2.0 BACKGROUND

General background information for the SWMU 62, New Housing Fuel Leak site is provided in this section. Additional information for the SWMU 62, New Housing Fuel Leak site is provided in the focused feasibility study (FFS) report (URS 2005a).

2.1 SITE HISTORY

Military presence on Adak began in 1942 with its occupation as a staging area to mount a counter-offensive to dislodge the Japanese from Attu and Kiska Islands. The Navy presence at Adak was officially recognized by Public Land Order 1949, dated August 19, 1959, which withdrew the northern portion of Adak Island, comprising approximately 76,800 acres, for use by the Navy for military purposes. The Navy also used the base to conduct a variety of Cold War-era military activities. Naval Air Facility Adak was on the list of Department of Defense installations recommended for closure in 1995, and that recommendation became final when Congress did not disapprove the list. The active Navy mission ceased, and the base operationally closed on March 31, 1997.

From April 1997 through September 2000, critical facilities such as the power plant, airfield, and environmental cleanup systems were operated by the Navy through a caretaker contractor. In June 1998, the Navy entered into a lease with the Adak Reuse Corporation (ARC), the designated local redevelopment authority that authorized ARC to use or sublease property in the developed core of the military reservation for commercial reuse purposes. In October 2000, ARC commenced operation of community facilities such as the airfield and utility systems in support of reuse activities under the authority of this lease.

In September 2000, the federal government entered into a land transfer agreement with TAC, a Native corporation, as documented in the Agreement Concerning the Conveyance of Property at the Adak Naval Complex, Adak, Alaska. This agreement set forth the terms and conditions for the conveyance of approximately 47,000 acres of the former Adak Naval Complex property to TAC. The actual conveyance or transfer of property occurred on March 17, 2004. The land transfer included all of the downtown area, housing units, and industrial facilities. Excluded from this transfer were any offshore islands, islets, rocks, reefs, and spires; those fixtures and equipment owned by the United States and associated with the airfield; those improvements owned by the United States and managed by the Federal Aviation Administration (FAA); and those improvements owned by the United States and managed by the Fish and Wildlife Service. TAC transferred the portion of the former Naval Air Facility known as Adak Airport and associated facilities and aviation easements, not including FAA navigation aids or weather
reporting equipment, to the State of Alaska. As a result of the land transfer agreement, TAC owns the SWMU 62, New Housing Fuel Leak site.

The transferred land has institutional controls currently in place as specified in the Interim Conveyance document. The institutional controls that have been implemented at the former Adak Naval Complex through the final institutional control management plan (ICMP) (U.S. Navy 2004) include:

1. Land use restrictions, primarily limited to areas designated for commercial or industrial use
2. Notification to the Navy of intrusive soil excavation activities deeper than 2 feet
3. Groundwater restrictions that prohibit use of the downtown aquifer as a drinking water resource

These institutional controls are discussed in more detail in Section 2.7.

2.1.1 Site Regulatory History

Investigation and cleanup of petroleum-contaminated sites at the former Adak Naval Complex have been ongoing since 1986. Adak was initially proposed for placement on the National Priorities List (NPL) in 1992 and was officially listed in 1994. The Navy, as lead agency, entered into a three-party Federal Facilities Agreement (FFA) with the U.S. Environmental Protection Agency (EPA) and Alaska DEC as well as a two-party State-Adak Environmental Restoration Agreement (SAERA) with the Alaska DEC to facilitate investigation and cleanup activities.

In 1993, the Navy, EPA, and Alaska DEC signed the FFA, which incorporates the EPA’s cleanup process under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). The CERCLA exclusion of petroleum as a hazardous substance required that cleanup of petroleum-related chemicals would follow State of Alaska regulations. Therefore, the FFA stated that petroleum-contaminated sites, such as those containing underground storage tanks (USTs) and leaking underground fuel lines, would be evaluated under a separate two-party agreement between the Navy and the State of Alaska. This agreement, the SAERA, was signed in April 1994.

The former Adak Naval Complex was divided into two operable units (OU), OU A and OU B, for investigation and cleanup activities. OU A includes CERCLA and petroleum sites, and OU B includes ordnance explosive sites. A total of 180 sites were evaluated within OU A. The
FFA listed 84 CERCLA sites, and the SAERA listed 128 petroleum sites. The number of CERCLA sites plus the number of petroleum sites is greater than 180, because some sites that were originally listed as CERCLA sites were evaluated under SAERA and some sites were evaluated under both CERCLA and SAERA. In May 1997, the Navy and Alaska DEC agreed to integrate the cleanup decision process for petroleum sites with the cleanup decision process being conducted for hazardous substance release sites under CERCLA. As a result, the Record of Decision (ROD) for OU A was prepared for both the petroleum-contaminated sites and the hazardous-substance-release sites. The ROD was signed by the Navy, the EPA, and the Alaska DEC in 2000.

The OU A ROD selected final or interim remedies for each of the 128 petroleum-contaminated sites identified on Adak Island. The interim remedy, free-product recovery, was selected for 14 sites that contained measurable quantities of free-phase petroleum product. In addition, the OU A ROD specified that these 14 sites would require future remedy selection pursuant to the two-party SAERA. To clarify regulatory authority, the OU A ROD was amended in 2003 to remove these petroleum sites and 48 others with further action from CERCLA authority. Therefore, final remedies for the 14 petroleum-contaminated sites will be selected in accordance with Alaska State regulation 18 AAC 75.325 through AAC 75.390 which provides the regulatory procedures and requirements for petroleum cleanup decisions.

This DD addresses one of the 14 free-product recovery sites. The 10 sites where the remaining petroleum-related chemicals pose no risk to human health or the environment above target health goals, provided that institutional controls remain in effect, were previously addressed in a separate DD (U.S. Navy and ADEC 2005b). This site is one of the three sites where petroleum-related chemicals pose a potential risk to human health or the environment above target health goals. The other two sites (the Naval Mobile Construction Battalion [NMCB] Building T-1416 Expanded Area and the South of Runway 18-36 Area and will be addressed in separate DDs. The NMCB Building T-1416 Expanded Area DD will be executed in 2006. The South of Runway 18-36 Area DD will be issued later in 2006. The SWMU 17 Power Plant No. 3 site was originally included as one of the sites where petroleum-related chemicals pose a potential risk to human health or the environment above target health goals, because the initial draft FFS prepared in August 2004 (using information current through November 2002) concluded that contaminants in sediment in Yakutat Creek posed a potential unacceptable risk. Because risks were only slightly above target health goals, the data used to evaluate the ecological risk were more than 6 years old, and samples were collected before the upgradient contaminant sources were remediated, the Navy performed additional sediment sampling in Yakutat Creek in June 2005. Risks were recalculated using the additional data. As a result, the revised risk assessment concluded that contaminants in Yakutat Creek are unlikely to pose a significant risk. The SWMU 17 Power Plant No. 3 site DD will be issued in a separate DD based on these conclusions later in 2006.
2.1.2 Site Release History

During 1988 and 1989, the Navy conducted inventory record reviews and visual site inspections in housing units and crawl spaces after occupants reported hydrocarbon-like odors. Five leaks in the heating fuel piping were discovered and repaired. The heating fuel distribution system was subsequently pressure-tested to assess the extent of potential releases. Sixteen additional piping leaks were detected and repaired as a result of pressure testing; 13 in Sandy Cove Housing, 2 in Eagle Bay Housing, and 1 in Turnkey Housing (GeoEngineers 1990). Figure 2-1 shows the 14 housing units where the 21 piping leaks were identified during inspections and pressure testing. The volume of fuel released to the environment from the heating fuel distribution system at the SWMU 62, New Housing Fuel Leak site has not been determined. Based on these findings, further investigation of the identified releases was undertaken.

Fuel-oil burning furnaces and water heaters located in each housing unit provide heating for living space and water, respectively. Jet petroleum (JP)-5 was formerly distributed from large above-ground storage tanks (ASTs) to individual housing units by underground iron piping coated with polyvinyl chloride (PVC). Figure 2-2 shows the location of the major fuel distribution pipelines in the vicinity of the SWMU 62, New Housing Fuel Leak site. These pipelines include an aviation gasoline (avgas) distribution system formerly used to provide fuel to truck fill stands along the airfield, as well as the primary JP-5 pipelines and associated ASTs that stored fuel for distribution to the individual housing units. Fuel for the SWMU 62, New Housing Fuel Leak site was stored as follows (EMCON 1994):

- For Sandy Cove Housing, two 30,000-gallon ASTs constructed on raised earthen pads at the junction of Raven Street and Bayshore Highway
- For Eagle Bay Housing, two 12,000-gallon ASTs constructed on raised earthen pads located along Main Road approximately 400 feet southwest of the High School
- For Turnkey Housing, two 37,000-gallon ASTs constructed on raised earthen pads located north of Kagalaska Drive northwest of Turnkey Housing

The piping that distributed fuel to the individual housing units consisted of 2-inch-diameter main trunk-line piping connected to 0.75- or 1-inch-diameter lateral lines to the duplexes, triplexes and four-plexes. A 0.5-inch-diameter copper pipe supplied fuel from the lateral lines to individual units. These smaller diameter pipelines are not shown on Figure 2-2. The fuel distribution system was designed to provide fuel to the housing units under gravity flow. However, booster pumps reportedly were installed to increase fuel flow to housing units near the end of the distribution system (GeoEngineers 1990).
2.2 PHYSICAL CHARACTERISTICS

Adak Island experiences a polar maritime climate characterized by persistently overcast skies, high winds, frequent and often violent storms, and a narrow range of temperature fluctuation throughout the year. The average total annual precipitation for Adak Island is about 60 inches, most of which falls as rain in the lower elevations. Average monthly precipitation varies from a low of about 3 inches during June and July to a high of 7 to 8 inches during November and December. Snowfall averages over 100 inches a year at sea level.

The SWMU 62, New Housing Fuel Leak site is located in the downtown area of Adak Island, east of Runway 18-36, north of Public Works Road, west of Bayshore Highway, and south of Kagalaska Drive (Figure 2-2). The SWMU 62, New Housing Fuel Leak site consists primarily of personnel housing units and includes Sandy Cove Housing (88 units), Eagle Bay Housing (33 units), and Turnkey Housing (15 units). Each unit contains between two to four individual townhouses. Turnkey and Eagle Bay Housing are no longer occupied. These housing areas occupy an area of approximately 100 acres that includes open areas between the separate housing complexes. Two school buildings, their associated play yards, and miscellaneous public facilities are adjacent to the SWMU 62, New Housing Fuel Leak site, but are not included as part of the site itself.

Ground surface surrounding the housing units at SWMU 62, New Housing Fuel Leak site consists of grass-covered residential lawns, paved streets, sidewalks, and driveways. The general topography of the site is flat to slightly undulating, with surface drainage predominantly collected and discharged to surface water bodies by ditches and the storm sewer system. Ground surface elevations in this area are generally about 24 to 30 feet above mean lower low water (MLLW). The regional topography in the vicinity of the site typically slopes gently downward toward the west and southwest. However, the topography in the northeast portion of the Sandy Cove Housing and Turnkey Housing areas slopes downward toward the northeast.

Prior to the military use of Adak Island during World War II, the western portion of the downtown area was occupied by a back-beach lagoon. The lagoon was separated from Kuluk Bay by a series of sand dunes located in the eastern portion of the downtown area, a portion of which is currently occupied by the SWMU 62, New Housing Fuel Leak site. Aerial photos of Adak Island taken prior to the arrival of military forces indicate the presence of small lakes or ponds within low-lying areas between the dunes. The lagoon was filled with sand and rock by the military forces to construct the airfield. The site occupied by the SWMU 62, New Housing Fuel Leak site was the source of a substantial portion of the fill material placed into the lagoon. The low-lying areas containing small lakes or ponds within the boundaries of the SWMU 62, New Housing Fuel Leak site were also filled as military construction progressed.
Groundwater is found as both a perched (laterally discontinuous) and a regional aquifer beneath the SWMU 62, New Housing Fuel Leak site. Perched groundwater occurs approximately 8 to 12 feet below ground surface (bgs) beneath Sandy Cove and Turnkey Housing. This perched groundwater collects on top of the lower permeability, organic-rich silt layers believed to represent bottom sediments deposited within small lakes or ponds formerly located at the site. Boring logs from investigations conducted in the area indicate that perched water-bearing zones are less prevalent beneath Eagle Bay Housing (URSG 1999a). Below the perched water zone, the regional aquifer is encountered between approximately 18 feet bgs in the vicinity of Unit 139 (northeast of the Elementary School) to about 30 feet bgs west of Eagle Bay Housing.

Groundwater within the regional aquifer beneath the site appears to flow towards three downgradient surface water bodies; Kuluk Bay, the East Canal of the Airport Ditch system, and Sweeper Cove (see Figure 1-2). The approximate location of the groundwater divide is shown on Figure 2-3. The position of this groundwater divide was approximated based on depth to groundwater data collected during product recovery operations at the site (URSG 1999a). West of this groundwater divide, groundwater generally flows to the west and southwest, toward the East Canal. In the vicinity of MW-134-10, located in the southeast extension of Sandy Cove Housing, groundwater flow becomes more southern toward Sweeper Cove. Northeast of the groundwater divide, including some or all of Turnkey Housing, groundwater appears to flow east-northeast toward Kuluk Bay. A more detailed description of the hydrogeology at the site is provided in the FFS (URS 2005).

Surface water in the vicinity of the SWMU 62, New Housing Fuel Leak site includes Kuluk Bay, Sweeper Cove (an extension of Kuluk Bay), and the East Canal of the airport ditch system (see Figure 1-2). Kuluk Bay is a marine environment located approximately 1,200 feet east of the housing units in Turnkey Housing and the north-eastern portion of Sandy Cove Housing. It is the closest downgradient surface water to these housing units. Sweeper Cove is a large saltwater inlet off Kuluk Bay. It is located approximately 1,700 feet south of the southern-most portion of Sandy Cove Housing and Eagle Bay Housing. The East Canal of the airport ditch system is the closest surface water body to the western portions of the SWMU 62, New Housing Fuel Leak site. It is located about 800 feet west of the western-most Eagle Bay Housing units and about 1,700 feet west of the western-most Sandy Cove Housing units. The East Canal is an engineered diversionary structure designed to collect surface runoff from the airfield and surrounding area, and convey it from the airport runway area. It parallels the north-south runway (Runway 18-36) and consists of a series of interconnected ditches. Water in the East Canal flows through the Crossover Canal (which is totally contained in underground culverts) into the West Canal, where it is transferred through turbine pumps into South Sweeper Creek. This renders the airport ditch system (including the East Canal) an isolated, intrastate, and non-navigable waterway. Therefore East Canal is not considered an ecological endpoint, as is South Sweeper Creek (and Kuluk Bay and Sweeper Cove). South Sweeper Creek, located approximately 3,800 feet from the Eagle Bay
Housing Area, is the closest downgradient water body along this transport pathway that is considered navigable waters of the United States.

The stormwater conveyances in SWMU 62, New Housing Fuel Leak site consist primarily of ditches, culverts, catchbasin inlets, manholes, and outlets. In general, stormwater west of Main Road flows via ditches or, after percolating into soil, with groundwater toward the East Canal of the airport ditch system and ultimately South Sweeper Creek. Stormwater in Turnkey and Sandy Cove Housing that is captured by stormdrain systems is discharged from three outlets into Kuluk Bay. The outlets from the stormdrain systems in Turnkey and Sandy Cove Housing are located along the Kuluk Bay shoreline between NORPAC Hill and Monument Hill. Stormwater collected by the stormdrain system in Eagle Bay Housing discharges into Sweeper Cove (Ecology and Environment 1995).

2.3 DESCRIPTION OF CONTAMINANTS AND MEDIA IMPACTED

Decisions documented in this DD are based upon information gathered from various environmental field investigations performed by the Navy at the site between 1988 and 2001, as indicated in Table 2-1. These investigations included site investigations, a release investigation, and a corrective action evaluation to evaluate subsurface conditions and investigate potential sources of contamination. Results of these investigations indicated that petroleum-related chemicals are confirmed in soil and groundwater samples collected from numerous locations at the SWMU 62, New Housing Fuel Leak site. In addition, a petroleum seep into the East Canal of the airport ditch system was identified west of the Eagle Bay Housing area. The concentrations of petroleum hydrocarbons in both soil and groundwater exceeded the applicable Alaska DEC cleanup levels. However, Alaska regulations have not established numerical cleanup criteria for individual petroleum hydrocarbons in surface water and sediment.

2.4 CLEANUP ACTIVITIES PERFORMED TO DATE

Cleanup activities that have been implemented at the SWMU 62, New Housing Fuel Leak site include:

- Contaminated soil removal and installation of vapor barriers to seal housing unit foundations
- Free-product recovery
- Natural attenuation monitoring
A summary of the cleanup activities performed at the site is provided in Table 2-2. In addition, results of the free-product recovery activities performed at the site are provided in Table 2-3. Additional information on the cleanup activities performed at the site is provided in the FFS report (URS 2005a).

**Contaminated Soil Removal and Installation of Vapor Barriers to Seal Housing Unit Foundations**

During 1989, the Navy conducted soil removal actions from under selected housing units where heating fuel was released through piping leaks. Surface soil sampling activities associated with these removal actions consisted primarily of field screening soils samples collected from the crawl spaces beneath housing units where pipelines had been repaired. Field screening consisted of soil vapor headspace and sheen testing (GeoEngineers 1990). These activities resulted in the removal of approximately 102 cubic yards (cy) of soil (URSG 1999a). The excavated material was replaced with clean sand, and vapor barriers sealed to the housing unit foundations were installed. These removal actions eliminated surface exposure to released petroleum hydrocarbons in the housing area.

**Free-Product Recovery**

As a result of the release investigations conducted by the Navy, a free-product recovery trench and 16 free-product recovery wells were installed during 1989. The recovery system was extensively modified from dual-stage recovery system to a lower maintenance total-fluids recovery system during October 1996. The recovery system operated until May 2000 when it was determined to have met the negotiated product recovery endpoints in the OU A ROD for systems that are dependent on water table depression and was shut down. As summarized in Table 2-3, this system recovered an estimated 154,000 gallons of free product from multiple plumes during its 11-year operational life (URSG 1999b).

**Natural Attenuation Monitoring**

To evaluate the potential for natural processes to attenuate petroleum-related chemicals in the SWMU 62, New Housing Fuel Leak site, natural attenuation monitoring was conducted in the 11 monitoring wells at the site that were sampled during 2002 as part of the annual groundwater monitoring activities. Analyses were performed on the groundwater samples for natural attenuation indicator parameters. These natural attenuation indicator parameters consist of dissolved oxygen (DO), nitrate/nitrite, ferrous iron, sulfate/sulfide, dissolved methane, alkalinity, chloride, and oxidation-reduction potential (ORP). Typically comparisons are made relative to upgradient locations versus source area and down-gradient locations. Because no wells are located at the site such that groundwater samples represent upgradient conditions, comparisons were made relative to downgradient wells where petroleum-related chemicals have not been
reported in groundwater samples. Taken as a body of evidence, the natural attenuation parameters measured at the SWMU 62, New Housing Fuel Leak site indicate both aerobic and anaerobic conditions were present at the site on the occasion of the 2002 sampling event. Aerobic conditions predominate in the areas beyond the limits of the dissolved petroleum plumes, while anaerobic conditions predominate within the dissolved petroleum plumes. These conditions indicate that biologic degradation of petroleum hydrocarbons is occurring within groundwater beneath the SWMU 62, New Housing Fuel Leak site.

In addition to the natural attenuation monitoring performed at the SWMU 62, New Housing Fuel Leak site, natural attenuation monitoring was performed at 10 sites on Adak in May and June of 2003 (USGS 2005). The site closest to the SWMU 62, New Housing Fuel Leak site that was monitored during this investigation was the Former Power Plant Building T-1451. The report concluded that the natural attenuation parameter data that have been collected to date demonstrate that biodegradation plays a significant role in natural attenuation in the downtown area of Adak Island.

2.5 LAND USE

Historical land use at the site now occupied by the SWMU 62, New Housing Fuel Leak site is based on a review of historical aerial photographs. Specific land uses at this site are uncertain. Aerial photographs taken from 1943 to 1946 indicate that the area was heavily used during this time period. Land uses included storage, housing, offices, and other activities, including commercial and industrial. As time passed, the intensity of land use decreased, as is evidenced in aerial photographs dated from 1946 to 1973.

Future land use at the SWMU 62, New Housing Fuel Leak site is designated to remain residential or future residential by the Adak Reuse Corporation (Figure 2-4). The uses of this category are oriented toward serving the residential needs of the community. Proposed uses for land surrounding the SWMU 62, New Housing Fuel Leak site are designated for either commercial, future residential, or public facilities reuse (ARC 2000).

2.6 GROUNDWATER USE

According to Alaska regulations (18 AAC 65.350), groundwater is considered to be a drinking water source unless it can be demonstrated that the groundwater is not currently being used as a drinking water source and groundwater is not a reasonably expected potential future source of drinking water. Although groundwater is not being used as a drinking water source on Adak and institutional controls are in place preventing the use of the downtown aquifer, groundwater is
still considered to be a potential future source of drinking water at the SWMU 62, New Housing Fuel Leak site because potable water could be obtained from a well installed at the site.

2.7 INSTITUTIONAL CONTROLS

Institutional controls are measures to prevent or limit exposure to hazardous substances left in place at a site, or assure effectiveness of the chosen remedy until cleanup levels are achieved. Institutional controls are placed on property where contaminants remain at levels above regulatory requirements for cleanup, and where exposure pathways, if they exist, may cause harm to human health and the environment. For the SWMU 62, New Housing Fuel Leak site addressed in this DD, the institutional controls specified in the Interim Conveyance document include excavation restrictions and groundwater restrictions. Groundwater restrictions prohibit use of the downtown aquifer as a drinking water resource. The excavation restrictions are discussed in more detail below.

There are two types of soil excavation restrictions implemented at the former Adak Naval Complex through the Interim Land Conveyance document: (1) excavation notifications and (2) absolute excavation prohibitions. Excavation notification is required for proposed excavations below 2 feet at each of the institutional controls sites, including the SWMU 62, New Housing Fuel Leak site.

At some sites, such as former landfills, or where the remedy in place is a protective cover, excavation by non-Navy personnel is absolutely prohibited. Absolute excavation prohibitions are not applicable to the SWMU 62, New Housing Fuel Leak site. Excavation for the purpose of digging a domestic use well in the downtown area is also prohibited. Excavation prohibitions have been implemented through the Interim Conveyance document and the Final ICMP (U.S. Navy 2004).
### Table 2-1
**Summary of Environmental Field Investigations, SWMU 62, New Housing Fuel Leak**

<table>
<thead>
<tr>
<th>Date</th>
<th>Investigation Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988-1989</td>
<td>Release investigation to identify and repair petroleum leaks in the fuel distribution system at the site, evaluate the extent of petroleum fuel released, and initiate product recovery (GeoEngineers 1990)</td>
</tr>
<tr>
<td>1993</td>
<td>Corrective action evaluation of the existing product recovery system with additional site characterization to better define the extent of free product released at the site (EMCON 1994)</td>
</tr>
<tr>
<td>1993</td>
<td>Investigation to evaluate possible petroleum releases associated with the Main Road pipeline (URS 1994)</td>
</tr>
<tr>
<td>1999</td>
<td>Preparation of a site summary report to present all site data collected to that point (URSG 1999a)</td>
</tr>
<tr>
<td>1999</td>
<td>Free-product recovery closure report to demonstrate that the existing free-product recovery system has recovered product to its practicable endpoint (URSG 1999b)</td>
</tr>
<tr>
<td>2000</td>
<td>Pilot study to evaluate the feasibility of low-maintenance, self-sufficient product recovery technologies that do not require external power (Hart Crowser 2000)</td>
</tr>
<tr>
<td>2001</td>
<td>Focused feasibility study to identify remaining areas of free product and groundwater contamination and evaluate technologies capable of reducing concentrations of petroleum-related chemicals in soil and groundwater at the site (Hart Crowser 2001b)</td>
</tr>
<tr>
<td>2001</td>
<td>Groundwater sampling and analyses investigation to address data gaps identified during the focused feasibility study (Hart Crowser 2001a)</td>
</tr>
</tbody>
</table>
Table 2-2
Summary of Site Cleanup Activities, SWMU 62, New Housing Fuel Leak

<table>
<thead>
<tr>
<th>Date</th>
<th>Cleanup Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>Removal of approximately 102 cubic yards of contaminated soil from under housing units where heating fuel leaked and installation of vapor barriers to seal housing unit foundations</td>
</tr>
<tr>
<td>1989-2000</td>
<td>Free-product recovery (total of approximately 154,000 gallons recovered)</td>
</tr>
<tr>
<td>2002</td>
<td>Natural attenuation monitoring</td>
</tr>
</tbody>
</table>

*aIntermittent operation*
Table 2-3
Free-Product Recovery Data, SWMU 62, New Housing Fuel Leak

<table>
<thead>
<tr>
<th>Year</th>
<th>Gallons Recovered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>70,000</td>
</tr>
<tr>
<td>1990</td>
<td>12,000</td>
</tr>
<tr>
<td>1991</td>
<td>6,500</td>
</tr>
<tr>
<td>1992</td>
<td>3,000</td>
</tr>
<tr>
<td>1993</td>
<td>NA</td>
</tr>
<tr>
<td>1994</td>
<td>26,000</td>
</tr>
<tr>
<td>1995</td>
<td>11,000</td>
</tr>
<tr>
<td>1996</td>
<td>13,400</td>
</tr>
<tr>
<td>1997</td>
<td>9,500</td>
</tr>
<tr>
<td>1998</td>
<td>1,600</td>
</tr>
<tr>
<td>1999</td>
<td>500</td>
</tr>
<tr>
<td>2000</td>
<td>NA</td>
</tr>
<tr>
<td>Total</td>
<td>154,000</td>
</tr>
</tbody>
</table>

NA - not available