Air Quality Permitting
Statement of Basis

October 18, 2005

Permit to Construct No. P-050316

Gale Lim Construction, Portable

Facility ID No. 777-00359

Prepared by:

Dan Pitman, P.E., Permit Coordinator
AIR QUALITY DIVISION

Final Permit

Table of Contents

Acronyms, Units, and Chemical Nomenclatures

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
gr/dscf	grain (1 lb = 7,000 grains) per dry standard cubic foot
HAPs	Hazardous Air Pollutants
HMA	hot-mix asphalt facility
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
MMBtu/hr	million British thermal units per hour
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
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
RAP	Recycled asphalt pavement
SIC	Standard Industrial Classification
SO_2	sulfur dioxide
TAP	toxic air pollutant
T/yr	tons per year
$\mu g/m^3$	micrograms per cubic meter
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. PURPOSE

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

2. FACILITY DESCRIPTION

The facility consists of a drum mix asphalt plant and electrical generator engine. Drum mix asphalt plants may be of either parallel flow design or the counterflow design. In either design aggregate (gravel) is dried in the drum and mixed with liquid asphalt cement to produce hot-mix asphalt which is used primarily for road and parking lot construction. The production of hot-mix asphalt includes aggregate handling operations which may include front end loaders, storage bins, conveyance systems, stock piles and haul trucks.

3. FACILITY / AREA CLASSIFICATION

Gale Lim Construction is defined as a synthetic minor facility because, without permit limits on the potential to emit, the PM_{10}, NO_x, and CO emissions would exceed 100 tons per year. The AIRS classification is "SM".

The facility is a portable facility and may locate anywhere in the state of Idaho except the Sandpoint PM_{10} nonattainment area.

The AIRS information provided in Appendix A defines the classification for each regulated air pollutant for the Gale Lim facility. This information is entered into the EPA AIRS database.

4. APPLICATION SCOPE

This permit to construct is for a new hot-mix asphalt plant with the capability to use recycled asphalt pavement (RAP), associated material handling equipment and an electrical generator engine.

4.1 Application Chronology

May 18, 2005	DEQ received a standard permit to construct application form for HMA's
June 16, 2005	DEQ determined the application complete

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this PTC action.

5.1 Equipment Listing

Hot-Mix Asphalt Plant

Manufacturer: Gencor, HS300

Type of HMA plant: Drum mix

Design capacity: 300 T/hr

HMA burner fuel type: Propane, Natural gas, used oil, and fuel oil

Emissions Control device: Baghouse, PT 684-10

Generator Set

Manufacturer: Caterpillar 3412, 41 gallons per hour of #2 Fuel oil

5.2 Emissions Inventory

Emission estimates for the hot-mix asphalt plant were made using AP-42 Section 11.1 emissions factors. Emissions estimates for the generator engine were made using AP-42 Section 3.4 emission factors for engines greater than 600 horse-power. Emission estimates for criteria and toxic air pollutants may be seen in Appendix B. Emission estimates from the asphalt plant are based on the requested hourly production rate of 300 tons per hour and 40,000 tons per year (which corresponds roughly 133 hours of operation per year). The generator engine was assumed to have a maximum operational design capacity of no more than 2,080 hours per year.

It is not known if the proposed drum mix asphalt plant is a parallel flow or counter flow, for emission estimation purposes it is not necessary to determine which type it is because AP-42 emissions factors for drum mix asphalt plants are not dependent on whether the drum mix plant is parallel flow or counter flow. Consequently, emissions estimates in Appendix B are accurate for either parallel flow drum mix plants or for counter flow drum mix plants.

AP-42 states that a counter flow drum mix plant can normally process 50% recycled asphalt with little or no observed effect upon emissions. Because data are not available to distinguish significant emissions differences between the parallel flow and counter flow process designs, recycled asphalt processing in parallel flow drum mixers is also assumed to have little or no observed effect upon emissions. Because of these findings, the permit allows recycled asphalt use up to 50% of the asphalt plants production capacity.

Table 5.1 gives a summary of the criteria air pollutant emissions from the hot-mix asphalt plant and the electrical generator set.

Table 5.1 EMISSIONS ESTIMATES (CONTROLLED POTENTIAL TO EMIT)

Pollutant	Maximum T/yr
PM (total)	1.26
PM_{10} (total)	1.1
CO	7.7
NO_x	20.3
SO_2	4.2
VOC	1.2
Lead	3.0E-4

5.3 Modeling

DEQ performed air pollutant dispersion modeling using SCREEN3 model. The model assumed flat terrain, no downwash and that ambient air was located immediately adjacent to the facility in a rural area. The SCREEN3 modeling results may be seen in Appendix C.

Stack parameters used in the modeling analysis are given in Table 5.2

Table 5.2 STACK PARAMETERS

Stack Parameter	Generator	HMA
Height	3.05 m	11.0 m
Diameter	0.2 m	0.97 m
Velocity	71.1 m/s	33.2 m/s
Temperature	778 K	310 K
Emission Rate	0.126 g/s	0.126 g/s

In determining facility wide ambient impacts each emission unit was modeled to determine the maximum ambient impact. Then the maximum ambient impact from each emission unit were added together to obtain the facility wide ambient impact. This methodology to determine facility wide ambient impact is conservative in part because it assumes that maximum impacts occur at the same ambient receptor.

For modeling purposes each emission units air pollutant emission rate was set to be one pound per hour (0.126 g/s). Using this method SCREEN3 model gives an air pollutant dispersion coefficient in micrograms per cubic meter per pound of emissions. The linear relationship between emission rate and ambient impact is then used to predict actual ambient impact by multiplying the dispersion coefficient by the actual emission rate. The predicted ambient impact is then multiplied by a persistence factor to convert the models one hour concentration to the averaging periods of the ambient standards or toxic air pollutant increments. Appendix C contains a spread sheet that shows the results of these calculations.

Table 5.3 shows the predicted ambient impacts for criteria air pollutants from the facility. Modeling was not conducted for lead emissions because emission estimates were below the State of Idaho modeling threshold of 0.6 tons per year.

Table 5.3 AMBIENT POLLUTANT CONCENTRATIONS

Pollutant	Averaging period	Maximum Predicted Ambient Impact (µg/m3)	Background Concentration (µg/m3)	Total Ambient Impact (µg/m3)	NAAQS (µg/m3)	Percent of NAAQS
CO	8-hour	190.8	7300	7490.8	10000	74.9
	1-hour	272.6	12200	12472.6	40,000	31.2
NO_2	Annual	7.9	40	47.9	100	47.9
SO_2	3-hour	124.0	372	496.0	1300	38.2
	24-hour	55.1	122	177.1	365	48.5
	Annual	1.3	21	22.3	80	27.9
PM-10	24-hour	16.7	103	119.7	150	79.8
	Annual	0.6	34.5	35.1	50	70.2

[a] Background concentration DEQ modeling coordinator, May 25, 20005
[b] National Ambient Air Quality Standard

The modeled concentrations, including the background, are less than the NAAQS.

Toxic air pollutant emissions ambient impacts are summarized in Table 5.4 for those toxic air pollutants that are estimated to be emitted above the toxic air pollutant screening emission level listed in IDAPA 58.01.01.585 and IDAPA 58.01.01.586. All other toxic air pollutants emissions are below the screening emissions rate and modeling is not required. All toxic air pollutants comply with the toxic air pollutant increments listed IDAPA 58.01.01.585 and IDAPA 58.01.01.586.

Table 5.4 TOXIC AIR POLLUTANT AMBIENT IMPACT ASSESSMENT.

Pollutant	Generator Emissions (lb/hr)	HMA Emissions (lb/hr)	Generator Impact (µg/m3)	HMA Impact (µg/m3)	Total Impact (µg/m3)	Allowable Increment (µg/m3)	Averaging period	Acceptable Impact?	Uncontrolled Emissions Exceed Increment ?
HCl		0.063		1.05E-01	1.05E-01	375	24-hour	YES	no
Benzene	4.48E-03	1.2E-01	2.96E-03	9.31E-04	3.89E-03	0.12	Annual	YES	no
Formaldehyde	4.56E-04	9.3E-01	3.01E-04	7.40E-03	7.70E-03	7.70E-02	Annual	YES	yes
Benzo(a)pyrene	1.49E-06	2.9E-06	9.84E-07	2.34E-08	1.01E-06	3.00E-04	Annual	YES	no
Acetaldehyde	1.46E-04	3.9E-01	9.65E-05	3.10E-03	3.20E-03	4.50E-01	Annual	YES	no
Propionaldehyde		3.9E-02	0.00E+00	6.53E-02	6.53E-02	2.15E+01	24-hour	YES	no
Quinone		4.8E-02		8.03E-02	8.03E-02	20	24-hour	YES	no
PAH	4.50E-06	2.0E-04	2.97E-06	1.57E-06	4.54E-06	3.00E-04	Annual	YES	no
Arsenic		1.7E-04		1.34E-06	1.34E-06	2.30E-04	Annual	YES	no
Cadmium		1.2E-04		9.79E-07	9.79E-07	5.60E-04	Annual	YES	no
Chromium VI		1.4E-04		1.07E-06	1.07E-06	8.30E-05	Annual	YES	no
Nickel		1.9E-02		1.50E-04	1.50E-04	4.20E-03	Annual	YES	yes
Phosphorus		8.4E-03		1.41E-02	1.41E-02	5.00E+00	24-hour	YES	no
2,3,7,8-TCDD		1.1E-09		8.38E-12	8.38E-12	2.20E-08	Annual	YES	no

[na] – emission factors not available

5.4 *Regulatory Review*

This section describes the regulatory analysis of the applicable air quality rules with respect to this PTC.

IDAPA 58.01.01.201 ..... Permit to Construct Required

Gale Lim has requested a permit to construct a hot-mix asphalt plant to operate as a portable source within the State of Idaho. This is an initial permit to construct for this facility.

40 CFR 60 Subpart I..... Standards of Performance for Hot-Mix Asphalt Facilities

The facility was contacted by telephone to determine the manufacturer date of the asphalt plant. The plant was manufactured in 1990 therefore it is an affected facility as defined by 40 CFR 60 Subpart I.

40 CFR 279 ..... Standards for the Management of Used Oil

The facility did not specifically request to combust used oil, however the permit was written to allow its use. Part 279.11 contains specifications for used oil which include allowable levels for arsenic, cadmium, chromium, lead, the flash point, and total halogens. The limit for total halogens is listed at 4,000 ppm maximum. However, used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under § 279.10(b)(1). Such used oil is subject to Subpart H of part 266 of this chapter rather than this part when burned for energy recovery unless the presumption of mixing can be successfully rebutted. Therefore, the permit limits the total halogens to 1,000 ppm. This permit condition is consistent with previous permits issued for hot-mix asphalt plants[1].

Permit Condition 3.9 states that, in accordance with 40 CFR 279.11, used oil burned for energy recovery shall not exceed any of the allowable levels listed in Table 2.3. These permit conditions are considered reasonable permit conditions because they inherently limit air pollution emissions.

[1] PTC-030138 Interstate Concrete, Hayden Lake, 2/18/05 & PTC-040101 Interstate Concrete, Rathdrum, 2/18/05

Table 2.3 USED OIL SPECIFICATIONS[1]

Constituent/property	Allowable level
Arsenic	5 ppm[2] maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash point	100 deg. F minimum
Total halogens	1,000 ppm maximum

[1] The specification does not apply to mixtures of used oil and hazardous waste that continue to be regulated as hazardous waste (see 40 CFR 279.10(b)).
[2] Parts per million

This table is based on Table 1 from 40 CFR 279.11, incorporating the 1,000 ppm limit for total halogens as explained above.

DEQ's Waste Program has reviewed and approved the above discussions regarding regulating used oil.

IDAPA 58.01.01.2..... Demonstration of Preconstruction Compliance with Toxic Standards

With a daily limitation of production of the asphalt plant set at 7,200 tons and an annual production limitation of 40,000 tons the facilities emissions caused ambient impact less than any toxic air pollutant increment listed in IDAPA 58.01.01.585 and IDAPA 58.01.01.586. No limitations on the operation of the generator engine are required for toxic air pollutant compliance purposes because the toxic air pollutant emission assessment was done at maximum operating capacity or 2080 hours per year. The toxic air pollutant emissions inventory can be seen in Appendix B and results of toxic air pollutant modeling can be seen in the Modeling section of this document (Section 5.3) and Appendix C.

In accordance with IDAPA 58.01.01.210.08, if a toxic air pollutant emissions need to be controlled to comply with the toxic increment DEQ "shall include an emission limit for the toxic air pollutant in the permit to construct that is equal to or, if requested by the applicant, less than the emission rate that was used in the modeling". Formaldehyde and nickel uncontrolled emissions exceeded there respective toxic air pollutant increment. Therefore, emissions limits are included in the permit for each of them which equals the average emission rate which was used in modeling. Controlled emissions of each of these pollutants caused ambient impacts below the acceptable ambient increment established for them.

5.5 PERMIT FEES

Gale Lim Construction paid the $1,000 permit to construct application fee as required in IDAPA 58.01.01.224 on May 18, 2005.

A permit to construct processing fee of $5,000 is required in accordance with IDAPA 58.01.01.225 because the emissions from the facility are between 10 and 100 tons per year. The fee calculation spread sheet can be found in Appendix D. The $5,000 processing fee was received on October 11, 2005.

Gale Lim Construction is not a major facility as defined in IDAPA 58.01.01.008.10. Therefore, registration fees to support the Tier I operating permit program are not applicable in accordance with IDAPA 58.01.01.387.

6. PERMIT CONDITIONS

Permit Condition 1 through 2.2

Permit Conditions 1 through 2.2 contains the Purpose of the Permit, listing of the regulated sources and process description.

Permit Condition 3.1

The 40 CFR 60.90 NSPS 20% opacity limit for Hot-Mix Asphalt Facilities is given as a reasonable permit condition.

Compliance Assurance

Permit Condition 3.19.1 requires visible emissions testing to demonstrate compliance with the NSPS opacity limit.

Permit Condition 3.19.2 requires visible emissions testing to demonstrate compliance with the NSPS opacity limit once each five years. This testing is not required by NSPS but is a reasonable permit condition in accordance with IDAPA 58.01.01.211.01.

Permit Condition 3.2

This permit condition is the IDAPA 58.01.01.625 20% opacity limit. The 40 CFR 60.90 NSPS opacity limit and the IDAPA 58.01.01.625 opacity limit are different. The IDAPA 58.01.01.625 20% opacity limit is for a period or periods aggregating more than three minutes in any 60-minutes, the NSPS 20% opacity limitation is for all periods.

Compliance Assurance

Permit Condition 3.19.1 requires visible emissions testing to demonstrate compliance with the IDAPA opacity limit.

Permit Condition 3.19.2 requires visible emissions testing to demonstrate compliance with the IDAPA opacity limit once each five years.

Permit Condition 3.3

This permit condition contains the NSPS 0.04 grains per dry standard cubic foot (gr/dscf) limit in accordance with 40 CFR Part 60.92(a)(1).

Compliance Assurance

Permit Condition 3.19.1 contains the NSPS performance test, which is a one time performance test. If the one time NSPS performance test has already been conducted on the facility, this permit condition requires, as a reasonable permit condition (IDAPA 58.01.01.211), that the facility conduct a performance test within 60 days after achieving the maximum production rate at which the affected facility will operate but not later than 180 days after initial start up of the source.

Permit Condition 3.19.2 requires emissions testing to demonstrate compliance with the NSPS grain loading limit once each five years as a reasonable permit condition (IDAPA 58.01.01.211).

Permit Condition 3.4

The PM and PM_{10} limits are established to protect ambient air quality standards and to limit the facilities potential to emit below major source thresholds.

Compliance Assurance

Permit Condition 3.8 limits the type of fuel that may be combusted, Permit Condition 3.10 limits the amount of sulfur that may be present in the fuel oil and Permit Condition 3.11 limits both daily and annual production limits to limit emissions to permitted levels.

Permit Conditions 3.19.1 and 3.19.2 requires performance testing to demonstrate compliance with PM emission limits. For permitting purposes it is assumed that compliance with the PM emissions limit is also compliance with the PM_{10} emissions limitation.

Particulate matter emissions are controlled by a baghouse. In order to assure the baghouse is operated as designed Permit Conditions 3.12 through 3.14 require that the facility write an O&M manual that will include baghouse pressure drop requirements, require the installation of a pressure drop monitor and requirements for monitoring and recording the pressure drop.

Permit Condition 3.5

Nickel emissions are limited to 2.5 pounds per year.

Formaldehyde emissions are limited to 125 pounds per year.

In accordance with IDAPA 58.01.01.210.08 if a toxic air pollutant emissions need to be controlled to comply with the toxic increment, DEQ "shall include an emission limit for the toxic air pollutant in the permit to construct that is equal to or, if requested by the applicant, less than the emission rate that was used in the modeling". Nickel and formaldehyde toxic air pollutants uncontrolled emissions exceed there respective toxic air pollutant increments. An emission limit is included in the permit for each pollutant that equals the rate which was used in modeling.

Compliance Assurance

Permit Condition 3.11 limits both daily and annual production limitations to restrict nickel and formaldehyde emissions to permitted levels.

Permit Condition 3.6

Visible fugitive dust emissions are limited so that they shall not be observed leaving the property boundary for a period or periods aggregating more than three minutes in any 60 minute period as determined by Method 22.

Compliance Assurance

Permit Condition 3.17 requires monthly monitoring to assure fugitive emissions are being reasonably controlled. There is not a permit condition that explicitly requires the permittee to conduct a method 22 visible emissions observation to determine compliance with this Permit Condition.

Permit Condition 3.6 is a means of setting a quantifiable emission limitation on fugitive dust emissions so that DEQ can without ambiguity determine if fugitive emissions are being reasonably controlled.

Permit Condition 3.7

Is a recitation of the rules to reasonably control fugitive dust.

Compliance Assurance

Permit Condition 3.17 requires monthly monitoring to assure fugitive emissions are being reasonably controlled

Permit Conditions of Section 4

Permit Conditions of Section 4 limit the facilities operations in PM_{10} nonattainment areas.

Daily production limits are set at 2,160 tons of hot-mix asphalt per day to assure that the plant would not significantly contribute to a violation of the PM_{10} ambient standards. Permit Condition 4.3 prohibits the plant form operating in the Sandpoint PM_{10} nonattainment area because the PM_{10} maintenance plan requires modeling of fugitive emissions and this permit analysis dose not include modeling of fugitive emissions.

Remaining Permit Conditions

The permit conditions that have not been discussed in this document are self explanatory and are not included in this statement of basis.

7. PERMIT REVIEW

7.1 Regional Review of Draft Permit

On September 8, 2005 the Pocatello Regional Office was given a draft of the permit and statement of basis for review. On September 12, 2005 the Pocatello Regional Office responded and did not have any comments on the draft permit.

7.2 Facility Review of Draft Permit

On September 27, 2005 the facility was given draft permit for review. The facility did not have any comments on the draft permit.

7.3 Public Comment

A notice for an opportunity to request a public comment period was published in a paper of general circulation in the area the facility proposes to locate. The opportunity to request a public comment period ran from July 5, 2005 to August 4, 2005. No comments were provided and no requests for a public comment were received.

8. RECOMMENDATION

Based on review of application materials, and all applicable state and federal rules and regulations, staff recommend that Gale Lim Construction be issued PTC No. P-050316 for the asphalt plant. The project does not involve PSD requirements nor were any public comments provided.

DP/sd Permit No. P-050316

G:\Air Quality\Stationary Source\SS Ltd\PTC\Gale Lim - Blackfoot\Final\sob.doc

APPENDIX A

AIRS INFORMATION

P-050316

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

Facility Name: Gale Lim Construction
Facility Location: Portable
AIRS Number: 777-00359

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							
NO_x	SM							
CO	SM							
PM_{10}	SM							
PT (Particulate)			SM					
VOC	B							
THAP (Total HAPs)	B							
			APPLICABLE SUBPART					
			I					

[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 HAPs 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 HAPs.

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

P-050316

[redacted]

Maximums Emissions From Fuels Used While Producing Asphalt

Drum Mix with Baghouse

Hourly Throughput [redacted] T/hr

PM (total)	9.9		
PM-10 (total)	6.9		
CO	39		
NOx	16.5		
SO_2	17.4		
VOC	9.6		
HCL*	0.063	0.05	yes
Benzene*	0.117	8.00E-04	yes
Ethylbenzene*	0.072	29	no
Formaldehyde*	0.93	5.10E-04	yes
Hexane*	0.276	12	no
Isooctane	1.20E-02		
Methyl chloroform*	1.44E-02	127	no
Toluene*	8.70E-01	25	no
Xylene*	6.00E-02	29	no
2-Methylnaphthalene	5.10E-02		
Acenaphthene	4.20E-04		
Acenaphthylene	6.60E-03		
Anthracene	9.30E-04		
Benzo(a)anthracene(+)	6.30E-05		
Benzo(a)pyrene*(+)	2.94E-06	2.00E-06	yes
Benzo(b)fluoranthene(+)	3.00E-05		
Benzo(e)pyrene(+)	3.30E-05		
Benzo(g,h,i)perylene	1.20E-05		
Benzo(k)fluoranthene(+)	1.23E-05		
Chrysene(+)	5.40E-05		
Fluoranthene	1.83E-04		
Fluorene	3.30E-03		
Indeno(1,2,3-cd)pyrene(+)	2.10E-06		
Naphthalene*	1.95E-01	3.33	no
Perylene	9.00E-04		
Phenanthrene	6.90E-03		
Pyrene	9.00E-04		
Butane	2.01E-01		
Ethylene	2.10E+00		
Heptane*	2.82E+00	109	no
2-Methyl-1-pentene	1.20E+00		
2-Methyl-2-butene	1.74E-01		
3-Methylpentane	5.70E-02		
1-Pentene	6.60E-01		
n-Pentane	8.30E-02		
Acetaldehyde*	0.39	3.00E-03	yes
Acrolein*	0.0078	0.017	no
Methyl Ethyl Ketone*	0.006	39.3	no
Propionaldehyde*	0.039	0.0287	yes
Quinone*	0.048	0.027	yes
Methyl chloroform*	0.0144	127	no
Acetone*	2.49E-01	119	no
Benzaldehyde	3.30E-02		
Butyraldehyde	4.80E-02		
Crotonaldehyde*	2.58E-02	0.38	no
Hexanal	3.30E-02		
Isovaleraldehyde	9.60E-03		
Valeraldehyde	2.01E-02		
PAH	1.97E-04	2.60E-06	yes

Dioxins*			
2,3,7,8-TCDD	6.3E-11		
Total TCDD	2.79E-10		
1,2,3,7,8-PeCDD	2.79E-10		
Total PeCDD	6.6E-09		
1,2,3,4,7,8-HxCDD	1.26E-10		
1,2,3,6,7,8-HxCDD	3.9E-10		
1,2,3,7,8,9-HxCDD	2.94E-10		
Total HxCDD	3.6E-09		
1,2,3,4,6,7,8-Hp-CDD	5.7E-09		
Total HpCDD	5.7E-09		
Octa CDD	7.50E-09		
Total PCDD	2.37E-08		
Furans*			
2,3,7,8-TCDF	2.91E-10		
Total TCDF	1.11E-09		
1,2,3,7,8-PeCDF	1.29E-09		
2,3,4,7,8-PeCDF	2.52E-10		
Total PeCDF	2.52E-08		
1,2,3,4,7,8-HxCDF	1.2E-09		
1,2,3,6,7,8-HxCDF	3.6E-10		
2,3,4,6,7,8-HxCDF	5.7E-10		
1,2,3,7,8,9-HxCDF	2.52E-09		
Total HxCDF	3.9E-09		
1,2,3,4,6,7,8-HpCDF	1.95E-09		
1,2,3,4,7,8,9-HpCDF	8.1E-10		
Total HpCDF	3.00E-09		
Octa CDF	1.44E-09		
Total PCDF	1.20E-08		
Total PCDD/PCDF	3.60E-08		
Antimony*	5.40E-05	0.033	no
Arsenic*	1.68E-04	1.50E-06	yes
Barium*	1.74E-03	0.033	no
Beryllium*	0.00E+00	2.80E-05	no
Cadmium*	1.23E-04	3.70E-06	yes
Chromium*	1.65E-03	3.30E-02	no
Cobalt*	7.80E-06	3.30E-03	no
Copper*	9.30E-04	1.30E-02	no
Hexavalent Chromium*	1.35E-04	5.60E-07	yes
Lead	4.50E-03		
Manganese*	2.31E-03	6.70E-02	no
Mercury*	7.80E-04	3.00E-03	no
Nickel*	1.89E-02	2.70E-05	yes
Phosphorus*	8.40E-03	7.00E-03	yes
Silver*	1.44E-04	7.00E-03	no
Selenium*	1.05E-04	1.30E-02	no
Thallium*	1.23E-06	7.00E-03	no
Zinc*	1.83E-02	6.67E-01	no

e - State Toxic Air pollutant

(+) - compounds which make up PAH

TAP Total = 0.4 Ton/yr

Annual Emission of Criteria Pollutants

PM (total)	0.66
PM-10 (total)	0.46
CO	2.6
NOx	1.1
SO_2	1.16
VOC	0.64
Lead	3.00E-04

Facility Name: [redacted]onstruction

Waste Oil Fired Drum Mix Asphalt Plant With Fabric Filter

Hourly Throughput [redacted] T/hr
Annual Throughput [redacted] hr/yr

[redacted]			
PM (total)	0.033	9.9	0.66
PM-10 (total)	0.023	6.9	0.46
CO	0.13	39	2.6
NOx	0.055	16.5	1.1
SO_2	0.058	17.4	1.16
VOC	0.032	9.6	0.64
HCl[e]	0.00021	0.063	0.0042
Dioxins[e]			
2,3,7,8-TCDD	2.10E-13	6.3E-11	4.2E-12
Total TCDD	9.30E-13	2.79E-10	1.86E-11
1,2,3,7,8-PeCDD	3.10E-13	9.3E-11	6.2E-12
Total PeCDD	2.20E-11	6.6E-09	4.4E-10
1,2,3,4,7,8-HxCDD	4.20E-13	1.26E-10	8.4E-12
1,2,3,6,7,8-HxCDD	1.30E-12	3.9E-10	2.6E-11
1,2,3,7,8,9-HxCDD	9.80E-13	2.94E-10	1.96E-11
Total HxCDD	1.20E-11	3.6E-09	2.4E-10
1,2,3,4,6,7,8-Hp-CDD	4.80E-12	1.44E-09	9.6E-11
Total HpCDD	1.90E-11	5.7E-09	3.8E-10
Octa CDD	2.50E-11	7.5E-09	5E-10
Total PCDD	7.90E-11	2.37E-08	1.58E-09
Furans[e]			
2,3,7,8-TCDF	9.70E-13	2.91E-10	1.94E-11
Total TCDF	3.70E-12	1.11E-09	7.4E-11
1,2,3,7,8-PeCDF	4.30E-12	1.29E-09	8.6E-11
2,3,4,7,8-PeCDF	8.40E-13	2.52E-10	1.68E-11
Total PeCDF	8.40E-11	2.52E-08	1.68E-09
1,2,3,4,7,8-HxCDF	4.00E-12	1.2E-09	8E-11
1,2,3,6,7,8-HxCDF	1.20E-12	3.6E-10	2.4E-11
2,3,4,6,7,8-HxCDF	1.90E-12	5.7E-10	3.8E-11
1,2,3,7,8,9-HxCDF	8.40E-12	2.52E-09	1.68E-10
Total HxCDF	1.30E-11	3.9E-09	2.6E-10
1,2,3,4,6,7,8-HpCDF	6.50E-12	1.95E-09	1.3E-10
1,2,3,4,7,8,9-HpCDF	2.70E-12	8.1E-10	5.4E-11
Total HpCDF	1.00E-11	3E-09	2E-10
Octa CDF	4.80E-12	1.44E-09	9.6E-11
Total PCDF	4.00E-11	1.2E-08	8E-10
Total PCDD/PCDF	1.20E-10	3.6E-08	2.4E-09
Acetaldehyde[e]	0.0013	0.39	0.026
Acrolein	2.60E-05	0.0078	0.00052
Benzene[e]	0.00039	0.117	0.0078
Ethylbenzene[e]	0.00024	0.072	0.0048
Formaldehyde[e]	0.0031	0.93	0.062
Hexane[e]	0.00092	0.276	0.0184
Isooctane	4.00E-05	0.012	0.0008
Methyl Ethyl Ketone[e]	2.00E-05	0.006	0.0004
Propionaldehyde[e]	0.00013	0.039	0.0026
Quinone[e]	0.00016	0.048	0.0032
Methyl chloroform[e]	4.80E-05	0.0144	0.00096
Toluene[e]	0.0029	0.87	0.058
Xylene[e]	0.0002	0.06	0.004

[redacted]			
2-Methylnaphthalene	0.00017	5.10E-02	3.40E-03
Acenaphthene	1.40E-06	4.20E-04	2.80E-05
Acenaphthylene	2.20E-05	6.60E-03	4.40E-04
Anthracene	3.10E-06	9.30E-04	6.20E-05
Benzo(a)anthracene	2.10E-07	6.30E-05	4.20E-06
Benzo(a)pyrene[e]	9.80E-09	2.94E-06	1.96E-07
Benzo(b)fluoranthene	1.00E-07	3.00E-05	2.00E-06
Benzo(e)pyrene	1.10E-07	3.30E-05	2.20E-06
Benzo(g,h,i)perylene	4.00E-08	1.20E-05	8.00E-07
Benzo(k)fluoranthene	4.10E-08	1.23E-05	8.20E-07
Chrysene	1.80E-07	5.40E-05	3.60E-06
Fluoranthene	6.10E-07	1.83E-04	1.22E-05
Fluorene	1.10E-05	3.30E-03	2.20E-04
Indeno(1,2,3-cd)pyrene	7.00E-09	2.10E-06	1.40E-07
Naphthalene[e]	0.00065	1.95E-01	1.30E-02
Perylene	8.80E-09	2.64E-06	1.76E-07
Phenanthrene	2.30E-05	6.90E-03	4.60E-04
Pyrene	3.00E-06	9.00E-04	6.00E-05
Acetone[e]	0.00083	2.49E-01	1.66E-02
Benzaldehyde	0.00011	3.30E-02	2.20E-03
Butane	0.00067	2.01E-01	1.34E-02
Butyraldehyde	0.00016	4.80E-02	3.20E-03
Crotonaldehyde[e]	8.60E-05	2.58E-02	1.72E-03
Ethylene	0.007	2.10E+00	1.40E-01
Heptane	0.0094	2.82E+00	1.88E-01
Hexanal	0.00011	3.30E-02	2.20E-03
Isovaleraldehyde	3.20E-05	9.60E-03	6.40E-04
2-Methyl-1-pentene	0.004	1.20E+00	8.00E-02
2-Methyl-2-butene	0.00058	1.74E-01	1.16E-02
3-Methylpentane	0.00019	5.70E-02	3.80E-03
1-Pentene	0.0022	6.60E-01	4.40E-02
n-Pentane	0.00021	6.30E-02	4.20E-03
Valeraldehyde	6.70E-05	2.01E-02	1.34E-03
Antimony[e]	1.80E-07	5.40E-05	3.60E-06
Arsenic[e]	5.60E-07	1.68E-04	1.12E-05
Barium[e]	5.80E-06	1.74E-03	1.16E-04
Beryllium[e]	0	0.00E+00	0.00E+00
Cadmium[e]	4.10E-07	1.23E-04	8.20E-06
Chromium[e]	5.50E-06	1.65E-03	1.10E-04
Cobalt[e]	2.60E-08	7.80E-06	5.20E-07
Copper[e]	3.10E-06	9.30E-04	6.20E-05
Hexavalent Chromium[e]	4.50E-07	1.35E-04	9.00E-06
Lead	1.50E-05	4.50E-03	3.00E-04
Manganese[e]	7.70E-06	2.31E-03	1.54E-04
Mercury[e]	2.60E-06	7.80E-04	5.20E-05
Nickel[e]	6.30E-05	1.89E-02	1.26E-03
Phosphorus[e]	2.80E-05	8.40E-03	5.60E-04
Silver[e]	4.80E-07	1.44E-04	9.60E-06
Selenium[e]	3.50E-07	1.05E-04	7.00E-06
Thallium[e]	4.10E-09	1.23E-06	8.20E-08
Zinc[e]	6.10E-05	1.83E-02	1.22E-03

a) Emission factors are from AP-42 11.1, Hot Mix Asphalt Plants, 3/04
b) Pounds per ton
c) Pounds per hour
d) Tons per year
e) IDAPA Toxic Air Pollutant

[redacted]

Natural Gas Fired Drum Mix Asphalt Plant With Fabric Filter

Hourly Throughput [redacted] T/hr
Annual Throughput [redacted] hr/yr

[redacted]			
PM (total)	0.033	9.9	0.66
PM-10 (total)	0.023	6.9	0.46
CO	0.13	39	2.6
NOx	0.026	7.8	0.52
SO_2	0.0034	1.02	0.068
VOC	0.032	9.6	0.64
Hcle	No Data		
Benzene[e]	0.00039	0.117	0.0078
Ethylbenzene[e]	0.00024	0.072	0.0048
Formaldehyde[e]	0.0031	0.93	0.062
Hexane[e]	0.00092	0.276	0.0184
Isooctane	4.00E-05	1.20E-02	8.00E-04
Methyl chloroform[e]	4.80E-05	1.44E-02	9.60E-04
Toluene[e]	0.00015	4.50E-02	3.00E-03
Xylene[e]	0.0002	6.00E-02	4.00E-03
2-Methylnaphthalene	7.40E-05	2.22E-02	1.48E-03
Acenaphthene	1.40E-06	4.20E-04	2.80E-05
Acenaphthylene	8.60E-06	2.58E-03	1.72E-04
Anthracene	2.20E-07	6.60E-05	4.40E-06
Benzo(a)anthracene	2.10E-07	6.30E-05	4.20E-06
Benzo(a)pyrene[e]	9.80E-09	2.94E-06	1.96E-07
Benzo(b)fluoranthene	1.00E-07	3.00E-05	2.00E-06
Benzo(e)pyrene	1.10E-07	3.30E-05	2.20E-06
Benzo(g,h,I)perylene	4.00E-08	1.20E-05	8.00E-07
Benzo(k)fluoranthene	4.10E-08	1.23E-05	8.20E-07
Chrysene	1.80E-07	5.40E-05	3.60E-06
Fluoranthene	6.10E-07	1.83E-04	1.22E-05
Fluorene	3.80E-06	1.14E-03	7.60E-05
Indeno(1,2,3-cd)pyrene	7.00E-09	2.10E-06	1.40E-07
Naphthalene[e]	9.00E-05	2.70E-02	1.80E-03

[redacted]			
Perylene	8.80E-09	2.64E-06	1.76E-07
Phenanthrene	7.60E-06	2.28E-03	1.52E-04
Pyrene	5.40E-07	1.62E-04	1.08E-05
Butane	0.00067	2.01E-01	1.34E-02
Ethylene	0.007	2.10E+00	1.40E-01
Heptane	0.0094	2.82E+00	1.88E-01
2-Methyl-1-pentene	0.004	1.20E+00	8.00E-02
2-Methyl-2-butene	0.00058	1.74E-01	1.16E-02
3-Methylpentane	0.00019	5.70E-02	3.80E-03
1-Pentene	0.0022	6.60E-01	4.40E-02
n-Pentane	0.00021	6.30E-02	4.20E-03
Antimony[e]	1.80E-07	5.40E-05	3.60E-06
Arsenic[e]	5.60E-07	1.68E-04	1.12E-05
Barium[e]	5.80E-06	1.74E-03	1.16E-04
Beryllium[e]	0	0.00E+00	0.00E+00
Cadmium[e]	4.10E-07	1.23E-04	8.20E-06
Chromium[e]	5.50E-06	1.65E-03	1.10E-04
Cobalt[e]	2.60E-08	7.80E-06	5.20E-07
Copper[e]	3.10E-06	9.30E-04	6.20E-05
Hexavalent Chromium[e]	4.50E-07	1.35E-04	9.00E-06
Lead	6.20E-07	1.86E-04	1.24E-05
Manganese[e]	7.70E-06	2.31E-03	1.54E-04
Mercury[e]	2.40E-07	7.20E-05	4.80E-06
Nickel[e]	6.30E-05	1.89E-02	1.26E-03
Phosphorus[e]	2.80E-05	8.40E-03	5.60E-04
Silver[e]	4.80E-07	1.44E-04	9.60E-06
Selenium[e]	3.50E-07	1.05E-04	7.00E-06
Thallium[e]	4.10E-09	1.23E-06	8.20E-08
Zinc[e]	6.10E-05	1.83E-02	1.22E-03

a) Emission factors are from AP-42 11.1, Hot Mix Asphalt Plants, 3/04
b) Pounds per ton
c) Pounds per hour
d) Tons per year
e) IDAPA Toxic Air Pollutant

[redacted]

#2 Fuel Oil Fired Drum Mix Asphalt Plant With Fabric Filter

Hourly Throughput [redacted] T/hr
Annual Throughput [redacted] T/yr

[redacted]			
PM (total)	0.033	9.9	0.66
PM-10 (total)	0.023	6.9	0.46
CO	0.13	39	2.6
NOx	0.055	16.5	1.1
SO_2	0.011	3.3	0.22
VOC	0.032	9.6	0.64
HCL[e]	No Data		
Benzene[e]	0.00039	0.117	0.0078
Ethylbenzene[e]	0.00024	0.072	0.0048
Formaldehyde[e]	0.0031	0.93	0.062
Hexane	0.00092	0.276	0.0184
Isooctane	4.00E-05	1.20E-02	8.00E-04
Methyl chloroform[e]	4.80E-05	1.44E-02	9.60E-04
Toluene[e]	0.0029	8.70E-01	5.80E-02
Xylene[e]	0.0002	6.00E-02	4.00E-03
2-Methylnaphthalene	0.00017	5.10E-02	3.40E-03
Acenaphthene	1.40E-06	4.20E-04	2.80E-05
Acenaphthylene	2.20E-05	6.60E-03	4.40E-04
Anthracene	3.10E-06	9.30E-04	6.20E-05
Benzo(a)anthracene	2.10E-07	6.30E-05	4.20E-06
Benzo(a)pyrene[e]	9.80E-09	2.94E-06	1.96E-07
Benzo(b)fluoranthene	1.00E-07	3.00E-05	2.00E-06
Benzo(e)pyrene	1.10E-07	3.30E-05	2.20E-06
Benzo(g,h,I)perylene	4.00E-08	1.20E-05	8.00E-07
Benzo(k)fluoranthene	4.10E-08	1.23E-05	8.20E-07
Chrysene	1.80E-07	5.40E-05	3.60E-06
Fluoranthene	6.10E-07	1.83E-04	1.22E-05
Fluorene	1.10E-05	3.30E-03	2.20E-04
Indeno(1,2,3-cd)pyrene	7.00E-09	2.10E-06	1.40E-07
Naphthalene[e]	0.00065	1.95E-01	1.30E-02
Perylene	8.80E-09	2.64E-06	1.76E-07
Phenanthrene	2.30E-05	6.90E-03	4.60E-04
Pyrene	3.00E-06	9.00E-04	6.00E-05
Butane	0.00067	2.01E-01	1.34E-02
Ethylene	0.007	2.10E+00	1.40E-01
Heptane	0.0094	2.82E+00	1.88E-01
2-Methyl-1-pentene	0.004	1.20E+00	8.00E-02
2-Methyl-2-butene	0.00058	1.74E-01	1.16E-02
3-Methylpentane	0.00019	5.70E-02	3.80E-03
1-Pentene	0.0022	6.60E-01	4.40E-02
n-Pentane	0.00021	6.30E-02	4.20E-03

[redacted]			
Dioxins[e]			
2,3,7,8-TCDD	2.10E-13	6.3E-11	4.2E-12
Total TCDD	9.30E-13	2.79E-10	1.86E-11
1,2,3,7,8-PeCDD	3.10E-13	9.3E-11	6.2E-12
Total PeCDD	2.20E-11	6.6E-09	4.4E-10
1,2,3,4,7,8-HxCDD	4.20E-13	1.26E-10	8.4E-12
1,2,3,6,7,8-HxCDD	1.30E-12	3.9E-10	2.6E-11
1,2,3,7,8,9-HxCDD	9.80E-13	2.94E-10	1.96E-11
Total HxCDD	1.20E-11	3.6E-09	2.4E-10
1,2,3,4,6,7,8-Hp-CDD	4.80E-12	1.44E-09	9.6E-11
Total HpCDD	1.90E-11	5.7E-09	3.8E-10
Octa CDD	2.50E-11	7.5E-09	5E-10
Total PCDD	7.90E-11	2.37E-08	1.58E-09
Furans[e]			
2,3,7,8-TCDF	9.70E-13	2.91E-10	1.94E-11
Total TCDF	3.70E-12	1.11E-09	7.4E-11
1,2,3,7,8-PeCDF	4.30E-12	1.29E-09	8.6E-11
2,3,4,7,8-PeCDF	8.40E-13	2.52E-10	1.68E-11
Total PeCDF	8.40E-11	2.52E-08	1.68E-09
1,2,3,4,7,8-HxCDF	4.00E-12	1.2E-09	8E-11
1,2,3,6,7,8-HxCDF	1.20E-12	3.6E-10	2.4E-11
2,3,4,6,7,8-HxCDF	1.90E-12	5.7E-10	3.8E-11
1,2,3,7,8,9-HxCDF	8.40E-12	2.52E-09	1.68E-10
Total HxCDF	1.30E-11	3.9E-09	2.6E-10
1,2,3,4,6,7,8-HpCDF	6.50E-12	1.95E-09	1.3E-10
1,2,3,4,7,8,9-HpCDF	2.70E-12	8.1E-10	5.4E-11
Total HpCDF	1.00E-11	3E-09	2E-10
Octa CDF	4.80E-12	1.44E-09	9.6E-11
Total PCDF	4.00E-11	1.2E-08	8E-10
Total PCDD/PCDF	1.20E-10	3.6E-08	2.4E-09
Antimony[e]	1.80E-07	5.40E-05	3.60E-06
Arsenic[e]	5.60E-07	1.68E-04	1.12E-05
Barium[e]	5.80E-06	1.74E-03	1.16E-04
Beryllium[e]	0	0.00	0.00
Cadmium[e]	4.10E-07	1.23E-04	8.20E-06
Chromium[e]	5.50E-06	1.65E-03	1.10E-04
Cobalt[e]	2.60E-08	7.80E-06	5.20E-07
Copper[e]	3.10E-06	9.30E-04	6.20E-05
Hexavalent Chromium[e]	4.50E-07	1.35E-04	9.00E-06
Lead	1.50E-05	4.50E-03	3.00E-04
Manganese[e]	7.70E-06	2.31E-03	1.54E-04
Mercury[e]	2.60E-06	7.80E-04	5.20E-05
Nickel[e]	6.30E-05	1.89E-02	1.26E-03
Phosphorus[e]	2.80E-05	8.40E-03	5.60E-04
Silver[e]	4.80E-07	1.44E-04	9.60E-06
Selenium[e]	3.50E-07	1.05E-04	7.00E-06
Thallium[e]	4.10E-09	1.23E-06	8.20E-08
Zinc[e]	6.10E-05	1.83E-02	1.22E-03

a) Emission factors are from AP-42 11.1, Hot Mix Asphalt Plants, 3/04
b) Pounds per ton
c) Pounds per hour
d) Tons per year
e) IDAPA Toxic Air Pollutant
g Compound is classified as polycyclic organic matter, as defined in the 1990 CAAA. Total PCDD is the sum of the total tetra through octa dioxins; total PCDF is sum of the total tetra through octa furans; and total PCDD/PCDF is the sum of total PCDD and total PCDF.

[redacted]

Maximum TAPs Emissions from HMA and Generator (if emissions estimated for generator)
(for comparison to toxic screening values)

State Toxic Air Pollutant	HMA+GEN (Maximums) (lb/hr)	Toxic Screen (lb/hr)	Exceeds Screen Level ?
HCL[e]	0.063	5.00E-02	YES
Benzene[e]	0.117	8.00E-04	YES
Ethylbenzene[e]	7.20E-02	29	No
Formaldehyde[e]	9.30E-01	5.10E-04	YES
Hexane[e]	2.76E-01	12	No
Methyl chloroform[e]	1.44E-02	127	No
Toluene[e]	8.72E-01	25	No
Xylene[e]	6.11E-02	29	No
Benzo(a)pyrene[e(+)]	4.43E-06	2.00E-06	YES
Naphthalene[e]	1.96E-01	3.33	No
Heptane[e]	2.82E+00	1.09E+02	No
Acetaldehyde[e]	3.90E-01	3.00E-03	YES
Acrolein[e]	7.85E-03	0.017	No
Methyl Ethyl Ketone[e]	6.00E-03	39.3	No
Propionaldehyde[e]	3.90E-02	0.0287	YES
Quinone[e]	4.80E-02	0.027	YES
Methyl chloroform[e]	1.44E-02	127	No
Acetone[e]	2.49E-01	119	No
Crotonaldehyde[e]	2.58E-02	0.38	No
PAH	2.02E-04	2.60E-06	YES
Antimony[e]	5.40E-05	0.033	No
Arsenic[e]	1.68E-04	1.5E-06	YES
Barium[e]	1.74E-03	0.033	No
Beryllium[e]	0.00E+00	0.000028	No
Cadmium[e]	1.23E-04	3.7E-06	YES
Chromium[e]	1.65E-03	0.033	No
Cobalt[e]	7.80E-06	0.0033	No
Copper[e]	9.30E-04	0.013	No
Hexavalent Chromium[e]	1.35E-04	5.6E-07	YES
Lead	4.50E-03	NA	No
Manganese[e]	2.31E-03	0.067	No
Mercury[e]	7.80E-04	0.003	No
Nickel[e]	1.89E-02	0.000027	YES
Phosphorus[e]	8.40E-03	0.007	YES
Silver[e]	1.44E-04	0.007	No
Selenium[e]	1.05E-04	0.013	No
Thallium[e]	1.23E-06	0.007	No
Zinc[e]	1.83E-02	0.667	No

e - State Toxic Air Pollutant

	Emissions (lb/hr)	Toxic Equivalancy Factor[T]	Adjusted Emission Rate
Dioxins[e]			
2,3,7,8-TCDD	6.3E-11	1	6.3E-11
Total TCDD	2.79E-10	na	
1,2,3,7,8-PeCDD	2.79E-10	0.5	1.395E-10
Total PeCDD	6.6E-09		
1,2,3,4,7,8-HxCDD	1.26E-10	0.1	1.26E-11
1,2,3,6,7,8-HxCDD	3.9E-10	0.1	3.9E-11
1,2,3,7,8,9-HxCDD	2.94E-10	0.1	2.94E-11
Total HxCDD	3.6E-09	na	
1,2,3,4,6,7,8-Hp-CDD	5.7E-09	0.01	5.7E-11
Total HpCDD	5.7E-09	na	
Octa CDD	7.5E-09	na	
Total PCDD	2.37E-08	na	
Furans[e]			
2,3,7,8-TCDF	2.91E-10	0.1	2.91E-11
Total TCDF	1.11E-09	na	
1,2,3,7,8-PeCDF	1.29E-09	0.05	6.45E-11
2,3,4,7,8-PeCDF	2.52E-10	0.5	1.26E-10
Total PeCDF	2.52E-08	na	
1,2,3,4,7,8-HxCDF	1.2E-09	0.1	1.2E-10
1,2,3,6,7,8-HxCDF	3.6E-10	0.1	3.6E-11
2,3,4,6,7,8-HxCDF	5.7E-10	0.1	5.7E-11
1,2,3,7,8,9-HxCDF	2.52E-09	0.1	2.52E-10
Total HxCDF	3.9E-09	na	
1,2,3,4,6,7,8-HpCDF	1.95E-09	0.01	1.95E-11
1,2,3,4,7,8,9-HpCDF	8.1E-10	0.01	8.1E-12
Total HpCDF	3E-09	na	
Octa CDF	1.44E-09	na	
Total PCDF	1.2E-08	na	
Total PCDD/PCDF	3.6E-08	na	
		Total[I]	EL (lb/hr)[*]
Total emission of dioxin/furan equivalent to 2,3,7,8-TCDD		1.063E-09	1.50E-10 Exceeds EL, must mo

na - not available
T- EPA Toxic Equivalancy Factor, EPA/89, (Source -Mike Dubois, IDEQ, April 2005)
I - Total of adjusted emission rates to be compared to the toxicity of 2,3,7,8-TCDD
* - EL is for 2,3,7,8-TCDD

Annual Emissions of Criteria Pollutants (total)

[redacted]	
PM (total)	1.26
PM-10 (total)	1.06
CO	7.71
NOx	20.34
SO_2	4.20
VOC	1.18
Lead	3.00E-04

[redacted]	0.4	Tons/year

[redacted]

Large Diesel Engines greater than 600 horse power

[redacted]					
Cat 3412 TA	41	2080		[redacted]	141000

[redacted]					
TOC	0.09	0.520	0.541		
NOx	3.2	18.499	19.239		
CO	0.85	4.914	5.110		
SOx	0.505	2.919	3.036		
PM-10	0.1	0.578	0.601		
Aldehydes	0	0.000E+00	0.000		
Benzene	7.76E-04	4.486E-03	4.665E-03	8.00E-04	yes
Toluene	2.81E-04	1.624E-03	1.689E-03	2.50E+01	no
Xylenes	1.93E-04	1.116E-03	1.160E-03	2.90E+01	no
Propylene	2.79E-03	1.613E-02	1.677E-02		
				2.40E-05	no
Formaldehyde	7.89E-05	4.561E-04	4.744E-04	5.10E-04	no
Acetaldehyde	2.52E-05	1.457E-04	1.515E-04	3.00E-03	no
Acrolein	7.88E-06	4.555E-05	4.738E-05	1.70E-02	no
Naphthalene	1.30E-04	7.515E-04	7.816E-04	3.33E+00	no
Acenaphthylene	9.23E-06	5.336E-05	5.549E-05		
Acenaphthene	9.23E-06	5.336E-05	5.549E-05		
	0.00E+00	0.000E+00	0.000E+00		
Phenanthrene	4.08E-05	2.359E-04	2.453E-04		
Fluoranthene	4.03E-06	2.330E-05	2.423E-05		
Pyrene	3.71E-06	2.145E-05	2.231E-05		
Benzo(a)anthracene[+]	6.22E-07	3.596E-06	3.740E-06		
Chrysene[+]	1.53E-06	8.845E-06	9.199E-06		
Benzo(b)fluoranthene[+]	1.11E-06	6.417E-06	6.674E-06		
Benzo(k)fluoranthene[+]	2.18E-07	1.260E-06	1.311E-06		
Benzo(a)pyrene[+]	2.57E-07	1.486E-06	1.545E-06	2.00E-06	no
Indeno(1,2,3-cd)pyrene[+]	4.14E-07	2.393E-06	2.489E-06		
Dibenz(a, h)anthracene[+]	3.46E-07	2.000E-06	2.080E-06		
Benzo(g,h,l)perylene	5.56E-07	3.214E-06	3.343E-06		
PAH[3]		4.50E-06			

1) Emission factors are from EPA, AP-42, Section 3.4, 10/96
2) Combustion Evaluation in Air Pollution Control, US EPA, March 1994
3) Compounds which makeup PAH a noted by "+"
4) #2 fuel oil

Total TAPS = 8.972E-03 Tons/yr

APPENDIX C

AIR DISPERSION MODELS

P-050316

Gale Lim Construction

Generator Ambient Impacts for Attainment Areas

Hours of operation = [redacted]

Dispersion Coefficient for generator from SCREEN3 = [redacted] (µg/m3/lb/hr) - one hour concentration

Pollutant	Averaging period	Actual Emission Rate (lb/hr)	Dispersion Coefficient (µg/m^3/lb/hr)	Persistence Factor (unitless)	Maximum Predicted Ambient Impact (µg/m3)
CO	8-hour	4.91385	22.26	0.7	76.6
	1-hour	4.91385	22.26	1	109.4
NO_2	Annual	18.4992	22.26	0.08	7.8
SO_2	3-hour	2.919405	22.26	0.9	58.5
	24-hour	2.919405	22.26	0.4	26.0
	Annual	2.919405	22.26	0.08	1.2
PM-10	24-hour	0.5781	22.26	0.4	5.1
	Annual	0.5781	22.26	0.08	0.2

HMA Ambient Impacts for Attainment Areas

Hours of Operation = [redacted]

Dispersion Coefficient for HMA from SCREEN3 = [redacted] (µg/m3/lb/hr) - one hour concentration

Pollutant	Averaging period	Actual Emission Rate (lb/hr)	Dispersion Coefficient (µg/m^3/lb/hr)	Persistence Factor (unitless)	Maximum Predicted Ambient Impact (µg/m3)
CO	8-hour	39	4.184	0.7	114.2
	1-hour	39	4.184	1	163.2
NO_2	Annual	16.5	4.184	0.08	0.1
SO_2	3-hour	17.4	4.184	0.9	65.5
	24-hour	17.4	4.184	0.4	29.1
	Annual	17.4	4.184	0.08	0.1
PM-10	24-hour	6.9	4.184	0.4	11.5
	Annual	6.9	4.184	0.08	0.4

Facility Wide Ambient Impact

Pollutant	Averaging period	Maximum Predicted Ambient Impact (µg/m3)	Background Concentration (µg/m3)	Total Ambient Impact (µg/m3)	NAAQS (µg/m3)	Percent of NAAQS
CO	8-hour	190.8	7300	7490.8	10000	74.9
	1-hour	272.6	12200	12472.6	40,000	31.2
NO_2	Annual	7.9	40	47.9	100	47.9
SO_2	3-hour	124.0	372	496.0	1300	38.2
	24-hour	55.1	122	177.1	365	48.5
	Annual	1.3	21	22.3	80	27.9
PM-10	24-hour	16.7	103	119.7	150	79.8
	Annual	0.6	34.5	35.1	50	70.2

Hours of Operation Allowed in PM-10 Nonattainment Areas

7.2 Hours/day (equals 5 micrograms per cubic meter - 24 hour average)

09/07/05
15:18:03

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 95250 ***

Gale Lim Construction - elec. gen. set

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.126100
STACK HEIGHT (M)	=	3.0500
STK INSIDE DIAM (M)	=	.2000
STK EXIT VELOCITY (M/S)	=	71.0867
STK GAS EXIT TEMP (K)	=	778.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	1.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 4732.0000 (ACFM)

BUOY. FLUX = 4.346 M**4/S**3; MOM. FLUX = 19.031 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** 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
10.	.6543E-07	4	20.0	20.0	6400.0	6.27	1.06	.77	NO
100.	21.69	4	20.0	20.0	6400.0	6.27	8.24	4.72	NO
200.	16.40	4	8.0	8.0	2560.0	11.11	15.73	8.81	NO
300.	12.53	4	5.0	5.0	1600.0	15.95	22.91	12.64	NO
400.	10.37	4	4.5	4.5	1440.0	17.38	29.74	15.81	NO
500.	8.733	4	3.5	3.5	1120.0	21.47	36.53	19.04	NO
600.	7.571	4	3.0	3.0	960.0	24.54	43.16	22.08	NO
700.	6.669	4	3.0	3.0	960.0	24.54	49.57	24.81	NO
800.	6.014	4	2.5	2.5	800.0	28.84	56.06	27.78	NO
900.	5.407	4	2.0	2.0	640.0	35.29	62.57	30.87	NO
1000.	5.001	4	2.0	2.0	640.0	35.29	68.75	33.39	NO
1100.	4.606	4	2.0	2.0	640.0	35.29	74.88	35.35	NO
1200.	4.250	5	1.0	1.0	10000.0	51.55	61.73	27.94	NO
1300.	4.432	6	1.5	1.5	10000.0	38.21	44.20	19.29	NO
1400.	4.631	6	1.0	1.0	10000.0	43.30	47.46	20.74	NO
1500.	4.816	6	1.0	1.0	10000.0	43.30	50.36	21.39	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:

87.	22.26	4	20.0	20.0	6400.0	6.27	7.32	4.23	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

```
     ****************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ****************************************
```

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	22.26	87.	0.

```
**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
```

HMASCREENgalelim

09/07/05
15:05:46

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 95250 ***

Gale Lim Construction - HMA

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.126100
STACK HEIGHT (M)	=	11.0000
STK INSIDE DIAM (M)	=	.9700
STK EXIT VELOCITY (M/S)	=	33.2096
STK GAS EXIT TEMP (K)	=	310.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	1.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 52000.000 (ACFM)

BUOY. FLUX = 4.201 M**4/S**3; MOM. FLUX = 245.198 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** 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
10.	.3902E-02	6	1.0	1.1	10000.0	50.11	10.45	10.45	NO
100.	1.403	3	10.0	10.1	3200.0	20.57	12.75	7.91	NO
200.	4.163	3	10.0	10.1	3200.0	20.57	23.78	14.29	NO
300.	3.906	3	5.0	5.0	1600.0	30.14	34.73	21.05	NO
400.	3.658	4	8.0	8.1	2560.0	22.91	29.65	15.64	NO
500.	3.434	4	8.0	8.1	2560.0	22.91	36.31	18.61	NO
600.	3.275	4	5.0	5.1	1600.0	30.05	43.06	21.90	NO
700.	3.086	4	5.0	5.1	1600.0	30.05	49.49	24.64	NO
800.	2.892	4	4.0	4.1	1280.0	34.82	55.99	27.63	NO
900.	2.710	4	3.5	3.6	1120.0	38.22	62.37	30.47	NO
1000.	2.556	4	3.5	3.6	1120.0	38.22	68.57	33.02	NO
1100.	2.398	4	3.0	3.0	960.0	42.76	74.86	35.31	NO
1200.	2.491	5	1.0	1.0	10000.0	58.43	61.66	27.79	NO
1300.	2.636	5	1.0	1.0	10000.0	58.43	66.10	28.89	NO
1400.	2.753	5	1.0	1.0	10000.0	58.43	70.53	29.98	NO
1500.	2.843	5	1.0	1.0	10000.0	58.43	74.93	31.04	NO
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:									
226.	4.184	3	8.0	8.1	2560.0	22.97	26.76	16.12	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

```
     ****************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ****************************************

 CALCULATION       MAX CONC    DIST TO   TERRAIN
  PROCEDURE       (UG/M**3)    MAX (M)    HT (M)
-------------   -----------   -------   -------
SIMPLE TERRAIN     4.184          226.        0.


**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
```

APPENDIX D

PERMIT PROCESSING FEE ASSESSMENT

P-050316

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: Gale Lim Construction
Address: 921 West 250 South
City: Blackfoot
State: Idaho
Zip Code: 83221
Facility Gale Lim
Contact:
Title: Owner
AIRS No.: 777-00359

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)

NO_X	20.3	0	20.3
SO_2	4.2	0	4.2
CO	7.7	0	7.7
PM10	1.1	0	1.1
VOC	1.2	0	1.2
TAPS/HAPS	0.4	0	0.4
Total:	0.0	0	**34.9**
Fee Due	**$ 5,000.00**		

Fee Amount (based on emisisons)
$ 5000

Comments: