

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permits will supersede previously issued permits of the same permit number, except in the case of the permit which was revoked.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 tons per yr	generator hours per yr	throughput tons per yr	generator hours per yr	throughput tons per yr	generator 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
 File name:

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

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

Enter Dryer Stack Flow Rate: 89,730 [-] actual cubic feet per minute (acfm)
 Enter Dryer Stack Temperature: 225 [-] temperature (°F)
 Enter Dryer Stack Moisture: 18.09 [-] moisture wt % (based 18 wt%)
 Enter Dryer Stack Pressure: 29.92 [-] stack pressure (based 29.92 "Hg)
 Calculated Corrected Flow Rate: 56,708 [-] dry standard cubic feet per minute (dscfm)

Enter HMA Absorbium Capacity: 400 [-] 1 inch (Asphalt Throughput)

Enter HMA Absorbium Concentration: 1.44 [-] percent (1 lb concentration @ 1 lb/hr)

Is a EPA performance test 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

Enter Generator Fuel Type: A
 (A - Diesel Fired Generator)
 (B - Gasoline Fired or Dual Fuel Generator)

Enter Generator Fuel Usage: 67.7 [-] Gallon/hr
 Calculated Generator Heat Output: 9.21 [-] Btu/minute

Enter EPA modified concentration: 10.17 [-] Lb/hr (1 lb concentration @ 1 HMA)

SPREADSHEET DATA - information used by spreadsheet

State Wide Background Concentrations for Criteria Air Pollutants	1 hr	3 hr	8 hr	24 hr	Annual
PM10					
CO	11,800		5130	86	21.7
NOx		545		144	40
SOx					22.5

Parameters used in the Fugitive Emission Calculations

Mean Wind Speed (U): 10 [-] mph
 Particle Size Distribution (PS): 2.5 [-] %
 Emission Factor: 0.35 [-] dimensionless
 PM10 (C-10 pm): 0.0020 [-] lb/hr-T
 PM10 (C-10 pm): 0.0053 [-] lb/hr-T

Notes: 1. K.F. = 4.0, 0.0027 (U/5)^1.5, 0.0007, 1.4
 2. Drop Point Equation, using "A", "A" = 41, 500, Kd = 0.13, 2.43.
 Assumptions: Wind Speed = 10 mph; Moisture = 1.5%; and
 MERZGIE = 92% of product.

FACILITY CLASSIFICATION REVIEW

Enter Annual Emission Limit: 100 [-] lb/yr
 Note: Use 100 Tpy for Title V Limitation
 Use 150 Tpy for PSD Limitation
 For the standard HMA period, use 100 Tpy.

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

Non-attainment Area		Attainment Area	
HMA Dryer Stack:		Allowable Emission Limits 19.4 lb/hr of PM	Allowable Emission Limits NA T/yr of NOX
Generator:	9.0 hr/day 3,281.90 hr/year	NA T/yr	Generator: 24.0 hr/day 3,381.38 hr/year
HMA Plant Throughput Limits:	3,597 T/day	1,312,762 T/yr	HMA Plant Throughput Limits: NA T/day
Collocated Attainment Areas			
HMA Dryer Stack:		Allowable Emission Limits 19.4 lb/hr of PM	Allowable Emission Limits 25.4 T/yr of NOX
Generator:	24.0 hr/day 1,690.69 hr/year	24.1 T/yr of NOX	
HMA Plant Throughput Limits:	NA T/day	676,276 T/yr	
INDUSTRY TO PERMIT TO CONSTRUCT (ITC)			
Section B "Attainment Area When Not Collocated"			
Section B.1.1 Facility Throughput Limits:	Annual Throughput Limit <<OK>>	1,352,552	T/yr
Section B.1.3 Generator Hours of Operation:	Daily Throughput Limit Annual Throughput Limit <<AND/OR>>	NA 1,352,552 3,381	T/day T/yr hr/year
Section C "Attainment Area When Collocated"	Daily Hours of Operation	24	hr/day
Section C.1.3 Facility Throughput Limits:	Annual Throughput Limit <<OK>>	676,276	T/yr
Section C.1.4 Generator Hours of Operation:	Daily Throughput Limit Annual Throughput Limit <<AND/OR>>	NA 676,276 1,691	T/day T/yr hr/year
Section D "Nonattainment Area"	Daily Hours of Operation	24.0	hr/day
Section D.1.1 Facility Throughput Limits:	Annual Throughput Limit <<OK>>	1,312,762	T/yr
Section D.1.3 Generator Hours of Operation:	Daily Throughput Limit Annual Throughput Limit <<AND/OR>>	3,597 1,312,762 3,282	T/day T/yr hr/year
	Daily Hours of Operation	9.0	hr/day

CO 1-hr Standard micrograms/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			
Parameter	Factor	Production Rate (Uncontrolled)	Production Rate (Controlled)	Production Rate (Controlled)	Production Rate (Controlled)
Equivalent Total PM	1-1 by/yr	7,600.00	1,220.00	19.44	19.44
	1-1 by/ton			14.40	14.40
	1-1 by/ton			30.00	30.00
	0.075			22.40	22.40
	0.056				
CO					
NO _x					
SO ₂					

PM emission factors for CO, NO_x, SO₂ and uncontrolled PM are from AT-42 Section 11.1. Controlled PM & PM₁₀ from the NPS 001 project.

GENERATOR EMISSION RATE CALCULATIONS

		GENERATOR STACK			
Parameter	Factor	Production Rate (Uncontrolled)	Production Rate (Controlled)	Production Rate (Controlled)	Production Rate (Controlled)
Equivalent Total PM	1-1 by/yr	0.67	0.06	0.51	0.53
	1-1 by/ton			0.81	0.81
	1-1 by/ton			3.10	3.10
	0.51			4.65	4.65
CO					
NO _x					
SO ₂					

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

MODIFIER ANALYSIS CALCULATIONS FOR ALL AIRBORN AREAS

Pollutant	Hours of Operation	Alternative Impacts		100 TTY		Fencible Impacts		100 TTY	
		Hours of Operation	Production Rate (Uncontrolled)	Hours of Operation	Production Rate (Controlled)	Hours of Operation	Production Rate (Controlled)	Hours of Operation	Production Rate (Controlled)
PM ₁₀	24.0	8,760	8,760	8,760	8,760	13.35	1.03	37.61	36.96
CO	N/A	N/A	N/A	N/A	N/A	18.65	2.98	96.62	96.62
NO _x	N/A	N/A	N/A	N/A	N/A	31.83	10.30	71.61	99.00
SO ₂	24.0	8,760	8,760	8,760	8,760	2.46	2.46	45.74	45.74

MODIFIER ANALYSIS CALCULATIONS FOR NON-ATTACHMENT AREAS

Pollutant	Hours of Operation	Alternative Impacts		100 TTY		Fencible Impacts		100 TTY	
		Hours of Operation	Production Rate (Uncontrolled)	Hours of Operation	Production Rate (Controlled)	Hours of Operation	Production Rate (Controlled)	Hours of Operation	Production Rate (Controlled)
PM ₁₀	9.0	3,282	3,282	3,282	3,282	5.00	1.00	16.50	15.87
CO	N/A	N/A	N/A	N/A	N/A	14.48	2.90	96.62	96.62
NO _x	N/A	N/A	N/A	N/A	N/A	7.06	10.00	67.63	96.09
SO ₂	24.0	8,760	8,760	8,760	8,760	2.18	2.18	44.37	44.37

NEGATIVE EMISSION CALCULATIONS FOR A TAMPING AREAS

	PM ₁₀	PM ₁₀
Pre-Dryer Source Emissions (Q-1)lb/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	6.02	2.28
Post-Dryer Source Emissions		
Screening Process	NA	NA
Screen -> Hot Bin	NA	NA
Hot Bin -> Weigh Hopper	NA	NA
Weigh Hopper -> Pug Mill	NA	NA
Total Post-Dryer Source Emissions	NA	NA
Scavenger Control Efficiency	NA	NA
Total Uncontrolled Emissions (Q-1)lb/hr	6.02	2.28
Total Controlled Emissions (Q-1)lb/hr	10.17	3.85
Total Confirmed Emissions (Q-1)lb/hr	16.17	6.13

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

NEGATIVE EMISSION CALCULATIONS FOR NORMAL TAMPING AREAS

	PM ₁₀	PM ₁₀
Pre-Dryer Source Emissions (Q-1)lb/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	6.02	2.28
Post-Dryer Source Emissions		
Screening Process	NA	NA
Screen -> Hot Bin	NA	NA
Hot Bin -> Weigh Hopper	NA	NA
Weigh Hopper -> Pug Mill	NA	NA
Total Post-Dryer Source Emissions	NA	NA
Scavenger Control Efficiency	NA	NA
Total Uncontrolled Emissions (Q-1)lb/hr	6.02	2.28
Total Controlled Emissions (Q-1)lb/hr	9.87	3.73
Total Confirmed Emissions (Q-1)lb/hr	15.89	6.01

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

ATTAINMENT & UNCLASSIFIABLE AREAS

ATTAINMENT & UNCLASSIFIABLE AREAS		NONATTAINMENT AREAS	
	Uncontrolled	Controlled	
Dryer	PM1	12471.2 T/yr	31.9 T/yr
	PM10	2822.4 T/yr	11.9 T/yr
	CO	23.6 T/yr	23.6 T/yr
	NOx	49.2 T/yr	49.2 T/yr
	SO ₂	36.8 T/yr	36.8 T/yr
Generator	PM1	1.1 T/yr	1.1 T/yr
	PM10	0.9 T/yr	0.9 T/yr
	CO	12.2 T/yr	12.2 T/yr
	NOx	46.9 T/yr	46.9 T/yr
	SO ₂	7.6 T/yr	7.6 T/yr
Fugitives	PM1	9.9 T/yr	9.9 T/yr
	PM10	3.7 T/yr	3.7 T/yr
Totals	PM1	12492.2 T/yr	42.8 T/yr
	PM10	2827.0 T/yr	16.5 T/yr
Title V FTE Summary ²	CO	35.9 T/yr	35.9 T/yr
	NOx	96.1 T/yr	96.1 T/yr
Title V FTE Summary ² Facility FTE Summary	SO ₂	44.4 T/yr	44.4 T/yr
	of PM10	2827.0 T/yr	96.1 T/yr
Enforceable Limits - Attainment Areas	of PM10	12482.2 T/yr	96.1 T/yr
	of PM1	9.9 T/yr	96.1 T/yr
Enforceable Limits - Non-Attainment Areas	9.9 h/day	3.282 h/day	
	24.0 h/day	3.282 h/day	
Dryer Controlled Emission Rates			
	19.4 lb/hr	31.9 T/yr	
	14.4 lb/hr	23.6 T/yr	
	30.0 lb/hr	49.2 T/yr	
	22.4 lb/hr	36.8 T/yr	
Generator Controlled Emission Rates			
	0.5 lb/hr	0.9 T/yr	
	7.5 lb/hr	12.2 T/yr	
	28.6 lb/hr	46.9 T/yr	
	4.7 lb/hr	7.6 T/yr	

¹ Total is the dryer, generator and fugitives added together for total FTE.

² Title V FTE Summary does not account for PM1 only PM10

Plant Area: Collected Unit - Calculations		Collective Ambient Air Quality Standards - (decibels)					Annual (Site's Abatement Hours)
Plant Area	Unit	1 hr	2 hr	8 hr	24 hr	Annual	
<p>1 hr, 2 hr, 8 hr, & 24 hr standards are cut in half for collection</p>							
SO ₂	1201 306599		2867.362719	18.651691051	8.1338417564		
NO _x	306.8914414487			78.673810679	24.84896627		
CO					27.021502717		
<p>Background Concentrations - Attachment/Plan (Theftable Area (up/in))</p>							
SO ₂		1 hr	2 hr	8 hr	24 hr	Annual	
NO _x							
CO							
SO ₂			11100	5130	86	12.7	
NO _x				543	144	40	
CO						23.5	

DATA ENTRY

Project Team: Process, Construction and Impact Planning

Company Name: Western Construction
 Project: Portable Crusher
 PTC #: 777-000442 & 777-000998
 Engineer: Eric Andon
 Date: 02/2/00
 Filename: 000008.WCA

Crusher Facility Information

Facility Production Capacity: 1000 [-] ton/hr
 Applicant's Requested Hours of Operation: 24 [-] hrs/day
 Estimated Throughput: 8,760,000 [-] tons/yr
 Maximum Hours of Operation: 8,760 [-] hrs/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)
 Restricted Emission Limitation: 100 Tons/yr (B = <250 Tons/yr, PSD Threshold)

Generator Information: Generator? (AYN): Y
 Generator Size: 1,220 [-] kW
 Units: R (A - Horsepower) (U - Kilowatts)

Fuel Type: A (A - Diesel-Fired Generator) (U - Gasoline-Fuel/Dual-Fuel Generator)
 Fuel Usage: 70 [-] gal/hr
 Fuel Heating Value: 9.82355 [-] Btu/lb

Modeled L₁₀ Concentration: 11.26 [-] µg/m³, at emission rate of 1 lb/hr

Drye (Wind) Emission Factor: 10 [-] g/gal
 Open Wind Speed (U): 2.5 [-] m/s
 Material Moisture Content (M): 0.35 [-] dimensionless
 Particle Size Multiplier (S): 0.24 [-] dimensionless
 PM₁₀ (-10 µm): 0.0033 [-] lb/don
 PM_{2.5} (-2.5 µm): 0.0027 [-] lb/don
 PM₁₀ (-10 µm): 0.0033 [-] lb/don
 PM_{2.5} (-2.5 µm): 0.0027 [-] lb/don

Notes: PM - R - 0.0017 (MUST) 30M271.400 X

PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}	Area
1.0	1.0	8.16	24.4	
11,400	5,150	86.0	32.7	
5.61	3.61	1.44	40.0	
33.5				

INPUTS TO PERMIT TO CONSTRUCT (PTC)

Section	Value	Units
Section A.2.1 Number of Generators	4	
Section A.2.1 Number of Generators	1	
Section A.2.1 Number of Generators	1,220	[-] kW
Section B.1.1 Facility Throughput Limit	1,340,868	T/yr
Section B.1.1 Generator Hours of Operation	6,706	hrs/yr
Section C.1.1 Facility Throughput Limit	670,434	T/yr
Section C.1.1 Generator Hours of Operation	3,353	hrs/yr
Section D.1.1 Facility Throughput Limit	1,340,868	T/yr
Section D.1.1 Generator Hours of Operation	6,706	hrs/yr
Section D.2.1 Facility Throughput Limit	NA	
Section D.2.1 Generator Hours of Operation	NA	

PERMIT LIMITS		PERMIT LIMITS		PERMIT LIMITS		PERMIT LIMITS		PERMIT LIMITS	
Controlled Emissions	Uncontrolled Emissions								
CO (1 hr Standard)	60.0								
SO ₂ (1 hr Standard)	3.0								
NO _x (1 hr Standard)	8.0								
PM ₁₀ (1 hr Standard)	4.0								
PM _{2.5} (1 hr Standard)	1.5								
NO ₂ (1 hr Standard)	1.0								
SO ₂ (3 hr Standard)	3.0								
NO _x (3 hr Standard)	8.0								
PM ₁₀ (3 hr Standard)	4.0								
PM _{2.5} (3 hr Standard)	1.5								
NO ₂ (3 hr Standard)	1.0								
SO ₂ (24 hr Standard)	3.0								
NO _x (24 hr Standard)	8.0								
PM ₁₀ (24 hr Standard)	4.0								
PM _{2.5} (24 hr Standard)	1.5								
NO ₂ (24 hr Standard)	1.0								

CONTROL

Potential to Exceed - Based on Applicant's Data

Controlled Emissions	Uncontrolled Emissions	Controlled Emissions	Uncontrolled Emissions
CO (1 hr Standard)	60.0	CO (1 hr Standard)	60.0
SO ₂ (1 hr Standard)	3.0	SO ₂ (1 hr Standard)	3.0
NO _x (1 hr Standard)	8.0	NO _x (1 hr Standard)	8.0
PM ₁₀ (1 hr Standard)	4.0	PM ₁₀ (1 hr Standard)	4.0
PM _{2.5} (1 hr Standard)	1.5	PM _{2.5} (1 hr Standard)	1.5
NO ₂ (1 hr Standard)	1.0	NO ₂ (1 hr Standard)	1.0
SO ₂ (3 hr Standard)	3.0	SO ₂ (3 hr Standard)	3.0
NO _x (3 hr Standard)	8.0	NO _x (3 hr Standard)	8.0
PM ₁₀ (3 hr Standard)	4.0	PM ₁₀ (3 hr Standard)	4.0
PM _{2.5} (3 hr Standard)	1.5	PM _{2.5} (3 hr Standard)	1.5
NO ₂ (3 hr Standard)	1.0	NO ₂ (3 hr Standard)	1.0
SO ₂ (24 hr Standard)	3.0	SO ₂ (24 hr Standard)	3.0
NO _x (24 hr Standard)	8.0	NO _x (24 hr Standard)	8.0
PM ₁₀ (24 hr Standard)	4.0	PM ₁₀ (24 hr Standard)	4.0
PM _{2.5} (24 hr Standard)	1.5	PM _{2.5} (24 hr Standard)	1.5
NO ₂ (24 hr Standard)	1.0	NO ₂ (24 hr Standard)	1.0

Potential to Exceed - Emissions Analysis Using Ambient Air Quality Standards

Emissions limited to less than: 100 Tons/yr

Assumptions: Plant operations limited by NAAQS from generator emissions, and Control emissions back-calculated in year 99 Twenty of emissions

Controlled Emissions	Uncontrolled Emissions	Controlled Emissions	Uncontrolled Emissions
CO (1 hr Standard)	60.0	CO (1 hr Standard)	60.0
SO ₂ (1 hr Standard)	3.0	SO ₂ (1 hr Standard)	3.0
NO _x (1 hr Standard)	8.0	NO _x (1 hr Standard)	8.0
PM ₁₀ (1 hr Standard)	4.0	PM ₁₀ (1 hr Standard)	4.0
PM _{2.5} (1 hr Standard)	1.5	PM _{2.5} (1 hr Standard)	1.5
NO ₂ (1 hr Standard)	1.0	NO ₂ (1 hr Standard)	1.0
SO ₂ (3 hr Standard)	3.0	SO ₂ (3 hr Standard)	3.0
NO _x (3 hr Standard)	8.0	NO _x (3 hr Standard)	8.0
PM ₁₀ (3 hr Standard)	4.0	PM ₁₀ (3 hr Standard)	4.0
PM _{2.5} (3 hr Standard)	1.5	PM _{2.5} (3 hr Standard)	1.5
NO ₂ (3 hr Standard)	1.0	NO ₂ (3 hr Standard)	1.0
SO ₂ (24 hr Standard)	3.0	SO ₂ (24 hr Standard)	3.0
NO _x (24 hr Standard)	8.0	NO _x (24 hr Standard)	8.0
PM ₁₀ (24 hr Standard)	4.0	PM ₁₀ (24 hr Standard)	4.0
PM _{2.5} (24 hr Standard)	1.5	PM _{2.5} (24 hr Standard)	1.5
NO ₂ (24 hr Standard)	1.0	NO ₂ (24 hr Standard)	1.0

EMISSIONS ANALYSIS BASED ON AMBIENT AIR QUALITY STANDARDS
Emissions limited to 150 tons/yr

Crude Oil Emission Calculations and Impact Parameters

Substance	Generator Emission Factor [-] lb/yr/MW	Generator Emission Rate [-] lb/yr	Hours of Operation [-] hr/yr	Hours of Operation [-] hr/yr	AAQS	Calculated Impacts		Allowable Impacts		Maximum Throughput [-] MMT/yr
						Hours of Operation [-] hr/yr	[-] Other	Hours of Operation [-] hr/yr	[-] Other	
SO ₂	0.0027	0.66	N/A	N/A	0.0	0.0	0.0	0.0	0.0	1.31
NO _x	0.0313	0.55	24.0	N/A	0.0	0.0	0.0	0.0	0.0	1.31
CO	0.1006	7.31	N/A	N/A	0.0	0.0	0.0	0.0	0.0	1.31
PM ₁₀	0.0027	0.66	24.0	N/A	0.0	0.0	0.0	0.0	0.0	1.31
PM _{2.5}	0.0027	0.66	24.0	N/A	0.0	0.0	0.0	0.0	0.0	1.31
OC	0.0027	0.66	24.0	N/A	0.0	0.0	0.0	0.0	0.0	1.31

Substance	Generator Emission Factor [-] lb/yr/MW	Generator Emission Rate [-] lb/yr	Hours of Operation [-] hr/yr	Hours of Operation [-] hr/yr	AAQS	Calculated Impacts		Allowable Impacts		Maximum Throughput [-] MMT/yr
						Hours of Operation [-] hr/yr	[-] Other	Hours of Operation [-] hr/yr	[-] Other	
SO ₂	0.0027	0.66	24.0	N/A	0.0	0.0	0.0	0.0	0.0	1.31
NO _x	0.0313	0.55	24.0	N/A	0.0	0.0	0.0	0.0	0.0	1.31
CO	0.1006	7.31	N/A	N/A	0.0	0.0	0.0	0.0	0.0	1.31
PM ₁₀	0.0027	0.66	24.0	N/A	0.0	0.0	0.0	0.0	0.0	1.31
PM _{2.5}	0.0027	0.66	24.0	N/A	0.0	0.0	0.0	0.0	0.0	1.31
OC	0.0027	0.66	24.0	N/A	0.0	0.0	0.0	0.0	0.0	1.31

Substance	Generator Emission Factor [-] lb/yr/MW	Generator Emission Rate [-] lb/yr	Hours of Operation [-] hr/yr	Hours of Operation [-] hr/yr	AAQS	Calculated Impacts		Allowable Impacts		Maximum Throughput [-] MMT/yr
						Hours of Operation [-] hr/yr	[-] Other	Hours of Operation [-] hr/yr	[-] Other	
SO ₂	0.0027	0.66	24.0	N/A	0.0	0.0	0.0	0.0	0.0	1.31
NO _x	0.0313	0.55	24.0	N/A	0.0	0.0	0.0	0.0	0.0	1.31
CO	0.1006	7.31	N/A	N/A	0.0	0.0	0.0	0.0	0.0	1.31
PM ₁₀	0.0027	0.66	24.0	N/A	0.0	0.0	0.0	0.0	0.0	1.31
PM _{2.5}	0.0027	0.66	24.0	N/A	0.0	0.0	0.0	0.0	0.0	1.31
OC	0.0027	0.66	24.0	N/A	0.0	0.0	0.0	0.0	0.0	1.31

Notes:
1) PM₁₀ calculations include crusher, screen and transfer point emissions
2) CO, 1 lb Average Fuel
3) CO, 8 lb Average Fuel
4) SO₂, 1 lb Average Fuel

1) Daily and annual operation values are based on background data less the nuclear generator emissions (i.e., ambient air concentrations).
2) Hourly and annual operation values have been calculated from AQS values. The crusher particle emission (Generator-Q)
3) Maximum throughput values are based on the minimum number of hours (transfer) that will yield a total of 90 tons/yr, multiplied by the maximum daily production rate.
4) Hourly emission values are based on maximum daily production rate & given above
5) Annual emission values are based on the maximum throughput value & given above
6) Non-attainment skin time of operation calculations require TSP emissions are non-attainment in F410
7) Non-attainment area. Therefore, operation is limited by significant impact limit.

