



Montana Department of  
**ENVIRONMENTAL QUALITY**

Brian Schweitzer, Governor

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March 17, 2010

Mr. Dennis Garnett  
Signal Peak Energy, LLC  
100 Portal Drive  
Roundup, Montana 59072

Dear Mr. Garnett:

Montana Air Quality Permit #3179-05 is deemed final as of March 17, 2010, by the Department of Environmental Quality (Department). This permit is for the operation of an underground coal mining facility. 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,

Vickie Walsh  
Air Permitting Program Supervisor  
Air Resources Management Bureau  
(406) 444-9741

Deanne Fischer, PE  
Environmental Engineer  
Air Resources Management Bureau  
(406) 444-3403

VW:DF  
Enclosure

Montana Department of Environmental Quality  
Permitting and Compliance Division

Montana Air Quality Permit #3179-05

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

March 17, 2010



## MONTANA AIR QUALITY PERMIT

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

Montana Air Quality Permit: #3179-05  
Administrative Amendment (AA)  
Request Received: 01/19/10  
Department Decision on AA: 3/1/2010  
Permit Final: 3/17/2010  
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

On January 19, 2010, the Montana Department of Environmental Quality (Department) received a change of address request regarding MAQP #3179. Specifically, SPE requested that the address shown on the MAQP be changed from 490 North 31<sup>st</sup> Street, Suite 308, Billings, MT 59101 to 100 Portal Drive, Roundup, Montana 59072. In addition, on July 31, 2009, the Department received a request to amend MAQP #3179 to more accurately reflect the number and size of coal and soil stockpiles at SPE. Specifically, SPE requested that the number of topsoil/subsoil storage piles be changed from one to nine, and that two Waste Disposal Area topsoil/subsoil storage piles be added. They also requested that the maximum surface area allowed at the run-of-mine (ROM) coal stockpile, the topsoil/subsoil storage pile, and each of the four coal stockpiles be modified. These changes were allowed pursuant to ARM 17.8.745. The current permit action is an administrative amendment pursuant to ARM 17.8.764 that changes the permittee address and description of coal and soil stockpiles as requested. 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.

### SECTION II: Conditions and Limitations

#### A. Emission Limitations

1. Coal production from the facility shall be limited to 1.3 million tons during any rolling 12-month time period for the development phase of the coal mining operation (ARM 17.8.749).

2. 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).
3. SPE shall not cause or authorize any particulate stack emissions (total particulate), from pneumatic coal cleaning equipment, which exceed the following (ARM 17.8.340 and 40 CFR 60, Subpart Y):
  - a. 0.040 grams per dry standard cubic meter (0.018 grains per dry standard cubic foot); and
  - b. 10% opacity or greater averaged over 6 consecutive minutes.
4. 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 processing coal, 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).
5. SPE shall not cause or authorize to be discharged into the atmosphere, from any other source of process or fugitive particulate emissions, any visible emissions 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).
6. 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.4 and Section II.A.5 (ARM 17.8.752).
7. SPE shall use a fabric filter baghouse to control process particulate emissions from surface crushing and screening operations (ARM 17.8.752).
8. SPE shall use a fabric filter baghouse to control process particulate emissions from coal drying and cleaning operations (ARM 17.8.752).
9. SPE may operate one ROM coal stockpile not to exceed a surface area of 3.43 acres (150,000 square feet (ft<sup>2</sup>)) (ARM 17.8.749).
10. SPE may operate four coal stockpiles, Stockpiles #1A, #2, #3, and #4 (piles #3 and #4 are combined), each not to exceed a surface area of 6.6 acres (290,000 ft<sup>2</sup>) (ARM 17.8.749).
11. SPE shall use watering and/or chemical dust suppressants and contouring techniques to control particulate emissions from the coal stockpiles (ARM 17.8.752).
12. 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).
13. SPE may operate nine topsoil/subsoil storage piles each not to exceed a surface area of 5.5 acres (240,000 ft<sup>2</sup>) (ARM 17.8.749).

14. SPE may operate two waste disposal area topsoil/subsoil storage piles each not to exceed a surface area of 35 acres (1,525,000 ft<sup>2</sup>) (ARM 17.8.749).
15. SPE shall employ watering and/or chemical dust suppressant, contouring, compaction techniques, and re-vegetation to reduce emissions from the topsoil storage pile (ARM 17.8.752).
16. 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).
17. 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).
18. 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).
19. 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).
20. SPE shall operate all crushers and screens within an enclosed building (ARM 17.8.752).
21. 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).
22. Crushing production is limited to 15 million tons during any rolling 12-month time period (ARM 17.8.749).
23. SPE shall not operate more than two screens at any given time and the maximum rated design capacity of each screen shall not exceed 3,500 TPH (ARM 17.8.749).
24. Screening production is limited to 15 million tons during any rolling 12-month time period (ARM 17.8.749).
25. 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).
26. 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).
27. SPE shall incorporate a radial stacker with an adjustable chute at the discharge end for both the clean coal and reject stockpiles during the development phase (ARM 17.8.752).
28. 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).
29. SPE shall develop, implement, and maintain good housekeeping practices to keep coal and waste material transfer locations clean (ARM 17.8.752).

30. 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).
31. SPE shall clean up all spilled material from road surfaces (ARM 17.8.752).
32. 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.30 (ARM 17.8.749).
33. SPE shall not operate more than two boilers at any given time and each boiler shall not exceed a maximum design capacity of 35,000 British thermal units per hour (Btu/hr) each (ARM 17.8.749).
34. SPE may power the 35,000 Btu/hr boilers using propane or coal (ARM 17.8.749).
35. Total coal combustion in 35,000 Btu/hr boilers shall be limited to 26 tons during any rolling 12-month time period (ARM 17.8.749).
36. 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. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial start-up of the development phase of the operation, the recipient shall conduct a Method 5 performance source test(s) on the coal wash plant baghouse stack to verify compliance with Section II.A.3.a (ARM 17.8.340 and 40 CFR 60, Subpart Y).
2. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial start-up of the development phase of the operation, the recipient shall conduct a Method 9 performance source test(s) on the coal wash plant baghouse stack and all other affected equipment to verify compliance with Section II.A.3.b and Section II.A.4 (ARM 17.8.340 and 40 CFR 60, Subpart Y).
3. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial start-up of the primary phase of the operation, the recipient shall conduct a Method 5 performance source test(s) on the coal wash plant baghouse stack to verify compliance with Section II.A.3.a. After the initial source test(s), additional testing shall occur on an every 5-year basis or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105, ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart Y).
4. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial start-up of the primary phase of the operation, the recipient shall conduct a Method 9 performance source test(s) on the coal wash plant baghouse stack and all other affected equipment to verify compliance with Section II.A.3.b and Section II.A.4. After the initial source test(s), additional testing shall occur on an

every 5-year basis or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105, ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart Y).

5. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
6. 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(1), 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 start up 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(1)(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 development phase coal production from the mine. By the 25<sup>th</sup> day of each month, SPE shall total the development 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 primary phase coal production from the mine. By the 25<sup>th</sup> 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.2. A written report of the compliance verification shall be submitted along with annual emission inventory (ARM 17.8.749).

6. 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.22. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).
7. SPE shall document, by month, the screening production from the facility. By the 25th day of each month, SPE shall calculate the screening 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.24. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).
8. SPE shall document, by month, the coal combustion in the 35,000 Btu/hr boilers. By the 25<sup>th</sup> day of each month, SPE shall total the coal combusted for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.35. A written report of the compliance verification shall be submitted along with 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 ( $\mu\text{g}/\text{m}^3$ )) of the 24-hour ambient standard ( $150\mu\text{g}/\text{m}^3$ ) and 87% ( $43.5 \mu\text{g}/\text{m}^3$ ) of the annual standard ( $50 \mu\text{g}/\text{m}^3$ ). 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).

#### E. Notification

SPE shall provide the Department with written notification of the following dates within the specified time periods (ARM 17.8.749):

1. Actual start-up date of the primary phase of the coal mine within 15 days after the actual start-up of the coal mine in the primary phase.

### 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 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 therefore, 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 #3179-05

1. This ambient air monitoring plan is required by Montana Air Quality Permit (MAQP) #3179-05, 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 3 below. 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-XXXX		PM-10 <sup>1</sup> 81102 and 85101	Every third day
		Wind Speed, Direction and Sigma Theta 61101,61102 and 61106	Continuous
Plant Area (Downwind) 30-065-XXXX		PM-10 (Collocated <sup>2</sup> ) 81102 and 85101	Every sixth day
Plant Area (Upwind) 30-065-XXXX		PM-10	Every third day
<sup>1</sup> PM-10 = particulate matter less than 10 microns. <sup>2</sup> 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<sub>10</sub>
  - 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<sub>10</sub>,
    - 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 (MAQP) Analysis  
Signal Peak Energy, LLC  
MAQP #3179-05

I. Introduction/Process Description

Signal Peak Energy, LLC (SPE) 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; a waste disposal area (WDA) including two topsoil/subsoil storage piles; mine ventilation; mine yard area equipment; a quarry; a run-of-mine (ROM) coal stockpile; nine topsoil/subsoil storage piles; coal Stockpiles #1A, #2, and combined stockpiles #3, and #4; two small building heating boilers (35,000 British thermal units per hour (Btu/hr)); and, various conveyors and transfer stations.

B. Source Description

SPE operates an underground coal mine that is initially capable of producing up to 1.3 million tons of raw coal per year. The initial phase of this project covers the development stage of the operation. The initial development phase allows for some production while the ultimate primary facilities are constructed. The primary facilities (new 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 mined underground using continuous miner sections and longwall panels. The continuous miner will be used to establish a mineable block of coal, and the longwall equipment will be used to extract the block of coal. 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. Coal will be supplied to local consumers from bins with hoppers located at the wash plant facilities. Reject material will be sent to the WDA.

During the development operations, the coal will be transferred from the ROM stockpile to the existing wash plant via a belt conveyor. The coal will pass through the buffer bin to a crusher and sizing screen and then on to the heavy media washer. The final product will be passed through a fluidized bed to air dry the product. A primary coal washing facility will be constructed concurrently with the development operations.

The development phase wash plant will reject 19 percent of the raw coal stream and the new primary facility will reject 13 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 the primary phase of operations, coal will be dumped from the mine portal onto a conveyor which dumps onto the proposed 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 conveyed to the refuse bin loadout where it is initially trucked via haul road and will ultimately be transferred via conveyor belt to the WDA at the northeast section of the plant boundary. A loader will be used at the WDA to move material into desired locations.

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

**Montana Air Quality Permit (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<sup>2</sup>))
- ROM coal stockpile site preparation (topsoil removal – dozer)
- Topsoil storage pile (surface area: 100,000 ft<sup>2</sup>)
- 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.

#### D. Current Permit Action

On January 19, 2010, SPE requested an administrative amendment to MAQP #3179-04 to change the business/ mailing address from 490 North 31<sup>st</sup> 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 Waste Disposal Area topsoil/subsoil storage piles each not to exceed a surface area of 35 acres.

The current permit action incorporates the requests into the MAQP. 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 #3179-05** replaces MAQP #3179-04.

#### 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<sub>10</sub>
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.
  - a. 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.
  - b. 40 CFR Part 60, Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants –requires that no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any stack emissions which: (1)

contain particulate matter in excess of 0.05 g/dscm, and, (2) Exhibit greater than 7 percent opacity, unless the stack emissions are discharged from an affected facility using a wet scrubbing control device.

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 the PTE more than 25 TPY of particulate matter with an aerodynamic diameter of 10 microns or less (PM<sub>10</sub>); 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, alteration, 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<sub>10</sub>) in a serious PM<sub>10</sub> 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 #3179-05 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<sub>10</sub> nonattainment area.
- d. This facility is subject to current NSPS standards (40 CFR 60, Subparts A, Y, and OOO).
- e. This facility is not subject to any current NESHAP standards.
- 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. In the original application for MAQP #3179-03, each emitting source was calculated separately; however, there were instances where multiple sources were located at the same coordinates. In response to the Department's comments to this fact, some emissions were combined into a single source for modeling purposes. The following table reflects those combined emission totals.

In addition, the method for estimating emissions from Stockpiles #1, #2, #3, and #4 were recalculated using wind speed information and calculations from AP-42 Section 13.2.5.

<b>Activities</b>	<b>Control Method</b>	<b>PM<sub>10</sub> Emissions (TPY)</b>
<b>Conveyors and Batch Dumps</b>		
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/Waterin g	10.62

<b>Activities</b>	<b>Control Method</b>	<b>PM<sub>10</sub> Emissions (TPY)</b>
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 Conveyor to Batch Weigh Loadout and Batch Product Loadout to Railcars	Minimum Fall/Boot	1.42
<b>Screening Crushing Operation</b>		
Enclosed Crushers and Screens	Enclosure	1.92
<b>Unpaved Roads</b>		
2 Haul Trucks/ Haul Roads	Watering	7.92
1 Cat 980 Loader (Waste Pit)	Watering	1.66
<b>Stockpiles</b>		
Stockpile #1	Watering as Necessary	0.25
Stockpile #2	Watering as Necessary	0.25
Stockpile #3	Watering as Necessary	0.25
Stockpile #4	Watering as Necessary	0.25
Stockpile A - Raw Coal Pile	Watering as Necessary	0.0025
Stockpile 1A - Temporary Raw Coal Pile	Watering as Necessary	0.65
Stockpile B	Watering as Necessary	0.0031
Stockpile C	Watering as Necessary	0.0125
Stockpile D - Rock Waste Storage	Watering as Necessary	0.0059
Stockpile E	Watering as Necessary	0.0125
Stockpile F	Watering as Necessary	0.0632
Coarse Refuse Stockpile	Watering as	0.0047

Activities	Control Method	PM <sub>10</sub> Emissions (TPY)
	Necessary	
Topsoil/Subsoil Stockpile	Seeding	0.0025
Topsoil/Subsoil Stockpile (Temporary)	Seeding	0.0089
Waste Rock Refuse Pile	Seeding	0.1120

Coal Fired Building Boilers		
Boiler 1	---	0.04
Boiler 2	---	0.04
<b>Facility Total</b>		<b>29.9</b>

#### 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 for all criteria pollutants.

Baseline air quality (particulate) was monitored in the project area. The measurements included both TSP (total suspended particulate) and PM<sub>10</sub>.

The period of record submitted with the application for MAQP #3179-03 is from March 1989 through March 1992. All values are well below applicable ambient air quality standards. The following table summarizes the data (values are reported in micrograms per cubic meter (µg/m<sup>3</sup>).

Year	Parameter	24-Hour High Reading	24-Hour Second Highest	Annual Average	No. of Samples
1989	TSP	39	33	14	51
	PM-10	53*	19	9	51
1990	TSP	59	58	13	59
	PM-10	29	27	9	57
1991	TSP	42	39	14	56
	PM-10	24	21	9	57

\*This high PM-10 value was recorded on June 27; no TSP value was recorded on that date.

The state and federal PM<sub>10</sub> standards are as follows:

Annual Average = 50 µg/m<sup>3</sup>  
 24-hour = 150 µg/m<sup>3</sup>

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 P.M. draw. There is also a significant southeasterly component down the draw.

Current local sources of air pollution in the area include vehicle traffic (unpaved roads), the PM Mine, agricultural activities, and home heating. Operational air monitoring requirements for the project are contained in Attachment 1.

## VI. Ambient Air Impact Analysis

Aspen Consulting and Engineering, Inc. (Aspen) previously submitted modeling on behalf of SPE supporting the application for MAQP #3179-03. The airborne PM<sub>10</sub> concentrations were modeled to demonstrate compliance with the Montana and National Ambient Air Quality Standards (MAAQS and NAAQS, respectively). The U.S. Environmental Protection Agency AERMOD model was used for the modeling demonstration with five years (1986 - 1990) of meteorological (met) data. The surface and upper air data were collected at the Billings and Great Falls International Airports, Montana, respectively.

The Department provided the surface characteristics for the Billings International Airport to Aspen for inclusion into AERMET, the met processor.

AERMAP, the terrain processor, was used to calculate the receptor, source, and hill heights. The receptor grid elevations were derived from digital elevation model (DEM) files from the United States Geological Survey (USGS) 7.5-minute series (1:24,000 scale) digitized topographical maps. The following thirty DEMs were used in the modeling analysis: Big Wall East, Big Wall West, Broadview East, Broadview NE, Bundy, Chimney Butte, Cherry Spring, Cotton Creek, Delphia, Dunn Mountain North, Dunn Mountain South, Elso, Gage, Gage NE, Harper Coulee, Hay Basin NE, Hay Basin North, Hay Basin South, Horsethief Creek, Lake Mason, Lake Mason SE, North Fork Crooked Creek East, North Fork Crooked Creek West, P K Ranch, P K Ranch SW, Park Coulee, Roundup, Signal Mountain, Timber Buttes North, and Timber Buttes South. A total of 4,735 receptors were used in the modeling.

Receptors were placed at 100 meter (m) spacing along the fenceline. A Cartesian grid was developed outside the fenceline. Receptors were placed at 100-m spacing for a distance of 1 kilometer (km) from the fenceline. Receptors were placed at 250-m spacing for a distance of 1 km to 3 km from the fenceline. Receptors were placed at 500-m spacing for a distance of 3 km to 10 km from the fenceline. All receptors were Universal Transverse Mercator (UTM) coordinates, North American Datum 1927 (NAD27).

Aspen did not include two building heat boilers in the modeling. The total corresponding PM<sub>10</sub> emissions were approximately 0.27% of the total facility emissions. No building downwash was considered since there were no point sources in the modeling analysis.

Two types of sources were modeled, area and volume, with two different PM<sub>10</sub> emission rates, 24-hour and annual. The 24-hour emission rates were based on the material transferred in pounds per hour (lb/hr) as specified in Table 2-1, Montana Air Quality Preconstruction Permit Modification Application, Permit #3179-03. The annual emission rates were based on the maximum production of 15 million tons of coal.

Table 1 shows the air dispersion modeling results for the high second high 24-hour modeled PM<sub>10</sub> concentrations for each met year. Also included is the Montana default 24-hour PM<sub>10</sub> background concentration of 30 µg/m<sup>3</sup>. When added together, the concentrations were compared to both the 24-hour PM<sub>10</sub> NAAQS and MAAQS, respectively.

Table 1. 24-Hour PM<sub>10</sub> Ambient Air Concentration Dispersion Results.

Met Year	H2H <sup>1</sup> 24-Hour PM <sub>10</sub> Modeled Ambient Conc. (µg/m <sup>3</sup> ) <sup>2</sup>	24-Hour PM <sub>10</sub> Back-ground Conc. (µg/m <sup>3</sup> )	24-Hour PM <sub>10</sub> Total (µg/m <sup>3</sup> )	24-Hour NAAQ S/MAA QS <sup>3</sup> (µg/m <sup>3</sup> )	Percent of NAAQS/MAAQS (%)	H2H Receptor Location UTM (NAD27) <sup>4</sup>		
						Easting (mE) <sup>5</sup>	Northing (mN) <sup>6</sup>	Elevation (m) <sup>7</sup>
1986	24.39	30	54.39	150	36.3	697830	5126140	1203.0
1987	23.47	30	53.47	150	35.7	699013	5126294	1192.4
1988	20.41	30	50.41	150	33.6	698401	5127911	1185.1
1989	26.59	30	56.59	150	37.7	697930	5126140	1208.6
1990	22.97	30	52.97	150	35.3	698449	5127913	1184.1

1. H2H = High Second High.

2. µg/m<sup>3</sup> = micrograms per cubic meter.

3. NAAQS/MAAQS = National Ambient Air Quality Standard/Montana Ambient Air Quality Standard.

4. UTM = Universal Transverse Mercator; NAD27 = North American Datum 1927.

5. mE = meters Easting.

6. mN = meters Northing.

7. m = meter(s).

The 24-hour PM<sub>10</sub> concentrations ranged from about 50.4 to 56.6 µg/m<sup>3</sup> with an average concentration of 53.6 µg/m<sup>3</sup>, significantly below either the NAAQS/MAAQS of 150 µg/m<sup>3</sup>. Table 2 lists the annual PM<sub>10</sub> model results for each met year with the Montana default annual PM<sub>10</sub> background concentration of 8 µg/m<sup>3</sup>. After adding the background concentration to the model results, these values were compared to the annual PM<sub>10</sub> NAAQS/MAAQS.

Table 2. Annual PM<sub>10</sub> Ambient Air Concentration Dispersion Results.

Met Year	H1H <sup>1</sup> Annual PM <sub>10</sub> Modeled Ambient Conc. (µg/m <sup>3</sup> ) <sup>2</sup>	Annual PM <sub>10</sub> Back-ground Conc. (µg/m <sup>3</sup> )	Annual PM <sub>10</sub> Total (µg/m <sup>3</sup> )	Annual PM <sub>10</sub> NAAQ S/MAA QS <sup>3</sup> (µg/m <sup>3</sup> )	Percent of NAAQS/MAAQS (%)	H1H Receptor Location UTM (NAD27) <sup>4</sup>		
						Easting (mE) <sup>5</sup>	Northing (mN) <sup>6</sup>	Elevation (m) <sup>7</sup>
1986	1.40	8	9.40	50	18.8	698498	5127915	1183.5
1987	1.65	8	9.65	50	19.3	698498	5127915	1183.5
1988	1.25	8	9.25	50	18.5	698498	5127915	1183.5
1989	1.55	8	9.55	50	19.1	698498	5127915	1183.5
1990	1.53	8	9.53	50	19.1	698498	5127915	1183.5

1. H1H = High First High.
2.  $\mu\text{g}/\text{m}^3$  = micrograms per cubic meter.
3. NAAQS/MAAQS = National Ambient Air Quality Standard/Montana Ambient Air Quality Standard.
4. UTM = Universal Transverse Mercator; NAD27 = North American Datum 1927.
5. mE = meters Easting.
6. mN = meters Northing.
7. m = meter(s).

The annual  $\text{PM}_{10}$  concentrations ranged from about 9.3 to 9.7  $\mu\text{g}/\text{m}^3$ , less than 20% the NAAQS or MAAQS. The results for the Class II increment consumption analysis for the 24-hour and annual periods are given in Table 3 and 4, respectively, for each met year.

Table 3. 24-Hour  $\text{PM}_{10}$  Class II Increment Consumption Results.

Met Year	H2H <sup>1</sup> Increment Consuming Sources $\text{PM}_{10}$ 24-Hour ( $\mu\text{g}/\text{m}^3$ ) <sup>2</sup>	Class II $\text{PM}_{10}$ 24-Hour Increment ( $\mu\text{g}/\text{m}^3$ )	H2H Receptor Location UTM (NAD27) <sup>4</sup>			Pass? (% of increment)
			Easting (mE) <sup>5</sup>	Northing (mN) <sup>6</sup>	Elevation (m) <sup>7</sup>	
1986	23.27	30	697830	5126140	1203.0	Yes (77.6)
1987	22.35	30	699063	5126295	1189.4	Yes (74.5)
1988	19.37	30	697674	5126259	1194.1	Yes (64.6)
1989	25.58	30	697930	5126140	1208.6	Yes (85.3)
1990	19.69	30	697724	5126261	1200.6	Yes (65.6)

1. H2H = High Second High.
2.  $\mu\text{g}/\text{m}^3$  = micrograms per cubic meter.
3. NAAQS/MAAQS = National Ambient Air Quality Standard/Montana Ambient Air Quality Standard.
4. UTM = Universal transverse Mercator; NAD27 = North American Datum 1927.
5. mE = meters Easting.
6. mN = meters Northing.
7. m = meter(s).

The modeling results for the 24-hour  $\text{PM}_{10}$  Class II increment analysis indicated over 85% of the increment was consumed using the 1989 met year data.

Table 4. Annual  $\text{PM}_{10}$  Class II Increment Consumption Results.

Met Year	H1H <sup>1</sup> Increment Consuming Sources $\text{PM}_{10}$ Annual ( $\mu\text{g}/\text{m}^3$ ) <sup>2</sup>	Class II $\text{PM}_{10}$ Annual Increment ( $\mu\text{g}/\text{m}^3$ )	H1H Receptor Location UTM (NAD27) <sup>4</sup>			Pass? (% of increment)
			Easting (mE) <sup>5</sup>	Northing (mN) <sup>6</sup>	Elevation (m) <sup>7</sup>	
1986	1.38	17	698498	5127915	1183.5	Yes (8.1)
1987	1.63	17	698498	5127915	1183.5	Yes (9.6)
1988	1.23	17	698498	5127915	1183.5	Yes (7.2)
1989	1.53	17	698498	5127915	1183.5	Yes (9.0)
1990	1.51	17	698498	5127915	1183.5	Yes (8.9)

1. H1H = High First High.
2.  $\mu\text{g}/\text{m}^3$  = micrograms per cubic meter.
3. NAAQS/MAAQs = National Ambient Air Quality Standard/Montana Ambient Air Quality Standard.
4. UTM = Universal Transverse Mercator; NAD27 = North American Datum 1927.
5. mE = meters Easting.
6. mN = meters Northing.
7. m = meter(s).

Less than 10% of the annual Class II increment was consumed, regardless of the met year, by the SPE sources.

The Department determined, based on ambient air modeling, that the impacts from permitting action #3179-03 would be minor. Based on that previous modeling, and the fact that the current permit action is an administrative action, the Department believes the current action 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.

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