Draft Hazardous Waste Post-Closure and Corrective Action Permit
Tesoro Alaska Petroleum Company
EPA No. AKD 04867 9682

July 14, 2017

The purpose of this fact sheet is to set forth the principal facts pertaining to a Resource Conservation and Recovery Act (RCRA) permit that the U.S. Environmental Protection Agency Region 10 proposes to reissue to Tesoro Alaska Petroleum Company. The permit is to require Tesoro to administer post-closure care and corrective action at its facility located at Mile 22, Kenai Spur Road, Kenai, Alaska, 98611. This fact sheet was prepared by the EPA in accordance with the requirements of 40 C.F.R. § 124.8. The draft permit is based on an administrative record which is available to the public for reviewing at the EPA Region 10 Office.

A. Purpose of the permitting process

The purpose of the permitting process is to design specific administrative and operational requirements under which the Permittee must operate to comply with the hazardous waste management requirements promulgated under RCRA, as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), and regulations adopted thereunder by the EPA in 40 C.F.R. Parts 124 and 260 to 270.

The EPA is required to prepare a draft permit which sets forth in one concise document all the applicable requirements the Permittee must comply with during the ten-year duration of the permit. The public is given forty-five (45) days to review and comment on the draft permit conditions prior to the Agency taking any final action on the permit.

B. Procedures for reaching a final decision

Section 7004(b) of RCRA and 40 C.F.R. § 124.10 require that the public be given forty-five (45) days to comment on each draft RCRA permit. The comment period will begin on July 14, 2017 and will end August 28, 2017. Any person interested in commenting on this draft permit must do so within this forty-five (45) day comment period.

Comments on the permit or a request for a public hearing should be submitted in writing to:
Jan Palumbo (OAW-150)
U.S. EPA Region 10
1200 Sixth Avenue, Suite 900
Seattle, Washington, 98101

Comments should include all reasonable available references, factual grounds and supporting material.

If interest is expressed in holding a public hearing the EPA will conduct a public hearing on **August 23, 2017**. If held, the hearing will begin at 7:00 p.m. at:
Nikiski Fire Station #1, Mile 17.9, Kenai Spur Hwy, Kenai, Alaska, 99611

There will not be a public hearing unless significant public interest in doing so is communicated to the EPA by **August 14, 2017**. To inquire if a hearing will be held, contact Jan Palumbo of the EPA ● 1-800-424-4372 Ext.6702 between **August 14** and **August 22, 2017**.

When making a determination regarding the issuance of this permit to Tesoro, the EPA will consider all written comments received during the public comment period, comments received during the public hearing, the requirements of the hazardous waste regulations, and the Agency's permitting policies.

When the EPA makes a final decision on the draft permit, if there have been comments submitted, notice will be sent to the applicant and each person who has submitted written comments or requested notice of the final decision. The final decision shall become effective no sooner than thirty (30) days after the notice unless a review is requested pursuant to 40 C.F.R. § 124.19.

C. Facility Description

The Tesoro refinery is located in the northwest portion of the Kenai Peninsula, five miles north of the city limits of Kenai, Alaska. The refinery began operation at the site in 1969. The facility covers an area of approximately 250 acres and has the capacity to process crude petroleum at a rate of 80,000 barrels per day. Primary products of the refinery include gasoline and diesel fuels, jet fuel, residential heating oil, and liquefied petroleum gas.

In the mid-1970s Tesoro constructed three unlined surface impoundments for the disposal of sludges from the facility's oil/water separator, tank bottoms, and miscellaneous oily wastes generated at the refinery. In 1980 Tesoro stopped using the impoundments for waste disposal. In 1981 two of the three impoundments were excavated and backfilled. The excavated sludges were transferred to the third impoundment. Each of the impoundments were then capped with two synthetic liners, covered with topsoil and reseeded. The three units are hazardous waste landfills under RCRA and are therefore subject to post-closure care and groundwater monitoring and corrective action under the RCRA permit.

In February of 1987 an oil sheen was discovered on water distilled at Tesoro's on-site laboratory. Following this discovery Tesoro conducted an investigation to determine the source and extent of the contamination. An extensive groundwater monitoring network of more than 100 wells was installed to characterize the groundwater contamination. The primary sources were identified as leaks from the oily water sewer system seal boxes and hubs.

Contaminants in groundwater, in both the dissolved and liquid phase, extend underneath major portions of the facility and off-site to the southwest of the facility, in both the unconfined aquifer and upper confined aquifer. The primary constituents of concern are benzene, toluene, ethylbenzene and xylene. Highest levels of contamination are found in the groundwater beneath the central area of the refinery, south and west of the process area. However, the groundwater contamination extends west of Kenai Spur Highway and has migrated to the south and west of the facility toward Cook Inlet.

Tesoro, first under an EPA enforcement order and then under the 1995 post-closure and corrective action permit, further investigated the extent of the contamination both on-site and off-site. Six groundwater corrective measures systems were installed, each addressing a portion of the contaminated groundwater at the facility. Two of those systems have been combined so there are now five operating corrective measures systems. One corrective measures system addresses cleanup of groundwater from the closed landfills. A second system addresses the area of the refinery tank farms and adjacent off-site properties currently owned by ConocoPhillips. A third operates to the west of the Kenai Spur Highway in the area of the Phillips Liquefied Natural Gas facility. The fourth addresses the B-aquifer plume, while the fifth addresses the upper confined aquifer plume.

D. Contents of the Permit

The draft permit requires long term post-closure monitoring and maintenance of the landfills, groundwater monitoring, and corrective action for contaminated groundwater. The required post-closure monitoring and maintenance period is a minimum of thirty (30) years after the date of closure of the units.

Twenty-eight years have passed since the post-closure monitoring and maintenance period began in 1989, so the remaining post-closure monitoring and maintenance period, based on the EPA's initial decision, is currently two (2) years.

However, the EPA may extend the monitoring and maintenance period if necessary to protect human health or the environment. Hazardous waste still remains in the closed landfills and the groundwater is still contaminated, and is likely to remain so for an additional thirty (30) years. The EPA is extending the post-closure monitoring and maintenance requirements to 2049. The post-closure period will be extended again if hazardous wastes remain in the closed landfills beyond 2049. The length of the post-closure care period will be reassessed every ten years when the permit is renewed.

The permit has general conditions for inspections, security, preparedness and prevention plans, contingency plans and emergency procedures, record keeping and reporting, training, financial assurance, and monitoring and maintenance of the landfills. The main part of the permit specifies requirements for operating and monitoring the five corrective measures systems for contaminated groundwater. Each system covers different portions of the groundwater contamination throughout the site. These five systems are described below:

- **The Surface Impoundment (SI) Corrective Measures System** is located in the area of the closed surface impoundments. It consists of a continuously-operating air sparge (AS) *in situ* treatment sysem. Treatment using enhanced reductive dechlorination may be added at some time in the future to enhance or replace the AS system if proven effective and approved by the EPA. The SI System is monitored by 25 monitoring wells and weekly inspection of the air flow and pressure in the air sparge wells.

- **The Phillips Marathon (PM) Corrective Measures System** is located in the area of the refinery tank farms and adjacent off-site properties currently owned by ConocoPhillips. It consists of groundwater and light non-aqueous phase liquid (LNAPL) extraction, treatment and reinjection; and air sparging with soil vapor extraction (AS/SVE). Groundwater is pumped from 14 recovery wells. The AS/SVE system consists of 24 AS wells, six SVE wells, and a granular activated carbon (GAC) treatment system. The recovered groundwater is treated using either an air stripper to remove the volatile organic compounds and carbon adsorption treatment of the air stripper off-gas, or a GAC treatment system. The treated groundwater is reinjected into injection wells within the plume or trenches side gradient from the plume, or discharged to Cook Inlet. The treated water must meet State of Alaska groundwater standards to be reinjected into the aquifer or National Pollution Discharge Elimination System (NPDES) permit requirements to be discharged into Cook Inlet. The design capacity for the groundwater treatment system is 1,000,000 gallons per day. The PM System is monitored by 80 monitoring wells.

- **The Phillips Remedial Measures (PRM) System** is in the area of the Phillips Liquefied Natural Gas (LNG) facility west of Kenai Spur Highway. It consists of groundwater and LNAPL extraction, treatment and reinjection, and air sparging with soil vapor extraction (AS/SVE). Groundwater is pumped from eight recovery wells. The AS system consists of 27 AS wells, six SVE wells, and a GAC treatment system. The recovered groundwater is treated in either of the two treatment systems described above under the PM system, and reinjected into in the injection

wells or trenches also described above under the PM System. The PRM System is monitored by 55 monitoring wells.

- **The B-Aquifer Corrective Measures System** addresses a portion of the plume underlying the facility which is thought to lie deeper and be distinct from the main aquifer. It occurs throughout the site but in certain locations is separated from and below the main unconfined aquifer. The B-aquifer corrective measures system is a groundwater extraction, treatment and reinjection system which includes six recovery wells, treatment in the GAC treatment system described above under the PM system, and reinjection in the four injection wells within the plume, also described above under the PM System. The B-Aquifer System is monitored by 64 monitoring wells.

- **The Upper Confined Aquifer (UCA) Corrective Measures Systems** addresses the confined aquifer underlying the facility and the adjacent properties. This confined aquifer lies below the main unconfined aquifer, which the other remediation systems address. The remediation for this aquifer consists of pumping of the Tesoro industrial production well and monitored natural attenuation. The production well pumps on average between 310 – 345 gallons per minute. The pumped water is then used in Tesoro's industrial processes. The system is monitored by 19 monitoring wells.

EPA has proposed to first remediate the worst areas of contamination at this site and to defer remediation of contaminated soils which do not pose an immediate threat to human health and the environment to a second phase of corrective action, which will begin after the free petroleum product has been recovered from the groundwater.

The list of constituents to be monitored consists of all contaminants that have been detected at the facility. The Groundwater Protection Standards listed in the permit are based on the federal drinking water standards (MCLs), or, if MCLs do not exist, on the EPA's human health based levels and the State of Alaska groundwater criteria for drinking water aquifers. The groundwater protection standards in the permit are targets and not final cleanup levels. The final cleanup levels will be determined at a time in the future when the determination is made that the cleanup has been completed, using the applicable agency guidelines and standards in effect at the time. The final cleanup standards will consider not only the health-based levels for each constituent, but will consider the additive effect of all constituents, and will be based on a level for the total mixture of contaminants that is protective of human health and the environment, according to the standards in effect at the time the determination is made that cleanup is complete.

The permit contains performance standards which will be used to measure the effectiveness of the corrective action program. These standards specify that all contaminated groundwater must be captured and that the corrective action program must demonstrate adequate progress. Adequate progress is defined as continuing declining levels of hazardous constituents in all wells designated in the permit as monitoring points. Capture is monitored at approximately 200 locations, and declining levels of constituents are monitored at 75 monitoring points. These monitoring wells are sampled and water quality and water levels analyzed quarterly.

The corrective action requirements in this permit include a dispute resolution procedure. Under this procedure, changes to the corrective action programs are not processed as permit modifications, but are considered enforceable permit conditions after approval by the Agency. This provision applies only to the corrective action specifications in Part III of this permit, and is meant to expedite the cleanup process by allowing the facility the ability to do what is necessary to achieve the cleanup and performance standards. Modification to the cleanup standards must be made through a permit modification, which will provide an opportunity for public comment.

E. Permit Organization

The permit is divided into five parts and four attachments, as described below:

Part I	Standard Conditions
Part II	General Facility Standards
Part III	Corrective Action Program
Part IV	Corrective Action Monitoring Program
Part V	Compliance Monitoring Program

Attachments

Attachment A	Part A Application
Attachment B	Part B Application
Attachment C	Sampling and Analysis Plan
Attachment D	Corrective Action Program Plan
Attachment E	Current Corrective Action Modification Plans