Air Quality Permitting
Technical Memorandum

March 7, 2003

Permit to Construct No. P-020015

CHEVRON PIPE LINE CO. AND NORTHWEST TERMINALLING CO. BOISE, IDAHO

AIRS Facility No. 001-00026

Prepared by:

Dustin Holloway, Permit Writer
Air Quality Division

FINAL

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AIRS	Aerometric Information Retrieval System
BTEX	Benzene, Toluene, Ethylbenzenes, and Xylenes
CO	carbon monoxide
CPL	Chevron Pipe Line
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
ft	feet
fpm	feet per minute
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
PTC	permit to construct
scfm	standard cubic feet per minute
SVE	soil vapor extraction
T/yr	tons per year
VOC	volatile organic compound

Public Comment and EPA Review Summary

A 30-day public comment period and affected states review for the Chevron Pipeline Co. (CPL) draft Permit to Construct (PTC) was held in accordance with IDAPA 58.01.01 sections 209.05.c, 364, and 365, *Rules for the Control of Air Pollution in Idaho*. The comment period closed on December 6, 2002. No public comments were received.

IDAPA 58.01.01.008.01 defines *affected states* as: *"All states: whose air quality may be affected by the emissions of the Tier I source and that are contiguous to Idaho; or that are within 50 miles of the Tier I source."*

A review of the site location information included in the permit application indicates that the facility is located within 50 miles of a state border. Therefore, the state of Oregon was provided with an opportunity to comment on the draft PTC. The comment period closed on December 6, 2002. No comments were received.

This permit was sent to EPA on December 26, 2002 for their 45 day review. As of February 25, 2003 DEQ has not received a response from EPA. Therefore, this permit is being issued in accordance with IDAPA 58.01.01.201-228.

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01.200, *Rules for the Control of Air Pollution in Idaho,* for issuing permit to construct (PTCs).

2. PROJECT DESCRIPTION

Chevron Pipe Line Co. and Northwest Terminalling Co. (CPL) propose to modify the requirements in their PTC for the SVE system at their bulk terminal in Boise. CPL is a Tier I facility, and as such, this PTC is being processed under IDAPA 58.0101.209.05.c. A public comment period, affected states review, and EPA review have been provided.

3. FACILITY DESCRIPTION

This facility is a petroleum distribution terminal located in Boise. Refined petroleum products are transported to the facility via an underground pipeline system where they are either stored or transferred to another terminal. The equipment at the facility includes petroleum storage tanks, additive storage tanks, a vapor destruction system, and a soil vapor extraction system.

4. SUMMARY OF EVENTS

May 3, 2002	DEQ received an application from CPL for a change in permit requirements on their SVE system.
June 11, 2002	The application was determined complete. CPL requested that the operating, monitoring, and record-keeping requirements from their PTC be modified to reflect current permitting standards for SVE systems. CPL requested a provision in the permit that allowed bypass of the vapor incinerator once the inlet concentration was low enough to allow for a PTC exemption.
October 30, 2002	A 30-day public comment period was opened. On November 29, 2002 the comment period closed. No comments were received.
December 26, 2002	The permit was sent to EPA for their 45-day review. EPA provided no written comments.

5. TECHNICAL ANALYSIS

Process Description

As part of a groundwater remediation project, the bioventing system removes spilled hydrocarbon product that is in the soil and floating on the groundwater under the plant site. The bioventing system consists of 40 wells connected to two blowers. The blowers deliver up to 1,000 scfm of hydrocarbon-contaminated air from the wells to the influent of a vapor incinerator.

After the vapor incinerator is brought up to the minimum operating temperature of 1200°F using natural gas and ambient air, the bioventing vapors are admitted to the incinerator. The hydrocarbons in this influent stream provide the necessary additional heat to keep the operating temperature in the desired range. If the influent stream does not have a high enough hydrocarbon content to generate sufficient heat, it is automatically enriched with natural gas. On the other hand, if the hydrocarbon content is too high, the influent stream is diluted with ambient air. The stack temperature is used as the process control parameter to regulate the amount of enrichment or dilution.

Hydrocarbon emissions (including benzene) are controlled by a McGill vapor incinerator with a manufacturer guaranteed control efficiency of at least 95% at 1200°F.

Equipment Listing

Process and control equipment listed below must meet the following specifications or be of equivalent design (subject to prior Department approval).

- Forty bioventing wells which range in depth from 32 ft to 36 ft and are four inches in diameter.
- Two Rotron air blowers - Model No. DR-14. Each blower has a maximum design, volumetric flow rate capacity of 920 scfm.
- A McGill Environmental Systems Inc. vapor incinerator - Model No. V200. The maximum design, influent volumetric flow rate capacity is 1,000 scfm and the operating temperature range is from 1200°F to 2000°F.

The vapor incinerator stack is 2.5 ft in diameter. The effluent exits the stack 20 ft above ground level with an exit velocity ranging from 197 fpm to 1100 fpm and with a temperature between 1000°F and 2000°F.

Emission Estimates

Emissions of BTEX are determined by air samples collected from the influent stream. The benzene throughput is calculated using the inlet concentrations and flow rates. The emissions are calculated using the destruction efficiency of the vapor incinerator. Emissions of BTEX submitted by the applicant are shown in the following table. These emission rates will decline as the system removes and incinerates hydrocarbon from the affected soil.

Table 5.1 TOXIC POLLUTANT EMISSIONS

Pollutant	Uncontrolled Emission Rate (lb/hr)	Controlled Emission Rate (lb/hr)	Screening Emission Level (lb/hr)
Benzene	0.095	3.27e-4	8.0e-4
Toluene	0.063	3.27e-4	25
Ethylbenzene	0.019	3.28e-4	29
Xylenes	0.078	0.001	29

Modeling

There are no changes in emissions associated with this modification; therefore, modeling is not required.

Facility Classification

This facility is classified as a major facility because the potential emissions of VOCs are greater than 100 T/yr.

Area Classification

This facility is located in an area that is nonattainment for CO and unclassifiable for all other criteria pollutants.

6. PERMIT REQUIREMENTS

Regulatory Review

This permit to construct is subject to the following permitting requirements:

IDAPA 58.01.01.201 .....Permit to Construct Required

Although there are no physical or operational changes at the facility, CPL has requested that the SVE system go through PTC review to update their permit to current standards for operating, monitoring, and record-keeping.

IDAPA 58.01.01.209.05 .....Permit to Construct Procedures for Tier I Sources

The proposed PTC will be provided for public comment, affected states review, and a 45-day EPA review in accordance with IDAPA 58.01.01.209.05.c.

IDAPA 58.01.01.210 .....Demonstration of Preconstruction Compliance with Toxic Standards

There are no changes in emissions of toxic air pollutants associated with the requested permit changes.

40 CFR 52.....Prevention of Significant Deterioration

There are no changes in emissions associated with these permit changes.

6.1 Emission Limits

The criteria pollutant emissions from the previous permit were the calculated, maximum potential emissions. These emissions do not cause or significantly contribute to a violation of any ambient air quality standard. They are below the significant rates and have thus been removed from the permit.

6.2 Operating Requirements

The permittee is required to develop an operations and maintenance manual for the vapor incinerator that contains the allowable operating temperatures, inlet flow rates, and inlet concentrations. The vapor incinerator must be operated in accordance to the operations and maintenance manual.

After the inlet concentrations of BTEX are low enough, the permittee may submit a request for DEQ exemption concurrence. Once DEQ concurs that the system is exempt from PTC requirements the permittee may discontinue the operating, monitoring, and record-keeping requirements for the vapor incinerator.

6.3 Permit Coordination

This PTC was subjected to a 30-day public comment period and affected states review. No comments were received. After the comment period the permit was sent to EPA for a 45-day review. EPA provided no response, therefore the permit will be issued according to the requirements of IDAPA 58.01.01.209.05.c. Upon issuance of this permit, the permittee must submit an application for an administrative amendment to their Tier I operating permit. The permittee may operate the source according to the provisions within this permit once the application for an administrative amendment is submitted.

7. AIRS INFORMATION

The AIRS database does not need to be updated as a result of this permitting action.

8. FEES

The CPL bulk terminal is a major facility as defined in IDAPA 58.01.01.008.10; therefore, it is subject to registration and registration fees in accordance with IDAPA 58.01.01.527. This permit is subject to a processing fee of $250 for modifications that do not require an engineering analysis in accordance with IDAPA 58.01.01.225. The processing fee was received on December 13, 2002.

9. RECOMMENDATION

Based on review of application materials and all applicable state and federal rules and regulations, staff recommend that CPL be issued modified PTC No. 001-00026 for the SVE system. This project does not involve PSD requirements.

DH/sm
\\DEQ-STO\GROUPS\AIR QUALITY\STATIONARY SOURCE\SS LTD\PTC\NW TERMINALLING-CHEVRON-BOISE\FINAL\P-020015 FINAL TM.DOC

cc: Mike McGown, Boise Regional Office