LEHIGH CEMENT COMPANY
Closed Cement Kiln Dust (CKD) Pile

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Feasibility Study Technical Report Available

The Washington Department of Ecology invites the public to review and comment on a draft Feasibility Study Technical Report for the Lehigh Cement Company Closed Cement Kiln Dust (CKD) Pile site. The site is located in Metaline Falls, at approximately milepost 14.7 along Highway 31 in Pend Oreille County, Washington (see Figure 1).

The purpose of the Feasibility Study Technical Report is to identify and evaluate cleanup alternatives for the site. Cleanup focuses on highly alkaline (high pH) groundwater, downgradient of the pile including discharges to Sullivan Creek. The contaminated water is not currently used for domestic use, and steps have been taken since 1996 to address potential exposure pathways.

Contamination at the site comes from arsenic and high pH which is a result of cement kiln dust and groundwater interaction.

Opportunity to Comment
Comments on the Feasibility Study Technical Report will be accepted **May 25 through June 23, 2005.** The box at the right provides information about where to review documents and submit comments.

Site Background
Lehigh owned and operated the cement plant from the early 1950s until 1989. Raw materials were mined from a quarry south of the facility and brought to the processing plant. Limestone and clay materials, which may contain trace heavy metals, were heated and ground to make the cement. In the heating process, cement kiln dust was generated as a waste by-product. The cement kiln dust was disposed of in a landfill on-site until 1989.

Groundwater beneath and downgradient of the CKD pile is highly alkaline, because of the high percentage of lime in cement kiln dust. The contamination exceeds state groundwater cleanup standards for pH and arsenic. The contaminated groundwater discharges along the west bank of Sullivan Creek and is seen as amber colored water during times of low water flow.

In 1996, Lehigh closed the CKD landfill and constructed a cover over the landfill pile to minimize contact with storm water. A stormwater management system also was constructed to control storm water run-on and run-off. The system included catch basins, internal and external drain pipes, and a sediment basin.

May 2005

Comments Accepted
May 25 through June 23 2005

Document Review Locations

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Eastern Regional Office
4601 North Monroe
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Ecology's Toxics Cleanup Website:
http://www.ecy.wa.gov/programs/tcp/sites/lehigh/lehigh_hp.htm

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If you require this publication in an alternate format, please call Marilyn Summers at 509 329-3444 or call 711 or 1-800-833-6388 (TTY)

Six Alternatives Evaluated to Clean Up Groundwater

Several investigations have been conducted at the site since 1992 to determine the nature and extent of contamination. The Feasibility Study Technical Report considers the information gathered from these investigations and identifies and evaluates options for cleanup.

Six alternatives were selected for in depth evaluation. Each alternative includes constructing necessary support facilities in or around the existing building at the site and applying institutional controls. Institutional controls include warning signs, fencing, restrictive covenants and ongoing compliance monitoring. The specific alternatives are as follows:

Alternative 1 - Permeable Treatment Wall. This option extends an existing pilot system treatment zone along the east side of State Route 31. CKD-affected groundwater will pass through a treatment zone before moving to Sullivan Creek. In addition to the passive treatment wall, a number of wells will be placed downgradient of the wall to extract groundwater and route it back to the treatment zone.

Alternative 2 - Groundwater Control. This option continues the existing pilot system treatment and adds extraction wells to collect CKD-affected groundwater. The groundwater is extracted and treated above ground, reducing the pH and precipitating the arsenic. Treated groundwater is then discharged to Sullivan Creek.

Alternative 3 - Additional Source Control. This option includes a vertical barrier upgradient of the CKD pile. It directs water away from the CKD. Wells on the upgradient side of the barrier capture and reroute the water around the CKD pile. This reduces the amount of water contacting the CKD. This option also includes downgradient groundwater extraction and above ground treatment components.

Alternative 4 - Partial Source Removal. This option involves removing approximately 265,500 cubic yards of CKD in order to extract the lower portions of the CKD pile that are in contact with the groundwater. This alternative also involves removing and re-installing a large part of the engineered CKD cover in order to remove CKD that is in contact with groundwater.

Alternative 5 - Funnel and Gate Treatment. This option involves installing a system of shallow underground vertical barrier walls and gravel drainage layers downgradient of the CKD pile. The water is treated in situ (in place) with the technology used in the pilot system in Alternative 1. Treated water then moves to Sullivan Creek via a discharge corridor below the surface.

Alternative 6 - Partial Additional Source Control. This option uses source control coupled with the downgradient in situ treatment as described in Alternative 5. This alternative supplements Alternative 5 with a source control gravity drain under the CKD pile. The drain captures and redirects unaffected groundwater away from the pile. CKD-affected groundwater is funneled to the treatment zone. Alternative 6 is the preferred alternative proposed by Lehigh.

Evaluation of each of these six alternatives takes into consideration protecting human health and the environment, complying with cleanup standards, complying with applicable state and federal laws and providing for compliance monitoring. The evaluation also includes using permanent solutions to the maximum extent practicable, providing for a reasonable restoration time frame and considering public concerns.

What Happens Next?

Ecology will review all written comments received and modify the Draft Feasibility Study Technical Report, if appropriate. A Responsiveness Summary will be prepared to address written comments, if applicable. Next, a draft Cleanup Action Plan will be developed and made available for public review and comment.

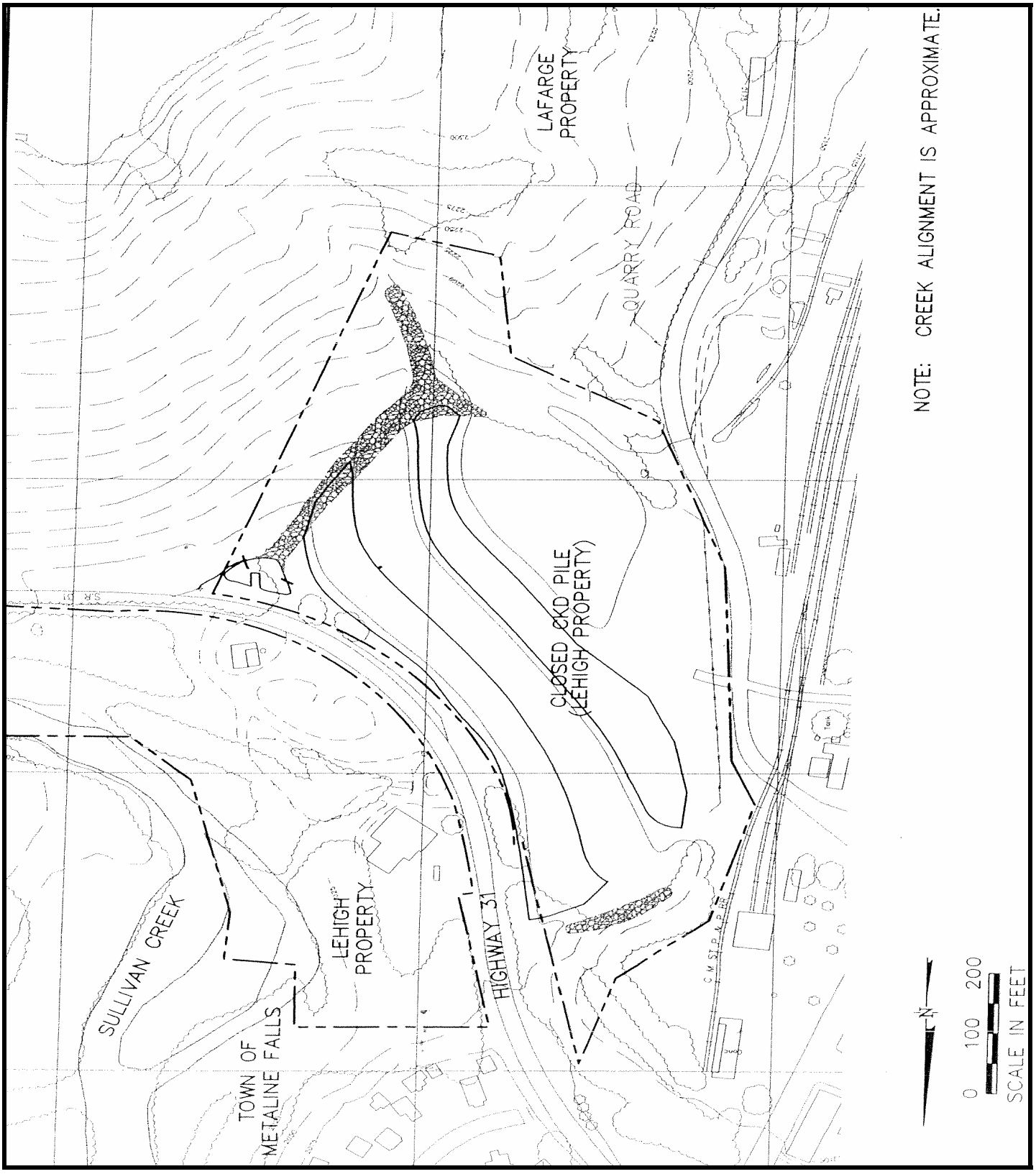
LAFARGE PROPERTY
QUARRY ROAD
NOTE: CREEK ALIGNMENT IS APPROXIMATE.
CLOSED CKD PILE (LEHIGH PROPERTY)
HIGHWAY 31
LEHIGH PROPERTY
SULLIVAN CREEK
TOWN OF METALINE FALLS
N
0 100 200
SCALE IN FEET

Figure 1