

STATEMENT OF BASIS

To: Reviewers
Through: Lori Bocchino, Operating Permit Program Manager
From: Rita Piroutek, Operating Permit Program
Subject: Draft Chapter 6, Section 3 Operating Permit 3-3-095, Bentonite Performance Minerals, LLC
Lovell Grinding Plant
Date: May 27, 2014

Introduction

Attached for your review is the draft renewal Wyoming Air Quality Standards and Regulations (WAQSR) Ch 6, Sec 3 operating permit for the Lovell Grinding Plant. The Lovell Grinding Plant is a bentonite processing facility. Raw bentonite clay is stored in outside storage piles, then crushed and dried using roll crushers and two 30-MMBtu/hr rotary dryers fired primarily on coal. The crushed and dried (C&D) product is stockpiled prior to bulk rail loadout or used as feedstock material for other processes. Products include C&D, granular, powder and hole plug bentonite. Each product is sold in bulk and/or packages and is shipped offsite by truck or railcar. Emission sources include two dryers, mills, elevators, and packers, controlled by an electrostatic precipitator (ESP), several baghouse or filter controlled material processing and handling sources, one propane fired heater, one used oil fired heater, and fugitives emissions.

Permitting History

Previous owners of this facility include NL Petroleum and NL Baroid. All permits are listed to document the permitting history. The permits listed in this first section (six paragraphs) have no remaining applicable requirements or were never activated:

CT-250 (9/5/1979)/OP-94 (11/17/1982): authorized the construction and operation of a bentonite processing plant. Sources included dryers with an electrostatic precipitator (ESP), bag packer baghouse (PBH) and bulk loadout baghouse (C&D). Requirements included establishing an ambient particulate monitoring program. The Division authorized discontinuation of the ambient monitoring program by letter 3/1/1984. Fugitive source emission limits were not carried over because they are not enforceable. Other fugitive emission requirements are now included in the general conditions for fugitive dust. Waiver (10/16/1986): authorized a hole plug screening and bagging operation. The baghouse was replaced under AP-1966 listed below.

Waiver (10/2/1998): allowed conversion of the existing single-spout granular rail loadout station to a three-spout loadout station to eliminate the need for railcar repositioning during loadout. Waiver AP-PD0 (4/18/2000): authorized the installation of two baghouses. A baghouse for the conveyor tripper to the stacker was not installed, but was re-addressed under AP-1964 listed below. The permittee installed tablet making machines and support conveyance equipment with a baghouse (TAB) to control particulate emissions. The tablet process has been removed from the facility. Waiver AP-NQ0 (5/23/2000): allowed the modification of the granular system. According to the permittee, this modification was not done.

Waiver AP-WGO (8/10/2000): allowed construction of an industrial drilling products (IDP) mixing plant at the facility, referred to as EZ Seal. This EZ Seal baghouse (Ezs), a Steelcraft 10-120-1482, AAF10-120, was relocated (as MEG) under waiver AP-0881 listed below. Waiver AP-WXO (8/10/2000): allowed construction of a 500 ton silo and two screw conveyors with a baghouse (QGB) to control emissions. The silo and screw conveyors were changed to be controlled by the ESP, as authorized with waiver AP-8427 listed below. Waiver AP-F52 (11/15/2001): authorized the addition of an AmerPulse 10-64, AAF10-64 baghouse to control two bulk powder silos controlled by the ESP. This baghouse has been relocated twice-as the MEG under waiver AP-SK2, and then as the EZS under waiver AP-0881.

Waiver AP-SK2 (4/8/2002): authorized the first relocation of the AAF10-64 baghouse permitted under AP-F52, to the Megatex system (MEG). Permit MD-849 (3/6/2003): modified the lb/hr NO_x emission limit from the dryers and limited the annual coal burned. This permit is superseded by MD-1233 listed below.

Waiver AP-0791 (6/27/2003): allowed the replacement of the Dresser hammer mill (controlled by the ESP) with a CEMCO AEV-54 impact mill (controlled with the existing granular baghouse, GBH). GBH conditions were changed according to AP-1402 listed below. Under AP-1688, also listed below, the impact mill is no longer a replacement for the hammer mill, but operating in addition to the hammer mill. Waiver AP-0881 (7/21/2003): authorized the relocation of two baghouses. Baghouse AAF10-64 (originally permitted under AP-F52 and then relocated as MEG under AP-SK2) was relocated as EZS. Baghouse AAF10-120 (permitted under AP-WGO as EZS) was relocated as MEG. EZS was re-permitted under AP-1434, and MEG was re-permitted under waiver AP-4551, as listed below.

Waiver AP-1434 (1/6/2004)/corrected (4/21/2004): allowed the addition of a pneumatic truck off-load to the EZ Seal tank which is controlled by EZS. Waiver AP-1434 was corrected 4/21/2004 to indicate the particulate emissions limit of 0.6 lb/hr for EZS. EZS was then re-permitted under AP-6101 listed below. Waiver AP-1861 (5/5/2004): allowed the replacement of five existing Rotex screens with a Megatex screening system to be controlled by GBH. Source GBH was re-permitted under AP-2278 listed below. Waiver AP-2811 (12/23/2004): allowed a temporary coal throughput increase for calendar year 2004. Waiver AP-2965 (2/9/2005): authorized the temporary use of a baghouse while the ESP was rebuilt. Waiver AP-6101 (4/26/2007): modified operations to change control of the granular silos from baghouse GBH to baghouse ESZ.

Waiver AP-8250 (10/8/2008): authorized the installation of a new Powder RLO baghouse to control powder train loadout operations. The baghouse did not commence construction within 24 month and the waiver expired. Waiver AP-8482 (10/27/2008): authorized the installation of a new packer (3-4 tons per hour) for the hole plug operation, to be controlled with the existing Hole Plug Process Baghouse (HPBH). The new packer was never installed and authorization to construct is no longer valid. Waiver AP-8427 (11/19/2008): recognized that the Quick Gel Baghouse (QGB) is out of commission, and the ESP is capable of handling all of the emissions from one storage bin/silo and two screw conveyors authorized under waiver AP-WXO. Waiver AP-11231 (10/22/2010): extended the authorization under AP-8250 for a new Powder RLO Baghouse. The baghouse was installed and tested, as required by this waiver. Waiver AP-11231 is superseded by waiver wv-15744.

The following waivers and permits have applicable requirements that are incorporated into the operating permit:

CT-1124 (1/4/1995): The plant ceased operations in 1987 because of poor market conditions. The plant re-opened December 1994 and the Division issued CT-1124 for construction of a new granular bentonite process. The permit includes opacity limits for sources ESP, PBH and C&D, requires no visible fugitive emissions from the process equipment addressed under this permit, and limits fugitive emissions from the bulk loadout stations to 10 percent. SO₂ limits are set for the ESP, and particulate limits are set for sources PBH and C&D. There is a loading hatch configuration requirement for bulk truck and rail loading. Particulate emissions from the granular rail loadout and the granular truck loadout/granular bag packer are now controlled by the granular baghouse (GBH) permitted below.

Waiver AP-R37 (6/4/1997): allowed installation of a baghouse to control particulate emissions from the granular process equipment (GBH). The waiver requires no visible fugitive emissions from the granular system. The baghouse is subject to the requirements of 40 CFR 60 Subpart OOO. Although granular process equipment originally routed to the ESP has been routed to the granular baghouse, the ESP is subject to Subpart OOO because it controls emissions from a hammer mill added under this waiver.

Waiver AP-J39 (10/18/1999): authorized the construction of an additional baghouse (SPB) to control emissions from the bulk powder loadouts (leaving the existing baghouse (PBH) to control just the packer and associated material handling points). The waiver limits particulate emissions and opacity from the new baghouse. Fugitive emissions from the truck and rail loading systems are limited to 20 percent opacity. The equipment is not subject to 40 CFR 60 Subpart OOO because the systems were installed in 1979 and predate this subpart. Addition of a baghouse is not considered a modification under Subpart OOO.

Waiver (9/12/2001): allowed the installation of a 0.14 MMBtu/hr Clean Burn CB-1400 heater used oil burner. The unit may burn only used oil generated at the plant, and is subject to a visible emission limit under WAQSR Ch 3, Sec 2.

Waiver AP-1402 (12/31/2003): changed the control device for the granular bunker. The bunker was controlled by EZS under permit AP-0881. Emissions from the bunker will now be controlled by GBH. Opacity of fugitive emissions from the bunker is limited to ten percent.

Waiver AP-1688 (3/17/2004): authorized the operation of both the Dresser hammer mill (which was to be replaced under AP-0791 listed above) controlled by the ESP, and the CEMCO impact mill controlled by GBH. Opacity and particulate emission limits are carried forward from CT-1124 for the ESP. Requirements associated with GBH are superseded by AP-2278.

Waiver AP-1964 (5/27/2004): allowed the addition of a baghouse (TBH) located on the tripper point on the belt used for stockpiling C&D product. Particulate emissions were addressed in the waiver and limits were not set because the baghouse cannot be reasonably tested in this location; therefore, the Division set an opacity limit of seven percent to represent best available control technology.

Waiver AP-1966 (5/27/2004): authorized the replacement of the existing HPB with a larger 9900 SCFM unit (HPBH). Particulate and opacity limits, as well as compliance with Subpart OOO are established under this waiver for the HPBH.

Waiver AP-2278 (8/31/2004): allowed the addition of a second railcar loading station, with emissions controlled by the GBH baghouse. Particulate and opacity limits, as well as compliance with Subpart OOO are established under this waiver for the GBH.

Permit MD-1233 (9/16/2005): increased the annual plant-wide coal usage. Applicable requirements include limiting the annual coal usage to 29,433 tons, coal usage recordkeeping, and NO_x limits for the dryers (ESP).

Waiver AP-4551 (4/24/2006): allowed the baghouse on the Megatex system (MEG) to be replaced. Potential emissions did not change. Opacity and particulate emission limits for the replacement MEG are established in this waiver.

Waiver AP-8251 (9/15/2008): authorized the replacement of the 12 TPY hole plug crushing unit with a 25 TPY crushing unit. This unit is controlled with the Hole Plug Process Baghouse (HPBH). The legal description was corrected on 9/22/2008 for a typo. Applicable requirements include the opacity and particulate limits previously established in waiver AP-1966 for the HPBH, as well as compliance with Subpart OOO.

Waiver AP-8298 (10/9/2008): authorized the replacement of the existing Megatex screening system with an identical like-kind system controlled with the existing pulse jet baghouse (MEG). The legal description was corrected on 12/10/2008. This waiver carries forward the opacity and particulate limits previously established in AP-4551 for the MEG.

Waiver wv-10001 (5/24/2010): authorized the replacement of the EZ Seal Baghouse (EZS). This waiver establishes particulate and visible emission limits, monitoring and recordkeeping, and requires compliance with Subpart OOO for the replacement baghouse.

Waiver wv-15744 (1/6/2014): was issued to modify condition 7 of Waiver wv-11231. This waiver supersedes AP-11231. Applicable requirements include visible and particulate emission limits, monitoring and recordkeeping, and compliance with Subpart OOO.

Applicable Requirements

Applicable requirements include the WAQSR Ch 6, Sec 2 permit and waiver limits and conditions listed above, and visible emission limits set forth in WAQSR Ch 3, Sec 2. The miscellaneous propane fired heaters (HTRS) and the Clean Burn CB-1400 heater (CBH) are subject to NO_x emission limits under WAQSR Ch 3, Sec 3. The permittee agreed to a voluntary particulate emission limit for the fuel coal silo bag filter (CS) during the issuance of operating permit 3-1-095-1.

The permittee must also comply with any applicable requirements from the WAQSR Ch 5, Sec 2 New Source Performance Standards, and 40 CFR 60 Subpart OOO - *Standards of Performance for Nonmetallic Mineral Processing Plants*. Affected facilities include the ESP, GBH, MEG, EZS, and HPBH.

The facility is not subject to 40 CFR 60 Subpart UUU for Calciners and Dryers in Mineral Industries, because the dryers were constructed prior to April 23, 1986.

Periodic Monitoring and CAM

The ESP and all baghouses, with the exception of units CS and TBH, are subject to WAQSR Ch 7, Sec 3 Compliance Assurance Monitoring (CAM) for particulate emissions. CAM requirements include daily visual observations and quarterly preventive maintenance and inspection. Should visible emissions be observed, corrective action shall be taken. Although for CS and TBH it is reasonable to expect particulate emissions of less than 100 TPY without control equipment, the permittee will also monitor these two units with daily visual observations and quarterly preventive maintenance and inspection.

Visible emissions monitoring for the miscellaneous heaters (HTRS) consists of verifying propane is the sole fuel source for these units. While the Clean Burn CB-1400 heater (CBH) is not likely to produce visible emissions and operates infrequently, incidental observations of visible emissions from the heater shall be recorded and corrective actions taken, if necessary.

Monitoring for NO_x, SO₂ and particulate emissions from the ESP includes annual NO_x testing, and SO₂ and particulate testing at least every five years. The permittee will monitor coal consumed by the dryers, hours of operation and sulfur content of the coal to assess compliance with the NO_x and SO₂ limits. The permittee will also monitor the total coal consumed in the two dryers to ensure the annual coal usage limits are not exceeded.

The miscellaneous propane-fired heaters (HTRS) are fuel burning equipment as defined in WAQSR Ch 1. These uncontrolled heaters (HTRS) emit oxides of nitrogen (NO_x) in relatively small quantities (each less than 1 ton per year). In the absence of more stringent permit limits, the NO_x emission limit for fuel burning equipment defaults to 0.20 pounds per million BTUs (lb/MMBtu) for sources constructed after April 9, 1973. Generally, small fuel burning sources like these units operate at a steady state; emission variations are not likely. AP-42 emission factors were developed by the EPA to help estimate the quantity of a pollutant from a given source type. In developing an AP-42 emission factor, emission data is averaged from sources of similar size and type, and the emission factor is then assigned a reliability rating based on quality and quantity of the data used. The rating scale runs from A to E with an A rating providing the highest quality. The AP-42 emission factor for small gaseous fuel burning sources (less than 100 MMBtu/hr) is 0.1 lb/MMBtu with a B rating. Considering the amount of data evaluated to develop the AP-42 emission factor and that the WAQSR Ch 3, Sec 3 emission limit is twice the AP-42 value, the Division feels it is extremely unlikely these sources will operate out of compliance and considers further testing of these sources to be uneconomical.

The 0.14 MMBtu/hr Clean Burn CB-1400 heater (CBH) is also considered fuel burning equipment as defined in WAQSR Ch 1. In the absence of more stringent permit limits, the NO_x emission limit for this piece of fuel burning equipment defaults to 0.60 lb/MMBtu. The AP-42 emission factor for small waste oil burning sources is 0.14 lb/MMBtu with a C rating. The WAQSR Ch 3, Sec 3 emission limit is more than four times the AP-42 value; the Division feels it is extremely unlikely this source will operate out of compliance and considers further testing of the infrequently operated used oil furnace to be uneconomical.