



State of Idaho
Department of Environmental Quality
Air Quality Division

**AIR QUALITY PERMIT
STATEMENT OF BASIS**

Permit to Construct No. P-2007.0193

FINAL

Schwartz Construction

Crushing and Screening Plant

Portable

Facility ID No. 777-00388

May 29, 2008

Morrie Lewis *ML*

Permit Writer

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

Table of Contents

1.	FACILITY INFORMATION.....	4
2.	APPLICATION SCOPE	4
3.	TECHNICAL ANALYSIS.....	5
4.	REGULATORY REVIEW	8
5.	PERMIT FEES	10
6.	PUBLIC COMMENT	10
	APPENDIX A – AIRS INFORMATION	
	APPENDIX B – EMISSIONS INVENTORY	
	APPENDIX C – MODELING ANALYSIS	
	APPENDIX D – EQUIPMENT SPECIFICATIONS	

Acronyms, Units, and Chemical Nomenclature

AACC	acceptable ambient concentration for carcinogens
acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
BMP	Best Management Practices
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EL	screening emissions levels
ft	feet
°F	degrees Fahrenheit
HAP	Hazardous Air Pollutants
hr/yr	hours per consecutive 12-calendar month period
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pounds per hour
m	meters
MACT	Maximum Achievable Control Technology
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	nitrogen oxides
NO_2	nitrogen dioxide
NSPS	New Source Performance Standards
PERF	Portable Equipment Relocation Form
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
Rules	Rules for the Control of Air Pollution in Idaho
SIP	State Implementation Plan
SO_2	sulfur dioxide
TAP	toxic air pollutants
T/hr	tons per hour
T/yr	tons per consecutive 12-calender month period
VOC	volatile organic compound

1. FACILITY INFORMATION

1.1 Facility Description

Schwartz Construction operates a crushing and screening plant near Council, Idaho. Rock and aggregate are crushed at the rock crushing and screening operations to reduce material in size to desired specifications, for direct sale and for further processing. Electric power will be supplied to the facility from the portable generators (or from the power grid when available).

1.2 Permitting History

This PTC will replace the existing Permit by Rule Registration (PBR), and will permit operation at the same location beyond the 12 month limitation of permit by rule.

August 4, 2006 PBR No. PR-060320 issued for the operation of a cone crusher, screen, generator, and jaw crusher (all of which are being incorporated into this PTC).
(S)

2. APPLICATION SCOPE

Schwartz Construction operates a crushing and screening plant. The plant maximum capacity is 120 tons per hour (T/hr) with a maximum production rate of 1,051,200 tons per year (T/yr).

2.1 Application Chronology

September 26, 2007	DEQ received a PTC application and \$1,000 application fee.
October 23, 2007	DEQ determined the application incomplete.
April 4, 2008	DEQ received additional information from Schwartz Construction.
October 10 through October 24, 2007	Opportunity for a public comment period was held. No comments or requests for a public comment period were received.
April 11, 2008	Draft permit and statement of basis were sent for peer and Boise Regional Office (BRO) review.
April 17, 2008	DEQ determined the application complete.
April 17, 2008	Draft permit and statement of basis were sent for facility review.
May 22, 2008	\$2,500 PTC processing fee was received.
May 29, 2008	Final permit and statement of basis were issued.

3. TECHNICAL ANALYSIS

3.1 Emission Units and Control Devices

Table 3.1 CONTROL DESCRIPTION OF THE SAND AND GRAVEL AND CRUSHED STONE PLANT

Emissions Units / Processes	Emissions Control Device	Emission Sources
Crushing, screening, and materials transfer (fugitives)	BMP, water sprays, or equivalent control methods Estimated Control Efficiency: 75%	Jaw crusher, Cone crusher Screen, Conveyors (2), Front-end loader, Aggregate dump to ground, Sand dump to ground, Aggregate dump to conveyor, Sand dump to conveyor.
Generators	None	631 Detroit Diesel Exit height: 14 ft. Exit diameter: 0.33 ft Exit air flow rate: >745 acfm Exit temperature: >1000 °F Onan Exit height: 14 ft Exit diameter: 0.33 ft Exit air flow rate: >745 acfm Exit temperature: >1000 °F

3.2 Emissions Inventory

An emissions inventory was developed for this crushing and screening plant based on AP-42 Section 11.19 emission factors for crushing and screening operations and Section 3.3 emission factors for generators, and the following assumptions: a maximum equipment capacity of less than 150 T/hr, a maximum production rate of 1,051,200 T/yr, and maximum operation of both of the generators of 1,900 hours per consecutive 12-calendar month period (e.g. for concurrent operation this would be equivalent to 950 hr/yr for each generator).

Fugitive emissions of particulate matter (PM) and PM₁₀ from crushing and screening plant material transfer points are assumed to be controlled by manual water sprays, sprinklers, or spray bars, or an equivalent control method (e.g., enclosing the entire process inside a building) that reduce the emissions by an estimated 75%. An estimate of fugitive emissions from vehicle traffic and wind erosion from stockpiles is also provided based on information provided in the application.

Table 3.2 EMISSIONS ESTIMATES OF CRITERIA POLLUTANTS – UNCONTROLLED EMISSIONS

Emissions Unit	PM ₁₀		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
Point Sources Affected by the Permitting Action										
Generators	1.03	4.52	0.97	4.23	14.70	64.37	3.17	13.87	1.20	5.25
Total, Point Sources	1.03	4.52	0.97	4.23	14.70	64.37	3.17	13.87	1.20	5.25
Fugitive Sources Affected by the Permitting Action										
Crushing operations	0.36	1.58								
Screening operations	1.31	5.72								
Materials transfer	1.16	5.06								
Vehicle traffic	3.98	17.44								
Material handling	0.39	1.70								
Stockpiles	0.09	0.40								
Total, Fugitive Sources		31.90								

Table 3.3 EMISSIONS ESTIMATES OF CRITERIA POLLUTANTS – CONTROLLED EMISSIONS¹

Emissions Unit	PM ₁₀		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
Point Sources Affected by the Permitting Action										
Generators	1.03	0.49	0.97	0.45	14.70	6.98	3.17	1.50	1.20	0.56
Total, Point Sources	1.03	0.49	0.97	0.45	14.70	6.98	3.17	1.50	1.20	0.56
Fugitive Sources Affected by the Permitting Action										
Crushing operations	0.08	0.36								
Screening operations	0.11	0.49								
Materials transfer	0.05	0.22								
Vehicle traffic	1.00	4.36								
Material handling	0.10	0.42								
Stockpiles	0.02	0.10								
Total, Fugitive Sources		5.95								

1. Assumes the use of BMP, water sprays or equivalent for control of fugitive dust.

A summary of the uncontrolled emissions of criteria pollutants is shown in Table 3.2, and controlled emissions in Table 3.3. Uncontrolled emissions of toxic air pollutants (TAP) did not exceed any applicable screening emissions levels (EL). The detailed emissions inventory and comparison of TAP emissions to EL for this facility can be found in Appendix B.

3.3 Ambient Air Quality Impact Analysis

An emissions inventory was developed based on information provided in the application. The potential facility-wide emission rates of NO_x, SO₂, and PM₁₀ from point and fugitive sources (except vehicle traffic and windblown dust) were estimated at above the DEQ recommended modeling thresholds¹ as provided in Table 3.4. As a result, facility-wide modeling analysis was required for these pollutants. The potential facility-wide emission rate for CO and lead were below the DEQ recommended modeling thresholds, and emission rates of TAP were below applicable EL.

Screening modeling analysis was conducted using SCREEN3 for NO_x, SO₂, and PM₁₀. The estimated ambient impacts for these pollutants were above the significance level, so emissions were compared against the NAAQS. The modeling analysis is included in Appendix C, and a summary of the results is provided in Table 3.5. Fugitive emissions were not considered in the modeling analysis; emissions from these sources are controlled through the use of Best Management Practices (BMP) as required by Permit Condition 3.7.

Table 3.4 IMPACT ANALYSIS RESULTS FOR CRITERIA POLLUTANTS – CONTROLLED EMISSIONS

Pollutant	Averaging Period	Maximum Predicted Ambient Impact (µg/m ³)	Significant Contribution Level (µg/m ³)	Significant Contribution?
PM ₁₀	24-hour	13.20	5	Yes
NO ₂	Annual	9.73	1	Yes
SO ₂	3-hour	55.55	25	Yes
	24-hour	12.34	5	Yes

Table 3.5 FULL IMPACT ANALYSIS RESULTS FOR CRITERIA POLLUTANTS WITH SIGNIFICANT CONTRIBUTION¹

Pollutant	Averaging Period	Facility Ambient Impact (µg/m ³)	Background Concentration (µg/m ³)	Total Ambient Concentration (µg/m ³)	NAAQS (µg/m ³)	Percent of NAAQS
PM ₁₀	24-hour	13.20	73	86.2	150	57.5 %
NO ₂	Annual	9.73	17	26.7	100	26.7%
SO ₂	3-hr	55.55	34	89.6	1,300	6.9%
	24-hr	12.34	26	38.3	365	10.5%

¹ Significant contribution as defined by IDAPA 58.01.01.006.102.

Schwartz Construction has demonstrated compliance to DEQ's satisfaction that emissions from the crushing and screening facility will not cause or significantly contribute to a violation of any ambient air quality standard. Schwartz Construction has also demonstrated compliance to DEQ's satisfaction that an emissions increase due to this permitting action will not exceed any AAC or AACC for TAP.

¹ Table 1, State of Idaho Air Quality Modeling Guideline, Doc ID AQ-011, rev. 1, December 31, 2002.

4. REGULATORY REVIEW

4.1 Attainment Designation (40 CFR 81.313)

The facility is located in Adams County, which is designated as attainment or unclassifiable for PM₁₀, PM_{2.5}, CO, NO_x, SO₂, and Ozone. Reference 40 CFR 81.313.

Information regarding the geographical location of nonattainment areas in Idaho can be found at: http://www.deq.idaho.gov/air/data_reports/monitoring/overview.cfm#AttvNon

4.2 Permit to Construct (IDAPA 58.01.01.201)

The facility does not meet the permit to construct exemption criteria contained in Sections 220 through 223 of the Rules. Therefore, a PTC is required.

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

The facility is classified as a natural minor facility because without limits on the potential to emit, the emissions of all regulated pollutants are less than major source thresholds. The AIRS classification is "B."

4.4 PSD Classification (40 CFR 52.21)

The facility is classified as a PSD minor facility because without limits on the potential to emit, the emissions of all regulated pollutants are less than PSD major source thresholds.

4.5 NSPS Applicability (40 CFR 60)

The facility is not subject to any NSPS.

Based on information provided in the application, the existing crushing and screening equipment are not being modified or reconstructed as a result of this permitting action, and were constructed and operating prior to August 31, 1983. The jaw crusher was reconstructed in 1997; it was rebuilt with a 6-71 Detroit Diesel (originally had a 60 HP generator). Based on information provided in the application (refer to Appendix D), this facility is a portable sand and gravel plant and crushed stone plant with a rated capacity of 150 tons per hour or less (120 T/hr), and meets the definition of portable in 40 CFR 60.671. As a result, this facility is not subject to the provisions of Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants.

The stationary compression ignition internal combustion engines (diesel-fired generators) were ordered (commenced construction) before July 11, 2005 and were manufactured before April 1, 2006. As a result, the generators are not subject to 40 CFR 60, Subpart IIII – Standard of Performance for Stationary Compression Ignition Internal Combustion Engines in accordance with 40 CFR 60.4200(a)(2)(i).

4.6 NESHAP Applicability (40 CFR 61)

The facility is not subject to NESHAP.

4.7 MACT Applicability (40 CFR 63)

The facility is not subject to MACT standards.

4.8 CAM Applicability (40 CFR 64)

The facility is a natural minor Title V source, and is therefore not subject to CAM.

4.9 Permit Conditions Review

This section describes permit conditions that have been added as a result of this permit action.

Permit Conditions 1.1, 1.2, and 1.3

- Describes the scope of the permitting action and the emission sources and controls that are regulated by this permit to construct.

Permit Condition 2.1 and 2.2:

- Limits opacity from any point of emission in accordance with IDAPA 58.01.01.625.
- Requires monthly inspection and recordkeeping to demonstrate compliance with opacity limits and recordkeeping of the results of each inspection when corrective actions are required.

Permit Condition 2.3:

- Requires the use of reasonable precautions for the control of fugitive emissions (facility-wide), in accordance with IDAPA 58.01.01.650-651.

Permit Condition 2.4:

- Requires the use of reasonable fugitive dust control strategies for the control of fugitive dust emissions (facility-wide), to achieve compliance with IDAPA 58.01.01.650-651.

Permit Condition 2.5:

- Requires daily monitoring and recordkeeping of potential fugitive emission sources and corrective actions and control strategies used to demonstrate compliance with Permit Conditions 2.4, 3.3, and 3.7.

Permit Condition 2.6:

- Limits the sulfur content in distillate fuel oil in accordance with IDAPA 58.01.01.728.

Permit Condition 2.7:

- Restricts the facility from operation in nonattainment areas. Nonattainment area operation was not requested, and compliance with nonattainment standards was not demonstrated.

Permit Condition 2.8:

- Requires submittal of PERF form when relocating in accordance with IDAPA 58.01.01.500.

Permit Conditions 3.1 and 3.2:

- Describe the processes, the emission sources, and the emission controls to be used at the facility. Demonstration of compliance with NAAQS and TAP requirements was based on emissions estimated using BMP, water spray, or equivalent control techniques.

Permit Condition 3.3:

- Limits the opacity of crushing and screening sources in accordance with IDAPA 58.01.01.793. Compliance with this permit condition is demonstrated by the monitoring of fugitive dust sources as required by Permit Condition 2.5.

Permit Condition 3.4:

- Limits the combined operating hours of the generators to 1,900 hr/yr.

Permit Condition 3.5:

- Limits the fuel used in the generators to distillate fuel oil.

Permit Condition 3.6:

- Requires the use of Best Management Practices for reasonable control of crushers, fugitive and mobile sources of particulate emissions as described by IDAPA 58.01.01.799.

Permit Conditions 3.7

- Requires monitoring and recordkeeping of the operating hours for each generator to demonstrate compliance with Permit Condition 3.4.

5. PERMIT FEES

Table 5.1 lists the processing fee associated with this permitting action. The facility is subject to a processing fee of \$2,500 in accordance with IDAPA 58.01.01.225 because the increase in permitted emissions is less than 10 tons per year, based upon the maximum allowable production rates.

Table 5.1 PTC PROCESSING FEE TABLE

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO _x	6.98	0	6.98
SO ₂	0.45	0	0.45
CO	1.50	0	1.50
PM ₁₀	0.49	0	0.49
VOC	0.56	0	0.56
HAP ¹	0.00	0	0.00
Total¹:	9.98	0	9.98
Fee Due	\$ 2,500.00		

¹ For the purposes of fee calculation, HAP emissions from PM₁₀ are included in the PM₁₀ emissions total, and are therefore not included in the HAP emissions total.

6. PUBLIC COMMENT

An opportunity for public comment period on the PTC application was provided in accordance with IDAPA 58.01.01.209.01.c (refer to Section 2.1 for dates). During this time, there were no comments on the application and no requests for a public comment period on DEQ's proposed action.

Appendix A – AIRS Information



AIRS/AFS^a FACILITY-WIDE CLASSIFICATION^b DATA ENTRY FORM

**Permittee/
 Facility Name:** Schwartz Construction, Portable
Facility Location: Portable
AIRS Number: 777-00388

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION
								A-Attainment U-Unclassified N-Nonattainment
SO ₂	B							U
NO _x	B							U
CO	B							U
PM ₁₀	B							U
PT (Particulate)	B							U
VOC	B							U
THAP (Total HAPs)	B							
APPLICABLE SUBPART								

^a Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

^b AIRS/AFS Classification Codes:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAP only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, or each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAP.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).

Appendix B – Emissions Inventory

CURRENT PTC APPLICATION ESTIMATES

DEQ Verification Worksheets:			
Facility ID/AIRS No.	777-00388	Spreadsheet Date	4/17/2008 17:46
Permit No.	P-2007.0193		
Facility Owner/Company Name:	Schwartz Construction		
Address:	2040 Council-Cuprum Road		
City, State, Zip:	Council, Idaho 83612		
Facility Contact:	Troy Schwartz, Owner		
Contact Number/ e-mail:	(208) 253-4210		

**PTC & FACWIDE
ESTIMATES**

Electrical Generator < 600 hp (447 kW) AP-42 Section 3.3 (diesel fueled)			
		Fuel Type(s)	Fuel Toggle
Generator Make/Model	Onan+Detroit Diesel	#2 Fuel Oil (Diesel)	1
	177.5 kW (2)	Gasoline	0
EF OPTIONS:	Use EFs in lb/hp-hr	Use EFs in lb/MMBtu	0
1) Input Rated Capacity, kW	355	Max Fuel Use Rate, gal/hr	0
Spreadsheet conversion from kW to hp:	476	Fuel Heating Value, Btu/gal	137,030
or 2) Input Rated Capacity, hp	476	Calculated MMBtu/hr	3.3324
Max Operational Hours/Day	24	Max Operational Hours/Day	24
Max Operational Hours per Year (Proposed Limit)	950	Max Operational Hours/Year	950
Note: 1 hp = 0.7456999 kW			

Note: AP-42 Tables 3.3-x,3.4-x: avg diesel heating value is based on 19,300 Btu/lb with density equal 7.1 lb/gal=> Btu/gal =	137,030
--	---------

Crushing & Screening Emissions Inventory

4/17/08 17:46

Facility Information											
Company:	Schwartz Construction										
Facility ID:	777-00388										
Permit No.:	P-2007.0193										
Technical Data											
Maximum Hourly Production Rate		cy/hr		150	tons/hr						
Proposed Daily Production Rate		cy/day		3,600	tons/day						
Proposed Maximum Annual Production Rate		cy/year		1,314,000	tons/year						
Emissions											
Crusher & Screening Emission Sources	# of sources	PM ₁₀ Emission Factor ² (lb/ton)		Uncontrolled Emission Rate	Uncontrolled Emission Rate	Controlled Emission Rate	Controlled Emission Rate 24-hour Average		Controlled Emission Rate Annual Average		Control Assumptions
		Controlled	Uncontrolled	lb/hr	T/yr	lb/hr	lb/hr	lb/day	lb/hr	T/yr	
Tertiary Crushing ¹	1	0.00054	0.0024	0.360	1.577	0.081	0.081	1.94	0.081	0.355	Water sprays or equiv.
Screening	1	0.00074	0.0087	1.305	5.716	0.111	0.111	2.66	0.111	0.486	Water sprays or equiv.
Conveyor Transfer Points	7	0.000046	0.0011	1.155	5.059	0.048	0.048	1.16	0.048	0.212	Water sprays or equiv.
Truck Unloading (fragmented stone)	1	0.000016	0.000016	2.40E-03	0.0105	2.40E-03	0.002	0.06	2.40E-03	0.0105	Water sprays or equiv.
Fugitive Sources Total Emissions (Except Road Dust and Windblown Dust)	9	0.0013	0.012	2.82	12.36	0.24	0.24	5.82	0.24	1.06	
DEQ Modeling Threshold								0.9		7	
Modeling Required?								No		No	

1) A primary crusher and a secondary crusher are associated with the rock crushing operations at this facility. No emission factors are available for primary or secondary crushing in AP-42. Although PM₁₀ emissions would be expected to be minimal due to the size of the material processed, to be conservative one of the two crushers at this facility was considered a tertiary crusher for the emission calculations.

2) Controlled emission factors from AP-42, 11.19.2-2, 8/04.

Fugitive

Air Emissions from Fugitive Particulate Emissions

lb =pound
VMT = vehicle miles traveled

Replace any inaccurate variables with your own values.

Production Rate = 1,314,000 T/yr
Operating Hours = 8,760
Control efficiency = 75%

a	b	c	d	e	f	
Source	Emission Factor	Activity	Actual Emissions	Actual Emissions	BMP Controlled	
			b x c / 2000	b x c / operating hr	d x control efficiency	e x control efficiency
	(lb/VMT)	(VMT)	(ton/year)	(lb/hr)	(ton/year)	(lb/hr)
unpaved road	PM10 1.99	17520	17.44	3.98	4.36	1.00
material handling	PM10 2.58E-03	1,314,000	1.69	0.39	0.42	0.10
ground pile	PM10 8.80	91.25	0.40	0.09	0.10	0.02
TOTALS	PM10		19.53			

Emission Factor Calculations

unpaved road from AP-42 13.2.2 (9/98)

k ₁₀ = PM ₁₀ particle size multiplier	1.5
a = empirical constant	0.9
b = empirical constant	0.45
s = silt content of road (%)	6
W = mean vehicle weight (ton)	22.5
S = average vehicle speed	12
M = surface material moisture (%)	10
V = # vehicle trips / yr	87,600
M = miles of unpaved roads	0.2

→ fill in to calculate

Vehicle 1	Vehicle 2	
100%	0%	% of total trips
15	20	Empty weight (tons)
30	40	Full weight (tons)

PM₁₀ emission factor (lb/VMT) = $k(s / 12)^a (W / 3)^b =$ 1.99
VMT = V x M = 17520

materials handling from AP-42 13.2.4 (1/95)

k = PM particle size multiplier	0.74
k ₁₀ = PM ₁₀ particle size multiplier	0.35
U = mean wind speed (mph)	10
M = material moisture content (%)	2.1

PM₁₀ emission factor (lb/ton) = $k_{10}(0.0032)((U/5)^{1.3}/(M/2)^{1.4}) =$ 0.0026

wind erosion of ground pile

s = silt content of material (%)	7.1
p = # of days w/ >=0.01" precip/yr	108
f = % time wind speeds exceed 12 mph at mean pile height	30
d = # days pile is present	365
a = acres of pile base	0.25

PM emission factor (lb/day/acre) = $1.7(s/1.5)((365-p)/235)(f/15) =$ 17.60
PM₁₀ emission factor = emission factor PM/2 = 8.80
d*acre = d * a = 91.25

Facility: Schwartz Construction
 4/17/2008 17:46 Permit/Facility ID: P-2007.0193

CURRENT PTC ESTIMATES

TAPs EL Screen - ALL SOURCES

586 pollutants are shown in bold/red Page 1 of 2

C. Generator: 0 gal/hour 950 Hours/year

Small or Large Generator using Diesel Fuel (based on hr/yr)

Pollutant	TOTAL of Max Emission Rates from A, B, C & D (lb/hr)	TAPs Screening Emission Limit (EL) Increment ^b (lb/hr)	TAPs Emissions Exceed EL Increment?	Modeled? Meets AAC or AAC?
HCl ^a	0.00	0.05	No	
Dioxins^c		Toxic Equivalency Factor^c	Adjusted Emission Rate (lb/hr)	
2,3,7,8-TCDD	0.00E+00	1.0	0.00E+00	
Total TCDD	0.00E+00	n/a		
1,2,3,7,8-PeCDD	0.00E+00	0.5	0.00E+00	
Total PeCDD	0.00E+00	n/a		
1,2,3,4,7,8-HxCDD	0.00E+00	0.1	0.00E+00	
1,2,3,6,7,8-HxCDD	0.00E+00	0.1	0.00E+00	
1,2,3,7,8,9-HxCDD	0.00E+00	0.1	0.00E+00	
Total HxCDD	0.00E+00	n/a		
1,2,3,4,6,7,8-HpCDD	0.00E+00	0.01	0.00E+00	
Total HpCDD	0.00E+00	n/a		
Octa CDD	0.00E+00	n/a		
Total PCDD ^h	0.00E+00	n/a		
Furans^c				
2,3,7,8-TCDF	0.00E+00	0.1	0.00E+00	
Total TCDF	0.00E+00	n/a		
1,2,3,7,8-PeCDF	0.00E+00	0.05	0.00E+00	
2,3,4,7,8-PeCDF	0.00E+00	0.5	0.00E+00	
Total PeCDF	0.00E+00	n/a		
1,2,3,4,7,8-HxCDF	0.00E+00	0.1	0.00E+00	
1,2,3,6,7,8-HxCDF	0.00E+00	0.1	0.00E+00	
2,3,4,6,7,8-HxCDF	0.00E+00	0.1	0.00E+00	
1,2,3,7,8,9-HxCDF	0.00E+00	0.1	0.00E+00	
Total HxCDF	0.00E+00	n/a		
1,2,3,4,6,7,8-HpCDF	0.00E+00	0.01	0.00E+00	
1,2,3,4,7,8,9-HpCDF	0.00E+00	0.01	0.00E+00	
Total HpCDF	0.00E+00	n/a		
Octa CDF	0.00E+00	n/a		
Total PCDF ^h	0.00E+00	n/a		
Total PCDD/PCDF ^h	0.00E+00	n/a		
TOTAL Dioxin/Furans^c	Adjusted lb/hr	TAPs EL for 2,3,7,8 TCDD	Exceeds TAPs EL?	Modeled?
	0.00E+00	1.38E-09	No	
Non-PAH HAPs				
Acetaldehyde ^a	2.58E-03	3.00E-03	No	
Acrolein ^a	3.08E-04	0.017	No	
Benzene ^a	3.11E-03	7.38E-03	No	
1,3-Butadiene ^a				
Ethylbenzene ^a	0.00E+00	29	No	
Formaldehyde ^a	3.93E-03	4.70E-03	No	
Hexane ^a	0.00E+00	12	No	
Isocane ^a	0.00E+00			
Methyl Ethyl Ketone ^a	0.00E+00	39.3	No	
Pentane ^a	0.00E+00	118	No	
Propionaldehyde ^a	0.00E+00	0.0287	No	
Quinone ^a	0.00E+00	0.027	No	
Methyl chloroform ^a	0.00E+00	127	No	
Toluene ^a	1.36E-03	25	No	
Xylene ^a	9.50E-04	29	No	
TOTAL PAH HAPs (lb/hr) =		1.28E-02		
TOTAL Federal HAPs (lb/hr) =		1.28E-02		
TOTAL Idaho TAPs (lb/hr) =		1.22E-02		

Pollutant	TOTAL of Max Emission Rates from A, B, C & D (lb/hr)	TAPs Screening Emission Limit (EL) Increment ^b (lb/hr)	TAPs Emissions Exceed EL Increment?	Modeled? Meets AAC or AAC?
PAH HAPs				
2-Methylnaphthalene	0.00E+00			
3-Methylchloranthrene ^a	0.00E+00	2.50E-08	No	
Acenaphthene	4.73E-06			
Acenaphthylene	1.69E-05			
Anthracene	6.23E-06			
Benzo(a)anthracene	5.60E-06			
Benzo(a)pyrene ^a	6.26E-07	1.84E-05	No	see POM
Benzo(b)fluoranthene	3.30E-07			
Benzo(e)pyrene	0.00E+00			
Benzo(g,h,i)perylene	1.63E-06			
Benzo(k)fluoranthene	5.17E-07			
Chrysene	1.18E-06			
Dibenzo(a,h)anthracene	1.94E-06			
Dichlorobenzene	0.00E+00			
Fluoranthene	2.54E-05			
Fluorene	9.73E-05			
Indeno(1,2,3-cd)pyrene	1.25E-06			
Naphthalene ^a	2.83E-04	3.33	No	
Perylene	0.00E+00			
Phenanthrene	9.80E-05			
Pyrene	1.59E-05			
PolycyclicOrganicMatter ^{d,e}	1.14E-05	2.40E-05	No	
Non-HAP Organic Compounds				
Acetone ^a	0.00E+00	119	No	
Benzaldehyde	0.00E+00			
Butane	0.00E+00			
Butyraldehyde	0.00E+00			
Crotonaldehyde ^a	0.00E+00	0.38	No	
Ethylene	0.00E+00			
Heptane	0.00E+00	109	No	
Hexanal	0.00E+00			
Isovaleraldehyde	0.00E+00			
2-Methyl-1-pentene	0.00E+00			
2-Methyl-2-butene	0.00E+00			
3-Methylpentane	0.00E+00			
1-Pentene	0.00E+00			
n-Pentane ^a	0.00E+00	118	No	
Valeraldehyde (n-Valeraldehyde ^a)	0.00E+00	11.7	No	
Metals				
Antimony ^a	0.00E+00	0.033	No	
Arsenic ^a	0.00E+00	1.38E-05	No	
Barium ^a	0.00E+00	0.033	No	
Beryllium ^a	0.00E+00	2.80E-05	No	
Cadmium ^a	0.00E+00	3.41E-05	No	
Chromium ^a	0.00E+00	0.033	No	
Cobalt ^a	0.00E+00	0.0033	No	
Copper ^a	0.00E+00	0.013	No	
Hexavalent Chromium ^a	0.00E+00	5.16E-06	No	
Manganese ^a	0.00E+00	0.067	No	
Mercury ^a	0.00E+00	0.003	No	
Molybdenum ^a	0.00E+00	0.333	No	
Nickel ^a	0.00E+00	2.49E-04	No	
Phosphorus ^a	0.00E+00	0.007	No	
Silver ^a	0.00E+00	0.007	No	
Selenium ^a	0.00E+00	0.013	No	
Thallium ^a	0.00E+00	0.007	No	
Vanadium ^a	0.00E+00	0.003	No	
Zinc ^a	0.00E+00	0.667	No	

a) Reserved.
 b) Toxic Air Pollutants, IDAPA 58.01.01.585 and .586, levels in effect as of January 27, 2006
 c) Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo- p-dioxins and Dibenzofurans (CDDs and CDFs, 1989 update, EPA/625/3-89/016, March 1989 (Source: Mike Dubois, IDEQ State Office, April 2005)
 n/a = not available. IDAPA 58.01.01.586, TAPs Carcinogenic Increments: Total of adjusted emission rates are treated as a single TAP (2,3,7,8 TCDD)
 d) IDAPA 58.01.01.586, Polycyclic Organic Matter: Emissions of PAHs shown in bold shall be considered together as one TAP equivalent in potency to benzo(a)pyrene.
 e) IDAPA Toxic Air Pollutant, 58.01.01.585 or .586

Facility:
4/17/2008 17:46

Schwartz Construction
Permit/Facility ID: P-2007.019 777-00388

CURRENT PTC ESTIMATES
TAPs EL Screen - ALL SOURCES

C. Generator: 0 gal/hour 0 Hours/year Small or Large Generator using Diesel Fuel

Pollutant	TOTAL of Max Emission Rates from A, B, C & D (lb/hr)	TAPs Screening Emission Limit (EL) Increment (lb/hr)	TAPs Emissions Exceed EL Increment?	Modeled?
non-PAH HAPs				
Bromomethane (Methyl bromide ^a)	0.00E+00	1.27	No	
2-Butanone (see Methyl Ethyl Ketone)				
Carbon disulfide ^a	0.00E+00	2	No	
Chloroethane (Ethyl chloride ^a)	0.00E+00	176	No	
Chloromethane (Methyl chloride ^a)	0.00E+00	6.867	No	
Cumene ^a	0.00E+00	16.3	No	
n-Hexane ^a (see Hexane ^a)				
Methylene chloride (Dichloromethane ^a)	0.00E+00	1.60E-03	No	
MTBE	0.00E+00			
Styrene ^a	0.00E+00	6.67	No	
Tetrachloroethene (Tetrachloroethylene ^a)	0.00E+00	1.30E-02	No	
1,1,1-Trichloroethane (see Methyl chloroform ^a)				
Trichloroethene (Trichloroethylene ^a)	0.00E+00	17.93	No	
Trichlorofluoromethane	0.00E+00			
m-/p-Xylene ^a (added into Xylene ^a)				
o-Xylene ^a (added into Xylene ^a)				
Phenol ^{a,f}	0.00E+00	1.27	No	
Non-HAP Organic Compounds				
Methane	0.00E+00			

a) For HMA facilities subject to NSPS (40 CFR 60, Subpart I), PTE includes fugitive emissions of PM from load-out, silo filling & storage tank operations.
e) IDAPA Toxic Air Pollutant, 58.01.01.585 or .586

Appendix C – Modeling Analysis



Facility:
4/17/08 17:55

Schwartz Construction

P-2007.0193

777-00388

FACILITY-WIDE MODELING - CRITERIA POLLUTANTS

Ambient Impacts - Screening Modeling

C. Generator: gal/hour 950 Hours/year Small or Large Generator using Diesel Fuel 24 hrs/day

Release Parameters	Drum Dryer
Stack Height (ft)	15.00
Stack Diameter (ft)	0.33
Stack Gas Temp (°F)	293.00
Stack Gas Flow (scfm)	0.001
Hours of Operation per Day	24.00
Hours of Operation per Year	950.00
SCREEN 3 Dispersion Coeff	63.87

¹ Persistence Factors from Appendix A to the Idaho DEQ Air Quality Modeling Guide, rev 1, 12/31/02
² Estimated Max Emission Rates are from worksheet: B4&5 EmissionInventory lb/hr
³ Approximation: Dioxin/Furan TEQ from all point sources treated as being emitted from the drum dryer.
⁴ Approximation: POMs from all point sources treated as being emitted from the drum dryer.
⁵ Max ambient impacts from criteria pollutants are based on each unit hrs/day and hrs/yr limits specified
⁶ Non-Carcinogenic (585) Impacts converted to 24-hr average using persistence factor x (hrs/day)/24
 Carcinogenic (586) Impacts converted to annual average using persistence factor x (T/yr)/(T/hr * 8760)

Pollutant	Averaging Period	Persistence Factor, Simple Terrain ¹ (unitless)	Generators			Significance Level (µg/m3)	SL Exceeded?	Background Concentration (µg/m3)	NAAQS (µg/m3)	Total Ambient Concentration (µg/m3)	% of NAAQS (µg/m3)
			SCREEN 3 Dispersion Coefficient (µg/m³/lb/hr)	Estimated Max Emission Rate ² (lb/hr)	Maximum Predicted Ambient Impact (µg/m3)						
PM-10	24-hour	0.4	63.870	1.03	26.39	5.00	Yes	73	150	99.4	66.3%
	Annual	0.08	63.870	0.11	0.57	1.00	No				
CO	1-hour	1	63.870	3.17	202.20	2000.00	No				
	8-hour	0.7	63.870	3.17	141.54	500.00	No				
NO ₂	Annual	0.08	63.870	1.59	8.14	1.00	Yes	17	100	25.1	25.1%
	3-hour	0.9	63.870	0.97	55.55	25.00	Yes	34	1,300	89.6	6.9%
SO ₂	24-hour	0.4	63.870	0.97	24.69	5.00	Yes	26	365	50.7	13.9%
	Annual	0.08	63.870	0.10	0.54	1.00	No				

***** SCREEN3 MODEL *****
 ***** VERSION DATED 96043 *****

ENTER TITLE FOR THIS RUN (<UP TO 79 CHARACTERS>):
 SCHWARTZ CONSTRUCTION

ENTER SOURCE TYPE: P FOR POINT
 F FOR FLARE
 A FOR AREA
 U FOR VOLUME

ALSO ENTER ANY OF THE FOLLOWING OPTIONS ON THE SAME LINE:

- N - TO USE THE NON-REGULATORY BUT CONSERVATIVE BRODE 2 MIXING HEIGHT OPTION.
 - nn.n - TO USE AN ANEMOMETER HEIGHT OTHER THAN THE REGULATORY <DEFAULT> 10 METER HEIGHT.
 - SS - TO USE A NON-REGULATORY CAVITY CALCULATION ALTERNATIVE
- Example - PN 7.0 SS (entry for a point source)

ENTER SOURCE TYPE AND ANY OF THE ABOVE OPTIONS:

P
 ENTER EMISSION RATE (G/S):
 0.126

ENTER STACK HEIGHT (M):
 4.2672

ENTER STACK INSIDE DIAMETER (M):
 0.14

ENTER STACK GAS EXIT VELOCITY OR FLOW RATE:

OPTION 1 : EXIT VELOCITY (M/S):

DEFAULT - ENTER NUMBER ONLY

OPTION 2 : VOLUME FLOW RATE (M**3/S):
 EXAMPLE "UM=20.00"

OPTION 3 : VOLUME FLOW RATE (ACFM):
 EXAMPLE "UF=1000.00"

UF=745

ENTER STACK GAS EXIT TEMPERATURE (K):

811

ENTER AMBIENT AIR TEMPERATURE (USE 293 FOR DEFAULT) (K):

293

ENTER RECEPTOR HEIGHT ABOVE GROUND (FOR FLAGPOLE RECEPTOR) (M):

0

ENTER URBAN/RURAL OPTION (U=URBAN, R=RURAL):

R

CONSIDER BUILDING DOWNWASH IN CALCS? ENTER Y OR N:

N

USE COMPLEX TERRAIN SCREEN FOR TERRAIN ABOVE STACK HEIGHT?

ENTER Y OR N:

Y

FINAL STABLE PLUME HEIGHT (M) = 20.4
 DISTANCE TO FINAL RISE (M) = 151.3

MAXIMUM CONCENTRATIONS ARE EXPECTED TO OCCUR DUE TO PLUME IMPACTION. THEREFORE ENTER MINIMUM DISTANCES AND TERRAIN HEIGHTS FOR WHICH IMPACTION IS LIKELY, TAKING INTO ACCOUNT TERRAIN CLOSER THAN THE DISTANCE TO FINAL RISE.

FOR TERRAIN BELOW PLUME HEIGHT, SIMPLE TERRAIN AND VALLEY 24-HR CALCULATIONS ARE BOTH MADE AND THE MAXIMUM SELECTED.

ENTER TERRAIN HEIGHT ABOVE STACK BASE (M), AND DISTANCE TO TERRAIN (M) (ZEROES TO EXIT):

0

0

COMPLEX TERRAIN CALCULATIONS DONE.

CONTINUE WITH SIMPLE TERRAIN CALCULATIONS? ENTER Y OR N:

Y

USE SIMPLE TERRAIN SCREEN WITH TERRAIN ABOVE STACK BASE?

ENTER Y OR N:

N
 ENTER CHOICE OF METEOROLOGY:
 1 - FULL METEOROLOGY (ALL STABILITIES & WIND SPEEDS)
 2 - INPUT SINGLE STABILITY CLASS
 3 - INPUT SINGLE STABILITY CLASS AND WIND SPEED
 1
 USE AUTOMATED DISTANCE ARRAY? ENTER Y OR N:
 Y
 ENTER MIN AND MAX DISTANCES TO USE (M):
 0
 1000

 *** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	1	1.0	1.0	320.0	20.68	.87	.79	NO
100.	61.65	3	3.0	3.0	960.0	9.74	12.56	7.60	NO
200.	54.20	4	2.5	2.5	800.0	10.83	15.68	8.70	NO
300.	44.68	4	1.5	1.5	480.0	15.21	22.83	12.49	NO
400.	36.41	4	1.0	1.0	320.0	20.68	29.83	15.97	NO
500.	31.99	4	1.0	1.0	320.0	20.68	36.45	18.89	NO
600.	27.31	4	1.0	1.0	320.0	20.68	42.97	21.72	NO
700.	23.20	4	1.0	1.0	320.0	20.68	49.41	24.49	NO
800.	19.81	4	1.0	1.0	320.0	20.68	55.77	27.19	NO
900.	17.03	4	1.0	1.0	320.0	20.68	62.06	29.84	NO
1000.	17.59	6	1.0	1.0	10000.0	26.18	34.46	15.29	NO

ITERATING TO FIND MAXIMUM CONCENTRATION . . .

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

75.	63.87	3	4.0	4.0	1280.0	8.37	9.74	5.91	NO
-----	-------	---	-----	-----	--------	------	------	------	----

USE DISCRETE DISTANCES? ENTER Y OR N:
 Y
 TO CEASE, ENTER A DISTANCE OF ZERO (0).

 *** SCREEN DISCRETE DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
-------------	-------------------	------	---------------	---------------	---------------	-----------------	----------------	----------------	-------

ENTER DISTANCE (M) (0 TO EXIT):

8	8.	.3326E-06	1	3.0	3.0	960.0	9.74	2.82	1.44	NO
---	----	-----------	---	-----	-----	-------	------	------	------	----

ENTER DISTANCE (M) (0 TO EXIT):

0

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	63.87	75.	0.

 *** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS ***

Appendix D – Equipment Specifications



2**SPECIFICATIONS****GENERAL PLANT SPECIFICATIONS (Applicable to both Primary and Secondary Units)**

Specifications, Corps of Eng., U. S. Army

No. T-1127A

Capacity of Plant (Based on reducing pit or quarry material to a maximum size of 1")

Rated	25 cu. yds. per hr.
Actual (by test)	45 cu. yds. per hr.

Trailer Frame

Type	Gooseneck
Main Frame Members	15" ϕ 33.9# Channel
Fifth Wheel Height (light)	48-1/2"
Pintle Hook	Holland Hitch Co. #110 (Q.M. Corps #C-57093-X)
Jack	Screw type 2" x 12" - 20 ton capacity, Rat- chet head

Front Wheel Equipment

Type	Dolly-Corps of Engineers Medium
Capacity	7 tons
Manufacturer	Spencer Trailer Co.
Model	J.D. 309 Special
Wheels	Budd Wheel Co. #45520 - 6-3/4" dish (Q.M. Corps #08760-Y)
Brakes	17-1/4" x 5" Spencer heavy duty "S" cam - "Bendix-Westinghouse" air controlled
Tires	12.00-20, 14 ply, non- directional cleated, dual mounted (4 re- quired)
Tire Pressure	60 pounds

Rear Wheel Equipment

Type	Approved tandem wheel oscillating beam with rigid main axle
Wheels	Budd Wheel Co. #45520 - 6-3/4" dish (Q.M. Corps #08760-Y)
Brakes	17-1/4" x 5" Spencer heavy duty "S" cam - "Bendix-Westinghouse" air controlled and hand controlled