Permit #: **28.1155-09**

Effective Date: **January 20, 2015**

Expiration Date: **November 5, 2017**

SOUTH DAKOTA DEPARTMENT OF

ENVIRONMENT AND NATURAL RESOURCES

TITLE V AIR QUALITY OPERATING PERMIT

Steven M. Pirner, P.E., Secretary
Department of Environment and Natural Resources

Under the South Dakota Air Pollution
Control Regulations

Pursuant to Chapter 34A-1-21 of the South Dakota Codified Laws and the Air Pollution Control Regulations of the State of South Dakota and in reliance on statements made by the owner designated below, a permit to operate is hereby issued by the Secretary of the Department of Environment and Natural Resources. This permit authorizes such owner to operate the unit(s) at the location designated below and under the listed conditions:

A. Owner

1. Company Name and Address

Wharf Resources (U.S.A.) Inc.
10928 Wharf Road
Lead, SD 57754

2. Actual Source Location and Mailing Address if Different from Above

Not Applicable

3. Permit Contact

Ron Waterland
Environmental Manager
(605) 584-4155

4. Facility Contact

Same as above

5. Responsible Official

Ken Nelson, Mine General Manager or
Ronald Waterland, Environmental Manager
(605) 584-1441

B. Permit Revisions or Modifications

January 20, 2015 - Administrative Amendment to add a responsible official.

C. Type of Operation

Wharf Resources is a large scale, open pit, heap leach gold mine.

TABLE OF CONTENTS

Page

1.0 Standard Conditions....1

1.1 Operation of source....1
1.2 Duty to comply....2
1.3 Property rights or exclusive privileges....2
1.4 Penalty for violating a permit condition....2
1.5 Inspection and entry....2
1.6 Severability....2
1.7 Permit termination, modification, or revocation....3
1.8 Credible evidence....3

2.0 Permit Fees....3

2.1 Annual air fee required....3
2.2 Annual operational report....3
2.3 Annual air fee....3

3.0 Permit Amendments and Modifications....4

3.1 Permit flexibility....4
3.2 Administrative permit amendment....4
3.3 Minor permit amendment....4
3.4 Permit modification....5
3.5 Permit revision....5
3.6 Testing new fuels or raw materials....6

4.0 Permit Renewal....6

4.1 Permit effective....6
4.2 Permit renewal....6
4.3 Permit expiration....7

5.0 Recordkeeping and Reporting....7

5.1 Recordkeeping and reporting....7
5.2 Signatory requirements....7
5.3 Certification statement....7
5.4 Monitoring log....8
5.5 Annual compliance certification....8
5.6 Reporting permit violations....9

6.0 Control of Regulated Air Pollutants....9

6.1 Visibility limit....9
6.2 Visibility exceedances....9
6.3 Total suspended particulate matter limits....9
6.4 Sulfur dioxide limits....10
6.5 Air emission exceedances – emergency conditions....10
6.6 Circumvention not allowed....10

TABLE OF CONTENTS

Page

6.7 Minimizing emissions....11

7.0 Performance Tests....11

7.1 Performance test may be required....11
7.2 Test methods and procedures....11
7.3 Representative performance test....11
7.4 Submittal of test plan....12
7.5 Notification of test....12
7.6 Performance test report....12

8.0 Monitoring....12

8.1 Periodic opacity monitoring for units operating on a monthly or more frequent basis....12
8.2 Monitoring opacity limits for units operating periodically....14
8.3 Certified personnel – visible emission tests....15
8.4 Monitoring sulfur content of distillate oil....15

9.0 BOILER NSPS REQUIREMENTS....15

9.1 Recordkeeping requirements for boiler....15
9.2 Changing boiler fuel....15

10.0 CRUSHER NSPS REQUIREMENTS....16

10.1 Standard for particulate matter....16
10.2 Monitoring of operations....16
10.3 Recordkeeping and reporting requirements....16
10.4 Test methods and procedures....17

11.0 EMERGENCY GENERATOR MACT REQUIREMENTS....17

11.1 Date to comply with emergency generator requirements....17
11.2 Maintenance requirements for emergency generator....17
11.3 Minimizing emissions from emergency generator....18
11.4 Operate emergency generator according to manufacturer's instructions....18
11.5 Installation and operation of a non-resettable hour meter....18
11.6 Minimizing startup time....18
11.7 Alternative maintenance schedule....19
11.8 Operation of emergency generator....19
11.9 Recordkeeping for emergency generator....20

12.0 GOLD MINE ORE PROCESSING....21

12.1 Date to comply with gold ore processing requirements....21
12.2 Mercury emission standards for gold ore processes....21
12.3 Mercury compliance emission tests....21
12.4 Mercury test methods....21
12.5 Test length and sample volume of emission test....22

TABLE OF CONTENTS

		Page
12.6	Representative operating conditions for emission test	22
12.7	Calculation of mercury emission rate	22
12.8	Monthly monitoring	23
12.9	Initial determination of mercury emissions	23
12.10	Periodic determination of mercury emissions	23
12.11	Measurement of Concentrate	24
12.12	Maintenance of Measurement Equipment.	24
12.13	Records of concentrate weights	24
12.14	Initial mercury limit compliance calculation	24
12.15	Periodic mercury limit compliance calculation	25
12.16	Semiannual deviation reports.	25
12.17	Reporting Malfunctions	25
12.18	Recordkeeping.	26
12.19	Record Retention.	26
12.20	Submission of Test Data.	26

1.0 Standard Conditions

1.1 Operation of source

In accordance with Administrative Rules of South Dakota (ARSD) 74:36:05:16.01(8), the owner or operator shall operate the units, controls, and processes as described in Table 1-1 in accordance with the statements, representations, and supporting data contained in the complete permit application received December 8, 2011 and January 20, 2015, unless modified by the conditions of this permit. Except as otherwise provided herein, the control equipment shall be operated at all times in accordance with the manufacturer's specification and in a manner that achieves compliance with the conditions of this permit. The application consists of the application forms, supporting data, and supplementary correspondence. If the owner or operator becomes aware it failed to submit any relevant facts in a permit application or submitted incorrect information in an application, such information shall be promptly submitted.

Table 1-1 – Description of Permitted Units, Operations, and Processes

Unit	Description	Maximum Operating Rate	Control Device
#5	1992 Tabor Machine Company, Model TI-140-M2, tertiary screen #1 (serial #3067)[a]	800 tons per hour	Operated inside a building equipped with a 1996 C&W baghouse[1]
	1988 Nordberg, Model Omnicone 1560, tertiary crusher #1 (serial #255)	460 tons per hour	
	1988 Tabor Machine Company, Model TI-140-M2, tertiary screen #2 (serial #2940)	235 tons per hour	
	1988 Nordberg, Model Omnicone 1560, tertiary crusher #2 (serial #254)	480 tons per hour	
	1988 Tabor Machine Company, Model TI-140-M2, tertiary screen #3 (serial #2941)	235 tons per hour	
	1985 Nordberg, Model Omnicone 1560, tertiary crusher #3 (serial #1560-142-M)	480 tons per hour	
	1988 Tabor Machine Company, Model TI-140-M2, tertiary screen #4 (serial #2942)	235 tons per hour	
	1988 Nordberg, Model Omnicone 1560, tertiary crusher #4 (serial #256)	480 tons per hour	
#7	1991 Kewanee Manufacturing Company, Model #L3SW250, natural gas or propane fired steam boiler.	10.5 million Btus per hour	Not applicable
#8	1988 Euclid Marathon Generator 573 RSL20 49A diesel fired generator	660 KW	Not applicable
#9	1989 Caterpillar 3516 Generator diesel fired generator	1,750 KW	Not applicable

[1] The baghouse does not operate under certain moisture and temperature conditions. During these conditions, the emissions are vented inside the building.

1.2 Duty to comply

In accordance with ARSD 74:36:05:16.01(12), the owner or operator shall comply with the conditions of this permit. An owner or operator who knowingly makes a false statement in any record or report or who falsifies, tampers with, or renders inaccurate, any monitoring device or method is in violation of this permit. A violation of any condition in this permit is grounds for enforcement, reopening this permit, permit termination, or denial of a permit renewal application. The owner or operator, in an enforcement action, cannot use the defense that it would have been necessary to cease or reduce the permitted activity to maintain compliance. The owner or operator shall provide any information requested by the Secretary to determine compliance or whether cause exists for reopening or terminating this permit.

1.3 Property rights or exclusive privileges

In accordance with ARSD 74:36:05:16.01(12), the State's issuance of this permit, adoption of design criteria, and approval of plans and specifications does not convey any property rights of any sort, any exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state or local laws or regulations, or any taking, condemnation or use of eminent domain against any property owned by third parties. The State does not warrant the owner's or operator's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state or local laws or regulations. The owner or operator is solely and severally liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state or local laws and regulations, or taking or condemnation of property owned by third parties, which may result from actions taken under the permit.

1.4 Penalty for violating a permit condition

In accordance with South Dakota Codified Laws (SDCL) 34A-1-39 and 34A-1-47, a violation of a permit condition may subject the owner or operator to civil or criminal prosecution, a state penalty of not more than $10,000 per day per violation, injunctive action, administrative permit action, and other remedies as provided by law.

1.5 Inspection and entry

In accordance with SDCL 34A-1-41, the owner or operator shall allow the Secretary, upon presentation of credentials, to:

1. Enter the premises where a regulated activity is located or where pertinent records are stored;
2. Have access to and copy any records required under this permit;
3. Inspect operations regulated under this permit; and/or
4. Sample or monitor any substances or parameters for the purpose of assuring compliance.

1.6 Severability

In accordance with ARSD 74:36:05:16.01(11), any portion of this permit that is void or challenged shall not affect the validity of the remaining permit requirements.

1.7 Permit termination, modification, or revocation

In accordance with ARSD 74:36:05:46, the Secretary may recommend the Board of Minerals and Environment terminate, modify, or revoke this permit for violations of SDCL 34A-1 or the federal Clean Air Act or for nonpayment of any outstanding fee or enforcement penalty.

1.8 Credible evidence

In accordance with ARSD 74:36:13:07, credible evidence may be used for the purpose of establishing whether the owner or operator has violated or is in violation of this permit. Credible evidence may consist of the following:

1. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred:
   a. A monitoring method approved pursuant to 40 CFR § 70.6(a)(3) and incorporated in this permit; or
   b. Compliance methods specified in an applicable plan;
2. The following testing, monitoring, or information gathering methods are presumptively credible testing, monitoring, or information-gathering methods:
   a. Any monitoring or testing methods approved in this permit, including those in 40 CFR Parts 51, 60, 61, and 75; or
   b. Other testing, monitoring, or information-gathering methods that produce information comparable to that produced by any method in paragraph (1) or (2)(a).

2.0 Permit Fees

2.1 Annual air fee required

In accordance with ARSD 74:36:05:06.01, the owner or operator shall submit an annual administrative fee and an annual fee. The fee is based on actual emissions in accordance with ARSD 74:37.

2.2 Annual operational report

In accordance with ARSD 74:37:01:06, the Secretary will supply the owner or operator with an annual operational report in January of each year. The owner or operator shall complete and submit the operational report to the Secretary by March 1 of each year. The responsible official shall sign the operational report in the presence of a notary public.

2.3 Annual air fee

In accordance with ARSD 74:37:01:08, the Secretary will notify the owner or operator of the required annual air emission fee and administrative fee by June 1 of each year. The fees shall accrue on July 1 and are payable to the Department of Revenue by July 31 of each year.

3.0 Permit Amendments and Modifications

3.1 Permit flexibility

In accordance with ARSD 74:36:05:30, the owner or operator shall have the flexibility to make changes to the source during the term of this permit. The owner or operator shall provide the Secretary written notice at least seven days in advance of the proposed change (NOTE: The Secretary will forward a copy of the written notice to EPA). The written notice shall include a brief description of the change, the date on which the change is to occur, any change in emissions, the proposed changes to the permit, and whether the requested revisions are for an administrative permit amendment, minor permit amendment, or permit modification.

The Secretary will notify the owner or operator whether the change is an administrative permit amendment, a minor permit amendment, or a permit modification. A proposed change that is considered an administrative permit amendment or a minor permit amendment can be completed immediately after the Secretary receives the written notification. The owner or operator must comply with both the applicable requirements governing the change and the proposed permit terms and conditions until the Secretary takes final action on the proposed change.

A proposed change that is considered a modification cannot be implemented until the Secretary takes final action on the proposed change or the owner or operator was issued an air quality construction permit. Permit modifications are subject to the same procedural requirements, including public comment, as the original permit issuance except that the required review shall cover only the proposed changes.

3.2 Administrative permit amendment

In accordance with ARSD 74:36:05:33, the Secretary has 60 days from receipt of a written notice to verify the proposed change is an administrative permit amendment. As provided in ARSD 74:36:01:03, the Secretary considers a proposed change an administrative permit amendment if the proposed change accomplishes one of the following:

1. Corrects typographical errors;
2. Changes the name, address, or phone number of any person identified in this permit or provides a similar minor administrative change;
3. Requires more frequent monitoring or reporting;
4. The ownership or operational control changes and the Secretary determines no other change in this permit is necessary. However, the new owner must submit a certification of applicant form and a written statement specifying the date for transfer of operating permit responsibility, coverage, and liability; or
5. Any other changes the Secretary and the administrator of EPA determines to be similar to those requirements in this condition.

3.3 Minor permit amendment

In accordance with ARSD 74:36:05:38, the Secretary has 90 days from receipt of a written notice or 15 days after the end of EPA's 45-day review period, whichever is later, to take final action on a minor permit amendment. Final action consists of issuing or denying a minor permit

amendment or determining the proposed change is a permit modification. As provided in ARSD 74:36:05:35, the Secretary considers a proposed change to be a minor permit amendment if the proposed change:

1. Does not violate any applicable requirements;
2. Does not involve significant changes to existing monitoring, reporting, or recordkeeping requirements;
3. Does not require or change a case-by-case determination of an emission limit or other standard, a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis; or
4. Does not seek to establish or change a permit term or condition for which the source has assumed to avoid an applicable requirement, a federally enforceable emission cap, or an alternative emission limit. An alternative emission limit is approved pursuant to regulations promulgated under section 112(i)(5) of the federal Clean Air Act.

3.4 Permit modification

In accordance with ARSD 74:36:05:39, an owner or operator may apply for a permit modification. A permit modification is defined in ARSD 74:36:01:10 as a physical change in or change in the operation of a source that results in at least one of the following:

1. An increase in the amount of an air pollutant emitted by the source or results in the emission of an air pollutant not previously emitted;
2. A significant change to existing monitoring, reporting, or recordkeeping requirements in the permit;
3. The change requires or changes a case-by-case determination of an emission limit or other standard, a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis; or
4. The change seeks to establish or change a permit term or condition for which there is a corresponding underlying applicable requirement that the source has assumed to avoid an applicable requirement, a federally enforceable emissions cap assumed to avoid classification as a modification under a provision of the Title I of the Clean Air Act, or an alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Clean Air Act.

Permit modifications are subject to the same procedural requirements, including public comment, as the original permit issuance except the required review shall cover only the proposed changes.

3.5 Permit revision

In accordance with ARSD 74:36:05:40, the Secretary may reopen and revise this permit to meet requirements of SDCL 34A-1 or the federal Clean Air Act. In accordance with ARSD 74:36:05:41, the Secretary shall notify the owner or operator at least 30 days before reopening this permit. The 30-day period may be less in the case of an emergency.

3.6 Testing new fuels or raw materials

In accordance with ARSD 74:36:11:04, an owner or operator may request permission to test a new fuel or raw material to determine if it is compatible with existing equipment before requesting a permit amendment or modification. A complete test proposal shall consist of the following:

1. A written proposal describing the new fuel or raw material, operating parameters, and parameters that will be monitored and any testing associated with air pollutant emissions during the test;
2. An estimate of the type and amount of regulated air pollutant emissions resulting from the proposed change; and
3. The proposed schedule for conducting the test. In most cases the owner or operator will be allowed to test for a maximum of one week. A request for a test period longer than one week will need additional justification. A test period shall not exceed 180 days.

The Secretary shall approve, conditionally approve, or deny in writing the test proposal within 45 days after receiving a complete proposal. Approval conditions may include changing the test schedule or pollutant sampling and analysis methods. Pollutant sampling and analysis methods may include, but are not limited to performance testing, visible emission evaluation, fuel analysis, dispersion modeling, and monitoring of raw material or fuel rates.

If the Secretary determines the proposed change will result in an increase in the emission of a regulated air pollutant or result in the emission of an additional regulated air pollutant, the Secretary shall give public notice of the proposed test for 30 days. The Secretary shall consider all comments received during the 30-day public comment period before making a final decision on the test.

The Secretary will not approve a test if the test would cause or contribute to a violation of a national ambient air quality standard.

4.0 Permit Renewal

4.1 Permit effective

In accordance with ARSD 74:36:05:07, this permit shall expire five years from date of issuance unless reopened or terminated for cause.

4.2 Permit renewal

In accordance with ARSD 74:36:05:08, the owner or operator shall submit an application for a permit renewal at least 180 days before the date of permit expiration if the owner or operator wishes to continue to operate an activity regulated by this permit. The current permit shall not expire and shall remain in effect until the Secretary takes final action on the timely permit renewal application.

4.3 Permit expiration

In accordance with ARSD 74:36:05:28, permit expiration terminates the owner's or operator's right to operate any unit covered by this permit.

5.0 Recordkeeping and Reporting

5.1 Recordkeeping and reporting

In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall maintain all monitoring data, records, reports, and pertinent information specified by this permit for five years from the date of sample, measurement, report, or application unless otherwise specified in this permit. The records shall be maintained on site for the first two years and may be maintained off site for the last three years. All records must be made available to the Secretary for inspection. All notifications and reports shall be submitted to the following address:

South Dakota Department of Environment and Natural Resources
PMB 2020, Air Quality Program
523 E. Capitol, Joe Foss Building
Pierre, SD 57501-3182

5.2 Signatory requirements

In accordance with ARSD 74:36:05:12 and ARSD 74:36:05:16.01, all applications submitted to the Secretary shall be signed and certified by a responsible official. A responsible official for a corporation is a responsible corporate officer and for a partnership or sole proprietorship is a general partner or the proprietor, respectively. All reports or other information submitted to the Secretary shall be signed and certified by a responsible official or a duly authorized representative. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the Secretary; and
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

The responsible official shall notify the Secretary if an authorization is no longer accurate. The new duly authorized representative must be designated prior to or together with any reports or information to be signed by a duly authorized representative.

5.3 Certification statement

In accordance with ARSD 74:36:05:16.01(14)(a), all documents required by this permit, including application forms, reports, and compliance certification, must be certified by a responsible official or a duly authorized representative. The certification shall include the following statement:

"I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this document and all attachments are true, accurate, and complete."

5.4 Monitoring log

In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall maintain a monitoring log. The monitoring log shall contain the following information.

1. Maintenance schedule for each piece of control equipment listed in Table 1-1. At a minimum, the maintenance schedule shall meet the manufacturer's recommended schedule for maintenance. The following information shall be recorded for maintenance:
   a. Identify the unit;
   b. The date and time maintenance was performed;
   c. Description of the type of maintenance;
   d. Reason for performing maintenance; and
   e. Signature of person performing maintenance;
2. The following information shall be recorded for each visible emission reading required in permit condition 8.1:
   a. Identify the unit and if it operates on a monthly, quarterly, semiannual, or annual basis;
   b. The date and time the visible emission reading was performed;
   c. If visible emissions were observed;
   d. Description of maintenance performed to eliminate visible emissions exceeding the applicable standard;
   e. Visible emission evaluation if visible emissions are not eliminated; and
   f. Signature of person performing visible emission reading and/or visible emission evaluation; and
3. The following information shall be recorded within two days of each emergency exceedance:
   a. The date of the emergency exceedance and the date the emergency exceedance was reported to the Secretary;
   b. The cause(s) of the emergency;
   c. The reasonable steps taken to minimize the emissions during the emergency; and
   d. A statement the permitted equipment was at the time being properly operated.

5.5 Annual compliance certification

In accordance with ARSD 74:36:05:16.01(14), the owner or operator shall submit an annual compliance certification letter to the Secretary by March 1 of each year this permit is in effect (NOTE: The Secretary will forward a copy of the certification letter to EPA). The certification shall contain the following information:

1. Methods used to determine compliance, including: monitoring, recordkeeping, performance testing and reporting requirements;
2. The source is in compliance and will continue to demonstrate compliance with all applicable requirements;

3. In the event the source is in noncompliance, a compliance plan that indicates how the source has or will be brought into compliance; and
4. Certification statement required in permit condition 5.3.

5.6 Reporting permit violations

In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall report all permit violations. A permit violation should be reported as soon as possible, but no later than the first business day following the day the violation was discovered. The permit violation may be reported by telephone to the South Dakota Department of Environment and Natural Resources at (605) 773-3151 or by FAX at (605) 773-4068.

A written report shall be submitted within five days of discovering the permit violation. Upon prior approval from the Secretary, the submittal deadline for the written report may be extended up to 30 days. The written report shall contain:

1. A description of the permit violation and its cause(s);
2. The duration of the permit violation, including exact dates and times; and
3. The steps taken or planned to reduce, eliminate, and prevent reoccurrence of the permit violation.

6.0 Control of Regulated Air Pollutants

6.1 Visibility limit

In accordance with ARSD 74:36:12:01, the owner or operator may not discharge into the ambient air an air contaminant of a density equal to or greater than that designated as 20 percent opacity from any permitted unit, operation, or process listed in Table 1-1, unless otherwise specified in this permit. This provision does not apply when the presence of uncombined water is the only reason for failure to meet the requirement.

6.2 Visibility exceedances

In accordance with ARSD 74:36:12:02, an exceedance of the opacity limit in permit condition 6.1 is not considered a violation during brief periods of soot blowing, start-up, shutdown, or malfunctions. Malfunction means any sudden and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. A failure caused entirely or in part by poor maintenance, careless operation, preventable equipment breakdown, or any other cause within the control of the owner or operator is not a malfunction and is considered a violation.

6.3 Total suspended particulate matter limits

In accordance with ARSD 74:36:06:02(1), the owner or operator shall not allow the emission of total suspended particulate matter in excess of the emission limit specified in Table 6-1 for the appropriate permitted unit, operation, and process.

Table 6-1 – Total Suspended Particulate Matter Emission Limit

Unit	Description	Emission Limit
#7	1991 Kewanee boiler.	0.6 pounds per million Btus
#8	1988 Euclid Marathon Generator	0.6 pounds per million Btus
#9	1989 Caterpillar 3516 Generator	0.6 pounds per million Btus

6.4 Sulfur dioxide limits

In accordance with ARSD 74:36:06:02(1), the owner or operator shall not allow the emission of sulfur dioxide in excess of the emission limit specified in Table 6-2 for the appropriate permitted unit, operations, and process.

Table 6-2 – Sulfur Dioxide Emission Limit

Unit	Description	Emission Limit
#7	1991 Kewanee boiler.	3.0 pounds per million Btu heat input
#8	1988 Euclid Marathon Generator	3.0 pounds per million Btu heat input
#9	1989 Caterpillar 3516 Generator	3.0 pounds per million Btu heat input

Compliance with the sulfur dioxide emission limit is based on a three-hour rolling average, which is the arithmetic average of three contiguous one-hour periods.

6.5 Air emission exceedances – emergency conditions

In accordance with ARSD 74:36:05:16.01(18), the Secretary will allow for an unavoidable emission exceedance of a technology-based emission limit if the exceedance is caused by an emergency condition and immediate action is taken by the owner or operator to restore the operations back to normal. An emergency condition is a situation arising from a sudden and reasonably unforeseeable event beyond the control of the owner or operator, including acts of God. An emergency shall not include an emission exceedance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error. The owner or operator shall notify the Secretary within two working days of the incident and take all steps possible to eliminate the excess emissions. The notification must provide a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. If the notification is submitted orally, a written report summarizing the information required by the notification shall be submitted and postmarked within 30 days of the oral notification

6.6 Circumvention not allowed

In accordance with ARSD 74:36:08:03, as referenced to 40 CFR § 63.4(b), no owner or operator shall build, erect, install, or use any article, machine, equipment, or process to conceal an emission that would otherwise constitute noncompliance with a relevant standard. Such concealment includes, but is not limited to the use of diluents to achieve compliance with a relevant standard based on the concentration of a pollutant in the effluent discharged to the atmosphere.

6.7 Minimizing emissions

In accordance with ARSD 74:36:08:03, as referenced to 40 CFR § 63.6(e)(1)(i), the owner or operator shall at all times, including periods of startup, shutdown, and malfunction, operate and maintain any permitted unit, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires the owner or operator to reduce emissions from the permitted unit to the greatest extent which is consistent with safety and good air pollution control practices. The general duty to minimize emissions during a period of startup, shutdown, or malfunction does not require the owner or operator to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Secretary which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including a startup, shutdown, and malfunction plan, if required), review of operation and maintenance records, and inspection of the operation.

7.0 Performance Tests

7.1 Performance test may be required

In accordance with ARSD 74:36:11:02, the Secretary may request a performance test during the term of this permit. A performance test shall be conducted while operating the unit at or greater than 90 percent of its maximum design capacity, unless otherwise specified by the Secretary. A performance test conducted while operating less than 90 percent of its maximum design capacity will result in the operation being limited to the percent achieved during the performance test. The Secretary has the discretion to extend the deadline for completion of performance test required by the Secretary if circumstances reasonably warrant but will not extend the deadline past a federally required performance test deadline.

7.2 Test methods and procedures

In accordance with ARSD 74:36:11:01, the owner or operator shall conduct the performance test in accordance with 40 CFR Part 60, Appendix A, 40 CFR Part 63, Appendix A, and 40 CFR Part 51, Appendix M. The Secretary may approve an alternative method if a performance test specified in 40 CFR Part 60, Appendix A, 40 CFR Part 63, Appendix A, and 40 CFR Part 51, Appendix M is not federally applicable or federally required.

7.3 Representative performance test

In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.8(c), performance tests shall be conducted under such conditions as the Secretary shall specify to the owner or operator based on the representative performance of the unit being tested. The owner or operator shall make available to the Secretary such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the

level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in this permit.

7.4 Submittal of test plan

In accordance with ARSD 74:36:11:01, the owner or operator shall submit the proposed testing procedures to the Secretary at least 30 days prior to any performance test. The Secretary will notify the owner or operator if the proposed test procedures are approved or denied. If the proposed test procedures are denied, the Secretary will provide written notification outlining what needs to be completed for approval.

7.5 Notification of test

In accordance with ARSD 74:36:11:03, the owner or operator shall notify the Secretary at least 10 days prior to the start of a performance test to arrange for an agreeable test date when the Secretary may observe the test. The Secretary may extend the deadline for the performance test in order to accommodate schedules in arranging an agreeable test date.

7.6 Performance test report

In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall submit a performance test report to the Secretary within 60 days after completing the performance test or by a date designated by the Secretary. The performance test report shall contain the following information:

1. A brief description of the process and the air pollution control system being tested;
2. Sampling location description(s);
3. A description of sampling and analytical procedures and any modifications to standard procedures;
4. Test results represented in the same terminology as the permit limits;
5. Quality assurance procedures and results;
6. Records of operating conditions during the test necessary for demonstrating compliance with the permit limits, preparation of standards, and calibration procedures;
7. Raw data sheets for field sampling and field and laboratory analyses;
8. Documentation of calculations;
9. All data recorded and used to establish parameters for compliance monitoring; and
10. Any other information required by the test method.

8.0 Monitoring

8.1 Periodic opacity monitoring for units operating on a monthly or more frequent basis

In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall demonstrate compliance with the opacity limits in Chapter 6.0 on a periodic basis for the units identified in the monthly log required in permit condition 5.4 that operate on a monthly or more frequent basis. Periodic monitoring for units that operate on a monthly or more frequent basis shall be based on the following steps:

Step 1: Periodic monitoring shall consist of a visible emission reading. A visible emission reading shall consist of a visual survey of each unit over a two-minute period to identify if there are visible emissions. The visible emission reading must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions. Visible emission readings shall be based on the following frequency:

a. The owner or operator shall conduct a visible emission reading once per calendar month;
b. If no visible emissions are observed from a unit in six consecutive monthly visible emission readings, the owner or operator may decrease the frequency of readings from monthly to semiannually for that unit; and
c. If no visible emissions are observed from a unit in two consecutive semiannual visible emission readings, the owner or operator may decrease the frequency of testing of readings from semiannually to annually for that unit.

Step 2: If visible emissions are observed from a unit at any time other than periods of startup, shutdown, or malfunction, periodic monitoring shall consist of a visible emission test to determine if the unit is in compliance with the opacity limit specified in Chapter 6.0. The visible emission test shall be for at least six minutes and conducted in accordance with 40 CFR Part 60, Appendix A, Method 9. The visible emission test must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions. Visible emission tests shall be based on the following frequency:

a. The visible emission test must be conducted within one hour of witnessing a visible emission from a unit;
b. If the visible emission test required in Step 2(a) results in an opacity value less than or equal to 50 percent of the opacity limit for the unit, the owner or operator shall perform a visible emission test once per month;
c. If the opacity value of a visible emission test in Step 2(b) is less than five percent for three straight monthly tests, the owner or operator may revert back to monthly visible emission readings as required in Step 1;
d. If the visible emission test required in Step 2(a) results in an opacity value greater than 50 percent of the opacity limit but less than the opacity limit, the owner or operator shall perform a visible emission test once per week; or
e. If the visible emission test in Step 2(d) results in an opacity value less than or equal to 50 percent of the opacity limit for four straight weekly readings, the owner or operator may revert back to a monthly visible emission test as required in Step 2(b).

The person conducting the visible emission reading does not have to be certified in accordance with 40 CFR Part 60, Appendix A, Method 9. The person conducting the visible emission test must be certified in accordance with 40 CFR Part 60, Appendix A, Method 9. If a visible emission test is required before a person is certified in accordance with permit condition 8.3, the owner or operator shall notify the Secretary within 24 hours of observing the visible emissions to schedule a visible emission test performed by a state inspector.

8.2 Monitoring opacity limits for units operating periodically

In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall demonstrate compliance with the opacity limits in Chapter 6.0 for the units identified in the monthly log required in permit condition 5.4 that operate on a quarterly, semiannual, or annual basis. Periodic monitoring shall be based on the following steps:

Step 1: For units that operate on a quarterly basis, monitoring shall consist of the following:

a. Monitoring shall consist of a visible emission reading once per quarter. A visible emission reading shall consist of a visual survey of the unit over a two-minute period to identify if there are visible emissions. The visible emission reading must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions; or
b. If visible emissions are observed from a unit at any time other than periods of startup, shutdown, or malfunction, the owner or operator shall conduct a visible emission test on that unit to determine if the unit is in compliance with the opacity limit specified in Chapter 6.0. The visible emission test must be conducted within one hour of witnessing a visible emission from the unit. The visible emission test shall be for at least six minutes and conducted in accordance with 40 CFR Part 60, Appendix A, Method 9. The visible emission test must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions.

Step 2: For units that operate on a semiannual or annual basis, monitoring shall consist of the following:

a. Monitoring shall consist of a visible emission reading once per year. A visible emission reading shall consist of a visual survey of the unit over a two-minute period to identify if there are visible emissions. The visible emission reading must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions;
b. If visible emissions are observed from a unit at any time other than periods of startup, shutdown, or malfunction, the owner or operator shall conduct a visible emission test on that unit to determine if the unit is in compliance with the opacity limit specified in Chapter 6.0. The visible emission test must be conducted within one hour of witnessing a visible emission from the unit. The visible emission test shall be for at least six minutes and conducted in accordance with 40 CFR Part 60, Appendix A, Method 9. The visible emission test must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions.

The person conducting the visible emission reading does not have to be certified in accordance with 40 CFR Part 60, Appendix A, Method 9. The person conducting the visible emission test must be certified in accordance with 40 CFR Part 60, Appendix A, Method 9. If a visible emission test is required before a person is certified in accordance with permit condition 8.3, the owner or operator shall notify the Secretary within 24 hours of observing the visible emissions to schedule a visible emission test performed by a state inspector.

8.3 Certified personnel – visible emission tests

In accordance with ARSD 74:36:13:07, within 180 days after permit issuance the owner or operator shall retain a person that is certified to perform a visible emission test in accordance with 40 CFR Part 60, Appendix A, Method 9. The owner or operator shall retain a certified person throughout the remaining term of this permit.

8.4 Monitoring sulfur content of distillate oil

In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall obtain a fuel supplier certification for each load of distillate oil (diesel) purchased or received. The fuel supplier certification shall include the following information:

1. The name of the oil supplier;
2. A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil (diesel). Distillate oil (diesel) means fuel oil that complies with the specifications for fuel oil numbers 1 or 2. Residual oil means crude oil and is fuel oil that does not comply with the specifications under the definition of distillate oil and includes all fuel oil numbers 4, 5, and 6. Specifications for fuel oils are defined in the American Society for Testing and Materials in ASTM D396-78, "Standards Specifications for Fuel Oils"; and
3. A statement that the sulfur content of the oil does not exceed 0.5 weight percent sulfur.

In the case where a fuel supplier certification is not obtained, the owner or operator shall collect a grab sample from the storage tank within 30 days of receiving the shipment of distillate oil (diesel) but before another load is transferred into the storage tank. The grab sample shall be analyzed to determine the sulfur content of the distillate oil (diesel) in the storage tank. A copy of the results of the analysis shall be submitted with the quarterly report required in permit condition 5.5.

9.0 BOILER NSPS REQUIREMENTS

9.1 Recordkeeping requirements for boiler

In accordance with ARSD 74:36:07:05, as referenced to 40 CFR § 60.48c(g)(2) and (i), the owner or operator shall maintain the following records:

1. Records of the amount of each fuel combusted in Unit #7 during each calendar month.

All records shall be maintained for a period of two years following the date of such record.

9.2 Changing boiler fuel

In accordance with ARSD 74:36:07:05, as referenced to 40 CFR § 60.40c, Unit #7 shall be fired with natural gas or propane. If Unit #7 is fueled with other fuels such as coal, other oil, or wood, additional standards and requirements in 40 CFR Part 60, Subpart Dc may apply. The owner or operator shall apply for and obtain approval from the Secretary before other fuels can be used as a fuel in Unit #7.

10.0 CRUSHER NSPS REQUIREMENTS

10.1 Standard for particulate matter.

In accordance with ARSD 74:36:07:20, as reference to 40 CFR§ 60.382 (a) and (b), the owner or operator shall cause to be discharged into the atmosphere from an affected facility any stack emissions that:

1. Contain particulate matter in excess of 0.05 grams per dry standard cubic meter (0.02 g/dscm); and
2. Exhibit greater than 7 percent opacity, unless the stack emissions are discharged from an affected facility using a wet scrubbing emission control device.

On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from an affected facility any process fugitive emissions that exhibit greater than 10 percent opacity.

10.2 Monitoring of operations.

In accordance with ARSD 74:36:07:20 as referenced to 40 CFR§ 60.384 (a) and (b), the owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device for the continuous measurement of the change in pressure of the gas stream through the scrubber for any permitted unit using a wet scrubbing emission control device. The monitoring device must be certified by the manufacturer to be accurate within ±250 pascals (±1 inch water) gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions.

The owner or operator shall install, calibrate, maintain, and operate a monitoring device for the continuous measurement of the scrubbing liquid flow rate to a wet scrubber for any affected facility using any type of wet scrubbing emission control device. The monitoring device must be certified by the manufacturer to be accurate within ±5 percent of design scrubbing liquid flow rate and must be calibrated on at least an annual basis in accordance with manufacturer's instructions.

10.3 Recordkeeping and reporting requirements.

In accordance with ARSD 74:36:07:20 as referenced to 40 CFR§ 60.385 (a) to (e) the owner or operator shall conduct a performance test and submit to the Secretary a written report of the results of the test as specified in §60.8(a).

1. During the initial performance test of a wet scrubber, and at least weekly thereafter, the owner or operator shall record the measurements of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate.
2. After the initial performance test of a wet scrubber, the owner or operator shall submit semiannual reports to the Secretary of occurrences when the measurements of the scrubber pressure loss (or gain) or liquid flow rate differ by more than ±30 percent from the average obtained during the most recent performance test.

3. The reports required under paragraph (2) shall be postmarked within 30 days following the end of the second and fourth calendar quarters.

10.4 Test methods and procedures.

In accordance with ARSD 74:36:07:20 as referenced to 40 CFR§ 60.386 (a) to (c), the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

The owner or operator shall determine compliance with the particulate matter standards in permit condition 10.1 as follows:

1. Method 5 or 17 shall be used to determine the particulate matter concentration. The sample volume for each run shall be at least 1.70 dscm (60 dscf). The sampling probe and filter holder of Method 5 may be operated without heaters if the gas stream being sampled is at ambient temperature. For gas streams above ambient temperature, the Method 5 sampling train shall be operated with a probe and filter temperature slightly above the effluent temperature (up to a maximum filter temperature of 121 °C (250 °F)) in order to prevent water condensation on the filter.
2. Method 9 and the procedures in §60.11 shall be used to determine opacity from stack emissions and process fugitive emissions. The observer shall read opacity only when emissions are clearly identified as emanating solely from the affected facility being observed.

To comply with permit condition 10.1, the owner or operator shall use the monitoring devices in permit condition 10.2 to determine the pressure loss of the gas stream through the scrubber and scrubbing liquid flow rate at any time during each particulate matter run, and the average of the three determinations shall be computed.

11.0 EMERGENCY GENERATOR MACT REQUIREMENTS

11.1 Date to comply with emergency generator requirements

In accordance with ARSD 74:36:08:40, as referenced to 40 CFR § 63.6595(a)(1), the owner or operator shall comply with the applicable requirements specified in this chapter on and after May 3, 2013.

11.2 Maintenance requirements for emergency generator

In accordance with ARSD 74:36:08:40, as referenced to 40 CFR § 63.6603(a), the owner or operator shall:

1. Change oil and oil filter every 500 hours of operation or annually, whichever comes first;
2. Inspect air cleaner every 1,000 hours or operation, or annually, whichever comes first; and
3. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

If an emergency generator is operating during an emergency and it is not possible to shut down the engine in order to perform the maintenance requirements on the schedule or if performing the maintenance requirements on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the maintenance requirements can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The maintenance requirements should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. The owner or operator must report any failure to perform the maintenance requirements on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable.

11.3 Minimizing emissions from emergency generator

In accordance with ARSD 74:36:08:40, as referenced to 40 CFR § 63.6605, the owner or operator shall be in compliance with the requirements in this chapter at all times. The owner or operator shall at all times operate and maintain the emergency generator, including associated monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the owner or operator to make any further efforts to reduce emissions if the requirements in this chapter have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on available information which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the emergency generator.

11.4 Operate emergency generator according to manufacturer's instructions

In accordance with ARSD 74:36:08:40, as referenced to 40 CFR §§ 63.6625(e) and 63.6640(a), the owner or operator shall operate and maintain the emergency generator according to the manufacturer's emission-related written instructions or develop a maintenance plan which provides to the extent practicable for the maintenance and operation of the emergency generator in a manner consistent with good air pollution control practice for minimizing emissions.

11.5 Installation and operation of a non-resettable hour meter

In accordance with ARSD 74:36:08:40, as referenced to 40 CFR §§ 63.6625(f) and 63.6635(a) and (b), the owner or operator shall install, operate, and maintain a non-resettable hour meter on the emergency generator. Except for a non-resettable hour meter malfunction and associated repairs, the non-resettable hour meter must monitor the operation of the emergency generator continuously at all times the emergency generator is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the non-resettable hour meter. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

11.6 Minimizing startup time.

In accordance with ARSD 74:36:08:40, as referenced to 40 CFR § 63.6625(h), the owner or operator shall minimize the emergency generator's time spent at idle during startup and minimize the emergency generator's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

11.7 Alternative maintenance schedule

In accordance with ARSD 74:36:08:40, as referenced to 40 CFR § 63.6625(i), the owner or operator may utilize an oil analysis program in order to extend the specified oil change requirement in permit condition 11.2. The oil analysis must be performed at the same frequency specified for changing the oil in permit condition 11.2. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows:

1. Total Base Number is less than 30 percent of the Total Base Number of the oil when new;
2. Viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or
3. Percent water content (by volume) is greater than 0.5.

If all of these condemning limits are not exceeded, the owner or operator is not required to change the emergency generator's oil. If any of the limits are exceeded, the owner or operator must change the emergency generator's oil within 2 days of receiving the results of the analysis. If the engine is not in operation when the results of the analysis are received, the owner or operator must change the emergency generator's oil within 2 days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

11.8 Operation of emergency generator

In accordance with ARSD 74:36:08:40, as referenced to 40 CFR § 63.6640(f), the owner or operator shall operate the emergency generator according to the following requirements:

1. There is no time limit on the use of emergency generator in emergency situations;
2. The owner or operator may operate the emergency generator for the purpose of maintenance checks and readiness testing, provided the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the emergency generator. Maintenance checks and readiness testing of the emergency generator is limited to 100 hours per year. The owner or operator may petition the Secretary for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating Federal, State, or local standards require maintenance and testing of the emergency generator beyond 100 hours per year; and
3. The owner or operator may operate the emergency generator up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity; except the owner and operator may operate the emergency generator for a maximum of 15 hours per year as part of a demand response program if the regional

transmission organization or equivalent balancing authority and transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level. The emergency generator may not be operated for more than 30 minutes prior to the time when the emergency condition is expected to occur, and the emergency generator operation must be terminated immediately after the owner or operator is notified the emergency condition is no longer imminent. The 15 hours per year of demand response operation are counted as part of the 50 hours of operation per year provided for non-emergency situations. The supply of emergency power to another entity or entities pursuant to financial arrangement is not limited by this paragraph, as long as the power provided by the financial arrangement is limited to emergency power.

Any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (1) through (3) of this permit condition, is prohibited. If the owner or operator does not operate the engine according to the requirements in this permit condition, the emergency generator will no longer be considered an emergency generator and will need to meet all applicable requirements for non-emergency generator in 40 CFR §§ 63.6580 through 63.6675, inclusive.

11.9 Recordkeeping for emergency generator

In accordance with ARSD 74:36:08:40, as referenced to 40 CFR §§ 63.6655 and 63.6660, the owner or operator shall maintain the following records:

1. Records of all required maintenance performed on the emergency generator to demonstrate compliance with permit condition 11.2 or 11.7;
2. Records of all required maintenance performed on the non-resettable hour meter;
3. Records of hours of operation identifying the reason for operation of the emergency generator to demonstrate compliance with permit condition 11.6 and 11.8; and
4. Records of how the owner or operator complied with operating the emergency generator according to the manufacturer's emission-related instruction or the owner or operator's maintenance plan required in permit condition 11.4.

All records shall be maintained in a form suitable and readily available for expeditious review for 5 years following the date of each occurrence, measurement, maintenance, report or record. At a minimum, the most recent 2 years of data shall be retained on site. The remaining 3 years of data may be retained off site.

12.0 GOLD MINE ORE PROCESSING

12.1 Date to comply with gold ore processing requirements

In accordance with ARSD 74:36:08, as referenced to 40 CFR § 63.11641(a), the owner or operator shall comply with the applicable requirements specified in this chapter on and after February 17, 2014.

12.2 Mercury emission standards for gold ore processes

In accordance with ARSD 74:36:08, as referenced to 40 CFR § 63.11645(b), the owner or operator shall not emit more than 2.2 pounds of mercury per ton of concentrate processed. The limit applies at all times.

12.3 Mercury compliance emission tests

In accordance with ARSD 74:36:08, as referenced to 40 CFR § 63.11646(a), the owner or operator must conduct a mercury compliance emission test within 180 days of the compliance date for all processes in accordance with permit conditions 12.4 through 12.15. Additional compliance tests must be conducted annually, thereafter, with no two consecutive annual compliance tests occurring less than 3 months apart or more than 15 months apart.

12.4 Mercury test methods

In accordance with ARSD 74:36:08, as referenced to 40 CFR § 63.11646(a)(1), the owner or operator must determine the concentration of mercury and the volumetric flow rate of the stack gas according to the following test methods and procedures:

1. Method 1 or 1A (40 CFR part 60, appendix A–1) to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) and prior to any releases to the atmosphere;
2. Method 2, 2A, 2C, 2D, 2F (40 CFR part 60, appendix A–1), or Method 2G (40 CFR part 60, appendix A–2) to determine the volumetric flow rate of the stack gas;
3. Method 3, 3A, or 3B (40 CFR part 60, appendix A–2) to determine the dry molecular weight of the stack gas. ANSI/ASME PTC 19.10, “Flue and Exhaust Gas Analyses” (incorporated by reference-see §63.14) as an alternative to EPA Method 3B may be used;
4. Method 4 (40 CFR part 60, appendix A–3) to determine the moisture content of the stack gas;
5. Method 29 (40 CFR part 60, appendix A–8) to determine the concentration of mercury, except as provided in permit condition 12.4 (6) and (7);
6. Upon approval by the secretary, ASTM D6784; “Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method)” may be used as an alternative to Method 29 to determine the concentration of mercury; and
7. Upon approval by the Secretary, Method 30B (40 CFR part 60, appendix A–8) may be used as an alternative to Method 29 to determine the concentration of mercury for those process units with relatively low particulate-bound mercury as specified in Section 1.2 of Method 30B.

12.5 Test length and sample volume of emission test

In accordance with ARSD 74:36:08, as referenced to 40 CFR § 63.11646(a)(2) a minimum of three test runs must be conducted for each performance test of each process unit. Each test run conducted with Method 29 must collect a minimum sample volume of 0.85 dry standard cubic meters (30 dry standard cubic feet). If conducted with Method 30B or ASTM D6784, determine sample time and volume according to the testing criteria set forth in the relevant method. If the emission testing results for any of the emission points yields a non-detect value, then the minimum detection limit (MDL) must be used to calculate the mass emissions rate (pounds per hour) used to calculate the emissions factor (pounds per ton) for that emission point and, in turn, for calculating the sum of the emissions (in units of pounds of mercury per ton of concentrate, or pounds of mercury per million tons of ore) for all emission points subject to the emission standard for determining compliance. If the resulting mercury emissions are greater than the MACT emission standard, the owner or operator may use procedures that produce lower MDL results and repeat the mercury emissions testing one additional time for any emission point for which the measured result was below the MDL. If this additional testing is performed, the results from that testing must be used to determine compliance (*i.e.*, there are no additional opportunities allowed to lower the MDL).

12.6 Representative operating conditions for emission test

In accordance with ARSD 74:36:08, as referenced to the requirements of 40 CFR § 63.11646(a)(3), performance tests shall be conducted under such conditions as the Secretary specifies to the owner or operator based on representative performance of the affected source for the period being tested. Upon request, the owner or operator shall make available to the Secretary such records as may be necessary to determine the conditions of performance tests. Performance tests must be conducted under operating conditions (including process or production throughputs) that are based on representative performance. Record and report to the permit authority the process throughput for each test run. For sources with multiple emission units (*e.g.*, two roasters, or a furnace, electrowinning circuit and a mercury retort) ducted to a common control device and stack, compliance testing must be performed either by conducting a single compliance test with all affected emissions units in operation or by conducting a separate compliance test on each emissions unit. Alternatively, the owner or operator may request approval from the permit authority for an alternative testing approach. If the units are tested separately, any emissions unit that is not tested initially must be tested as soon as is practicable. If the performance test is conducted when all affected units are operating, then the number of hours of operation used for calculating emissions pursuant to permit condition 12.9 and 12.10, must be the total number of hours for the unit that has the greatest total operating hours for that period of time, or based on an appropriate alternative method approved by the permit authority to account for the hours of operation for each separate unit in these calculations.

12.7 Calculation of mercury emission rate

In accordance with ARSD 74:36:08, as referenced to the requirements of 40 CFR § 63.11646(a)(4), calculate the mercury emission rate (pounds per hour), based on the average of 3 test run values, for each process unit (or combination of units that are ducted to a common stack

and are tested when all affected sources are operating pursuant to permit condition 12.6 using Equation 12-1:

Equation 12-1
E = Cs x Qs x K

Where:

E = mercury emissions in lb/hr;
Cs = concentration of mercury in the stack gas, in grains per dry standard cubic foot (gr/dscf);
Qs = volumetric flow rate of the stack gas, in dry standard cubic feet per hour; and
K = conversion factor for grains (gr) to pounds (lb), 1.43 × 10-4.

12.8 Monthly monitoring

In accordance with ARSD 74:36:08, as referenced to the requirements of 40 CFR § 63.11646(a)(5), the owner or operator shall monitor and record the number of one-hour periods each process unit operates during each month.

12.9 Initial determination of mercury emissions

In accordance with ARSD 74:36:08, as referenced to the requirements of 40 CFR § 63.11646(a)(6), for the initial compliance determination, determine the total mercury emissions for all the full calendar months between the compliance date and the date of the initial compliance test by multiplying the emission rate in pounds per hour for each process unit (or combination of units ducted to a common stack that are tested together) by the number of one-hour periods each process unit (or the unit that had the greatest total operating hours among the combination of multiple units with one stack that are tested together, or an alternative method approved by the permit authority, pursuant to permit condition 12.6 operated during those full calendar months prior to the initial compliance test. This initial period must include at least 1 full month of operations. After the initial compliance test, for subsequent compliance tests, determine the mercury mass emissions for the 12 full calendar months prior to the compliance test in accordance with the procedures in permit condition 12.10. The owner or operator may use a previous emission test for their initial compliance determination in lieu of conducting a new test if the test was conducted within one year of the compliance date using the methods specified in permit conditions 12.4 through 12.7, and the tests were representative of current operating processes and conditions. If a previous test is used for their initial compliance determination, 3 to 12 full months of data on hours of operation and production (*i.e.,* million tons of ore or tons of concentrate), including the month the test was conducted, must be used to calculate the emissions rate (in units of pounds of mercury per million tons of ore for the ore pretreatment affected sources, or in units of pounds of mercury per tons of concentrate for the other affected sources).

12.10 Periodic determination of mercury emissions

In accordance with ARSD 74:36:08, as referenced to the requirements of 40 CFR § 63.11646(a)(7), for compliance determinations following the initial compliance test, the owner or operator shall determine the total mercury mass emissions for each process unit for the 12 full

calendar months preceding the performance test by multiplying the emission rate in pounds per hour for each process unit (or combination of units ducted to a common stack that are tested together) by the number of one-hour periods each process unit (or the unit that had the greatest total operating hours among the combination of multiple units with one stack that are tested together, or an alternative method approved by the permit authority, pursuant to permit condition 12.6 operated during the 12 full calendar months preceding the completion of the performance tests.

12.11 Measurement of Concentrate

In accordance with ARSD 74:36:08, as referenced to the requirements of 40 CFR § 63.11646(a)(9), the owner or operator shall measure the weight of concentrate (produced by electrowinning, Merrill Crowe process, gravity feed, or other methods) using weigh scales for each batch prior to processing in mercury retorts or melt furnaces. For facilities with mercury retorts, the concentrate must be weighed in the same state and condition as it is when fed to the mercury retort. You must keep accurate records of the weights of each batch of concentrate processed and calculate, and record the total weight of concentrate processed each month.

12.12 Maintenance of Measurement Equipment.

In accordance with ARSD 74:36:08, as referenced to the requirements of 40 CFR § 63.11646(a)(10), the owner or operator must maintain the systems for measuring density, volumetric flow rate, and weight within ± 5 percent accuracy. The owner or operator must describe the specific equipment used to make measurements at the facility and how that equipment is periodically calibrated. The owner or operator must also explain, document, and maintain written procedures for determining the accuracy of the measurements and make these written procedures available to the Secretary upon request. The owner or operator must determine, record, and maintain a record of the accuracy of the measuring systems before the beginning of the initial compliance test and during each subsequent quarter of affected source operation.

12.13 Records of concentrate weights

In accordance with ARSD 74:36:08, as referenced to the requirements of 40 CFR § 63.11646(a)(11), the owner or operator shall record the weight in tons on a daily and monthly basis.

12.14 Initial mercury limit compliance calculation

In accordance with ARSD 74:36:08, as referenced to the requirements of 40 CFR § 63.11646(a)(12), the owner or operator shall calculate the emissions for the sum of all full months between the compliance date and the date of the initial compliance test in pounds of mercury per ton of process input using the following procedures to determine initial compliance with the emission standards in permit condition 12.2. This must include at least 1 full month of data. Or, if a previous test is used pursuant to permit condition 12.9 for the initial compliance test, use a period of time pursuant to permit condition 12.9 to calculate the emissions. After this initial compliance test period, determine annual compliance using the procedures in permit condition 12.15.

The owner or operator shall divide the sum of mercury mass emissions (in pounds) from all carbon kilns, preg tanks, electrowinning, mercury retorts, and melt furnaces during the initial number of full months between the compliance date and the initial compliance tests by the total amount of concentrate (in tons) processed in these process units during those same full months following the compliance date. If a previous test is used to determine initial compliance, pursuant to permit condition 12.9, then the same 3 to 12 full months of production data (*i.e.*, tons of concentrate) and hours of operation referred to in permit condition 12.9, must be used to determine the emissions in pounds of mercury per tons of concentrate.

12.15 Periodic mercury limit compliance calculation

In accordance with ARSD 74:36:08, as referenced to the requirements of 40 CFR § 63.11646(a)(13), the owner or operator shall, after the initial compliance test, calculate the emissions for each 12-month period preceding each subsequent compliance test in pounds of mercury per ton of process input using the following procedures to determine compliance with the emission standards in permit condition 12.2.

The owner or operator shall divide the sum of mercury mass emissions (in pounds) from all carbon kilns, preg tanks, electrowinning, mercury retorts, and melt furnaces in the 12-month period preceding a compliance test by the total amount of concentrate (in tons) processed in these process units in that 12-month period.

12.16 Semiannual deviation reports.

In accordance with ARSD 74:36:08, as referenced to the requirements of 40 CFR § 63.11648 and (c), if a deviation occurs during a semiannual reporting period, the owner or operator must submit a deviation report to the secretary as follows:

1. The first reporting period covers the period beginning on the compliance date specified in permit condition 12.1 and ending on June 30 or December 31, whichever date comes first after your compliance date. Each subsequent reporting period covers the semiannual period from January 1 through June 30 or from July 1 through December 31. The deviation report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after the end of the semiannual reporting period.
2. A deviation report must include the following information:
   a. Company name and address.
   b. Statement by a responsible official, with the official's name, title, and signature, certifying the truth, accuracy and completeness of the content of the report.
   c. Date of the report and beginning and ending dates of the reporting period.
   d. Identification of the affected source, the pollutant being monitored, applicable requirement, description of deviation, and corrective action taken.

12.17 Reporting Malfunctions.

In accordance with ARSD 74:36:08, as referenced to the requirements of 40 CFR § 63.11648(d) for any malfunction occurring during the reporting period, the annual certification letter required in permit condition 5.5 must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused

any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions including actions taken to correct a malfunction.

12.18 Recordkeeping.

In accordance with ARSD 74:36:08, as referenced to the requirements of 40 CFR § 63.11648(e),the owner or operator must keep the records specified as follows:

1. A copy of each notification and all documentation supporting any Initial Notification, Notification of Compliance Status, and semiannual compliance certifications.
2. The owner or operator shall keep the records of all performance tests, measurements, monitoring data, and corrective actions required by permit condition 12.3. The data shall include the following:
   a. The date, place, and time of the monitoring event requiring corrective actions;
   b. Technique or method used for monitoring;
   c. Operating conditions during the activity;
   d. Results, including the date, time, and duration of the period from the time the monitoring indicated a problem to the time that monitoring indicated proper operation; and
   e. Maintenance or corrective action taken.
3. The owner or operator must keep records of operating hours for each process as required by permit condition 12.8 and records of the monthly quantity of ore and concentrate processed or produced as required by permit condition 12.12.

12.19 Record Retention.

In accordance with ARSD 74:36:08, as referenced to the requirements of 40 CFR § 63.11648(f), records must be in a form suitable and readily available for expeditious review. The owner or operator shall keep each record for 5 years following the date of each recorded action. Records shall be kept onsite for at least 2 years after the date of each recorded action and may be kept offsite for the remaining 3 years.

12.20 Submission of Test Data.

In accordance with ARSD 74:36:08, as referenced to the requirements of 40 CFR § 63.11648(g), The owner or operator must submit the test data to EPA by entering the data electronically into EPA's WebFIRE data base through EPA's Central Data Exchange within 60 days after the date of completing each performance evaluation. The owner or operator of an affected facility shall enter the test data into EPA's data base using the Electronic Reporting Tool or other compatible electronic spreadsheet. Only performance evaluation data collected using methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFIRE database.