

**TECHNICAL REVIEW AND EVALUATION
OF APPLICATION FOR
AIR QUALITY PERMIT #42474**

I. INTRODUCTION

This is a renewal permit for operation of the Morenci mine by Freeport-McMoRan Morenci, Inc. (FMMI). This is a stationary facility located at 4521 U.S. Highway 191 in Morenci, Greenlee County, Arizona. This is a renewal of operating permit #M110734P1-99.

Company Information:

Facility Name: Morenci Mine

Mailing/Facility Address: 4521 U.S. Hwy 191, Morenci, Greenlee County
AZ 85540-9795.

II. FACILITY/PROCESS DESCRIPTION

A. Process Description

The major operations at FMMI facility include an open-pit mine, three in-pit crushers, ore conveyors, the Morenci copper ore concentrator, the Metcalf mine for leach (MFL) plant, copper solution extraction & electro winning (SX/EW) plants, and copper powder plant. The supporting operations of the facility are the lime slaking plant, the concrete batch plant, the concentrate leach plant, and the Metcalf combined cycle power plant. Please refer to application for detailed discussion about the processes.

B. Air Pollution Control Equipment

For controlling emissions of particulate matter (PM), particulate matter below 10 micron size (PM₁₀), and volatile organic compounds (VOCs), the Permittee uses wet scrubbers, fabric filter dust collectors (FFDC), baghouses, bag collectors, and water spray systems at various emission points.

III. EMISSIONS

A. Facility wide Emissions

FMMI is a major source for purposes of Title V because potential emissions of PM₁₀, PM, and NO_x exceed 100 tpy. Facility wide emissions are listed in Table 1. In order to stay a synthetic minor source for purposes of the Federal New Source program, the source is accepting various air pollution control requirements like wet scrubbers, fabric filter dust collectors (FFDC), and water spray systems for controlling emissions of particulate matter.

Table 1- Facility wide Emissions

Pollutant	Potential to Emit Tons per year
NO _x	231.32
CO	92.64
SO ₂	0.81
VOC	41.18
PM	188.45
PM ₁₀	173.32

B. SOURCE WITHIN A SOURCE

FMMI is currently a major source under both the Title V and Prevention of Significant Deterioration (PSD) definitions of “major source”. Through this renewal permit application, the Permittee has accepted new permit limits that will result in the FMMI’s facility remaining a Class I (Title V) major source and becoming a PSD “synthetic minor” source.

The definition of “Major Source” in A.A.C. R 18-2-401(9) states that the PSD major source threshold is 100 tons per year for a source classified as a categorical source and 250 tons per year for a source not classified as a categorical source. The list of categorical sources, A.A.C. R 18-2-401(2), does not include copper mining or other types of metal mining. Thus for FMMI’s overall operation, the PSD major source threshold is 250 tons per year.

For supporting the processing of ore at Morenci, FMMI has fossil-fuel-fired steam boilers and combined cycle gas turbines of more than 250 million Btu per hour heat input at their facility. Since these support facilities are a listed categorical source, the PSD threshold for them is 100 tons per year.

With the establishment of voluntarily accepted emission limitations, FMMI’s facility-wide emissions will not exceed 250 tons per year. Consequently, the FMMI’s facility as a whole is not considered a PSD “major source”. The fossil-fuel-fired steam electric plants (Boiler and power producing steam turbine generator) have PTE for all criteria pollutants below 100 tons per year. Consequently, it will not be considered as a PSD “major source”.

Since the potential to emit for NO_x is greater than 100 tons per year for the Combined Cycle Power Plant (CCPP) considered alone, it will be considered a PSD “major source”. Any future change at the CCCP with a net emissions increase above significant levels will trigger a major modification under the PSD program.

IV. COMPLIANCE HISTORY

There are no air quality cases associated with this facility. There have been 42 facility inspections with six physical facility inspections, 17 performance tests, and 19 records reviews in the past five years.

V. APPLICABLE REGULATIONS

Table 2: VERIFICATION OF APPLICABLE REGULATIONS

SECTION	RULE	VERIFICATION
<p>Mine</p> <p>Material Transfer operation- from the mine to the Metcalf concentrator, from the Metcalf concentrator to the SX Circuit, from the mine to Morenci concentrator, Morenci concentrator to the Bedding plant</p> <p>Concentrators</p>	<p>40 CFR 60, Subpart LL</p> <p>A.A.C R 18-2-721</p>	<p>NSPS Subpart LL is applicable to each crusher and screen in open-pit mines; each crusher, screen, bucket elevator, conveyor belt transfer point, thermal dryer, product packaging station, storage bin, enclosed storage area, truck loading station, truck unloading station, railcar loading station, and railcar unloading station at the mill or concentrator that commences construction or modification after August 24, 1982.</p> <p>For all other equipment, A.A.C. R 18-2-721 is applicable.</p>

Table 2: VERIFICATION OF APPLICABLE REGULATIONS (contd.)

SECTION/ EQUIPMENT	DATE OF MANUFACTURE	CONTROL DEVICE	RULE	VERIFICATION
<p><u>Turbines</u></p> <p>Gas Turbine #1</p> <p>Gas Turbine #2</p>	<p>1970</p> <p>1970</p>	<p>None</p>	<p>A.A.C. R 18-2-719</p>	<p>NSPS Subpart GG is applicable to gas turbines which commenced construction, modification, or reconstruction after October 3, 1977. The year of manufacture of gas turbines is before the trigger date for Subpart GG. Hence NSPS is not applicable.</p> <p>Therefore, A.A.C. R 18-2-719 is applicable to gas turbines.</p>

Table 2: VERIFICATION OF APPLICABLE REGULATIONS (contd.)

SECTION/ EQUIPMENT	DATE OF MANUFACTURE	CONTROL DEVICE	RULE	VERIFICATION
<u>Steam Boilers</u> Boiler #1 Boiler #2	1970 1970	None	A.A.C. R 18-2-703	40 CFR 60 Subpart D & Da are applicable to each fossil-fuel-fired steam generating unit of more than 73 megawatts (MW) heat input rate (250 million British thermal units per hour (MMBtu/hr) that commenced construction or modification after August 17, 1971 or September 18, 1978 respectively. The year of manufacture of these boilers is before the trigger date for Subpart D & Da. Hence NSPS is not applicable. Therefore, A.A.C. R 18-2-703, is applicable to these boilers.
Cooling Tower		Drift Eliminator	A.A.C. R18-2-702.B.3 A.A.C. R18-2-702.C	The cooling tower is subject to the generally applicable opacity emission standard because it is not subject to an applicable NSPS under Article 9 of A.A.C. R18-2 or any specific standard under Article 7
			A.A.C. R18-2-730.A.1	The cooling tower is subject to the generally applicable PM emission standard because it is an unclassified process source.
			A.A.C. R18-2-730.G	The general requirement related to air pollution impacts to adjoining property and the ability of the Director to require the installation of abatement equipment is applicable.

Table 2: VERIFICATION OF APPLICABLE REGULATIONS (contd.)

SECTION/ EQUIPMENT	DATE OF MANUFACTURE	CONTROL DEVICE	RULE	VERIFICATION
<u>Lime Slaking Plant</u> Lime Silo #1 & #2 Lime Slakers #1 & #2	N/A N/A	Dust Filter Water Spray mist control	A.A.C. R 18-2- 730	NSPS Sub part HH is applicable to each rotary lime kiln used in the manufacture of lime. Since FMMI is not manufacturing lime at its facility, Subpart HH is not applicable. Therefore, A.A.C. R 18-2-730 is applicable to unclassified sources.
<u>Solution Extraction/ Electrowinning SX/EW equipment</u>	1987 to 2005	Baghouse	A.A.C. R 18-2-730.	A.A.C. R 18-2-730 is applicable to unclassified sources.
SX/EW Boiler #1, 2, 3, 4, and 5.	1995, 1998, 1998, 2000, and 2000.	None	40 CFR 60 § Sub Part Dc	NSPS Subpart Dc is applicable to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr). NSPS subpart Dc is applicable to these boilers.

Table 2: VERIFICATION OF APPLICABLE REGULATIONS (contd.)

SECTION/ EQUIPMENT	DATE OF MANUFACTURE	CONTROL DEVICE	RULE	VERIFICATION
Small Industrial Boiler (009-301)	N/A	None	A.A.C. R 18-2- 724	NSPS Subpart Dc is applicable to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr). The capacity of this boiler is 2.6 MMBtu/hour. Hence NSPS is not applicable. Therefore, A.A.C. R 18-2-724 is applicable.
<u>Tank Farm</u> <u>Gasoline Tanks</u> Gasoline Tank #G1 #G2 #G3	Prior to 1984	None	A.A.C. R18-2- 710	NSPS subparts K, Ka and Kb are applicable to gasoline tanks with capacity greater than or equal to 75 M ³ (19812 gallons). The capacity of these tanks is 12000 gallons. Hence NSPS is not applicable. A.A.C. R18-2-710 is applicable to storage tanks handling petroleum liquids, and, hence, applicable to gasoline storage tanks.
<u>Concentrate Leach</u> <u>Plant (CLP)</u>	N/A	Wet Scrubber	A.A.C. R 18-2- 730	This standard is applicable to unclassified sources.

Table 2: VERIFICATION OF APPLICABLE REGULATIONS (contd.)

SECTION/ EQUIPMENT	DATE OF MANUFACTURE	CONTROL DEVICE	RULE	VERIFICATION
Boiler	N/A	None	40 CFR 60 Sub Part Dc	NSPS Subpart Dc is applicable to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr). NSPS subpart Dc is applicable to this boiler.
Concrete Batch Plant	N/A	Water and other reasonable precautions	Article 6, A.A.C. R18-2-702	These standards are applicable to concrete batch plant sources.
Fugitive dust sources	N/A	Water and other reasonable precautions	Article 6, A.A.C. R18-2-702	These standards are applicable to fugitive dust sources.
Mobile sources	-	Water Sprays/Water Truck for dust control	Article 8	This Article is applicable to off-road mobile sources, which either move while emitting air pollutants or are frequently moved during the course of their utilization.
Abrasive Blasting	-	Water and enclosure	A.A.C. R-18-2-726	This standard is applicable to any abrasive blasting operation.
Spray painting operations	-	Enclosed area	A.A.C. R-18-2-727	This standard is applicable to any spray painting operation.
Demolition/renovation operations	-		A.A.C. R18-2-1101.A.8, Subpart M	This standard is applicable to any asbestos related demolition or renovation operations.

VII. PREVIOUS PERMIT AND PERMIT CONDITIONS

A. PREVIOUS PERMITS

Table 3: PREVIOUS PERMITS

Permit #	Issue Date	Application Basis
M110734P1-99	May 5, 2001	Title V Operating Permit
35471	September 26, 2005	Minor Permit Revision
36341	November 23, 2005	Minor Permit Revision
36424	March 10, 2006	Significant Permit Revision
41833	March 23, 2007	Minor Permit Revision
42707	July 31, 2007	Minor Permit Revision
46398	May 5, 2008 (Approved on)	Minor Permit Revision

B. PREVIOUS PERMIT CONDITIONS

1. Operating Permit #M110734P1-99

Condition #	Determination				Comments
	Delete	Kept	Revise	Streamline	
Attachment A			x		This has been revised and most recent Attachment "A" is used for this permit.
Attachment B					
I		x			This condition is for facility-wide requirements.
<u>Mine Area</u> II.A.1		x			This condition is for emission limitations/standards for "Existing" emission units.
II.A.2		x			This condition is for emission limitations/standards for "New" emission units.
II.B.1		x			This condition is for air pollution control requirements for "New" emission units.

1. Operating Permit #M110734P1-99 (contd.)

Condition #	Determination				Comments
	Delete	Kept	Revise	Streamline	
<u>Mine Area</u> II.B.2		x			This condition is for air pollution control requirements for “Existing” emission units.
II.C.1.a, b, and c		x			This condition is for monitoring, reporting, and recordkeeping requirements for “Existing” emission units.
II.C.1.d		x			This condition is for performance testing requirements for “Existing” emission units.
II.C.2.a, b, c, and d		x			This condition is for monitoring, reporting, and recordkeeping requirements for “New” emission units.
II.C.2.e		x			This condition is for performance testing requirements for “New” emission units.
II.D		x			This condition is for throughput limitation of the mine.
<u>Material Transfer Operation</u> III.A		x			This condition is for opacity standard for material transfer area.
III.B		x			This condition is for air pollution control requirements.
III.C		x			This condition is for voluntary limitation accepted by the source.
III.D		x			This condition is for monitoring, reporting, and recordkeeping requirements.
III.E		x			This condition is for performance testing requirements.
<u>Concentrators</u> IV.A.1		x			This condition is for emission limitation/standards for “Existing” emission units.
IV.A.2		x			This condition is for emission limitation/standards for “New” emission units.
IV.B		x			This condition is for air pollution control requirements for “New” and “Existing” emission units.
IV.C.1.a, b, & c		x			This condition is for monitoring, reporting, and recordkeeping requirements for “Existing” emission units.

1. Operating Permit #M110734P1-99 (contd.)

Condition #	Determination				Comments
	Delete	Kept	Revise	Streamline	
<u>Concentrators</u> IV.C.1.d		x			This condition is for performance testing requirements for “Existing” emission units.
IV.C.2.a, b, c, & d		x			This condition is for monitoring, reporting, and recordkeeping requirements for “New” emission units.
IV.C.2.e		x			This condition is for performance testing requirements for “New” emission units.
<u>Morenci Steam Power Plant</u> V	x				This condition for Morenci Steam Power plant requirements has been deleted since this has been removed by FMMI.
<u>Metcalf Combined Cycle Power Plant</u> VI			x		This condition for voluntarily accepted limitation for fuel usage, emission limitation/standards (particulate matter and opacity), and monitoring, reporting, & recordkeeping requirements for Metcalf combined cycle power plant has been revised since FMMI has taken voluntary limitation on the fuel usage. FMMI shall be using only natural gas as the fuel in the gas turbine generators and boilers. Accordingly, conditions relevant to use of natural gas have been incorporated.
<u>Southwest Lime Plant</u> VII.A		x			This condition for emission limitation/standards has been placed under Lime Slaking plant.
VII.B		x			This condition for air pollution control requirements has been placed under Lime Slaking plant.
VII.C.1, 2, & 3		x			This condition for monitoring, reporting, and recordkeeping requirements has been placed under Lime Slaking plant.
VII.C.4		x			This condition for performance testing requirements has been placed under Lime Slaking plant.
<u>Solution Extraction/ Electrowinning</u> VIII.A		x			This condition is for emission limitation/standards, air pollution control requirements, and monitoring, reporting, & recordkeeping requirements of VOCS and other miscellaneous emissions.

1. Operating Permit #M110734P1-99 (contd.)

Condition #	Determination				Comments
	Delete	Kept	Revise	Streamline	
VIII.B.1		x			This condition for emission limitation/standards and monitoring, reporting, & recordkeeping requirements of opacity and particulate matter from Hot Water heaters #1, 2, 3, 4, and 5 has been placed for the small industrial boiler and dryer heater.
VIII.B.2		x			This condition for emission limitation/standards and monitoring, reporting, & recordkeeping requirements is for the SX/EW boilers.
IX.		x			This condition is for the Tank Farm Gasoline Storage Tanks.
X.	x				This condition for Diesel Generator has been deleted since this has been determined by ADEQ to be a non-road engine.
XI			x		This condition is for emission limitation/standards and monitoring, reporting, & recordkeeping requirements for non point sources.
XII		x			This condition is for the control of fugitive dust and opacity from the concrete batch plant.
XIII		x			This condition is for the opacity, particulate matter emission, and monitoring, reporting, & recordkeeping requirements for the mine portable grizzly.
XIV		x			This condition for the Pumps and Compressors has been included in the condition for Tank Farm Gasoline Storage Tanks.
XV		x			This condition is for the other periodic activities.

2. Minor Permit Revision #35471

Condition #	Determination				Comments
	Delete	Kept	Revise	Streamline	
Copper Powder Plant VIII.A.2.c		x			This condition is an air pollution control requirement for the dryer for drying the produced copper powder.
VIII.A.2.d		x			This condition is an air pollution control requirement for the dryer feeder, trash screen, product storage bin, product packaging, and product feed conveyor.
VIII.A.3		x			This condition is for monitoring, reporting, and recordkeeping requirements.

3. Minor Permit Revision #36341

Condition #	Determination				Comments
	Delete	Kept	Revise	Streamline	
II.B.3		x			This condition is an air pollution control requirement for the portable rock crusher and screening plant under “New” emission units in the mine area.
II.E	x				This condition for the notification requirements for the portable rock crusher and screening plant has been deleted since the requirements have already been met.
II.F		x			This condition is for performance testing of the new portable rock crusher and screening plant.

4. Significant Permit Revision #36424

Condition #	Determination				Comments
	Delete	Kept	Revise	Streamline	
<u>Mine Area</u> II.A.1		x			This condition is for emission limitations for “Existing” emission units.
II.A.2		x			This condition is for emission limitations for “New” emission units.
II.B.1 & 3.		x			This condition is for air pollution control requirements for “New” emission units.
II.B.2		x			This condition is for air pollution control requirements for “Existing” emission units.

4. Significant Permit Revision #36424 (contd.)

Condition #	Determination				Comments
	Delete	Kept	Revise	Streamline	
II.C.1.a, b, and c		x			This condition is for monitoring, reporting, and recordkeeping requirements for “Existing” emission units.
II.C.1.d		x			This condition is for performance testing requirements for “Existing” emission units.
II.C.2.a, b, c, and d		x			This condition is for monitoring, reporting, and recordkeeping requirements for “New” emission units.
II.C.2.e		x			This condition is for performance testing requirements for “New” emission units.
II.D		x			This condition is for throughput limitation of the mine.
<u>Material Transfer Operation</u> III.A		x			This condition is for opacity standard.
III.B		x			This condition is for air pollution control requirements.
III.C		x			This condition is for voluntary limitation accepted by the source.
III.D		x			This condition is for monitoring, reporting, and recordkeeping requirements.
III.E		x			This condition is for performance testing requirements.
<u>Concentrators</u> IV.A.1		x			This condition is for emission limitation/standards for “Existing” emission units.
IV.A.2		x			This condition is for emission limitation/standards for “New” emission units.
IV.B		x			This condition is for air pollution control requirements for “New” and “Existing” emission units.
IV.C.1.a, b, & c		x			This condition is for monitoring, reporting, and recordkeeping requirements for “Existing” emission units.
IV.C.1.d		x			This condition is for performance testing requirements for “Existing” emission units.
IV.C.2.a, b, c, & d		x			This condition is for monitoring, reporting, and recordkeeping requirements for “New” emission units.

4. Significant Permit Revision #36424 (contd.)

Condition #	Determination				Comments
	Delete	Kept	Revise	Streamline	
VII.		x			This condition is for emission limitation/standards, air pollution control requirements, and monitoring, reporting, & recordkeeping requirements for lime slaking plant.
XVI.A		x			This condition is for the emission limitation/standards for the concentrate leach plant.
XVI.B		x			This condition is for the air pollution control requirements for the concentrate leach plant
XVI.C.1 & 2		x			This condition is for the monitoring, reporting, and recordkeeping requirements for the concentrate leach plant
XVI.C.4		x			This condition is for the performance testing requirements for the concentrate leach plant
XVII.A		x			This condition is for the emission limitation/standards for the natural gas boiler associated with the concentrate leach plant.
XVII.B		x			This condition is for the monitoring, reporting, and recordkeeping requirements for the natural gas boiler associated with the concentrate leach plant.

5. Minor Permit Revision #41833

Condition #	Determination				Comments
	Delete	Kept	Revise	Streamline	
<u>Mine Area</u> II.C.2.c.(1)	x				This condition for baseline opacity level for “New” emission units has been deleted since these have been determined.
II.C.2.e.(2)			x		This condition is for performance test for “New” emission units.
III.E.2		x			This condition is for performance test for emission units in the material transfer area.
IV.C.1.d.(4)		x			This condition is for performance testing requirements for “Existing” emission units in the concentrator area.
VII.C.1	x				This condition for the performance test in the lime slaking area has been deleted since the emissions are very small.
XVI.C.1	x				This condition for baseline opacity level in the concentrate leach plant has been deleted since these have already been determined.

5. Minor Permit Revision #41833 (contd.)

Condition #	Determination	Comments
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	Delete	Kept	Revise	Streamline	
XVI.C.4.a &b		x			This condition is for performance testing requirements for emission units in the concentrate leach plant.

6. Minor Permit Revision #42707

Condition #	Determination				Comments
	Delete	Kept	Revise	Streamline	
III.B.3		x			This condition is for air pollution control requirements in the material transfer area.
III.E.2		x			This condition is for performance testing requirement in the material transfer area.

VIII. PERIODIC MONITORING

A. Mines, Material Transfer, and Concentrators

1. Equipment Subject to Non-NSPS- PM and Opacity Standards

These units are subject to the 20 percent opacity standard under A.A.C. R18-2-702 and particulate matter emission standards under A.A.C. R18-2-721.B.2. The Permittee is required to establish a baseline opacity level at the exit of air pollution control equipment under normal representative operating conditions. The Permittee is required to make a bi-weekly survey of the visible emissions from the emission units including fugitive emissions. The Permittee is required to create a record of the date on which the survey was taken, the name of the observer, and the results of the survey. If the visible emissions do not appear to exceed the baseline opacity level, the Permittee would note in the record that the visible emissions were below the baseline opacity, and it did not require a Method 9 to be performed.

If the Permittee finds that on an instantaneous basis the visible emissions appear to be in excess of the baseline opacity level but appear to be below the opacity standard, then the Permittee is required to make a six-minute Method 9 observation.

If this observation indicates opacity in excess of the baseline opacity level but below the opacity standard then the Permittee is required to adjust or repair the controls or the equipment to bring the opacity below baseline level.

If the six-minute reading indicates that the opacity is above both the baseline level and the opacity standard then the Permittee is required to adjust the process equipment or process control equipment to bring the opacity below the baseline level. In addition, the Permittee must report the event as excess emission.

If the Permittee finds that the visible emissions are less than the baseline opacity, then the Permittee is required to record the source of emission, date, time, and result of the test. The Permittee is required to adopt a similar approach with fugitive dust emissions at the mine. However, rather than establishing baseline opacity level for fugitive emissions the Permittee is required to conduct a visual survey of visible

emissions against the 40 percent opacity standard.

ADEQ has determined that the bi-weekly visual survey approach identified in the preceding paragraphs will reasonably assure compliance with the opacity and particulate matter standards. The permit requires a representative stack test every year plus periodically monitoring of stack opacity to fulfill the periodic monitoring requirements for particulate matter emissions. Although no data is available to directly correlate opacity to particulate matter emissions, opacity observation will indicate potential problems with the air pollution control equipment. If corrective actions are taken to rectify the problems associated with the pollution control device, then compliance can be inferred on the basis that the source operates its pollution control equipment in a manner consistent with good air pollution control practices. Opacity above the baseline level but less than the standard does not hold the source in violation of the particulate matter standard, but merely requires the source to identify and alleviate the problem by taking corrective actions to reduce the opacity to less than the baseline level. However, not taking corrective action could potentially hold the source in violation of the permit terms.

Also, it shall be noted that all references to a Method 9 observation shall be construed as meaning a six-minute observation and not a 3-hour performance test.

2. Equipment Subject to NSPS PM and Opacity Standards

These units are subject to the stack opacity standard of 7 percent (unless controlled by a wet scrubbing emission control device) under 40 CFR 60.382(a)(2), the fugitive opacity standard of 10 percent under 40 CFR 60.382(b), and the particulate matter standard of 0.05 grams per dry standard cubic meter under 40 CFR 60.382(a)(1).

For the purposes of periodic monitoring of particulate matter emissions, the Permittee is required to install, calibrate, maintain, and operate monitoring devices for continuous measurement of the change in pressure of the gas stream through the scrubber and the scrubbing liquid flow rate to the scrubber. For the purposes of periodic monitoring of opacity of fugitive emissions, the Permittee is required to adopt the bi-weekly visual survey of visible emissions approach identified above against the applicable fugitive opacity standard of 10 percent.

B. Metcalf Combined Cycle Power Plant (CCPP)

In the combined cycle operation of gas turbine and boiler, exhaust of gas turbine acts as a feed to the boiler unit and nothing leaves the stack of the gas turbine. In this case, the applicable standards for the CCPP operation mode are only those applicable to the operation of boilers.

1. Boiler #1/Combined Cycle Operation of Gas Turbine #1 & Boiler #1 and

Boiler #2/Combined Cycle Operation of Gas Turbine #2 & Boiler #2

a. Opacity

The boilers are subject to the opacity standard of 20 percent under the general visible emissions rule in A.A.C. R18-2-702.B. These units burn only natural gas. Natural gas is a clean burning fuel and inspections indicate that there have been no opacity problems. Hence, no monitoring is required when burning natural gas.

b. PM

The units are also subject to the particulate matter emissions standard in A.A.C. R18-2-703.C.1. This unit burns only natural gas. Natural gas is a clean burning fuel and results in negligible particulate matter emissions. Hence, no monitoring is required when burning natural gas.

2. Gas Turbine #1 and #2

a. Opacity:

The turbines are subject to the opacity standard of 20 percent in A.A.C. R18-2-719.E. Gas turbine #1 and #2 burn only natural gas. Natural gas is a clean burning fuel and usually does not pose a visible emissions problem. Hence, no monitoring is required when burning natural gas.

b. PM:

The units are also subject to the particulate matter emissions standard in A.A.C. R18-2-719.C.1. Natural gas is a clean burning fuel and results in negligible particulate matter emissions. Hence, no monitoring is required when burning natural gas.

3. Cooling Tower #1 and #2

a. The Permittee is required to perform quarterly survey of visible emissions from the cooling towers. If the opacity appears to exceed the standard, the Permittee is required to conduct EPA Method 9 observation by a certified EPA Reference Method 9 observer.

b. The Permittee is required to perform monthly inspections of the drift eliminators to verify performance. The Permittee must keep records of the results of the inspections and any repairs performed in a written facility log.

C. Lime Slaking Plant

Opacity and Particulate Matter Standard

The emission units are subject to the opacity standard of 20 percent under A.A.C. R18-2-702.B and the emission limits for particulate matter under A.A.C. R18-2-730.A.1.a. For the purposes of periodic monitoring of opacity of emissions and particulate matter emissions, the Permittee is required to adopt the bi-weekly visual survey of visible emissions approach identified in Section VIII.A.1 of this technical support document.

In addition, the Permittee is required to maintain and operate the air pollution control equipment in accordance with the manufacturer's specifications. The Permittee is also required to keep these specifications on file. Emissions related maintenance work performed on the air pollution control equipment and/or the process equipment must be recorded.

D. SX/EW Operations

1. SX/EW Plant

The intent of A.A.C. R18-2-730.D as applicable to the SX/EW process is to limit emissions from the equipment and operations associated with the SX/EW process so as to not cause air pollution. FMMI uses covered fixed roof mixer/settler tanks for all SX facilities and their associated ancillary process tanks.

Extraction of copper from pregnant leach solution takes place in the mixer settler tanks. Usage of covered mixer settler tanks was prescribed as a control measure for the SX circuit. This was done following the site visits by the permit engineers to the respective facility and the fact that almost all of the tanks utilized covered roofs.

2. SX/EW Boilers

The Permittee is limited to burn only natural gas in these units. The Permittee has accepted voluntary limitation on the gas consumption in these boilers. NSPS Subpart Dc is applicable to these boilers. There are no emission standards for opacity, particulate matter, SO_x, or NO_x for natural gas using boilers in the NSPS. The Permittee must keep a daily record of fuel consumed in these boilers. At the end of each day, 365-day total of fuel and MMBtu consumed shall be computed.

E. Concentrate Leach Plant (CLP)

1. Particulate Matter

All the emission points in the CLP are subject to A.A.C. R18-2-730. The Permittee is accepting a limit on PM and PM₁₀ emissions of 0.75 lbs per hour from the wet

scrubber associated with the pressure leach vessel.

Monitoring requirement includes submission and implementation of a visual observation plan to the Director. A certified Method 9 observer must conduct, in accordance with the observation plan, a bi-weekly visual survey of visible emissions from the CLP when in operation. If the observer, during the visual survey, does not see a plume from the stack of the air pollution control equipment that on an instantaneous basis appears to exceed the baseline level, then the observer shall keep a record of the name of the observer, the date on which the observation was made, and the result of the observation. If the observer sees a plume from the stack of the air pollution control equipment that on an instantaneous basis appears to exceed the baseline level, then the observer shall, if practicable, take a six-minute Method 9 observation of the plume. If the observer records a reading in excess of the baseline, the Permittee shall initiate corrective action measures to address it. If the reading is above the opacity standard, the Permittee shall report the incident as excess emissions.

2. Volatile Organic Compounds (VOC)

All the emission points in the CLP are subject to A.A.C. R18-2-730. FMMI has accepted a limit of 5.82 pounds per hour on VOC emissions from the wet scrubber associated with the pressure leach vessels.

F. Non-Point Sources Monitoring

Non-point sources are subject to the 40 percent opacity standard and other Article 6 requirements. Periodic monitoring for opacity standard entails a bi-weekly visible emissions survey in accordance with an ADEQ-approved observation plan, by a certified Method 9 observer. If the visible emissions survey indicates that a Method 9 reading may be required, the observer shall do so, and maintain records of the results. Any observed exceedance of the opacity standard should be reported appropriately.

Article 6 regulations also contain applicable requirements for non-point source emissions. These regulations require the Permittee to employ various control methods to suppress particulate emissions. The permit lists the various methods of dust suppression that may be used. By not restricting the Permittee to use only one of the methods, the permit provides the flexibility required to facilitate employment of effective control measures. Periodic monitoring data for these applicable requirements is conducted in line with the non-point source monitoring plan.

IX. COMPLIANCE ASSURANCE MONITORING (CAM) (40 CFR 64)

The CAM rule applies to "pollutant-specific emission units" (PSEU) at a major Title V source if the unit meets all of the following criteria:

- A. The unit is subject to an emission limit or standard for the applicable regulated air pollutant;

- B. The unit uses a control device to achieve compliance with the emission limit or standard; and
- C. The unit has "potential pre-control device emissions" of the applicable regulated air pollutant equal to or greater than 100% of the amount (tons/year) required for a source to be classified as a major source. "Potential pre-control device emissions" means potential to emit (PTE, as defined in Title V) except emissions reductions achieved by the applicable control device are not taken into account.

The general purpose of monitoring required by the CAM rule is to assure compliance with emission standards by ensuring that control devices meet and maintain the assumed control efficiencies. Compliance is ensured through requiring monitoring of the operation and maintenance of the control equipment and, if applicable, operating conditions of the pollutant-specific emissions unit. For the PSEUs that have post control potential to emit equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source, for each parameter monitored, the owner shall collect four or more data values equally spaced over each hour. Such units are defined as "large" PSEUs. For all other PSEUs ("small" PSEUs), the monitoring shall include some data collection at least once per 24-hour period. In the specific case of FMMI, all the PSEUs have post control emission below the major source threshold and therefore require data collection once in 24-hour period. Table 4 provides a list of small PSEUs at FMMI.

Table 4: CAM Applicable Units

(Defined as small pollutant specific emission units under 40 CFR 64)

S. No.	EQUIPMENT	PROCESS #	CONTROL DEVICE
1	In-Pit Crusher #1	001-005	Wet Scrubber
2	In-Pit Crusher #2	001-006	FFDC
3	DC1 to P8	001-007	FFDC
4	Surge Pile Baghouse	001-012	Baghouse

Table 4: CAM Points (contd.)

S. No.	EQUIPMENT	PROCESS #	CONTROL DEVICE
5	P2/P4	001-013	FFDC

6	P4/P5	001-014	FFDC
7	P5/P6	001-015	FFDC
8	IOS #1 Wet Scrubber	001-018	Wet Scrubber
9	DC2/P9, P9/P10	001-225	FFDC
10	DC2/P5	001-225	FFDC
11	In-Pit Crusher #3	001-250	FFDC
12	BF3/DC3 and DC3/P5	001-251	FFDC
13		001-255	FFDC
14	Morenci Fine Crushing Line B	002-030	FFDC
15	Fine Crushing	003-089	Wet scrubber #5
16	Fine Crushing	003-090	Wet scrubber #8
17	Fine Crushing	003-092	Wet scrubber #1
18	Morenci Fine Crushing Line C	002-031	FFDC
19	Morenci Fine Crushing Line D	002-032	FFDC
20	R4 to R5 and R5 to R6	003-080	FFDC
21	Fine Crushing	003-088	Wet scrubber #4

B. Monitoring Approach

FMMI uses FFDC, bag collectors, bag filters and wet scrubbers as the control devices for controlling the emissions of particulate matter (both PM and PM₁₀). The monitoring approach for the various control devices is detailed below.

1. FFDC, Bag Collectors, and Bag filters

Table 5: Monitoring Approach for FFDC, Bag collectors, and Bag filters

Indicator	Visible emissions
Indicator Range	No visible emissions.
Measurement approach	Visible emissions from the control device exhaust will be monitored daily using EPA Reference Method 22.
QA/QC practices and criteria	Operate and maintain the control device in a manner consistent with good air pollution control practice.
Excursion Range	Any opacity observed during the visible emission survey.

2. Wet Scrubber

Table 6: Monitoring Approach for Wet Scrubbers

	Indicator 1	Indicator 2
Indicator	Scrubber liquid flow rate	Gas stream pressure drop
Indicator Range	The indicator range for liquid flow rate will be $\pm 30\%$ of the value established during annual performance testing.	The indicator range for pressure drop will be $\pm 30\%$ of the value established during annual performance testing.
QA/QC practices and criteria	Operate and maintain flow indicators in a manner consistent with good air pollution control practice.	Operate and maintain pressure indicators in a manner consistent with good air pollution control practice.
Measurement approach	The scrubber flow rate monitors will be in continuous operation and shall be recorded once every day.	The pressure drop monitors will be in continuous operation and shall be recorded once every day.

Table 6: Monitoring Approach for Wet Scrubbers (contd.)

	Indicator 1	Indicator 2
Excursion Range	Events when the liquid flow rate differs by more than ± 30 percent	Events when the pressure drop differs by more than ± 30 percent from the

	from the average obtained during the most recent performance test on the wet scrubber.	average obtained during the most recent performance test on the wet scrubber.
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X. TESTING

A. Particulate Matter

In order to stay below PSD thresholds, the Permittee has adopted various air pollution control measures like wet scrubbers, FFDC, water spray system, etc. for controlling emission of particulate matter and volatile organic compounds throughout the facility. FMMI has voluntarily accepted emission limits for PM and PM₁₀ from the control devices. In order to show compliance with the voluntarily accepted emission limits, the Permittee will conduct performance tests on the stacks of the control device as per the testing schedule attached as Annexure I.

B. NO_x and CO

1. CCPP Operation

In the CCPP operation, exhaust of gas turbine acts as a feed to the boiler and the products of combustion of natural gas feed to gas turbine and additional natural gas feed to boilers exit through the stack at the boilers. In order to show compliance with the emission factor in AP-42, the Permittee will conduct performance test on the stack of boilers as per the testing schedule attached as Annexure I.

2. Gas Turbine #1 and #2

In order to show compliance with the emission factor in AP-42, the Permittee will conduct performance test on the stack of gas turbines as per the testing schedule attached as Annexure I.

XI. INSIGNIFICANT ACTIVITIES

The following activities were listed as insignificant by the Permittee in their application and have been deemed either insignificant or not insignificant by the Department:

Table 7: Insignificant Activity List

S. No.	Activity	Determination	Justification
1	Non-commercial (in-house) experimental, analytical laboratory equipment which is bench	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j

	scale in nature including quality control/quality assurance laboratories supporting an electric utility facility, and research and development laboratories.		
2	Small pilot scale research and development projects.	No	These will be evaluated on a case by case basis considering size, nature and amount of emissions, and duration of project. Appropriate permits will have to be obtained as required by the regulations
3	Housekeeping activities and associated products used for cleaning purposes, including collected spilled and accumulated materials at the source, including operation of fixed vacuum cleaning systems for such purposes.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.a
4	Air conditioning, cooling, heating or ventilation equipment not designed to remove air contaminants generated by or released from associated or other equipment.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.a
5	General office activities, such as paper shredding, copying, photographic activities, and blueprinting, but not to include incineration.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
6	Restroom facilities and associated cleanup operations and stacks or vents used to prevent the escape of sewer gasses through plumbing traps.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.a
7	Smoking rooms and areas.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j

Table 7: Insignificant Activity List

S. No.	Activity	Determination	Justification
8	Use of consumer products, including hazardous	Yes	Insignificant pursuant to

	substances as that term is defined in the Federal Hazardous Substances Act (15 U.S.C. 1261, et. seq.) where the product is used at a source in the same manner as normal consumer use.		A.A.C. R18-2-101.57.j
9	Vacuum cleaning systems where the system is used exclusively for industrial or commercial use.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
10	Building maintenance and janitorial activities.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.a
11	Batch mixers with rated capacity of 5 ft ³ or less.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.d
12	Internal combustion (IC) engine driven compressors, IC engine electrical generator sets and IC engine driven water pumps used only for emergency replacement or standby service.	No	Subject to A.A.C. R18-2-719
13	Water treatment or storage for boiler feed water.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
14	Water treatment or storage or cooling systems for process water.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
15	Chemical storage associated with water and wastewater treatment where the water is treated for consumption and/or use within the permitted facility (limited to chemicals not listed in 40 CFR 68.13, chemicals listed in 40 CFR 68.13 but not stored in quantities less than threshold levels, and not subject to any applicable regulation under the Act or the Arizona Revised Rules).	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
16	The collection, transmission, liquid treatment and solids treatment process and domestic type wastewater and sewage treatment works, or treatment facilities, including septic tank systems which treat only domestic type wastewater and sewage.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j

Table 7: Insignificant Activity List

S. No.	Activity	Determination	Justification

17	Firefighting activities and training conducted at the source in preparation for firefighting.	Yes	Insignificant pursuant to A.A.C. R18-2-602.C.2.b
18	Open burning activities.	No	Subject to A.A.C. R18-2-602
19	Flares used to indicate danger	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
20	Chemical storage and process holding tanks(limited to chemicals not listed in 40 CFR 68.13, chemicals listed in 40 CFR 68.13 but not stored in quantities less than threshold levels, and not subject to any applicable regulation under the Act or the Arizona Revised Rules)	May be	Not insignificant, if subject to A.A.C. R18-2-730. Case by case determination is required.
21	Storage and piping of natural gas or liquefied petroleum gas.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
22	Storage and piping of butane or propane.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
23	Gasoline storage tanks with capacity of 10,000 gallons or less.	No	Subject to A.A.C. R18-2-710
24	Diesel fuel storage tanks with capacity of 40,000 gallons or less.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.c
25	Petroleum product storage tanks containing lubricating oil, transformer oil, or used oil.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
26	Distribution and piping of diesel fuel, lubricating oil, used oil and transformer oil.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
27	Storage and handling of drums or other transportable containers where the containers are sealed during storage, and covered during loading and unloading (includes containers of RCRA waste and used oil).	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j

Table 7: Insignificant Activity List (contd.)

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S. No.	Activity	Determination	Justification
28	Waste motor oil collection and recycling.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
29	Storage tanks of any size containing exclusively soaps, detergents, waxes, greases, aqueous caustic solutions, or aqueous salt solutions.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
30	Storage tanks of any size containing exclusively aqueous acid solutions.	May be	These will be evaluated on a case by case basis. Subject to A.A.C. R18-2-730
31	Landscaping and site housekeeping equipment.	No	Subject to Article 8 regulations
32	Fugitive emissions from landscaping activities.	No	Subject to Article 6 regulations
33	Groundskeeping activities and products.	No	Subject to regulations under Article 6.
34	Shoveling ore to and from belt conveyors and transfer points as part of routine maintenance programs.	No	Subject to regulations under Article 6 or Article 7.
35	Air lance operations	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
36	Mechanized or manual cleanup and haulage operations	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
37	Concentrate reclamation	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
38	Waste concrete handling	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j

Table 7: Insignificant Activity List (contd.)

S. No.	Activity	Determination	Justification
39	Railroad track maintenance.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
40	Potable wellfield maintenance	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
41	Drilling and well development	No	Subject to regulations under Article 6.
42	Demolition, renovation and salvage operations.	No	Subject to regulations under Article 6 and/or 40 CFR 61, Subpart M
43	Cleanup of ditches	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
44	Storm water drainage control	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
45	Cleanout of water collection sumps	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
46	Cleanup of railcars	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
47	Cleanup of clogged chutes	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
48	Manual cleanup around conveyor belts and chutes.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
49	Activities associated with the construction, repair or maintenance of roads and other paved or open areas, including operation of street sweepers,	No	Subject to A.A.C. R18-2-605

	vacuum trucks, spray trucks and other vehicles related to the control of fugitive emissions of such roads or other areas.		
50	Unpaved public and private roadways within a stationary source site boundary.	No	Subject to A.A.C. R18-2-605

Table 7: Insignificant Activity List (contd.)

S. No.	Activity	Determination	Justification
51	Road and lot paving operations at commercial and industrial facilities.	No	Subject to A.A.C. R18-2-604
52	Sanding of streets and roads to abate traffic hazards caused by ice and snow.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
53	Street and parking lot striping.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
54	Fugitive dust emissions from the operation of passenger automobile, station wagon, pickup truck or van at a stationary source.	No	Subject to A.A.C. R18-2-604
55	Small equipment operations such as bobcats and backhoes and other small earth moving activities used as part of facility cleanup and material haulage.	No	Subject to A.A.C. R18-2-604 and 804
56	Tailing dam maintenance.	No	Subject to regulations under Article 6.
57	Cafeterias, kitchens and other facilities used for preparing food or beverages primarily for consumption at the source.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
58	Equipment using water, water and soap or detergent or a suspension of abrasives in water for purposes of cleaning or finishing.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
59	Construction and disturbance of surface areas for purpose of land development.	No	Subject to A.A.C. R18-2-604

Table 7: Insignificant Activity List (contd.)

S. No.	Activity	Determination	Justification
60	Activities at a source associated with the maintenance, repair or dismantlement of an emission unit installed at the source, including preparation for maintenance, repair or dismantlement and preparation for subsequent startup, including preparation of a shutdown vessel for entry, replacement of insulation, welding and cutting, and steam purging of a vessel prior to startup.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
61	Maintenance, repair or dismantlement of buildings, utility lines, pipelines, wells, and other structures that do not constitute an emission unit.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
62	Containers, reservoirs, or tanks used exclusively in dipping operations to coat objects with oils, waxes or greases.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
63	Activities directly used in the diagnosis and treatment of disease, injury or other medical condition.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
64	Manually operated equipment used for buffing, polishing, carving, cutting, drilling, machining, routing, sawing, surface grinding or turning and associated venting hoods.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.f
65	Individual sampling points, analyzers, and process instrumentation, whose operation may result in emissions.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
66	Individual equipment that is transportable or	No	These will be evaluated

	activities within a facility established for testing units prior to sale or for purposes of research.		on a case by case basis considering size, nature and amount of emissions, and duration of project. Appropriate permits will have to be obtained as required by the regulations.
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Table 7: Insignificant Activity List (contd.)

S. No.	Activity	Determination	Justification
67	Individual flanges, valves, pump seals, pressure relief valves and other individual components that have the potential for leaks.	No	Subject to A.A.C. R18-2-730
68	Brazing, soldering or welding operations.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
69	Battery recharging areas.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
70	Aerosol can usage.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
71	Plastic pipe welding.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
72	Acetylene, butane and propane torches.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
73	Architectural painting and associated surface preparation for maintenance purposes at individual or commercial facilities.	No	Subject to A.A.C. R18-2-727
74	Steam vents, condenser vents and boiler blow down	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
75	Equipment used exclusively for portable steam	Yes	Insignificant pursuant

	cleaning.		to A.A.C. R18-2-101.57.j
76	Blast-cleaning equipment using a suspension of abrasive in water and any exhaust system or collector serving them exclusively.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
77	Surface impoundments such as ash ponds, cooling ponds, evaporation ponds, settling ponds and storm water ponds.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
78	Pump/motor oil reservoirs, such as gear box lubrication.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j

Table 7: Insignificant Activity List (contd.)

S. No.	Activity	Determination	Justification
79	Transformer vents.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
80	Lubrication system vents.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
81	Hydraulic system reservoirs.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
82	Adhesive use which is not related to production.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
83	Caulking operations that are not part of a production process.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
84	Electric motors.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j

85	Cathodic protection systems.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
86	High voltage induced corona.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
87	Production of hot/chilled water for on-site use not related to any industrial application.	May be	This shall be evaluated for applicability of A.A.C. R18-2-724 on a case –by –case basis.
88	Safety devices such as fire extinguishers.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
89	Soil gas sampling.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
90	Filter draining.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
91	General vehicle maintenance and servicing activities at the source.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j

Table 7: Insignificant Activity List (contd.)

S. No.	Activity	Determination	Justification
92	Station transformers.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
93	Circuit breakers.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
94	Generation unit gas vents.	Yes	Insignificant pursuant to A.A.C. R18-2-

			101.57.j
95	Storage cabinets for flammable products.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
96	Fugitive emissions from landfill operations.	No	Subject to A.A.C. R18-2-731 (Landfill rule) or A.A.C. R18-2-730
97	HVAC vents.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
98	Wet cyclones and the ball mill circuits operated at the concentrators.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
99	Copper and Molybdenum Floatation.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
100	Copper Concentrate Filtering.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
101	Lime milling and classifying.	Yes	It is a completely wet process. Insignificant pursuant to A.A.C. R18-2-101.57.j
102	Ore, rock, tailing and concentrate reclamation practices.	No	Subject to Article 6 requirements.
103	Graders and Dozers.	No	Subject to Article 8 requirements.

Table 7: Insignificant Activity List (contd.)

S. No.	Activity	Determination	Justification
104	General startup and shutdown of process and	No	Case-by-case evaluation

	pollution control equipment including maintenance activities.		based on terms of the applicable requirements.
105	Malfunction of process and pollution control equipment outside the normal operation scenarios.	No	Case-by-case evaluation based on terms of the applicable requirements.
106	General research activities such as testing water mist/spray controls for dust abatement.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
107	Incineration of methane gas and bar screen residue that is retained by the solids bar screen from the primary wastewater treatment facility.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
108	Incineration of used office paper material.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
109	General vehicle refueling, sulfuric acid unloading, used oil collection/processing and used oil storage tanks.	No	Subject to A.A.C. R18-2-730
110	Geologic and hydro geologic exploration drilling activities.	No	Subject to A.A.C. R18-2-604
111	Ammonium nitrate loading and unloading.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
112	Tire shredding.	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
113	The Evan's Point Limestone Quarry facilities including the pan feeder, crusher, and tramway were demolished during late 1996 and early 1997. However, as special projects warrant, limestone may be mined on a small-scale basis, using front-end loaders, ten yard end dump trucks or other similar equipment.	No	Subject to A.A.C. R18-2-604.
114	Water for Oxygen and PLVs Cooling Tower	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j

Table 7: Insignificant Activity List (contd.)

S. No.	Activity	Determination	Justification
115	Water treatment or Storage for Boiler Feed	Yes	Insignificant pursuant

	Water		to A.A.C. R18-2-101.57.j
116	Concentrate Storage Tank Pump to Super Fine Grinding Vessel	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
117	Ground Concentrate Tank Pump to PLVs	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
118	Lean Electrolyte Tank Pump to PLVs	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
119	PLVs Coolant Tank Pumps to PLVs	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
120	Concentrate Storage Tank	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
121	Ground Concentrate Tank	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
122	Lean Electrolyte Tank	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
123	PLVs Coolant Tank	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
124	Tailing Neutralization Tank	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
125	Super Fine Grinding Vessel	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
126	CCD Thickeners	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
127	Decant Thickeners	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
128	Strong PLS Clarifier	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
129	Oxygen Plant	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j

130	CCD Feed Coolers	Yes	Insignificant pursuant to A.A.C. R18-2-101.57.j
131	Concentrate Repulp Tank Feed Conveyor	No	Subject to A.A.C. R18-2-730
132	Surfactant feed to Pressure Leach Vessels in CLP	No	Subject to A.A.C. R18-2-730

XII. LIST OF ABBREVIATIONS

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
AQD	Air Quality Division
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CCPP	Combined Cycle Power Plant
CLP	Concentrate Leach Plant
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
FFDC	Fabric Filter Dust Collector
hr	Hour
lb	Pound
MFL	Mine for Leach
MMBtu	Million British Thermal Units
MW	Megawatts
NSPS	New Source Performance Standards
NO _x	Nitrogen Oxide
PSEU	Pollutant Specific Emission Unit
PLV	Pressure Leach Vessel
PM	Particulate Matter
PM ₁₀	Particulate Matter Nominally less than 10 Micrometers
PSD	Prevention of Significant Deterioration
PTE	Potential-to-Emit
SO ₂	Sulfur Dioxide
SX/EW	Solvent Extraction & Electrowinning Plant
TPY	Tons per Year
EPA	Environmental Protection Agency
VOC	Volatile Organic Compound

ANNEXURE I

TEST SCHEDULE

TABLE 1: TESTING IN 1st, 3rd, & 5th YEAR**TABLE 2: TESTING IN 2nd & 4th YEAR**

S. No.	EQUIPMENT	CONTROL	PROCESS	PROCESS #	PERMIT SECTION
1	IPC #1	Scrubber	Mining	001-005	Attachment B; Section II
2.	IPC #2	FFDC		001-006	
3.	IPC #3	FFDC		001-250	
4.	IOS #1/R1A & R1B	Scrubber	Material Transfer	001-018	Attachment B; Section III
5.	Belt S10 to S11	BC #6		003-198	
6.	Fine Ore Pile to A1A	BC #7		003-201	
7.	A1A to A2A	BC #8		003-202	
8.	A1A to A2C	BC #9		003-203	
9.	DC1/P8 transfer point	FFDC		001-007	
10.	Belt R2 to Belt R3	BC #2		003-078	
11.	Belt R3 to Belt R4	BC #3		003-079	
12.	FB3/DC3, DC3/P5	FFDC		001-251	
13.	DC2/P9, P9/P10	FFDC		001-225	
14.	P2/P4 Transfer point	FFDC		001-013	
15.	P4/P5 Transfer point	FFDC		001-014	
16.	P5/P6 Transfer point	FFDC	001-015		
17.	Morenci Fine Crushing Line B	FFDC	Morenci Concentrator	002-030	Attachment B; Section IV
18.	Line C to Belt 3B to Belt 3	FFDC		002-031	
19.	Line C to Belt 3B to Belt 3A	FFDC		002-032	
20	Fine Crushing	Scrubber #1	Metcalf Building Scrubbers	003-092	Attachment B; Section IV
21	Fine Crushing	Scrubber #8		003-090	
22.	PLV Scrubber Vent	Scrubber	Concentrate Leach Plant	014-239	Attachment B; Section IX

TABLE 3: ONE TIME TESTING WITHIN 90 DAYS OF STARTUP

S. No.	EQUIPMENT	CONTROL	PROCESS		PERMIT SECTION
1.	Surge Pile/P2	Baghouse	Material Transfer	001-012	Attachment B; Section III
2.	DC2/P5	FFDC		001-225	
3.	IOS #2/R8	FFDC		001-228	
4.	R8/R9	FFDC		001-229	
5.	R9/R7	FFDC		001-230	
6.	R1B & R1A to R2	BC #1		003-077	
7.	R4/R5/R6	BC #4		003-080	
8.	Apron Feeders	Scrubber #3A	Metcalf Building Scrubbers	003-084	Attachment B; Section IV
9.	Coarse Ore Bin	Scrubber #3C		003-082	
10.	Fine Crushing	Scrubber #4		003-088	
11.	Fine Crushing	Scrubber #5		003-089	
12.	Crusher Building	Scrubber #6		003-085	
13.	Morenci Fine Crushing Line C	FFDC	Morenci Concentrator	002-031	Attachment B; Section IV
14.	Morenci Fine Crushing Line D	FFDC		002-032	

S. No.	EQUIPMENT	CONTROL	PROCESS	PERMIT SECTION
1.	Turbine #1		Metcalf Combined Cycle Power Plant	Attachment B; Section V
2.	Turbine #1			
3.	Turbine #1/Boiler #1 combined Cycle			
4.	Turbine #2/Boiler #2 combined Cycle			