

3. Loading of railcars shall be restricted to the use of submerged fill and dedicated normal service (ARM 17.8.752).
4. ConocoPhillips' railcar loading rack shall be equipped with a vapor recovery system designed to collect the organic compounds displaced from gasoline railcar product loading and vent those emissions to the flare (ARM 17.8.749).
5. The vapor recovery system shall be designed to prevent any VOC vapors collected at one loading position from passing to another loading position (ARM 17.8.749).
6. Loading of liquid product into gasoline railcars shall be limited to vapor-tight gasoline railcars using the following procedures (ARM 17.8.749):
 - a. ConocoPhillips shall obtain the vapor tightness documentation described in EPA Method 27 (or another method approved by the Department) or Department of Transportation (DOT) certification methods for each gasoline railcar that is to be loaded at the railcar loading rack;
 - b. ConocoPhillips shall require the railcar identification number to be recorded as each gasoline railcar is loaded at the terminal; and
 - c. ConocoPhillips shall take the necessary steps to ensure that any non-vapor-tight gasoline railcar will not be reloaded at the railcar loading rack until vapor tightness documentation for that railcar is obtained.
7. ConocoPhillips shall ensure that loading of gasoline railcars at the railcar loading rack are made only into railcars equipped with vapor recovery equipment that is compatible with the terminal's vapor recovery system (ARM 17.8.749).
8. ConocoPhillips shall ensure that the terminal's and the railcar's vapor recovery systems are connected during each loading of a gasoline railcar at the railcar loading rack (ARM 17.8.749).
9. The vapor recovery and liquid loading equipment shall be designed and operated to prevent gauge pressure in the gasoline railcar from exceeding 4,500 Pascals (Pa) (450 millimeters (mm) of water) during product loading (ARM 17.8.749).
10. No pressure-vacuum vent in the permitted terminal's vapor recovery system shall begin to open at a system pressure less than 4,500 Pa (450 mm of water) (ARM 17.8.749).
11. ConocoPhillips shall operate and maintain an enclosed flare to control VOC and hazardous air pollutant (HAP) emissions during the loading of gasoline in the railcar loading rack (ARM 17.8.752).
12. ConocoPhillips shall not cause or authorize to be discharged into the atmosphere from the enclosed flare:
 - a. Any visible emissions that exhibit an opacity of 10% or greater (ARM 17.8.749); and
 - b. Any particulate emissions in excess of 0.10 grains per dry standard cubic foot (gr/dscf) corrected to 12% carbon dioxide (CO₂) (ARM 17.8.749).

13. The total emissions to the atmosphere from the flare due to loading liquid product into gasoline railcars shall not exceed the following:
 - a. VOC emissions of 10.0 milligrams per liter (mg/L) of gasoline loaded (ARM 17.8.749 and ARM 17.8.752).
 - b. Carbon monoxide (CO) emissions of 10.0 mg/L of gasoline loaded (ARM 17.8.752).
 - c. Nitrogen oxide (NO_x) emissions of 4.0 mg/L of gasoline loaded (ARM 17.8.752).
14. ConocoPhillips shall install and continuously operate a thermocouple and an associated recorder, or any other equivalent device, to detect the presence of a flame (ARM 17.8.752).

B. Testing Requirements

1. The flare shall be tested for total VOCs, and compliance demonstrated with the emission limitation contained in Section II.A.13.a. every 5 years, or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105).
2. Compliance with the vapor recovery and liquid loading equipment gauge pressure limit contained in Section II.A.9 shall be demonstrated every 5 years, or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105).
3. All compliance source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
4. The Department may require further testing (ARM 17.8.105).

C. Inspection and Repair Requirements

Each calendar month, the vapor recovery system, the vapor control system, and the railcar loading rack shall be inspected for total organic compound leaks, liquid or vapor, during product transfer operations. For purposes of this requirement, detection methods incorporating sight, sound, or smell are acceptable. Each leak detection shall be recorded and the source of the leak repaired within 15 calendar days after it is detected (ARM 17.8.105 and ARM 17.8.749).

D. Recordkeeping Requirements

1. The railcar vapor tightness documentation required in Section II.A.6. of this permit shall be kept on file at the terminal, in a permanent form, and be made available for inspection and shall be updated at least once per year to reflect current test results (ARM 17.8.749).
2. A record of each monthly leak inspection required under Section II.C. of this permit shall be kept on file at the terminal. Inspection records shall include, at a minimum, the following information (ARM 17.8.749):

- a. Date of inspection;
 - b. Findings (may indicate no leaks discovered or location, nature, and severity of each leak);
 - c. Leak determination method;
 - d. Corrective action (date each leak repaired and reasons for any repair interval in excess of 15 calendar days); and
 - e. Inspector's name and signature.
3. ConocoPhillips shall document, by month, the gasoline throughput for the railcar loading rack. This shall include all gasoline products shipped and received at the railcar loading rack. By the 25th day of each month, ConocoPhillips shall total the amount of throughput during the previous 12 months to verify compliance with the limitations in Section II.A.1. A written report of the compliance verification shall be submitted along with annual emission inventory (ARM 17.8.749).
 4. ConocoPhillips shall document, by month, the distillate throughput for the railcar loading rack. This shall include all distillate products shipped and received at the railcar loading rack. By the 25th day of each month, ConocoPhillips shall total the amount of throughput during the previous 12 months to verify compliance with the limitations in Section II.A.2. A written report of the compliance verification shall be submitted along with annual emission inventory (ARM 17.8.749).
 5. ConocoPhillips shall document, by month, the amount of time that the flare did not operate while gasoline was loaded from the railcar loading rack (ARM 17.8.749).
 6. All records compiled in accordance with this permit must be maintained by ConocoPhillips 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).

Section III: Tank Truck Loading Rack

A. Conditions and Limitations

1. ConocoPhillips shall not exceed 1,800,000 barrels of gasoline throughput for the truck loadout operation, on a rolling 12-month basis (ARM 17.8.749).
2. ConocoPhillips shall not exceed 2,500,000 barrels of distillate product throughput for the truck loadout operation, on a rolling 12-month basis (ARM 17.8.749).
3. Loading of tank trucks shall be restricted to the use of submerged fill and dedicated normal service (ARM 17.8.749).

B. Recordkeeping Requirements

1. ConocoPhillips shall document, by month, the gasoline throughput for the truck loading rack. By the 25th day of each month, ConocoPhillips shall total the amount

of gasoline throughput during the previous 12 months to verify compliance with the limitations in Section III.A.1. A written report of the compliance verification shall be submitted along with annual emission inventory (ARM 17.8.749).

2. ConocoPhillips shall document, by month, the distillate throughput for the truck loading rack. By the 25th day of each month, ConocoPhillips shall total the amount of distillate throughput during the previous 12 months to verify compliance with the limitations in Section III.A.2. A written report of the compliance verification shall be submitted along with annual emission inventory (ARM 17.8.749).
3. All records compiled in accordance with this permit must be maintained by ConocoPhillips 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).

Section IV: Fugitive Emission Sources

A. Limitations and Conditions

ConocoPhillips shall ensure that any open-ended line shall be sealed with a valve (ARM 17.8.749).

B. Inspection and Repair Requirements

1. Each calendar month, all valves, flanges, pump seals, and open-ended lines shall be inspected for total organic compound leaks. For purposes of this requirement, detection methods incorporating sight, sound, or smell are acceptable (ARM 17.8.749).
2. ConocoPhillips shall (ARM 17.8.749):
 - a. Make a first attempt at repair for any leak not later than 5 calendar days after the leak is detected; and
 - b. Repair any leak as soon as practicable, but not later than 15 calendar days after it is detected except as provided in Section IV.B.3., as follows below:
3. Delay of repair of equipment for which a leak has been detected will be allowed if repair is technically infeasible without a source shutdown. Such equipment shall be repaired before the end of the first source shutdown after detection of the leak (ARM 17.8.749).

C. Recordkeeping Requirements

A record of each monthly leak inspection required under Section IV.B.1. of this permit shall be kept on file at the terminal. Inspection records shall include, at a minimum, the following information (ARM 17.8.749):

1. Date of inspection;
2. Findings (may indicate no leaks discovered or location, nature, and severity of each leak);
3. Leak determination method;

4. Corrective action (date each leak repaired and reasons for any repair interval in excess of 15 calendar days); and
5. Inspector's name and signature.

Section V: Facility-Wide

A. Limitations and Conditions

VOC emissions from the SVE system shall not exceed 23.7 tpy of VOC (ARM 17.8.749).

B. Recordkeeping Requirements

1. ConocoPhillips shall calculate total annual VOC emissions from the SVE system. The emissions must be reported on the annual emissions inventory (ARM 17.8.749).
2. ConocoPhillips shall calculate total annual VOC emissions from the railcar loading, truck loading, and tank storage. The emissions must be reported on the annual emissions inventory (ARM 17.8.749).
3. The sum of the emissions from the SVE and the restricted operations (based on the production throughput limitations in Sections II.A.1 and 2. and Sections III.A.1. and 2.), shall result in facility-wide potential to emit, excluding fugitives, of less than 250 tpy VOC (ARM 17.8.749).

C. Operational Reporting Requirements

1. ConocoPhillips 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). ConocoPhillips shall submit the following information annually to the Department by March 1 of each year; the information may be submitted along with the annual emission inventory (ARM 17.8.505).

- a. The type of petroleum liquid stored in each tank.
- b. The average true vapor pressure of the petroleum liquid stored in each tank.
- c. The estimated annual throughput of petroleum liquids for each tank.
- d. The annual throughput of distillate and gasoline for the railcar loading rack.
- e. The annual throughput of distillate and gasoline for the truck loading rack.

- f. The annual VOC facility-wide emissions for each month, on a 12-month rolling basis.

For reporting purposes, the tanks shall be identified using the tank numbers contained in Section I.B. of the permit analysis.

2. ConocoPhillips shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a 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 or the addition of a new emission unit. 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. The Department shall 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 (ARM 17.8.110).

Section VI: General Conditions

- A. Inspection – ConocoPhillips 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 (CEMS, 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 ConocoPhillips fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving ConocoPhillips 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 the air quality permit shall be made available for inspection by the Department at the location of

the source.

- G. Construction Commencement – Construction must begin within three years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (ARM 17.8.762).

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

PERMIT ANALYSIS
 ConocoPhillips Company – Helena Terminal
 Permit #2907-04

I. Introduction/Process Description

A. Permitted Equipment

ConocoPhillips Company (ConocoPhillips) operates a bulk fuel terminal that includes the following equipment:

- Seven (7) product storage tanks (T-30 through T-33, and T-35 through T-37);
- Railcar loading rack;
- Railcar loading rack enclosed flame vapor combustor (flare);
- Tank truck loading rack;
- Miscellaneous additive tanks; and
- Soil Vapor Extraction (SVE) System

B. Source Description

ConocoPhillips operates a bulk gasoline terminal, which receives gasoline and distillate fuels from the Yellowstone Pipeline and distributes them around the state via railcar and tank truck. This facility is located in the SE¼ of the NE¼ of Section 28, Township 10 North, Range 3 West, in Lewis and Clark County, Montana. The facility is known as the Helena bulk terminal.

1. Product Storage Tanks

<u>Tank #</u>	<u>Yr manuf.</u>	<u>Fuel Stored</u>	<u>Capacity (Barrels)</u>	<u>Type of Tank</u>
T-30	1953	Jet Kerosene	20,000	Fixed roof
T-31	1953	#2 Diesel	30,000	Fixed roof
T-32	1953	Gasoline	20,000	Int. flt. Roof
T-33	1953	Gasoline	30,000	Int. flt. Roof
T-35	1959	Gasoline	30,000	Ext. flt. Roof
T-36	1959	Gasoline	30,000	Ext. flt. Roof
T-37	1959	Gasoline	30,000	Ext. flt. Roof

2. Railcar Loading

The product loading rack consists of 6 loading arms capable of loading gasoline or distillate fuel.

3. Railcar Loading Rack Enclosed Flame Vapor Combustor (Flare)

A Vapor Recovery System will capture the gasoline vapors from the railcar loading operation and thermally oxidize the vapors in a John Zink enclosed flare or equivalent.

4. Tank Truck Loading Rack

Tank truck loading of gasoline and distillate is accomplished at the product truck loading rack. The 2-bay truck loading rack consists of a total of 4 distillate loading arms and 4 gasoline loading arms.

5. Fugitive Emissions

Fugitive Emissions are from total facility valves, flanges, pump seals, and open-ended lines.

6. Miscellaneous Additive Tanks containing fuel detergents and lubricity additive.

7. SVE System

An 11-well soil vapor extraction system will be installed to remediate the remaining gasoline originally released onto the site in 2000.

C. Permit History

The original facility included 2 distillate tanks (T-30 and T-31), 2 gasoline tanks (T-32 and T-33), a gasoline and distillate railcar loading rack, and a gasoline and distillate truck loading rack. The truck rack consists of 4 distillate loading arms and 4 gasoline loading arms. The railcar loading rack consists of 4 loading arms capable of loading gasoline and distillate. In 1959, Conoco, Inc. (Conoco), added gasoline storage tanks T-35, T-36, and T-37.

On January 24, 1996, Permit #2907-00 was issued for Conoco to expand their rail loadout facility to accommodate the loading of gasoline. The proposed changes to the product railcar loading rack consisted of the removal of the existing loading arms and the installation of 6 new loading arms capable of loading gasoline and distillate fuel. Volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions from the gasoline railcar loadout were controlled with an enclosed flare. The control on the gasoline railcar, combined with the throughput limits on the truck loading rack, kept Conoco below Title III MACT applicability thresholds.

On February 14, 2002, Permit #2907-01 was issued to Conoco for construction and operation of a new truck loading rack and installation of a flare to control loading emissions. The new loading rack replaced the existing truck loading rack at the Helena Products Terminal. The Helena Products Terminal operated under a Title V operating permit because the facility was considered a major source for VOC emissions. The installation of the flare on the truck loading rack significantly reduced VOC emissions below the major source threshold. The flare was controlled beyond New Source Performance Standards (NSPS), which was considered to be Best Available Control Technology (BACT) for similar loading racks. The Montana Department of Environmental Quality (Department) had grounds to revoke the Title V permit following appropriate installation of the flare and at Conoco's request; however, Conoco was considered a Title V synthetic minor.

The limit on the VOC emissions from the flare was as follows: the total VOC emissions to the atmosphere from the flare due to loading liquid product into tank trucks shall not exceed 10.0 milligrams per liter (mg/L) of gasoline loaded. This limit is more stringent than the 40 code of federal regulations (CFR) 60, Subpart XX, VOC emissions limit of 35.0 mg/L of gasoline loaded. The source complied with the Subpart XX 35.0 mg/L limit by maintaining compliance with the 10.0 mg/L limit in Permit #2907-01.

Because Conoco's flare was defined as an incinerator under Montana Code Annotated (MCA) 75-2-215, a determination that the emissions from the flare would constitute a

negligible risk to public health was required prior to the issuance of a permit to the facility.

Conoco and the Department identified the following hazardous air pollutants from the flare, which were used in the health risk assessment. These constituents are typical components of gasoline.

1. Benzene
2. Ethyl Benzene
3. Hexane
4. Toluene
5. Xylenes

The reference concentrations for the above pollutants were obtained from EPA's IRIS database, where available. The model performed for the hazardous air pollutants identified above demonstrated compliance with the negligible risk requirement. Permit **#2907-01** replaced Permit #2907-00.

A letter from ConocoPhillips dated January 3, 2003, and received by the Department January 10, 2003, notified the Department that Conoco had changed its name to ConocoPhillips. The permit action changed the facility name from Conoco to ConocoPhillips. Permit **#2907-02** replaced Permit #2907-01.

A letter from ConocoPhillips dated November 24, 2004, and received by the Department December 1, 2004, notified the Department that ConocoPhillips planned to install a 2,000-gallon vertical tank used to store a lubricity additive. Since the uncontrolled potential to emit (PTE) of the 2,000-gallon vertical tank is less than 15 tons per year of any regulated pollutant the tank was added to the permit under the provisions of administrative Rules of Montana (ARM) 17.8.745 Montana Air Quality Permits-- Exclusion for de minimis Changes. Permit #2907-03 was also updated to reflect current permit language and rule references used by the Department. Permit **#2907-03** replaced Permit #2907-02.

D. Current Permit Action

ConocoPhillips submitted an application on June 28, 2006 for the addition of a SVE System. In addition, ConocoPhillips never installed the 2-Bay Truck Loading Rack and thermal oxidizer permitted in 2002 in Montana Air Quality Permit (MAQP) #2907-01. Therefore, the company is requesting to remove this equipment from the permit. Furthermore, ConocoPhillips wants to revise the throughput limits for Truck Loading and add limits for the Rail Loading Racks to maintain plant-wide emissions below 250 tons per year (tpy) of VOC. Lastly, the permit was revised to clarify some of the conditions and limitations. The following provides more detail on each of these points.

The proposed SVE system has a calculated PTE of 23.7 tpy VOC from the eleven wells, based on field scale emission tests conducted in February 2006. Emissions were based on the predicted concentration of VOC, assuming exponential decrease in VOC concentrations from the initial range of 920 – 13,000 parts per million on a volume basis (ppmv) documented in the laboratory analysis for the field study. BACT was determined to be no control.

This permit removes references to the 2-Bay truck loading rack and thermal oxidizer that were never installed, and the permit revised back to the original truck loading requirements. Without the addition of the new truck loading rack, the facility is no longer subject to the NSPS for gasoline loading, 40 CFR 60 Subpart XX.

In an effort to ensure the facility maintains its status as a minor source under Prevention of Significant Deterioration (PSD), the following limits were changed, added, or clarified: Section II. Railcar loading throughput limits for gasoline and distillate; Section III. Truck loading throughput limits for gasoline and distillate, and Section V. annual VOC emission limit to less than 250 tpy VOC.

Lastly, specific requirements for operating the storage tanks in conformance with ARM 17.8.324 were added for clarity. Permit #2907-04 replaces permit #2907-03.

E. Additional Information

Additional information, such as applicable rules and regulations, BACT 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 locations 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.*, MCA.

ConocoPhillips shall comply with all 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 which, without resulting in reduction in 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 notice.

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

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 PM₁₀

ConocoPhillips 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, ConocoPhillips 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.
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.
5. ARM 17.8.316 Incinerators. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any incinerator, particulate matter in excess of 0.10 grains per standard cubic foot of dry flue gas, adjusted to 12% carbon dioxide and calculated as if no auxiliary fuel had been used. Further, no person shall cause or authorize to be discharged into

the outdoor atmosphere from any incinerator emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes.

6. 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.

7. ARM 17.8.324 Hydrocarbon Emissions - Petroleum Products. (1) Tanks > 65,000 gallons must comply with the prescribed control methodologies for storage of any material greater than 2.5 psia. Tanks T-30 & T-31 store distillate with a vapor pressure far below that level. The other five tanks store gasoline, and comply with the requirement through use of floating roofs.

(3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule. ConocoPhillips has seven tanks that comply with this rule as follows:

T-30 & T-31	Submerged fill
T-32 & T-33	Internal Floating Roof
T-35 – T-37	External Floating Roof

8. 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 NSPS. ConocoPhillips is not considered an NSPS affected facility under 40 CFR 60 as described below:

40 CFR 60, Subpart XX – Standards of Performance for Bulk Gasoline Terminals applies to loading racks at bulk gasoline terminals that load product into gasoline tank trucks which commenced construction or modification after December 17, 1980. Subpart XX does not apply to ConocoPhillips, since:

- Truck loading rack: the truck loading rack permitted in 2002 was never installed and there has been no construction or modification of the truck loading rack since 1980.
- Railcar loading rack: not subject since Subpart XX only regulates loading product into trucks.

9. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63. Since the emission of HAPs from the ConocoPhillips facility is less than 10 tons per year for any individual HAP and less than 25 tons per year for all HAPs combined, the ConocoPhillips facility is not subject to the provisions of 40 CFR Part 63. ConocoPhillips is considered an “area source” of HAPs with respect to 40 CFR 63, Subpart R (the Gasoline Distribution Maximum Achievable Control Technology (MACT)).

- D. ARM 17.8, Subchapter 4 – Stack Height and Dispersion Techniques, including but not limited to:

1. ARM 17.8.401 Definitions. This rule includes a list of definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.402 Requirements. ConocoPhillips must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP).
- E. 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. ConocoPhillips submitted the \$500 fee to the Department on July 12, 2006.
 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 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 which prorate the required fee amount.
- F. 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 alteration to construct, alter, or use any air contaminant sources that have the PTE greater than 25 tons per year of any pollutant. ConocoPhillips' Helena facility has the PTE more than 25 tons per year of carbon monoxide (CO) and VOC; 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. ConocoPhillips submitted an

application for the current permit action. (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. ConocoPhillips submitted an affidavit of publication of public notice for the July 13, 2006 issue of the *Independent Record*, a newspaper of general circulation in the City of Helena, as proof of compliance with the public notice requirements.

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. A BACT analysis was supplied for the SVE system. 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 ConocoPhillips 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 17.8.762 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 altered 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.
12. 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).
13. 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.

14. 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.
15. ARM 17.8.770 Additional Requirements for Incinerators. This rule specifies the additional information that must be submitted to the Department for incineration facilities subject to 75-2-215, MCA.

G. 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 PSD source since this facility is not a listed source (the facility has < 300,000 barrels (bbl) of petroleum storage) and the facility has restricted their throughput to ensure that their PTE is below 250 tpy of any pollutant (excluding fugitive emissions).

H. 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 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 PM₁₀ in a serious PM₁₀ 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 Air Quality Permit #2907-04 for ConocoPhillips' Helena bulk terminal, the following conclusions were made.
 - a. The facility's PTE is greater than 100 tons/year for any pollutant.

- b. The facility's PTE is less than 10 tons/year of any one HAP and less than 25 tons/year of all HAPs.
- c. This source is not located in a serious PM₁₀ nonattainment area.
- d. The facility is not subject to any current NSPS standards.
- e. The facility is not subject to any current NESHAP standards.
- f. The source is not a Title IV affected source or a solid waste combustion unit.
- g. The source is an EPA designated Title V source.

ConocoPhillips' Helena bulk terminal is subject to Title V Operating Permit requirements because the potential to emit is above 100 tpy of VOC.

- 3. ARM 17.8.1207 Certification of Truth, Accuracy, and Completeness. The compliance certification submittal required by ARM 17.8.1204(3) shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under this subchapter shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

I. MCA 75-2-103, Definitions provides in part as follows:

- 1. "Incinerator" means any single or multiple-chambered combustion device that burns combustible material, alone or with a supplemental fuel or catalytic combustion assistance, primarily for the purpose of removal, destruction, disposal, or volume reduction of all or any portion of the input material.
- 2. "Solid waste" means all putrescible and non-putrescible solid, semi-solid, liquid, or gaseous wastes including, but not limited to air pollution control facilities.

J. MCA 75-2-215, Solid or hazardous waste incineration -- additional permit requirements, including but not limited to the following requirements:

The Department may not issue a permit to a facility until: (d) the Department has reached a determination that the projected emissions and ambient concentrations will constitute a negligible risk to the public health, safety, and welfare and to the environment.

For Permit #2907-01, Conoco submitted modeling identifying the maximum concentration of HAPs released from the new truck loading flare. Since the truck loading bay and flare were never installed, this information is no longer relevant.

III. BACT Determination

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

ConocoPhillips supplied a BACT analysis for the only 'new or altered source,' the SVE system. The SVE system will be installed to remediate the remaining residual gasoline that remains after

the pump & treat remediation system was removed. Although the amount of gasoline is estimated to be 28,000 lbs (14 tons) based on soil sampling and monitoring conducted since the 2000 release, ConocoPhillips calculated a potential of 23.7 tpy based on field testing in 2006. The SVE will consist of 11 soil vapor extraction wells, vapor flow lines, SVE blower, water knockout, and ancillary equipment.

Identification of VOC Control Options:

There are the following VOC control options to reduce the VOC emissions from the uncontrolled extraction system:

- *Thermal oxidation* – natural gas would act as supplemental fuel to raise the flare combustion zone to 1400 – 1500 degrees F. A preheat heat exchanger would preheat the incoming air.
- *Carbon adsorption* – the SVE exhaust gas would pass through a carbon canister to remove VOC emissions. Saturated carbon would be disposed. In general, carbon can be used on applications with vapor ranging from 10 ppm to 10,000 ppm. The working capacity is typically 10 – 20 lbs VOC per 100 lbs carbon. Carbon is 90 – 98% efficient at removing VOCs, although the capacity to adsorb contaminants is inversely related to gas stream temperature (maximum operating temperature is 125 deg F).

Carbon can only remove carbon chains of C5 or larger. Smaller carbon chains will pass through the carbon. Gasoline is estimated at to be comprised of 5-15% lighter ends (C1-C4), although in the case of older releases, there is less lighter ends (approximately 2% light ends). Depending upon the amount of light ends removed during SVE, approximately 2% - 15% of the VOC from the SVE will not adsorb onto the carbon and will be emitted.

- *Biofiltration* – vapor-phase organic contaminants are passed through, and sorb onto, a bed of porous media. Microorganisms introduced into the filter degrade the contaminant. Biofiltration is used primarily to treat non-halogenated VOCs and fuel hydrocarbons.

Eliminate Technically Infeasible VOC Control Options:

Carbon adsorption is not technically feasible, because of the following reasons:

- The influent temperature of the Maxim carbon adsorbers should be less than 100 degrees Fahrenheit. The SVE system's exhaust gas is at 170 degrees F. This makes carbon a technically infeasible control option.
- In addition to the above technical issue, use of carbon would be considered economically infeasible. The effective cost of VOC control would be approximately \$46,000/ton of VOC, as follows:
 - Purchase cost for carbon of approximately \$33,000/ton VOC removed, based on \$2.50/lb carbon and 15 lbs VOC removed for every 100 lbs carbon
-->\$2.50/lb carbon * 100 lb carbon/15 lb VOC * 2000 lb/ton = \$33,333/ton VOC
 - Disposal cost for spent carbon of approximately \$13,000/ton VOC removed, based on \$350/drum, with an estimated 350 lbs per drum (and 15 lbs of VOC per 100 lbs of carbon).
-->(\$350.00/drum) / (350 lbs/drum) * 100 lb carbon/15 lb VOC * 2000 lb/ton = \$13,333/ton VOC

Based on the above reasons, carbon adsorption was eliminated from consideration as a BACT control option.

Rank Feasible VOC Control Options:

The remaining technically feasible control options were ranked, in order of the lowest VOC emission rate to the highest VOC emission rate:

Control Technology	% Control	VOC Emission Rate*
Thermal Oxidation	98%	0.47 TPY
Biofiltration	95%	1.2 TPY
Baseline	0%	23.7 TPY

*Note: Emissions based on worst-case projected potential to emit of 23.7 tpy

Evaluate Most Effective VOC Control Options:

Thermal Oxidation

The EPA's "OAQPS Control Cost Manual" provides the EPA's recommended methodology for estimating the costs for add-on control technology. To calculate the cost effectiveness of a control technology in dollars per ton (\$/ton), the following factors are used:

Cost effectiveness (\$/ton) = [(total capital investment x CRF) + Direct Annual Cost]/(tons VOC controlled)

Capital recovery cost (= total capital investment x capital recovery factor)

Total capital investment = direct and indirect costs for purchasing and installing control equipment, estimated at \$125,000.

Capital recovery factor (CRF) = multiplier to determine the uniform end-of-year payment necessary to repay an investment in n years with an interest rate of i .

Control system life, n = typically 10 to 20 years, but this system is expected to run less than five years.

Interest rate, i = 7% is recommended interest rate

For this BACT analysis, $CRF = 5 \text{ years @ } 7\% = 0.243$.

Direct Annual cost (utilities, labor, taxes)

The anticipated annual cost is approximately \$40,000 per year to operate the thermal incinerator.

Thermal Adsorption:

$[(\$125,000 \times 0.243) + \$40,000] / (23.7 - 0.47 \text{ tons}) = \$70,375 / 23.2 \text{ tons} = \$3,033/\text{ton controlled}$

Thermal oxidation was projected to have a cost effectiveness of \$3,033 per ton of VOC removed.

Biofiltration

Biofiltration is used primarily to treat non-halogenated VOCs and fuel hydrocarbons. While filters that require low organic loading rates (less than 100 ppm) have been used for over 20 years, new designs that support higher loading rates have gained attention. ConocoPhillips expects vapor concentrations of approximately 5,000 ppmv VOC, and would require the newer designed units.

While there are limitations on biofiltration (the systems operate best at 90 – 100 deg F and 100% relative humidity, and filter flooding and plugging as a result of excessive biomass accumulation

may require periodic mechanical cleaning of the filter), this control technology could not be considered technically infeasible.

However, according to the Federal Remediation Technology Roundtable document, the cost of biofiltration is approximately \$3.40/lb, or \$6,810/ton, which is well above the amount routinely required under BACT. Therefore, this control option was eliminated from BACT.

Select BACT:

Information from the applicant indicates that it is technically infeasible to install carbon absorption on the SVE system. The other option, thermal incineration, was not economically feasible, with the cost effectiveness of above \$3,000 per ton. Therefore, the Department agrees with the applicant's proposal that no control is BACT.

IV. Emission Inventory

Source	TPY – Potential to Emit					
	VOC	NOx	CO	SO2	PM10	HAPs
Storage Tanks (7)*	16.2					0.9
Railcar Loading Racks –Flare*	8.8	3.5	8.8	0	0	0.5
Railcar Loading Rack – Fugitive*	5.9					0.2
Truck Loading Rack*	178.3					9.7
Fugitive	3.6					0.3
SVE System	23.7					1.3
TOTAL	236.4	3.5	8.8	0	0	12.9

*Note: Potential VOC emissions restricted based on annual limits on gasoline and distillate throughput.

Allowable Emissions for HAPs

HAP	Tons/year
2,2,4-Trimethylpentane	1.66
Benzene	1.64
Cumene	0.08
Ethylbenzene	0.24
Toluene	2.60
Xylenes	0.96
n-Hexane	5.67
Total HAPs	12.9

Detail:

Tanks (standing and working losses from the seven facility storage tanks):

Total Tank VOC emissions = 32,318 lb/yr * 0.0005 ton/lb = 16.2 ton/yr

Tank Emissions Based on:

Tanks 30 & 31 – fixed roof, based on maximum throughput of jet kerosene and #2 fuel

Tanks 32 & 33 – internal floating roof based on gasoline with RVP 15

Tanks 35 to 37 – external floating roof based on gasoline with RVP 15

Emissions calculated using EPA Tanks v.4.09b Storage Tank Emissions Calculation Software.

Railcar Loading Rack Flare Emissions:

Annual loading rack emissions from the flare are based on potential 100% gasoline throughput (Mgal/yr) and emission factors provided by the flare manufacturer (John Zink).

Emissions (E) = Emission Factor (EF) [lb/thousand gal (lb/Mgal)] * Annual throughput of material (Q, Mgal/yr)
 where Q = the restricted annual gasoline throughput from rail loading.

CO

$$EF = 10.0 \text{ mg/L of gasoline loaded (per manufacturer's specifications)} = 0.0834 \text{ lb/Mgal}$$

$$E = 0.0834 \text{ lb/Mgal} * 210,000 \text{ Mgal/yr} * 0.0005 \text{ ton/lb} = 8.8 \text{ ton/yr}$$

NO_x

$$EF = 4.0 \text{ mg/L of gasoline loaded (per manufacturer's specifications)} = 0.0334 \text{ lb/Mgal}$$

$$E = 0.0334 \text{ lb/Mgal} * 210,000 \text{ Mgal/yr} * 0.0005 \text{ ton/lb} = 3.5 \text{ ton/yr}$$

VOC

$$EF = 10.0 \text{ mg/L of gasoline loaded (per manufacturer's specifications)} = 0.0834 \text{ lb/Mgal}$$

$$E = 0.0834 \text{ lb/Mgal} * 210,000 \text{ Mgal/yr} * 0.0005 \text{ ton/lb} = 8.8 \text{ ton/yr}$$

Railcar Loading Rack Fugitive Emissions:

Annual fugitive loading rack emissions are based on the amount of material loaded, the collection and destruction efficiency of the flare, and engineering calculation based on the vapor pressure and molecular weight of the product (AP-42 Section 5.2).

Emissions (E, lb/yr) =

$$\text{Annual throughput of material (Q, Mgal/yr)} * 12.46 * (S * P_{\text{vap}} * MW_{\text{vap}} / T) * (1 - \text{VCUeff} * \text{VDUeff}) / 10000$$

The emissions from distillate:

$$E = 420,000 \text{ Mgal/yr} * 12.46 * (0.6 * 0.0049 * 130) / 503.64$$

$$E = 3971 \text{ lb/yr}$$

The emissions from gasoline (assume 100% of captured fumes is combusted):

$$E = 210,000 \text{ Mgal/yr} * 12.46 * (0.6 * 4.945 * 64.08) / 503.64 * (1 - (99.2\%) / 100)$$

$$E = 7902 \text{ lb/yr}$$

Truck Loading Rack:

Annual fugitive loading rack emissions are based on the amount of material loaded, and engineering calculation based on the vapor pressure and molecular weight of the product (AP-42 Section 5.2). There is no ad-on control.

Emissions (E, lb/yr) =

$$\text{Annual throughput of material (Q, Mgal/yr)} * 12.46 * (S * P_{\text{vap}} * MW_{\text{vap}} / T)$$

The emissions from distillate:

$$E = 105,000 \text{ Mgal/yr} * 12.46 * (0.6 * 0.0049 * 130) / 503.64$$

$$E = 993 \text{ lb/yr}$$

The emissions from gasoline:

$$E = 75,600 \text{ Mgal/yr} * 12.46 * (0.6 * 4.945 * 64.08) / 503.64$$

$$E = 355,598 \text{ lb/yr}$$

Fugitive Emissions from Equipment Leaks (Leaks from process equipment: valves, connections, etc.)

$$\text{Emissions (lb/yr)} = \text{Number of components} * EF \text{ (lb/hr-component)} * 8760 \text{ hr/yr}$$

Basis for Emission Factors: EPA Protocol for Equipment Leak Emission Estimates, November 1995 (EPA-453/R-95-017)

Component Type	Number of Components	EF (lb/hr-component)	VOC Emissions (lb/hr)	VOC Emissions (lb/yr)
Valves	291	9.48E-05	0.276	242
Connections	912	1.76E-05	0.016	141
Open-ended Lines	49	2.87E-04	0.014	123
Load Arms	20	2.87E-04	0.006	50
Pumps and Meters	27	1.19E-03	0.032	281

Total Liquid Fugitive VOC Emissions: 837 lb/yr
 Total Liquid Fugitive VOC Emissions: 0.42 ton/yr

Miscellaneous Emissions

Emissions (lb/yr) = Number of components *EF (lb/yr-component)

Miscellaneous emissions include emissions from tank cleaning, additive tanks, and meter provings. Emissions estimations are based on process knowledge and engineering calculations.

Component Type	Number of Components	EF (lb/yr-component)	VOC Emissions (lb/yr)
Tank Cleaning	1	350	350
WW Tanks	0	399.5	0
WW Sumps	2	613.0	1226
OW Sep	0	11.0	0
Provers*	120	7.39	886.8
Rack Drains	2	613.0	1226.0
Additive Tanks	5	37.4	187.2
Tank Roof Landings	2	1218.5	2437.0

*Provers: 120 provers = 10 prover-meters x 3 replicates x 4X per year

Total Miscellaneous VOC Emissions: 6,313 lb/yr
 Total Miscellaneous VOC Emissions: 3.2 ton/yr

HAP Speciation Factors – HAP/VOC

Stream	Benzene	Toluene	Ethylbenzene	Xylenes	n-Hexane	2,2,4-Trimethylpentane	Cumene	Total
Gasoline (vapor)	0.7%	1.1%	0.1%	0.4%	2.4%	0.7%	0.03%	5.4%
Distillate (vapor)	7.2%	4.2%	0.7%	2.5%	2.3%	0	0.2%	17.1%

Soil Vapor Extraction System

Engineering estimate based on 7-day field test in spring 2006 developed maximum anticipated emissions of 23.7 tpy.

V. Existing Air Quality

ConocoPhillips is located in the SE¼ of the NE¼ of Section 28, Township 10 North, Range 3 West, in Lewis and Clark County, Montana. This area is considered attainment for all criteria pollutants. The majority of the emissions from the facility are VOC.

VI. Ambient Air Impact Analysis

The Department did not conduct ambient air modeling for this permit action. The Department believes the amount of controlled emissions from this facility 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 a private property taking and damaging assessment and determined there are no taking or damaging implications.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
P.O. Box 200901, Helena, Montana 59620
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: ConocoPhillips Pipeline Company
2330 5th Ave South
Billings, MT 59101

Air Quality Permit Number: 2907-04

Preliminary Determination Issued: August 25, 2006
Department Decision Issued: September 12, 2006
Permit Final: September 28, 2006

1. *Legal Description of Site:* This facility is located in the SE¹/₄ of the NE¹/₄ of Section 28, Township 10 North, Range 3 West, in Lewis and Clark County, Montana.
2. *Description of Project:* ConocoPhillips submitted an application on June 28, 2006 for the following:
 - the addition of a Soil Vapor Extraction (SVE) System to remediate the gasoline remaining in the soil after pump & treat;
 - correcting the permit to reflect the fact that ConocoPhillips never installed the 2-Bay Truck Loading Rack and thermal oxidizer permitted in 2002 in Montana Air Quality Permit (MAQP) #2907-01; and
 - revising the throughput limits for Truck Loading Racks and adding limits for the Railcar Loading Racks to maintain plant-wide emissions below the Prevention of Significant Deterioration threshold of 250 tons per year (tpy) of volatile organic compound (VOC).
3. *Objectives of Project:* to allow installation of the gasoline soil vapor extraction remediation process, and correct the existing permits to reflect the current operating conditions.
4. *Alternatives Considered:* In addition to the proposed action, the Department also considered the “no-action” alternative. The “no-action” alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the “no-action” alternative to be appropriate because ConocoPhillips demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the “no-action” alternative was eliminated from further consideration.
5. *A Listing of Mitigation, Stipulations, and Other Controls:* A list of enforceable conditions, including a BACT analysis, would be included in Permit #2907-04.
6. *Regulatory Effects on Private Property:* The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats				X		Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture			X			Yes
D	Vegetation Cover, Quantity, and Quality				X		Yes
E	Aesthetics				X		Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources				X		Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites				X		Yes
J	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic life and Habitats

No impacts on terrestrial or aquatic life and habitats would be expected from the proposed project, because although the emissions from the facility would slightly increase temporarily, the project will occur at an existing industrialized facility. The Department determined that there will be no discernible impact on terrestrial and aquatic life due to the relatively small amount of pollutants emitted (see Section 7.F of this EA). No habitats would be directly impacted, since the project will occur on existing industrial land that is currently gravel-based.

B. Water Quality, Quantity and Distribution

Only minor impacts would be expected on water quality, quantity, and distribution from the proposed project because of the relatively small size of the project. While the facility would have a temporary increase in air pollutants, the Department determined that any impacts from the increase in emissions would not be discernible due to the relatively small amount of pollutants emitted from the project (see Section 7.F of this EA). The project is not expected to impact water quality, quantity, or distribution because there is no surface water on the site. The SVE System will remove some water from the soil vapor space; however, it is not expected to remove any significant amount. Overall, any impacts to water quality, quantity, and distribution would be minor.

C. Geology and Soil Quality, Stability and Moisture

Minor impacts would occur on the geology and soil quality, stability, and moisture from the proposed project. The SVE system is designed to remove gasoline remaining in the soil vapor space via 11 extraction wells, and exhaust it into the air. After conducting pump & treat remediation since the accidental release of 52,000 gallons of gasoline in the year 2000, there is estimated to be 14 – 23.7 tons of gasoline remaining in the soil. Overall the soil quality will be improved, since the applicant expects to extract between 14 and 23.7 tons per year of gasoline. The chance of pollutant emissions or deposition impacting the geology and soil in the areas surrounding the site would be minor due to the relatively small amount of pollutants emitted (see Section 7.F of this EA) from the project. Overall, any impacts to the geology and soil quality, stability, and moisture would be minor.

D. Vegetation Cover, Quantity, and Quality

There will be no impact on vegetation cover quantity, since the SVE system will be installed within a gravel area in an industrialized site. The Department determined that the chance of emissions or deposition of pollutants from this project impacting the vegetation in the areas surrounding the site would be insignificant due to the relatively small amount of pollutants emitted (see Section 7.F of this EA) from the project. Overall, there will be no discernible impacts to vegetation cover, quantity, and quality.

E. Aesthetics

No impact would result on the aesthetics of the area because the project is relatively small and is occurring at an existing facility in the middle of an industrialized area.

F. Air Quality

The air quality of the area would realize minor temporary impacts from the proposed project because the SVE system would emit relatively small amounts of VOC and Hazardous Air Pollutants (HAPs). The maximum amount of emissions, based on conservative engineering evaluations from field testing, would initially be 23.7 tpy VOC and 1.3 tpy HAPs, with declining emissions as the soil gas is remediated. Since the emissions from the proposed project are expected to exhibit good dispersion characteristics, the Department determined that emissions from the source will not cause or contribute to a violation of any ambient air quality standard. Therefore, any impacts to air quality from the proposed facility would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

This permitting action should not have an impact on terrestrial and aquatic life and/or their habitat; therefore, it is extremely unlikely that unique, rare, threatened, or endangered species would experience any discernible impacts. In addition, the Department is not aware of any unique, rare, threatened, or endangered species in the area surrounding the facility, particularly since the area in which the facility resides has been used for industrial purposes for greater than 50 years.

H. Demands on Environmental Resource of Water, Air and Energy

The proposed project would have impacts on the demands on the environmental resources of air and water because the facility would be a source of air pollutants. However, any impacts on the environmental resources would be minor because the facility's potential to emit would be relatively small by industrial standards, and the project is occurring within a previously developed industrial site.

The proposed project would have a minor impact on the demand for energy due to increase in electrical demand for powering the vacuum pump. Overall, any impacts on the demands on the environmental resources of air, water, and energy would be minor.

I. Historical and Archaeological Sites

The proposed project would not disturb a greater land surface than has already been occupied by the ConocoPhillips-Helena terminal. To the best of the Department's knowledge there is no historical or archeological sites in this area. Therefore, no impacts to any historical and archaeological sites are anticipated.

J. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts on the physical and biological aspects of the human environment in the immediate area would be minor due to the relatively small size of the project. Potential emissions from the facility would be relatively small by industrial standards. The Department expects this facility to operate in compliance with all applicable rules and regulations outlined in Permit #2907-04.

8. *The following table summarizes the potential economic and social effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.*

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores				X		Yes
B	Cultural Uniqueness and Diversity				X		Yes
C	Local and State Tax Base and Tax Revenue			X			Yes
D	Agricultural or Industrial Production				X		Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities				X		Yes
G	Quantity and Distribution of Employment				X		Yes
H	Distribution of Population				X		Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity				X		Yes
K	Locally Adopted Environmental Plans and Goals				X		Yes
L	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores

B. Cultural Uniqueness and Diversity

The proposed project would not cause a disruption to any native or traditional lifestyles or communities (social structures or mores) or cultural uniqueness and diversity in the area, because the proposed project would take place at an existing site, in an industrial area. The proposed project would not change the predominant use of the surrounding area and the facility would be relatively small by industrial standards.

C. Local and State Tax Base and Tax Revenue

The proposed project would result in minor, if any, impacts to the local and state tax base and tax revenue because the proposed facility will be unmanned. In addition, only extremely minor amounts of construction would be needed to complete the project.

D. Agricultural or Industrial Production

The site is existing, and the SVE Extraction system does not impact production. There will be no impact on agricultural or industrial production.

E. Human Health

The proposed project would result in only minor, if any, impacts to human health because of the relatively small quantity of potential emissions. As explained in Section 7.F of this EA, the Department determined that the proposed project, permitted by Permit #2907-04, would comply with all applicable air quality rules, regulations, and standards, which are designed to be protective of human health.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed project would not have any impacts on access to recreational and wilderness activities because of the relatively small size of the facility and the fact that the project is at an existing industrial facility. The proposed project would not have impacts on the quality of recreational and wilderness activities in the area.

G. Quantity and Distribution of Employment

The proposed project would not affect the quantity and distribution of employment because the SVE system does not require additional personnel.

H. Distribution of Population

The proposed project would not affect distribution of population in the area because the project will not require additional personnel.

I. Demands for Government Services

There would be minor impacts on demands of government services because additional time would be required by government agencies to issue Permit #2907-04 and to monitor compliance with applicable rules and standards. Overall, any impacts on the demands for government services would be minor.

J. Industrial and Commercial Activity

The project should not cause any change in industrial or commercial activity.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans and goals affected by issuing Permit #2907-04. The state standards would protect the proposed site and the environment surrounding the site.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from the proposed project would be minor due to the small size of the project. The Department would not expect other industries to be impacted by the proposed project and the Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #2907-04.

Recommendation: No EIS is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the installation and operation of a soil vapor extraction system to remediate gasoline remaining in the soil from a release in 2000. Permit #2907-04 would include conditions and limitations to ensure the facility would operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

Individuals or groups contributing to this EA: Department of Environmental Quality – Air Resources Management Bureau

Permit Analysis Prepared By: Christine Weaver
Date: July 24, 2006