Adak Island UPDATE

NMCB Building Expanded Area: Proposed Cleanup

Naval Facilities Engineering Command Northwest

Background

August 2005

Investigation and cleanup of petroleum-contaminated sites at the former Naval Complex on Adak have been ongoing since 1986. In May 1997, the Navy and Alaska Department of Environmental Conservation (DEC) agreed to integrate the cleanup decision process for petroleum sites with the cleanup decision process being conducted for hazardous substance release sites under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). As a result, the Record of Decision (ROD) for Operable Unit A (OU A) was prepared for both the petroleum-contaminated sites and the hazardous-substance-release sites. The OU-A ROD was signed by the Navy, the EPA, and the Alaska DEC during 2000. The ROD is the legal document describing the cleanup actions selected for a site.

The ROD for OU A selected remedies for each of the 128 petroleum-contaminated sites identified on Adak Island. An interim remedy, free-product recovery, was selected for 14 sites that contained measurable quantities of free-phase petroleum product. Free-product recovery, regular groundwater monitoring, and some interim remedial actions have been conducted at these sites. Interim remedial actions included removal of storage tanks and piping, and removal of some contaminated surface soils and sediments. The ROD for OU A specified that, in addition to the interim actions, these 14 sites would require final remedy selection in the future. To clarify regulatory authority, the ROD for OU A was amended in September of 2003 to remove these petroleum sites from CERCLA authority. Therefore, final remedies for the 14 petroleum-contaminated sites are now being selected in accordance with State of Alaska petroleum cleanup regulations.

Final remedies were selected during 2004 for 10 of these 14 free-product recovery petroleum sites where petroleum-related chemicals pose no unacceptable risk to human health and the environment, provided that institutional controls prohibiting the use of groundwater as a drinking water source remain in effect. Remedy selection is currently being conducted for the four free-product recovery petroleum sites where petroleum-related chemicals pose a risk to human health or the environment above target health goals. This document summarizes the selection of a preferred remedial alternative for one of those four sites—the NMCB Building Expanded Area site (NMCB). Figure 1 shows the location of the NMCB Building T-1416 at the former Naval Complex on Adak. The three remaining free-product sites where petroleum-related chemicals pose a potential risk to human health or the environment above target health goals will be addressed separately in the future.

Figure 1. Location Map, NMCB Building Expanded Area Site

Cleanup Levels at the Free-Product Recovery Petroleum Sites

Cleanup levels are needed as part of the process of selecting the preferred cleanup remedy. Cleanup levels are used to help determine how much cleanup is required and also establish when a site can be considered "clean" after remedial actions. Chemical-specific cleanup levels for soil and groundwater have been established for NMCB in accordance with Alaska DEC regulation 18 AAC 75.

The Alaska regulations establish four methods for determining cleanup levels for soil. Alternative cleanup levels (ACLs) are proposed for remediation of soil following Alaska DEC Method Four, which uses site-specific risk assessments to establish proposed cleanup levels. The proposed ACLs are established at concentrations such that human health risks from hazardous substances do not exceed the following target health goals: cumulative carcinogenic risk of 1 in 100,000 and the cumulative non-carcinogenic hazard index of 1.0. Proposed ACLs were submitted to the Alaska DEC for approval, and are designated as remedial cleanup levels for NMCB because the Alaska DEC agrees that they are protective of human health, safety, and welfare and of the environment. The extent of soil at NMCB containing petroleum-related chemicals at concentrations greater than the proposed ACLs is shown on Figure 2.

The Alaska regulations establish three methods for determining cleanup levels for groundwater. Cleanup levels specified for remediation of groundwater at NMCB are based on 10 times these values because groundwater is not reasonably expected to be a potential future source of drinking water. The extent of groundwater at the site containing petroleum-related chemicals at concentrations greater than the applicable groundwater cleanup levels is also shown on Figure 2.

Under the Alaska water quality standards, Sweeper Cove (located adjacent to the site) and the lower reach of South Sweeper Creek (located west of the site) fall within the marine water class and the following subclasses: water supply aquaculture; secondary recreation; and growth and propagation of fish, shellfish, other aquatic life, and wildlife. The water quality standards established for this use class and these

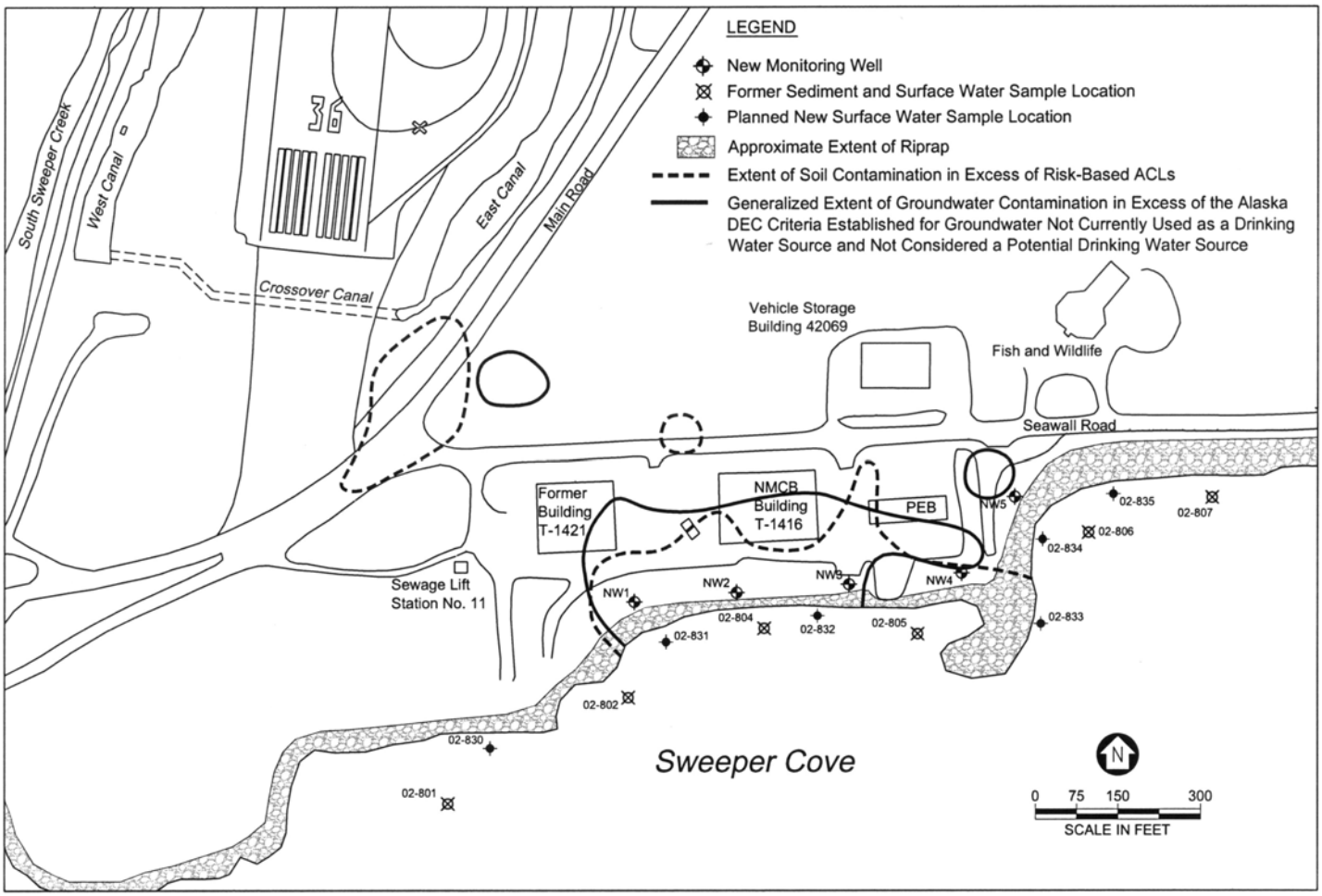

Figure 2. Extent of Soil and Groundwater Contamination with Proposed Additional Sampling Locations, NMCB Building Expanded Area

Cleanup Levels at the Free-Product Recovery Petroleum Sites (continued)

subclasses, specify cleanup levels for total aqueous hydrocarbons (TAqH) and total aromatic hydrocarbons (TAH) in the water column. In addition, there may be no concentrations of petroleum hydrocarbons, oils, and grease in shoreline or bottom sediments that cause deleterious effects to aquatic life. Surface waters and adjoining shorelines must be virtually free from floating oil, film, sheen, or discoloration.

Under the Alaska water quality standards, the canals of the airport ditch system, including the East Canal (located northwest of the site) fall within the fresh water class, and the secondary recreation subclass. The water quality standards established for this use class and subclass specify that petroleum hydrocarbons, oils and grease may not cause a film, sheen, or discoloration on the surface or floor of the water body or adjoining shorelines, and surface waters must be virtually free from floating oils.

Alaska State Regulations do not establish cleanup levels for sediment. Therefore, sediment cleanup levels are established based on the results of the ecological risk assessment conducted for the site. Because no ecological risks above target health goals were identified in sediment, no cleanup levels are necessary for sediment.

Final Remedy Selection at NMCB

Based on the ecological risk analysis conducted for this site, no remedial action objectives (RAOs) were found to be necessary for the protection of ecological receptors at NMCB. Based on the human health risk analysis conducted for this site and the regulatory requirements, RAOs were developed for the protection of human health at NMCB. The RAOs are:

- Prevent human exposure to petroleum hydrocarbons in soil that would result in adverse health effects
- Reduce petroleum hydrocarbons in groundwater to concentrations less than or equal to the Alaska DEC groundwater cleanup levels established for groundwater not currently used for, or not reasonably expected to be used for, drinking water
- Minimize exposure to free-phase petroleum product

Four different cleanup alternatives were evaluated for the site: [1] No Action; [2] Institutional Controls, Free-Product Recovery, and Monitored Natural Attenuation (MNA); [3] Hot Spot Soil Excavation and MNA; and [4] Hot Spot Soil Excavation, In Situ Soil Treatment, and MNA. In order to be selected as the best remedy, a cleanup alternative must meet several strict criteria established by State regulations, in addition to achieving the RAOs. These criteria are protection of human health and the environment, compliance with Alaska regulations, long-term and short-term effectiveness, cost-effectiveness, and implementability.

Alternative 2 - Institutional Controls, Free-Product Recovery, and MNA - is the preferred cleanup alternative for NMCB. This alternative will provide an appropriate, cost-effective remedy that protects human health and the environment and can be implemented at the earliest possible time. The Alaska DEC concurs with the selection of this alternative as the Preferred Alternative.

The Navy will perform additional sampling activities to support the selection of the preferred remedial alternative. The additional sampling activities include the collection of soil, groundwater, surface water, and air samples. Five new monitoring wells will be installed along the shoreline of Sweeper Cove adjacent to the rip rap. Soil samples will be collected during the drilling of these wells, and groundwater samples will be collected after installation of the wells and as part of the annual MNA monitoring. Surface water samples will be collected from six new sampling locations and six existing sampling locations within Sweeper Cove. Figure 2 shows the proposed sampling locations. Finally, indoor air samples will be collected within the NMCB Building T-1416 and the Pre-Engineered Building (PEB). Background air samples will also be collected outside the two buildings.

Additional Information

More detailed information on the proposed cleanup plan for NMCB can be found at the Adak Island High School, the University of Alaska at Anchorage, and the Navy site file.

Public comment period for the proposed cleanup plan is from August 16 to September 15, 2005.

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