Montana Department of
ENVIRONMENTAL QUALITY
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September 13, 2013

Mr. Dusty Weber
Permitting Manager
Signal Peak Energy, LLC
100 Portal Drive
Roundup, Montana 59072

Dear Mr. Weber:

Montana Air Quality Permit #3179-07 is deemed final as of September 13, 2013, by the Department of Environmental Quality (Department). This permit is for an underground coal mining operation. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

Julie A. Merkel
Air Permitting Supervisor
Air Resources Management Bureau
(406) 444-3626

Deanne Fischer, P.E.
Environmental Engineer
Air Resources Management Bureau
(406) 444-3403

JM:DF
Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Montana Air Quality Permit #3179-07

Signal Peak Energy, LLC
100 Portal Drive
Roundup, Montana 59072

September 13, 2013

MONTANA AIR QUALITY PERMIT

Issued To: Signal Peak Energy, LLC
100 Portal Drive
Roundup, Montana 59072

MAQP: #3179-07
Administrative Amendment (AA) Request
Received: 08/01/2013
Department Decision on AA: August 28, 2013
Permit Final: September 13, 2013
AFS #: 065-0003

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Signal Peak Energy, LLC (SPE), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

SECTION I: Permitted Facilities

A. Plant Location

SPE is located in the Bull Mountains approximately 16 miles southeast of Roundup, Montana, and approximately 35 miles northeast of Billings, Montana. The legal description of the site is Section 12, West ½ Section 13, and Section 14, Township 6 North, Range 26 East, in Musselshell County, Montana.

A description of the permitted equipment is contained in the permit analysis.

B. Current Permit Action

The current permit action modifies the number and/or size of the permitted coal and soil stockpiles at the SPE Bull Mountain Mine and updates the potential to emit calculations to more closely reflect actual conditions at the site. In addition to accounting for these changes, the current permit action updates the MAQP to reflect current permit language and rule references, used by the Department.

SECTION II: Conditions and Limitations

A. Emission Limitations

1. Coal production from the facility shall be limited to 15.0 million tons during any rolling 12-month time period for the primary phase of the coal mining operation (ARM 17.8.749).

2. SPE shall not cause or authorize to be discharged into the outdoor atmosphere from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system, any emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.340 and 40 CFR 60, Subpart Y).

3. SPE shall not cause or authorize emissions to be discharged into the outdoor atmosphere, from any other sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304, ARM 17.8.308, and ARM 17.8.752).

4. Water and/or chemical dust suppressant shall be available on site and used, as necessary, to maintain compliance with the opacity limitations in Section II.A.2 and Section II.A.3 (ARM 17.8.752).

5. SPE shall use a fabric filter baghouse to control process particulate emissions from surface crushing operations (ARM 17.8.752).

6. SPE shall use a fabric filter baghouse to control process particulate emissions from coal drying and cleaning operations (ARM 17.8.752).

7. SPE may operate one run-of-mine (ROM) coal stockpile not to exceed a surface area of 3.70 acres (ARM 17.8.749).

8. SPE may operate four coal stockpiles, Stockpiles #1A (temporary), #2 (raw coal), #3, and #4 (piles #3 and #4 are combined clean coal), not to exceed a total surface area of 18.3 acres (ARM 17.8.749).

9. SPE shall use watering and/or chemical dust suppressants and contouring techniques to control particulate emissions from the coal stockpiles (ARM 17.8.752).

10. Fall distance shall be minimized during the transfer of waste material and coal to storage piles and during all transfer of material to haul trucks, material traps, hoppers, bins, and conveyors (ARM 17.8.752).

11. SPE may operate up to nineteen topsoil/subsoil storage piles (including waste disposal area (WDA) topsoil/subsoil stockpiles) not to exceed a total surface area of 77.2 acres (ARM 17.8.749).

12. SPE shall employ watering and/or chemical dust suppressant, contouring, compaction techniques, and re-vegetation to reduce emissions from the topsoil storage piles (ARM 17.8.752).

13. SPE shall employ watering and/or chemical dust suppressant, contouring, compaction techniques, and eventual covering with soil and re-vegetation, to reduce emissions from waste disposal activities (ARM 17.8.752).

14. SPE shall enclose all coal and waste material conveyors. Conveyors shall be enclosed on the top and sides with a partial opening on the bottom (ARM 17.8.752).

15. SPE shall use flexible chutes, enclosures, and fabric filtration to control emissions from all coal and waste material conveying transfer points and coal loadout operations (ARM 17.8.752).

16. SPE shall convey coal from Stockpiles #3 and #4 to either the product loadout conveyor directly or to product silos only (ARM 17.8.752).

17. SPE shall operate all crushers within an enclosed building (ARM 17.8.752).

18. SPE shall not operate more than two crushers at any given time and the maximum rated design capacity of each crusher shall not exceed 3,500 tons per hour (TPH) (ARM 17.8.749).

19. Crushing production is limited to 15 million tons during any rolling 12-month time period (ARM 17.8.749).

20. SPE shall utilize a stacker-reclaim (underground) system for movement of product into and out of stockpiles during the primary phase of operations (ARM 17.8.752).

21. Rejects/waste material for the primary phase shall be enclosed in a bin equipped with a hopper for haul truck loading (ARM 17.8.752).

22. SPE shall incorporate a fixed stacker for both the ROM and clean coal stockpiles during the primary phase of the project (ARM 17.8.752).

23. SPE shall develop, implement, and maintain good housekeeping practices to keep coal and waste material transfer locations clean (ARM 17.8.752).

24. SPE shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

25. SPE shall clean up all spilled material from road surfaces (ARM 17.8.752).

26. SPE shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant, as necessary, to maintain compliance with the reasonable precautions limitation in Section II.A.25 (ARM 17.8.749).

27. SPE shall not operate more than two boilers at any given time and each boiler shall not exceed a maximum design capacity of 500,000 British Thermal Units per hour (Btu/hr) each (ARM 17.8.749).

28. SPE shall power the 500,000 Btu/hr boilers using propane (ARM 17.8.749).

29. SPE shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR 60, Subpart Y, *Standards of Performance for Coal Preparation Plants* (ARM 17.8.340 and 40 CFR 60, Subpart Y).

B. Testing Requirements

1. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

2. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. SPE shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. SPE shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745(l), that would include ***the addition of a new emissions unit***, change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to startup or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(l)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by SPE as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

4. SPE shall document, by month, the primary phase coal production from the mine. By the 25th day of each month, SPE shall total the primary phase coal production for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.1. A written report of the compliance verification shall be submitted along with annual emission inventory (ARM 17.8.749).

5. SPE shall document, by month, the crushing production from the facility. By the 25th day of each month, SPE shall calculate the crushing production from the facility for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.19. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

D. Ambient Monitoring Requirements

Modeled impacts predicted the SPE project would consume 94% (141 micrograms per cubic meter ($\mu g/m^3$)) of the 24-hour ambient standard (150$\mu g/m^3$) and 87% (43.5 μg/m3) of the annual standard (50 $\mu g/m^3$). Based on this information and using the Department Ambient Monitoring Requirements Guidance Statement (10/09/98), the Department, assuming a medium level of confidence, will require ambient monitoring for the mine operations as proposed by SPE when the mine reaches a coal production level of 1.3 million tons during any rolling 12-month period.

SPE shall operate an ambient air quality monitoring network around the project area. The monitoring requirements are more fully described in the Monitoring Plan (Attachment 1). Exact monitoring locations must be approved by the Department prior to installation or relocation (ARM 17.8.749).

SECTION III: General Conditions

A. Inspection – SPE shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (continuous emissions monitoring system (CEMS), continuous emissions rate monitoring system (CERMS)) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if SPE fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving SPE of the responsibility for complying with any applicable federal or Montana statute, rule or standard, except as specifically provided in ARM 17.8.740, *et seq*. (ARM 17.8.756).

D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement action as specified in Section 75-2-401, *et seq*., MCA.

E. Appeals – Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefor, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by SPE may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Duration of Permit – Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

Attachment 1
AMBIENT AIR MONITORING PLAN
Signal Peak Energy, LLC
MAQP #3179-07

1. This ambient air monitoring plan is required by Montana Air Quality Permit (MAQP) #3179-07, which applies to the Signal Peak Energy, LLC (SPE), coal mining operation south of Roundup, Montana. This monitoring plan may be modified by the Department of Environmental Quality (Department). All requirements of this plan are considered conditions of the permit.

2. SPE shall install, operate and maintain three air monitoring sites in the vicinity of the mine and facilities as described in Item 4 below. Two air monitoring sites will measure particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) and one air monitoring site collects meteorological measurements. The exact locations of the monitoring sites must be approved by the Department and meet all the siting requirements contained in the Montana Quality Assurance Manual including revisions, the EPA Quality Assurance Manual including revisions, and Parts 53 and 58 of the Code of Federal Regulations (CFR), or any other requirements specified by the Department.

3. SPE may request that the Department review the ambient monitoring requirement if changes or commitments are made to reduce emissions from the facility. Any changes or commitments must be approved by the Department. The air monitoring data will be reviewed by the Department to determine if continued monitoring or additional monitoring is warranted.

4. SPE shall monitor the following parameters at the sites and frequencies described below:

AIRS # & Site Name	UTM Coordinates	Parameter	Frequency
30-065-0007		PM-10[1] (primary) 81102 and 85101 Wind Speed, Direction and Sigma Theta 61101,61102 and 61106	Every sixth day Continuous
Plant Area (Downwind) 30-065-0007		PM-10 (Collocated[2]) 81102 and 85101	Every twelfth day
Plant Area (Upwind) 30-065-0006		PM-10	Every sixth day

[1]PM-10 = particulate matter less than 10 microns.
[2]The requirement for a collocated PM-10 sampler may be waived if the monitor operator operates a collocated PM-10 sampler at another site.

5. Data recovery for all parameters shall be at least 80 percent computed on a quarterly and annual basis. The Department may require continued monitoring if this condition is not met. (Data Recovery = (Number of data points collected in evaluation period)/(number of scheduled data points in evaluations period)*(100%))

6. Any ambient air monitoring changes proposed by SPE must be approved in writing by the Department.

7. SPE shall utilize air monitoring and quality assurance (QA) procedures, which are equal to or exceed the requirements described in the Montana Quality Assurance Manual including revisions, the EPA Quality Assurance Manual including revisions, 40 CFR Parts 53 and 58, and any other requirements specified by the Department.

8. SPE shall submit two hard copies of the quarterly data reports within 45 days after the end of the calendar quarter and two hard copies of the annual data report within 90 days after the end of the calendar year. The annual report may be substituted for the fourth quarterly report if all information in 9 below is included in the report.

9. The quarterly data submittals shall consist of a hard copy narrative data summary and a digital submittal of all data points in AIRS batch code format. The electronic data must be submitted to the Air Monitoring Section as digital text files readable by an office PC with a Windows operating system.

   The narrative data hard copy summary must be submitted to the Air Compliance Section and shall include:

   a. A hard copy of the individual data points,

   b. The first and second highest 24-hour concentrations for PM_{10}

   c. The quarterly and monthly wind roses,

   d. A summary of the data completeness,

   e. A summary of the reasons for missing data,

   f. A precision data summary,

   g. A summary of any ambient air standard exceedances, and

   h. Q/A-Q/C information such as zero/span/precision, calibration, audit forms, and standards certifications.

10. The annual data report shall consist of a narrative data summary. The narrative data hard copy summary must be submitted to the Air Compliance Section and shall include:

    a. A topographic map of appropriate scale with UTM coordinates and a true north arrow showing the air monitoring site location in relation to the refinery and the general area,

b. The year's four highest 24-hour concentrations for PM_{10},

c. The annual wind rose,

d. A summary of any ambient air standard exceedances, and,

e. An annual summary of data completeness.

11. All records compiled in accordance with this Attachment must be maintained by SPE as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

12. The Department may audit (or may require SPE to contract with an independent firm to audit) the air monitoring network, the laboratory performing associated analyses, and any data handling procedures at unspecified times.

13. The hard copy reports should be sent to:

    Department of Environmental Quality
    Attention: Air Compliance Section Supervisor

14. The electronic data from the quarterly monitoring shall be sent to:

    Department of Environmental Quality
    Attention: Air Monitoring Section Supervisor

Montana Air Quality Permit Analysis
Signal Peak Energy, LLC
MAQP #3179-07

I. Introduction/Process Description

Signal Peak Energy, LLC (SPE) owns and operates an underground coal mining operation in the Bull Mountains near Roundup, Montana. The facility is located approximately 16 miles southeast of Roundup, Montana, and approximately 35 miles northeast of Billings, Montana.

A. Permitted Equipment

The SPE facility contains: reject piles; clean coal piles; an old coal preparation plant; a new coal preparation plant; a rail loadout; waste disposal areas (WDA) including seven topsoil/subsoil storage piles and two temporary waste area topsoil/subsoil storage piles; mine ventilation; mine yard area equipment; a quarry; a run-of-mine (ROM) coal stockpile; ten topsoil/subsoil storage piles; coal stockpiles #1A (temporary), #2 (raw coal), and combined clean coal stockpiles #3, and #4; two small building heating boilers (500,000 British thermal units per hour (Btu/hr)); and various conveyors and transfer stations.

B. Source Description

SPE operates an underground coal mine that will be capable of producing up to 15 million tons of raw coal per year. The primary facilities (coal wash plant and on-site rail loadout) will support a production rate of up to 15 million tons of raw coal per year.

The operations at the facility can be classified into four categories: underground mining, coal handling and storage, coal cleaning, and waste disposal. Coal will be underground mined by room and pillar and longwall methods. A continuous miner will be used to develop coal entries in order to establish longwall panels, and longwall equipment will be used to extract coal panels. A conveyor belt will be used to transfer the ROM coal to a stockpile outside of the mine portal.

Surface material storage facilities will include stockpiles of ROM coal, clean coal, and reject material from the wash plant. Material will be moved from inside the mine to the ROM stockpile on a high capacity belt conveyor. Other conveyors will be used to transport coal from the ROM pile to the coal cleaning facility and from there to the clean coal piles. Stockpile 1A will be utilized periodically to store excess coal. Haul trucks will be used to transport coal between Stockpile 1A and the other coal stockpile areas. Reject material will be conveyed to the WDA.

The primary facility will reject approximately 20 percent of the raw coal stream. These coal processing wastes and other mine development wastes will be permanently disposed of in the WDA located 1.4 miles northeast of the wash plant. The mine plan calls for re-vegetation of this area after completion of the project and after the appropriate seed bed preparation.

During operations, coal will be dumped from the mine portal onto a conveyor which dumps onto Stockpile #1. From Stockpile #1 the coal will be conveyed to the preparation plant stockpile (Stockpile #2). Coal from Stockpile #2 will either be conveyed to the preparation plant or the blended coal stockpile (Stockpile #3).

Coal sent to the preparation plant is washed, dewatered, and then conveyed to the clean coal stockpile (Stockpile #4). No dryer is used in the proposed preparation plant. Waste and reject material is transferred via conveyor belt to the WDA. Loaders and haul trucks will be used within the WDA perimeter to move material into desired locations for compaction.

Coal from Stockpiles #3 and #4 will be conveyed to either the product loadout conveyor or directly to product silos. The product loadout conveyor feeds the batch weigh loadout hopper which loads railcars for delivery.

C. Permit History

MAQP #3179-00 was issued to BMP Investments Incorporated (BMP) on May 10, 2002, for the project as described above located in Sections 12, 13, and 14, Township 6 North, Range 26 East, in Musselshell County, Montana.

On May 9, 2003, BMP submitted a request to delay the commencement of ambient air monitoring until the mine reaches a coal production level of 1.3 million tons during any rolling 12-month period. The permit action was an administrative amendment to make that change and to update the rule citations in the permit. **MAQP #3179-01** replaced MAQP #3179-00.

On November 21, 2006, the Department of Environmental Quality (Department) received a request from BMP for a modification to MAQP #3179-01 to add, during the development phase of the mining operation, a ROM coal stockpile, a topsoil stockpile, additional haul roads, and associated transfers involved with the coal stockpile and topsoil stockpile. The request allowed BMP to transfer coal from the mine portal to a ROM coal stockpile using haul trucks, a wheeled loader, and a bulldozer. Coal is dumped to the ground from the mine portal. A wheeled loader loads the haul trucks for transport to the ROM coal stockpile. The haul trucks dump the coal to the ground and a bulldozer moves the coal to the desired location within the pile. Prior to stockpiling the coal, a bulldozer prepares the coal stockpile site by removing the topsoil (about 12 inches of soil depth) and moves the soil into a pile for storage.

BMP proposed the following equipment and emission sources as listed below:

- ROM coal stockpile (surface area: 520,000 square feet, (ft^2))
- ROM coal stockpile site preparation (topsoil removal – dozer)
- Topsoil storage pile (surface area: 100,000 ft^2)
- Mobile sources (haul trucks, wheeled loader, and bulldozer)

BMP will add to the ROM coal stockpile until the primary phase of the mining operation begins. After the primary phase of the mining operation has begun, BMP will transfer the coal from the coal stockpile to the new coal preparation plant. BMP did not request an increase in the production rate of the development phase. Once the primary phase has begun, the haul trucks, wheeled loader, and the requested haul road operations will not be needed. **MAQP #3179-02** replaced MAQP #3179-01.

On December 20, 2007, the Department received a request from BMP for a modification to MAQP #3179-02. BMP proposed to install a new coal preparation plant with a maximum annual production of 15 million tons of coal. BMP will remove the existing coal preparation plant and associated storage piles once the new plant is operating. In addition, BMP proposed to install two 35,000 Btu/hr boilers to heat buildings. The units will be powered using coal, propane, or electricity. Finally, BMP requested the name on MAQP #3179-02 be changed from BMP to Bull Mountain Coal Mining, Inc. (BMCM). **MAQP #3179-03** replaced MAQP #3179-02.

On November 21, 2008, the Department received a request from BMCM for a modification to MAQP #3179-03. BMCM requested an administrative amendment to MAQP #3179-03 to transfer ownership of the permit from BMCM to SPE. **MAQP #3179-04** replaced MAQP #3179-03.

On January 19, 2010, SPE requested an administrative amendment to MAQP #3179-04 to change the business/mailing address from 490 North 31st Street, Suite 308, Billings, MT 59101 to 100 Portal Drive, Roundup, Montana 59072. On July 31, 2009, SPE also requested an administrative amendment pursuant to the Administrative Rules of Montana (ARM) 17.8.745, to more accurately reflect the number and size of coal and soils stockpiles at the facility. Specifically, SPE requested the following amendments:

- that the surface area of the run-of-mine (ROM) coal stockpile be changed from 11.9 acres to 3.43 acres,
- that one of the four coal stockpiles be renamed from Stockpile #1, to Stockpile #1A (temporary), and that the maximum surface area of each coal stockpile be changed from 4.6 acres to 6.6 acres,
- that the number of topsoil/subsoil storage piles be changed from one to nine and that the maximum surface area of each topsoil/subsoil storage pile be changed from 2.3 acres to 5.5 acres, and,
- that SPE may operate two WDA topsoil/subsoil storage piles each not to exceed a surface area of 35 acres.

MAQP #3179-05 replaced MAQP #3179-04.

On March 9, 2010, the Department received an email from SPE requesting that the Monitoring Plan in MAQP 3179-05 be updated and requesting that the Permit Analysis more clearly describe the actual configuration of the mine operations and associated stockpiles. In addition, the following requests were addressed in the permit:

- The Department received a letter from SPE, dated March 24, 2010 which included a Title V Applicability Analysis of Stationary Source Emissions. The analysis clarified that the two 35,000 British Thermal Units per hour (BTU/hr) coal-fired boilers listed in previous versions of the MAQP were never installed. Instead, two 500,000 BTU/hr propane fueled boilers were installed to supply heat to the shop and warehouse.
- A July 27, 2010 phone conversations and email correspondences between the SPE and the Department clarified that the coal wash plant baghouse had never been installed.
- A March 23, 2011 letter requested that the Department remove the reporting requirements for the 35,000 BTU/hr coal combustion boilers. The letter also clarified that SPE no longer screens coal at the site, and requested that the limitations and reporting requirements associated with the screening of the coal be removed. Because the mine has completed the development phase, SPE requested that the limitations and reporting requirements associated with the development phase of the mine be removed.

  The permit action incorporated the requested updates and clarifications into the MAQP. The existing soil and coal stockpiles were summarized in Table 1 below, and changes to the list of emitting units were made to the emissions inventory. In addition to accounting for these changes, the current permit action updated the permit to reflect current permit language and rule references, used by the Department. **MAQP #3179-06** replaced MAQP #3179-05.

Table 1: Stockpiles Built and/or Designed

Stockpile	Size (acre)	PM_{10} Emissions (tpy)
Coal Stockpiles		
Stockpile #1 (ROM)	3.43	0.19
Stockpile #2 (ROM)	2.13	0.12
Stockpile #3 & #4 (Clean)	6.60	0.36
Stockpile #1A (Temporary)	3.36	0.18
Coal Total	*15.52*	*0.85*
Soils Stockpiles		
Waste Disposal Area Topsoil	7.00	0.0273
Waste Disposal Area Subsoil	35.00	0.1365
Topsoil #1 (Silo Area)	1.95	0.0076
Subsoil #1 (Silo Area)	5.50	0.0215
Topsoil #2 (Loop Area)	5.10	0.0199
Subsoil #2 (Loop Area)	3.21	0.0125
Subsoil #2A (Loop Area)	2.10	0.0082
Madison Well Soil	0.56	0.0022
Area 1A Soil	1.12	0.0044
Soils Total	*61.54*	*0.2400*
Total Stockpile Emission		**1.09**

Note: Stockpiles

Table 1 provided by SPE.

D. Current Permit Action

On August 1, 2013 the Department received a request from SPE for an administrative amendment pursuant to the Administrative Rules of Montana (ARM) 17.8.745 to modify the number and or size of the permitted coal and soil stockpiles at the Bull Mountain Mine. SPE also requested that an updated summary of the PM_{10} emissions from the stockpiles be included in the permit. The revised emissions are based on the maximum acreage of each stockpile, maximum coal throughput in tons per year, standard emissions control efficiencies, and documented AP-42 emissions factors. The new updated PM_{10} emissions account for coal handling emissions that were listed separately from the stockpile emissions in previous versions of the permit. The current permit action incorporates the requested updates and clarifications into the MAQP. The soil and coal stockpiles are summarized in Table 2 below, and changes to the emissions inventory have been made. In addition to accounting for these changes, the current permit action updates the permit to reflect current permit language and rule references used by the Department. **MAQP #3179-07** replaces MAQP #3179-06.

Table 2 Proposed Stockpiles – MAQP#2179-07

Stockpile	Size (acre)	PM_{10} Emissions (tpy)
Coal Stockpiles		
Stockpile #1 (ROM)	3.70	26.58
Stockpile #2 (ROM)	2.20	26.24
Stockpile #3 & #4 (Clean)	6.60	27024
Stockpile #1A (Temporary)	9.50	4.73
Coal Total	*22.0*	*84.80*

Soils Stockpiles		
WDA Topsoil #1	8.40	0.96
WDA Topsoil #2	3.00	0.34
WDA Subsoil #1	24.00	2.74
WDA Subsoil #2	4.40	0.50
WDA Subsoil #3	3.70	0.42
WDA Suitable Subsoil	11.50	1.31
RR Topsoil	5.30	0.60
RR Subsoil	6.00	0.68
Silo Topsoil	2.30	0.26
Silo Subsoil	3.10	0.35
Temp Waste Area Topsoil	0.10	0.01
Temp Waste Area Subsoil	0.50	0.06
WDA Haul Rd Area Subsoil	0.20	0.02
Madison Well 1 Topsoil	0.20	0.02
Madison Well 1 Subsoil	0.30	0.03
Madison Well 3 Topsoil	0.20	0.02
Madison Well 3 Subsoil	0.40	0.05
Area 1A Topsoil	0.80	0.09
Area 1A Subsoil	2.80	0.32
Soil Total	*77.20*	*8.80*
Total Stockpile Emission		**92.60**

Table 1 provided by SPE.

E. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT)/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the ARM and are available, upon request, from the Department. Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

   SPE shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}
11. ARM 17.8.230 Fluoride in Forage

SPE must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, SPE shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.

6. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). SPE is considered an NSPS affected facility under 40 CFR Part 60 and is subject to the requirements of the following subparts.

   a. 40 CFR 60, Subpart A – General Provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below.

   b. 40 CFR Part 60, Subpart Y - Standards of Performance for Coal Preparation Plants - requires a particulate emission limitation of 0.04 grams per dry standard cubic meter, a 10 percent opacity limitation on pneumatic coal cleaning emissions, and an opacity limitation of 20 percent for coal processing, conveying, storage, and loading systems as described in Section II of the permit. The subpart also requires particulate and opacity limitations for thermal dryers. The coal dryer proposed for the development phase of the operation uses ambient air as opposed to a heated gas stream; therefore, that portion of the regulation is not applicable. If at some point, the permittee proposes to use a heated gas stream for coal drying, the Department must be notified in order to determine the monitoring and testing requirements with respect to NSPS applicability. The NSPS applicability for pneumatic coal cleaning and thermal dryers is specific to bituminous coal, while the other provisions apply to all classifications of coal. The applicant reported that the coal to be mined is classified as bituminous.

D. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. A permit fee is not required for the current permit action because the permit action is considered an administrative permit change.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

E. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. SPE has a PTE greater than 25 tpy of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. A permit application was not required for the current permit action because the permit change is considered an administrative permit change. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. An affidavit of publication of public notice was not required for the current permit action because the permit change is considered an administrative permit change.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving SPE of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.760 Additional Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.

12. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

13. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

14. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

15. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source because this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions). In addition, the current permit action is an administrative change and is not associated with an increase in emissions. Therefore, a PSD review is not required.

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:

   a. PTE > 100 tons/year of any pollutant;

   b. PTE > 10 tons/year of any one hazardous air pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

   c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #3179-07 for SPE, the following conclusions were made:

   a. The facility's PTE is less than 100 tons/year for any pollutant (excluding fugitive emissions).

   b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.

   c. This source is not located in a serious PM_{10} nonattainment area.

   d. This facility is subject to current NSPS standards (40 CFR 60, Subparts A and Y).

   e. This facility is not subject to area source provisions of a current NESHAP standard.

   f. This source is not a Title IV affected source, or a solid waste combustion unit.

   g. This source is not an EPA designated Title V source.

   Based on these facts, the Department determined that SPE is a minor source of emissions as defined under Title V, and SPE is not required to obtain a Title V Operating Permit. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit in the future, SPE will be required to obtain a Title V Operating Permit.

III. BACT Determination

A BACT determination is required for each new or modified source. SPE shall install on the new or modified source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized.

A BACT analysis was not required for the current permit action because the current permit action is considered an administrative permit action.

IV. Emission Inventory

The annual potential emission rates were based on the maximum production of 15 million tons of coal. The number, sizes and configuration of the stockpiles and the associated emission estimates were updated as part of the current permit action. The following tables reflect the updated emission totals.

Emission Inventory - Fugitive Sources

Unpaved Roads (calculated in previous versions of the permit)	**Control Method**	**PM = PM_{10} Emissions (tpy)**
2 Haul Trucks/ Haul Roads	Watering	7.92
1 Cat 980 Loader (Waste Pit)	Watering	1.66
Total Unpaved Roads Emissions		**9.58**

Coal Stockpiles		**Control Method**	**PM = PM_{10} Emissions (tpy)**
Stockpile #1 (ROM) (15,000,000 tpy)	3.70 Acre	Watering as Necessary	26.58
Stockpile #2 (Raw) (15,000,000 tpy)	2.20 Acre	Watering as Necessary	26.24
Stockpile #3 (Blended) and #4 (Clean) (15,000,000 tpy)	6.60 Acre	Watering as Necessary	27.24
Stockpile #1A (Temporary) (1,500,000 tpy)	9.50 Acre	Watering as Necessary	4.73
Coal - Total Stockpile Emissions			**84.80**

Emissions = [acreage x wind erosion] + throughput x [loading/dumping + mat'l handling/drop + pile shaping]

Activity	**Emission Factor (EF)**	**EF Units**	**Control Efficiency**	**Adjusted PM_{10} EF**
Loading/Dumping (Table 11.9-4, Mine Location III (SE Montana)	0.005	lb/ton	85%	0.00075
Material Handling/Drop (13.2.4.3 Eq.1) k (0.0032) x $((U/5)^{1.3})/(M/2)^{1.4}$)	0.0002451	lb/ton	85%	0.00004
Pile shaping (Table 11.9-1, Bulldozing coal)	0.005	lb/ton	50%	0.00265
Wind erosion (from applicant derived by method detailed in Section 13.2.5)	0.227	ton/acre/yr	0%	0.22718

Constants/Assumptions	
U = Average wind speed (mph)	9.3
M = Average coal moisture (%)	10.4
Average coal silt (%)	8.6
Portion of stockpile handled by dozer	20%
Dozer capacity (ton/hr)	1,400

AP-42 Reference	
Industrial Wind Erosion (applicant)	Method detailed in Section 13.2.5
k = PM_{10}/TSP = 0.5	13.2.5, Aerodynamic particle size multipliers for Eq. 2
Average Moisture Content	Table 11.9-3
Material Handling/Drop	13.2.4.3 Eq. 1
Loading/Dumping	Table 11.9-4, Mine Location III (SE Montana)
Pile Shaping/Bulldozing	Table 11.9-1
Average Silt Content	Table 11.9-3
Threshold friction velocity for coal = 1.12m/sec	Table 13.2.5-2

Soils Stockpiles		**Control Method**	**PM = PM_{10} Emissions (tpy)**
Waste Disposal Area Topsoil #1	8.40 Acres	Seeding	0.96
Waste Disposal Area Topsoil #2	3.00 Acres	Seeding	0.34
Waste Disposal Area Subsoil #1	24.00 Acres	Seeding	2.74

Soils Stockpiles		Control Method	PM = PM_{10} Emissions (tpy)
Waste Disposal Area Subsoil #2	4.40 Acres	Seeding	0.50
Waste Disposal Area Subsoil #3	3.70 Acres	Seeding	0.42
Waste Disposal Area Suitable	11.50 Acres	Seeding	1.31
RR Topsoil (Silo Area)	5.30 Acres	Seeding	0.60
RR Subsoil (Silo Area)	6.00 Acres	Seeding	0.68
Silo Topsoil	2.30 Acres	Seeding	0.26
Silo Subsoil	3.10 Acres	Seeding	0.35
Temp Waste Area Topsoil	0.10 Acre	Seeding	0.01
Temp Waste Area Subsoil	0.50 Acre	Seeding	0.06
Waste Disposal Area Haul Rd Area Subsoil	0.20 Acre	Seeding	0.02
Madison Well 1 Topsoil	0.20 Acre	Seeding	0.02
Madison Well 1 Subsoil	0.30 Acre	Seeding	0.03
Madison Well 3 Topsoil	0.20 Acre	Seeding	0.02
Madison Well 3 Subsoil	0.40 Acre	Seeding	0.05
Area 1A Topsoil	0.80 Acre	Seeding	0.09
Area 1A Subsoil	2.80 Acres	Seeding	0.32
Soil - Total Stockpile Emissions			**8.80**

(Acreage x Wind Erosion EF x conversion)

AP-42 References	
Wind Erosion EF = 0.38 ton/acre/yr	Table 11.9-4 (wind erosion of exposed areas, TSP)
Soil TSP to PM_{10} Conversion = 0.306	k, Table 13.2.2-2, Industrial Roads, (1.5/4.9=0.306)

FACILITY TOTAL FUGITIVE EMISSIONS (tpy PM_{10})	103.18

Emission Inventory - Non- fugitive sources

Conveyors and Batch Dumps	Control Method	PM = PM_{10} Emissions (tpy)
72" Discharge Belt (- 6") ROM to ROM Surge Stockpile Conveyor	Minimum Fall	0.71
72" Belt (- 6") ROM from Discharge Belt to Stockpile #1	Minimum Fall	0.71
60" Belt (-6") ROM from Stockpile #1 to Screen/Crush Building	Minimum Fall	0.71
Miscellaneous Stockpile Belts and 2 Cat D10 Dozers (Stockpiles) and 2 Cat 980 Loader (Stockpiles)	Minimum Fall/Watering	10.62
48" Belt (-2") Raw from Plant Feed Stockpile #2 to Prep Plant	Minimum Fall	0.71
60" Belt (-2") Coal from Clean Coal Stockpile #4 to Product Silos/Product Loadout Conveyor and Product Silos to 72" Batch Weigh Loadout Belt	Minimum Fall/Boot	1.42
36" Belt (-2") Refuse from Prep Plant to 300 ton Refuse Bin and Refuse Bin to Truck	Minimum Fall/Boot	0.22
72" Belt (-2") Coal from Product Silos/Prod. Loadout	Minimum Fall/Boot	1.42

Conveyors and Batch Dumps	Control Method	PM = PM_{10} Emissions (tpy)
Conveyor to Batch Weigh Loadout and Batch Product Loadout to Railcars		
Total conveyors and Batch Dump Emissions		**16.52**

Crushing Operation	Control Method	PM = PM_{10} Emissions (tpy)
Enclosed Crushers and Screens	Enclosure	1.92
Sub- total Crushing Operation Emissions		**1.92**

Propane Boilers	tpy					
	PM	PM10	NOx	CO	VOC	SO2
Boiler #1 (500,000 Btu/hr)	0.017	0.017	0.31	0.18	0.012	0.0013
Boiler #2 (500,000 Btu/hr)	0.017	0.017	0.31	0.18	0.012	0.0013
Sub-Total – Boiler Emissions	**0.034**	**0.034**	**0.62**	**0.36**	**0.24**	**0.0026**

FACILITY TOTAL NON-FUGITIVE EMISSIONS (tpy)	PM	PM10	NOx	CO	VOC	SO2
	18.47	**18.47**	**0.62**	**0.36**	**0.24**	**0.0026**

Propane Gas Boiler (500,000 BTU/hr)

Operational Capacity of Boiler = 500,000 BTU/hr =
Hours of Operation = 8,760 hours
Heat Content: 91.5 MMBtu/1000 gal (for propane)(AP42, Sec. 1.5, Table 1.5-1a.))
Calculation: (0.500 MMBtu/hr) / (0.0915 MMBTU/gal) =

PM-10 Emissions:
Emission Factor = 0.0007 lb/gal propane (AP-42, Sec. 1.5, Table 1.5-1, 07/08)
Calculation: (5.46 gal/hr) * (8,760 hours) * (0.0007 lb/gal propane) * (ton/2000 lb) = 0.017 ton/yr
Calculation: (5.46 gal/hr) * (8,760 hours) * (0.0007 lb/gal propane) = 33.51 lbs/yr

NOx Emissions:
Emission Factor = 0.013 lb/gal propane (AP-42, Sec. 1.5, Table 1.5-1, 07/08)
Calculation: (5.46 gal/hr) * (8,760 hours) * (0.013 lb/gal propane) * (ton/2000 lb) = 0.31 ton/yr
Calculation: (5.46 gal/hr) * (8,760 hours) * (0.013 lb/gal propane) = 622.30 lbs/yr

CO Emissions:
Emission Factor = 0.0075 lb/gal propane (AP-42, Sec. 1.5, Table 1.5-1, 07/08)
Calculation: (5.46 gal/hr) * (8,760 hours) * (0.0075 lb/gal propane) * (ton/2000 lb) = 0.18 ton/yr
Calculation: (5.46 gal/hr) * (8,760 hours) * (0.0075 lb/gal propane) = 359.02 lbs/yr

VOC Emissions: (AP-42, Sec. 1.4, Table 1.4-2, 07/98, Used natural gas values)
Calculation: (0.5 MMBtu/hr) * (8,760 hours) * (0.00539 lbs/MMBtu) * (ton/2000 lb) = 0.012 ton/yr
Calculation: (0.5 MMBtu/hr) * (8,760 hours) * (0.00539 lbs/MMBtu) = 23.61 lbs/yr

(AP-42, Table 1.4-2: VOC=(5.5 lb/10^6 scf)/1020 = .00539 lb/MMBtu)

SOx Emissions: (AP-42, Sec. 1.4, Table 1.4-2, 07/98, Used natural gas values)
Emission Factor = 0.000588 lbs/MMBtu
Calculation: (0.5 MMBtu/hr)*(8,760 hours)*(0.000588 lbs/MMBtu)* (ton/2000 lb) = 0.0013 ton/yr
Calculation: (0.5 MMBtu/hr) * (8,760 hours) * (0.000588 lbs/MMBtu) = 2.58 lbs/yr

(AP-42, Table 1.4-2: SOx=(0.6 lb/10^6 scf)/1020 = .000588 lb/MMBtu)

CO_2 Emissions: (AP-42, Sec. 1.5, Table 1.5-1, 07/08)
Emission Factor = 12.5 lb/gal propane (AP-42, Sec. 1.5, Table 1.5-1, 07/08)
Calculation: (5.46 gal/hr) * (8,760 hours) * (12.5 lb/gal propane) * (ton/2000 lb) = 299.18 ton/yr
Calculation: (0.01 gal/hr) * (8,760 hours) * (12.5 lb/gal propane) = 598,360.66 lbs/yr
(AP-42, Table 1.4-2: SOx=(0.6 lb/10^6 scf)/1020 = .000588 lb/MMBtu)

CH_4 Emissions: (AP-42, Sec. 1.5, Table 1.5-1, 07/08)
Emission Factor = 0.0002 lb/gal propane (AP-42, Sec. 1.5, Table 1.5-1, 07/08)
Calculation: (5.46 gal/hr) * (8,760 hours) * (0.0002 lb/gal propane) * (ton/2000 lb) = 0.00 ton/yr
Calculation: (0.01 gal/hr) * (8,760 hours) * (0.0002 lb/gal propane) = 9.57 lbs/yr
(AP-42, Table 1.4-2: SOx=(0.6 lb/10^6 scf)/1020 = .000588 lb/MMBtu)

N_20 Emissions: (AP-42, Sec. 1.5, Table 1.5-1, 07/08)
Emission Factor = 0.0009 lb/gal propane (AP-42, Sec. 1.5, Table 1.5-1, 07/08)
Calculation: (5.46 gal/hr) * (8,760 hours) * (0.0009 lb/gal propane) * (ton/2000 lb) = 0.02 ton/yr
Calculation: (0.00 gal/hr) * (8,760 hours) * (0.0009 lb/gal propane) = 43.08 lbs/yr
(AP-42, Table 1.4-2: SOx=(0.6 lb/10^6 scf)/1020 = .000588 lb/MMBtu)

V. Existing Air Quality

SPE is located in the Bull Mountains approximately 16 miles southeast of Roundup, Montana, and approximately 35 miles northeast of Billings, Montana. The legal description of the site is Section 12, West ½ Section 13, and Section 14, Township 6 North, Range 26 East, in Musselshell County, Montana. This area is considered attainment or unclassifiable for all criteria pollutants.

Baseline air quality (particulate) was monitored in the project area. The measurements included both TSP (total suspended particulate) and PM_{10}.

The period of record submitted with the application for MAQP #3179-03 was from March 1989 through March 1992. All values were well below applicable ambient air quality standards. The following table summarizes the data (values are reported in micrograms per cubic meter ($\mu g/m^3$)).

Year	Parameter	24-Hour High Reading	24-Hour Second Highest	Annual Average	No. of Samples
1989	TSP PM-10	39 53*	33 19	14 9	51 51
1990	TSP PM-10	59 29	58 27	13 9	59 57
1991	TSP PM-10	42 24	39 21	14 9	56 57
*This high PM-10 value was recorded on June 27, 1989; no TSP value was recorded on that date.					

The state and federal PM_{10} standards are as follows:

Annual Average = 50 $\mu g/m^3$
24-hour = 150 $\mu g/m^3$

Meteorological data was collected at the site as well. The predominant wind direction is from the northwest. In the immediate plant area the predominant wind is up the PM draw. There is also a significant southeasterly component down the draw.

At the time the data was collected, local sources of air pollution in the area included vehicle traffic (unpaved roads), the PM Mine, agricultural activities, and residential heating. Operational air monitoring requirements for the project are contained in Attachment 1.

VI. Ambient Air Impact Analysis

The Department determined that the impacts from this permitting action will be minor because this permit action is an administrative amendment that results in minor emissions increases from the facility (less than 5 tpy). Therefore, the Department believes it will not cause or contribute to a violation of any ambient air quality standard.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

This permitting action is considered an administrative action; therefore, an Environmental Assessment is not required.

Analysis prepared by: Deanne Fischer
Date: August 13, 2013