Pacific Coast Pipeline Superfund Site

U.S. Environmental Protection Agency • Region 9 • San Francisco, CA • June 2011

EPA Seeks Comments on Proposed Changes to Site Cleanup Plan

Public Comment Period **Extended** until **July 15th, 2011**

Introduction

This Proposed Plan presents the U.S. Environmental Protection Agency's (EPA) cleanup plan to address contaminated groundwater and soil at the Pacific Coast Pipeline Superfund Site (PCPL), known locally as the Texaco Site, in Fillmore, CA. EPA intends to replace the original remedy chosen in 1992, which addressed only groundwater and included both a groundwater pump and treat system and soil vapor extraction (SVE) system. These systems were turned off in 2002 when EPA determined they were no longer effective.

EPA's Preferred Alternative

Groundwater

Northern Plume

GWN-2

Monitored Natural Attenuation

Southern Plume

GWS-5: Multiple Technologies

Air Sparging

Enhanced Bioremediation

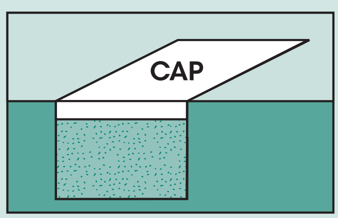
Monitored Natural Attenuation

Soil

Shallow Soils

S-3

Soil Excavation with On-Site Capping and Land Use Restrictions



EPA, as the lead agency, has prepared this Proposed Plan in consultation with the California Department of Toxic Substances Control.[1] In addition to discussing EPA's preferred action, this plan presents EPA's cleanup goals and other cleanup alternatives that were considered. EPA seeks your feedback on this proposed cleanup plan. Your comments and suggestions may result in changes to the plan. All comments will be reviewed and responded to and the final decision document (Record of Decision, or ROD) will include a summary of EPA's response to the public comments.

For a detailed description of the information and analysis upon which this plan is based, see the Remedial Investigation/Focused Feasibility Study and other documents in the Administrative Record file. See page 11 for information on how to obtain these documents.

You're Invited to a

Public Meeting

EPA will hold a public meeting to explain and answer questions about its Proposed Plan. Oral and written comments will also be accepted at the meeting on:

Thursday, June 16th, 2011
7:00 - 8:30 pm

Fillmore Senior Center
535 Santa Clara Ave.
Fillmore, CA 93015

Official comments may be made at the public meeting or submitted by email, fax, phone or postal mail **no later than Friday, July 15th, 2011**. You can send your comments to:

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Fax: (415) 947-3528
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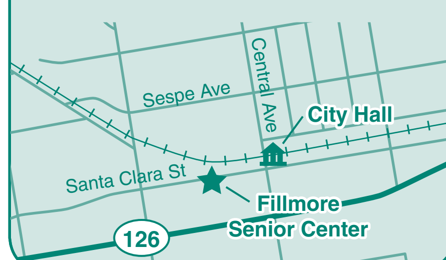


[1] *This Proposed Plan is being issued pursuant to CERCLA §117(a) and the National Contingency Plan §300.430(f)(2).*

About the Site

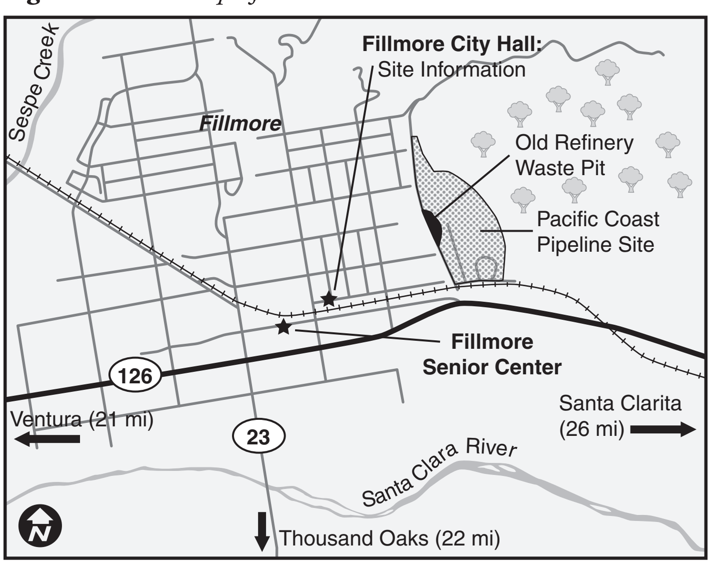
The PCPL Site is in Ventura County just east of the City of Fillmore and north of Highway 126 (Figure 1). The Site is located between an avocado orchard and Pole Creek, with a residential area just west of Pole Creek. It is approximately 56 acres and is relatively flat, sloping downhill toward Hwy 126. On the east side is a very steep upward sloping hill that has some native vegetation and shrub habitat. Groundwater flows to the west at a depth that ranges from 60 to 90 feet below ground.

A petroleum refinery operated at the Site from 1915 to 1950. In 1950 Texaco shut down and dismantled the refinery and converted it into a crude oil pumping station. The pumping station ceased operation in 2000, two years before Texaco merged with Chevron Corporation.

All of the refinery structures have been removed except for some underground pipes and utilities. The primary products of the refinery were gasoline, diesel, and fuel oil. Refinery wastes were disposed of on-site in a large main waste pit located along the western boundary of the Site and in eight smaller unlined sumps and pits distributed throughout the Site.

The groundwater under the Site is contaminated with **benzene**[2] and **toluene**. The soil is contaminated with **lead, polycyclic aromatic hydrocarbons (PAHs), and volatile organic compounds (VOCs)** (including benzene). PAHs and VOCs are naturally occurring chemicals in crude oil (petroleum). Lead was a common fuel additive until the 1970s.

Figure 1: *PCPL Superfund Site*



Past Investigations and Cleanups

1983

Texaco conducted a voluntary groundwater and soil investigation from 1983 through 1989. Groundwater contamination was found in 1983 after the initial installation of three monitor wells. Samples from the wells indicated the presence of hydrocarbons, specifically benzene and toluene, in the part per billion (ppb) range. Benzene was the contaminant with the highest concentrations.

1986

Texaco removed 38,000 tons of waste material and contaminated soils from the main waste pit and eight other waste disposal areas and transported the soil to a licensed hazardous waste disposal facility. As a part of the investigation, Texaco installed 34 additional monitoring wells.

1989

EPA placed the Site on the National Priorities List due to two plumes of contaminated groundwater, one under the main waste pit and one in the southwest area. The source of the groundwater contamination was most likely refinery wastes in the main waste pit and other disposal sites. Concentrations of groundwater contamination decreased after the removal of refinery wastes from the waste pits.

1992

EPA selected a remedy to clean up the groundwater to meet drinking water standards. The Record of Decision (ROD) specified that the groundwater be cleaned up by pumping and treating the contaminated groundwater. This pump and treat system reduced benzene concentrations by over 90%, from 5,800 ppb to 390 ppb.

2002

After EPA determined that the system was unable to remove any more benzene, the system was shut off.

The ROD also specified that contaminants in the soil vapor above the groundwater plumes should be removed to prevent them from reaching the groundwater. A soil vapor extraction (SVE) system operated until 2002, when it too reached its limit of effectiveness and met the goal of preventing benzene migration down to the groundwater. With both the groundwater and SVE systems turned off, samples showed that soil gas concentrations of benzene did not increase.

[2]*Words in **Bold** are described in the Glossary on Page 11*

Scope and Role of This Action

The proposed remedy would replace the existing groundwater and soil vapor extraction and treatment remedy. The proposed remedy addresses the remaining contamination in the groundwater that exceeds the California drinking water standards. The proposed remedy also addresses the contaminated soil at the Site.

EPA's Reasons for Taking Action

Groundwater

The groundwater in the Pole Creek area is contaminated with chemicals that exceed California drinking water standards. This water is not used for drinking and the PCPL Site is not contaminating any drinking water supply wells. The City of Fillmore provides residents and businesses with water from wells in the Sespe Creek area, which is northwest of the city. Current City regulations prohibit the installation of drinking water wells in areas with groundwater contamination. The contamination in the groundwater is not spreading and the two plumes of contaminated groundwater will not threaten the Sespe Creek drinking water wells.

Soil

The property is currently zoned for industrial and agricultural uses and it is reasonably anticipated that it will remain so. EPA evaluated the current and future risks to human health and the environment posed by site soil and **soil vapor** based on these future uses. For the contaminants at the Site that can cause cancer (see Table 1), an acceptable risk is considered to range from one additional case of cancer to one hundred additional cancer cases in a population of one million people exposed over their lifetime. This is expressed numerically as $1x10^{-6}$ to $1x10^{-4}$. There are areas where the cancer risk to on-site workers is higher than $1x10^{-4}$ so these areas need cleaning up. For lead, which does not cause cancer but can cause brain, nerve, and kidney damage, risk is measured as a Hazard Quotient (HQ). A HQ above 1.0 indicates an increased risk of adverse health effects. There are areas where the HQ of lead in soil is above 1 so these areas need cleaning up. There are five spots where vapor in the soil has VOCs (benzene, ethylbenzene and naphthalene). These areas are co-located with lead and will be cleaned up simultaneously.

Table 1: *Soil contaminants that need to be cleaned up at the Site and their health risk(s):*

Chemical	Risk	How Exposed
Lead	damage to nervous system, kidneys, immune system	breathing, swallowing
PAHs	cancer	breathing, swallowing, skin contact
VOCs	cancer	breathing, swallowing, skin contact

Current Risks

Risks to the environment were also evaluated in order to determine if any plants or animals could be threatened by Site contaminants. While most of the Site is bare and has no suitable habitat for animals, the hillside on the east does have habitat suitable for some plants and animals. The ecological assessment noted that in this area burrowing animals may be exposed to lead above levels that would be safe for them, so the contaminated soil in this area will be removed.

The risk assessments established that the Site poses potential risks if steps are not taken to clean up the contaminated soil. The Preferred Alternatives identified in this Proposed Plan are necessary to protect public health or welfare and the environment from actual or threatened releases of hazardous substances into the environment. After the soil is cleaned up, the property can be used for commercial and recreational use.

Cleanup Objectives

The cleanup objectives, also known as the Remedial Action Objectives, for the Site are: 1) prevent exposure to contaminated groundwater by restoring it to drinking water standards; 2) prevent direct contact, ingestion or inhalation of outdoor soil contaminated above safe levels for commercial and recreational land use; 3) prevent inhalation of volatile organic compounds (VOCs) in indoor air above safe levels for commercial and recreational land use; and 4) eliminate contamination in soil so it is not toxic to the plants and animals of the existing hillside scrub habitat.

Groundwater

Benzene is the main contaminant in groundwater (Figure 2), this plan proposes new cleanup technologies for the remaining benzene. In a few areas in the southern plume monitor wells sometimes detect petroleum floating at the top of the groundwater. This petroleum, referred to as light non-aqueous phase liquid, or LNAPL, contains benzene, which is the principal threat to groundwater.

Figure 2: *Benzene Contamination Plumes*

Soil

At the Site there are some areas in the shallow soil (top ten feet) contaminated with lead, PAHs, and VOCs. Most of the shallow soil at the Site has little or no contamination so no cleanup is needed. However, there are some areas with contamination which present an unacceptable risk for workers or recreational users. This plan proposes to clean up these shallow soils.

Summary of Cleanup Alternatives

EPA has investigated how well each of the cleanup alternatives satisfies the cleanup objectives and other requirements. Each alternative is described below, including EPA's preferred alternatives. These cleanup alternatives are separated into three categories: Groundwater Southern Plume, Groundwater Northern Plume, and Soil.

Groundwater Southern Plume (GWS)

Alternative GW-1: No Change to Current Remedy

Under this alternative, the 1992 cleanup decision would remain in place, no additional cleanup actions would be carried out, and current monitoring would continue.

Alternative GWS-2: Monitored Natural Attenuation (MNA)

Natural attenuation relies on naturally occurring biological, physical, and/or chemical processes that act without human intervention to reduce the toxicity, mobility, volume and/or concentration of contaminants in groundwater. Among the evidence that natural attenuation is occurring is that the size of the plume has not grown over time and hydrocarbon concentrations have dropped since the groundwater treatment system shutdown. A study of the groundwater shows that biological processes are contributing to the hydrocarbon reduction (see RI/FS Appendix E).

This alternative includes continued groundwater monitoring with seven existing wells and up to three additional wells. It is estimated that it would take up to 100 years for benzene to drop below 1 ppb. The present value cost of this alternative is an estimated $590,000.

Alternative GWS-3: Air Sparging & MNA

Air sparging (see Figure 3) involves injecting air through up to 51 wells into the contaminated groundwater. This air speeds up the breakdown of benzene. Because this treatment might volatilize benzene in the deep soil just above the groundwater, vapor monitoring wells would be installed to prevent benzene from reaching the surface. If the benzene in soil gas reaches health-based concentrations (122 **µg/m**^{3}) at five feet below the ground, an SVE system using granular activated carbon treatment would be installed to extract and treat the soil gas.

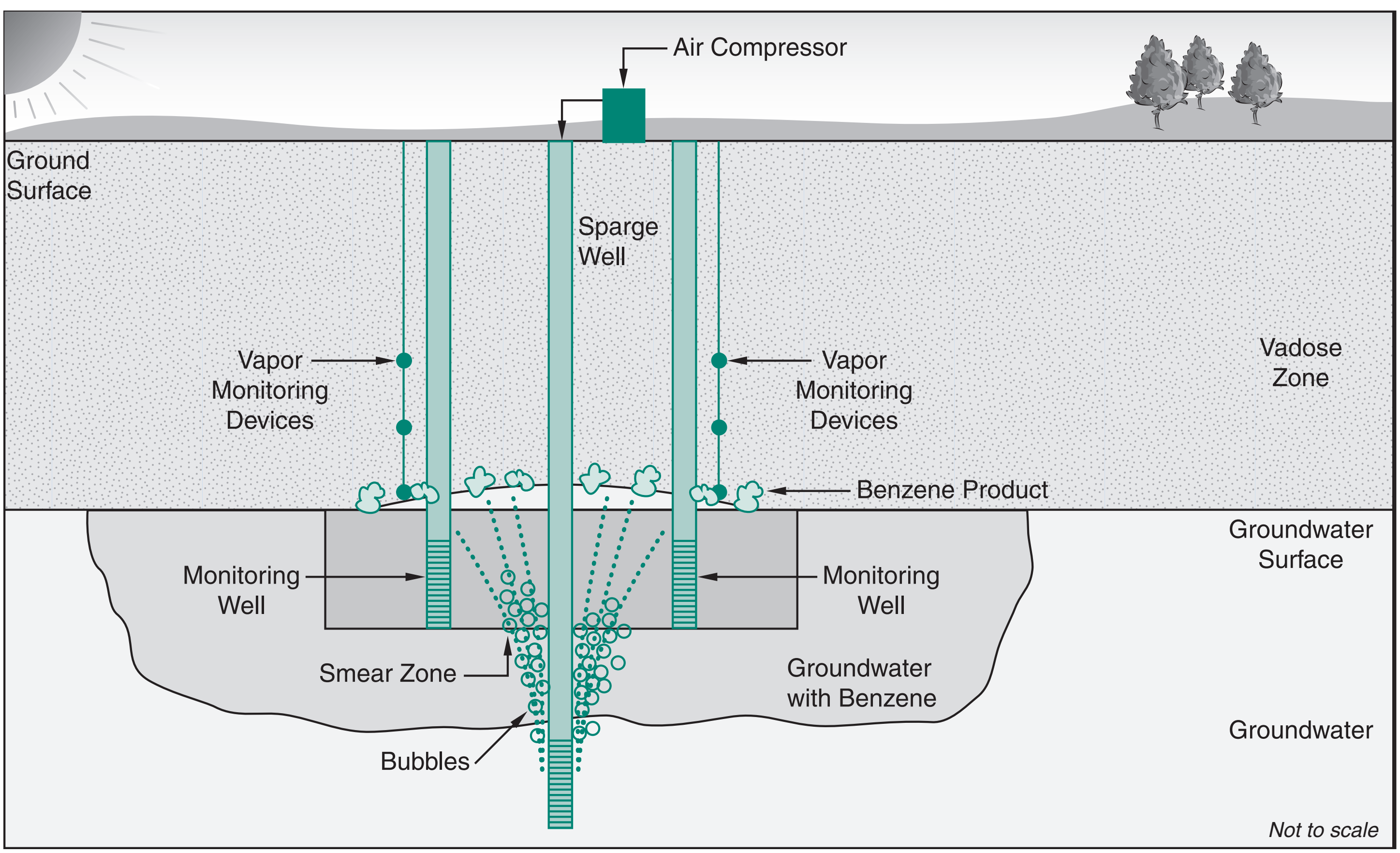
Air sparging might need to operate for up to 20 years and is not expected to clean up the benzene to 1 ppb, so MNA would be implemented for another 10 years or until cleanup levels are met, resulting in a total of up to 30 years needed to reach the cleanup goal. The present value cost of this alternative is an estimated $5.68 million.

Alternative GWS-4: Enhanced Bioremediation With Sulfate & MNA

Enhanced bioremediation involves installing up to 20 wells that pull deeper groundwater from below the benzene plume up into the benzene plume. This deeper water has more sulfate than the water that has been exposed to benzene. By introducing sulfate-rich groundwater into the benzene plume, the sulfate-consuming bacteria will thrive and break down the benzene. This water would be released into the benzene plume at a very slow rate. Surrounding monitor wells would detect any change in the benzene plume.

Enhanced bioremediation has an estimated timeframe of 50 years, followed by MNA for 10 years or until cleanup levels are met, for a total of up to 60 years. The present value cost of this alternative is an estimated $4.67 million.

Figure 3: *Air Sparging Diagram*



Preferred Alternative

Alternative GWS-5: Multiple Technologies

A combination of Alternatives 2, 3, and 4 would be used to clean up groundwater at the Site. First to be implemented would be air sparging for up to six years, followed by enhanced bioremediation for up to nine years, and MNA for up to ten years or until cleanup levels are met, for a total estimated timeframe of up to 25 years. Air sparging would be used first to target the benzene LNAPL. When sparging is no longer effective, it would be followed by the sulfate bioremediation for the dissolved benzene. After nine years of bioremediation, or when concentrations of benzene reach 100 ppb, whichever comes first, MNA would be implemented to eliminate the remaining benzene in groundwater. The present value cost of this alternative is an estimated $6.44 million.

Groundwater Northern Plume (GWN)

EPA evaluated the same five alternatives for the northern plume (scope and costs are different).

Alternative GW-1: No Change to Current Remedy

Preferred Alternative

Alternative GWN-2: Monitored Natural Attenuation (MNA)

MNA includes continued groundwater monitoring with five existing wells and up to two additional wells. It is estimated that it would take up to 50 years for benzene to drop below 1 ppb. The present value cost of this alternative is an estimated $598,000.

Alternative GWN-3: Air Sparging & MNA

Air would be injected in three wells for up to 15 years, followed by MNA for 10 years, taking an estimated 25 years to reach the cleanup goal. The present value cost of this alternative is an estimated $2.7 million.

Alternative GWN-4: Enhanced Bioremediation With Sulfate & MNA

Up to four circulation wells would operate for up to 30 years, followed by MNA for 10 years, taking an estimated 40 years to reach the cleanup goal. The present value cost of this alternative is an estimated $2.7 million.

Alternative GWN-5: Multiple Technologies

Air sparging would be done for up to four years, followed by circulation for six years, followed by MNA for ten years, taking an estimated 20 years to reach the cleanup goal. The present value cost of this alternative is an estimated $2.94 million.

Soil Cleanup Alternatives

Alternative S-1: No Action

EPA is required to consider the no action alternative. Under this alternative no soil would be cleaned up.

Alternative S-2: Soil Excavation & Off-Site Disposal, Institutional Controls

This alternative involves removing 20,000 cubic yards of contaminated soil and trucking it to an off-site licensed facility. Institutional controls will include zoning restrictions and a restrictive covenant. This alternative has an estimated timeframe of 10 weeks and a present value cost of about $3.37 million.

Preferred Alternative

Alternative S-3: Soil Excavation, On-Site Disposal & Capping , Institutional Controls

This alternative involves removing 20,000 cubic yards of contaminated soil and disposing of it in the on-site pit that used to contain refinery wastes. To protect groundwater, the pit would be capped with a synthetic material in order to prevent rainwater from percolating down and leaching out the contaminants. This alternative has an estimated timeframe of 13 weeks and a present value cost of about $1.59 million.

Alternative S-4: Screened Out

Alternative S-5a: Soil Excavation & On-Site Cement Treatment, Institutional Controls

This alternative involves removing 20,000 cubic yards of contaminated soil, such as in the other alternatives, but would treat contaminated soil on-site with Portland cement in order to solidify and stabilize the contamination. The consolidated product would then be placed in the on-site pit. A pilot test would be conducted in order to get the correct percent of cement that is needed to stabilize the lead and PAHs. This alternative has an estimated timeframe of 14 weeks and a present value cost of about $1.66 million.

Evaluation of Alternatives

To determine which alternative to select, EPA evaluates and compares the cleanup alternatives using nine evaluation criteria. EPA categorizes the nine criteria into three groups: (1) threshold criteria, (2) balancing criteria, and (3) modifying criteria. To be chosen as the preferred alternative, an alternative must meet the two threshold criteria: overall protection of human health and the environment and compliance with Federal and State applicable or relevant and appropriate requirements (ARARs). The five balancing criteria are long-term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; short-term effectiveness; implementability; and cost. The two modifying criteria are state acceptance and community acceptance, which will be evaluated based on comments received during the public comment period. The alternatives preferred by EPA can change in response to public comment and/or new information. Tables 2, 3, and 4 show how each alternative for each media compare to eight of the nine criteria and the results of the evaluation for each alternative.

What are Institutional Controls?

Institutional controls (ICs) are legal, non-engineered controls applied to property to minimize the potential for exposure to contamination left on a property or to protect the remedy after it is completed. Each groundwater alternative relies on continued enforcement of the City of Fillmore restriction on drilling wells in areas of contaminated groundwater. Soil alternatives 2 through 5 include a restrictive covenant between the State and property owner that identifies prohibited future uses of the property, limits uses to commercial and industrial, and ensures the integrity of the waste pit cap is maintained. This covenant would be filed at the Ventura County Recorder's office.

Threshold Criteria

Because Alternative 1 for both groundwater and soil are not protective of human health and the environment and do not meet ARARs, they were not evaluated against the other criteria.

The remaining groundwater and soil alternatives will be protective of human health and the environment. These Alternatives will also result in a cleanup that complies with all requirements (ARARs), so these alternatives were evaluated further.

Groundwater, Southern Plume: Balancing Criteria

Long-term effectiveness and permanence

The cleanup achieved by Alternatives GWS-2 through GWS-5 would be permanent. Any of these alternatives would clean up the groundwater to drinking water standards and continued monitoring would ensure that the reduction in benzene is not temporary. Alternative GWS-2 would achieve the cleanup goal for benzene, but it would take up to 100 years. Alternatives GWS-3 and GWS-4 would not reduce benzene to 1 ppb through active treatment so both include MNA to achieve the cleanup goal. Alternative GWS-5, the combination of all three alternatives, is also protective in the long-term.

The alternatives vary in the length of time required to meet the cleanup goal, with Alternative GWS-2 taking 100 years, Alternative GWS-3 taking 30 years, Alternative GWS-4 taking 60 years, and Alternative GWS-5 taking 25 years.

Reduction in toxicity, mobility, or volume through treatment

Alternative GWS-2 is not an active treatment and so does not meet this criterion. Alternatives GWS-3, GWS-4 and GWS-5 reduce the volume of benzene and the associated LNAPL by destroying it and so satisfy the preference for treatment. Alternatives GWS-3 and GWS-5 might produce benzene vapors that would be collected and treated.

Short-term effectiveness

Alternative GWS-2 poses the least risk to workers and community members during implementation, as the only field work required is the installation of several monitor wells. Alternatives GWS-3, GWS-4, and GWS-5 all present similar levels of minimal short-term risk from the construction and implementation of the treatment systems. These risks can be managed by following standard health and safety measures.

Implementability

All of the alternatives are implementable, as the technologies are readily available and do not present design challenges. Alternative GWS-2 is the easiest to implement, with only three additional wells needed. Alternative GWS-4 is the next easiest to implement, with installation of up to 20 groundwater circulation wells. Alternative GWS-3 requires more work to implement, as it requires up to 49 sparging wells and 9 vapor monitoring wells and, possibly, an SVE system. Alternative GWS-5 requires the most work to implement as it includes air sparging wells, groundwater circulation wells, and monitor wells.

Cost

The estimated costs for each alternative include construction costs and operation & maintenance (O&M) costs and are calculated as a Net Present Value (total future costs over the lifetime of the project, with O&M discounted at a rate of 7% per year). Alternative GWS-2 costs the least, for construction and O&M. Alternatives GWS-3, GWS-4, and GWS-5 are all significantly more expensive due to higher construction and O&M costs. See Table 2 for estimated costs.

Groundwater, Northern Plume: Balancing Criteria

Long-term effectiveness and permanence

The cleanup achieved by Alternatives GWN-2 through GWN-5 would be permanent. Any of these alternatives would clean up the groundwater to drinking water standards and continued monitoring would ensure that the reduction in benzene is not temporary.

Alternative GWN-2 would achieve the cleanup goal for benzene in approximately 50 years. Alternatives GWN-3, GWN-4, and GWN-5 would take 25, 40 and 20 years, respectively.

Reduction in toxicity, mobility, or volume through treatment

Alternative GWN-2 is not an active treatment and so does not meet this criterion. Alternatives GWN-3, GWN-4 and GWN-5 would reduce the volume of benzene by destroying it and so satisfy the preference for treatment.

Table 2: *Southern Plume Groundwater Alternatives Comparison*

Evaluation Criteria	Alternative GW-1 1992 ROD	Alternative GWS-2 MNA	Alternative GWS-3 Air Sparging	Alternative GWS-4 Sulfate	Alternative GWS-5 Multiple Technologies (EPA's Preferred Alternative)
Overall Protectiveness	Not protective	High	High	High	High
Compliance w/ State & Federal requirements	No	Yes	Yes	Yes	Yes
Long-Term Effectiveness	NA	High	High	High	High
Implementability	NA	High	High	High	High
Short-Term Effectiveness	NA	Med	Med	Med	High
Reduction of Toxicity, Mobility or Volume by Treatment	NA	No	Yes	Yes	Yes
Estimated Total Cost (NPV*)	NA	$0.6 M	$5.7 M	$4.7 M	$6.4 M
State Agency Acceptance	Yes				
Community Acceptance	Community acceptance of the preferred alternative will be evaluated after the public comment period.				

*Net present value

Short-term effectiveness

Alternatives GWN-2 poses the least risk to workers and community members during implementation, as the only field work required is the installation of several monitor wells. Alternatives GWN-3, GWN-4, and GWN-5 all present similar levels of minimal short-term risk from the construction and implementation of the treatment systems. These risks can be managed by following standard health and safety measures.

Implementability

All of the alternatives are implementable, as the technologies are readily available and do not present design challenges. Alternative GWN-2 is the easiest to implement, with only three additional wells needed. Alternatives GWN-3 and GWN-4 require similar efforts to implement, with both requiring installation of up to 4 treatment wells and up to 3 monitor wells. Alternative GWN-5 requires the most work to implement as it includes both air sparging wells, groundwater circulation wells, and monitor wells.

Cost

The estimated cost for each alternative includes construction costs and operation & maintenance (O&M) costs and are calculated as a Net Present Value (total future costs over the lifetime of the project, with O&M discounted at a rate of 7% per year).

Alternative GWN-2 costs the least, for both construction and O&M. Alternatives GWN-3, GWN-4, and GWN-5 are all significantly more expensive due to higher construction and O&M costs. See Table 3 for estimated costs.

Soil: Balancing Criteria

Long-term effectiveness and permanence

Alternatives S-2, S-3, and S-5a would be permanent and effective in the long term as the contaminants would be sequestered on-site or off-site and there would be no exposure to the contaminants. Alternatives S-3 and S-5a would require

Table 3: *Northern Plume Groundwater Alternatives Comparison*

EPA's Preferred Alternative

Evaluation Criteria	Alternative GW-1 1992 ROD	Alternative GWN-2 MNA (EPA's Preferred Alternative)	Alternative GWN-3 Air Sparging	Alternative GWN-4 Sulfate	Alternative GWN-5 Multiple Technologies
Overall Protectiveness	Not protective	High	High	High	High
Compliance w/ State & Federal requirements	Yes	Yes	Yes	Yes	Yes
Long-Term Effectiveness	NA	High	High	High	High
Implementability	NA	High	High	High	High
Short-Term Effectiveness	NA	High	Med	Med	Med
Reduction of Toxicity, Mobility or Volume by Treatment	NA	No	Yes	Yes	Yes
Estimated Total Cost (NPV*)	NA	$0.6 M	$2.7 M	$2.7 M	$2.9 M
State Agency Acceptance	Yes				
Community Acceptance	Community acceptance of the preferred alternative will be evaluated after the public comment period.				

*Net present value

more long-term monitoring to ensure the effectiveness of the cap. ICs will be maintained to ensure that future property use is limited to commercial and recreational uses only and that the waste pit cap intergrity is maintained.

Reduction in toxicity, mobility, or volume through treatment

Alternatives S-2 and S-3 would not reduce toxicity, mobility, or volume through treatment and so do not meet this criterion. Alternative S-5a reduces the mobility of lead and PAHs in the soil; it does not reduce the toxicity or volume.

Short-term effectiveness

Alternatives S-2, S-3, and S-5a all include excavation. The main short-term risk is limited to worker exposure to contaminated soil, which could be controlled by wetting the surface. Alternative S-3 is the most effective in the short-term as it involves the least handling of contaminated soil. Alternative S-5a requires additional handling and treatment and presents normal construction hazards. Alternative S-2 presents more short-term risk, requiring approximately 1,000 truck-loads of excavated soil to be transported on public roads.

Implementability

Alternatives S-2 and S-3 are easy to implement as the technologies are proven and readily available. Alternative S-5a requires additional handling of contaminated soil and testing in order to make sure the amendments are applied correctly.

Cost

The estimated costs for each alternative include construction and reporting costs and are calculated as a Net Present Value (total future costs over the lifetime of the project at a discount rate of 7%). Alternative S-2 costs the most and Alternatives S-3 and S-5a are all significantly less. See Table 4 for estimated costs.

Modifying Criteria

State Acceptance

The Department of Toxic Substances Control, Chatsworth Office, concurs with EPA's Proposed Plan.

Community Acceptance

Community acceptance will be determined after the close of the public comment period. See page 1 of this Proposed Plan for details about how to provide comments to the EPA.

Table 4: *Soil Alternatives Comparison*

Evaluation Criteria	Alternative S-1 No Action	Alternative S-2 Off-Site Disposal	EPA's Preferred Alternative: Alternative S-3 On-Site Disposal and Cap	Alternative S-5a On-Site Solidification
Overall Protectiveness	Not protective	High	High	High
Compliance w/State & Federal requirements	Yes	Yes	Yes	Yes
Long-Term Effectiveness	NA	High	High	High
Implementability	NA	High	High	Med
Short-Term Effectiveness	NA	Low	High	Med
Reduction of Toxicity, Mobility or Volume by Treatment	NA	No	No	Yes
Estimated Total Cost (NPV*)	NA	$3.4 M	$1.6 M	$1.7 M
State Agency Acceptance	Yes			
Community Acceptance	Community acceptance of the preferred alternative will be evaluated after the public comment period.			

*Net present value

EPA's Preferred Alternatives

The preferred alternatives for cleaning up the Pacific Coast Pipeline Site are: Groundwater, Southern Plume, Alternative GWS-5 (Multiple Technologies: Air Sparging, Enhanced Bioremediation, and Monitored Natural Attenuation); Groundwater Northern Plume, Alternative GWN-2 (MNA); and Soil Alternative S-3 (Soil Excavation with On-site Capping and Institutional Controls).

The preferred southern plume groundwater alternative was selected because it is expected to clean up the groundwater within the shortest time frame. The preferred northern plume alternative was selected because natural attenuation is already lowering benzene concentrations, the other alternatives are not more protective in the short or long term, and they are significantly more expensive. The preferred soil alternative was selected over the other alternatives because it provides long-term risk reduction with less handling of contaminated soil. It does not satisfy the preference for treatment, as the contaminants in the soil are not highly toxic or highly mobile. Alternative S-2 costs significantly more than Alternatives S-3 and S-5a due to transport and disposal costs. Alternative S-5a requires more handling, materials, and heavy equipment. The treatment provided by this alternative does not provide greater risk reduction and so was not selected.

Based on the information currently available, EPA and the State of California believe the preferred alternatives meet the threshold criteria and provide the best balance of tradeoffs among the other alternatives with respect to the balancing criteria. EPA expects the preferred alternative to satisfy the statutory requirements of CERCLA §121(b) to 1) be protective of human health and the environment; 2) comply with ARARs (or justify a waiver); 3) be cost-effective; 4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and 5) satisfy the preference for treatment as a principal element (or justify not meeting the preference).

Glossary of Terms

benzene: a naturally occurring chemical in crude oil, known to cause cancer

lead: a metal with many industrial uses, was added to gasoline until the 1970s, can cause damage to nervous system, kidneys, and immune system

polycyclic aromatic hydrocarbons (PAHs): a group of chemicals found in crude oil, some of which might cause cancer

soil vapor: chemicals in a gas form in the soil

volatile organic compounds (VOCs): carbon-containing chemicals that evaporate readily into the air, includes benzene and toluene

$\mu g/m^3$: micrograms per cubic meter, or 1/1 million of a gram in one $meter^3$

Information Repositories

The Administrative Record file, which contains documents EPA used to develop this Proposed Plan, is available at:

Fillmore City Hall, 2nd Floor
250 Central Avenue
Fillmore, CA 93015
(805) 524-3701

EPA Superfund Records Center
95 Hawthorne Street
San Francisco, CA 94105
(415) 820-4700

Documents and information are also available at EPA's website: **www.epa.gov/region09/pacificcoastpipeline**

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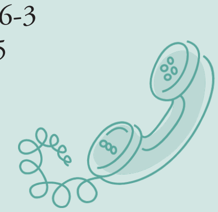


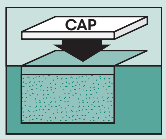
Pacific Coast Pipeline Superfund Site
Sitio Superfund Pacific Coast Pipeline
¡Una version en Español esta adentro!

Public Meeting
June 16th
7:00 - 8:30pm

EPA is Proposing a Final Cleanup Plan for the Former Texaco Refinery in Fillmore

The plan includes:

- » Excavating contaminated soil, disposing of it in an on-site pit, and placing a permanent cap over it



- » Several technologies to clean up contaminated groundwater

- » Restricting the future use of the land

You are invited to attend the public meeting on Thursday, June 16th, 2011 to learn more about this. For more details, see the Proposed Plan inside. Submit comments on it to Holly Hadlock (contact info on page 11).

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Attn: Alejandro Díaz (PCPL 6/11)

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