



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706 • (208) 373-0502
www.deq.idaho.gov

C.L. "Butch" Otter, Governor
John H. Tippetts, Director

February 11, 2016

Roger W. Gibson
Vice President, Operations
P4 Production, LLC
P.O. Box 816
Soda Springs, ID 83276

RE: Facility ID No. 029-00001, P4 Production, LLC, Soda Springs
Final Tier I Operating Permit Letter

Dear Mr. Gibson:

The Department of Environmental Quality (DEQ) is issuing Tier I Operating Permit No. TI-2014.0001 to P4 Production, LLC at Soda Springs in accordance with IDAPA 58.01.01.300 through 386, Rules for the Control of Air Pollution in Idaho (Rules).

The enclosed permit is effective immediately, summarizes the applicable requirements for your facility, and requires an annual compliance certification for all emissions units. This permit replaces Tier I Operating Permit No. T1-2009.0121, issued March 24, 2011. The enclosed operating permit is based on the information contained in your permit application received on January 14, 2014. Modifications to and/or renewal of this operating permit shall be requested in a timely manner in accordance with the Rules.

In order to fully understand the compliance requirements of this permit, DEQ highly recommends that you schedule a meeting with Rick Elkins, Air Quality Analyst, at 208-236-6160 to review and discuss the terms and conditions of this permit. Should you choose to schedule this meeting, DEQ recommends the following representatives attend the meeting: your facility's plant manager, responsible official, environmental contact, and any other staff responsible for day-to-day compliance with permit conditions.

Pursuant to IDAPA 58.01.23, you, as well as any other entity, may have the right to appeal this final agency action within 35 days of the date of this decision. However, prior to filing a petition for a contested case, I encourage you to call Kelli Wetzel at 208 373-0502 or kelli.wetzel@deq.idaho.gov to address any questions or concerns you may have with the enclosed permit.

Sincerely,

A handwritten signature in black ink that reads "Mike Simon".

Mike Simon
Stationary Source Program Manager
Air Quality Division

MS/KW Permit No. T1-2014.0001 PROJ 61319

Enclosure

AIR QUALITY

TIER I OPERATING PERMIT

Permittee P4 Production LLC
Permit Number T1-2014.0001
Project ID 61319
Facility ID 029-00001
Facility Location P.O. Box 816/ Two miles north of Soda Springs, on Highway 34
Soda Springs, Idaho 83276

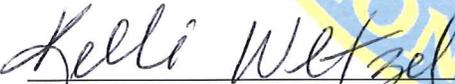
Permit Authority

This permit (a) is issued according to the "Rules for the Control of Air Pollution in Idaho" (Rules) (IDAPA 58.01.01.300-386) (b) incorporates all applicable terms and conditions of prior air quality permits issued by the Idaho Department of Environmental Quality (DEQ) for the permitted source, unless the permittee emits toxic pollutants subject to state-only requirements pursuant to IDAPA 58.01.01.210 and the permittee elects not to incorporate those terms and conditions into this operating permit.

The permittee shall comply with the terms and conditions of this permit. The effective date of this permit is the date of signature by DEQ on this cover page.

Date Issued February 11, 2016

Date Expires February 11, 2021


Kelli Wetzel, Permit Writer


Mike Simon, Stationary Source Manager

Mike Simon, Stationary Source Manager

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1. Acronyms, Units, and Chemical Nomenclature

| | |
|-------------------|--|
| acfm | actual cubic feet per minute |
| ASTM | American Society for Testing and Materials |
| BACT | Best Available Control Technology |
| BMP | best management practices |
| Btu | British thermal unit |
| CAA | Clean Air Act |
| CAM | Compliance Assurance Monitoring |
| CEMS | continuous emission monitoring systems |
| cfm | cubic feet per minute |
| CFR | Code of Federal Regulations |
| CI | compression ignition |
| CMS | continuous monitoring systems |
| CO | carbon monoxide |
| CO ₂ | carbon dioxide |
| CO ₂ e | CO ₂ equivalent emissions |
| COMS | continuous opacity monitoring systems |
| DEQ | Idaho Department of Environmental Quality |
| dscf | dry standard cubic feet |
| EPA | United States Environmental Protection Agency |
| GHG | greenhouse gases |
| gph | gallons per hour |
| gpm | gallons per minute |
| gr | grains (1 lb = 7,000 grains) |
| HAP | hazardous air pollutants |
| HHV | higher heating value |
| hp | horsepower |
| hr/yr | hours per consecutive 12-calendar-month period |
| ICE | internal combustion engines |
| IDAPA | a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act |
| iwg | inches of water gauge |
| lb/hr | pounds per hour |
| MACT | Maximum Achievable Control Technology |
| mg/dscm | milligrams per dry standard cubic meter |
| MMBtu | million British thermal units |

| | |
|-------------------|---|
| MMscf | million standard cubic feet |
| MRRR | Monitoring, Recordkeeping and Reporting Requirements |
| NESHAP | National Emission Standards for Hazardous Air Pollutants |
| NO ₂ | nitrogen dioxide |
| NO _x | nitrogen oxides |
| NSPS | New Source Performance Standards |
| O&M | operation and maintenance |
| O ₂ | oxygen |
| PC | permit condition |
| PM | particulate matter |
| PM _{2.5} | particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers |
| PM ₁₀ | particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers |
| ppm | parts per million |
| ppmw | parts per million by weight |
| PSD | Prevention of Significant Deterioration |
| psig | pounds per square inch gauge |
| PTC | permit to construct |
| PTE | potential to emit |
| PW | process weight rate |
| RICE | reciprocating internal combustion engines |
| <i>Rules</i> | <i>Rules for the Control of Air Pollution in Idaho</i> |
| scf | standard cubic feet |
| SIP | State Implementation Plan |
| SO ₂ | sulfur dioxide |
| SO _x | sulfur oxides |
| T/day | tons per calendar day |
| T/hr | tons per hour |
| T/yr | tons per consecutive 12-calendar-month period |
| T1 | Tier I operating permit |
| T2 | Tier II operating permit |
| ULSD | ultra-low sulfur diesel |
| U.S.C. | United States Code |
| VOC | volatile organic compound |

2. Permit Scope

Purpose

- 2.1 This Tier I operating permit establishes facility-wide requirements in accordance with the Idaho State Implementation Plan control strategy and the Rules.
- 2.2 This Tier I operating permit incorporates the following permit(s):
 - Tier II Operating Permit No. T2-2009.0109, issued November 17, 2009
 - Permit to Construct No. P-2012.0055, issued April 20, 2015
- 2.3 This Tier I operating permit supersedes the following permit(s):
 - Tier I Operating Permit No. T1-2009.0121, issued July 14, 2009 and amended on June 2, 2011.

Regulated Sources

Table 2.1 lists all sources of regulated emissions in this permit.

Table 2.1. REGULATED SOURCES

| Permit Section | Source | Control Equipment |
|----------------|----------------------------------|--|
| 4 | Kiln | Dust knockout chamber North spray tower Four parallel cyclonic separator pairs Four parallel Hydro-Sonic scrubbers and demisters LCDA SO ₂ scrubbing system |
| 4 | Cooler | Cooler spray tower and demisters |
| 5 | Material handling and drying | Baghouse 104 Nodule reclaim baghouse SDM vent filter Dryer baghouse 836 Baghouse 105 Coke bunker baghouse (Coke baghouse) Coke handling baghouse (Coke and quartzite baghouse)(C&Q baghouse) Scaleroom baghouse No. 7 CO baghouse No. 8 CO baghouse No. 9 CO baghouse Main furnace stocking system baghouse (Main stock baghouse) Bulk storage bin baghouse No. 304 coke fines bin vent filter No. 305 coke fines bin vent filter No. 306 coke fines bin vent filter No. 307 coke fines bin vent filter No. 308 coke fines bin vent filter No. 309 coke fines bin vent filter Decon baghouse (Decon building baghouse) |
| 6 | Nodule crushing and screening | Scrubber |
| 7 | Furnaces No. 7, No. 8, and No. 9 | Electrostatic precipitators Spray towers THFC's CO flare for furnaces Nos. 7 and 8 CO flare for Furnace No. 9 Balanced CO Gas Operation method and/or thermal oxidizer |
| 8 | A/U boiler | None |

3. Facility-Wide Conditions

Table 3.1 contains a summary of requirements that apply generally to emissions units at the facility.

Table 3.1. APPLICABLE REQUIREMENTS SUMMARY

| Permit Conditions | Parameter | Limit / Standard Summary | Applicable Requirements Reference | Monitoring, Recordkeeping, and Reporting Requirements |
|-------------------|--|--|-----------------------------------|---|
| 3.1–3.4 | Fugitive Dust | Reasonable control | IDAPA 58.01.01.650–651 | 3.2–3.4, 3.23, 3.28 |
| 3.5–3.6 | Odors | Reasonable control | IDAPA 58.01.01.775–776 | 3.6, 3.23 |
| 3.7–3.9 | Visible Emissions | 20% opacity for no more than 3 minutes in any 60-minute period | IDAPA 58.01.01.625 | 3.8–3.9, 3.23, 3.28 |
| 3.10–3.14 | Excess Emissions | Compliance with IDAPA 58.01.01.130-136 | IDAPA 58.01.01.130–136 | 3.10–3.14, 3.23, 3.28 |
| 3.15 | PM | <u>Natural gas only</u> 0.015 gr/dscf at 3% O ₂ <u>Fuel oil only</u> 0.05 gr/dscf at 3% O ₂ <u>Coal only</u> 0.05 gr/dscf at 8% O ₂ <u>Wood only</u> 0.08 gr/dscf at 8% O ₂ | IDAPA 58.01.01.676–677 | 3.28 |
| 3.16–3.17 | Sulfur Content | ASTM grade No. 1 fuel oil ≤ 0.3% by weight ASTM grade No. 2 fuel oil ≤ 0.5% by weight | IDAPA 58.01.01.725 | 3.17, 3.23, 3.28 |
| 3.18 | Open Burning | Compliance with IDAPA 58.01.01.600-623 | IDAPA 58.01.01.600–623 | 3.18, 3.23, 3.28 |
| 3.19 | Asbestos | Compliance with 40 CFR 61, Subpart M | 40 CFR 61, Subpart M | 3.19, 3.23, 3.28 |
| 3.20 | Accidental Release Prevention | Compliance with 40 CFR 68 | 40 CFR 68 | 3.20, 3.23, 3.28 |
| 3.21 | Recycling and Emissions Reductions | Compliance with 40 CFR 82, Subpart F | 40 CFR 82, Subpart F | 3.21, 3.23, 3.28 |
| 3.22 | NSPS/NESHAP General Provisions | Compliance with 40 CFR 60, Subpart A | IDAPA 58.01.01.107.03 | 3.22, 3.23, 3.28 |
| 3.23 | Monitoring and Recordkeeping | Maintenance of required records | IDAPA 58.01.01.322.06 | 3.23, 3.28 |
| 3.24–3.27 | Testing | Compliance testing | IDAPA 58.01.01.157 | 3.24–3.27, 3.23, 3.28 |
| 3.28 | Reports and Certifications | Submittal of required reports, notifications, and certifications | IDAPA 58.01.01.322.08 | 3.28 |
| 3.29 | Incorporation of Federal Requirements by Reference | Compliance with applicable federal requirements referenced | IDAPA 58.01.01.107 | 3.29 |

Fugitive Dust

3.1 All reasonable precautions shall be taken to prevent particulate matter (PM) from becoming airborne in accordance with IDAPA 58.01.01.650–651.

[IDAPA 58.01.01.650–651, 3/30/07]

- 3.2 The permittee shall monitor and maintain records of the frequency and the method(s) used (e.g., water, chemical dust suppressants) to reasonably control fugitive emissions.
[IDAPA 58.01.01.322.06, 07, 5/1/94]
- 3.3 The permittee shall maintain records of all fugitive dust complaints received. The permittee shall take appropriate corrective action as expeditiously as practicable after receiving of a valid complaint. The records shall include, at a minimum, the date that each complaint was received and a description of the following: the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.
[IDAPA 58.01.01.322.06, 07, 5/1/94]
- 3.4 The permittee shall conduct a monthly facility-wide inspection of potential sources of fugitive emissions during daylight hours and under normal operating conditions to ensure that the methods used to reasonably control fugitive emissions are effective. If fugitive emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee shall maintain records of the results of each fugitive emissions inspection. The records shall include, at a minimum, the date of each inspection and a description of the following: the permittee's assessment of the conditions existing at the time fugitive emissions were present (if observed), any corrective action taken in response to the fugitive emissions, and the date the corrective action was taken.
[IDAPA 58.01.01.322.06, 07, 5/1/94]

Odors

- 3.5 The permittee shall not allow, suffer, cause, or permit the emission of odorous gases, liquids, or solids to the atmosphere in such quantities as to cause air pollution.
[IDAPA 58.01.01.775-776 (state only), 5/1/94]
- 3.6 The permittee shall maintain records of all odor complaints received. If the complaint has merit, the permittee shall take appropriate corrective action as expeditiously as practicable. The records shall include, at a minimum, the date that each complaint was received and a description of the following: the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.
[IDAPA 58.01.01.322.06, 07 (state only), 5/1/94]

Visible Emissions

- 3.7 The permittee shall not discharge any air pollutant to the atmosphere from any point of emission for a period or periods aggregating more than three minutes in any 60-minute period which is greater than 20% opacity as determined by procedures contained in IDAPA 58.01.01.625. These provisions shall not apply when the presence of uncombined water, NO_x, and/or chlorine gas is the only reason for the failure of the emission to comply with the requirements of this section.
[IDAPA 58.01.01.625, 4/5/00]
- 3.8 The permittee shall conduct a weekly facility-wide inspection of potential sources of visible emissions, during daylight hours and under normal operating conditions. Sources that are monitored using a continuous opacity monitoring system (COMS) are not required to comply with this permit condition. The inspection shall consist of a see/no see evaluation for each potential source of visible emissions. If any visible emissions are present from any point of emission, the permittee shall either:

- a) take appropriate corrective action as expeditiously as practicable to eliminate the visible emissions. Within 24 hours of the initial see/no see evaluation and after the corrective action, the permittee shall conduct a see/no see evaluation of the emissions point in question. If the visible emissions are not eliminated, the permittee shall comply with b).

or

- b) perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded when conducting the opacity test. If opacity is greater than 20%, as measured using Method 9, for a period or periods aggregating more than three minutes in any 60-minute period, the permittee shall take all necessary corrective actions and report the period or periods as an excess emission in the annual compliance certification and in accordance with IDAPA 58.01.01.130–136.

[IDAPA 58.01.01.322.06, 5/1/94]

- 3.9 The permittee shall maintain records of the results of each visible emission inspection and each opacity test when conducted. The records shall include, at a minimum, the date and results of each inspection and test and a description of the following: the permittee's assessment of the conditions existing at the time visible emissions are present (if observed), any corrective action taken in response to the visible emissions, and the date corrective action was taken.

[IDAPA 58.01.01.322.07, 5/1/94]

Excess Emissions

Excess Emissions—General

- 3.10 The permittee shall comply with the procedures and requirements of IDAPA 58.01.01.130–136 for excess emissions. The provisions of IDAPA 58.01.01.130–136 shall govern in the event of conflicts between the excess emissions facility wide conditions (Permit Conditions 3.10 through 3.14) and the regulations of IDAPA 58.01.01.130–136.

During an excess emissions event, the permittee shall, with all practicable speed, initiate and complete appropriate and reasonable action to correct the conditions causing the excess emissions event; to reduce the frequency of occurrence of such events; to minimize the amount by which the emission standard is exceeded; and shall, as provided below or upon request of DEQ, submit a full report of such occurrence, including a statement of all known causes, and of the scheduling and nature of the actions to be taken.

[IDAPA 58.01.01.132, 4/5/00]

Excess Emissions—Startup, Shutdown, and Scheduled Maintenance

- 3.11 In all cases where startup, shutdown, or scheduled maintenance of any equipment or emission unit is expected to result or results in an excess emissions event, the permittee shall demonstrate compliance with IDAPA 58.01.01.133.01(a) through (d), including, but not limited to, the following:

- Prohibiting any scheduled startup, shutdown, or maintenance resulting in excess emissions shall occur during any period in which an Atmospheric Stagnation Advisory or a Wood Stove Curtailment Advisory has been declared by DEQ.
- Notifying DEQ of the excess emissions event as soon as reasonably possible, but no later than two hours prior to, the start of the event, unless the permittee demonstrates to DEQ's satisfaction that a shorter advance notice was necessary.

- Reporting and recording the information required pursuant to the excess emissions reporting and recordkeeping requirements (Permit Conditions 3.13 and 3.14) and IDAPA 58.01.01.135 and 136 for each excess emissions event due to startup, shutdown, or scheduled maintenance.

[IDAPA 58.01.01.133, 4/11/06]

Excess Emissions—Upset, Breakdown, or Safety Measures

3.12 In all cases where upset or breakdown of equipment or an emissions unit, or the initiation of safety measures, results or may result in an excess emissions event, the permittee shall demonstrate compliance with IDAPA 58.01.01.134.01(a) and (b) and the following:

- Immediately undertake all appropriate measures to reduce and, to the extent possible, eliminate excess emissions resulting from the event and to minimize the impact of such excess emissions on the ambient air quality and public health.
- Notify DEQ of any upset, breakdown, or safety event that results in excess emissions. Such notification shall identify the time, specific location, equipment or emissions unit involved, and (to the extent known) the cause(s) of the occurrence. The notification shall be given as soon as reasonably possible, but no later than 24 hours after the event, unless the permittee demonstrates to DEQ's satisfaction that the longer reporting period was necessary.
- Report and record the information required pursuant to the excess emissions reporting and recordkeeping facility wide conditions (Permit Conditions 3.13 and 3.14) and IDAPA 58.01.01.135 and 136 for each excess emissions event caused by an upset, breakdown, or safety measure.
- During any period of excess emissions caused by upset, breakdown, or operation under facility safety measures, DEQ may require the permittee to immediately reduce or cease operation of the equipment or emissions unit causing the period until such time as the condition causing the excess has been corrected or brought under control. Such action by DEQ shall be taken upon consideration of the factors listed in IDAPA 58.01.01.134.03 and after consultation with the permittee.

[IDAPA 58.01.01.134, 4/11/06]

Excess Emissions—Reporting and Recordkeeping

3.13 The permittee shall submit a written report to DEQ for each excess emissions event, no later than 15 days after the beginning of such an event. Each report shall contain the information specified in IDAPA 58.01.01.135.02.

[IDAPA 58.01.01.135, 4/11/06]

3.14 The permittee shall maintain excess emissions records at the facility for the most recent five calendar-year period. The excess emissions records shall be made available to DEQ upon request and shall include the information requested by IDAPA 58.01.01.136.03(a) and (b) as summarized in the following:

- An excess emissions log book for each emissions unit or piece of equipment containing copies of all reports that have been submitted to DEQ pursuant to IDAPA 58.01.01.135 for the particular emissions unit or equipment; and
- Copies of all startup, shutdown, and scheduled maintenance procedures and upset, breakdown, or safety preventative maintenance plans that have been developed by the permittee in accordance with IDAPA 58.01.01.133 and 134, and facility records as necessary to demonstrate compliance with such procedures and plans.

[IDAPA 58.01.01.136, 4/5/00]

Fuel-burning Equipment

3.15 The permittee shall not discharge to the atmosphere from any fuel-burning equipment PM in excess of 0.015 grains per dry standard cubic foot (gr/dscf) of effluent gas corrected to 3% oxygen by volume for gas, 0.050 gr/dscf of effluent gas corrected to 3% oxygen by volume for liquid, 0.050 gr/dscf of effluent gas corrected to 8% oxygen by volume for coal, and 0.080 gr/dscf of effluent gas corrected to 8% oxygen by volume for wood products.

[IDAPA 58.01.01.676–677, 5/1/94]

Sulfur Content

3.16 The permittee shall not sell, distribute, use, or make available for use any of the following:

- Distillate fuel oil containing more than the following percentages of sulfur:
 - ASTM Grade 1 fuel oil, 0.3% by weight
 - ASTM Grade 2 fuel oil, 0.5% by weight
- Coal containing greater than 1.0% sulfur by weight
- DEQ may approve an exemption from these fuel sulfur content requirements (IDAPA 58.01.01.725.01-725.04) if the permittee demonstrates that, through control measures or other means, SO₂ emissions are equal to or less than those resulting from the combustion of fuels complying with these limitations.

[IDAPA 58.01.01.725, 3/29/10]

3.17 The permittee shall maintain documentation of supplier verification of distillate fuel oil sulfur content on an as-received basis.

[IDAPA 58.01.01.322.07, 5/1/94]

Open Burning

3.18 The permittee shall comply with the “Rules for Control of Open Burning” (IDAPA 58.01.01.600–623).

[IDAPA 58.01.01.600–623, 5/08/09]

Asbestos

3.19 NESHAP 40 CFR 61, Subpart M—National Emission Standard for Asbestos

The permittee shall comply with all applicable requirements of 40 CFR 61, Subpart M—“National Emission Standard for Asbestos.”

[40 CFR 61, Subpart M]

Accidental Release Prevention

3.20 A permittee of a stationary source that has more than a threshold quantity of a regulated substance in a process, as determined under 40 CFR 68.115, shall comply with the requirements of the “Chemical Accident Prevention Provisions” at 40 CFR 68 no later than the latest of the following dates:

- Three years after the date on which a regulated substance present above a threshold quantity is first listed under 40 CFR 68.130.
- The date on which a regulated substance is first present above a threshold quantity in a process

[40 CFR 68.10 (a)]

Recycling and Emissions Reductions

3.21 40 CFR Part 82—Protection of Stratospheric Ozone

The permittee shall comply with applicable standards for recycling and emissions reduction of refrigerants and their substitutes pursuant to 40 CFR 82, Subpart F, “Recycling and Emissions Reduction.”

[40 CFR 82, Subpart F]

NSPS/NESHAP General Provisions

3.22 NESHAP 40 CFR 61, Subpart A—General Provisions.

The permittee shall comply with the requirements of 40 CFR 61, Subpart A—“General Provisions.” A summary of applicable requirements for affected facilities is provided in Table 3.3.

Table 3.2. NESHAP 40 CFR 61, SUBPART A—SUMMARY OF GENERAL PROVISIONS

| Section | Subject | Summary of Section Requirements | | | |
|--|--|--|--|-----|---|
| 61.04 | Addresses | <ul style="list-style-type: none"> All requests, reports, applications, submittals, and other communications associated with 40 CFR 61, shall be submitted to: <table style="margin-left: 40px; border: none;"> <tr> <td style="padding-right: 20px;">Director Air and Waste US EPA 1200 Sixth Avenue Seattle, WA 98101</td> <td style="text-align: center; vertical-align: middle;">and</td> <td>Pocatello Regional Office Department of Environmental Quality 444 Hospital Way, #300 Pocatello, ID 83201</td> </tr> </table> | Director Air and Waste US EPA 1200 Sixth Avenue Seattle, WA 98101 | and | Pocatello Regional Office Department of Environmental Quality 444 Hospital Way, #300 Pocatello, ID 83201 |
| Director Air and Waste US EPA 1200 Sixth Avenue Seattle, WA 98101 | and | Pocatello Regional Office Department of Environmental Quality 444 Hospital Way, #300 Pocatello, ID 83201 | | | |
| 61.05 | Prohibited Activities | <ul style="list-style-type: none"> No permittee shall construct or modify any stationary source subject to a standard without first obtaining written approval in accordance with 40 CFR 61.05. | | | |
| 61.07 | Application for approval of construction or modification | <ul style="list-style-type: none"> The permittee shall submit an application for approval of the construction of any new source or modification of any existing source in accordance with 40 CFR 61.07. The application shall be submitted before the construction or modification is planned to commence. | | | |
| 61.09 | Notification of startup | <ul style="list-style-type: none"> The permittee shall furnish written notification of the anticipated date of initial startup of each source not more than 60 days nor less than 30 days before that date, and notification of the actual date of initial startup of each source within 15 days after that date. | | | |
| 61.10 | Source reporting | <ul style="list-style-type: none"> Any change in the information provided in accordance with 40 CFR 61.07(b) shall be provided within 30 days after the change. | | | |
| 61.12 | Compliance with standards and maintenance requirements | <ul style="list-style-type: none"> Compliance with numerical emission limits shall be determined in accordance with emission tests established in 40 CFR 61.13 or as otherwise specified. The permittee of each stationary source shall maintain and operate the source, including associated equipment for air pollution control, in a manner consistent with good air pollution control practice for minimizing emissions. For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed. | | | |
| 61.13 | Emission tests | <ul style="list-style-type: none"> If required to do emission testing, the permittee shall test emissions from the source within 90 days after the effective date or within 90 days after initial startup, in accordance with the requirements of 40 CFR 61.13. The permittee shall provide notification of the emission test at least 30 days before the emission test to allow the opportunity to have an observer present during the test. The permittee shall provide emission testing facilities and shall conduct each emission test in accordance with the requirements of 40 CFR 61.13(d) and (e). | | | |

| Section | Subject | Summary of Section Requirements |
|---------|---------------|--|
| | | <ul style="list-style-type: none"> The permittee shall report the determinations of the emission test by a registered letter sent before the close of business on the 31st day following the completion of the emission test in accordance with the procedures in 40 CFR 61.13(f). The permittee shall retain at the source and make available upon request for inspection, for a minimum of 2 years, records of emission test results and other data needed to determine emissions. |
| 61.15 | Modification | <ul style="list-style-type: none"> A physical or operational change to a stationary source which results in an increase in the emission rate to the atmosphere of a hazardous pollutant to which a standard applies shall be considered a modification, and upon modification an existing source shall become a new source in accordance with the requirements and exemptions in 40 CFR 61.15. |
| 61.19 | Circumvention | <ul style="list-style-type: none"> No permittee shall build, erect, install or use any article machine, equipment, process, or method, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. |

[40 CFR 61, Subpart A]

Monitoring and Recordkeeping

3.23 The permittee shall maintain sufficient records to ensure compliance with all of the terms and conditions of this operating permit. Monitoring records shall include, but not be limited to, the following: (a) the date, place, and times of sampling or measurements; (b) the date analyses were performed; (c) the company or entity that performed the analyses; (d) the analytical techniques or methods used; (e) the results of such analyses; and (f) the operating conditions existing at the time of sampling or measurement. All monitoring records and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Supporting information includes, but is not limited to, all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. All records required to be maintained by this permit shall be made available in either hard copy or electronic format to DEQ representatives upon request.

[IDAPA 58.01.01.322.06, 07, 5/1/94]

Performance Testing

3.24 If performance testing is required, the permittee shall provide notice of intent to test to DEQ at least 15 days prior to the scheduled test or shorter time period as provided in a permit, order, consent decree, or by DEQ approval. DEQ may, at its option, have an observer present at any emissions tests conducted on a source. DEQ requests such testing not be performed on weekends or state holidays.

3.25 All testing shall be conducted in accordance with the procedures in IDAPA 58.01.01.157. Without prior DEQ approval, any alternative testing is conducted solely at the permittee's risk. If the permittee fails to obtain prior written approval by DEQ for any testing deviations, DEQ may determine that the testing does not satisfy the testing requirements. Therefore, prior to conducting any performance test, the permittee is encouraged to submit in writing to DEQ, at least 30 days in advance, the following for approval:

- The type of method to be used
- Any extenuating or unusual circumstances regarding the proposed test
- The proposed schedule for conducting and reporting the test

[IDAPA 58.01.01.157, 4/5/00; IDAPA 58.01.01.322.06, 08.a, 09, 5/1/94]

- 3.26 Unless a longer time is approved by DEQ, the permittee shall submit a compliance test report for the respective test to DEQ within 30 days, or up to 60 days upon request following the date in which a compliance test required by this permit is concluded. The compliance test report shall include all process operating data collected during the test period as well as the test results, raw test data, and associated documentation, including any approved test protocol.
- 3.27 The proposed test date(s), test date rescheduling notice(s), compliance test report, and all other correspondence shall be sent to the DEQ address specified in the "Reports and Certifications" facility wide condition (Permit Condition 3.30).

[IDAPA 58.01.01.157, 4/5/00; IDAPA 58.01.01.322.06, 08.a, 09, 5/1/94]

Reports and Certifications

- 3.28 All periodic reports and certifications required by this permit shall be submitted to DEQ within 30 days of the end of each specified reporting period. Excess emissions reports and notifications shall be submitted in accordance with IDAPA 58.01.01.130–136. Reports, certifications, and notifications shall be submitted to:

Air Quality Permit Compliance
Department of Environmental Quality
Pocatello Regional Office
444 Hospital Way, #300
Pocatello, ID 83201
Phone: (208) 236-6160
Fax: (208) 236-6168

The periodic compliance certification required in the general provisions (General Provision 15.22) shall also be submitted within 30 days of the end of the specified reporting period to:

EPA Region 10
Air Operating Permits, OAQ-107
1200 Sixth Ave.
Seattle, WA 98101

[IDAPA 58.01.01.322.08, 11, 4/5/00]

Incorporation of Federal Requirements by Reference

- 3.29 Unless expressly provided otherwise, any reference in this permit to any document identified in IDAPA 58.01.01.107.03 shall constitute the full incorporation into this permit of that document for the purposes of the reference, including any notes and appendices therein. Documents include, but are not limited to:

- National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61, Subpart K

For permit conditions referencing or cited in accordance with any document incorporated by reference (including permit conditions identified as NSPS or NESHAP), should there be any conflict between the requirements of the permit condition and the requirements of the document, the requirements of the document shall govern, including any amendments to that regulation.

[IDAPA 58.01.01.107, 4/7/11]

4. Phosphate Ore Nodulizing Kiln And Cooler

Summary Description

4.1 Process Description

Phosphate ore must be nodulized in a rotary kiln in preparation for use in the furnace feedstock. Blended ore is added to the kiln where it is heated to the point of incipient fusion. The tumbling action of the kiln causes the ore to agglomerate into balls referred to as raw nodules. These raw nodules pass through a cooling and crushing process. A portion of the resulting raw nodules is routed directly into the nodule crushing and screening process while the remainder of the raw nodules is stockpiled for future use. The kiln's exhaust gas is routed through an emission control system that includes a dust knockout chamber for large particulate removal, a spray tower used to capture soluble gases and fine particulate matter, and four parallel Hydro-Sonic scrubbing systems that remove submicron dust particles and entrained particulate-laden water. The nodule cooling process generates both point and fugitive particulate matter that is controlled by a wet scrubbing system.

The kiln is fueled by carbon monoxide (CO) from the furnaces, coal, and natural gas.

4.2 Emission Controls Description

P4 Production's phosphate ore nodulizing kiln has particulate emissions, including polonium-210, and SO₂ emissions. The particulate emissions are controlled by a dust knockout chamber, North spray tower, four parallel cyclonic separator pairs, four parallel Hydro-Sonic scrubbers and demisters, and SO₂ scrubbing system. A spray tower controls emissions from the nodule cooler. The kiln SO₂ emissions are controlled by a lime concentrated dual alkali (LCDA) SO₂ scrubbing system. This system consists of Hydro-Sonic scrubbers that absorb SO₂ with a solution of sodium salts. Some sodium sulfate is produced. The spent solution of sodium sulfite/bisulfite/sulfate is continuously withdrawn to a dual-reactor system, where it is reacted with hydrated lime. The lime regenerates the scrubbing solution and precipitates calcium sulfite/sulfate solids. The solids are removed from the system through thickening and filtration, and the regenerated solution is returned to the scrubber as feed material. The LCDA installation includes raw material storage tanks, two reactor tanks, thickener/clarifier, filtration (feed tank with vacuum filtering process), and a double lined landfill with leachate collection.

[PTC No. P-030316, 10/1/10]

The following requirements apply generally to emissions from the nodulizing kiln that is controlled by a dust knockout chamber, nodulizing kiln spray tower, eight parallel cyclonic separators, and four parallel Hydro-Sonic® scrubbers. A spray tower controls the nodule cooler.

Table 4.1 describes the devices used to control emissions from the phosphate ore nodulizing kiln and cooler.

Table 4.1. KILN DESCRIPTION.

| Source ID | Emissions Units / Processes | Control Devices |
|----------------------------|---|--|
| 302.10 | Hydro treatment clarifier roof | Demisters |
| 310.00 310.10 310.20 | Kiln Carbon monoxide, coal, and gas combustion | Dust knockout chamber North spray tower (nodulizing kiln spray tower) Eight parallel cyclonic separators (four pairs) Four parallel Hydro-Sonic scrubbers Demisters LCDA SO ₂ scrubbing system |
| 314.10 | Nodule cooler | Cooler spray tower and demisters |

[PTC No. P-030316, 10/1/10; IDAPA 58.01.01.322]

Table 4.2 contains only a summary of the requirements that apply to the phosphate ore nodulizing kiln and cooler. Specific permit requirements are listed below.

Table 4.2. APPLICABLE REQUIREMENTS SUMMARY.

| Permit Conditions | Parameter | Limit / Standard Summary | Applicable Requirements Reference | Operating, Monitoring, and Recordkeeping Requirements |
|-------------------|----------------------------------|---|-----------------------------------|---|
| 4.3 ^a | Polonium-210 | 2 curies/year from kiln or install Hydro-Sonic® Tandem Nozzle Fixed Throat Free-Jet Scrubber System and limit total emissions from plant to 4.5 curies/year | 40 CFR 61.122 | 4.3, 4.11- 4.18, 4.29 |
| 4.4 | Kiln and Cooler Emissions Limits | Kiln 30 lb/hr PM ₁₀ 143 lb/hr SO ₂ Cooler 27 lb/hr PM ₁₀ 177 lb/hr SO ₂ | PTC No. P-030316, October 1, 2010 | 4.5 - 4.10, 4.19, 4.21-4.24, 4.26 - 4.28 |
| 3.3 | Coal - sulfur content | 1% by weight | IDAPA 58.01.01.729, 5/1/94 | 3.14 |
| 3.7 | Visible emissions | 20% opacity for no more than three minutes in any 60-minute period | IDAPA 58.01.01.625, 4/5/00 | 3.8, 3.9 |

^a Permit Condition 4.3 applies only to emissions from the kiln hydrosonics.

Emission Limits

4.3 Polonium-210 Emission Limit

Emissions of polonium-210 to the ambient air from all calciners and nodulizing kilns at an elemental phosphorus plant shall not exceed a total of 2 curies per year; except that compliance with this standard may be conclusively shown if the elemental phosphorous plant does the following:

- Maintain and operate a Hydro-Sonic Tandem Nozzle Fixed Throat Free-Jet Scrubber System including four scrubber units.
- All four scrubber units are operated continuously with a minimum average over any six-hour period of 40 inches (water column) of pressure drop across each scrubber during calcining of phosphate shale.
- The system is used to scrub emissions from all calciners and/or nodulizing kilns at the plant.

- Total emissions of polonium-210 from the plant do not exceed 4.5 curies per year.
- Alternative operating conditions, which can be shown to achieve an overall removal efficiency for emissions of polonium-210 which is equal to or greater than the efficiency that would be achieved under the operating conditions described in first three bullet items of Permit Condition 4.3, may be used with prior approval of the U. S. Environmental Protection Agency (EPA). A facility shall apply for such approval in writing, and the EPA shall act upon the request within 30 days after receipt of a complete and technically sufficient application.

[40 CFR 61.122]

4.4 Kiln and Cooler Emission Limits

The emissions from the kiln and cooler stacks shall not exceed any emissions rate limit in the following table.

Table 4.3 KILN AND COOLER EMISSION LIMITS^a

| Source Description | PM ₁₀ ^b | SO ₂ |
|----------------------------|-------------------------------|--------------------|
| | lb/hr ^c | lb/hr ^c |
| Kiln (total from 4 stacks) | 30.0 | 143 |
| Cooler spray tower | 27.0 | 177 |

a) In absence of any other credible evidence, compliance is assured by complying with permit operating, monitoring, and record keeping requirements.

b) Particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers, including condensable particulate as defined in IDAPA 58.01.01.006.81.

c) Pounds per hour, as determined by a test method prescribed by IDAPA 58.01.01.157, EPA reference method, or DEQ approved alternative. (for SO₂ on a three-hour average)

[PTC No. P-030316, 10/1/10]

Operating Requirements

4.5 Elemental Phosphorus Operating Requirement

The owner or operator of each stationary source shall maintain and operate the source, including associated equipment for air pollution control, in a manner consistent with good air pollution control practices for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator, which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, and inspection of the source.

[40 CFR 61.12(c)]

4.6 Equipment Installation

The permittee shall install equipment to measure, or develop methods to determine, the pounds per hour and tons per year of material handled throughout the process.

[IDAPA 58.01.01.322.06, 5/1/94]

4.7 Throughput Limits

The throughput of phosphate ore and other feed through the kiln, measured as input to the kiln, shall not exceed the tons per hour production rate, as a 24-hour average, that is verified through source testing to not exceed the hourly emission limits established in Permit Condition 4.4.

[PTC No. P-030316, 10/1/10]

4.8 pH Limit

The scrubbing solution pH, as measured in the recirculation tank, shall not be less than 6.1 on a one-hour average.

[PTC No. P-030316, 10/1/10]

4.9 Hydro-Sonic Scrubbing System Operation for PM emissions

- When the kiln is in use, the Hydro-Sonic and LCDA scrubbing system shall be operated continuously to scrub PM and PM₁₀ emissions.
- The six hour average pressure drop across the venturi section of the scrubbing system shall be maintained at or above the pressure drop, in inches of water, established by performance tests that showed compliance with the PM and PM₁₀ emissions limits.
- The three-hour average scrubbing media flow rate shall be maintained at or above the scrubbing media flow rate, in gallons per minute, established by performance tests that showed compliance with the PM and PM₁₀ emissions limits.

[PTC No. P-2012.0055, 4/20/15]

4.10 Cooler Spray Tower

- When the nodule cooler is in use, the cooler spray tower scrubber shall be operated continuously to scrub PM and PM₁₀ emissions.
- The three-hour average scrubbing media flow rate shall be maintained at or above the scrubbing media flow rate, in gallons per minute, as established by performance tests that showed compliance with the PM and PM₁₀ emissions limits.

[PTC No. P-030316, 10/1/10]

Monitoring and Recordkeeping Requirements

4.11 Monitoring of Radionuclide Emissions

The owner or operator of any source subject to the emissions standard in Permit Condition 4.3 using a wet-scrubbing emission control device shall install, calibrate, maintain, and operate a monitoring device for the continuous measurement and recording of the pressure drop of the gas stream across each scrubber. The monitoring device must be certified by the manufacturer to be accurate within ± 250 Pascal (± 1 inch of water). The owner or operator of any source subject to the emission standard in Permit Condition 4.3 using a wet-scrubbing emission control device shall also install, calibrate, maintain, and operate a monitoring device for the continuous measurement and recording of the scrubber fluid flow rate. These continuous measurement recordings shall be maintained at the source and made available for inspection by the Administrator, or his authorized representative.

[40 CFR 61.126]

4.12 Reporting Exemption

All facilities designated under 40 CFR 61, Subpart K are exempt from the reporting requirements of 40 CFR 61.10.

[40 CFR 61.127]

4.13 **Monitoring Requirements Under Subpart A**

Unless otherwise specified, this section applies to each monitoring system required under each Subpart requiring monitoring.

- 4.14 Each owner or operator shall maintain and operate each monitoring system as specified in the applicable Subpart and in a manner consistent with good air pollution control practice for minimizing emissions. Any unavoidable breakdown or malfunction of the monitoring system should be repaired or adjusted as soon as practicable after its occurrence. The Administrator's determination of whether acceptable operating and maintenance procedures are being used will be based on information which may include, but not be limited to, review of operating and maintenance procedures, manufacturer recommendations and specifications, and inspection of the monitoring system.
- 4.15 When required by 40 CFR Part 61, Subpart K, and at any time the Administrator may require, the owner or operator of a source being monitored shall conduct a performance evaluation of the monitoring system and furnish the Administrator with a copy of a written report of the results within 60 days of the evaluation. Such a performance evaluation shall be conducted according to the applicable specifications and procedures described in 40 CFR Part 61, Subpart K. The owner or operator of the source shall furnish the Administrator with written notification of the date of the performance evaluation at least 30 days before the evaluation is to begin.
- 4.16 When the effluents from a single source, or from two or more sources subject to the same emissions standards, are combined before being released to the atmosphere, the owner or operator shall install a monitoring system on each effluent or on the combined effluent. If two or more sources are not subject to the same emission standards, the owner or operator shall install a separate monitoring system on each effluent, unless otherwise specified. If the applicable standard is a mass emission standard and the effluent from one source is released to the atmosphere through more than one point, the owner or operator shall install a monitoring system at each emission point unless the installation of fewer systems is approved by the Administrator.
- 4.17 The owner or operator of each monitoring system shall reduce the monitoring data as specified in 40 CFR Part 61, Subpart K. Monitoring data recorded during periods of unavoidable monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in any data average.
- 4.18 The owner or operator shall maintain records of monitoring data, monitoring system calibration checks, and the occurrence and duration of any period during which the monitoring system is malfunctioning or inoperative. These records shall be maintained at the source for a minimum of two years and made available, upon request, for inspection by the Administrator. Monitoring shall be conducted as set forth in this section and the applicable Subpart unless the Administrator:
- Specifies or approves the use of the specified monitoring requirements and procedures with minor changes in methodology; or Approves the use of alternatives to any monitoring requirements or procedures.
 - If the Administrator finds reasonable grounds to dispute the results obtained by an alternative monitoring method, the Administrator may require the monitoring requirements and procedures specified in this part.

[40 CFR 61.14]

4.19 Compliance Test

The permittee shall conduct a compliance test on the kiln venturi scrubber stacks and the nodule cooler spray tower in accordance with the procedures outlined in 40 CFR 60, Appendix A, Method 5 or a Department-approved alternative method.

[IDAPA 58.01.01.322.09, 5/1/94]

4.20 Coal Sulfur Content

The permittee shall maintain documentation of supplier verification of coal sulfur content. The documentation shall be kept for a period of five years and shall be made available to the Department representatives upon request.

[IDAPA 58.01.01.322.06, 5/1/94]

4.21 Operating Parameter Recordkeeping

The permittee shall maintain records containing the following:

- The average hourly throughput of the process on a monthly basis.
- The calculated monthly emissions from the process.
- The hours of operation for each month and for the previous consecutive 12-month period.
- These records shall be maintained in accordance with Permit Condition 3.23.

[IDAPA 58.01.01.322.06, 5/1/94]

4.22 Operations and Maintenance Manual

Within 60 days after startup, the permittee shall have developed an O&M manual for the Hydro-Sonic scrubber system, the LCDA system, and the cooler spray tower system which describes the procedures that will be followed to comply with the general provisions for these systems. The manual shall be updated as needed to reflect any change in operating parameters from the most recent performance test that demonstrated compliance. This manual shall remain onsite at all times and shall be made available to Department representatives upon request.

[PTC No. P-030316, 10/1/10]

4.23 Hydro-Sonic Scrubber Monitoring

The permittee shall monitor and record the pH of the scrubbing solution in the recirculation tank after scrubbing at least once per hour when the system is operating. If more than one reading is taken each hour, the readings for that hour may be averaged to show compliance with the pH limit. The readings shall be taken in evenly-spaced time increments.

- The permittee shall monitor and record the pressure drop across the venturi section of the scrubbing system for each of the Hydro-Sonic scrubbers once per hour and determine the 3 hour rolling average pressure drop. If more than one reading is taken each hour, the readings for that hour may be averaged to show compliance with the pressure drop limit. The readings shall be taken in evenly-spaced time increments.
- The permittee shall monitor and record the total scrubbing media flow rate, in gallons per minute, across each of the Hydro-Sonic scrubbers once per hour and determine the 3 hour rolling average scrubbing media flow rate. If more than one reading is taken each hour, the readings for that hour may be averaged to show compliance with the flow rate limit. The readings shall be taken in evenly-spaced time increments.

[PTC No. P-030316, October 1, 2010]

4.24 Cooler Spray Tower Monitoring

The permittee shall monitor and record the scrubbing media flow rate, in gallons per minute, across the cooler spray tower once per hour. If more than one reading is taken each hour, the readings for that hour may be averaged to show compliance with the flow rate limit. The readings shall be taken in evenly-spaced time increments.

[PTC No. P-030316, 10/1/10]

4.25 Throughput Monitoring

The permittee shall monitor and record the daily and monthly throughput of phosphate ore and other feed to the kiln when the system is operating.

[PTC No. P-030316, 10/1/10]

4.26 PM and PM₁₀ Performance Tests for Kiln Hydro-Sonic Scrubbers and Cooler Spray Tower

The permittee shall conduct performance tests to measure PM and PM₁₀ emissions from the kiln Hydro-Sonic scrubbers and the cooler spray tower according to the schedule in this permit condition. The performance testing will be conducted to demonstrate compliance with the emission rate limits.

The performance test shall be performed in accordance with IDAPA 58.01.01.157. The following information shall be recorded during each performance test:

- Amount of phosphate ore and other feed processed in the kiln, in tons per hour
- Pressure drop across each Hydro-Sonic scrubber when testing the Hydro-Sonic Scrubbers
- Scrubber solution flow rate for each scrubber
- When testing the Hydro-Sonic scrubbers, monitor and record the coal used in the kiln

After the initial performance test, which was done prior to the issuance of this permit, future testing shall be performed within one year of the issuance of the permit, or in accordance with the following schedule, whichever is later. If the PM or PM₁₀ emission rate measured in the most recent test is less than or equal to 75% of the applicable emission standard, the next test shall be conducted within five years of the test date. If the PM or PM₁₀ emission rate measured during the most recent performance test is greater than 75%, but less than or equal to 90%, of the emission standard, the next test shall be conducted within two years of the test date. If the PM or PM₁₀ emission rate measured during the most recent performance test is greater than 90% of the emission standard, the next test shall be conducted within one year of the test date.

[PTC No. P-030316, 10/1/10]

4.27 SO₂ Performance Tests for Kiln Hydro-Sonic Scrubbers

The permittee shall conduct performance tests to measure SO₂ emissions from the kiln Hydro-Sonics scrubber stacks according to the schedule in this permit condition. The performance testing will be conducted to demonstrate compliance with the emission rate limits.

Each performance test shall be performed in accordance with IDAPA 58.01.01.157. The following information shall be recorded during each performance test:

- Amount of kiln phosphate ore and other feed processed in the kiln, in tons per hour
- Pressure drop across each Hydro-Sonic scrubber
- Scrubber solution flow rate pH in the recirculation tank
- Coal burned in the kiln during the test

After the initial performance test, which was done prior to the issuance of this permit, future testing shall be performed within one year of the issuance of the permit, or in accordance with the following schedule, whichever is later. If the SO₂ emission rate measured in the most recent test is less than or equal to 75% of the applicable emission standard, the next test shall be conducted within five years of the test date. If the SO₂ emission rate measured during the most recent performance test is greater than 75%, but less than or equal to 90%, of the emission standard, the next test shall be conducted within two years of the test date. If the SO₂ emission rate measured during the most recent performance test is greater than 90% of the emission standard, the next test shall be conducted within one year of the test date.

[PTC No. P-030316, 10/1/10]

4.28 SO₂ Performance Tests for Cooler Spray Tower

The permittee shall conduct performance tests to measure SO₂ emissions from the cooler spray tower according to the schedule in this permit condition. The performance testing will be conducted to demonstrate compliance with the emission rate limits.

Each performance test shall be performed in accordance with IDAPA 58.01.01.157. The following information shall be recorded during each performance test:

- Amount of kiln phosphate ore and other feed processed in the kiln, in tons per hour
- The amount of sulfur in the ore that was processed in the kiln during each test run
- The percent SO₃ equivalent in the ore
- Scrubber solution flow rate

After the initial performance test, future testing shall be performed according to the following schedule. If the SO₂ emission rate measured in the most recent test is less than or equal to 75% of the applicable emission standard in, the next test shall be conducted within five years of the test date. If the SO₂ emission rate measured during the most recent performance test is greater than 75%, but less than or equal to 90%, of the emission standard, the next test shall be conducted within two years of the test date. If the SO₂ emission rate measured during the most recent performance test is greater than 90% of the emission standard, the next test shall be conducted within one year of the test date.

[PTC No. P-030316, 10/1/10]

Reporting Requirements

4.29 Reporting of Radionuclide Emissions

In accordance with 40 CFR 61.04(a), all requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted in duplicate to the:

Director
Office of Air Quality
U.S. Environmental Protection Agency
1200 Sixth Ave. Seattle, WA 98101

[40 CFR 61.04(a)]

5. Material Handling and Drying

Summary Description

5.1 Process Description

Phosphate Ore Handling Operations

Phosphate ore and underflow solids (UFS) are reclaimed from the ore stockpile by loader and transported to the ore hopper by haul trucks and/or loaders. Separator discharge material (SDM) is also reclaimed from stockpiles and processed using a separate hopper. Phosphate ore, SDM, and UFS drop from the hoppers to belt 104 which transfers through a grizzly screen to belt 111. Belt 111 transfers material to belt 110. Belt 110 feeds a distributor in the Raw Ore Building which distributes the material to bins within the building. Phosphate ore feeders from the bins drop ore blends onto belt 115, which has a belt scale. Belt 115 transfers ore to belt 101 which transfers to belt 114. Material from belt 114 drops into the kiln feed pipe. The 104 Baghouse collects particulate matter (PM) from the tail and head-end of 104 belt, and tail-end of 111 belt.

Nodule Preparation

The blended phosphate ore, UFS and SDM are fed to the rotary kiln by a belt conveyor. Phosphate ore dust from the kiln's drop-out chamber is collected and recycled back to the kiln. Also, the UFS from the scrubber clarifier are dewatered and recycled to the kiln. The rotary kiln produces hardened nodules that allow for proper operation of the electric reduction furnaces. The rotary kiln raises the ore temperature to its point of incipient fusion and the tumbling action causes the ore to agglomerate into the desired nodular form. The rotary kiln is fueled with carbon monoxide (generated in the electric reduction furnace operation), natural gas, and supplemental coal. The hot nodules pass through a cooler and chunk breaker with a separate off-gas treatment system before being conveyed to the sizing/screening operation.

The raw nodules produced by the rotary kiln fall from the discharge end of the kiln onto a traveling-grate cooler. These nodules then fall from the cooler outlet onto a metal pan conveyor. Raw nodule production is split, with part going directly into the crushing and screening process and the rest is conveyed to the raw nodule stockpile by belt 300.

The nodule reclaim, crushing, and screening process combines fresh (hot) and reclaimed (cooler) nodules from the reclaim hopper, in the proportions necessary to achieve the desired temperature and quantity of coarse, medium, and fine-sized nodules. Nodule sizing is accomplished by using vibrating screens. The oversize material from these screens is routed to a crusher and then recycled for re-screening. The SDM is air conveyed into a storage tank and heavy mobile equipment is used to stockpile it for recycling through the kiln. The coarse, medium, and fine nodule size fractions are routed to scaleroom bins 2 through 7. The Nodule Reclaim Baghouse collects PM from the tail and head-end of belt 300, and the raw nodule dump to reclaim hopper. SDM Bin Vent collects PM from the SDM bin.

Coke Drying and Associated Handling

Coke is reclaimed from the coke stockpile by loader and dumped to the dryer feed hopper, which feeds the vibrating pan feeder. Coke falls from the vibrating pan feeder to belt 855, which feeds coke and quartzite to dryer 851. Dried coke falls from dryer 851 to belt 835 (coke and quartzite share this equipment to this point), and then to belt 105. Coke is fed from belt 105 to one of two coke screens. Sized coke falls from the coke screen to belt 106, and then fed to the coke distributor which fills scaleroom coke bin 8, coke bin 9, or coke bin 10. Sized coke can also be directed to belt 827, and then to scaleroom coke bin 11. Coke fines falls through the coke screen to a loadout bin. From the loadout bin, coke fines can be sent back through a bypass around the coke screens to belt 106 and fed to belt

827 which fills scaleroom coke bin 11, or feeds belt 828 which fills the bulk coke fines storage bin.

The Dryer Baghouse collects PM from the tail and head-end of the 855 belt, the dryer, and the tail-end of the 835 belt. The 105 Baghouse is described below.

Quartzite Drying and Associated Handling

Quartzite is reclaimed from the raw quartzite stockpile by loader and dumped to the dryer feed hopper, which feeds the vibrating pan feeder. Quartzite falls from the vibrating pan feeder to belt 855, which feeds coke and quartzite dryer 851. Dried quartzite falls from dryer 851 to belt 835 (coke and quartzite share this equipment to this point), and then to belt Q1. Quartzite transfers from belts Q1 to Q2, which feed either the north quartzite screen or the south quartzite screen. Fine quartzite falls through the north quartzite screen and/or south quartzite screen, through the silica mixers, and into the quartzite fines bunker. All other screened quartzite falls from the north quartzite screen and/or south quartzite screen into the scaleroom quartzite bin (Bin #1). The Dryer Baghouse collects PM from the tail and head-end of the 855 belt, the dryer, and the tail-end of the 835 belt. The 105 Baghouse collects PM from the head-end of the 835 belt, tail and head-end of the Q1 belt, and the tail-end of the Q2 belt.

Undried coke unloading from railroad cars or trucks

Coke brought in by railroad cars and trucks is unloaded at hopper 105. From hopper 105 the coke is fed to a truck loadout chute where it is then taken to the coke stockpile. Coke brought in by semi-trucks can be unloaded into the coke storage tent or deposited directly onto the coke stockpile. The Coke Bunker will be kept operational for infrequent events when a coke car has to be dumped and the 105 belt to truck loadout is unavailable. The Coke Bunker Baghouse will control emissions from unloading coke into the bunker.

Undried coke handling to screening and storage

Undried coke is unloaded from railroad cars or semi-trucks to hopper 105. Undried coke falls from the hopper to belt 105. Coke falls from belt 105 to one of two coke screens. Sized coke falls from the coke screen to the coke distributor which fills scaleroom coke bin 8, coke bin 9, or coke bin 10. Sized coke can also be directed to belt 827, and then to scaleroom coke bin 11. Coke fines fall through the coke screen to a loadout bin. From the loadout bin, coke fines can be sent back through a bypass around the coke screens to belt 106 and fed to belt 827 which fills scaleroom coke bin 11, or feeds belt 828 which fills the bulk coke fines storage bin. The 105 Baghouse collects PM from the head-end of the 835 belt, tail and head-end of the Q1 belt, the tail-end of the Q2 belt, and tail-end of the 105 belt. The Coke Handling Baghouse collects PM from the head-end of belt 105, tail and head-end of the bucket elevators, coke screens, tail and head-end of belt 106, bypass and fines loadout bin discharge spouts, the fines loadout bin vent, and tail and head-end of belt 827. The Scaleroom Baghouse collects PM from all scaleroom bins unloading to belt 416.

Undried quartzite handling to screening and storage

Quartzite is reclaimed from the raw quartzite stockpile by loader and dumped to the quartzite hopper. Quartzite falls from the hopper to belt Q2, and then feeds either the north quartzite screen or the south quartzite screen. Fine material falls through the north quartzite screen and/or the south quartzite screen into a silica fines mixer, and then to the quartzite fines bunker. All other screened quartzite falls from the north quartzite screen and/or south quartzite screen into the scaleroom quartzite bin (Bin #1). The Nodule Crushing and Screening Scrubber collects PM from the head-end of the Q2 belt and is regulated in another section of this permit.

The scaleroom process is a computer-controlled batch process. The scaleroom bins (containing nodules, quartzite, and coke) are positioned linearly above conveyor belt 416, also known as the long belt. When making a batch, the desired quantity of quartzite is automatically layered onto the moving long belt, followed by the nodules and then the coke.

Material is fed from 11 scaleroom bins (1 containing quartzite, 6 containing phosphate ore nodules, and 4 containing coke) to 11 weigh bins which proportion material onto belt 416 in the scaleroom. Material is carried by this belt to the top of (north) furnace building 7, and falls by way of rotary distributor 421 to one of three belts (belt 417 for furnace 7, belt 418 for furnace 8, and belt 419 for furnace 9). Material falls from belt 417 to rotary stock diverter 672 which feeds belt 713, feeds belt 714, or fills four stock bins. Belt 713 and belt 714 each fill one other stock bin. Material falls from belt 418 to furnace 8 stock diverter which feeds belt 12W or belt 12E. Belts 12W and 12E each fill six stock bins. Material falls from belt 419 to furnace 9 stock diverter which feeds belt 420W or 420E. Belts 420W and 420E each fill six stock bins. The material in each bin is gravity fed to the furnaces. Dust collection from all stock bins is controlled by #7, #8, and #9 CO dust collectors. Dust collection from all other transfer points in the furnace stocking area is controlled by the main furnace stocking baghouse. The Scaleroom Baghouse collects PM from the 11 scaleroom bins, and tail-end of the 416 belt. #7 CO Baghouse collects PM from the head and tail-end of belts 713 and 714, from rotary stock diverter 672 to the #7 Furnace stock bins, and the #7 Furnace stock bins. #8 CO Baghouse collects PM from the head and tail-end of belts 12W and 12E to the #8 Furnace stock bins, and the #8 Furnace stock bins. #9 CO Baghouse collects PM from head and tail-end of belts 420W and 420E to the #9 Furnace stock bins, and #9 Furnace stock bins. The Main Baghouse collects PM from the head-end of belt 416, head and tail-end of belts 713, 714, 12W, 12E, 420W, and 420E, and various points along belts 713, 714, 12W, 12E, 420W, and 420E. Dust from the #7, #8, #9 CO Baghouses is pneumatically conveyed to the Main Baghouse.

Coke fines handling from railcars to the stockpile

Coke fines are unloaded from railcars to hopper 105 and fed to belt 105. Belt 105 feeds coke fines to a truck loadout chute and the coke fines are then hauled to the coke fines stockpile. The Coke Bunker will be kept operational for infrequent events when a coke car has to be dumped and the 105 belt to truck loadout is unavailable. The Coke Bunker Baghouse will control emissions from unloading coke into the bunker.

Coke fines screening and handling from the stockpile or railcars to the bulk storage bin

Coke fines are reclaimed from the coke fines stockpile by loader and dumped to hopper 105. Coke fines are also unloaded from railcars directly to hopper 105. Coke fines fall from hopper 105 onto belt 105 and are fed to one of two coke screens. Coke fines fall through the coke screens to a loadout bin. From the loadout bin, coke fines can be sent back through a bypass around the coke screens to belt 106 and fed to belt 827 which fills coke bin 11 or feeds belt 828. Belt 828 fills the bulk coke fines storage bin.

Coke fines drying, screening, and handling from the stockpile to the bulk storage bin

Coke fines are reclaimed from the coke fines stockpile by loader and dumped to dryer feed hopper 853 which feeds vibrating pan feeder 854. Coke fines fall from vibrating pan feeder 854 to belt 855 which feeds coke and quartzite dryer 851. Dried coke fines fall from dryer 851 to belt 835 and then to belt 105 (coke, quartzite, and coke fines share this equipment to this point). Coke fines are fed from belt 105 to one of two coke screens. Sized coke in the fines falls from the coke screen to the mid-sized coke distributor which fills either coke bin 8, bin 9, or bin 10. Sized coke can also be directed to belt 827, and then to scaleroom coke bin 11. Coke fines fall through the coke screen to a loadout bin. From the loadout bin, coke fines can be sent back through a bypass around the coke screens to belt 106 and fed to belt 827 which fills coke bin 11 or feeds belt 828. Belt 828 fills the bulk coke fines storage bin. The Coke Handling Baghouse collects from the tail and head-end of belt 827, tail and head-end of belt 828, bulk coke fines storage bin, and moving coke fines from the bulk storage bin to the first air conveyor.

Coke fines screening, crushing, and handling from the bulk storage bin to the furnace feed bins

Coke fines are transferred from the bulk storage bin to the coke-fines screen. Oversized coke fines fall through the screen to the over-sized coke surge pile. Contaminated or wet coke fines may be unloaded from the bulk coke fines storage bin through a reject chute to the ground. Under-sized coke fines are fed from the coke-fines screen to the second air conveyor, which pneumatically conveys the coke fines either to fines bins 304 or 305 (which feed furnace 7), to fines bins 306 or 307 (which feed furnace 8), or to fines bins 308 or 309 (which feed furnace 9). The 304, 305, 306, 307, 308, and 309 Furnace Feed Bin Vents collect dust from conveying coke fines from the second air conveyor to fines bins 304, 305, 306, 307, 308, and 309.

Maintenance Activities

Sandblasting of process equipment for reuse in the manufacturing process takes place in the Decon Building. The Decon Building Baghouse collects dust/particulate from the sandblasting process.

Table 5.1 describes the devices used to control emissions from the material handling.

Table 5.1 MATERIAL HANDLING DESCRIPTION

| Emissions Unit(s) / Process(es) | Emissions Control Device |
|--|---------------------------------|
| Ore to belt 104 | Baghouse 104 |
| SDM to belt 104 | |
| UFS to belt 104 | |
| Belt 104 emissions to baghouse | |
| Belt 104 ore, SDM, UFS to grizzly | |
| Belt 111 ore, SDM, UFS | |
| Belt 300 nodules to raw nodule storage | Nodule reclaim baghouse |
| Raw nodule dump to reclaim hopper | SDM vent filter |
| SDM blow to hopper | |
| 855 dryer feed belt – dried coke, quartzite, and coke fines | Dryer baghouse 836 |
| Dryer – dried coke, quartzite, and coke fines | |
| Dryer – combustion | |
| 835 dryer discharge belt loading - dried coke, quartzite, and coke fines | |
| 835 dryer discharge belt unloading – dried coke, quartzite, and coke fines | Baghouse 105 |
| Q2 belt loading – dried quartzite | |
| Q1 belt loading and unloading - dried quartzite | |
| 105 belt loading – dried coke and coke fines | |
| 105 vibrating pan feeder - undried coke, quartzite, and coke fines | |
| Coke railroad car unloading | |
| Coke fines railroad car unloading | |
| Coal railroad car unloading | |
| Vector truck station unloading | |
| Coke conveying | Coke handling baghouse |
| Coke screens – dried and undried coke | |
| Coke screens – dried and undried coke fines | |
| Bins 8, 9, and 10 loading – dried and undried coke | |
| Fine coke to belt 827 – dried and undried coke | |
| Fine coke to belt 827 – dried and undried coke fines | |
| Bin 11 (fine coke) loading – dried and undried coke | |
| Bin 11 (fine coke) loading – dried and undried coke fines | |
| Belt 827 to belt 828 – dried and undried coke fines | |
| Bin 1 weighing | |
| Bin 1 loading to belt 416 | |
| Bins 2 and 3 weighing | |
| Bins 2 and 3 loading to belt 416 | |

| Emissions Unit(s) / Process(es) | Emissions Control Device |
|--|--|
| Bins 4 and 5 weighing | |
| Bins 4 and 5 loading to belt 416 | |
| Bins 6 and 7 weighing | |
| Bins 6 and 7 loading to belt 416 | |
| Bins 8 and 9 weighing | |
| Bins 8 and 9 loading to belt 416 | |
| Bin 10 weighing | |
| Bin 10 loading to belt 416 | |
| Bin 11 weighing | |
| Bin 11 loading to belt 416 | |
| Furnace No. 7 stock bins and transfer points | |
| 672 distributor to bins 701-704 | |
| South twin belt to bin 705 | |
| South twin belt to bin 706 | |
| Bins 701-706 | |
| No. 8 furnace stock bins and transfer points | No. 8 CO baghouse |
| E/W pivot belt to bins 801-812 | |
| Bins 801-812 | |
| Furnace No. 9 stock bins and transfer points | No. 9 CO baghouse |
| E/W 420 pivot belt to bins 901-912 | |
| Bins 901-912 | |
| Transfer points and CO baghouses | Main furnace stocking system baghouse (Main stock baghouse) |
| Belt 416 burden to 421 distributor | |
| 421 distributor to belt 417 | |
| 421 distributor to belt 418 | |
| 421 distributor to belt 419 | |
| 417 burden belt | |
| 418 burden belt | |
| 419 burden belt | |
| Belt 417 feed to 672 distributor | |
| 672 distributor to south twin belt | |
| 672 distributor to north twin belt | |
| Belt 418 Feed to E/W pivot belt | |
| E/W pivot belt | |
| Belt 419 to E/ 420 pivot belt | |
| E/W 420 pivot belt | |
| Fine coke storage bin from belt 828 – dried coke fines | Coke handling baghouse |
| Fine coke storage bin from belt 828 – undried coke fines | |
| Coke fines screens (2) | |
| Bulk storage bin | |
| Coke fines injection to feed bin 304 | No. 304 coke fines bin vent filter |
| Coke fines injection to feed bin 305 | No. 305 coke fines bin vent filter |
| Coke fines injection to feed bin 306 | No. 306 coke fines bin vent filter |
| Coke fines injection to feed bin 307 | No. 307 coke fines bin vent filter |
| Coke fines injection to feed bin 308 | No. 308 coke fines bin vent filter |
| Coke fines injection to feed bin 309 | No. 309 coke fines bin vent filter |
| Sandblasting of process equipment | Decon baghouse (Decon building baghouse) |

Table 5.2 contains only a summary of the requirements that apply to the material handling and drying sources. Specific permit requirements are listed below.

Table 5.2 APPLICABLE REQUIREMENTS SUMMARY

| Permit Conditions | Parameter | Permit Limit / Standard Summary | Applicable Requirements Reference | Operating and Monitoring and Recordkeeping Requirements |
|-------------------|-------------------------------------|--|---------------------------------------|---|
| 5.1 | PM ₁₀ /PM _{2.5} | Coke Handling 1.43 lb/hr PM ₁₀ 1.43 lb/hr PM _{2.5} Scaleroom 0.90 lb/hr PM ₁₀ 0.90 lb/hr PM _{2.5} | PTC No. P-2012.0055, June 23, 2014 | 5.8, 5.10-5.12 |
| 3.7 | Visible emissions | 20% opacity for no more than three minutes in any 60-minute period | IDAPA 58.01.01.625, 4/5/00 | 3.8, 3.9 |
| Section 10 | Various | Compliance Assurance Monitoring conditions | 40 CFR 64 | Reference Section 10 |

Emission Limits

5.2 PM₁₀/PM_{2.5} Emission Limits

The emissions from the Coke handling baghouse and the scaleroom baghouse stacks shall not exceed any corresponding emissions rate limits listed in Table 5.3.

Table 5.3 BAGHOUSE EMISSION LIMITS

| Source Description | PM _{2.5} ^(b) lb/hr ^(d) | PM ₁₀ ^(c) lb/hr ^(d) |
|------------------------|--|---|
| Coke handling baghouse | 1.43 | 1.43 |
| Scaleroom baghouse | 0.90 | 0.90 |

- a) In absence of any other credible evidence, compliance is ensured by complying with permit operating, monitoring, and record keeping requirements.
- b) Particulate matter with an aerodynamic diameter less than or equal to a nominal two and a half (2.5) micrometers, including condensable particulate as defined in IDAPA 58.01.01.006.
- c) Particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers, including condensable particulate as defined in IDAPA 58.01.01.006.
- d) Pounds per hour, as determined by a test method prescribed by IDAPA 58.01.01.157, EPA reference test method, continuous emission monitoring system (CEMS) data, or DEQ-approved alternative.

[PTC No. P-2012.0055, 6/23/14]

Operating Requirements

5.3 Dryer Baghouse Bags

For the Dryer and Dryer Baghouse, the permittee shall operate the dryer baghouse with the same type of bags as were used during the most recent Department approved performance test.

[IDAPA 58.01.01.322.01, 3/19/99]

5.4 Use of Baghouse and Bin Vent Filters Required

The baghouses and bin vent filters shall be used to control emissions from the corresponding processes listed in Table 5.1. Each baghouse and bin vent filter shall be operated at all times that material is handled within the corresponding process.

[PTC No. P-030316, 10/1/10]

5.5 Pressure Drop

The permittee shall install instrumentation to accurately measure and indicate the pressure drop across Baghouse 104 and the Decon baghouse. The permittee shall operate, calibrate, and maintain instrumentation to accurately measure and indicate the pressure drop across each device required to be monitored.

[PTC No. P-030316, 10/1/10]

5.6 Visible Emissions

The baghouses and filters listed in this permit section shall have no visible emissions, except for bag cleaning cycles, as determined by a see/no see evaluation.

[PTC No. P-030316, 10/1/10]

5.7 Fuel Type

The permittee shall use natural gas exclusively as fuel for Dryer 851.

[PTC No. P-030316, October 1, 2010]

5.8 Coke Screen Operation

Only one of the two coke screens shall be used at a time.

[PTC No. P-2012.0055, 6/23/14]

Monitoring and Recordkeeping Requirements

5.9 Baghouse Pressure Drop Monitoring

Once each week, the permittee shall monitor and record the pressure drop across each baghouse listed in Table 5.1.

[PTC No. P-030316, 10/1/10]

5.10 Coke Screen Operation Monitoring

The permittee shall monitor and record the date and time that each screen starts and finishes operation.

[PTC No. P-2012.0055, 6/23/14]

Performance Testing Requirements

5.11 Baghouse Testing

Within 180 days of installation of the coke screens, the permittee shall conduct a performance test on each of the units listed below to demonstrate compliance with the PM_{2.5} and with the PM₁₀ emissions limits specified in this permit:

- Coke handling baghouse
- Scaleroom baghouse

[PTC No. P-2012.0055, 6/23/14]

5.12 Performance Test Schedule

For each of the sources that are listed in Table 5.3, after the initial performance test, future testing shall be performed according to the following schedule. If the pollutant emission rate measured in the most recent test is less than or equal to 75% of the corresponding emission standard in the baghouse emission limits table, the next test shall be conducted within five years of the test date. If the pollutant emission rate measured during the most recent performance test is greater than 75%, but less than or equal to 90%, of the corresponding emission standard in the Baghouse emission limits table, the next test shall be conducted within two years of the test date. If the pollutant emission rate measured during the most recent corresponding performance test is greater than 90% of the emission standard in the baghouse emission limits table, the next test shall be conducted within one year of the test date.

[PTC No. P-2012.0055, 6/23/14]

6. Nodule Crushing And Screening

Summary Description

6.1 Process Description

The nodule-crushing and screening scrubber, also known as the nodule scrubber, venturi scrubber, or nodule reclaim venturi scrubber, is used to control emissions from the transfers associated with moving quartzite from the Q2 belt to the quartzite screens and scaleroom quartzite bin, and emissions from the transfer points associated with nodule conveying, sizing, crushing, and screening.

Table 6.1 describes the devices used to control emissions from nodule crushing and screening.

Table 6.1 NODULE AND QUARTZITE TRANSFER AND SCREENING DESCRIPTION

| Emissions Unit(s) / Process(es) | Emissions Control Device |
|--|--|
| North and south dried quartzite screens | Nodule crushing and screening scrubber |
| North and south undried quartzite screens | |
| Bin 1 dried quartzite Loading | |
| Bin 1 undried quartzite Loading | |
| Q2 belt unloading – dried quartzite | |
| Q2 belt unloading – undried quartzite | |
| Dried quartzite fines to conveyor belt loading | |
| Undried quartzite fines to conveyor belt loading | |
| Dried quartzite fines unloading to fines silo | |
| Undried quartzite fines unloading to fines silo | |
| Belt 265 nodules to distributor (300, 289) | |
| Reclaim hopper to belt 882 | |
| Coarse gundlach crusher | |
| 273 gundlach crusher | |
| Belt 888 pan discharge | |
| 289, 882 and 881 (reclaim) elevator to top screen splitter | |
| East and west top sizing screens | |
| Nodules to 290 elevator | |
| Nodules to 291 elevator | |
| Nodules to splitters | |
| North and south quad deck screens | |
| North and south fine to belt 880 | |
| North and south medium to belt 879 | |
| North and south coarse to belt 878 | |
| Fine nodules to bins 4 and 5 | |
| Medium nodules to bins 2 and 3 | |
| Coarse nodules to bins 6 and 7 | |
| SDM to blow tank | |
| SDM silo unloading spout | |
| SDM overflow/bypass bunker | |

Table 6.2 contains only a summary of the requirements that apply to the Nodule-Crushing and Screening sources. Specific permit requirements are listed below Table 6.2.

Table 6.2 APPLICABLE REQUIREMENTS SUMMARY

| Permit Conditions | Parameter | Permit Limit / Standard Summary | Applicable Requirements Reference | Operating and Monitoring and Recordkeeping Requirements |
|--------------------------|----------------------------|--|---|--|
| 6.2 | PM ₁₀ Emissions | 15 lb/hr or 65.7 T/yr | Permit to Construct No. P-030316, October 1, 2010 | 6.3-6.10 |
| 3.7 | Visible emissions | 20% opacity for no more than three minutes in any 60-minute period | IDAPA 58.01.01.625, 4/5/00 | 3.8, 3.9 |
| Section 10 | Various | Compliance Assurance Monitoring conditions | 40 CFR 64 | Reference Section 10 |

Emission Limits

6.2 PM₁₀ Emissions Limits

The PM₁₀ emissions from the nodule crushing and screening scrubber shall not exceed 15 lb/hr or 65.7 tons per any consecutive 12-calendar-month period.

[PTC No. P-030316, 10/1/10]

Operating Requirements

6.3 Pressure Drop and Media Flow Rate Instrumentation for Scrubber

The permittee shall install, operate, calibrate, and maintain instrumentation to accurately measure and indicate the pressure drop across the venturi section of the scrubber, and instrumentation to accurately measure and indicate the media flow rate to the scrubber.

[PTC No. P-030316, 10/1/10]

6.4 Requirement to Operate Control Equipment

All equipment controlling emissions from the process shall be operated at all times that material is handled within the process.

[PTC No. P-030316, 10/1/10]

6.5 Method to Determine Material Throughput

The permittee shall install and operate equipment to measure, or develop methods to determine, the pounds per hour and tons per year of material handled throughout the process.

[PTC No. P-030316, 10/1/10]

6.6 Scrubber Maintenance

Maintenance shall be performed to the scrubber when visible emissions exceed 15% opacity.

[PTC No. P-030316, 10/1/10]

Monitoring and Recordkeeping Requirements

6.7 Pressure Drop and Flow Rate

The pressure drop and scrubber solution flow rate shall be monitored and recorded by collecting four or more data values equally spaced over each hour and average the values. These records shall be maintained in accordance with Permit Condition 3.23.

[IDAPA 58.01.01.322.06, 5/1/94]

6.8 Recordkeeping

The permittee shall maintain records containing the following:

- The hourly throughput of the process.
- The calculated annual emissions from the process.
- The hours of operation for each month and for the previous consecutive 12-month period.
- These records shall be maintained in accordance with Permit Condition 3.23.

[IDAPA 58.01.01.322.06, 5/1/94]

6.9 Maintain Calibration Specifications

Manufacturer specifications for calibration of the scrubbing media flow rate monitor shall be maintained on-site and shall be made available to DEQ representatives upon request. The permittee shall maintain records of the results of all calibrations in accordance with the recordkeeping general provision of this permit.

[PTC No. P-030316, 10/1/10]

6.10 Inspect Inlet Distribution Assembly

The permittee shall inspect the scrubbing media delivery inlet distribution assembly each quarter. The inspection shall be to assure that the inlet distribution assembly is allowing complete flow and coverage across the venturi.

[PTC No. P-030316, 10/1/10]

7. Furnaces No. 7, No. 8, And No. 9

Summary Description

7.1 Process Description

CO Flares

Feedstock is gravity fed from burden bins into three electric reduction furnaces (No. 7, No. 8, and No. 9). Electrical power is used to generate the heat required to drive the reduction of phosphate (from the nodules) to elemental phosphorus. This reaction results in the evolution of phosphorus gas, carbon monoxide gas, and molten calcium silicate and ferrophosphorus slag. The furnace gases, composed of mainly carbon monoxide and phosphorus, are drawn through electrostatic precipitator dust collectors where particulate matter is removed. The cleaned gases are then sent through water spray condensers which have an associated external cooling system where the gases are cooled, condensing the phosphorus. After removal of phosphorus, the furnace off gas, composed primarily of CO, water, and trace quantities of fluoride, phosphorus, phosphorus compounds, and particulate matter, is sent to the kiln where the CO is used as fuel for the kiln. During normal operations, the CO gas produced will be balanced by the kiln fuel demand and/or the thermal oxidizer. During periods of startup, shutdown, scheduled maintenance, safety measures, upset, and breakdown when the CO gas cannot be sent to either the kiln or the thermal oxidizer, the gas is sent to flares. Flaring is minimized by controlling the CO produced in the furnaces to match the amount of CO that the kiln is able to use as fuel and/or by using the thermal oxidizer when CO production exceeds the amount that can be used by the kiln.

Each furnace (No. 7, No. 8, and No. 9) has an electrostatic precipitator (treater) and spray tower to control particulate emissions. There are three furnaces, three electrostatic precipitators, and three spray towers.

No. 7, No. 8, and No. 9 Tap Hole Fume Collectors

These are also known as tap hole fume collectors (THFC) or Venturi Scrubbers. The furnaces are periodically tapped to remove accumulated molten slag and ferrophosphorus (FeP). Slag taps occur about 40-45 times per day per furnace and last about 10-15 minutes per tap. The ferrophosphorus is tapped once or twice per day per furnace. The tapping gases pass through a high-energy venturi scrubber equipped with a cyclonic separator before discharge to the atmosphere. This is the tap hole fume collector process and equipment.

The following requirements apply to emissions from slag tapping, PRV vent gases, and electrostatic precipitator dust oxidation from the No. 7, No. 8, and No. 9 furnaces, which are each controlled by a cyclonic separator pair and venturi scrubber known as the No. 7, No. 8, and No. 9 tap hole fume collectors (THFC). Normally, the No. 9 THFC also controls emissions from the seal pots. The No. 7 and No. 8 THFC may be used to control emissions from the seal pots when the No. 9 THFC is down.

Phosphorus Storage

Phosphorus storage and loading operations emissions are controlled by the No. 9 THFC with the No. 7 THFC as a backup.

Table 7.1 describes the devices used to control emissions from furnaces.

Table 7.1 EMISSIONS UNITS AND EMISSIONS CONTROL DEVICES

| Emissions Unit(s) / Process(es) | Emissions Control Device |
|--------------------------------------|--|
| Furnaces Nos. 7, 8, and 9 | Electrostatic precipitators Spray towers CO flare for furnaces Nos. 7 and 8 CO flare for Furnaces Nos. 7, 8, and 9 Balanced CO Gas Operation method, or Thermal Oxidizer, or both |
| FeP Slag Tapping | No. 7 THFC |
| Calcium Silicate (CaSi) Slag Tapping | |
| No. 7 Treater doghouses | |
| PRV vent gases | No. 8 THFC |
| FeP slag tapping | |
| CaSi slag tapping | |
| No. 8 treater doghouses | |
| PRV vent gases | No. 9 THFC |
| FeP slag tapping | |
| CaSi slag tapping | |
| No. 9 treater doghouses | |
| PRV vent gases | No. 9 THFC with No. 7 or No. 8 THFC backup |
| Acid water tank seal pot | |
| Wastewater tank seal pot | |
| Clarifier tank seal pot | |
| No. 7 collection tank seal pot | |
| No. 8 collection tank seal pot | |
| No. 9 collection tank seal pot | |
| East mud tank seal pot | Vented to atmosphere |
| West mud tank seal pot | |
| CO phos trap seal pot | No. 9 THFC with No. 7 or No. 8 THFC backup |
| 554/508 mud tank seal pot | |
| Phosphorus loading leg | Vented to atmosphere |
| Phosphorus loading sump | |

[PTC No. P-030316, 10/1/10]

Table 7.2 contains only a summary of the requirements that apply to the furnaces. Specific permit requirements are listed below Table 7.2.

Table 7.2 APPLICABLE REQUIREMENTS SUMMARY

| Permit Conditions | Parameter | Permit Limit / Standard Summary | Applicable Requirements Reference | Operating and Monitoring and Recordkeeping Requirements |
|-------------------|---------------------|--|---|---|
| 7.3 | Visible emissions | No more than 40% opacity from phosphorus storage | IDAPA 58.01.01.625.02, 4/23/99 | 7.21 |
| 7.4 | HCN emissions | Not exceed acceptable ambient concentration in IDAPA 58.01.01.585 | IDAPA 58.01.01.585 | 7.4, 7.11 |
| 7.5 | Criteria pollutants | Various, see permit condition | Permit to Construct No. P-030316, October 1, 2010 | 7.12-7.15, 7.23-7.26 |
| 3.7 | Visible emissions | 20% opacity for no more than three minutes in any 60-minute period | IDAPA 58.01.01.625, 4/5/00 | 3.8, 3.9 |
| Section 10 | Various | Compliance Assurance Monitoring conditions | 40 CFR 64 | Reference Section 10 |

Emission Limits

7.2 PSD-Required BACT Emission Control

The following control measures are equivalent BACT for control of CO emissions from the furnaces. Either option, or both, shall be implemented as provided in Permit Condition 6.10.

- Balanced CO Gas Operation Method

The Balanced CO Gas Operation Method is defined as operating the furnaces such that they produce no more CO gas than what the kiln can use as fuel.

- Thermal Oxidizer

The thermal oxidizer (TO) may be used to thermally treat CO gas generated by the furnaces that is not used by the kiln.

For the furnaces, TO, flares, and kiln from which excess emissions may occur during startup, shutdown, or scheduled maintenance, the facility owner or operator shall prepare, implement and file with the Department, Pocatello Regional Office, specific procedures which will be used to minimize excess emissions during such events. Specific information for each of the types of excess emissions events (i.e. startup, shutdown and scheduled maintenance) shall be established or documented for each piece of equipment or emissions unit and shall include all of the information listed in IDAPA 58.01.01.133.02.a through h (which may be based upon the facility owner or operator's knowledge of the process or emissions where measured data is unavailable).

For the furnaces, TO, flares, and kiln, for process upsets and breakdowns and situations that require implementation of safety measures, which events can reasonably be anticipated to occur periodically but which cannot be reasonably avoided or predicted with certainty, the owner or operator shall prepare, implement, and file with the Department, Pocatello Regional Office, specific procedures which will be used to minimize such events and excess emissions during such events. To the extent possible and reasonably practicable (and based upon knowledge of the process or emissions where measured data is not available), specify the information for each type of anticipated upset/ breakdown/safety event listed in IDAPA 58.01.01.134.04.a through h.

For Phosphorus Storage, a person shall not discharge to the atmosphere from any point of emission, any air pollutant for a period or periods aggregating more than three minutes in any 60-minute period that is greater than 40% opacity as determined by this permit condition.

[IDAPA 58.01.01.625.02, 4/23/99]

7.3 Visible Emissions

For Phosphorus Storage, a person shall not discharge to the atmosphere from any point of emission, any air pollutant for a period or periods aggregating more than three minutes in any 60-minute period that is greater than 40% opacity as determined by this permit condition.

[IDAPA 58.01.01.625.02, 4/23/99]

7.4 HCN Emissions

Emissions of hydrogen cyanide (HCN) resulting from the furnaces shall not cause the controlled ambient concentration of HCN to exceed the applicable acceptable ambient concentration listed in IDAPA 58.01.01.585. The emission rate of HCN may be estimated through the use of standard scientific and engineering principles and practices including, but not limited to, the use of emission factors and engineering judgment.

[Permit to Construct No. P-030316, 10/1/10]

7.5 Thermal Oxidizer Emissions Limits

Emissions of PM₁₀, SO₂, NO_x, and CO from the thermal oxidizer shall not exceed any of the corresponding limits specified in Table 7.3.

Table 7.3 THERMAL OXIDIZER EMISSION LIMITS

| Emissions Unit | PM ₁₀ | | SO ₂ | | NO _x | | CO | |
|------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|
| | lb/hr ^a | T/yr ^b |
| Thermal Oxidizer | 27 | 155 | 257 | 138 | 132 | 119 | 495 | 1,378 |

^{a)} Pounds per hour for each stack

^{b)} Tons per any consecutive 12-month period for three stacks combined

[Permit to Construct No. P-030316, 10/1/10]

Operating Requirements

7.6 PM Compliance Test for No. 7 and No. 8 THFC

This permit condition applies to the following sources:

- No. 7 THFC
- No. 8 THFC

The permittee shall conduct a PM compliance test prior to May 3, 2010, in accordance with the procedures outlined in 40 CFR Part 60, Appendix A, Method 5 or a Department-approved alternative method.

[IDAPA 58.01.01.322.09, 5/1/94]

7.7 PM Compliance Test for No. 9 THFC

The permittee shall conduct a PM compliance test on the No. 9 THFC prior to December 4, 2013, in accordance with the procedures outlined in 40 CFR Part 60, Appendix A, Method 5 or a Department-approved alternative method.

[IDAPA 58.01.01.322.09, 5/1/94]

7.8 Throughput Determination

This permit condition applies to the following sources:

- No. 7 THFC
- No. 8 THFC
- No. 9 THFC

The permittee shall operate and maintain equipment to measure, or develop methods to determine, the pounds per hour of material handled throughout the process.

[IDAPA 58.01.01.322.06, 5/1/94]

7.9 Throughput Limits

The throughput of nodules into the furnaces shall not exceed the limits in Table 7.4.

Table 7.4 FURNACE NODULE THROUGHPUT LIMITS

| Furnace | Nodule throughput |
|---------|--------------------|
| | T/day ^a |
| No. 7 | 5,425 |
| No. 8 | 5,808 |
| No. 9 | 6,068 |

^a) T/day = tons per calendar day

[PTC No. P-030316, 10/1/10]

7.10 Implementation of the Balanced CO Gas Operation Method and/or Installation of the Thermal Oxidizer

The permittee shall operate and maintain the thermal oxidizer or any modifications required for the Balanced CO Gas Operation Method or both commence construction of the thermal oxidizer and commence construction of any modifications required for the Balanced CO Gas Operation Method, and shall start up operation of the thermal oxidizer or the balanced CO gas operation method or both within 24 months of issuance of PTC No. P-030316, in accordance with Item No. 8 of the consent order signed on December 30, 2002. The Balanced CO Gas Operation Method shall match CO gas production from the furnaces with CO gas consumption of the kiln, or excess CO shall be thermally treated by the thermal oxidizer.

[PTC No. P-030316, 10/1/10]

7.11 Operating Requirements

Upon implementation of the Balanced CO Gas Operation Method or installation of the thermal oxidizer or both as set forth by this permit, CO gas generated by the operating furnaces shall be controlled by the kiln, the thermal oxidizer, or the flares in accordance with the PSD-Required BACT Emission Control permit condition in this permit.

[PTC No. P-030316, 10/1/10]

7.12 Thermal Oxidizer Throughput

All three units of the thermal oxidizer combined shall not combust more than 160 million pounds of CO gas per any 12-consecutive month period.

[PTC No. P-2012.0055, 4/20/15]

7.13 Thermal Oxidizer Operating Temperature

The primary combustion chamber of the thermal oxidizer shall be maintained at or above 1600 degrees F on a one-hour average when being used to control emissions from the furnaces.

[PTC No. P-2012.0055, 4/20/15]

7.14 Thermal Oxidizer Scrubber Operation

- When the thermal oxidizer is in use, one or more of the three scrubber units shall be operated to scrub emissions.
- For each scrubber unit in operation, the pressure drop across the venturi section of the scrubber shall be maintained at or above the pressure drop established by performance tests that showed compliance with the PM and PM₁₀ emissions limits.
- For each scrubber unit in operation, the scrubbing media flow rate shall be maintained at or above the flow rate, in gallons per minute, established by performance tests that showed compliance with the PM and PM₁₀ emissions limits.

[PTC No. P-030316, 10/1/10]

7.15 Thermal Oxidizer Performance Testing

The permittee shall conduct a minimum of one performance test for each of the following pollutants: PM, PM₁₀, SO₂, NO_x, and CO. These tests will be used to demonstrate compliance with the hourly limits for PM₁₀, SO₂, NO_x, and CO. The permittee is encouraged to submit a source testing protocol for approval 30 days prior to conducting any of these performance tests. Of the three thermal oxidizer stacks, only the most commonly used stack is required to be tested and is considered representative of the other stacks.

The permittee shall test in accordance with IDAPA 58.01.01.157 and the conditions of this permit including the operating requirements for specify the unit to be tested and the performance testing requirements specified in the general provisions of this permit. The general provisions include notification requirements, testing procedures and reporting requirements.

The permittee shall monitor and record the following during each performance test:

- Temperature in the main combustion chamber in degrees Fahrenheit
- Quantity of gas treated from the furnace(s) in pounds
- Pressure drop across the scrubber for PM and PM₁₀ tests
- Scrubbing media flow rate in gallons per minute for PM and PM₁₀ tests

Each source test shall be conducted under “worst case normal” conditions as required by IDAPA 58.01.01.157 and the performance testing requirements specified in the general provisions of this permit. The performance test report shall contain documentation that the test was conducted under these conditions.

After the initial performance test, for each pollutant tested, future testing shall be performed according to the following schedule. If the pollutant emission rate measured in the most recent test is less than or equal to 75% of the applicable emission standard, the next test shall be conducted within five years of the test date. If the pollutant emission rate measured during the most recent performance test is greater than 75%, but less than or equal to 90%, of the applicable emission standard, the next test shall be conducted within two years of the test date. If the pollutant emission rate measured during the most recent performance test is greater than 90% of the applicable emission standard, the next test shall be conducted within one year of the test date.

[PTC No. P-030316, 10/1/10]

7.16 Flare Operation

Balanced CO Gas Operation Method

When the Balanced CO Gas Operation Method is used to control emissions from the furnaces, the furnaces shall be operated such that they produce no more CO gas than what the kiln can use as fuel. Allowable operation of the flares is described in the documentation that is developed in accordance with the PSD-Required BACT Emission Control section of this permit.

Thermal Oxidizer

When the thermal oxidizer is used to control the emissions from the furnaces, any use of the flares is subject to IDAPA 58.01.01.130-136 and to the procedures developed in accordance with the PSD-required BACT emission control permit condition.

[PTC No. P-030316, 10/1/10]

Monitoring and Recordkeeping Requirements

7.17 CO Flow

- Monitor and record the average hourly CO flow, in pounds per hour, to the kiln.

- Calculate and record the average pound-per-hour CO flow to the flares (total CO to the No. 7 and 8 flare and No. 9 flare).

[IDAPA 58.01.01.322.06, 5/1/94]

7.18 Phosphorus Traps

Once each shift, the permittee shall monitor and record the operation of the phosphorus traps and operation of the CO flow monitor to the kiln.

[IDAPA 58.01.01.322.06, 5/1/94]

7.19 CO Piping

Once each year, the permittee shall complete a thickness profile of the CO piping to the kiln.

[IDAPA 58.01.01.322.06, 5/1/94]

7.20 CO Opacity

The permittee shall conduct a visible emission inspection of the CO phosphorus-trap seal pot, phosphorus loading leg, and phosphorus-loading sump once each week during daylight hours and under normal operating conditions. If opacity greater than 20% is present, the permittee shall take appropriate corrective action as expeditiously as practicable. If opacity is greater than 40% for a period or periods aggregating more than three minutes in any 60-minute period, the permittee shall take all necessary corrective actions and report the exceedance in its annual compliance certification and in accordance with IDAPA 58.01.01.130-136. The permittee shall maintain records of the results of each weekly visible emission inspection. The records shall include, at a minimum, the date of each inspection and a description of the following: the permittee's assessment of the conditions existing at the time visible emissions are present (if observed), any corrective action taken in response to the visible emissions, and the date corrective action was taken.

[IDAPA 58.01.01.322.06, 07, 08, 5/1/94]

7.21 Process Weight Rate

For the following sources:

- No. 7 THFC
- No. 8 THFC
- No. 9 THFC

The permittee shall maintain records containing the following:

- The daily average hourly process weight rate.
- The daily average calculated hourly emission limitation using the 0.2 lb/T emission limit if the process weight rate is less than 352,000 lb/hr. If the process weight rate is greater than 352,000 lb/hr, the permittee shall calculate the maximum hourly emission limitation using the formula in IDAPA 58.01.01.702.
- These records shall be maintained in accordance with Permit Condition 3.23.

[IDAPA 58.01.01.322.06, 5/1/94]

7.22 Nodule Throughput Monitoring

The permittee shall monitor the throughput of nodules in tons per day into the furnaces and record the amount once per calendar day.

[PTC No. P-030316, 10/1/10]

7.23 Thermal Oxidizer Throughput Monitoring

The permittee shall monitor and record the quantity of CO gas sent to the thermal oxidizer at least once per month, when operating. The total quantity, in pounds, of CO gas sent to the thermal oxidizer each month shall be calculated. Records shall be maintained for that month and for every consecutive 12-calendar-month period.

[PTC No. P-030316, 10/1/10]

7.24 Thermal Oxidizer Temperature Monitoring

The temperature in the primary combustion chamber of the thermal oxidizer shall be monitored and recorded once per hour when the thermal oxidizer is being used to treat CO emissions from the furnaces. If more than one reading is taken each hour, the readings for that hour may be averaged to show compliance with the temperature limit. The readings shall be taken in evenly-spaced time increments.

[PTC No. P-030316, 10/1/10]

7.25 Thermal Oxidizer Scrubber Flow Rate and Pressure Drop Monitoring

- For each thermal oxidizer scrubber, the permittee shall monitor and record the average hourly pressure drop across the scrubber once per hour, when operating.
- The permittee shall monitor and record the average hourly scrubbing media flow rate, in gallons per minute, across the scrubber once per hour, when operating.

[PTC No. P-030316, 10/1/10]

Reporting Requirements

7.26 Flare Usage

Any use of the flares is subject to the reporting provisions specified in IDAPA 58.01.01.130-136 and to the procedures developed in accordance with the PSD-required BACT emission control permit condition.

[PTC No. P-030316, 10/1/10]

8. Natural Gas-Fired Boiler (A/U Boiler)

Summary Description

8.1 Process Description

The A/U boiler is used to provide steam to various processes at the facility. The primary steam source for the plant is the waste heat boiler on the kiln discharge and the A/U boiler is the secondary source. The A/U boiler is the primary source of steam when the kiln is down and/or maintenance is being performed on the waste heat boiler. The AU boiler is normally in a hot standby mode on minimum fire. It is rated for 50,000 lb/hr of steam. It was constructed prior to June 8, 1989.

[PTC No. P-030316, 10/1/10]

Table 8.1 describes the devices used to control emissions from A/U boiler.

Table 8.1. NATURAL GAS-FIRED BOILER (A/U BOILER) DESCRIPTION

| Source ID | Emissions Units / Processes | Control Devices |
|-----------|---|-----------------|
| 804.00 | Natural gas-fired A/U Boiler 50,000 lb/hr steam | None |

Table 8.2 contains a summary of the requirements that apply to the A/U boiler. Specific permit requirements are listed below Table 8.2.

Table 8.2 NATURAL GAS-FIRED BOILER (A/U BOILER) APPLICABLE REQUIREMENTS SUMMARY

| Permit Conditions | Parameter | Permit Limit/ Standard Summary | Applicable Requirements Reference | Monitoring and Recordkeeping Requirements |
|-------------------|-------------------|---|--------------------------------------|---|
| 8.2 | PM | Gas - 0.015 gr/dscf, 3% oxygen Liquid - 0.050 gr/dscf, 3% oxygen | IDAPA 58.01.01.677 | 3.15 |
| 3.7 | Visible emissions | 20% opacity for no more than three minutes in any 60-minute period | IDAPA 58.01.01.625, 4/5/00 | 3.8, 3.9 |

Emission Limits

8.2 PM Emissions

The PM emissions shall not exceed 0.015 gr/dscf of effluent gas corrected to 3% oxygen by volume for natural gas, and 0.050 gr/dscf of effluent gas corrected to 3% oxygen by volume for liquid fuel.

[IDAPA 58.01.01.677, 5/1/94]

Operating Requirements

8.3 Fuel Restriction

The boiler shall burn only natural gas. No monitoring or recordkeeping of grain-loading is required by this permit while burning natural gas.

[IDAPA 58.01.01.322.06, 5/1/94]

8.4 Fuel Throughput

The natural gas burned by the A/U boiler shall not exceed 140 million standard cubic feet per any consecutive 12-month period.

[PTC No. P-030316, 10/1/10]

Monitoring and Recordkeeping Requirements

8.5 Fuel Monitoring and Recordkeeping

The permittee shall monitor and record the amount, in standard cubic feet, of natural gas burned in the A/U boiler each month and each consecutive 12-calendar-month period.

[PTC No. P-030316, 10/1/10]

9. Optimization Projects

Summary Description

9.1 Process Description

There are several projects designed to improve the efficiency of operation which are allowed by this permit.

Furnace power control improvement

P4 will change the programming which controls the furnace power controls to reduce “peaks” and “valleys” associated with the power consumed by the furnaces. This will reduce variation in furnace power and result in a more constant flow of CO gas to be burned in the kiln and/or the thermal oxidizer. The effort will involve power control system logic improvements, possible automatic control of furnace power input voltage, and other possible equipment needed to reduce variations of furnace power. The project is intended to reduce variation in peak load while maintaining the same average furnace load.

Furnace feed variability reduction

The proposed improvement would better blend raw materials prior to “charging” the feed to the furnace. The benefits of a more stable chemical and physical furnace charge are in improved yields and recovery. This equates directly to a more stable and constant CO flow to the kiln and/or the thermal oxidizer (thereby improving its efficiency and reliability), as well as potentially reducing the loss of phosphorus to the slag. The effort will involve optimizing equipment and control systems, and the criteria and decision process used to make furnace charge adjustments.

Increase furnace tapping frequency

Increasing the frequency of tapping is expected to reduce furnace production variability. The benefits are a more stable furnace offgas flow that will reduce furnace temperature peaks and particulate entrainment. This will allow for more efficient electrostatic precipitator operation, which will reduce phosphy mud and precipitator dust generation and result in safety improvements in the handling of recycle material. Additionally, a more stable offgas flow relates to a more stable CO flow to the kiln and/or the thermal oxidizer. Currently, one source of process variation occurs as the molten material accumulates inside the furnace between tapping operations. The effort would involve tapping (removing slag from the furnace) approximately twice the current frequency of four times per hour, thus reducing the slag accumulation in the furnace. The tapping would be of approximately half the duration so there would be no increase in emissions.

Kiln feed variation reduction

The proposed improvement would better blend ore prior to “charging” the feed to the nodulizing kiln. This project would upgrade the ore stacker itself to be able to move on a continuous basis, and related ore handling equipment to optimize blending. Additional blending of ore may reduce sulfur and carbon peaks to the kiln, resulting in more efficient SO₂ scrubbing at the kiln discharge and more predictable CO consumption at the kiln.

Furnace vent gas pollution control improvements

P4 will complete a project to route the furnace PRV vent gases through the THFC scrubbers for scrubbing particulate from the vent gas stream.

10. Compliance Assurance Monitoring

Summary Description

Table 10.1 describes the devices used to control emissions from CAM applicable emissions sources.

Table 10.1 EMISSIONS UNITS AND EMISSIONS CONTROL DEVICES

| Emissions Units | Control device used to achieve compliance with emission limitation or standard | Emission limitation or standard | Indicator |
|--|--|--|---|
| Kiln | Hydro-Sonic scrubbers | 30 lb/hr PM ₁₀ 143 lb/hr SO ₂ PWR ¹ IDAPA 58.01.01.702 | Pressure differential and scrubbing media flow rate |
| Nodule cooler | Spray tower | 27 lb/hr PM ₁₀ PWR ¹ IDAPA 58.01.01.702 | Scrubbing media flow rate |
| Material handling and drying | Baghouse 104 | PWR IDAPA 58.01.01.702 | See/no see visible emissions observation |
| | Nodule reclaim baghouse | PWR IDAPA 58.01.01.702 | |
| | SDM vent filter | PWR IDAPA 58.01.01.702 | |
| | Dryer baghouse 836 | PWR IDAPA 58.01.01.702 | |
| | Baghouse 105 | PWR IDAPA 58.01.01.702 | |
| | Coke bunker baghouse (Coke baghouse) | PWR IDAPA 58.01.01.702 | |
| | Coke handling baghouse (Coke and quartzite baghouse)(C&A baghouse) | PWR IDAPA 58.01.01.702 | |
| | Scaleroom baghouse | PWR IDAPA 58.01.01.702 | |
| | No. 7 CO baghouse | PWR IDAPA 58.01.01.702 | |
| | No. 8 CO baghouse | PWR IDAPA 58.01.01.702 | |
| | No. 9 CO baghouse | PWR IDAPA 58.01.01.702 | |
| | Main furnace stocking system baghouse (Main stock baghouse) | PWR IDAPA 58.01.01.702 | |
| Bulk storage bin baghouse, aka coke fines bin baghouse | PWR IDAPA 58.01.01.702 | | |
| Nodule crushing and screening | Nodule reclaim venturi scrubber, aka nodule crushing and screening scrubber | 15 lb/hr PM ₁₀ 65.7 T/yr PM ₁₀ | Pressure differential and scrubbing media flow rate |
| Furnaces No. 7, No. 8, and No. 9 | THFC's | PWR IDAPA 58.01.01.702 | Pressure differential and scrubbing media flow rate |
| | Thermal Oxidizer scrubbers | 27 lb/hr PM ₁₀ | Pressure differential and scrubbing media flow rate |

¹ The process weight rate limit applies to the emissions from the kiln and the nodule cooler combined.

TBD = To be determined

10.1 Within 180 days of source tests of the kiln and cooler that demonstrate compliance, to DEQ's satisfaction, with Permit Condition 3.5, the permittee shall submit CAM plans for the kiln and for the cooler, prepared in accordance with 40 CFR 64.3 and 64.4, and an application for a Tier I operating permit revision to incorporate CAM for the emission control devices which control emissions of PM from the kiln and the cooler.

[IDAPA 58.01.01.322.06, 5/1/94]

10.2 For each baghouse and vent filter listed in Table 10.1, the indicator of control performance shall be visible emissions as determined by a see/no see observation.

[40 CFR 64.6(c)]

10.3 For each baghouse and vent filter listed in Table 10.1, the permittee shall conduct a see/no see observation of visible emissions a minimum of once per every 24 hour period in accordance with 40 CFR 64.6(c). Records of the observations shall be maintained in accordance with Permit Condition 2.11.

[40 CFR 64.6(c)]

10.4 For each baghouse and vent filter listed in Table 10.1, an excursion is defined as any visible emission observed.

[40 CFR 64.6(c)(2)]

10.5 The indicators of control performance shall be pressure differential across the scrubber and the scrubbing media flow rate for each of the following scrubbers, as identified in Table 10.1:

- Nodule crushing and screening venturi scrubber
- No. 7 THFC venturi scrubber
- No. 8 THFC venturi scrubber
- No. 9 THFC venturi scrubber
- Thermal oxidizer scrubbers

[40 CFR 64.6(c)]

10.6 The CAM range for the pressure differential (PD) is a PD at or above the PD identified below for each corresponding scrubber:

| Scrubbers | Pressure Differential Inches of water |
|--|--|
| Nodule crushing and screening venturi scrubber | 12.1 |
| No. 7 THFC venturi scrubber | 40.5 |
| No. 8 THFC venturi scrubber | 39.6 |
| No. 9 THFC venturi scrubber | 39.6 |
| Thermal oxidizer scrubbers | 65.0 |

[40 CFR 64.6(b)]

10.7 The CAM range for the scrubbing media flow rate (flow rate) is a flow rate at or above the flow rate identified below for each corresponding scrubber:

| Scrubbers | Flow Rate Gallons per Minute |
|--|---------------------------------|
| Nodule crushing and screening venturi scrubber | 768.6 |
| No. 7 THFC venturi scrubber | 406.8 |
| No. 8 THFC venturi scrubber | 365.4 |
| No. 9 THFC venturi scrubber | 421.4 |
| Thermal oxidizer scrubbers | 1350.0 |

[40 CFR 64.6(b)]

10.8 Within 60 days of permit issuance, if required to establish a range for the pressure differential and the scrubbing media flow rate, the permittee shall conduct a performance test for each of the following scrubbers, as identified in Table 10.1:

- Nodule crushing and screening venturi scrubber
- No. 7 THFC venturi scrubber
- No. 8 THFC venturi scrubber
- No. 9 THFC venturi scrubber
- Thermal oxidizer scrubbers

to demonstrate compliance with the corresponding PM limits in order to establish a range for CAM for the pressure differential and scrubbing media flow rate for the venturi scrubbers. These tests can be combined with the tests required by Permit Conditions 6.3, 7.6, and 7.7. The permittee is encouraged to submit a source testing protocol for approval 30 days prior to conducting any performance test.

The permittee shall test in accordance with IDAPA 58.01.01.157 and the conditions of this permit including the operating requirements for specify the unit to be tested.

The permittee shall monitor and record the following during each performance test:

- Pressure drop across the scrubber once each 15 minutes during the performance test
- Scrubbing media flow rate in gallons per minute once each 15 minutes during the test
- For the nodule crushing and screening scrubber, the amount of material handled by the nodule and quartzite systems.
- For the THFC's, testing shall be conducted during tapping and pugging operations

Each source test shall be conducted under "worst case normal" conditions as required by IDAPA 58.01.01.157 and the source test report shall contain documentation that the test was conducted under these conditions.

More than one performance test may be required for each scrubber in order to establish a range of values for the pressure differential and the scrubbing media flow rate to reasonably assure compliance with CAM in accordance with 40 CFR 64.6(b).

[40 CFR 64.6(b)]

10.9 For the nodule crushing and screening scrubber, the THFC venturi scrubbers, and thermal oxidizer scrubbers listed in Table 10.1, an excursion is defined as any three hour average measurement of pressure differential or scrubber media flow rate that is less than the corresponding range established in Permit Conditions 10.7 and 10.8.

[40 CFR 64.6(c)(2)]

10.10 For the nodule crushing and screening scrubber, the THFC venturi scrubbers, and the thermal oxidizer scrubbers listed in Table 10.1, the monitoring devices for pressure differential and scrubbing media flow rate shall be operated, maintained and calibrated in accordance with manufacturer specifications. Copies of the manufacturer specifications shall be maintained on-site.

10.11 For the nodule crushing and screening scrubber, the THFC venturi scrubbers, and the thermal oxidizer scrubbers listed in Table 10.1, if the manufacturer specifications for the monitoring devices for pressure differential and scrubbing media flow rate include calibration procedures the permittee shall calibrate the monitoring device as frequently as the manufacturer specifies.

10.12 For the nodule crushing and screening scrubber, the THFC venturi scrubbers, and the thermal oxidizer scrubbers listed in Table 10.1, if the manufacturer specifications for the monitoring devices for pressure differential and scrubbing media flow rate include calibration procedures but do not specify a calibration frequency, the device shall be calibrated at least once each calendar year.

[40 CFR 64.3(b)(1)(2)&(3)]

10.13 The permittee shall monitor and record the pressure differential and scrubbing media flow rate of the air pollution devices used to control emissions from each of the following scrubbers, as identified in Table 10.1:

- Nodule crushing and screening venturi scrubber
- No. 7 THFC venturi scrubber
- No. 8 THFC venturi scrubber
- No. 9 THFC venturi scrubber
- Thermal oxidizer scrubbers

by collecting four or more data values equally spaced over each hour and average the values once each calendar day. Pressure differential shall be recorded as inches of water and scrubbing media flow rate shall be recorded as gallons per minute.

[40 CFR 64.3(b)(4)(iii)]

10.14 For the cooler spray tower, the indicator of control performance shall be the scrubbing media flow rate.

[40 CFR 64.6(c)]

10.15 For each of the kiln Hydro-Sonic scrubbers, the indicators of control performance shall be the scrubbing media flow rate and the pressure differential.

[40 CFR 64.6(e)]

10.16 For the cooler spray tower, the permittee shall monitor and record the scrubbing media flow rate by collecting four or more data values equally spaced over each hour and average the values in accordance with 40 CFR 64.6(c). Records of the monitoring shall be maintained in accordance with Permit Condition 3.23. Scrubbing media flow rate shall be recorded as gallons per minute.

[40 CFR 64.6(c)]

10.17 For each of the kiln Hydro-Sonic scrubbers, the permittee shall monitor and record the scrubbing media flow rate and the differential pressure by collecting four or more data values equally spaced over each hour and average the values in accordance with 40 CFR 64.6(c). Records of the monitoring shall be maintained in accordance with Permit Condition 3.23. Pressure differential shall be recorded as inches of water and scrubbing media flow rate shall be recorded as gallons per minute.

[40 CFR 64.6(e)]

10.18 For the cooler spray tower, an excursion is defined as any three-hour average scrubbing media flow rate which is less than the minimum level specified for the cooler spray tower in Permit Condition 10.22.

[40 CFR 64.6(c)(2)]

10.19 For the Hydro-Sonic scrubbers, an excursion is defined as:

- Any six-hour average scrubbing media flow rate which is less than the minimum level specified for the corresponding scrubber in Permit Condition 10.20.
- Any six-hour average pressure differential reading which is less than the minimum level specified for the corresponding scrubber in Permit Condition 10.21.

[40 CFR 64.6(c)(2)]

10.20 The CAM ranges for PM and PM₁₀ for the pressure differential (PD) is a PD at or above the PD identified below for each corresponding scrubber:

| Control Device | Pressure Differential (in. H ₂ O) |
|-------------------------|--|
| Hydro-Sonic Scrubber #1 | 40 |
| Hydro-Sonic Scrubber #2 | 40 |
| Hydro-Sonic Scrubber #3 | 40 |
| Hydro-Sonic Scrubber #4 | 40 |

[40 CFR 64.6(b)]

10.21 The CAM ranges for PM and PM₁₀ for the scrubbing media flow rate (flow rate) is a flow rate at or above the flow rate identified below for each corresponding scrubber:

| Control Device | Scrubbing Media Flow Rate (gpm) |
|-------------------------|---------------------------------|
| Cooler Spray Tower | 1334 |
| Hydro-Sonic Scrubber #1 | 891 |
| Hydro-Sonic Scrubber #2 | 894 |
| Hydro-Sonic Scrubber #3 | 908 |
| Hydro-Sonic Scrubber #4 | 910 |

[40 CFR 64.6(b)]

10.22 For the cooler spray tower and Hydro-Sonic scrubbers, if the manufacturer specifications for the monitoring devices for pressure differential and scrubbing media flow rate include calibration procedures but do not specify a calibration frequency, the device shall be calibrated at least once each calendar year.

[40 CFR 64.3(b)(1)(2)&(3)]

10.23 For the cooler spray tower, at all times, the permittee shall maintain the monitoring equipment for the scrubbing media flow rate, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

[40 CFR 64.7(b)]

10.24 For each Hydro-sonic scrubber, at all times, the permittee shall maintain the monitoring equipment for the pressure differential and scrubbing media flow rate, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

[40 CFR 64.7(b)]

10.25 Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

[40 CFR 64.7(c)]

10.26 An exceedance is defined as any measured emission of PM or PM₁₀ which exceeds any corresponding emissions limit specified for each emissions unit in Table 10.1.

[40 CFR 64.6(c)(2)]

10.27 In accordance with 40 CFR 64.7(d), upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

[40 CFR 64.7(d)]

10.28 In accordance with 40 CFR 64.7(e), if the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the Title V permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

[40 CFR 64.7(e)]

10.29 If it is determined that a Quality Improvement Plan (QIP) is required based on a determination under 40 CFR 64.7(d)(2), the permittee shall comply with QIP requirements in accordance with 40 CFR 64.8.

[40 CFR 64.8]

10.30 In accordance with 40 CFR 64.9(a), on and after the date specified in 40 CFR 64.7(a) by which the owner or operator must use monitoring that meets the requirements of this part, the owner or operator shall submit monitoring reports to the permitting authority in accordance with 40 CFR 70.6(a)(3)(iii). A report for monitoring under this part shall include, at a minimum, the information required under §70.6(a)(3)(iii) of this chapter and the following information, as applicable: (i) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken; (ii) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and (iii) A description of the actions taken to implement a QIP during the reporting period as specified in 40 CFR 64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

[40 CFR 64.9(a)]

10.31 In accordance with 40 CFR 64.9(b), the owner or operator shall comply with the recordkeeping requirements specified in 40 CFR 70.6(a)(3)(ii). The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 40 CFR 64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions).

[40 CFR 64.9]

11. Insignificant Activities

Activities and emissions units identified as insignificant under IDAPA 58.01.01.317.01(b) are required to be listed in the Tier I operating permit to qualify for a permit shield.

Table 11.1 INSIGNIFICANT ACTIVITIES

| Location of the Emissions unit At the facility | Description | Emission Point | Insignificant activities IDAPA citation Section 317.01(b) |
|--|---|----------------------------------|---|
| 303.00, Hydroclarifier | Sodium hydrosulfide unloading | Fug, lime slaker building | b19, Aqueous solution of an inorganic salt |
| 304.00, Underflow solids | Sodium hydrosulfide addition | Fug, belt filter building | b19, Aqueous solution of an inorganic salt |
| 318.00, Kiln | Diesel tanks (auxiliary) | Fug, outside | b3, Diesel storage tanks, 250 gallons each |
| 560.15, Furnace No. 7 | Flare stack igniter | Pt, No. 7 & No. 8 co Flare stack | b5, Natural gas, 0.15 MMBtu/hr |
| 560.50, Furnace No. 7 | No. 7 hearth fan gasoline fuel tank | Fug, inside building | b3, Gasoline storage tank, 25 gallons |
| 560.55, Furnace No. 7 | No. 7 hearth fan fuel backup motor (Gasoline driven) | Pt, inside building | b6, Gasoline, 65 hp = 0.165 MMBtu/hr |
| 560.60, Furnace No. 7 | Gasoline tank (shell motor pump – No. 7&8) | Fug, inside building | b3, Gasoline storage tank, 40 gallons |
| 560.65, Furnace No. 7 | Shell motor pump No. 7&8 (Gasoline driven) | Pt, outside building | b6, Gasoline, 192 hp = 0.488 MMBtu/hr |
| 584.50, Furnace No. 8 | No. 8 hearth fan diesel fuel tank | Fug, inside building | b3, Diesel storage tank, 200 gallons |
| 584.55, Furnace No. 8 | No. 8 hearth fan fuel electrical backup motor (Diesel driven) | Pt, inside building | b7, Gasoline, 65 hp = 0.165 MMBtu/hr |
| 608.15, Furnace No. 9 | Flare stack igniter | Pt, No. 9 Co flare | b5, Natural gas, 0.15 MMBtu/hr |
| 608.50, Furnace No. 9 | No. 9 hearth fan diesel fuel tank | Fug, inside building | b3, Diesel storage tank, 58 gallons |
| 608.55, Furnace No. 9 | No. 9 hearth fan fuel electric backup motor (diesel driven) | Pt, inside building | b7, Diesel, 192 hp = 0.488 MMBtu/hr |
| 608.80, Furnace No. 9 | Diesel tank (No. 9 oil seal fire system) | Fug, inside building | b3, Diesel storage tank, 200 gallons |
| 608.85, Furnace No. 9 | No. 9 oil seal fire system pump (Diesel driven) | Fug, inside building | b7, Diesel (No. 2 fuel oil) 0.51 MMBtu/hr |
| 608.90, Furnace No. 9 | Gasoline tank (No. 9 furnace shell motor pump) | Fug, outside | b3, Gasoline storage tank, 25 gallons |
| 608.95, Furnace No. 9 | No. 9 furnace shell pump motor (Gasoline driven) | Pt, inside building | b6, Gasoline, 192 hp = 0.488 MMBtu/hr |
| 805.10, Boiler house | Diesel tank | Fugitives, inside building | b3, Diesel storage tank, 50 gallons |
| 805.20, Boiler house | Emergency diesel electric engine | Pt, wall vent | b7, Diesel (No. 2 fuel oil) 0.51 MMBtu/hr |
| 807.00, Machine shop | Gas heaters (2) | Pt, roof vents | b5, b18, Natural gas, 0.030 MMBtu/hr each |
| 812.00, Tank car repair building | Gas heaters (2) | Pt, roof vents | b5, b18, Natural gas, 0.16 MMBtu/hr each |
| 814.00, Training building | Gas Furnace | Pt, roof vent | b5, 18, Natural gas, 0.125 MMBtu/hr |
| | | | |

| Location of the Emissions unit At the facility | Description | Emission Point | Insignificant activities IDAPA citation Section 317.01(b) |
|---|-------------------------------------|-----------------------|---|
| 817.00, South shop | Gas heaters (2) | Pt, roof vents | b5, b18, Natural gas, 0.16 MMBtu/hr each |
| 819.00, North shop | Gas heaters (3) | Pt, roof vents | b5, b18, Natural gas, 0.14 MMBtu/hr each |
| 821.00, North shop | Jet washer | Fug, inside building | b26, Electric washer using hot water |
| 822.00, Electric shop | Gas heaters (3) | Pt, roof vents | b5, b18, Natural gas, 0.10 MMBtu/hr each |
| 823.00, Electric shop | Jet washer | Fug, inside building | b26, Electric washer using hot water |
| 827.00, sandblasting area | Propane storage tank | Fug, outside | b4, Propane storage tank, 500 gallons |
| 829.00, salvage hill | Kerosene tank | Fug, outside | b3, Kerosene storage tank, 250 gallons |
| 829.10, salvage hill | Propane heaters (10)(10)(20)(12) | Fug, inside building | b5, 18, Propane, (10) 0.15 MMBtu/hr each, (10) 0.08 MMBtu/hr each, (20) 0.09 MMBtu/hr each, (12) 0.40 MMBtu/hr each |
| 830.00, salvage hill | Stoddard solvent tank | Fug, outside | b3, Stoddard solvent storage tank, 500 gallons |
| 832.00, Maintenance building | Welding | Fug, inside | b9, Small amount of Welding rod used per day (<<1 ton/day) |
| 833.00, Maintenance building | Propane heaters (10)(10)(20)(12) | Pt, roof vents | b5, 18, Propane, 0.03 MMBtu/hr |
| 835.00, Heavy duty building | Steam parts cleaner | Fug, inside | b26, Cleaning equipment using Steam |
| 838.00, Heavy duty building | Jet washer | Fug, inside | b26, Electric washer using hot water |
| 841.00, Heavy duty building | Gas heaters (13)(1) | Pt, roof vents | b5, 18, Natural gas, (13) 0.20 MMBtu/hr each, (1) 0.032 MMBtu/hr |
| 843.00, Mark III shop | Welding | Fug, inside | b9, Small amount of Welding rod used per day (<<1 ton/day) |
| 844.00, Mark III shop | Gas heaters (3) | Pt, roof vents | b5, 18, Natural gas, 0.20 MMBtu/hr each |
| 845.00, Mark III shop | Jet washer | Fug, inside | b26, Electric washer using hot water |
| 846.00, materials handling shop | Gas furnace (2) | Pt, roof vent | b5, 18, Natural gas (1) 0.20 MMBtu/hr, (1) 0.10 MMBtu/hr |
| 848.10, Fuel storage tank | Low sulfur diesel tank | Fug, outside | b3, Diesel storage tank, 500 gallons |
| 849.00, Fuel storage tank | Gasoline storage tanks (3) | Fug, outside | b3, Gasoline storage tanks, 1200 gallons each |
| 852.00, Main control lab | Auto fluxer (glass beading Machine) | Pt, roof vent | b5, Natural gas, 0.30 MMBtu/hr |
| 853.00, Main control lab | Ambient air pre-heater | Pt, roof vent | b5, 18, Natural gas, 0.20 MMBtu/hr each |
| 855.30, Main control lab | Oil filter bath tank | Fug, outside | b3, low volatility oil tank, 15 gallons |
| | | | |

| Location of the Emissions unit At the facility | Description | Emission Point | Insignificant activities IDAPA citation Section 317.01(b) |
|---|-------------------------------|-----------------------------|---|
| 856.00, Pump repair shop | Water heater | Pt, roof vent | b5, 18, Natural gas, 0.178 MMBtu/hr |
| 918.10, Phossey water ponds | Sulfuric acid dispensing | Fug, acid addition building | b19, 97% H ₂ SO ₄ |
| 927.20, Slag handling | Coating mixing tank | Pt, exhaust vent | b26, Slurry tank, 400 gallons |
| 927.30, Slag handling | High moisture coating station | Fug, outside | b25, Surface coating using aqueous mixture |
| 961.00, Pump repair shop | Jet washer | Pt, wall duct | b26, Electric washer using hot water |
| 962.00, Inert Gas generator | Generator fugitives | Fug, outside | b5, Natural gas, 0.50 MMBtu/hr |
| 965.00, Sub-station | Transformer oil tank | Fug, outside | b3, Oil storage tank, 2,060 gallons |
| 966.10, Plant well 1-4 | Backup diesel pumps | Pt, outside | b7, Diesel, 192 hp = 0.488 MMBtu/hr |
| 1025.00, Portable welders | Exhaust | Mobile, tailpipe | b7, Diesel (No. 2 fuel) 150 hp = 0.38 MMBtu/hr |
| 1025.10, Portable equipment | Portable propane tanks (4) | Fug, outside | b4, Propane storage tanks, (2) 172 gal, (2) 176 gal |
| 557.00 | No. 7 Treater heat vent | Pt, outside | b30, Natural gas-fired |
| 581.00 | No. 8 Treater heat vent | Pt, outside | b30, Natural gas-fired |
| 605.00 | No. 9 Treater heat vent | Pt, outside | b30, Natural gas-fired |
| 711.10, Phosphorus storage | Railcar cleanout leg | Fug, outside | b30, No significant emissions |
| 720.10, Phosphorus storage | Phosphorus RR tank cars | Pt, outside | b30, Unloading is a closed Loop system, no emissions should occur |
| 720.20, Phosphorus storage | Phosphorus ISO tanks | Pt, outside | b30, Unloading is a closed loop system, no emissions should occur |
| 801.00, Store room | Starting fluid, spot check | Fug, inside | b30, Minor emissions |
| 803.00, Store room | Solvent storage cabinet | Fug, inside | b30, Stored Sealed, solvent use accounted for elsewhere |
| 806.00, Machine shop | Welding snorkle vents | Pt, duct vent | b30, Primarily Welding emissions (insignificant activity) |
| 808.10, Machine shop | Flammable storage cabinet | Fug, inside building | b30, Stored Sealed, solvent use accounted for elsewhere |
| 809.00, Tank car repair building | Welding snorkle vents | Pt, duct vent | b30, Primarily Welding emissions (insignificant activity) |
| 810.00, Tank car repair building | Plasma cutter | Fug, inside building | b30, Low usage, negligible amount of emissions |
| 811.00, Tank car repair building | Acetylene cutter | Fug, inside | b30, Low usage, negligible amount of emissions |
| 815.00, South shop | Welding snorkle vents | Pt, duct vent | b30, Primarily Welding emissions (insignificant activity) |
| 816.00, South shop | Forge | Pt, roof vent | b30, Low usage, negligible amount of emissions |
| 820.00, North shop | Welding snorkle vents | Pt, duct vent | b30, Primarily Welding emissions (insignificant activity) |
| 826.10, Sandblasting area | plasma cutter | Fug, outside | b30, Low usage, negligible amount of emissions |

| Location of the Emissions unit At the facility | Description | Emission Point | Insignificant activities IDAPA citation Section 317.01(b) |
|--|-------------------------------------|-----------------------------|---|
| 840.00, Heavy duty building | Welding snorkle vents | Pt, duct vent | b30, Primarily Welding emissions (insignificant activity) |
| 843.10, Mark III shop | Welding snorkle vents | Pt, wall vent | b30, Primarily Welding emissions (insignificant activity) |
| 102.00, 109.00, 116.00, 121.00, 523.00, 523.20, 530.20, 610.00, 855.20 | Baghouse dust unloading | Vactor truck vent | b30, Bag in vactor truck is process equipment |
| 303.20 | Lime silo loading | Pt, Lime silo baghouse vent | IDAPA 58.01.01.317.01.a.i (95) |
| Waste Handling Building | Aerosol Can Ventilation System | Pt, wall vent | IDAPA 58.01.01.317.01.a.i (38) |
| Phos Loading Dock | Ventilation fan | Pt, roof vent | IDAPA 58.01.01.317.01.a.i (9) |
| Thermal Oxidizer | Emergency Diesel Electric Generator | Pt, outside | b7, Diesel, 217 hp = 0.552 MMBtu/hr |
| Kiln | East auxiliary kiln drive engine | Pt, outside | b7, Diesel, 165 hp = 0.42 MMBtu/hr |
| Kiln | West auxiliary kiln drive engine | Pt, outside | b7, Diesel, 165 hp = 0.42 MMBtu/hr |
| Dryer | Dryer auxiliary drive engine | Pt, outside | b7, Diesel, 28 hp = 0.071 MMBtu/hr |

¹ million British thermal units per hour

11.1 There are no additional monitoring, recordkeeping, or reporting requirements for insignificant emissions units or activities beyond those required in the Facility-wide Permit Conditions.

[IDAPA 58.01.01.322.06, 5/1/94]

12. General Provisions

General Compliance

- 12.1 The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation and is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application.

[IDAPA 58.01.01.322.15.a, 5/1/94; 40 CFR 70.6(a)(6)(i)]

- 12.2 It shall not be a defense in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the terms and conditions of this permit.

[IDAPA 58.01.01.322.15.b, 5/1/94; 40 CFR 70.6(a)(6)(ii)]

- 12.3 Any permittee who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.

[IDAPA 58.01.01.315.01, 5/1/94; 40 CFR 70.5(b)]

Reopening

- 12.4 This permit may be revised, reopened, revoked and reissued, or terminated for cause. Cause for reopening exists under any of the circumstances listed in IDAPA 58.01.01.386. Proceedings to reopen and reissue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists. Such reopening shall be made as expeditiously as practicable in accordance with IDAPA 58.01.01.360 through 369.

[IDAPA 58.01.01.322.15.c, 5/1/94; IDAPA 58.01.01.386, 3/19/99; 40 CFR 70.7(f)(1), (2); 40 CFR 70.6(a)(6)(iii)]

- 12.5 The filing of a request by the permittee for a permit revision, revocation and reissuance, or termination or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

[IDAPA 58.01.01.322.15.d, 5/1/94; 40 CFR 70.6(a)(6)(iii)]

Property Rights

- 12.6 This permit does not convey any property rights of any sort or any exclusive privilege.

[IDAPA 58.01.01.322.15.e, 5/1/94; 40 CFR 70.6(a)(6)(iv)]

Information Requests

- 12.7 The permittee shall furnish all information requested by DEQ, within a reasonable time, that DEQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit.

[Idaho Code §39-108; IDAPA 58.01.01.122, 4/5/00; IDAPA 58.01.01.322.15.f, 4/5/00; 40 CFR 70.6(a)(6)(v)]

- 12.8 Upon request, the permittee shall furnish to DEQ copies of records required to be kept by this permit. For information claimed to be confidential, the permittee may furnish such records along with a claim of confidentiality in accordance with Idaho Code §9-342A and applicable implementing regulations including IDAPA 58.01.01.128.

[IDAPA 58.01.01.322.15.g, 5/1/94; IDAPA 58.01.01.128, 4/5/00; 40 CFR 70.6(a)(6)(v)]

Severability

12.9 The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

[IDAPA 58.01.01.322.15.h, 5/1/94; 40 CFR 70.6(a)(5)]

Changes Requiring Permit Revision or Notice

12.10 The permittee may not commence construction or modification of any stationary source, facility, major facility, or major modification without first obtaining all necessary permits to construct or an approval under IDAPA 58.01.01.213, or complying with IDAPA 58.01.01.220 through 223. The permittee shall comply with IDAPA 58.01.01.380 through 386 as applicable.

[IDAPA 58.01.01.200–223, 4/2/08; IDAPA 58.01.01.322.15.i, 3/19/99; IDAPA 58.01.01.380–386, 7/1/02; 40 CFR 70.4(b)(12), (14), (15); 40 CFR 70.7(d), (e)]

12.11 Changes that are not addressed or prohibited by the Tier I operating permit require a Tier I operating permit revision if such changes are subject to any requirement under Title IV of the Clean Air Act (CAA), 42 United States Code (U.S.C.) Section 7651 through 7651c, or are modifications under Title I of the CAA, 42 U.S.C. Section 7401 through 7515. Administrative amendments (IDAPA 58.01.01.381), minor permit modifications (IDAPA 58.01.01.383), and significant permit modifications (IDAPA 58.01.01.382) require a revision to the Tier I operating permit. IDAPA 58.01.01.502(b)(10) changes are authorized in accordance with IDAPA 58.01.01.384. Off permit changes and required notice are authorized in accordance with IDAPA 58.01.01.385.

[IDAPA 58.01.01.381–385, 4/5/00; IDAPA 58.01.01.209.05, 4/11/06; 40 CFR 70.4(b)(14), (15)]

Federal and State Enforceability

12.12 Unless specifically identified as a "state-only" provision, all terms and conditions in this permit, including any terms and conditions designed to limit a source's potential to emit, are enforceable: (i) by DEQ in accordance with state law; and (ii) by the United States or any other person in accordance with federal law.

[IDAPA 58.01.01.322.15.j, 5/1/94; 40 CFR 70.6(b)(1), (2)]

12.13 Provisions specifically identified as a "state-only" provision are enforceable only in accordance with state law. "State-only" provisions are those that are not required under the Federal Clean Air Act or under any of its applicable requirements or those provisions adopted by the state prior to federal approval.

[Idaho Code §39-108; IDAPA 58.01.01.322.15.k, 3/23/98]

Inspection and Entry

12.14 Upon presentation of credentials, the permittee shall allow DEQ or an authorized representative of DEQ to do the following:

- Enter upon the permittee's premises where a Tier I source is located, or emissions related activity is conducted, or where records are kept under conditions of this permit;
- Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;
- Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and

- As authorized by the Idaho Environmental Protection and Health Act, sample or monitor, at reasonable times, substances or parameters for the purpose of determining or ensuring compliance with this permit or applicable requirements.

[Idaho Code §39-108; IDAPA 58.01.01.322.15.1, 5/1/94; 40 CFR 70.6(c)(2)]

New Applicable Requirements

12.15 The permittee shall comply with applicable requirements that become effective during the permit term on a timely basis.

[IDAPA 58.01.01.322.10, 4/5/00; IDAPA 58.01.01.314.10.a.ii, 5/1/94; 40 CFR 70.6(c)(3) citing 70.5(c)(8)]

Fees

12.16 The permittee shall pay annual registration fees to DEQ in accordance with IDAPA 58.01.01.387 through IDAPA 58.01.01.397.

[IDAPA 58.01.01.387, 4/2/03; 40 CFR 70.6(a)(7)]

Certification

12.17 All documents submitted to DEQ shall be certified in accordance with IDAPA 58.01.01.123 and comply with IDAPA 58.01.01.124.

[IDAPA 58.01.01.322.15.o, 5/1/94; 40 CFR 70.6(a)(3)(iii)(A); 40 CFR 70.5(d)]

Renewal

12.18 The permittee shall submit an application to DEQ for a renewal of this permit at least six months before, but no earlier than 18 months before, the expiration date of this operating permit. To ensure that the term of the operating permit does not expire before the permit is renewed, the permittee is encouraged to submit a renewal application nine months prior to the date of expiration.

[IDAPA 58.01.01.313.03, 4/5/00; 40 CFR 70.5(a)(1)(iii)]

12.19 If a timely and complete application for a Tier I operating permit renewal is submitted, but DEQ fails to issue or deny the renewal permit before the end of the term of this permit, then all the terms and conditions of this permit, including any permit shield that may have been granted pursuant to IDAPA 58.01.01.325, shall remain in effect until the renewal permit has been issued or denied.

[IDAPA 58.01.01.322.15.p, 5/1/94; 40 CFR 70.7(b)]

Permit Shield

12.20 Compliance with the terms and conditions of the Tier I operating permit, including those applicable to all alternative operating scenarios and trading scenarios, shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that:

- Such applicable requirements are included and are specifically identified in the Tier I operating permit; or
- DEQ has determined that other requirements specifically identified are not applicable and all of the criteria set forth in IDAPA 58.01.01.325.01(b) have been met.
- The permit shield shall apply to permit revisions made in accordance with IDAPA 58.01.01.381.04 (administrative amendments incorporating the terms of a permit to construct), IDAPA 58.01.01.382.04 (significant modifications), and IDAPA 58.01.01.384.03 (trading under an emissions cap).
- Nothing in this permit shall alter or affect the following:
 - Any administrative authority or judicial remedy available to prevent or terminate emergencies or imminent and substantial dangers;

- The liability of a permittee for any violation of applicable requirements prior to or at the time of permit issuance;
- The applicable requirements of the acid rain program, consistent with 42 U.S.C. Section 7651(g)(a); and
- The ability of EPA to obtain information from a source pursuant to Section 114 of the CAA; or the ability of DEQ to obtain information from a source pursuant to Idaho Code §39-108 and IDAPA 58.01.01.122.

[Idaho Code §39-108 and 112; IDAPA 58.01.01.122, 4/5/00; IDAPA 58.01.01.322.15.m, 5/1/94; IDAPA 58.01.01.325, 3/19/99; IDAPA 58.01.01.381.04, 382.04, 383.05, 384.03, 385.03, 3/19/99; 40 CFR 70.6(f)]

Compliance Schedule and Progress Reports

12.21 The permittee shall comply with the following:

- For each applicable requirement for which the source is not in compliance, the permittee shall comply with the compliance schedule incorporated in this permit.
- For each applicable requirement that will become effective during the term of this permit and that provides a detailed compliance schedule, the permittee shall comply with such requirements in accordance with the detailed schedule.
- For each applicable requirement that will become effective during the term of this permit that does not contain a more detailed schedule, the permittee shall meet such requirements on a timely basis.
- For each applicable requirement with which the permittee is in compliance, the permittee shall continue to comply with such requirements.

[IDAPA 58.01.01.322.10, 4/5/00; IDAPA 58.01.01.314.9, 5/1/94; IDAPA 58.01.01.314.10, 4/5/00; 40 CFR 70.6(c)(3) and (4)]

Periodic Compliance Certification

12.22 The permittee shall submit compliance certifications during the term of the permit for each emissions unit to DEQ and the EPA as follows:

- The compliance certifications for all emissions units shall be submitted annually from December 30 to December 29 or more frequently if specified by the underlying applicable requirement or elsewhere in this permit by DEQ.
- The initial compliance certification for each emissions unit shall address all of the terms and conditions contained in the Tier I operating permit that are applicable to such emissions unit, including emissions limitations, standards, and work practices;
- The compliance certification shall be in an itemized form providing the following information (provided that the identification of applicable information may cross-reference the permit or previous reports as applicable):
 - The identification of each term or condition of the Tier I operating permit that is the basis of the certification;
 - The identification of the method(s) or other means used by the permittee for determining the compliance status with each term and condition during the certification period. Such methods and other means shall include, at a minimum, the methods and means required under Subsections 322.06, 322.07, and 322.08;
 - The status of compliance with the terms and conditions of the Tier I operating permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated in Subsection 322.11.c.ii above. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is

required and in which an excursion or exceedance as defined under 40 CFR Part 64 occurred; and

- Such information as DEQ may require to determine the compliance status of the emissions unit.

12.23 All original compliance certifications shall be submitted to DEQ and a copy of all compliance certifications shall be submitted to the EPA.

[IDAPA 58.01.01.322.11, 4/6/05; 40 CFR 70.6(c)(5)(iii) as amended, 62 Fed. Reg. 54900, 54946 (10/22/97); 40 CFR 70.6(c)(5)(iv)]

False Statements

12.24 No person shall knowingly make any false statement, representation, or certification in any form, notice, or report required under this permit or any applicable rule or order in force pursuant thereto.

[IDAPA 58.01.01.125, 3/23/98]

No Tampering

12.25 No person shall knowingly render inaccurate any monitoring device or method required under this permit or any applicable rule or order in force pursuant thereto.

[IDAPA 58.01.01.126, 3/23/98]

Semiannual Monitoring Reports

12.26 In addition to all applicable reporting requirements identified in this permit, the permittee shall submit reports of any required monitoring at least every six months. The permittee's semiannual reporting periods shall be from January 1 to June 30 and July 1 to December 31. All instances of deviations from this operating permit's requirements must be clearly identified in the report. The semiannual reports shall be submitted to DEQ within 30 days of the end of the specified reporting period.

[IDAPA 58.01.01.322.15.q, 3/23/98; IDAPA 58.01.01.322.08.c, 4/5/00; 40 CFR 70.6(a)(3)(iii)]

Reporting Deviations and Excess Emissions

12.27 The permittee shall promptly report all deviations from permit requirements including upset conditions, their probable cause, and any corrective actions or preventive measures taken. For excess emissions, the report shall be made in accordance with IDAPA 58.01.01.130–136. For all other deviations, the report shall be made in accordance with IDAPA 58.01.01.322.08.c, unless otherwise specified in this permit.

[IDAPA 58.01.01.322.15.q, 3/23/98; IDAPA 58.01.01.135, 4/11/06; 40 CFR 70.6(a)(3)(iii)]

Permit Revision Not Required

12.28 No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in the permit.

[IDAPA 58.01.01.322.05.b, 4/5/00; 40 CFR 70.6(a)(8)]

Emergency

12.29 In accordance with IDAPA 58.01.01.332, an "emergency," as defined in IDAPA 58.01.01.008, constitutes an affirmative defense to an action brought for noncompliance with such technology-based emissions limitation if the conditions of IDAPA 58.01.01.332.02 are met.

[IDAPA 58.01.01.332.01, 4/5/00; 40 CFR 70.6(g)]