annual reporting be required if modeling was not triggered? As written, there is none. (see comment A3 referring to Permit Condition 3.14)

DEQ Response: No report is required if modeling is not triggered.

Facility Comment: Per regulations. You have already verified compliance with the design standards of 11173(e)(2). (see comment A4 referring to Permit Condition 3.17)

DEQ Response: The reference to 40 CFR 63 11177(b) is noted and the citation changed to 40 CFR 63.11173(e)(i).

Facility Comment: Duplicate of preceding condition. (see comment A5 referring to the last bullet of Permit Condition 3.17)

DEQ Response: Duplicate bullet has been removed.

Facility Comment: Strikethroughs and insertions

DEQ Response: All suggested deletions and insertions were included in the proposed draft for public comment with the exception of the recommended change of Permit Condition 3.5. This would change the condition to regulate TAPs; however, the condition is meant to regulate HAPs. TAPs are regulated through the coating usage permit condition.

APPENDIX E – 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: Quest Aircraft Company, LLC
Address: 1200 Turbine Drive
City: Sandpoint
State: ID
Zip Code: 83864
Facility Contact: Tiffany Goodvin
Title: Safety and Health Specialist
AIRS No.: 017-00067

- 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	1.4	0	1.4
SO ₂	0.0	0	0.0
CO	2.3	0	2.3
PM10	0.3	0	0.3
VOC	4.2	0	4.2
TAPS/HAPS	8.1	0	8.1
Total:	16.3	0	16.3
Fee Due	\$ 5,000.00		

Comments:

