FACT SHEET

Remedial Action at IR Site 14, Firefighter Training Area Former Naval Air Station Alameda

Alameda, California

August 2008

PROJECT CONTACTS

If you have any questions or concerns about environmental activities, please feel free to contact any of the project representatives:

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INTRODUCTION

The Navy is proceeding with the selected remedial action for groundwater at Installation Restoration (IR) Site 14, known as the Firefighter Training Area, at Alameda Point, Alameda, California. This fact sheet describes the scope of the remedial action being conducted to reduce the concentration of vinyl chloride (VC) present in groundwater across the Site. This remedial alternative also will reduce the concentration of 1,2-dichloroethene (DCE) and 1,1-dichloroethane (DCA) in groundwater and VOCs in the soil.

The Navy is conducting environmental actions at IR Site 14 in accordance with the National Contingency Plan (NCP) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). After completing a remedial investigation, the Navy conducted a feasibility study in 2005 to evaluate potential remedial alternatives for IR Site 14 and prepared a Record of Decision (ROD) in 2007 to document the selected remedy. The selected remedy consisted of in situ chemical oxidation (ISCO) and long-term institutional controls to limit human exposure.

SITE HISTORY

Naval Air Station (NAS) Alameda was an active military installation from 1940 to 1997. It primarily provided facilities and support for fleet aviation activities. IR Site 14 is located in the northwestern section of Alameda Point with the northern boundary adjacent to the Oakland Inner Harbor. The Site is primarily open space and partially paved with a generally flat topography. Currently, the buildings at the Site are vacant and access to the Site is restricted. Throughout the history of the NAS, IR Site 14 was used for storage of airfield-related materials and equipment with the northwestern portion of the Site used for firefighter training activities. The Site was originally designated as an IR site based on concerns related to these activities. Subsequent investigations revealed the presence of chlorinated solvents in groundwater. These solvents are the focus of the current groundwater investigation and proposed remediation at the Site.

Regulatory Agencies Concur on Cleanup Plan

The Navy and its cleanup partners, the U.S. Environmental Protection Agency, the California Department of Toxic Substances Control, and the San Francisco Bay Regional Water Quality Control Board, concurred with the selected remedy presented in the Record of Decision, which was finalized in January 2007.

IR Site 14 Remedial Action Area

Investigation Results

Results of investigations at IR Site 14 verified that current groundwater conditions at the Site pose a potential risk to human health from volatile organic compounds (VOCs) via inhalation of indoor air. Specifically, a VC groundwater plume with concentrations exceeding the remediation goal (RG) of 15 µg/L was defined at the Site. The VC plume is approximately 500 ft long and 450 ft wide. Contamination is limited to the upper portion of the saturated zone in the depth interval from approximately 5 to 15 ft bgs. Since the RI was performed, the plume has expanded up to 50 ft farther in its northwestern and northern lobes, which is in the general direction of groundwater flow.

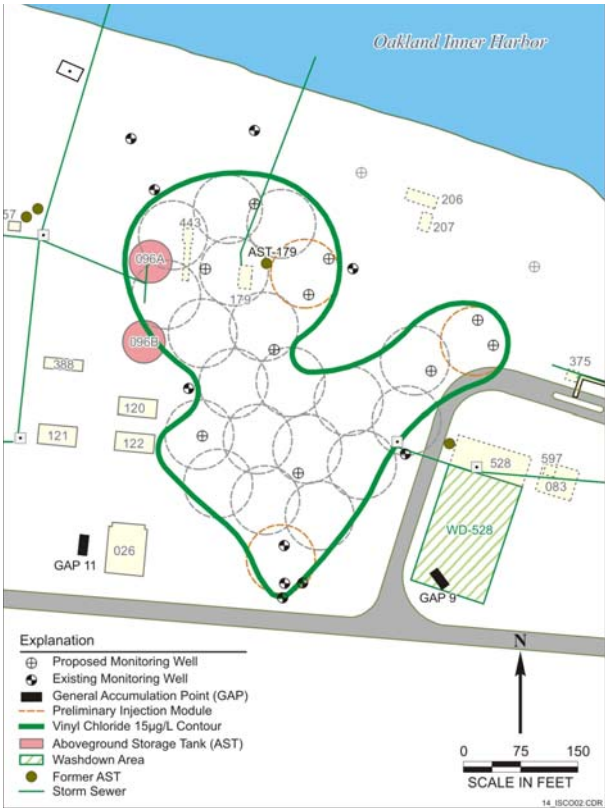
Cleanup Action

The selected remedy consists of full-scale ISCO to rapidly break down source contaminants and long-term institutional controls to limit human exposure. The objective of the remedial action is to prevent exposure to VOCs in indoor air, which may volatilize from groundwater. The target treatment area for full-scale ISCO application is the entire VC plume, which is defined as the area of groundwater having a VC concentration greater than 15 µg/L.

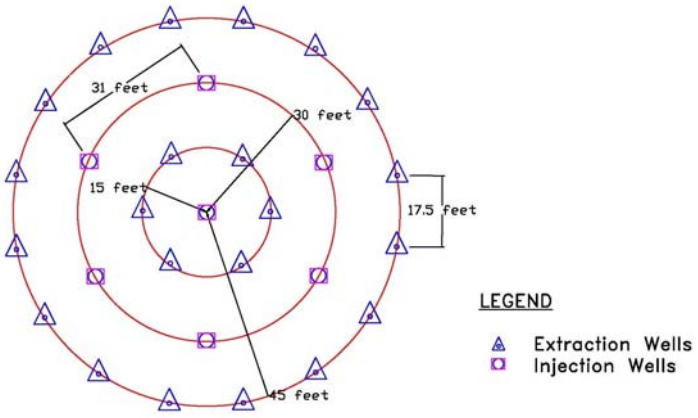
Groundwater remediation using ISCO involves injecting an oxidant directly into the target treatment area. The oxidant chemically reacts with the contaminants, breaking down large organic molecules into smaller constituent compounds and ultimately, if complete oxidation occurs, into carbon dioxide, water, and, in the case of chlorinated hydrocarbon compounds, inorganic chloride. Sodium persulfate was selected as the oxidant for the full-scale ISCO remedy at IR Site 14 because it is not toxic at low concentrations, and is more persistent in the subsurface than other oxidants.

The sodium persulfate will be mixed into groundwater that is extracted from the subsurface from multiple wells. Oxidation of the VC will begin immediately upon contact with the persulfate. This amended groundwater will be reinjected into the subsurface through a series of injection wells. It will react with VC remaining in the subsurface present either on soil or in groundwater.

It is anticipated that three applications of persulfate will be performed. These include a preliminary application that is intended to test the effectiveness of the recirculation system, aide in refining the recirculation approach, and target the portions of the site that contain the highest concentrations of VC in groundwater; a site-wide application that will apply the oxidant over the entire treatment area; and a polishing application, which is designed to treat any portions of the site that are found to contain VC contamination above the RG after the first two applications. If the RG does not appear to have been achieved following these three successive events, then the appropriateness of performing additional injections or transitioning to monitored natural attenuation will be evaluated.



Site-Wide ISCO Application at IR Site 14



Recirculation Module Layout

Groundwater sampling will be conducted prior to the first ISCO injection event and following each of the three applications. Samples will be collected from all monitoring wells at the Site and will be analyzed for parameters that will be used to evaluate the progress of treatment. VC concentrations will be compared to the RG to determine whether or not the plume still poses a health risk.

Traffic Impacts

Based on the city of Alameda's traffic data, it is estimated that the remedial actions will not have an impact on the existing traffic conditions in the area. The most significant increase in traffic would occur during monitoring well installation, ISCO injections, and groundwater sampling events, but it is not anticipated that the increase will affect activities in the area.

Project Schedule

The anticipated time to complete the field activities associated with the remedial action at IR Site 14 is approximately 16 months (from September 2008 through December 2009). The first ISCO application is expected to begin in September 2008.

INSIDE…

Remedial Action Update for Installation Restoration Program Site 14 Firefighter Training Area

FOR MORE INFORMATION

Documents that detail activities associated with this remedial action, including the remedial design and remedial action workplan, are available at the following locations:

Alameda Main Public Library
(Historic Alameda High School)
2220-A Central Avenue
Alameda, California

Alameda Point, Former NAS Alameda
950 West Mall Square, Suite 240
Alameda, California

This fact sheet is prepared in accordance with the NCP, 40 CFR 300.435(c)(3).

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