

May 17, 2000

MEMORANDUM

TO: Steve West, Administrator
Boise Regional Office

FROM: Eric Antrim, Engineer-In-Training
Technical Services Office

SUBJECT: **PERMIT TO CONSTRUCT TECHNICAL ANALYSIS**
P-000008, Western Construction, Inc., Boise
(Draft permit amendments to incorporate provisions for fugitive dust control and collocation)

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 16.01.01.200 (*Rules for the Control of Air Pollution in Idaho*) for issuing Permits to Construct (PTC).

PROJECT DESCRIPTION

Western Construction, Inc., has requested amendments and modifications to five of their PTCs. First, they have requested the inclusion of a fugitive dust control plan and collocation terminology in two of them. Second, they have requested the inclusion of just the fugitive dust control plan in two more. Finally, they have asked that one of them be revoked. These requests have been satisfied. These permits will supersede previously issued permits of the same permit number, except in the case of the permit which was revoked.

It was noticed that PTC 777-00212 was missing annual NO_x numbers for non-attainment areas. These numbers were provided by a previous analysis and have been included in the table on page 10 of PTC 777-00212.

SUMMARY OF EVENTS

On January 31, 2000, DEQ's Boise Regional Office received a request from Western Construction to amend/modify PTCs numbered 777-00231, 777-00042, 777-00098, 777-00212, & 777-00035. Application materials were assigned to DEQ staff, Technical Services Office, on February 10, 2000. On March 14, 2000, it was noticed that PTC 777-00212 was missing annual NO_x numbers for non-attainment areas. These numbers were provided by a previous analysis and have been included in the table on page 10 of PTC 777-00212. This analysis is included with this memorandum.

DISCUSSION

1. Area Classification

These are portable sources. The intent of these permits is to allow the facilities to be located anywhere in the State of Idaho, provided they follow the conditions of the applicable permit. They may be located or collocated in attainment areas. Also, they may be located in nonattainment areas. Collocation in nonattainment areas is not allowed.

2. Facility Classification

Because of the imposition of federally enforceable limits, these facilities are not major facilities in accordance with IDAPA 16.01.01.006.55, nor are they designated facilities in accordance with IDAPA 16.01.01.006.27. None of these facilities are subject to any National Emission Standards for Hazardous Air Pollutants (NESHAP) in accordance with 40 CFR 61, or Maximum Achievable Control Technology (MACT) standards in accordance with 40 CFR 63. All facilities subject to this permitting action are classified A2. New Source Performance Standards in accordance with 40 CFR 60, Subpart I (Standards of Performance for Hot Mix Asphalt Plants) and Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) apply. Only two of these will require a new performance test due to an increased potential to emit (PTE) with their new PTCs, because one was revoked and the other two have already completed performance tests.

2.1 PTC # 777-00231

This PTC is an amendment. This facility is a crusher for which the Standard Industrial Classification (SIC) code is 1442 (Construction Sand and Gravel). Because the new permit does not allow for an increase in emissions, it is not necessary for the source to be performance tested again. The previous performance test was completed September 14 and 15, 1999.

2.2 PTC # 777-00212

This PTC is an amendment. This facility is a hot-mix asphalt plant for which the Standard Industrial Classification (SIC) code is 2951. Because the new permit does not allow for an increase in emissions, it is not necessary for the source to be performance tested again. The previous performance test was completed July 26, 1999.

2.3 PTC # 777-00035

This crusher is no longer in use. This PTC is being revoked as part of this permitting action.

2.4 PTC # 777-00098

This PTC is a modification due to an increase in its PTE. This facility is a crusher for which the Standard Industrial Classification (SIC) code is 1442 (Construction Sand and Gravel). Because the new permit does allow for an increase in emissions, it is necessary for the source to be performance tested again.

2.5 PTC # 777-00042

This PTC is a modification due to an increase in its PTE. This facility is a crusher for which the Standard Industrial Classification (SIC) code is 1442 (Construction Sand and Gravel). Because the new permit does allow for an increase in emissions, it is necessary for the source to be performance tested again.

3. PTC Amendments

3.1 PTC # 777-00231

Amended to include a Fugitive Dust Control Plan to ensure compliance with National Ambient Air Quality Standards (NAAQS) beyond the facility's boundaries. All other requirements of this permit remain unchanged. This permit is for a crusher.

3.2 PTC # 777-00212

Amended to include a Fugitive Dust Control Plan to ensure compliance with National Ambient Air Quality Standards(NAAQS) beyond the facility's boundaries. All other requirements of this permit remain unchanged. This permit is for a hot-mix asphalt plant.

3.3 PTC # 777-00035

PTC # 777-00035 is hereby revoked. The applicant has indicated PTC # 777-00035 is no longer in use and should be removed. This permit was for a crusher.

4. PTC Modifications

4.1 PTC # 777-00098

This modification resulted from updating an older format. Western Construction essentially reapplied for this permit making changes to their original permit application. They wanted the Fugitive Dust Control Plan to be included. Previously, this provision was not included in this permit. After the completion of the attached spreadsheet, the prepared permit incorporated the changes requested by Western

Construction. Permit 777-00098 was last updated on December 6, 1999. The generator size has increased from 750 kW to 1,220 kW, and the number of crushers allowed has increased from 3 to 4. When not collocated in an attainment or unclassifiable area, the permitted throughput decreased from 2,080,289 tons per year to 1,340,868 tons per year; and the permitted hours of generator operation decreased from 7,824 hours per year to 6,706 hours per year. When collocated, the permitted throughput decreased from 1,040,644 tons per year to 670,434 tons per year; and the permitted hours of generator operation decreased from 3,912 hours per year to 3,353 hours per year. The previous edition of this permit did not specify that collocation was not allowed in a nonattainment area; the current one does. The previous edition of this permit did not allow operation in a nonattainment area, even when not collocated; the current one allows 1,340,868 tons of throughput per year and 6,706 hours of generator operation per year when not collocated. Because the previously permitted emissions in a nonattainment area were zero, and they are now nonzero, the changes to this PTC constitute a modification of the previous permit.

Table 1. PTC # 777-00098 Modification Summary

PTC # 777-00098	Attainment Area		Collocation (Attainment A)		Nonattainment Area		generator size (kW)	number of crushers
	throughput	generator	throughput	generator	throughput	generator		
	tons per yr	hours per yr	tons per yr	hours per yr	tons per yr	hours per yr		
Pre-Modification:	2,080,289	7,824	1,040,644	3,912	0	0	750	3
Post-Modification:	1,340,868	6,706	670,434	3,353	1,340,868	6,706	1,220	4

4.2

PTC # 777-00042

This modification resulted from updating an older format. Western Construction essentially reapplied for this permit making changes to their original permit application. They wanted the Fugitive Dust Control Plan to be included. Previously, this provision was not included in this permit. After the completion of the attached spreadsheet, the prepared permit incorporated the changes requested by Western Construction.

Permit 777-00042 was last updated on November 24, 1995. The generator size and number of crushers were not previously specified; now they are 1,220 kW and 4 respectively. The previous permit specifies 800,000 tons of through-put per year and 2,000 hours of "crusher" operation per year. The previous permit does not discuss collocation. The current permit specifies through-put rates and hours of "generator" operation based on attainment/nonattainment and collocation status.

When not collocated and operating in an attainment or unclassifiable area, the permitted through-put is 1,340,868 tons per year; and the permitted hours of generator operation are 6,706 hours per year. When collocated, the permitted through-put is 670,434 tons per year; and the permitted hours of generator operation are 3,353 hours per year. The current permit allows 1,340,868 tons of through-put per year and 6,706 hours of generator operation per year in a nonattainment area. The permitted through-put under the previous permit is 129,566 tons per year greater than the most restrictive requirement of the new permit and 540,868 tons per year less than the least restrictive one. The permitted hours of "crusher" operation are 1,353 hours per year less than the most restrictive currently permitted hours of "generator" operation.

The limits on this crusher are identical to those in PTC # 777-00098 and are shown in Table 1.

5. Modeling

The EPA approved SCREEN3 model was used to predict the concentration of pollutants in the exhaust gas stream from both crusher generators where the changes made were classified as modifications. These were PTC # 777-00098 and PTC # 777-00042. Since these generators are identical, the model was only run one time for both cases. The results are attached and summarized in the "post-modification" row of Table 1.

6. Regulatory Review

IDAPA 16.01.01.201 Permit to Construct Required

Two of these facilities (PTC # 777-00098 & PTC # 777-00042) are allowed increased emissions in non-attainment areas and are, therefore, classified as modifications. This triggers permit to construct requirements. The remaining facilities are not increasing emissions. The changes to these remaining facilities are classified as amendments.

IDAPA 16.01.01.210 Demonstration of Preconstruction Compliance with Toxic Standards

This regulation does not apply.

IDAPA 16.01.01.577 Ambient Air Quality Standards for Specific Air Pollutants

Crusher throughput and generator hours of operation were limited to prevent the exceeding of ambient standards. The ambient air quality beyond the facilities' boundaries are further protected by requiring the reasonable control of fugitive dust emissions so that no visible emissions be seen crossing the facilities' boundaries. The facility must also develop a Fugitive Dust Control Plan.

40 CFR 52 Prevention of Significant Deterioration

Because of federally enforceable limits on throughput and hours of generator operation, this facility is not a PSD major facility.

40 CFR 60 New Source Performance Standards

New Source Performance Standards in accordance with 40 CFR 60, Subpart I (Standards of Performance for Hot Mix Asphalt Plants) and Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) apply. Only the emission units regulated by PTCs # 777-00098 and # 777-00042 will require performance testing with their new permits due to an increase in allowable emissions under the new permits.

40 CFR 61 & 63 National Emission Standards for Hazardous Air Pollutants & MACT

NESHAP and MACT requirements do not apply to this facility.

7. Permit Requirements

7.1 PTC # 777-00231

Included Federal Dust Control Plan to insure compliance with NAAQS beyond facility boundaries.

7.2 PTC # 777-00212

Included Federal Dust Control Plan to insure compliance with NAAQS beyond facility boundaries.

7.3 PTC # 777-00035

This permit was revoked. The applicant indicated that the crusher was no longer in use and that the permit should be removed.

7.4 PTC # 777-00098

This is essentially a new permit using an old PTC number.

7.4.1 Statewide Requirements

These requirements are independent of attainment/nonattainment or unclassifiable area status.

7.4.1.1 Emission Limits

This requirement is to assure that the Permittee inspects all potential sources to ensure compliance with IDAPA 16.01.01.625. The permittee is required to maintain a log of each inspection and include in the log the assessment of the conditions existing at the time visible emissions are observed and any correction taken in response to the visible emissions.

7.4.1.2 Operating Requirements

The facility is limited to four crushers and a 1,220 kW generator. The facility is required to take reasonable precautions to prevent particulate matter from becoming airborne and thereby ensure compliance with IDAPA 16.01.01.651. The permittee is required to develop a written plan detailing the methods and procedures that will be used to control fugitive dust emissions.

7.4.1.3 Monitoring and Recordkeeping Requirements

The facility is required to record location (nonattainment, attainment, or unclassifiable), throughput, and hours of generator operation on a daily basis and maintain these records on site, in a log, and make them available to DEQ representatives upon request. A performance test is required according to 40 CFR 60.675 and IDAPA 16.01.01.157 on all equipment affected by 40 CFR 60.670.

7.4.1.4 Reporting Requirements

The Permittee is encouraged to submit a written performance test protocol to DEQ thirty days in advance of the performance test in accordance with IDAPA 16.01.01.157.07.a. The Permittee is required to submit a written report of the performance test to DEQ within thirty days of the test in accordance with IDAPA 16.01.01.157.04. The Permittee is required to submit registration/relocation forms supplied by DEQ in accordance with IDAPA 16.01.01.500.

7.4.2 Attainment or Unclassifiable Area Requirements when Not Collocated

Throughput is limited to 1,340,868 tons per year and the hours of generator operation are limited to 6,706 hours per year. These limits are required to limit the facility's Potential To Emit (PTE) to retain its minor source status.

7.4.3 Attainment or Unclassifiable Area Requirements when Collocated

The Permittee shall not collocate without obtaining a permit which specifically allows for collocation. The facility may only collocate with one other source which has been permitted to specifically allow for collocation. Throughput is limited to 670,434 tons per year and the hours of generator operation are limited to 3,353 hours per year. These limits are required to limit the facility's Potential To Emit (PTE) to retain its minor source status.

7.4.4 Nonattainment Area Requirements

The facility shall not be collocated in a nonattainment or proposed nonattainment area. Throughput is limited to 1,340,868 tons per year and the hours of generator operation are limited to 6,706 hours per year. These limits are required to limit the facility's Potential To Emit

(PTE) to retain its minor source status.

7.5 PTC # 777-00042

The requirements for this permit are identical to those listed immediately above for # 777-00098.

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FEES

Registration fees do not apply to this facility in accordance with IDAPA 16.01.01.527. This is not a major facility as defined in IDAPA 16.01.01.008.10.

RECOMMENDATION

Based on review of application materials and all applicable state and federal rules and regulations, staff recommend that Western Construction be issued draft amended PTCs for their portable rock crushing and hot-mix asphalt equipment. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD requirements.

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cc: DEQ State Office
Boise Regional Office

INPUT SECTION - enter info in highlighted areas only

Company: **Western Construction, Inc.**
 Permit Engineer: **Zach Q. Klotzsch**
 Date: **06/02/99**
 Filename:

Enter the HMA Plant Type: **B**
 (A - Batch Mix Hot Mix Asphalt Plant)
 (B - Drum Mix Hot Mix Asphalt Plant)

Dryer Fuel Type: **B**
 (A - Natural Gas Fired Dryer)
 (B - Oil Fired Dryer)

Enter Dryer Stack Flow Rate:
 Enter Dryer Stack Temperature:
 Enter Dryer Stack Moisture:
 Enter Dryer Stack Pressure:
 Calculated Corrected Flow Rate:
 Enter HMA Production Capacity:
 89,700 [-] actual cubic feet per minute (cfm)
 225 [-] temperature (°F)
 18.00 [-] moisture wt % (Default 18 wt%)
 29.92 [-] stack pressure (Default 29.92 "Hg)
 56,706 [-] dry standard cubic feet per minute (scfm)

Enter HMA Applied Concentration:
 1.44 [-] percent (1 hr concentration @ 1 Hrb)

Is a PM performance level required for this HMA plant? **Y**
 Y or N (Based on 40 CFR 60.90 Requirements)

Does Plant Require a Generator? **Y**
 Y or N
 Enter Generator Size: **750 [-] kW**
 (A - Horsepower or B - Kilowatts)

Calculated Generator Size: **100KVA [-] Horsepower**
 (A - 1-Megawatt Generator)
 (B - Gasoline Fired or Dual Fuel Generator)

Enter Generator Fuel Usage:
 Calculated Generator Heat Output:
 67.7 [-] million Btu
 9.21 [-] million kWh

Enter PM model concentration: **10.12 [-] percent (1 hr concentration @ 1 Hrb)**

SPREADSHEET DATA - information used by spreadsheet

State Wide Background Concentration for Criteria Air Pollutants	1 hr	1 hr	8 hr	24 hr	Annual
PM10	11,400	540	5130	86	32.7
CO					40
NOx					21.5
SOx					

Parameters used in the Fuel/air Emission Calculation:
 Assumed Wind Speed (U): **10 [-] mph**
 Observed Asphalter Content (a): **2.5 [-] %**
 Asphalter Size Parameter (K): **0.25 [-] dimensionless**
 PM10 (-10 pm): **0.0020 [-] lb/CT**
 PM10 (-10 pm): **0.0050 [-] lb/CT**
 PM2.5 (-2.5 pm): **0.0020 [-] lb/CT**
 PM2.5 (-2.5 pm): **0.0050 [-] lb/CT**
 PM10 (-10 pm): **0.0020 [-] lb/CT**
 PM10 (-10 pm): **0.0050 [-] lb/CT**
 PM2.5 (-2.5 pm): **0.0020 [-] lb/CT**
 PM2.5 (-2.5 pm): **0.0050 [-] lb/CT**
 Assumptions: Wind Speed = 10 mph, Asphalter = 2.5%, and Adjustment = 94% of product

QUALITY CLASSIFICATION REPORT

Enter Annual Emission Limit:
 Note: Use 100 T/Yr for Title V Installation
 Use 250 T/Yr for PSD Installation
 For the standard HMA permit, use 100 T/Yr.

100 [-] T/Yr

PERMIT REQUIREMENTS SECTION - enforceable permit limits
 AHS Facility Classification: A2

Non-attainment Area		Attainment Area	
Allowable Emission Limits	Value	Units	Value
HM1A Dryer Stack: Allowable Emission Limits 19.4 lb/hr of PM	NA T/yr		50.7 T/yr of NOx
Generator: 9.0 hr/day 3,281.90 hr/year	NA T/yr		48.3 T/yr of NOx
HM1A Plant Throughput Limits: 3,597 T/day	1,312,762 T/yr		1,352,552 T/yr
Collocated Attainment Areas			
HM1A Dryer Stack: Allowable Emission Limits 19.4 lb/hr of PM	25.4 T/yr of NOx		
Generator: 24.0 hr/day 1,690.69 hr/year	24.1 T/yr of NOx		
HM1A Plant Throughput Limits: NA T/day	676,276 T/yr		
INPUTS TO PERMIT TO CONSTRUCT (PTC)			
Section B "Attainment Area When Not Collocated"			
Section B.1.1 Facility Throughput Limits: Annual Throughput Limit <<OR>> Daily Throughput Limit Annual Throughput Limit Annual Hours of Operation <<AND/OR>> Daily Hours of Operation	1,352,552	T/yr	
Section B.1.3 Generator Hours of Operation: Annual Throughput Limit Daily Throughput Limit Annual Hours of Operation <<AND/OR>> Daily Hours of Operation	NA 1,352,552 3,381	T/day T/yr hr/year	
Section C "Attainment Area When Collocated" Section C.1.3 Facility Throughput Limits: Annual Throughput Limit <<OR>> Daily Throughput Limit Annual Throughput Limit Annual Hours of Operation <<AND/OR>> Daily Hours of Operation	676,276	T/yr	
Section C.1.4 Generator Hours of Operation: Annual Throughput Limit <<OR>> Daily Throughput Limit Annual Throughput Limit Annual Hours of Operation <<AND/OR>> Daily Hours of Operation	NA 676,276 1,691	T/day T/yr hr/year	
Section D "Nonattainment Area" Section D.1.1 Facility Throughput Limits: Annual Throughput Limit <<OR>> Daily Throughput Limit Annual Throughput Limit Annual Hours of Operation <<AND/OR>> Daily Hours of Operation	1,312,762	T/yr	
Section D.1.3 Generator Hours of Operation: Annual Throughput Limit <<OR>> Daily Throughput Limit Annual Throughput Limit Annual Hours of Operation <<AND/OR>> Daily Hours of Operation	3,597 1,312,762 3,282	T/day T/yr hr/year	
	9.0	hr/day	

CO 1-hr Standard minutes/1-hr	SO2 3-hr standard hr/3-hr	CO 8-hr Standard hr/8-hr
60.0	3.0	8.0

DRYER EMISSION RATE CALCULATIONS

		DRYER STACK		Production Rate (Controlled)	
Parameter	Factor	Hours of Operation (hr/yr)	Production Rate (t/yr)	Production Rate (t/yr)	Production Rate (t/yr)
Total PM10	19.00	1,220.00	19.44	19.44	19.44
CO	0.036	14.40	14.40	14.40	14.40
NO _x	0.075	30.00	30.00	30.00	30.00
SO ₂	0.056	22.40	22.40	22.40	22.40

HRV emission factors for CO, NO_x, SO₂ and uncontrolled PM10 & PM10 air from AP-42 Section 3.1.1. Controlled PM10 & PM10 from the NSPS 0.01 t/yr/t

GENERATOR EMISSION RATE CALCULATIONS

		GENERATOR STACK		Production Rate (Controlled)	
Parameter	Factor	Hours of Operation (hr/yr)	Production Rate (t/yr)	Production Rate (t/yr)	Production Rate (t/yr)
Total PM10	0.06	0.06	0.53	0.53	0.53
CO	0.81	7.46	7.46	7.46	7.46
NO _x	3.10	28.56	28.56	28.56	28.56
SO ₂	0.51	4.65	4.65	4.65	4.65

Generator emission factors are from AP-42 Section 3.3 and 3.4

ANODELINE ANALYSIS CALCULATIONS FOR AMBIENT AIRWAYS

Parameter	Hours of Operation (hr/yr)	Allowable Impacts		Hours of Operation (hr/yr)	Hours of Operation (hr/yr)	Hours of Operation (hr/yr)	Permitted Impacts		Hours of Operation (hr/yr)	Hours of Operation (hr/yr)	Generated Impacts		Hours of Operation (hr/yr)	Hours of Operation (hr/yr)
		MAAQS	Other				MAAQS	Other			MAAQS	Other		
PM10	24.0	8,760	3,381	24.0	8,760	24.0	13.35	1.03	24.0	8,760	5.00	1.00	24.0	8,760
CO	N/A	8,760	3,381	24.0	8,760	24.0	18.65	2.98	24.0	8,760	14.48	2.90	24.0	8,760
NO _x	N/A	8,760	3,381	24.0	8,760	24.0	11.83	2.46	24.0	8,760	7.06	2.38	24.0	8,760
SO ₂	24.0	8,760	3,381	24.0	8,760	24.0	71.61	71.61	24.0	8,760	71.61	71.61	24.0	8,760

ANODELINE ANALYSIS CALCULATIONS FOR AMBIENT AIRWAYS

Parameter	Hours of Operation (hr/yr)	Allowable Impacts		Hours of Operation (hr/yr)	Hours of Operation (hr/yr)	Hours of Operation (hr/yr)	Permitted Impacts		Hours of Operation (hr/yr)	Hours of Operation (hr/yr)	Generated Impacts		Hours of Operation (hr/yr)	Hours of Operation (hr/yr)
		MAAQS	Other				MAAQS	Other			MAAQS	Other		
PM10	9.0	3,282	1,181	9.0	3,282	9.0	5.00	1.00	9.0	3,282	5.00	1.00	9.0	3,282
CO	N/A	3,282	1,181	9.0	3,282	9.0	14.48	2.90	9.0	3,282	14.48	2.90	9.0	3,282
NO _x	N/A	3,282	1,181	9.0	3,282	9.0	7.06	2.38	9.0	3,282	7.06	2.38	9.0	3,282
SO ₂	24.0	8,760	3,381	24.0	8,760	24.0	71.61	71.61	24.0	8,760	71.61	71.61	24.0	8,760

FUGITIVE EMISSION CALCULATIONS FOR ALL TAMPING AREAS

	PM	PM10
Pre Dryer Source Emissions (Q=1lb/hr)		
Loader -> Cold Aggregate Bin	2.01	0.76
Cold Aggregate Bin -> Conveyor	2.01	0.76
Conveyor -> Drum Dryer	2.01	0.76
Total Pre Dryer Source Emissions	6.03	2.28
Post Dryer Source Emissions		
Screening Process	NA	NA
Screen -> Hot Bin	NA	NA
Hot Bin -> Weigh Hopper	NA	NA
Weigh Hopper -> Hot Mill	NA	NA
Total Post Dryer Source Emissions	NA	NA
Peaverger Control Efficiency		
Total Uncontrolled Emissions (Q=1lb/hr)	6.03	2.28
Total Uncontrolled Emissions (Q=1 Tpy)	10.17	3.85
Total Controlled Emissions (Q=1lb/hr)	6.03	2.28
Total Controlled Emissions (Q=1 Tpy)	10.17	3.85

Source: National Asphalt Pavement Association
 * CO2 by Averaging Period
 * CO2 by Averaging Period
 * SO2 by Averaging Period

FUGITIVE EMISSION CALCULATIONS FOR NONATTACHMENT AREAS

	PM	PM10
Pre Dryer Source Emissions (Q=1lb/hr)		
Loader -> Cold Aggregate Bin	2.01	0.76
Cold Aggregate Bin -> Conveyor	2.01	0.76
Conveyor -> Drum Dryer	2.01	0.76
Total Pre Dryer Source Emissions	6.03	2.28
Post Dryer Source Emissions		
Screening Process	NA	NA
Screen -> Hot Bin	NA	NA
Hot Bin -> Weigh Hopper	NA	NA
Weigh Hopper -> Hot Mill	NA	NA
Total Post Dryer Source Emissions	NA	NA
Peaverger Control Efficiency		
Total Uncontrolled Emissions (Q=1lb/hr)	6.03	2.28
Total Uncontrolled Emissions (Q=1 Tpy)	9.87	3.71
Total Controlled Emissions (Q=1lb/hr)	6.03	2.28
Total Controlled Emissions (Q=1 Tpy)	9.87	3.71

SPREADSHEET SUMMARY - results of emission and modeling rates for all pollutants

ATTAINMENT & UNCLASSIFIABLE AREAS

	ATTAINMENT & UNCLASSIFIABLE AREAS		NONATTAINMENT AREAS	
	Uncontrolled	Controlled	Uncontrolled	Controlled
Generator	PM1	11.1 T/yr	11.1 T/yr	11.1 T/yr
	PM10	0.9 T/yr	0.9 T/yr	0.9 T/yr
	CO	12.6 T/yr	12.2 T/yr	12.2 T/yr
	NOx	48.1 T/yr	46.9 T/yr	46.9 T/yr
	SO ₂	7.9 T/yr	7.6 T/yr	7.6 T/yr
Fugitives	PM1	10.2 T/yr	9.9 T/yr	9.9 T/yr
	PM10	3.8 T/yr	3.7 T/yr	3.7 T/yr
Total	PM1	44.1 T/yr	42.8 T/yr	42.8 T/yr
	PM10	37.6 T/yr	36.5 T/yr	36.5 T/yr
	CO	37.0 T/yr	35.9 T/yr	35.9 T/yr
	NOx	99.0 T/yr	96.1 T/yr	96.1 T/yr
	SO ₂	45.7 T/yr	44.4 T/yr	44.4 T/yr
Title V PTE Summary 1				
Title V PTE Summary 2				
Title V PTE Summary 3				
Enforceable Limits - Non-Attainment Areas				
24.0 hr/day		3,381 hr/yr	9.0 hr/day	3,282 hr/yr
Dryer Controlled Emission Rates				
PM1	19.4 lb/hr	32.9 T/yr	19.4 lb/hr	31.9 T/yr
PM10	14.4 lb/hr	24.3 T/yr	14.4 lb/hr	23.6 T/yr
CO	30.0 lb/hr	50.7 T/yr	30.0 lb/hr	49.2 T/yr
NOx	22.4 lb/hr	37.9 T/yr	22.4 lb/hr	36.8 T/yr
SO ₂	0.5 lb/hr	0.9 T/yr	0.5 lb/hr	0.9 T/yr
Generator Controlled Emission Rates				
PM1	7.5 lb/hr	12.6 T/yr	7.5 lb/hr	12.2 T/yr
PM10	28.6 lb/hr	48.3 T/yr	28.6 lb/hr	46.9 T/yr
CO	4.7 lb/hr	7.9 T/yr	4.7 lb/hr	7.6 T/yr
Enforceable Limits - Attainment Areas				
24.0 hr/day		3,381 hr/yr	9.0 hr/day	3,282 hr/yr
Dryer Controlled Emission Rates				
PM1	19.4 lb/hr	32.9 T/yr	19.4 lb/hr	31.9 T/yr
PM10	14.4 lb/hr	24.3 T/yr	14.4 lb/hr	23.6 T/yr
CO	30.0 lb/hr	50.7 T/yr	30.0 lb/hr	49.2 T/yr
NOx	22.4 lb/hr	37.9 T/yr	22.4 lb/hr	36.8 T/yr
SO ₂	0.5 lb/hr	0.9 T/yr	0.5 lb/hr	0.9 T/yr
Generator Controlled Emission Rates				
PM1	7.5 lb/hr	12.6 T/yr	7.5 lb/hr	12.2 T/yr
PM10	28.6 lb/hr	48.3 T/yr	28.6 lb/hr	46.9 T/yr
CO	4.7 lb/hr	7.9 T/yr	4.7 lb/hr	7.6 T/yr

1 Total is the dryer, generator and fugitives added together for total PTE.
 2 1998 V PTE Summary does not account for PM1 only PM10.

Standard H-4 Mix Asphalt Plant Emissions and Ambient Impact Calculations

Ambient Area - Collected Data - Calculations		Collected Ambient Air Quality Standards - Calculations					Annual (hrs, Adjustment)	
Parameter	1 hr	3 hr	8 hr	24 hr	Annual	hrs	Adjustment	
PM ₁₀	1,203.381599	2367.367119	18,654,091,031	8,158,017,564				
SO ₂	306,891,141,1487	78,678,100,29	27,021,507,717	24,810,862,7				
Peak ground concentrations -- Allamburgh/Knox (testable areas) (ug/m ³)								
PM ₁₀	330	330	330	330	86	32.7		
SO ₂	11300	5130	5130	5130	40	23.5		
CO								
NO _x								
NO ₂								
OX								

DATA ENTRY

Crusher Plant Emission Calculations and Impact Prediction

Company Name: Western Construction
 Project: Possible Crusher
 PTC #: 777-000042 & 777-000098
 Engineer: Eric Ashton
 Date: 02/24/00
 Filename: 000008.WE4

Crusher Facility Information
 Facility Production Capacity: 1000 [-] tons/hr

Applicant's Requested Hours of Operation: 24 [-] hrs/day
 Estimated Throughput: 8,760 [-] tons/yr
 Maximum Hours of Operation: 8,760 [-] tons/yr
 Maximum Throughput: 8,760,000 [-] tons/yr

Number of Crushers: 4
 Limitations:
 Annual Threshold Emission A (A = <100 Tons/yr, Below Table V Threshold)
 Selected Emission Limitation B (B = <250 Tons/yr, P31 Threshold)

Generator Information
 Generator 7 (VYN) Y 1,220 [-] kW 1635.654 Conversion Factor
 Generator Size: 1,220 [-] kW
 Limits: B (A = Horsepower) (B = Kilowatts)
 Fuel Type: A (A = Diesel-Fired Generator) (B = Gasoline-Fired Generator)
 Fuel Usage: 70 [-] gal/hr
 Fuel Heating Value: 9.52455 [-] MMBtu/hr
 Modeled Labe Concentration: 11.26 [-] ug/m³ at emission rate of 1 lb/hr

2000 Limit Emission Factors
 Span Wind Speed (U) 10 [-] mph
 Material Moisture Content (M) 2.5 [-] %
 Particle Size Multiplier (A) 0.35 [-] dimensionless
 PM 10 (<10 µm) 0.24 [-] dimensionless
 PM 2.5 (<2.5 µm) 0.020 [-] lb/hr
 Emission Factor: 0.0052 [-] lb/hr
 PM 10 (<10 µm) 0.0067 [-] lb/hr

Notes: PM = K = 0.0012 (U/5) 1.50(K/2) 1.490 R

Parameter	Value	Unit	Area (sqm)	Annual
PM 10	1.16	µg/m ³	8.14	24.44
PM 2.5	1.16	µg/m ³	8.14	24.44
CO	13.490	ppm	5.130	31.7
NOx	1.16	ppm	8.14	24.44
SOx	1.16	ppm	8.14	24.44
OC	1.16	µg/m ³	8.14	24.44

INPUTS TO PERMIT TO CONSTRUCT (PTC)	Value	Unit
Section A.2 - Operating Requirements		
Section A.2.1 Number of Generators	4	
Section A.2.1 Number of Crushers	1	
Section A.2.1 Number of Generators	1,220	[-] kW
Section B - Abatement Area When Not Collocated		
Section B.1.1 Facility Throughput Limit	1,340,868	T/yr
Section B.1.3 Generator Hours of Operation	6,706	hrs/yr
Section C - Abatement Area When Collocated		
Section C.1.3 Facility Throughput Limit	670,434	T/yr
Section C.1.4 Generator Hours of Operation	3,353	hrs/yr
Section D - Nonattainment Area		
Section D.1.1 Facility Throughput Limit	1,340,868	T/yr
Section D.1.3 Generator Hours of Operation	6,706	hrs/yr
Section E - Other		
Daily Hours of Operation	NA	
Annual Throughput Limit	NA	
Annual Hours of Operation	NA	
Daily Hours of Operation	NA	

MISSION AQA1 YR18 BASED ON ANTIHILF AIR QUALITY STANDARDS
Emissions based on test data: 100 Ton/yr

Crude Oil Emissions, Emissions and Impact Factors

Pollutant	Generator Emission Factor (1) (MAD) (lb/hr)	Generator Emission Rate (1) (lb/hr)	Hours of Operation (1) (hr/yr)	Hours of Operation (1) (hr/yr)	AQS	Calculated Impacts		Allowable Impacts		Maximum Throughput (1) (MAD) (lb/yr)
						< 100 T/Yr (1) (lb/yr)	Generator Hours of Operation (1) (hr/yr)	< 100 T/Yr (1) (lb/yr)	Generator Hours of Operation (1) (hr/yr)	
SO ₂	0.0877	0.66	210	210	1.01	6.760	6.760	6.760	6.760	1.31
NO _x	0.8196	7.74	210	210	8.01	6.760	6.760	6.760	6.760	1.31
CO	1.1000	29.53	210	210	1.01	6.760	6.760	6.760	6.760	1.31
PM ₁₀	0.5058	4.81	210	210	1.01	6.760	6.760	6.760	6.760	1.31
PM _{2.5}	0.1800	0.95	210	210	1.01	6.760	6.760	6.760	6.760	1.31

Pollutant	Generator Emission Factor (1) (MAD) (lb/hr)	Generator Emission Rate (1) (lb/hr)	Hours of Operation (1) (hr/yr)	Hours of Operation (1) (hr/yr)	AQS	Calculated Impacts		Allowable Impacts		Maximum Throughput (1) (MAD) (lb/yr)
						< 100 T/Yr (1) (lb/yr)	Generator Hours of Operation (1) (hr/yr)	< 100 T/Yr (1) (lb/yr)	Generator Hours of Operation (1) (hr/yr)	
SO ₂	0.0877	0.66	210	210	1.01	6.760	6.760	6.760	6.760	1.31
NO _x	0.8196	7.74	210	210	8.01	6.760	6.760	6.760	6.760	1.31
CO	1.1000	29.53	210	210	1.01	6.760	6.760	6.760	6.760	1.31
PM ₁₀	0.5058	4.81	210	210	1.01	6.760	6.760	6.760	6.760	1.31
PM _{2.5}	0.1800	0.95	210	210	1.01	6.760	6.760	6.760	6.760	1.31

Pollutant	Generator Emission Factor (1) (MAD) (lb/hr)	Generator Emission Rate (1) (lb/hr)	Hours of Operation (1) (hr/yr)	Hours of Operation (1) (hr/yr)	AQS	Calculated Impacts		Allowable Impacts		Maximum Throughput (1) (MAD) (lb/yr)
						< 100 T/Yr (1) (lb/yr)	Generator Hours of Operation (1) (hr/yr)	< 100 T/Yr (1) (lb/yr)	Generator Hours of Operation (1) (hr/yr)	
SO ₂	0.0877	0.66	210	210	1.01	6.760	6.760	6.760	6.760	1.31
NO _x	0.8196	7.74	210	210	8.01	6.760	6.760	6.760	6.760	1.31
CO	1.1000	29.53	210	210	1.01	6.760	6.760	6.760	6.760	1.31
PM ₁₀	0.5058	4.81	210	210	1.01	6.760	6.760	6.760	6.760	1.31
PM _{2.5}	0.1800	0.95	210	210	1.01	6.760	6.760	6.760	6.760	1.31

Notes:
 1)TY calculations include output, screen and transfer point emissions.
 2)CO₂ is the average period.
 3)CO₂ is the average period.
 4)SO₂ is the average period.
 5)NO_x is the average period.
 6)PM₁₀ and annual operations values are based on background data from the model generator emissions (i.e., ambient air concentrations) are then used to back-calculate the generator emissions. The transfer point emissions (transfer) are then used to back-calculate the generator emissions. The transfer point emissions (transfer) are then used to back-calculate the generator emissions.
 7)Maximum throughput values are based on the maximum number of hours (transfer) that will yield a total of 99 Tons/yr, multiplied by the maximum daily production rate.
 8)Hours from values are based on maximum daily production rate, given above.
 9)Annual emissions values are based on the maximum throughput values given above.

Assessment Area - Coliform and BOD - Calculations

Coliform BOD Assessment Calculations and Impact Estimates

Coliform and BOD Assessment Calculations
 (Max Hours to Achieve 49.5 T/92)

Parameter	1.0	3.0	8.0	24.0	49.5
PM ₁₀	14,205	2,369	393	8.4	8.4
SO ₂	338	87	18.9	24.7	24.7

Background Concentrations - Attainment/Non-Attainment Area (µg/m³)

Parameter	1.0	3.0	8.0	24.0	49.5
PM ₁₀	11,100	3,130	86.0	17.7	17.7
SO ₂	5.1	1.4	40.0	73.5	73.5