

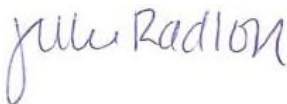
**2005 COMPREHENSIVE INTERIM ACTION
DOCUMENTATION REPORT**

**CHEVRON ENVIRONMENTAL
MANAGEMENT COMPANY**

**West Nome Tank Farm
Nome, Alaska**

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Project No. 08CH.20990**

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EXECUTIVE SUMMARY

This *2005 Comprehensive Interim Action Documentation Report* describes the continuation of interim action measures conducted in the vicinity of the West Nome Tank Farm (WNTF), Nome, Alaska during the 2005 construction season. It also documents the continued measures conducted by Chevron to address petroleum-impacted soil, light non-aqueous phase liquids (LNAPL), and groundwater encountered during the installation of a water line in the Port Road utility corridor right-of-way performed by the City of Nome Joint Utility System (NJUS).

The WNTF was used as a petroleum, oil, and lubricants storage and distribution facility from the late 1940s until the late 1980s. In 1991 and 1992, all of the on-site storage tanks were taken out of service and demolished. Previous environmental investigations indicate past releases of petroleum hydrocarbons to soil and groundwater have occurred. The WNTF property is currently vacant and not used for any commercial, industrial, or residential uses.

The interim action field activities performed between May 29 and August 8, 2005, are summarized below:

Hydrocarbon-impacted Soil Characterization and Handling

In June 2004, soil sampling was conducted prior to the start of the utility corridor construction to delineate which soils met Alaska Department of Environmental Conservation (ADEC) specified cleanup levels and to determine the volume of soils that may require some form of mitigation management. As determined in June 2004, soils in areas along the utility corridor right-of-way that exceeded the site cleanup levels were identified for segregation into the following three categories and managed accordingly:

- On-site beneficial re-use – placed back in the excavation as backfill material (<5,000 milligrams per kilogram [mg/kg] diesel range organics [DRO]);
- Off-site beneficial re-use – transported to the City of Nome's Landfill for use as daily cover (>5,000 mg/kg and <12,500 mg/kg; not to exceed an average of 7,000 mg/kg DRO); or
- On-site temporary stockpiles – stockpiled on-site for long-term storage, treatment if necessary, and beneficial re-use (>12,500 mg/kg DRO).

Hydrocarbon-Impacted Groundwater Handling

NJUS began installation of the new water line in the utility corridor right-of-way along Port Road on May 29, 2005. The utility corridor crosses approximately perpendicular to groundwater flow from the WNTF. The new water line was located approximately five feet east of the sewer line installed in 2004. The recovery and treatment of groundwater from the utility corridor excavation was less of an issue in 2005 because the water line was installed at a shallower depth (approximately 10 feet below ground surface [bgs]) than the sewer line (approximately 13 feet bgs).

Groundwater recovered from the excavation adjacent to the WNTF site contained dissolved concentrations of DRO and potential LNAPL. However, no LNAPL was encountered during the 2005 installation of the NJUS water line. In keeping with the approved *Comprehensive Interim Action Plan* (CIAP) (SECOR, 2004), groundwater was pumped through a temporary oil/water separator prior to discharge to the City of Nome's publicly owned treatment works (POTW) ponds.

The primary dissolved contaminant of concern with respect to discharge to Nome's POTW ponds was DRO. However, groundwater was also analyzed for volatile organic compounds (VOCs) including benzene, toluene, ethylbenzene, and total xylenes (BTEX), semi-volatile organic compounds (SVOCs), including polynuclear aromatic hydrocarbons (PAHs), and gasoline range organics (GRO) prior to discharge to the POTW ponds. POTW effluent samples were collected and analyzed for BTEX, GRO, DRO, VOCs, SVOCs and PAHs. Effluent from the POTW did not exceed allowable permit discharge limits.

Excavation dewatering was performed as needed during the June and July 2005 construction period. At the conclusion of the dewatering activities, the influent and effluent high density polyethylene piping was flushed, cut into 20-foot segments and decontaminated using high-pressure water. The oil/water separator was similarly decommissioned.

LNAPL Capture

Interim actions implemented during the NJUS project were designed to prevent off-site migration of LNAPL at the eastern property boundary of the site. The goals of the CIAP for LNAPL capture, which included the installation of an LNAPL barrier, interceptor trench, and LNAPL collection sump, were met and completed during the 2004 construction season. LNAPL was not encountered during the installation of the water line in 2005. An interceptor trench test was performed in September 2005 and the results are presented in the *Report on Results of Interceptor Trench Test* (SECOR, 2006b).

Conclusion

The interim actions specified in the CIAP were successfully implemented during the 2005 NJUS construction season. The interim actions consisted of: excavation dewatering and groundwater management, soil screening and management, and continued use and maintenance of the oil/water separator. At the completion of all construction activities, the influent and effluent HPDE lines were flushed, cut into segments, and decontaminated, as was the oil/water separator. Following the consolidation of the soil stockpiles, the temporary stockpile area was decommissioned. Verification sampling of the temporary soil stockpile footprint indicated soils had not been contaminated.

1.0 INTRODUCTION

SECOR International Incorporated (SECOR), on behalf of Chevron Environmental Management Company, has prepared this *2005 Comprehensive Interim Action Documentation Report* to document the continuation of construction and interim actions at the West Nome Tank Farm (WNTF) during the 2005 construction season. The report also summarizes 2005 activities conducted on behalf of Chevron in support of the City of Nome Joint Utility System (NJUS) utility corridor installation.

1.1 Purpose

This report was prepared in accordance with the July 13, 2004, memorandum of understanding (MOU) between Chevron, Crowley Marine Services, Inc. (Crowley), the United States Air Force (USAF), NJUS, and the Alaska Department of Environmental Conservation (ADEC). The MOU was created to establish a timeline for site remediation. NJUS utility upgrades near the WNTF, including management of petroleum hydrocarbon impacted soil and groundwater was conducted in accordance with the MOU.

The NJUS began construction of new water and sewer pipelines within a utility corridor along Port Road during the summer of 2004. Port Road is located east of the WNTF, as shown on Figure 1. The utility corridor crosses approximately perpendicular to the groundwater flow from the WNTF (Figure 2). Because of the opportunity presented by the construction of new water and sewer lines in the utility corridor by NJUS, an interim action plan was generated. Planned activities were outlined in the SECOR document, *Comprehensive Interim Action Plan* (CIAP) (SECOR, 2004). Activities performed during the 2004 construction season were documented in the *Comprehensive Interim Action Documentation Report* (CIADR) (SECOR, 2005) dated September 6, 2005 and submitted to ADEC December 12, 2005.

This report describes the continuation of interim action activities conducted in 2005 to manage contaminated soil and groundwater encountered during the NJUS utility corridor installation. The field work was conducted between May 29 and August 8, 2005, and consisted of the following activities:

- Soil and groundwater discharge sampling during utility corridor construction work;
- Excavated soil handling (re-use as backfill, stockpile on-site at the WNTF, or dispose of at the City of Nome's Landfill);
- Consolidation of previously constructed on-site soil stockpiles;
- Closure of a temporary on-site soil stockpile; and
- Excavation dewatering, groundwater treatment, and discharge to the City of Nome publicly-owned treatment works (POTW) ponds.

1.2 Report Organization

In accordance with the CIAP, this report includes:

- A detailed description of all 2005 interim action activities, including photographic documentation;
- Groundwater discharge and soil sample results;
- Volumes of contaminated soil excavated as part of the utility upgrade project and details regarding re-use, potential treatment, and/or stockpiling of the soil; and
- Data relating to the collection and treatment of contaminated groundwater removed from the water line excavation and treated through an oil/water separator and disposed of in the City of Nome's POTW ponds.

The results of 2005 groundwater monitoring and sampling events will be presented under separate cover. An operations and maintenance plan for the interceptor trench installed along Port Road and downgradient of the WNTF site was included in the August 2004 CIAP.

2.0 BACKGROUND

The United States Army Air Force, predecessor of the USAF, began construction of fuel storage tanks at the WNTF in 1947. The USAF, as the owner/operator of WNTF, supported Marks Air Force Base until the base's deactivation in 1955. Standard Oil Company of California (a predecessor of Chevron) leased the WNTF from the USAF from 1957 to 1985. After 1985, the site was leased from the USAF by Crowley. The WNTF has operated continuously as a bulk fuel terminal for the storage of diesel, aviation gasoline, jet fuel, and heating fuel. In 1991, the fuel storage tanks were taken out of service and eventually demolished by the USAF 611th Civil Engineering Squadron, Elmendorf AFB, Alaska. The WNTF site is still currently owned by the USAF.

The storage and distribution of petroleum, oil, and lubricants for land, aviation and marine activities at the WNTF has apparently resulted in hydrocarbon releases to subsurface soils and shallow groundwater. Several environmental investigations have been conducted at the WNTF site between 1983 and 2003. Most assessments were conducted as a result of property pre- and post-lease transfers. The results have shown petroleum hydrocarbon (primarily diesel fuel) impacts to local soils, groundwater, surface water, and sediments.

2.1 Site Location and Description

The City of Nome is located on Norton Sound on the south side of the Seward Peninsula, approximately 580 air miles northwest of Anchorage, Alaska. The WNTF is located approximately two miles west of the City of Nome on the west side of Nome Harbor. The WNTF site covers an area of approximately 6.5 acres and is bordered on the north by property being developed for the future NJUS power plant, on the south by City of Nome property, on the west by a cargo shipping and boat storage yard, and on the east by a salvage yard.

Topographically, Nome is located in an area of coastal plains, beaches, and watercourses. Relief is generally less than 100 feet above mean sea level (AMSL). The WNTF site is situated on a coastal plain and varies in elevation from approximately 10 to 18 feet AMSL.

Temperatures are generally below freezing from November to late April, with February typically the coldest month of the year. Norton Sound usually begins freezing in November. The average temperature from June to November (field construction season) ranges from 38°F to 50°F (Western Regional Climate Center).

Precipitation is generally the highest during the late summer months of August and September and drops to a minimum during April and May. Snow cover accumulates from early November to early March and has generally melted by April or May. The average annual total precipitation in Nome is 16 inches (Western Regional Climate Center).

The WNTF site is not currently used for any commercial, industrial, or residential purposes. Debris which was previously concentrated on the northern edge of a berm, north of the pump house, has been removed from the site. Two of the three on-site seasonal ponds have been filled in and brought to grade, the third seasonal pond located in the central western portion of the WNTF site still exists.

The majority of soils present in the vicinity of Nome consist of poorly drained, silty soils with thick mats of organic material. The soils are perennially frozen near the base of the organic mat. During previous assessments, frozen ground was encountered on the west side of the WNTF site at depths of 8.5 to 14 feet below ground surface (bgs). In addition, because the Nome area has been extensively placer mined, mine tailings are a common surface material which can be several tens of feet thick in some areas. The tailings rubble is a mixture of rounded gravel, boulders, and angular stones as large as two feet in diameter.

2.2 Summary of 2004 Interim Action Activities

The 2004 interim action field activities were performed between June 28 and November 17, 2004. For a complete description, please refer to the 2004 CIADR dated September 6, 2005. A summary of those activities are described below:

2.2.1 Hydrocarbon-impacted Soil Characterization and Handling

Soil sampling was conducted prior to the start of utility corridor construction work to delineate which soils met ADEC-specified cleanup levels and to determine the volume of soils that may require mitigation measures. Composite soil samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), naphthalene, gasoline range organics (GRO), diesel range organics (DRO), and residual range organics (RRO). Based on the highest photo ionization detector and/or PetroFLAG™ measurement in each test pit, one additional soil sample was collected for leachate analysis. The leachate was analyzed for the same analytes as the soil samples to determine the potential for these constituents to migrate to groundwater. Soils in areas along the utility corridor right-of-way that exceeded site cleanup levels were identified for segregation into the following three categories and managed accordingly:

- On-site beneficial re-use – placed back in the excavation as backfill material (<5,000 milligrams per kilogram [mg/kg] DRO);
- Off-site beneficial re-use – transported to the City of Nome's Landfill for use as daily cover (>5,000 mg/kg and <12,500 mg/kg; not to exceed an average of 7,000 mg/kg DRO); or
- On-site temporary stockpiles – stockpiled on-site for long-term storage, potential treatment, and beneficial re-use (>12,500 mg/kg DRO).

2.2.2 Hydrocarbon-Impacted Groundwater Handling

NJUS began installation of the new sewer lines in the utility corridor right-of-way on August 4, 2004. The utility corridor crosses approximately perpendicular to groundwater flow from the WNTF site. Groundwater in the vicinity of the Port Road lift station was lowered to approximately 15 feet bgs to allow excavation for the installation of the new sewer line. An average pumping rate of 25 gallons per minute was required to prevent petroleum-impacted groundwater from migrating into the utility corridor and pump station excavations.

Groundwater recovered from the excavation adjacent to the WNTF site contained concentrations of dissolved DRO and potential light, non-aqueous phase liquid (LNAPL).

Therefore, to prevent potential LNAPL contamination of the City of Nome's POTW ponds, the groundwater was pumped through a temporary oil/water separator prior to discharge to the POTW ponds. In addition to the oil/water separator, NJUS used contingency control measures (e.g., storm water controls) designed to minimize the amount of LNAPL migrating into the utility corridor excavation.

Although the dissolved contaminant of concern (COC) with respect to discharge to the City of Nome's POTW pond was DRO; recovered groundwater was also analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), GRO, and RRO prior to discharge to the POTW ponds. In addition, POTW pond effluent samples were collected and analyzed for BTEX, GRO, DRO, RRO, and polynuclear aromatic hydrocarbons (PAHs). POTW effluent did not exceed allowable permit discharge limits.

The dewatering of the excavation continued from August to November 2004. At the conclusion of dewatering activities, LNAPL and sediments present in the oil/water separator were collected, drummed, and appropriately disposed of by Crowley. Approximately 30 gallons of LNAPL accumulated in the oil/water separator during the dewatering process. In addition, approximately 80 gallons of LNAPL were removed from abandoned process piping located south of the pump station building.

2.2.3 LNAPL Capture

Interim actions implemented during the NJUS project were designed to prevent off-site migration of LNAPL at the eastern property boundary of the site. An interceptor trench and a collection sump (a six-foot diameter manhole) were installed to address LNAPL encountered during and after the installation of the sewer lines in the utility corridor right-of-way. The interceptor trench was installed near the north-east corner of the WNTF site and extends approximately 800 feet along the eastern boundary (Figure 3). Three piezometers (PZ-1 through PZ-3) were installed in the utility corridor trench (Figure 8) to monitor LNAPL levels upgradient of the collection and recovery system.

2.2.4 Final Disposition of the 2004 Interim Actions

At the completion of the 2004 construction season, the sewer line expansion had been completed. However, due to the delayed arrival of the barge transporting equipment and supplies and flooding from a large storm event in October 2004, NJUS halted construction activities on the water line portion of the utility corridor. In addition, during utility installations and related interim actions, the following groundwater monitoring wells were either plugged and abandoned or destroyed; W-5, W-16, W-17, W-18, W-19, NMW-6, NMW-7, and NMW-8 (Figure 2).

3.0 INTERIM ACTION DURING NJUS 2005 WATER LINE EXPANSION

NJUS and their contractor, CE₂ Engineers, began installation of the new water line in the Port Road utility corridor right-of-way on May 29, 2005. The water line excavation is located approximately 5 feet to the east of the sewer line installed in 2004. The new water line was installed at an average depth of 10 feet bgs, approximately three feet shallower than the sewer line.

The utility corridor construction work included the installation of 1,100 linear feet of water line along the east boundary of the WNTF site (Figure 3). Groundwater flowing into the excavation was recovered and disposed of. Soils contaminated with petroleum hydrocarbons encountered during water line installation activities were segregated and managed as described in Section 3.1.

During the 2005 construction activities, monitoring wells P-3, W-3 and W-14 and piezometer PZ-2 were plugged and abandoned either due to damage inflicted during the previous winter or construction/excavation activities.

The groundwater recovered from the water line excavation adjacent to the WNTF site contained concentrations of dissolved DRO and potential LNAPL. Therefore, to prevent LNAPL contamination of the City of Nome's POTW ponds, groundwater was pumped through a temporary oil/water separator prior to discharge to the POTW ponds. Section 3.2 describes dewatering and discharge activities.

Appendix A presents photographs of the 2005 construction activities.

3.1 Hydrocarbon-Impacted Soil Handling

A review of 2004 data indicated petroleum hydrocarbons were present at elevated concentrations in soils along the eastern boundary of the WNTF. As stated in the CIAP and 2004 CIADR, DRO and GRO in soil samples have been detected at concentrations up to 17,800 mg/kg and 1,530 mg/kg, respectively (Table 1). Pre-excavation test pit sampling results from 2004 indicated the majority of the higher DRO and GRO concentrations in soils were present primarily near the pump house in the northeast portion of the site (Figures 4 and 5).

As described in the CIAP and 2004 CIADR, DRO is the main COC with regard to alternative cleanup levels (ACLs) and determining soil management. The approved ACLs described in the CIAP are shown in Table 1.

Based on pre-excavation soil sampling, a field soil screening protocol was developed and outlined in the August 30, 2004 SECOR letter *Draft Test Pit Sampling Summary*. The established criteria are listed below:

- PetroFLAG™ result of <5,000 parts per million (ppm) was used as an indicator that the concentration of DRO in soil was <5,000 mg/kg;
- PetroFLAG™ result >5,000 ppm and <10,000 ppm was used as an indicator that the concentration of DRO in soil was >5,000 mg/kg but <12,500 mg/kg; and

- PetroFLAG™ result >10,000 ppm was used as an indicator that the concentration of DRO in soil was >12,500 mg/kg.

Based on PetroFLAG™ results, excavated soils were managed one of three ways:

- On-site beneficial re-use - placed back in the excavation as backfill material (<5,000 mg/kg DRO);
- Off-site beneficial re-use - transported to the City of Nome's Landfill for use as daily cover (>5,000 mg/kg and <12,500 mg/kg; not to exceed an average of 7,000 mg/kg DRO); or
- On-site temporary stockpile - stockpiled on for long-term storage, potential treatment, and beneficial re-use (>12,500 mg/kg DRO).

Therefore, soils data from 2004 were generally used to guide management of contaminated soil during 2005 excavation activities. PetroFLAG™ screening was used to assist in determining the most appropriate management of excavated soil. Soils categorized as on-site beneficial re-use were excavated and placed in temporary soil piles and used as backfill for the water line excavation. Soils categorized for off-site beneficial re-use and on-site temporary stockpile were excavated and placed in separate halves of the temporary stockpile area pending either their removal to the City of Nome's Landfill (off-site beneficial re-use soils) or consolidation into the soil stockpile storage area (on-site temporary stockpile).

Figure 5 shows the anticipated handling of contaminated soils based on pre-excavation sampling.

During 2004 excavation activities, contaminated soil was detected up to 50 feet beyond the southern property boundary. As a result SECOR's soil screening and management protocols were applied to this area of contamination. In 2005, SECOR monitored this area as it was excavated, but no soil exhibiting PetroFLAG™ results above the 5,000 ppm criteria were observed beyond station location 22+50, approximately 25 feet south of the southern property boundary. SECOR continued monitoring to station location 24+00, approximately 125 feet to the south of the WNTF southern property boundary.

3.1.1 On-site Soil Stockpiles

During the 2005 construction season soils excavated from the utility corridor that were categorized for off-site beneficial re-use and on-site temporary stockpiling were managed in two stockpile areas using the protocols set forth in the CIAP and described in the 2004 CIADR. The soil stockpile areas are shown in Figure 6A.

3.1.1.1 Stockpile Construction

The temporary stockpile area and long-term storage stockpile area were constructed as illustrated in Figure 7 and in accordance with the specifications listed in ADEC *Guidance for Cleanup of Petroleum Contaminated Sites* (ADEC, 2000), as restated below:

The regulations set out bottom liner specifications for stockpiles in Table D of 18 AAC 75.370. For petroleum-contaminated soil, a 10-mil thick liner is required for short-term storage (less than 180 days). For long-term storage (more than 180 days), a 20-mil thick bottom liner is required. Contaminated stockpiles must be covered with a 6-mil or greater thickness of reinforced polyethylene liner. The liner should protect the contaminated stockpile from weather. The edges of the cover liner should lap over the bottom liner to prevent water from running through the soil in the stockpile. Use tires, ropes or other materials to hold the cover in place. Inspect and maintain the stockpile regularly to ensure the cover and bottom liner material remains intact and that any liquid leachate from the soil is contained and does not migrate.

The temporary stockpile area and long-term storage stockpile area were constructed with a bottom liner, consisting of a 16-ounce Geonet above and below liner and a 20-mil high-density polyethylene (HDPE) liner placed between the Geonet (Figure 7).

The temporary stockpile area was split into two halves and utilized for stockpiling excavated soil that was categorized for off-site beneficial re-use and on-site temporary stockpile per the criterion set forth in Section 3.1 and based PetroFLAG™ results collected in the field during excavation activities. Excavated soil destined for the City of Nome's landfill was stockpiled in the temporary stockpile area as it was excavated and held until the size of the staged soil stockpile warranted removal to the City of Nome's landfill. The amount of soil amassed prior to removal to the City of Nome's landfill was based on the availability of dump trucks to haul the excavated soils. A discussion of transportation and sampling of soils taken to the City of Nome's landfill is presented in Section 3.1.2.

Excavated soils segregated for long-term storage and potential on-site treatment were staged on one-half of the temporary stockpile area pending the completion of excavation activities. At the completion of excavation activities and after the removal of soils to the City of Nome's landfill, the stockpiled soil for long-term storage was moved to the soil stockpile long-term storage area and consolidated with stockpiled soils from the 2004 construction season.

3.1.1.2 Stockpile Subgrade Sampling

Prior to stockpile construction in 2004, background soil samples were collected from the subgrade of the stockpile areas (Figure 6A). The data indicated only one sample had a result above an ACL. Sample SP2-E had a DRO concentration of 5,900 mg/kg, which was above the 5,000 mg/kg ACL for DRO. Table 2 summarizes the laboratory analytical data results.

At the end of the 2005 construction activities, soils staged in the temporary stockpile area were consolidated with the soils stockpiled from the 2004 excavation activities. The consolidated stockpile was covered for long-term storage. Verification samples were collected from the subgrade beneath the temporary soil stockpile area following the removal of the staged soil and stockpile liner in the same locations as the background subgrade samples (Figure 6B). The initial subgrade sample locations had been surveyed, and thus, the sample locations could be re-identified for verification sampling. Laboratory analytical results indicated no samples contained concentrations of DRO above the 5,000 mg/kg ACL, indicating that the liner system for the temporary soil stockpile area was effective. Table 2 summarizes the laboratory analytical results for the background and verification samples.

Final subgrade verification sampling to confirm the integrity of the soil long-term storage stockpile area containment structure will be conducted after the soil is removed. Laboratory analytical data reports for verification subgrade soil samples are included in Appendix B. Laboratory analytical data reports for the 2004 subgrade soil samples were reported in Appendix C of the 2004 CIADR.

Following the screening protocols of 2004, soils containing pre-excitation concentrations of DRO greater than 12,500 mg/kg were excavated, placed into a dump truck, and transferred to the temporary stockpile area. This soil was then consolidated and transported to the soil stockpile area at the end of the construction season for long-term storage over the winter. Approximately 1,900 cubic yards of excavated soil were stockpiled at the end of the 2004 construction season. An additional 2,100 cubic yards of contaminated soil were stockpiled at the end of the 2005 construction activities. Approximately 4,000 cubic yards of contaminated soil are currently in the soil stockpile long-term storage area.

3.1.1.3 *Stockpile Sampling*

Following the consolidation of soils in the stockpile storage area, composite soil samples were collected on July 23, 2005. The number of soil samples collected was in accordance with the specifications listed in ADEC *Guidance for Cleanup of Petroleum Contaminated Sites* (ADEC, 2000) and 18 AAC 78.605, Table C.

Based on these ADEC criteria, a minimum of 14 samples were required from the stockpile. Fifteen soil samples and two duplicate soil samples were collected from test pits dug at depths of 0-8 feet below the surface of the stockpile. Soils were excavated in 2-foot intervals from a test pit, from which a grab soil sample was collected from each interval (e.g., 0-2 feet, 2-4 feet, 4-6 feet and 6-8 feet). These grab samples were then mixed together to create a composite soil sample for the test pit location. An approximate 2-foot buffer between the bottom of the test pit and stockpile liner was maintained to avoid compromising the liner. Stockpile baseline sample locations are depicted in Figure 6B. Soil samples were subjected to laboratory leachate testing by the Synthetic Precipitation Leaching Procedure (SPLP). Leachate was analyzed by Lancaster Laboratories of Lancaster, Pennsylvania (Lancaster) an Alaska-certified laboratory, for BTEX, naphthalene, GRO, DRO, and RRO by AK101, AK102, and AK103, respectively. Laboratory analytical results indicated no soil samples contained concentrations of DRO exceeding 5,000 mg/kg. A summary of the soil stockpile baseline sample analytical results is presented in Table 3. Laboratory analytical reports are included in Appendix C.

3.1.1.4 *Long-term Stockpile Cover Placement*

The final placement of the stockpile cover was completed on July 28, 2005, following consolidation of the staged soil into the soil stockpile storage area. A layer of 16-ounce Geonet followed by a 20-mil HDPE cover was placed over the stockpiled soil. Prior to placement of the stockpile cover, an anchor trench approximately two-feet deep was excavated around the perimeter of the stockpile outside the containment berm. The bottom liner and the outside edge of the cover were placed in the trench and backfill material was placed on top to serve as an anchor for the bottom liner and the cover, as shown in Figure 7. A net rope was anchored over the entire surface area of the stockpile cover. The net roping was anchored using three-foot long utility pole anchor pins. One anchor pin was placed in each corner with an additional

anchor pin placed in the middle of each long side of the stockpile. Approximately 100 bait bags filled with stone were placed on the top of the cover in the net spacings for extra stability. The placement of the net rope and bait bags was completed July 28, 2005. An eight-foot high chain link fence was erected around the stockpile with one pedestrian gate located at the northeast corner. A truck gate is located on the northwest end outside of the berm. Both gates are kept locked. The chain link fence was completed by August 30, 2005. Photographs of the cover and perimeter fence are reproduced in Appendix A.

3.1.2 Off-site Beneficial Re-use of Soils

Excavated soils with concentrations of DRO less than 12,500 mg/kg but greater than 5,000 mg/kg were taken to the City of Nome landfill. The City of Nome landfill was able to accept excavated soils if the average DRO concentration was below 7,000 mg/kg.

An Agreement for Disposal of Soil at the City of Nome Landfill was signed in July 2004 by Chevron and the City Manager of Nome. As specified in the agreement, up to 5,000 cubic yards of soil each year can be disposed of at the City of Nome landfill. Approximately 968 cubic yards of soil were disposed of at the City of Nome Landfill in 2005.

As discussed previously in Sections 3.1 and 3.1.1.1, soils categorized for off-site beneficial re-use and destined for the City of Nome's landfill were first staged on-site in the temporary stockpile area. When enough soil was amassed and/or dump trucks were available, the soil was transported to the City of Nome's landfill. Soils were transported in visqueen-lined dump trucks. A soil sample was collected from approximately one in every ten trucks. Each sample was subjected to PetroFLAG™ screening and to laboratory leachate testing by SPLP. Leachate was analyzed by Lancaster for BTEX, naphthalene, GRO, DRO, and RRO. Additionally, a split soil sample was collected from every tenth truck and tested for BTEX and GRO, DRO, and RRO by AK101, AK102, and AK103, respectively. A truck log was completed in the field to document transportation conditions for each soil load to the landfill. DRO leachate concentrations ranged from 0.096 to 2.7 mg/L; RRO concentrations ranged from non-detect to 0.320 mg/L; GRO, ethylbenzene, total xylenes, and naphthalene concentrations were generally non-detect with maximum detected concentrations of 0.500, 0.003, 0.0096, and 0.084 mg/L, respectively. Benzene and toluene concentrations were all non-detect. The results of the leachate testing on the truck soil samples are summarized in Table 4. The truck logs are presented in Appendix E.

3.1.3 On-site Beneficial Re-use of Soils

Based on SECOR's soil sampling and management protocols, the excavation of the utility corridor was conducted in a manner that minimized the storage and handling of contaminated soils that may require treatment.

Based on 2004 pre-excavation sampling data, soils excavated from the utility corridor right-of-way with DRO concentrations below 5,000 mg/kg were re-used as general fill after installation of the water line. As discussed in Section 3.1, these excavated soils were temporarily staged in soil piles separate from the temporary stockpile area and usually adjacent to the water line excavation and used to backfill the water line excavation. The 2004 pre-excavation sample results were verified by field screening excavated soils with PetroFLAG™, to determine the soils' suitability for use as general fill. If a PetroFLAG™ result was greater than 5,000 ppm or

significantly different than the pre-excavation data for the location, the soil was reclassified into either the off-site beneficial re-use or on-site temporary stockpile soil re-use categories and handled accordingly.

3.2 Hydrocarbon-Impacted Groundwater Handling

A temporary construction dewatering system was built to collect and treat petroleum hydrocarbon contaminated groundwater migrating into excavation areas during the water line construction. Collected water was pumped to an above ground oil/water separator prior to discharge to the City of Nome's POTW ponds as shown on Figures 8 and 9. Three- to six-inch sump pumps were used to periodically dewater the excavation and were connected to the oil/water separator by a 6-inch diameter aboveground HDPE pipeline. The oil/water separator was located at the north end of the WNTF. After passing through the oil/water separator, the water was pumped to an equalization tank, through a flow meter, and into a second 6-inch diameter HDPE aboveground pipeline. This 6-inch diameter HDPE pipeline then transported the water to POTW ponds located approximately 2,500 feet west of the WNTF. Figure 8 presents a plan view of the dewatering system. A process flow diagram for the dewatering system is presented in Figure 9.

3.2.1 Excavation Dewatering

Excavation dewatering was less of an issue in 2005 because the water line was installed at a shallower depth (approximately 10 feet bgs) than the 2004 sewer line (approximately 13 feet bgs). Thus, dewatering was not a daily requirement and was performed as needed during the June and July 2005 construction period. NJUS and their contractor, CE₂ Engineering, were responsible for the daily operation of the excavation dewatering system. Groundwater was pumped from the open utility corridor excavation or from temporary dewatering well points placed in the excavation by NJUS with mobile trash pumps. The effectiveness of the system was monitored daily by SECOR, and included the inspection of the structural integrity of the influent and effluent HDPE piping. Results and observations were recorded on inspection logs, which are included in Appendix F. At the conclusion of the dewatering activities, the influent and effluent HDPE piping was flushed, cut into 20-foot segments and decontaminated using high-pressure water. The oil/water separator was similarly decommissioned; drained, sediment removed and then decontaminated using high-pressure water. A total of 24,716 gallons of water was pumped from the water main line utility corridor excavation during 2005 dewatering and decontamination activities of the 6-inch HDPE pipelines and oil/water separator.

As discussed in the CIAP, the COC with respect to discharge to the City of Nome's POTW ponds was DRO. However, recovered groundwater was also analyzed for VOCs, including BTEX; SVOCs, including PAHs; and GRO prior to discharge to the POTW ponds. No LNAPL was encountered during water line excavation activities in 2005. Section 3.2.2 discusses the analytical results.

3.2.2 Discharge to Local Wastewater Treatment Facility

In a letter dated June 8, 2004, ADEC approved NJUS's proposal to treat and discharge water generated during construction activities to the City of Nome's POTW ponds. Specific allowable

limits were established in the ADEC letter, including discharge volumes of up to 432,000 gallons per day for up to eight weeks.

The CIAP specified collection of oil/water separator (pond influent) grab samples for the first three days of operation. The samples were collected downstream of the oil/water separator at the point of discharge to the City of Nome's POTW ponds. After the first three days, if results of the daily sampling were consistently below allowable discharge limits, the oil/water separator sampling frequency could be reduced to every other day for six days. If those results indicated the limits were consistently being met, the sampling could be reduced to weekly.

To assist NJUS in permit compliance, SECOR personnel conducted sampling of influent water to the POTW ponds (pond influent) and post-POTW effluent (pond effluent) water. Pond influent samples were collected at the point of discharge from the upper 6-inch diameter HDPE pipeline into the City of Nome's western POTW pond. Pond effluent samples were collected from the manhole in the City of Nome's outflow monitoring shed located at the southeastern corner of the eastern POTW pond. The samples were sent to Lancaster and SGS Environmental Services Inc. of Anchorage Alaska (both Alaska-certified laboratories). The samples were analyzed for BTEX, GRO, DRO, RRO, PAHs, VOCs and SVOCs. Sampling of pond influent samples was conducted between June 14 and August 4, 2005. Sampling of the pond effluent was conducted between June 16 and August 8, 2005.

Effluent discharges from the POTW ponds did not exceed allowable discharge limits (Table 5). Total aromatic hydrocarbon (TAH) results, which are the sum of the BTEX constituents, were generally non-detect. However one sample contained a TAH concentration of 0.320 micrograms per liter ($\mu\text{g/L}$), which was below the allowable limit of 10 $\mu\text{g/L}$. Total aqueous hydrocarbon (TAqH) results, which are the sum of TAH and PAH constituents, were all below the allowable limit of 15 $\mu\text{g/L}$. Table 5 summarizes the sample results and compares them against the approved ADEC discharge limits. Laboratory analytical reports are presented in Appendix G.

3.3 LNAPL and Groundwater Migration

Section 3.5 of the CIAP identified the basis for the design of the comprehensive interim action implemented during the NJUS project. Interim action was intended to prevent the off-site migration of LNAPL at the eastern property boundary of the site.

3.3.1 LNAPL Capture

The goals of the CIAP for LNAPL capture, which included the installation of an LNAPL barrier, interceptor trench, and LNAPL collection sump, were met and completed during the 2004 construction season. Please refer to section 3.3 of SECOR's 2004 CIADR for a complete discussion. No LNAPL was encountered during the installation of the water line in 2005. An interceptor trench test was performed in September 2005 and the results are presented in the *Report on Results of Interceptor Trench Test* (SECOR, 2006b).

3.3.2 Groundwater Migration

Groundwater samples were collected during two semi-annual groundwater monitoring events in 2005. These sampling events are documented in the *2005 Annual Groundwater Monitoring Report* (SECOR, 2006a).

Based on groundwater sample analytical results from these and previous groundwater sampling events, SECOR performed a trend analysis on select analytes in groundwater samples collected from monitoring wells located between the LNAPL interceptor trench and the Snake River to evaluate the possible off-site migration of hydrocarbon-impacted groundwater. To evaluate concentration trends for constituents in groundwater, concentrations were plotted versus time for each COC (as identified in Section 3.3), as shown on Table 6. A data set beginning with the initial concentration through the most recent data point was used for analysis. Constituents not detected above their reporting limit were evaluated at the respective reporting limit. A least-squares statistical method was used to calculate the best-fit line through each data set. The equation for the best-fit line was then used to evaluate the overall trend of the data set. Graphs that exhibited a decreasing trend in constituent concentrations are identified by a negative trendline slope.

A decreasing trend was observed in each of the trend evaluations performed, suggesting that hydrocarbon-impacted groundwater is no longer migrating off-site. Trend evaluations are included as Appendix H.

3.4 Status of Port Road Utility Construction and Interim Action Activities: End of 2005

SECOR's field activities in support of the installation of the NJUS water line were completed when NJUS completed the water line installation in the Port Road utility corridor in August 2005. Soils that were generated during the water line excavation and classified as on-site beneficial re-use were used as backfill for the water line excavation. Soils excavated and classified for off-site beneficial re-use were transported to the City of Nome's landfill for disposal. Excavated soils classified for on-site temporary stockpile were consolidated into a single soil stockpile storage area, and covered and secured for long-term storage. The temporary stockpile area was deconstructed and confirmation samples indicated the area underneath the liner had been protected and exhibited no signs of contamination. The temporary construction dewatering system was deconstructed with the influent and effluent 6-inch diameter HDPE pipeline being cut into 20 foot segments and decontaminated and the oil/water separator dismantled and decontaminated. The LNAPL interception trench, collection sump, and associated piezometers previously installed during the 2004 construction season are currently being evaluated for possible future remedial applications.

4.0 CONCLUSION

The interim actions as specified in the CIAP were successfully completed during the 2005 NJUS water line construction period. The 2005 interim actions consisted of:

- Excavation dewatering and management;
- Soil screening and management; and
- Continued use and maintenance of the oil/water separator.

Because of the established soil screening and management protocols, the proper management of contaminated soil and water was successful. Laboratory analysis of soil and water samples collected throughout the interim action activities indicated the following:

- Soil samples collected from soil disposed of at the City Nome's landfill indicated a maximum DRO concentration of 3,900 mg/kg, which was below the allowable disposal permit level of 5,000 mg/kg for DRO;
- Pond influent samples indicated a maximum DRO concentration 14,700 µg/L which did not exceed the allowable discharge permit level of 25,000 µg/L;
- Pond effluent samples indicated a maximum TAH concentration of 0.320 µg/L which did not exceed the allowable permit limit of 10 µg/L, and a maximum TAqH concentration of 3.9 µg/L which did not exceed the allowable permit limit of 15 µg/L;
- Results of baseline soil sampling of the stockpile staged for long-term storage, following consolidation with 2004 excavated soils, prior to covering indicated a maximum DRO concentration of 4,800 mg/kg, which is below the 5,000 mg/kg ACL for DRO; and
- Verification sampling of the temporary stockpile area indicated no samples contained concentrations of DRO above the 5,000 mg/kg ACL, indicating that the liner system for the temporary soil stockpile area was effective.

SECOR was able to implement best management practices to minimize any impact to surrounding areas. The work was completed with high levels of cooperation among NJUS, CE₂, and SECOR field personnel.

5.0 LIMITATIONS

The conclusions and recommendations contained in this report are based upon professional opinions with regard to the subject matter. These opinions have been arrived at in accordance with currently accepted hydrogeologic and engineering standards and practices applicable to this location and are subject to the following limitations:

1. The data and findings presented in this report are valid as of the dates when the investigation and construction activities were performed. The passage of time, manifestation of latent conditions or occurrence of future events may require further exploration at the site, the analysis of additional data, and the reevaluation of the findings, observations, and conclusions expressed in the report.
2. The data reported and the findings, observations, and conclusions expressed in the report are limited by the Scope of Work. The requested Scope of Work, time and budgetary restraints, and the availability of the site access were defined by the client.
3. Because of the limitations stated above, the findings, observations, and conclusions expressed by SECOR in this report are not, and should not be, considered an opinion concerning the compliance of any past or present owner or operator of the site with any federal, state or local law or regulation.
4. No warranty or guarantee, whether expressed or implied, is made with respect to the data or reported findings, observations, and conclusions, which are based solely upon site conditions in existence at the time of the investigation and construction activities.
5. SECOR reports present professional opinions and findings of a scientific and technical nature. While attempts were made to relate the data and findings to applicable environmental laws and regulations, the report shall not be construed to offer a legal opinion or representations as to the requirements of, nor the compliance with, environmental laws, rules, regulations, or policies of federal, state, or local governmental agencies. Any use of this report constitutes acceptance of the limits of SECOR's liability. SECOR's liability extends only to its client and not to any other parties who may obtain the report. Appropriate legal counsel should review issues raised by the report.

6.0 REFERENCES

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Chevron et al., July 13, 2004, *Memorandum of Understanding*.

Nome Joint Utility System. www.njus.org

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SECOR International Inc., August 09, 2004, *Response to Comments on Comprehensive Interim Action Plan, West Nome Tank Farm, Nome, Alaska*.

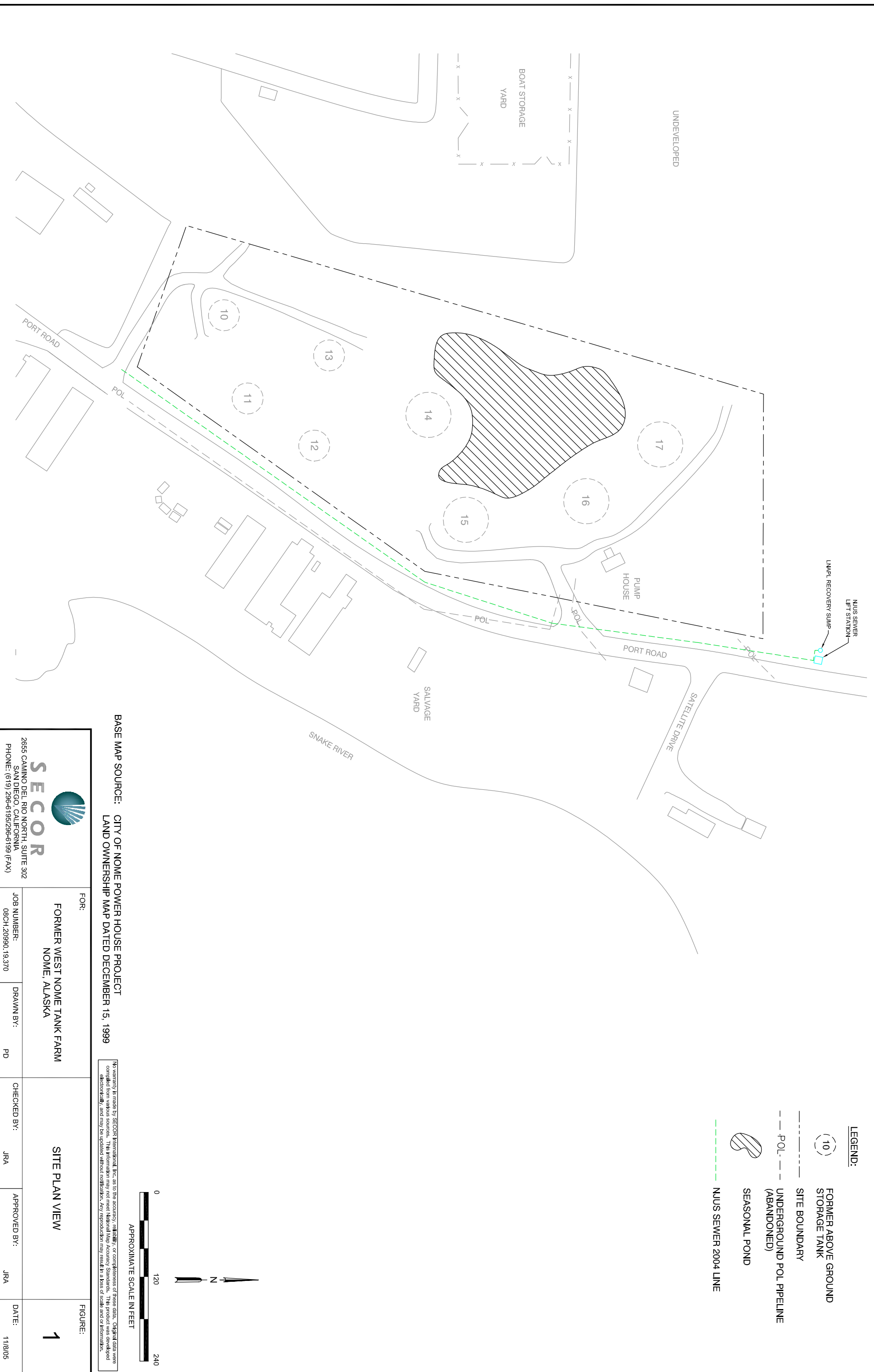
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SECOR International Inc., April 21, 2006a, *2005 Annual Groundwater Monitoring Report, Former West Nome Tank Farm, Nome, Alaska*

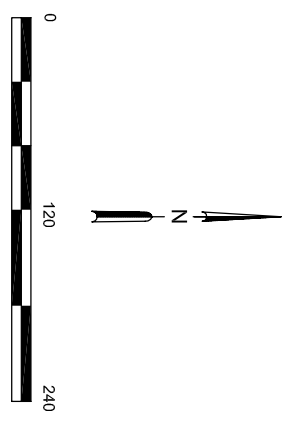
SECOR International Inc., August 9, 2006b, *Report on Results of Interceptor Trench Test, West Nome Tank Farm, Nome, Alaska*

Western Regional Climate Center. <http://www.wrcc.dri.edu/index.html>.

FIGURES
2005 Comprehensive Interim Action Documentation Report
Chevron Environmental Management Company
West Nome Tank Farm
Nome, Alaska



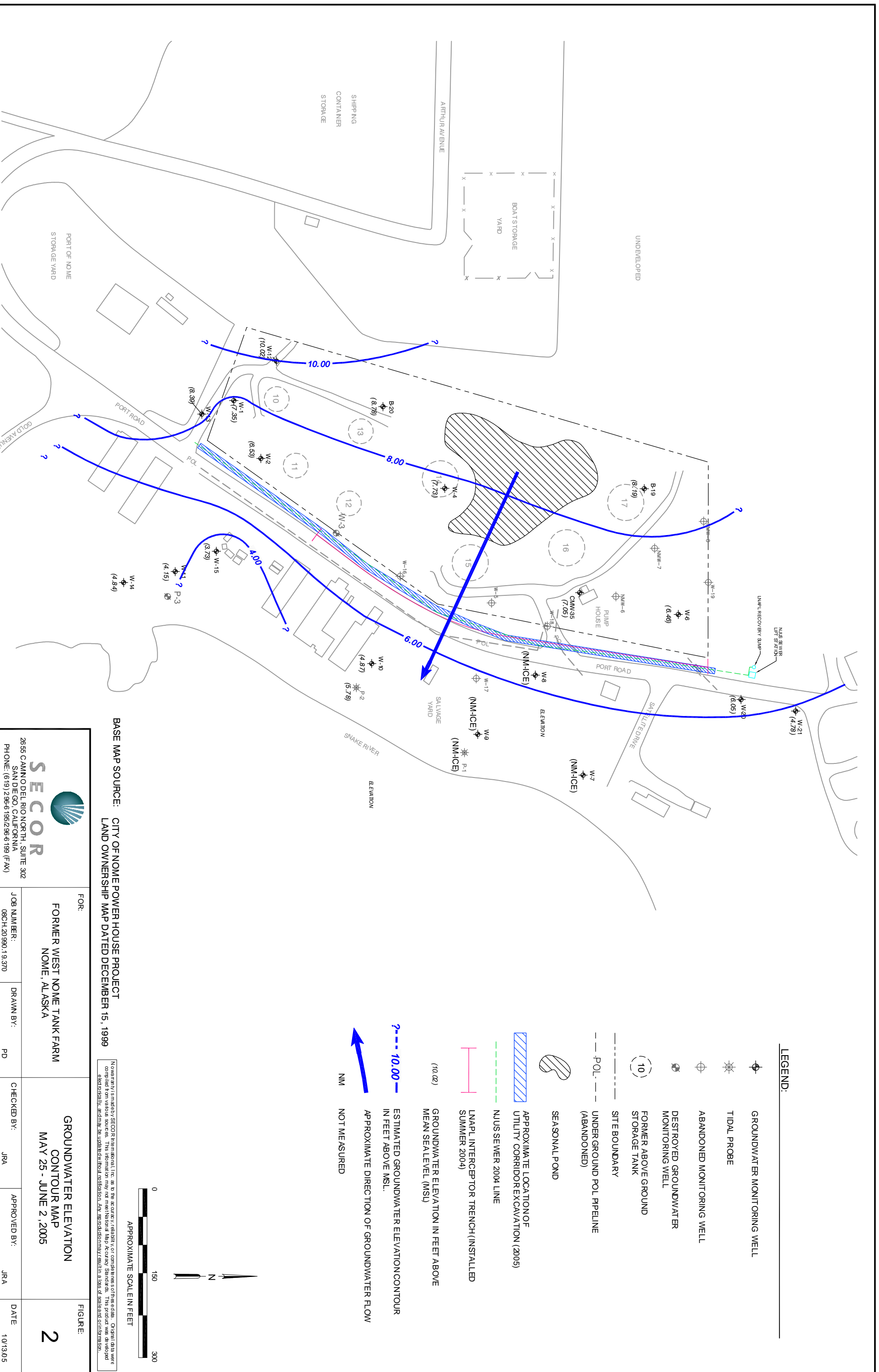
- LEGEND:**
- (10) FORMER ABOVE GROUND STORAGE TANK
 - SITE BOUNDARY
 - - - POL - - - UNDERGROUND POL PIPELINE (ABANDONED)
 - SEASONAL POND
 - - - NJUS SEWER 2004 LINE



BASE MAP SOURCE: CITY OF NOME POWER HOUSE PROJECT
LAND OWNERSHIP MAP DATED DECEMBER 15, 1999

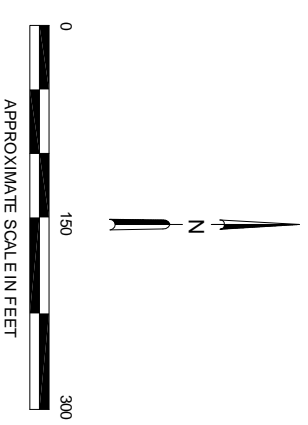
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<p>2655 CAMINO DEL RIO NORTH, SUITE 302 SAN DIEGO, CALIFORNIA PHONE: (619) 296-6195/296-6199 (FAX)</p>		FOR:		FIGURE:	
		FORMER WEST NOME TANK FARM NOME, ALASKA		1	
JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	
08CH.20990.13.370	PD	JRA	JRA	11/8/05	



LEGEND:

- GROUNDWATER MONITORING WELL
- TIDAL PROBE
- ABANDONED MONITORING WELL
- DESTROYED GROUNDWATER MONITORING WELL
- FORMER ABOVE GROUND STORAGE TANK
- SITE BOUNDARY
- UNDER GROUND PIPELINE (ABANDONED)
- SEASONAL POND
- APPROXIMATE LOCATION OF UTILITY CORRIDOR EXCAVATION (2005)
- NJS SEWER 2004 LINE
- LNAPL INTERCEPTOR TRENCH (INSTALLED SUMMER 2004)
- GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (MSL)
- ESTIMATED GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MSL.
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW
- NM NOT MEASURED



BASE MAP SOURCE: CITY OF NOME POWER HOUSE PROJECT
LAND OWNER SHIP MAP DATED DECEMBER 15, 1999

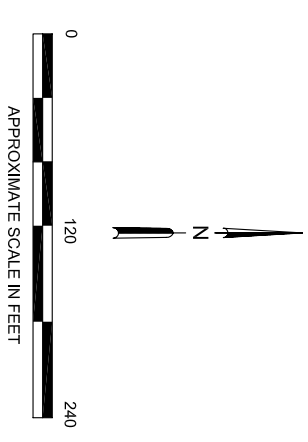
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<p>SECOR 2655 CAMINO DEL RIO NORTH, SUITE 302 SAN DIEGO, CALIFORNIA PHONE: (619) 296-6199 FAX: (619) 296-6199</p>	FOR:	GROUNDWATER ELEVATION CONTOUR MAP	FIGURE:
	FORMER WEST NOME TANK FARM NOME, ALASKA	MAY 25 - JUNE 2, 2005	2
JOB NUMBER: 08CH209901.9.370	DRAWN BY: PD	CHECKED BY: JRA	APPROVED BY: JRA
		DATE	10/13/05



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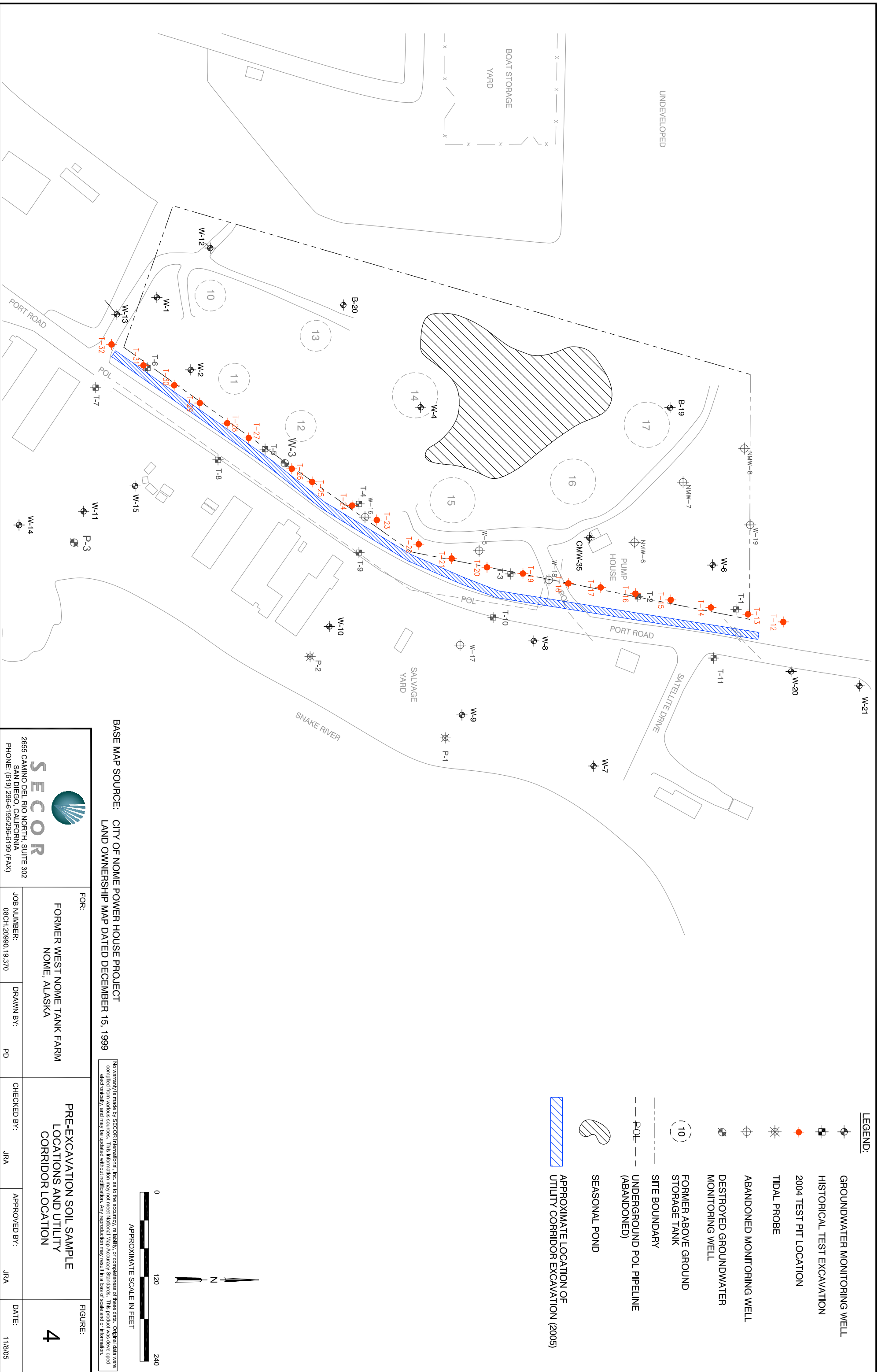
- GROUNDWATER MONITORING WELL
 - TIDAL PROBE
 - ABANDONED MONITORING WELL
 - DESTROYED GROUNDWATER MONITORING WELL
 - FORMER ABOVE GROUND STORAGE TANK
 - SITE BOUNDARY
 - UNDERGROUND POL PIPELINE (ABANDONED)
 - SEASONAL POND
 - APPROXIMATE LOCATION OF UTILITY CORRIDOR EXCAVATION (2005)
 - NIJUS SEWER 2004 LINE
 - LNAPL INTERCEPTOR TRENCH (INSTALLED SUMMER 2004)
- NOTE: CWM-35 AND W-5 LNAPL THICKNESS BASED ON JULY 2003 LEVEL.
W-16 LNAPL THICKNESS BASED ON MAY 2004 LEVEL.



BASE MAP SOURCE: CITY OF NOME POWER HOUSE PROJECT
LAND OWNERSHIP MAP DATED DECEMBER 15, 1999

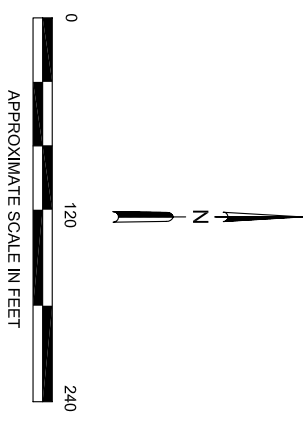
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<p>2655 CAMINO DEL RIO NORTH, SUITE 302 SAN DIEGO, CALIFORNIA PHONE: (619) 296-6195/296-6199 (FAX)</p>	FOR:		CHECKED BY: JRA	APPROVED BY: JRA	DATE: 11/8/05
	FORMER WEST NOME TANK FARM NOME, ALASKA				
JOB NUMBER: 08CH-20990.19.370	DRAWN BY: PD	2005 UTILITY CORRIDOR CONSTRUCTION AREA		FIGURE: 3	



LEGEND:

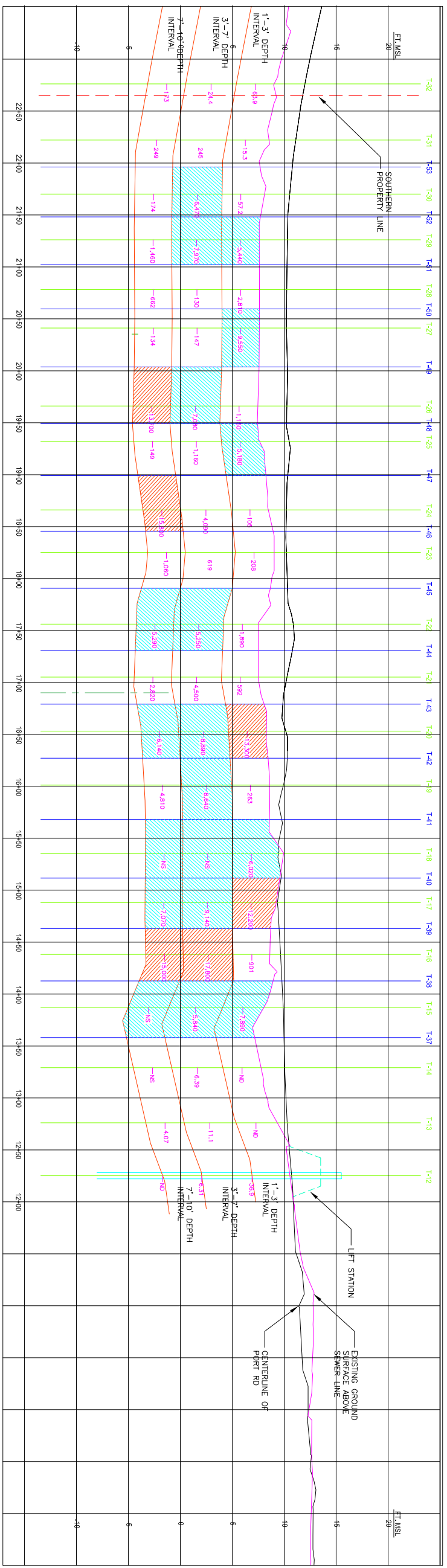
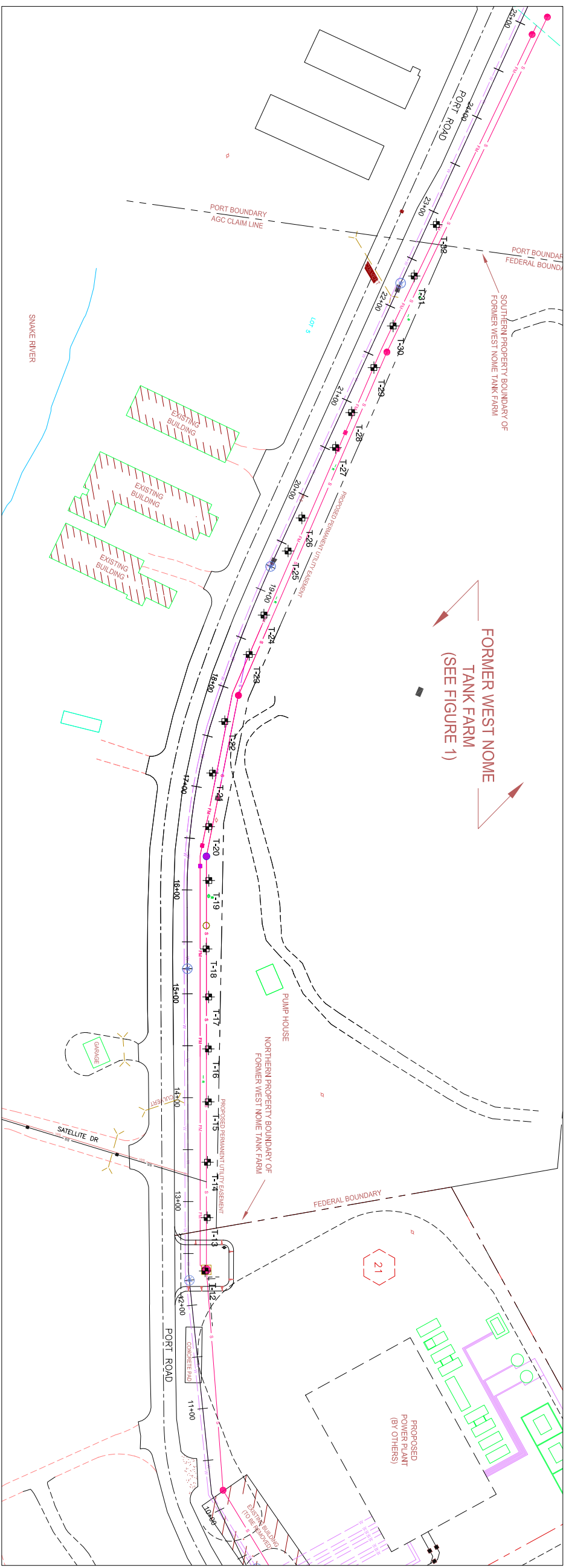
- GROUNDWATER MONITORING WELL
- HISTORICAL TEST EXCAVATION
- 2004 TEST PIT LOCATION
- TIDAL PROBE
- ABANDONED MONITORING WELL
- DESTROYED GROUNDWATER MONITORING WELL
- FORMER ABOVE GROUND STORAGE TANK
- SITE BOUNDARY
- UNDERGROUND POL PIPELINE (ABANDONED)
- SEASONAL POND
- APPROXIMATE LOCATION OF UTILITY CORRIDOR EXCAVATION (2005)



BASE MAP SOURCE: CITY OF NOME POWER HOUSE PROJECT
LAND OWNERSHIP MAP DATED DECEMBER 15, 1999

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<p>2655 CAMINO DEL RIO NORTH, SUITE 302 SAN DIEGO, CALIFORNIA PHONE: (619) 295-6195/296-6199 (FAX)</p>	FOR:	PRE-EXCAVATION SOIL SAMPLE LOCATIONS AND UTILITY CORRIDOR LOCATION	FIGURE:
	<p>FORMER WEST NOME TANK FARM NOME, ALASKA</p>	<p>CHECKED BY: JRA</p>	<p>APPROVED BY: JRA</p>
JOB NUMBER:	DRAWN BY:	CHECKED BY:	DATE:
08CH-20990.19.370	PD	JRA	11/8/05



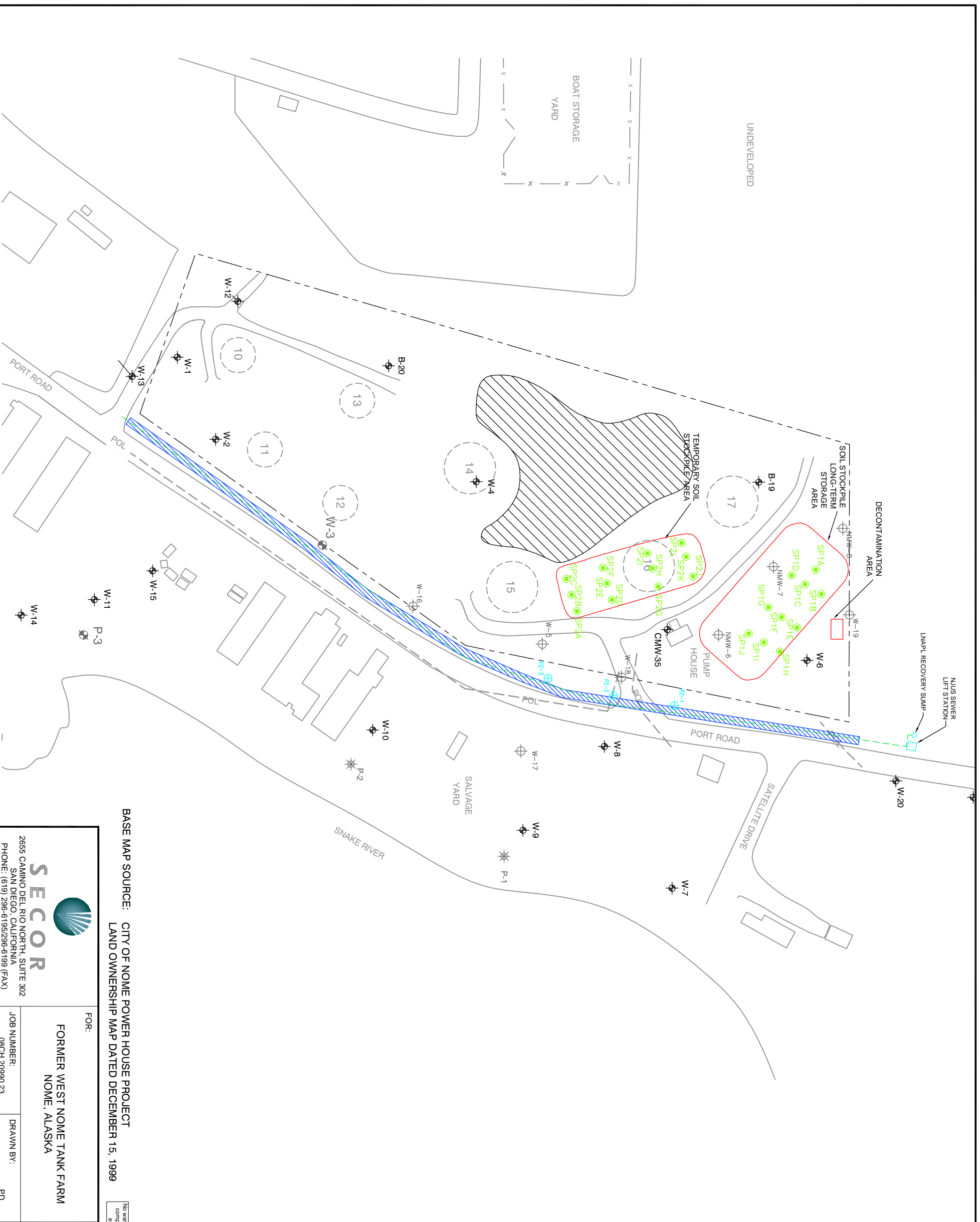
SECOR
2321 CLUB MERIDIAN DRIVE, STE. E
OKEMOS, MICHIGAN

FORMER WEST NOME TANK FARM
NOME, ALASKA

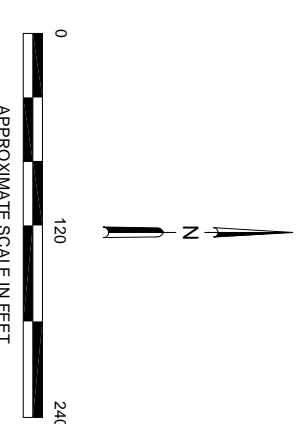
HYDROCARBON-IMPACTED MATERIAL
UTILITY CORRIDOR CROSS-SECTION

DESIGNED BY: MJC	DRAWN BY: MJC	CHECKED BY: JSJ
DATE: 12/14/04	CAD FILE: SJA_Xsecor	
PROJECT No: 0861209909.19.270	DRAWING SCALE: AS SHOWN	

FIGURE 5



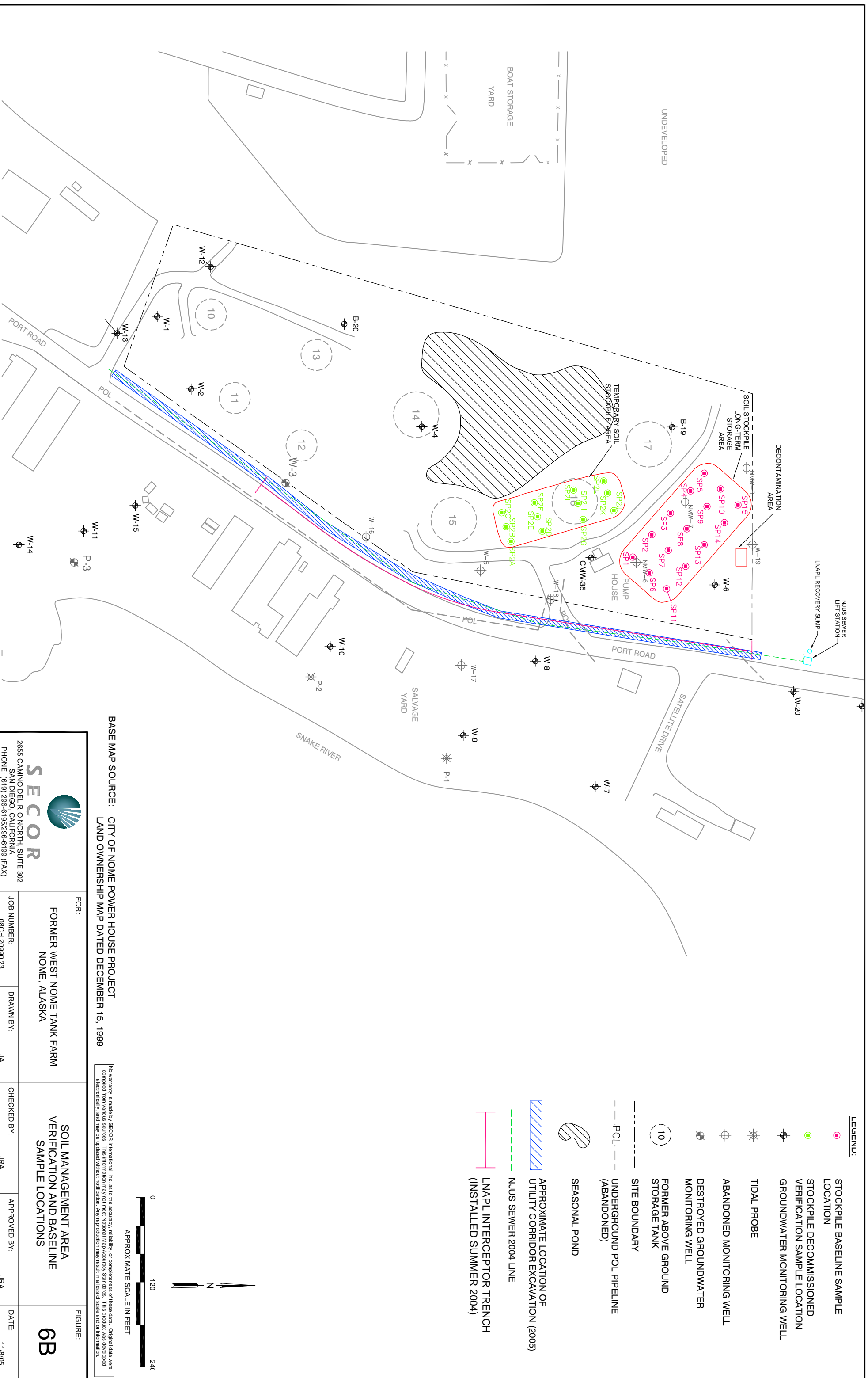
- LEGEND:**
- STOCKPILE BACKGROUND SUBSURFACE SAMPLE LOCATION (2004)
 - GROUNDWATER MONITORING WELL
 - TIDAL PROBE
 - ABANDONED MONITORING WELL
 - PIEZOMETER
 - DESTROYED GROUNDWATER MONITORING WELL
 - FORMER ABOVE GROUND STORAGE TANK
 - SITE BOUNDARY
 - UNDERGROUND POL PIPELINE (ABANDONED)
 - SEASONAL POND
 - APPROXIMATE LOCATION OF UTILITY CORRIDOR EXCAVATION (2005)
 - NIJUS SEWER 2004 LINE



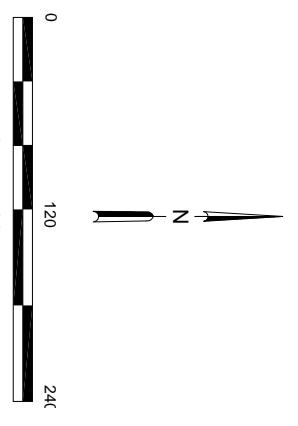
BASE MAP SOURCE: CITY OF NOME POWER HOUSE PROJECT
 LAND OWNERSHIP MAP DATED DECEMBER 15, 1999

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<p>2655 CAMINO DEL RIO NORTH, SUITE 302 SAN DIEGO, CALIFORNIA PHONE: (619) 296-6195/296-6199 (FAX)</p>	FOR:	SOIL MANAGEMENT AREA	FIGURE:
	FORMER WEST NOME TANK FARM NOME, ALASKA	BACKGROUND SUBSURFACE SAMPLE LOCATIONS	6A
JOB NUMBER: 08CH.20990.23	DRAWN BY: PD	CHECKED BY: JRA	APPROVED BY: JRA
			DATE: 11/8/05



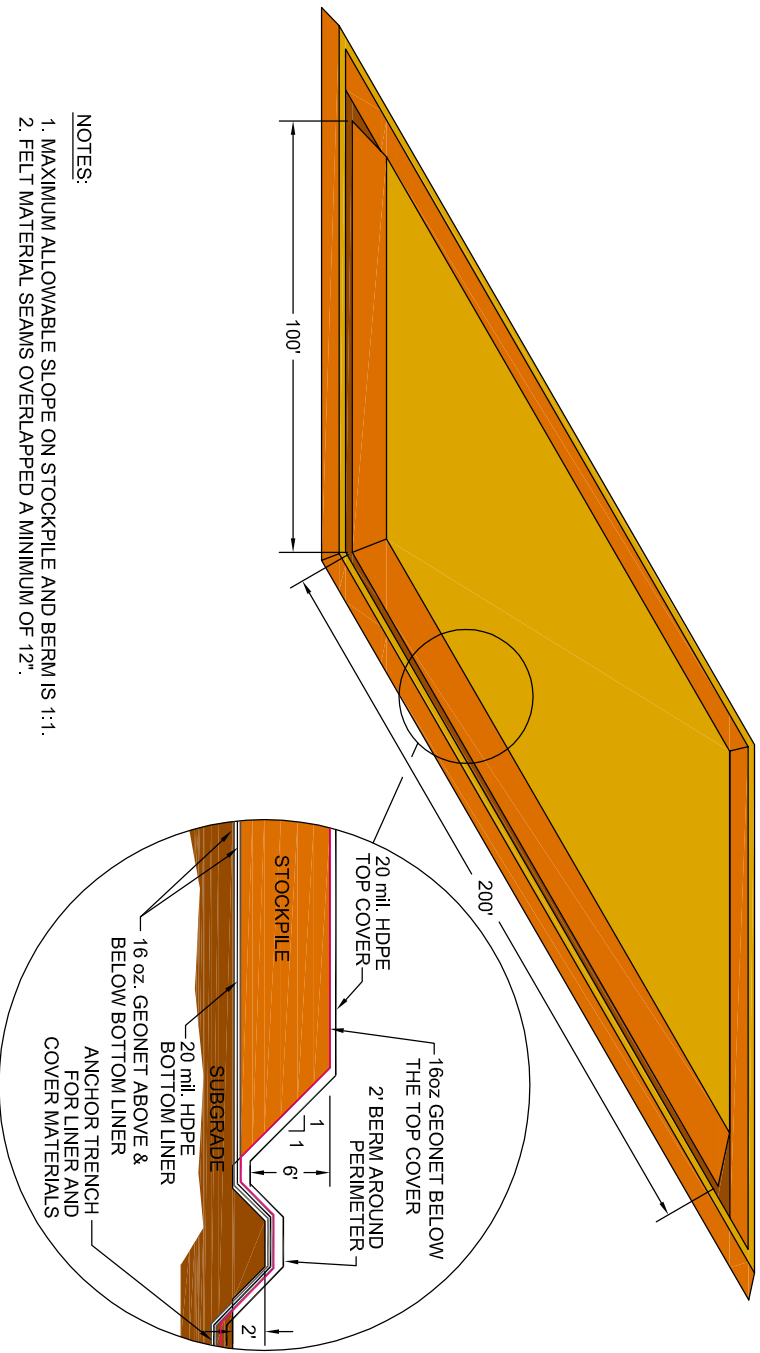
- LEGEND:**
- STOCKPILE BASELINE SAMPLE LOCATION
 - STOCKPILE DECOMMISSIONED VERIFICATION SAMPLE LOCATION
 - GROUNDWATER MONITORING WELL
 - ⊕ TIDAL PROBE
 - ⊕ ABANDONED MONITORING WELL
 - ⊕ DESTROYED GROUNDWATER MONITORING WELL
 - (10) FORMER ABOVE GROUND STORAGE TANK
 - SITE BOUNDARY
 - - - POL - - - UNDERGROUND POL PIPELINE (ABANDONED)
 - ▨ SEASONAL POND
 - ▨ APPROXIMATE LOCATION OF UTILITY CORRIDOR EXCAVATION (2005)
 - - - NUS SEWER 2004 LINE
 - | LNAPL INTERCEPTOR TRENCH (INSTALLED SUMMER 2004)



BASE MAP SOURCE: CITY OF NOME POWER HOUSE PROJECT
LAND OWNERSHIP MAP DATED DECEMBER 15, 1999

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<p>2655 CAMINO DEL RIO NORTH, SUITE 302 SAN DIEGO, CALIFORNIA PHONE: (619) 296-6195/296-6199 (FAX)</p>	FOR:	SOIL MANAGEMENT AREA	FIGURE:
	FORMER WEST NOME TANK FARM NOME, ALASKA	VERIFICATION AND BASELINE SAMPLE LOCATIONS	6B
JOB NUMBER: 08CH 20990.23	DRAWN BY: JA	CHECKED BY: JRA	APPROVED BY: JRA
			DATE: 11/8/05



- NOTES:**
1. MAXIMUM ALLOWABLE SLOPE ON STOCKPILE AND BERM IS 1:1.
 2. FELT MATERIAL SEAMS OVERLAPPED A MINIMUM OF 12".

AS-BUILT STOCKPILE

DRAWN BY: JSJ
 CHECKED: JSJ
 APPROVED: JRB
 DATE: 05/04/04
 JOB No.: 08CH.20990.19.0370
 CAD FILE: conceptual-stockpile

PREPARED BY:

PREPARED FOR:

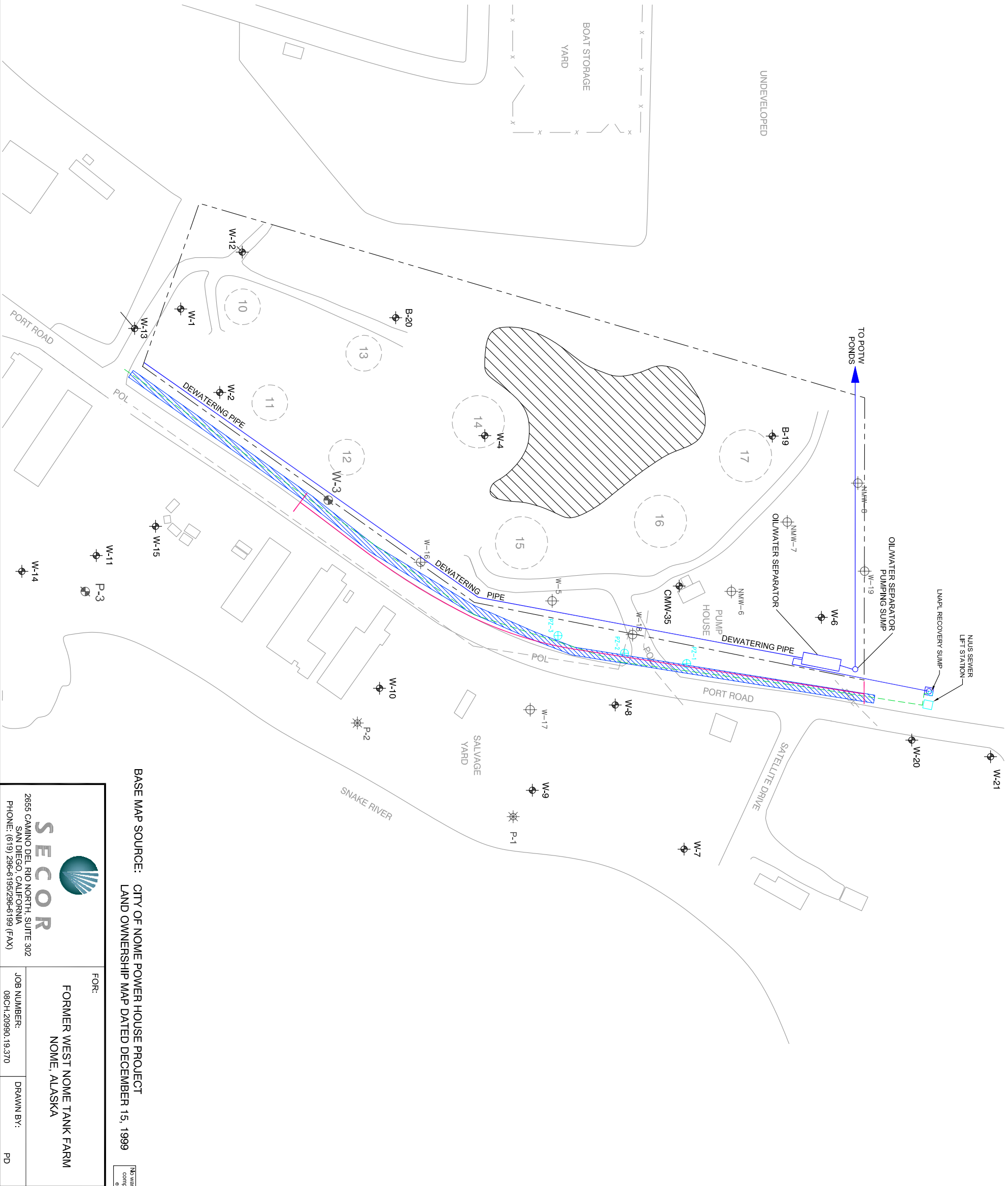


FORMER
 WEST NOME
 TANK FARM
 NOME, ALASKA

FIGURE 7

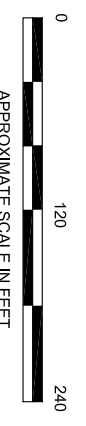
SOILS STOCKPILE
 CONCEPTUAL VIEW

- LEGEND:**
- GROUNDWATER MONITORING WELL
 - TIDAL PROBE
 - ABANDONED MONITORING WELL
 - LNAPL MONITORING PIEZOMETER
 - DESTROYED GROUNDWATER MONITORING WELL
 - FORMER ABOVE GROUND STORAGE TANK
 - SITE BOUNDARY
 - UNDERGROUND POL PIPELINE (ABANDONED)
 - SEASONAL POND
 - APPROXIMATE LOCATION OF UTILITY CORRIDOR EXCAVATION (2005)
 - LNAPL SEWER 2004 LINE
 - LNAPL INTERCEPTOR TRENCH (INSTALLED SUMMER 2004)

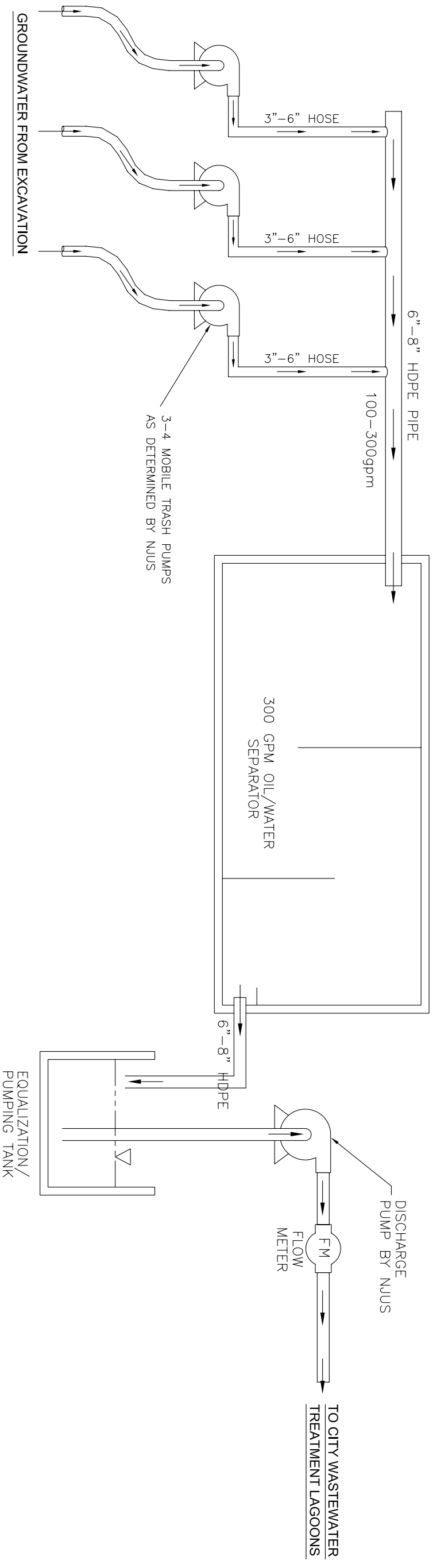


BASE MAP SOURCE: CITY OF NOME POWER HOUSE PROJECT
 LAND OWNERSHIP MAP DATED DECEMBER 15, 1999

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<p>2655 CAMINO DEL RIO NORTH, SUITE 302 SAN DIEGO, CALIFORNIA PHONE: (619) 295-6195/296-6199 (FAX)</p>	FOR:	TEMPORARY DEWATERING SYSTEM PLAN VIEW	FIGURE:
	<p>FORMER WEST NOME TANK FARM NOME, ALASKA</p>	<p>CHECKED BY: JRA</p> <p>APPROVED BY: JRA</p>	<p>8</p>
<p>JOB NUMBER: 08CH-20990-19.370</p>	<p>DRAWN BY: PD</p>	<p>DATE: 11/8/05</p>	



TEMPORARY CONSTRUCTION DEWATERING PROCESS FLOW DIAGRAM

PREPARED FOR:		FORMER WEST NOME TANK FARM NOME, ALASKA	
DRAWN	JSJ	<p style="text-align: center;">FIGURE 9</p> <p style="text-align: center;">TEMPORARY DEWATERING SYSTEM PROCESS FLOW DIAGRAM</p>	
APPR	JSJ		
DATE	11/14/05		
JOB NO.	08CH.20990.19		

TABLES
2005 Comprehensive Interim Action Documentation Report
Chevron Environmental Management Company
West Nome Tank Farm
Nome, Alaska

TABLE 1
Pre-Excavation Sample Data Summary
Former West Nome Tank Farm
Nome, Alaska

Sample ID	Date	PID (ppm)	PetroFlag™ (ppm)	RRO (mg/kg)	DRO (mg/kg)	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Naphthalene (mg/kg)	SPLP-Naphthalene (mg/L)	SPLP-BTEX (mg/L)	SPLP-GRO (mg/L)	SPLP-DRO (mg/L)	SPLP-RRO (mg/L)
ADEC ACLs		--	--	22,000	5,000	1,400	0.0882	5.4	5.5	78	43	--	--	--	--	--
T-12-1-3	6/30/2004	0	NS	485	36.9	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS
T-12-3-7	6/30/2004	0	180	54	6.31	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND*	ND*
T-12-7-10	6/30/2004	0	NS	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS
T-13-1-3	6/30/2004	0	880	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND*	ND*
T-13-3-7	6/30/2004	1.4	NS	96.7	11.1	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS
T-13-7-10	6/30/2004	0.07	NS	ND	4.07	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS
T-14-1-3	6/30/2004	0	NS	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS
T-14-3-7	6/30/2004	0.4	420	ND	6.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
T-15-1-3	6/30/2004	1,050	18,620	ND	7,890	1390	ND	ND	2.49	10.7	46.9	ND	ND	ND	1.98	ND
T-15-3-7	6/30/2004	640	7,590	ND	5,840	703	ND	ND	2.42	6.03	27.5	NS	NS	NS	NS	NS
T-16-1-3	6/30/2004	64	1,365	ND	901	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS
T-16-3-7	6/30/2004	960	13,220	ND	17,800	1,530	ND	ND	10.4	30	194	ND	ND	ND	2.07*	ND*
T-16-7-10	6/30/2004	350	NS	ND	15,000	499	ND	ND	2.02	8.33	46.2	NS	NS	NS	NS	NS
T-17-1-3	6/30/2004	902	NS	ND	12,200	176	ND	ND	0.421	1.83	11.3	NS	NS	NS	NS	NS
T-17-3-7	6/30/2004	640	16,930	ND	9,140	577	ND	ND	2.5	6.23	34.9	ND	ND	ND	2.85*	ND*
T-17-7-10	6/30/2004	370	NS	ND	7,070	352	0.048	0.0594	1.93	7.21	53.2	NS	NS	NS	NS	NS
T-18-1-3	6/30/2004	713	10,180	ND	6,020	256	ND	ND	ND	2.26	17	NS	NS	NS	NS	NS
T-19-1-3	6/30/2004	4.3	1,570	256	263	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS
T-19-3-7	6/30/2004	380	12,960	974	8,640	135	ND	ND	ND	1.41	19.8	ND	ND	ND	1.93*	ND*
T-19-7-10	6/30/2004	270	16,020	ND	4,810	73.7	ND	ND	ND	0.78	3.04	NS	NS	NS	NS	NS
T-20-1-3	7/1/2004	160	NS	1,460	13,300	18.9	ND	ND	ND	0.727	2.65	NS	NS	NS	NS	NS
T-20-3-7	7/1/2004	280	8,780	ND	6,910	273	ND	ND	ND	9.86	1.56	ND	ND	ND	3.5	ND
T-20-7-10	7/1/2004	270	NS	ND	6,140	114	ND	ND	0.0814	3.95	1.94	NS	NS	NS	NS	NS
T-21-1-3	7/1/2004	5	NS	ND	592	ND	ND	ND	ND	ND	0.348	NS	NS	NS	NS	NS
T-21-3-7	7/1/2004	300	11,920	ND	4,500	240	ND	ND	0.924	7	24.4	ND	ND	ND	2.66	ND
T-21-7-10	7/1/2004	100	NS	901	2,820	26.6	0.0165	ND	0.0533	0.926	3.06	NS	NS	NS	NS	NS
T-22-1-3	7/1/2004	18	NS	357	1,890	ND	ND	ND	ND	ND	0.454	NS	NS	NS	NS	NS
T-22-3-7	7/1/2004	430	NS	760	5,250	56.8	0.0136	ND	0.284	1.3	9.21	NS	NS	NS	NS	NS
T-22-7-10	7/1/2004	460	7,370	ND	5,290	231	0.0712	0.0746	1.52	7.71	7.32	ND	ND	ND	4.02	ND
T-23-1-3	7/1/2004	1.1	NS	219	208	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS
T-23-3-7	7/1/2004	2.9	NS	501	619	ND	ND	ND	ND	ND	0.582	NS	NS	NS	NS	NS
T-23-7-10	7/1/2004	225	2,650	618	1,060	8.85	ND	ND	ND	0.212	1.56	ND	ND	ND	2.37	ND
T-24-1-3	7/1/2004	0	NS	211	105	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS
T-24-3-7	7/1/2004	37	NS	1,580	4,090	ND	ND	ND	ND	ND	0.313	NS	NS	NS	NS	NS
T-24-7-10	7/1/2004	345	4,390	1,130	15,800	133	ND	ND	ND	1.83	13.3	ND	ND	ND	2.67	ND
T-25-1-3	7/2/2004	190	NS	ND	5,180	35.2	ND	ND	ND	ND	1.55	NS	NS	NS	NS	NS
T-25-3-7	7/2/2004	190	11,810	1,740	1,160	5.6	ND	ND	ND	ND	3.36	ND	ND	ND	5.23	ND
T-25-7-10	7/2/2004	35	NS	212	149	9.28	ND	ND	ND	ND	4.01	NS	NS	NS	NS	NS
T-26-1-3	7/2/2004	230	NS	ND	1,150	53.3	ND	ND	ND	0.429	2.05	NS	NS	NS	NS	NS
T-26-3-7	7/2/2004	350	NS	ND	7,080	160	ND	ND	ND	1.68	6.76	NS	NS	NS	NS	NS
T-26-7-10	7/2/2004	470	19,770	ND	13,700	440	ND	ND	2.35	9.81	38.1	ND	ND	ND	3.63	ND
T-27-1-3	7/2/2004	300	NS	ND	9,550	18	ND	ND	ND	0.275	0.909	NS	NS	NS	NS	NS
T-27-3-7	7/2/2004	350	NS	109	147	16.8	ND	ND	0.0629	0.337	5.69	NS	NS	NS	NS	NS
T-27-7-10	7/2/2004	300	950	92.5	134	54.5	ND	ND	0.0948	0.509	3.32	ND	ND	ND	0.797	ND
T-28-1-3	7/2/2004	1.7	NS	ND	2,280	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS
T-28-3-7	7/2/2004	150	NS	70.5	130	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS
T-28-7-10	7/2/2004	180	1,380	ND	662	22.8	ND	ND	ND	ND	0.953	ND	ND	ND	0.859	ND
T-29-1-3	7/2/2004	250	7,180	ND	5,440	260	ND	ND	ND	1.64	7.64	NS	NS	NS	NS	NS
T-29-3-7	7/2/2004	130	NS	646	7,970**	232	ND	ND	ND	2.69	7.78	NS	NS	NS	NS	NS

TABLE 1
Pre-Excavation Sample Data Summary
Former West Nome Tank Farm
Nome, Alaska

Sample ID	Date	PID (ppm)	PetroFlag™ (ppm)	RRO (mg/kg)	DRO (mg/kg)	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Naphthalene (mg/kg)	SPLP-Naphthalene (mg/L)	SPLP-BTEX (mg/L)	SPLP-GRO (mg/L)	SPLP-DRO (mg/L)	SPLP-RRO (mg/L)
ADEC ACLs		--	--	22,000	5,000	1,400	0.0882	5.4	5.5	78	43	--	--	--	--	--
T-29-7-10	7/2/2004	325	NS	595	698	37.8	ND	ND	ND	0.523	8.14	ND	ND	ND	2.82	ND
T-30-1-3	7/1/2004	0.4	NS	73.3	57.2	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS
T-30-3-7	7/1/2004	41	3,430	1,170	6,470	26.1	ND	ND	0.0661	0.162	1.89	ND	ND	ND	1.1	ND
T-30-7-10	7/1/2004	NA	NS	184	174	16.9	0.0412	0.121	0.0875	0.211	1.17	NS	NS	NS	NS	NS
T-31-1-3	7/2/2004	1	NS	43.7	12.7	ND	ND	ND	0.0664	0.342	1.57	NS	NS	NS	NS	NS
T-31-3-7	7/2/2004	100	4,100	1,400	190	4.74	ND	ND	ND	ND	0.247	ND	ND	ND	ND	ND
T-31-7-10	7/2/2004	46	NS	484	249	10.2	ND	ND	ND	0.0662	0.483	NS	NS	NS	NS	NS
T-32-1-3	7/2/2004	0	NS	211	56.5	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS
T-32-3-7	7/2/2004	0	NS	174	22.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
T-32-7-10	7/2/2004	0	NS	592	173	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS

Explanation

ADEC ACLs = Alaska Department of Environmental Conservation Alternative Clean-up Levels based on

BTEX = by AK Method 101

DRO = Diesel Range Organics by AK Method 102

GRO = Gasoline Range Organics by AK Method 101

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

ND = Sample Result below method detection limit

NS = Not sampled/not analyzed/not measured/not available

PID = Photoionization detector

ppm = parts per million

RRO = Residual Range Organics by AK Method 103

SPLP = Synthetic Precipitation Leaching Procedure by SW846 EPA Method 1312

-- = No clean up level established

* Reported results from a sample taken outside the method established holding time.

**Result from preliminary extraction. Sample was re-extracted, and due to reporting irregularity the official result was received after the excavation was completed. Therefore a conservative approach was implemented based on the preliminary results.

TABLE 2
Soil Stockpile Subgrade Sample Data Summary
Former West Nome Tank Farm
Nome, Alaska

Sample ID	Sample Date	DRO (mg/kg)	GRO (mg/kg)	RRO (mg/kg)
ADEC Alternative Soil Cleanup Levels		5,000	1,400	22,000
Soil Stockpile Treatment Area				
SP1-A ¹	7/12/04	360	11	166
SP1-B	7/12/04	62.1	ND	181
SP1-C	7/12/04	18.2	ND	84.6
SP1-D	7/13/04	34.2	ND	156
SP1-E	7/13/04	434	ND	115
SP1-F	7/13/04	33.9	ND	98.4
SP1-G	7/13/04	124	ND	245
SP1-H	7/13/04	56.9	ND	96.1
SP1-I	7/13/04	2,800	36.5	849
SP1-J	7/13/04	130	ND	181
Temporary Soil Stockpile Area				
SP2-A ²	7/12/04	3,320	28.2	ND
SP2A-S-072705 ³	7/27/05	1,600	14	<94
SP2-B	7/12/04	612	10.7	59.7
SP2B-S-072705	7/27/05	97	1	<23
SP2-C	7/12/04	452	5.52	181
SP2C-S-072705	7/27/05	180	5	83
SP2-D	7/12/04	76.7	ND	47.7
SP2D-S-072705	7/27/05	130	3	<23
SP2-E	7/12/04	5,900	69	ND
SP2E-S-072705	7/27/05	280	11	<42
SP2-F	7/12/04	404	ND	127
SP2F-S-072705	7/27/05	260	1.2	<44
SP2-G	7/12/04	4,370	46.8	ND
SP2G-S-072705	7/27/05	<4.3	<0.6	<4.3
SP2-H	7/12/04	587	ND	109
SP2H-S-072705	7/27/05	220.0	4	<44
SP2-I	7/12/04	354	ND	142
SP2I-S-072705	7/27/05	110	3.6	37
SP2-J	7/12/04	1,530	7.18	ND
SP2J-S-072705	7/27/05	61	0.9	27
SP2-K	7/12/04	611	7.62	75.8*
SP2K-S-072705	7/27/05	200	5.2	<43
SP2-L	7/12/04	1,040	12.6	75.1*
SP2L-S-072705	7/27/05	290	3	<43
SP2DUP1-S-072705 ⁴	7/27/05	370	2.7	<44
SP2DUP2-S-072705 ⁵	7/27/05	1,300	21	<230
Explanation DRO = Diesel Range Organics by AK Method 102 GRO = Gasoline Range Organics by AK Method 101 mg/kg = milligrams per kilogram ND = Sample result below method detection limit RRO = Residual Range Organics by AK Method 103 < = Result less than reporting limit indicated ¹ = Background samples for soil stockpile ² = Temporary soil pile background sample. ³ = Post-removal of temporary soil pile confirmation sample ⁴ = Duplicate soil sample of SP2L-S-072705 ⁵ = Duplicate of soil sample SP2A-S-072705 sample ID: "SP2X-S-mmdyy" * Reported results from a sample taken outside the method established holding time.				

TABLE 3
Stockpile Baseline Sample Data Summary
2005 Construction Season
Former West Nome Tank Farm
Nome, Alaska

Sample ID	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Naphthalene* (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	RRO (mg/kg)	Acena-phthene (mg/kg)	Acena-phthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(ghi)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)
ADEC Alternative Cleanup Levels		0.0882	5.4	5.5	78	43	1,400	5,000	22,000	--	--	--	--	--	--	--	--	--
SP1-S-072305	7/23/05	<0.25	<0.62	<0.62	<5	93	430	2,500	<400	0.6	0.42	0.14	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
SP2-S-072305	7/23/05	<0.23	<0.58	<0.58	<5	83	500	2,700	<400	0.35	0.49	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
SP3-S-072305	7/23/05	<0.21	<1	<1	<0.21	81	520	2,900	<400	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
SP4-S-072305	7/23/05	<0.19	<0.5	<1	<6	96	210	3,800	<400	0.76	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
SP5-S-072305	7/23/05	<0.21	<0.52	<1	<7	130	660	3,300	<400	0.69	0.7	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
SP6-S-072305	7/23/05	<0.22	<0.54	<1	<6	120	560	2,100	<400	0.58	0.48	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
SP7-S-072305 ¹	7/23/05	NA	NA	NA	NA	NA	NA	2,200	<400	0.77	0.43	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	0.035
SP8-S-072305	7/23/05	<0.23	<0.57	<0.57	<6	81	440	4,800	<400	0.81	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
SP9-S-072305	7/23/05	<0.27	<0.27	<1	<6	100	11.60	570	4300	0.71	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
SP10-S-072305 ¹	7/23/05	NA	NA	NA	NA	NA	NA	2,900	<400	0.78	0.7	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
SP11-S-072305	7/23/05	<0.21	<0.53	<0.53	<3	<90	340	2,400	<400	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
SP12-S-072305	7/23/05	<0.22	<0.22	<0.22	<1.7	180	220	1,600	<400	0.51	0.49	<0.033	0.037	<0.033	0.036	<0.033	<0.033	0.052
SP13-S-072305	7/23/05	<0.098	<0.24	<0.24	<3	71	230	2,500	<400	<0.033	<0.033	0.13	0.089	0.069	0.093	<0.033	<0.033	0.1
SP14-S-072305	7/23/05	<0.12	<0.12	<0.12	<8	120	630	3,500	<400	0.45	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
SP15-S-072305	7/23/05	<0.1	<0.1	<0.26	<3	53	240	2,400	<400	0.46	0.3	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
SPDUP1-S-072305 ²	7/23/05	<0.11	<0.11	<1	<6	46	510	2,400	<400	0.37	0.3	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
SPDUP2-S-072305 ³	7/23/05	<0.21	<0.21	<0.53	<1.6	39	230	3,100	<400	0.43	0.43	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033

Explanation

BTEX = by EPA Method 8021B
DRO = Diesel Range Organics by AK Method 102
GRO = Gasoline Range Organics by AK Method 101
mg/kg = milligrams per kilogram
NA = Not sampled/not analyzed/not measured/not available
ND = Sample Result below method detection limit
RRO = Residual Range Organics by AK Method 103
SPLP = Synthetic Precipitation Leaching Procedure by SW846 EPA Method 1312
TAH = Total aromatic hydrocarbons (sum of benzene, toluene, ethylbenzene, and total xylenes)
TAqH = Total aqueous hydrocarbons (sum of TAHs and PAHs)
µg/L = micrograms per liter
¹ = Laboratory could not report AK 101, BTEX and Naphthalene from samples SP7-S-072305 and SP10-S-072305 due to lack of methanol in the vials.
² = Duplicate of SP1-S-072305
³ = Duplicate of SP10-S-072305
* = Naphthalene analyzed by EPA Method 8021B
-- = No clean up level established
< = Result less than the reporting limit indicated

TABLE 3
Stockpile Baseline Sample Data Summary
2005 Construction Season
Former West Nome Tank Farm
Nome, Alaska

Sample ID	Sample Date	Dibenzo(a,h) anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-cd) pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)	TAH (µg/L)	TAqH (mg/kg)	SPLP GRO (µg/L)	SPLP DRO (µg/L)	SPLP RRO (µg/L)	SPLP Benzene (µg/L)	SPLP Toluene (µg/L)	SPLP Ethylbenzene (µg/L)	SPLP Xylenes (µg/L)	SPLP Napthalene (µg/L)
ADEC Alternative Cleanup Levels		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SP1-S-072305	7/23/05	<0.033	0.067	1.3	<0.033	<0.033	0.76	0.064	ND	2.13	860	1,400	31	12	7.5	<2.5	17	<25
SP2-S-072305	7/23/05	<0.033	0.056	1.1	<0.033	<0.033	0.6	0.069	ND	1.8	850	1,500	24	<2.5	2.9	3.9	16	92
SP3-S-072305	7/23/05	<0.033	0.085	1.7	<0.033	<0.033	1.1	0.079	ND	2.89	910	1,500	22	4.9	<2.5	<2.5	9	86
SP4-S-072305	7/23/05	<0.033	0.079	1.7	<0.033	2	1.1	0.083	ND	4.88	1,200	1,600	<20	9.00	5.7	<2.5	16	120
SP5-S-072305	7/23/05	<0.033	0.084	2.2	<0.033	3.5	1.4	0.070	ND	7.18	190	1,600	<20	4.7	3.6	<2.5	8.7	29
SP6-S-072305	7/23/05	<0.033	0.085	1.3	<0.033	<0.033	0.87	0.073	ND	2.26	1,100	1,400	<20	<2.5	3	3.5	20	120
SP7-S-072305 ¹	7/23/05	<0.033	0.083	1	<0.033	<0.033	0.69	0.084	ND	1.77	190	1,400	<20	<2.5	<2.5	<2.5	<7.5	26
SP8-S-072305	7/23/05	<0.033	0.077	1.8	<0.033	<0.033	1.1	0.070	ND	2.98	1,500	1,700	<20	7.6	5.5	<2.5	23	100
SP9-S-072305	7/23/05	<0.033	0.091	1.7	<0.033	<0.033	1.1	0.074	ND	2.9	1,300	1,600	<20	<2.5	<2.5	<2.5	9.9	100
SP10-S-072305 ¹	7/23/05	<0.033	0.086	1.7	<0.033	<0.033	1.2	0.074	ND	2.99	1,300	1,700	23	<2.5	<2.5	<2.5	11	140
SP11-S-072305	7/23/05	<0.033	0.096	1.5	<0.033	<0.033	1.1	0.079	ND	2.7	330	1,300	<20	<2.5	<2.5	<2.5	<7.5	43
SP12-S-072305	7/23/05	<0.033	0.110	1.1	<0.033	<0.033	0.75	0.14	ND	1.96	790	1,400	<20	<2.5	<2.5	<2.5	<7.5	130
SP13-S-072305	7/23/05	<0.033	0.250	1.5	<0.033	4	1	0.27	ND	6.75	180	1,100	<20	<2.5	<2.5	<2.5	<7.5	27
SP14-S-072305	7/23/05	<0.033	0.037	1.3	<0.033	<0.033	1	0.053	ND	2.34	910	1,400	<20	<2.5	<2.5	<2.5	<7.5	81
SP15-S-072305	7/23/05	<0.033	0.072	0.89	<0.033	<0.033	0.66	0.071	ND	1.62	450	1,300	<20	<2.5	<2.5	<2.5	<7.5	42
SPDUP1-S-072305 ²	7/23/05	<0.033	0.062	0.86	<0.033	<0.033	0.51	0.058	ND	1.4	610	1,400	33	<2.5	<2.5	<2.5	<7.5	74
SPDUP2-S-072305 ³	7/23/05	<0.033	0.082	1.1	<0.033	<0.033	0.84	0.069	ND	2.02	360	1,400	<20	<2.5	<2.5	<2.5	<7.5	<5

Explanation

BTEX = by EPA Method 8021B
DRO = Diesel Range Organics by AK Method 102
GRO = Gasoline Range Organics by AK Method 101
mg/kg = milligrams per kilogram
NA = Not sampled/not analyzed/not measured/not available
ND = Sample Result below method detection limit
RRO = Residual Range Organics by AK Method 103
SPLP = Synthetic Precipitation Leaching Procedure by SW846 EPA Method 1312
TAH = Total aromatic hydrocarbons (sum of benzene, toluene, ethylbenzene, and total xylenes)
TAqH = Total aqueous hydrocarbons (sum of TAHs and PAHs)
µg/L = micrograms per liter
¹ = Laboratory could not report AK 101, BTEX and Naphthalene from samples SP7-S-072305 and SP10-S-072305 due to lack of methanol in the vials.
² = Duplicate of SP1-S-072305
³ = Duplicate of SP10-S-072305
* = Naphthalene analyzed by EPA Method 8021B
-- = No clean up level established
< = Result less than the reporting limit indicated

TABLE 4
Truck Sample Data Summary
2005 Construction Season
Former West Nome Tank Farm
Nome, Alaska

Sample ID	Sample Date	Field Screening	Soil Laboratory Analysis								Soil Leachate Analysis							
		PetroFlag™ Result (TPH - ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	RRO (mg/kg)	Naphthalene (mg/kg)	SPLP GRO (mg/L)	SPLP DRO (mg/L)	SPLP RRO (mg/L)	SPLP Benzene (mg/L)	SPLP Toluene (mg/L)	SPLP Ethylbenzene (mg/L)	SPLP Xylenes (mg/L)	SPLP Naphthalene (mg/L)
Truck4-S-062005	6/20/05	7,830	<0.094	<0.24	<0.24	<1.7	170	3,800	<220	<0.47	0.13	2.5	0.21	<0.0025	<0.0025	<0.0025	<0.0075	<0.025
Truck14-S-062005	6/20/05	5,080	<0.094	<2.4	<2.4	<1.7	210	2,600	<230	<52	<0.05	2.7	0.32	<0.0025	<0.0025	<0.0025	<0.0075	<0.005
Truck1-S-062305	6/23/05	4,410	<0.088	0.14	<0.2	<1.5	190	1,900	470	<40	<0.05	1.6	0.15	<0.0025	<0.0025	<0.0025	<0.0075	<0.005
Truck11-S-062305	6/23/05	9,740	<0.083	<0.083	<0.083	<3	290	3,900	<800	<60	0.370	1.7	0.19	<0.0025	<0.0025	<0.0025	<0.0075	0.084
Truck21-S-062305	6/23/05	4,430	<0.082	0.19	<0.21	<1.5	160	1,700	420	<40	<0.05	1.0	0.12	<0.0025	<0.0025	<0.0025	<0.0075	<0.005
Truck31-S-062305	6/23/05	5,610	<0.082	0.16	<0.21	<1.5	160	1,500	420	<35	0.290	1.1	0.12	<0.0025	<0.0025	<0.0025	<0.0075	<0.025
Truck41-S-062305	6/23/05	6,350	<0.085	0.23	<0.5	<3	320	2,800	430	<50	0.5	1.5	0.21	<0.0025	<0.0025	<0.0025	<0.0075	0.062
Truck51-S-062305	6/23/05	2,930	<0.088	0.15	<0.088	<0.66	100	1,200	460	<30	0.12	1.3	0.23	<0.0025	<0.0025	<0.0025	<0.0075	0.029
Truck1-S-070705	7/7/05	5,870	<0.0020	0.0081	0.0028	0.014	0.50	94	240	3.2	<0.05	0.14	0.053	<0.0025	<0.0025	0.003	0.0096	<0.005
TruckDUP1-S-070705 ¹	7/7/05	5,870	<0.0024	0.0079	<0.0059	<0.018	2.3	100	300	<2	<0.05	0.096	<0.019	<0.0025	<0.0025	<0.0025	<0.0075	<0.005
Truck11-S-070705	7/7/05	1,800	<0.0022	0.0083	<0.0054	<0.016	2.6	70	230	<2	<0.05	0.14	0.05	<0.0025	<0.0025	<0.0025	<0.0075	<0.005
Truck21-S-070705	7/7/05	3,030	<0.021	<0.021	<0.0054	<0.6	45	450	200	<15	<0.05	0.4	0.024	<0.0025	<0.0025	<0.0025	<0.0075	<0.005
Truck31-S-070705	7/7/05	7,610	<0.086	<0.086	<0.4	<1.5	240	1,800	<400	<60	<0.05	1.5	0.12	<0.0025	<0.0025	<0.0025	<0.0075	0.011
Truck41-S-070705	7/7/05	5,810	<0.047	<0.047	<0.12	<1.5	83	1,100	370	<40	<0.05	1.1	0.19	<0.0025	<0.0025	<0.0025	<0.0075	<0.005

Explanation
TPH = Total Petroleum Hydrocarbons
ppm = parts per million
mg/kg = milligrams per kilogram
GRO = Gasoline Range Organics by AK Method 101
DRO = Diesel Range Organics by AK Method 102
RRO = Residual Range Organics by AK Method 103
BTEX = by EPA Method 8021B
Naphthalene = by EPA Method 8021B
SPLP = Synthetic Precipitation Leaching Procedure by SW846 EPA Method 1312
¹ = Duplicate of sample Truck1-S-070705

TABLE 6
Groundwater Analytical Data
Former West Nome Tank Farm
Nome, Alaska

Well No./ Elevation (TOC)*	Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Xylenes (µg/L)	GRO (µg/L)	DRO (µg/L)	RRO (µg/L)	Polynuclear Aromatic Compounds													
									Fluorene (µg/L)	Naph- thalene (µg/L)	Phenan- threne (µg/L)	Benzo (a)pyrene (µg/L)	Benzo (ghi) perylene (µg/L)	Acena- phthylene (µg/L)	Acena- phthene (µg/L)	Benzo (a) anthracene (µg/L)	Benzo (b) fluoranthene (µg/L)	Chry- sene (µg/L)	Dibenzo (a,h) anthracene (µg/L)	Pyrene (µg/L)	Fluor- anthene (µg/L)	IDP (µg/L)
Trip Blank																						
TB-4	09/19/02	<0.2	<0.5	<0.5	<1.0	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/03/03	<0.2	<0.5	<0.5	<1.0	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	05/27/04	<0.2	<0.5	<0.5	<1.0	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/28/04	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	05/30/05	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/31/05	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TB-5	09/19/02	<0.2	<0.5	<0.5	<1.0	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/03/03	<0.2	<0.5	<0.5	<1.0	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	05/27/04	<0.2	<0.5	<0.5	<1.0	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/26/04	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	06/01/05	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	09/01/05	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TB-6	09/19/02	<0.2	<0.5	<0.5	<1.0	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/03/03	<0.2	<0.5	<0.5	<1.0	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	05/27/04	<0.2	<0.5	<0.5	<1.0	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/26/04	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	05/31/05	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	09/01/05	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TB-7	08/03/03	<0.2	<0.5	<0.5	<1.0	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	05/27/04	<0.2	<0.5	<0.5	<1.0	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/26/04	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	06/01/05	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	09/01/05	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TB-8	08/03/03	<0.2	<0.5	<0.5	<1.0	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/26/04	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	06/01/05	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	06/02/05	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TB-9	10/28/04	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TB-10	10/28/04	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TB-20	06/29/05	<0.5	<0.5	<0.5	<1.5	<10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

<p><u>Explanation</u></p> <p>µg/L = Micrograms per liter -- = Not sampled/not analyzed/not measured/not available GRO = Gasoline Range Organics by AK Method 101 DRO = Diesel Range Organics by AK Method 102/103 RRO = Residual Range Organics by AK Method 102/103 BTEX = by AK Method 101 PAH = Polynuclear Aromatic Compounds by EPA Method 8270M Lead by EPA Method 6010B IDP = Indeno (1,2,3-cd) pyrene</p>	<p><u>Notes:</u></p> <p>a = Results reported for the gas range are primarily due to overlap from diesel range hydrocarbons. b = The analyte concentration could be artificially elevated due to coeluting compounds or components. c = The sample was received at a pH>2 and analyzed outside of the method recommended hold time of seven days for unpreserved or inadequately preserved samples. d = The sample chromatographic pattern does not resemble the fuel standard used for quantitation. e = Detected hydrocarbons in the diesel range do not have a distinct diesel pattern and may be due to heavily weathered diesel or possibly biogenic interference. f = Detected hydrocarbons do not have pattern and range consistent with typical petroleum products. g = The detected hydrocarbons appear to be due to diesel range overlap as well as a straight chain alkane product such as paraffin or a highly refined lube oil. h = The heavy oil range organics present are due to hydrocarbons eluting primarily in the diesel range. I = This sample also analyzed for PCBs by EPA 8082. PCBs were reported below the laboratory detection limit. j = An intermittent sheen was noted while purging this well. The results may not be representative of dissolved groundwater concentrations. k = During purging process of this well, relatively high turbidity field readings were observed prior to the well going dry. The high turbidity of the sample may have caused an elevated lead result in this well. ADEC Groundwater Clean-up Levels per 18AAC 75.345, Table C, Register 165, January 2003.</p>
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**APPENDIX A
PHOTOGRAPHS**

2005 Comprehensive Interim Action Documentation Report
Chevron Environmental Management Company
West Nome Tank Farm
Nome, Alaska

SEE COMPACT DISC FOR APPENDIX

APPENDIX B
SOIL STOCKPILE SUBGRADE SAMPLE ANALYTICAL REPORTS
2005 Comprehensive Interim Action Documentation Report
Chevron Environmental Management Company
West Nome Tank Farm
Nome, Alaska

SEE COMPACT DISC FOR APPENDIX

APPENDIX C
STOCKPILE STORAGE AREA SAMPLE ANALYTICAL REPORTS
2005 Comprehensive Interim Action Documentation Report
Chevron Environmental Management Company
West Nome Tank Farm
Nome, Alaska

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APPENDIX D
TRUCK SAMPLE ANALYTICAL REPORTS
2005 Comprehensive Interim Action Documentation Report
Chevron Environmental Management Company
West Nome Tank Farm
Nome, Alaska

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**APPENDIX E
TRUCK LOGS**

2005 Comprehensive Interim Action Documentation Report
Chevron Environmental Management Company
West Nome Tank Farm
Nome, Alaska

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APPENDIX F
OIL/WATER SEPARATOR LOGS
2005 Comprehensive Interim Action Documentation Report
Chevron Environmental Management Company
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APPENDIX G
DEWATERING DISCHARGE ANALYTICAL REPORTS
2005 Comprehensive Interim Action Documentation Report
Chevron Environmental Management Company
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Nome, Alaska

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APPENDIX H
GROUNDWATER DATA TREND EVALUATIONS
2005 Comprehensive Interim Action Documentation Report
Chevron Environmental Management Company
West Nome Tank Farm
Nome, Alaska

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