

SUPERFUND

Fact Sheet

MOSES LAKE WELLFIELD-SKYLINE WATER SYSTEM CUSTOMERS

Moses Lake, Washington



U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 10

April 2000

The Environmental Protection Agency (EPA) is proposing a new well as the final action for the trichloroethylene (TCE)-contaminated Skyline water system wells. EPA's decision to propose a new well for Skyline water system users is explained in the Engineering Evaluation/Cost Analysis (EE/CA). The EE/CA includes a summary and analysis of the options for the Skyline water system.

You are invited to comment on the EE/CA. The comment period is for 30 days. EPA can extend the public comment period for an additional 15 days upon timely request. After the close of the public comment period, EPA will review and consider all comments and respond to them in a Responsiveness Summary. EPA will then prepare a final Action Memorandum which will officially select a final alternative for the action.

For the site as a whole, which includes the entire Moses Lake Wellfield Contamination Superfund Site, EPA and the U.S. Army Corps of Engineers (USACE) are currently conducting a Remedial Investigation and Feasibility Study (RI/FS). The RI/FS will define the area of the plume, investigate potential TCE sources and evaluate possible cleanup technologies for the contaminated groundwater. When the RI/FS is completed, EPA will decide if further action is needed for other areas of the site. The RI/FS is expected to be completed in 2001.

Copies of the EE/CA are available for your review at the Moses Lake Public Library. Or, you can contact **Krista Rave** toll free at **1-800-424-4372** (extension **6686**) and request a copy be mailed to you.

Your comments can be made either during the public meeting on May 10th, or by mail. Please send written comments by **May 12th** to:

Lynda Priddy, Project Manager
U.S. Environmental Protection Agency
1200 Sixth Avenue (ECL-112)
Seattle, Washington 98101

Public Comment Period for Proposed Skyline Action

From April 13 to May 12, 2000

Public Meeting:
May 10
from 7:00 - 9:00 p.m.
at: Larson Heights Elementary School,
700 Lindberg

The EE/CA Process

EPA has identified technologies that could be used to provide a reliable, permanent source of drinking water for the Skyline water system users. The technologies are evaluated against nine evaluation criteria. These criteria are described in Superfund's primary regulation, the National Contingency Plan (NCP). The NCP criteria are:

1. Overall Protection of Human Health and Environment
2. Compliance With Federal and State Regulations

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Background

The Moses Lake Wellfield Contamination Superfund Site, which includes the contaminated Skyline water system, is located about three miles northwest of the City of Moses Lake, Washington and includes the former Larson Air Force Base. The United States Air Force used the base from 1942 to the mid 1960s. The Boeing Company also operated facilities on the property during many of these years. The Port of Moses Lake owns most of the former base now, operating a large portion as the Grant County Municipal Airport. The Port also leases space to a variety of commercial enterprises. The United States Army Corps of Engineers (USACE) is the federal agency in charge of investigating and, if necessary, cleaning up Formerly Utilized Defense Sites such as the former Larson Air Force Base. In this case, USACE is representing the U.S. Air Force at the site.

The contaminant of concern is trichloroethylene (TCE), which is a volatile organic compound that was commonly used as a degreaser in manufacturing and aircraft maintenance. Elevated TCE levels were found in some Moses Lake municipal wells and two Skyline water system wells during sampling conducted by the Washington Department of Ecology in 1988 and 1989. In 1992, EPA added the Moses Lake Wellfield Contamination Site to the National Priorities List of hazardous waste sites across the country that need further investigation and possible cleanup.

The Port of Moses Lake provided bottled water to Skyline water system users for five years. The USACE took over the bottled water distribution to Skyline water users in July 1999.

(EE/CA Process continued)

3. Long-Term Effectiveness and Permanence
4. Reduction of Toxicity, Mobility, and Volume Through Treatment
5. Short-Term Effectiveness
6. Implementability
7. Cost
8. State Acceptance
9. Community Acceptance

EPA is proposing that a new well best meets all of the above criteria as a reliable, permanent source of drinking water for the Skyline water system users. This fact sheet and attached chart summarize EPA's evaluation of the technologies identified for the EE/CA. More detailed information is included in the EE/CA.

After balancing and weighing the alternatives against the nine criteria, EPA is proposing a new well for the Skyline water system primarily for the following reasons. One, the vast majority of the Skyline water system users (Criteria 9 - Community Acceptance) oppose the hookup to city water. They oppose the hookup because it would significantly increase their water bills, they don't want the chlorination of city water, and they are concerned that the hookup would speed annexation and development. Second, while EPA believes that the hookup is generally a good option for providing drinking water, in this case there are serious implementation issues of obtaining permanent water rights and a purveyor agreement to purchase water from the city, (Criteria 6 - Implementability). Three, while the hookup has the lowest capital costs (initial cost to implement the remedy) of the alternatives, the operation and maintenance costs (O&M) to the community are among the highest of the alternatives (Criteria 7 - Cost). The new well has the second to the lowest capital cost and the lowest O&M costs. Monthly water bills with a new well are expected to be approximately the same as they are at present, given the assumptions used in the EE/CA. The remaining alternatives, which are all treatment and filtration system alternatives, have the highest



capital and O&M costs. Lastly, while a new well also provides a long term, effective source of clean water as do other alternatives, effectiveness of the new well does not rely on long-term O&M by a certified operator.

EE/CA Alternatives

Alternative 1: NO FURTHER ACTION

EPA is required by law to include the no-further-action alternative. It is provided only for comparison with other removal action alternatives. For example, current O&M costs for the two Skyline wells operating without treatment are presented for comparison purposes with the O&M costs for other alternatives. The O&M cost of a No Further Action alternative serve as a baseline and should reflect current typical monthly costs.

Alternative 2: AIR STRIPPING

Air stripping is a treatment technology where the water to be treated trickles down through a tower in a "packed column." This breaks up the flow of water to create as much surface area as possible. Large volumes of air are forced up through the water, transferring the contaminants from the water to the air through evaporation. The air is then treated by forcing it through filters which absorb the contaminants. The filters are recycled or treated and disposed of as hazardous waste. Proper operation of air strippers typically requires an experienced operator. Chlorination or an equivalent disinfection system approved by the Washington Department of Health (WDOH), would be required before distribution to water system users.

An air stripper would be constructed at Skyline Well No. 1 (the westerly well). Skyline Well No. 2 (the easterly well) would serve as a backup well for high water demand periods or as an emergency source of water. Water from Well No. 2 would be transported to the air stripper through an underground pipeline for treatment before distribution to the residents.

Alternative 3: GRANULAR ACTIVATED CARBON ADSORPTION

The Granular Activated Carbon Adsorption (GAC) selectively adsorbs the TCE and binds it to the internal pores of the carbon granules. Treated groundwater leaves the system as clean drinking water. When the carbon granules are saturated, they are recycled (regenerated) off-site where contaminants are released by a thermal process and destroyed by combustion. Any carbon granules lost through the regeneration process is replaced. The regeneration facility must be in compliance with EPA's Off-site Rule. Chlorination or an equivalent disinfection system approved by the WDOH would be required.

GAC adsorption system would be constructed at Well No. 1 (westerly well). Well No. 2 (easterly well) would serve as a backup well for high water demand periods or as an emergency source of water. Water from Well No. 2 would be transported to the GAC adsorption system through an underground pipeline for treatment before distribution to residents.

Alternatives 4A and 4B: AWS FILTRATION SYSTEM

Alternative 4A: O&M CONDUCTED BY A QUALIFIED CONTRACTOR

Alternative 4B: O&M CONDUCTED BY LOCAL WATER ASSOCIATION

The existing water supply system would be modified by constructing the Advanced Water System (AWS) Filtration System at the wellheads of Skyline Well No. 1 (westerly well) and Well No. 2 (easterly well). TCE contained in the water is both adsorbed and absorbed (bonded) by a filter medium. The filter medium is a petroleum-derived polymer for adsorption with the addition of coconut hulls for adsorption. When the filtration medium becomes clogged, the bed is replaced because the filter medium cannot be cleaned. Therefore, this alternative includes



sand filters prior to the treatment unit. The sand filters will filter out much of the particular material in the untreated groundwater, thus extending the life of the filtration media and bed. The expected bed life is 10 years. Chlorination or an equivalent disinfection system approved by the WDOH would also be required before distribution.

This is an innovative technology for treatment of TCE-contaminated groundwater. A pilot study would be required to demonstrate its effectiveness for treating TCE before design and construction of a full system. Because it is an innovative technology, capital and O&M costs are less certain.

Many users of the Skyline water system formed the Broadview Tracts Water Association and proposed Option B. The Association has told EPA that, after a new well, its preferred alternative for addressing the TCE contamination in the Skyline water system is to treat the water at the wellhead with AWS technology.

Two options for O&M costs were considered. Under Option A, the current purveyor (supplier) of the Skyline water system would continue to be the purveyor, and the O&M of the system would be contracted to a qualified operator. Under Option B, the Association would own the Skyline water system and be responsible for performing O&M.

Alternative 5: POINT-OF-ENTRY HOUSEHOLD GAC FILTRATION

TCE would be eliminated by installing a compact GAC filtration unit at each household. The system would be connected to the main line of each residence. A self-back washing system that automatically removes and traps contaminants within the filter bed would be used.

A water meter would be installed at each house to determine when the GAC filters would need to be changed. The frequency of filter changing

would depend on the quantity of water used and the concentration of the TCE. Maintenance of the individual systems would be set up as a service provided under contract at the expense of each homeowner.

Alternative 6: NEW, DEEPER, CLEAN SKYLINE WELL

TCE would be eliminated by replacing one of the Skyline wells with a new well screened in the lower, uncontaminated aquifer. One of the old wells would be abandoned. The remaining well would be used only as an emergency water source. The emergency source well would be activated if the new well mechanically fails to provide water, such as during pump failure. The emergency well could not be used to supply additional water to Skyline water system users for other uses, such as irrigation.

The new well would be a 10-inch-diameter well, screened at an interval approximately 500 feet below ground surface and located in the Skyline Water Company service area.

Other drinking water wells in the area that are approximately 500 feet deep deliver sufficient water to meet the present peak hourly rate for Skyline at 400 gallons per minute. The new well would be designed for water production up to 500 gallons per minute. This delivery rate is expected to supply sufficient water to meet peak demands. The new well would be sealed through the zone of contaminated groundwater with steel casing and grout to prevent cross contamination.

Alternative 7: HOOKUP TO THE CITY OF MOSES LAKE WATER SUPPLY SYSTEM

Skyline water system users would be connected to the city of Moses Lake's water system. Water supplied by the City is in compliance with applicable drinking water standards. The City's supply main is roughly 1,200 feet away from the hookup point to the Skyline water system.

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(Alternative 7 Continued)

A new water line would include gate valves, check valves to prevent back flow, and a single 4-inch water meter to tie the two systems together. The pipeline would be routed underneath Highway 17 to connect the two water systems.

Since the Skyline Water Company would not be required to provide a backup source of drinking water, both Skyline wells would be abandoned. The owner of the Skyline water system would have to apply to the City to buy water from the City. The City has agreed to sell water to Skyline provided that sufficient water rights and associated fees to provide water are given to the City.

The Proposed Alternative

EPA is proposing a new well for the Skyline water system (Alternative 6). The new well will be a permanent and final solution for the TCE contaminated Skyline water system. EPA believes that a new well best satisfies evaluation criteria standards. However, for the Moses Lake Superfund site, as a whole, future cleanup activities will not be identified until the RI/FS has been completed.

For More Information

Copies of the EE/CA and other reports that support the EE/CA are available at the Moses Lake Public Library.

If you have any questions, please contact one of the following people:

For questions on the Skyline Water System, please contact:

Lynda Priddy, EPA Project Manager, at (206) 553-1987 or toll-free at 1-800-424-4372.

For questions on the Remedial Investigation and Feasibility Study (RI/FS), the overall Site investigation, or questions regarding bottled water service to Skyline Water System users, please contact:

Bill Graney, U.S. Army Corps of Engineers, at (206) 764-3494.

To ensure effective communication with everyone, additional services can be made available to persons with disabilities by contacting one of the EPA representatives.



United States
Environmental Protection
Agency

Region 10 (ECO-081)
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