THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION & RESPONSE
Contaminated Sites Program

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File: 2658.38.001

August 7, 2012

Jeffrey S. Backlund, V.P.
North Pacific Seafoods, Inc.
4 Nickerson Street, Suite 400
Seattle, WA 98109

Re: Decision Document; Togiak Fisheries, Togiak, Alaska
Cleanup Complete Determination - Institutional Controls

Dear Mr. Backlund;

The Alaska Department of Environmental Conservation (ADEC) Contaminated Sites Program has reviewed the environmental record on file for the Togiak Fisheries site (site). The site is contained within two adjacent parcels, one that is owned and the other leased from the State of Alaska by North Pacific Seafoods, Inc. (NPSI). Based on the information submitted to date, ADEC determined that the contaminant concentrations remaining on site do not pose an unacceptable risk to human health or the environment. No further remedial action will be required as long as the site is in compliance with established institutional controls.

The record for the site is summarized in ADEC's online Contaminated Sites database[1] and the file is located at the return address listed above.

In preparing this decision, ADEC reviewed all environmental records on file for the site, dating from 1987 through the present. Key documents that were reviewed include the August 2007 risk assessment[2] prepared by NPSI's consultant, SLR Alaska (SLR), approved by ADEC in a letter dated November 9, 2007; the *Addendum to Method 4 Human Health and Screening Ecological Risk Assessment (Addendum)* dated February 2, 2009; the letter report *Findings from ADEC Inquiry Regarding Remaining Contamination (Findings)* dated February 4, 2009; the 2008 Ground Water Characterization Report received May 11, 2009 with supplemental information provided in April and May 2009; the *June 2010 Field Event – Letter Report, Togiak Fisheries, Togiak, Alaska* received July 30, 2010; and the *September 2010 Ground Water Monitoring Event - Summary Report* and *September 2010 Stockpile Decommissioning - Summary Report* both dated December 22, 2010.

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[1] URL: http://dec.alaska.gov/Applications/SPAR/CCReports/Site_Report.aspx?Hazard_ID=322

[2] *Method 4 Human Health and Screening Ecological Risk Assessment, North Pacific Seafoods, Inc., Togiak, Alaska. August 2007* prepared by SLR International Corp.

Although ADEC determined that Cleanup Complete with Institutional Controls status could be granted in 2010, during a January 11, 2010 meeting ADEC and NPSI agreed to delay issuance of the Record of Decision until after the results of the work scheduled to begin in June 2010 became available, so that the final closure documents would be more definitive.

ADEC did not approve alternative cleanup levels for the site. The site cleanup levels for hazardous substances in site soil are set by 18 AAC 75.341, Method Two, Tables B1 and B2, Migration to Groundwater for the over 40-inch (precipitation) zone. ADEC cleanup levels for groundwater are set by 18 AAC 75.345, Groundwater and surface water cleanup levels, Table C.

Site specific information, applicable regulatory standards, and other factors considered by ADEC in making the decision to grant Cleanup Complete with Institutional Controls (ICs) status are summarized in the sections below. Potential risks associated with the contaminants remaining in site soils, groundwater and sediments have been addressed through the imposition of the institutional controls and other conditions listed at the end of this decision.

Site Information

Site Name and Location:
Togiak Fisheries
Located on the east side of Togiak Bay across from Togiak, Alaska 99678

Legal Description: Within U.S. Survey 878 and adjacent Alaska Tideland Survey No. 1334 (Tideland Lease Agreement ADL No. 217490), both located within protracted Section 17, Township 13 South, Range 66 West, Seward Meridian, Alaska, according to survey plats filed in the Bristol Bay Recording District.

Name and Mailing Address of Contact:
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ADEC Contaminated Sites Database and File Numbers:
File No.: 2658.38.001
Hazard ID: 322

Regulatory authority under which the site was cleaned up:
18 AAC 75

Background

The site name assigned by ADEC reflects the ownership by Togiak Fisheries, Inc. (TFI) of the NPSI property at the time the releases were reported in 1987. In 1996 TFI merged with and became North Pacific Processors, Inc. (NPPI). In 2005, NPPI changed its name to North Pacific Seafoods, Inc. (NPSI). As the owner of U.S. Survey 878 and leaseholder for the adjacent Alaska Tidal Survey 1334, NPSI is the responsible party for the site.

The site is located on Togiak Bay in the Bristol Bay region of Alaska (Figure 1).[3] There are two neighboring Alaska Native villages within sight of the plant. Togiak Village (pop. 804) is approximately 2.5 miles across Togiak Bay from the plant and can be reached only by boat or plane. Twin Hills (pop. 80) is six miles from

[3] Figure 1: Site Vicinity Map

the plant and can be accessed by 4-wheel drive vehicle. Both villages are traditional Yup'ik Eskimo communities with a fishing and subsistence lifestyle. Togiak Bay is located about 67 miles west of Dillingham, or about 30 minute plane flight. Dillingham is about 329 miles southwest of Anchorage.

The site comprises the contaminated portions of two adjacent surveyed properties.[4] These are U.S. Survey 878, a 5.21-acre parcel of land owned by NPSI, and Alaskan Tideland Survey No. 1334, a 5.08-acre tideland tract that has been leased by NPSI from the Alaska Department of Natural Resources (ADNR) since 1987.

The NPSI property is comprised of a low-lying spit to the north and uplands to the south. The spit is surrounded on three sides by marine tidelands and estuarine marsh. Ground surface elevations at the north end of the site, where the highest density of cannery structures are located, are generally less than 10 feet above sea level. The processing plant is built on pilings above the normal high tide level and has docking facilities on the north end of the plant.

The NPSI land borders private land to the south, with development of the private land described by NPSI as low-density seasonally-occupied residential structures. Groundwater at the site is shallow and in the low-lying areas is heavily influenced by the tides. Drinking and process water for the Togiak Fisheries facility, and water used by the owners and occupants of adjacent privately-owned land is obtained from the Togiak River.

Tideland Survey No. 1334 is horseshoe-shaped tract that follows the shoreline of and extends into the marine tideland environment adjacent to U.S. Survey 878. (Figure 2)[5]. The upland boundary of the tideland tract is formed by the natural meanders of the line of mean high water. The seaward boundary of the tract is formed by a line 150-feet seaward of and parallel to the line of mean high water. As shown on Figure 2, the leasehold parcel includes a 50-foot-wide easement for public access present along the mean high water line. A segment of the easement approximately 150 feet in length is entirely beneath existing structures supported on pilings.

NPSI's property was first surveyed in 1908 and was initially the location of a missionary complex built by the Morovian church. The property has reportedly been operated as a fish processing plant since the late 1940s. NPSI's property is occupied by production buildings, residences, docks, an above-ground tank farm and associated piping, and various outbuildings. Structures on the spit are built on pilings, including the processing plant, with buildings adjacent to the marine environment on the north and west sides of the spit surrounded by nearly continuous docks that extend over the beach and part of the adjacent tidelands. The plant operates during the summer and is closed approximately eight months of the year. A fuel storage tank farm is maintained at the site for on-site use and for marine fuel sales. The southern, inland boundary of the NPSI property abuts private property as shown on Figure 3.[6]

Widespread contamination of the NPSI (formerly "TFI") property and adjacent tideland tract resulted from releases that took place from approximately 1984 through November 1987. In October 1987 the ongoing releases were reported to the US Coast Guard and relayed to ADEC for enforcement action and oversight of cleanup. TFI filed a report with the U.S. Coast Guard in December 1987 acknowledging that releases

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[4] The regulatory definition of "site" is an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership [18 AAC 75.990; Definitions (115)]

[5] Figure 2: Site map showing NPSI property USS 878 and adjacent tideland tract ATS 1334.

[6] Figure 3: Air photo showing NPSI property boundary corrections; line designated as "Brady Environmental, LLC is correct southern site boundary.

from a leaking underground marine gasoline pipeline under the dock created a sheen on marine waters and contaminated a 300-foot stretch of the shoreline of adjacent Togiak Bay.

It was later determined that over 35,000 gallons of gasoline and diesel has been released to the land, groundwater, and marine environment from buried and surface gasoline pipelines and from the aboveground tank farm at the NPSI facility.

The large-volume releases that took place in the 1980's resulted in free-product accumulation on the shallow groundwater and the creation of a smear zone in soil associated with the groundwater over large portions of the north half of the NPSI property. Based on interviews and depositions, prior to initiation of spill cleanup, sheens were regularly observed in adjacent marine waters and during one incident the beach reportedly ignited after a smoker discarded a cigarette butt, leaving the pilings charred. TFI operated a groundwater and vapor recovery systems during 1989, recovering over 8,000 gallons of free product from site soil and groundwater.

NPSI reports that since 1987 there were two additional documented releases on NPSI's Togiak property:

1. In 2003 NPSI reported a release from a tank overflow adjacent to an ongoing excavation. The soils were excavated and treated with the 2003 soils.

2. In 2005 approximately 260 gallons of diesel fuel was released when a worker reportedly left a valve open between a fuel tank and the incinerator near the southern property boundary. The release was investigated and cleaned up in 2006, and is referred to in ADEC records as the 2005 incinerator release.

All soil and sediment excavation with the exception of excavation associated with the 2005 incinerator release was done with oversight by Brady Environmental, LLC (Brady) during the 2001 through 2003 field seasons.

Site Characterization and Cleanup Actions: Chronology

1987 through 1991 Activities

Initial sampling in 1987 indicated that soil over a large portion of the spit was saturated with gasoline and diesel and that free product either as gasoline, diesel or fuel mixtures was present on the groundwater over large areas of the property. Initial steps taken by TFI in early 1988 were to drain and cap the fuel lines at the facility. Later, substandard fuel pipelines and storage tanks were replaced.

ADEC and TFI entered into a Compliance Order by Consent (COBC) on January 20, 1988 that required TFI to take remedial action to contain fuel spills and prevent any additional contamination of the land or migration of fuel into water. The COBC stated that since at least 1984, in excess of 35,000 gallons of gasoline and diesel fuels had spilled on the land and into the state's waters at TFI's Togiak facility. Criminal charges were filed against the plant manager and the corporation for knowingly not reporting petroleum spills. In the fall of 1988 an out of court settlement was made that dismissed the criminal charges and settled all civil claims for damages and fines in the amount of $185,000.

Initial site investigation and free product recovery took place from 1988 to 1991. Crowley Environmental Services (Crowley) and consultant Rittenhouse-Zeman & Associates (RZA) were contracted by TFI to plan and carry out remedial actions specified in the COBC. Site conditions and hydrocarbon recovery operations

are discussed in two reports on file by RZA.[7] However, the record is incomplete as two additional RZA reports referenced in other reports were not located either in ADEC or NPSI files; these are the June 20, 1988 report *Results of Test Explorations at Togiak Fisheries, Inc.* and the 1989 *Petroleum Remediation Summary Report, Togiak Fisheries Site.*

The RZA reports document subsurface explorations and petroleum recovery operations at the site that began in February 1988. The work included installation of 11 monitoring wells, 7 ejector pump recovery wells, 2 skimmer pump scavenger wells, 30 test pits, and 11 soil borings. The recovery wells utilized ejector pumps. The scavenger wells were 36-inch-diameter wells equipped with skimmer pumps, and worked in conjunction with groundwater-depression wells located approximately 10 feet from the recovery wells. Both well systems were designed to recover hydrocarbons floating on the groundwater surface.

RZA continued site remedial actions during the spring and summer of 1988. In May 1988 RZA dug 25 test pits to groundwater to determine the boundaries of petroleum impacted areas at the site. Field observations and test results were used to develop a map of site areas that had been moderately and heavily impacted. During the August 1988, RZA also installed and began operating a soil vapor extraction (SVE) system in a series of trenches to treat contaminated soil in place.

In June 1989, RZA representatives visited the site to document changes in free product distribution and to evaluate the need for additional free product recovery. Most of the recoverable petroleum was reportedly accumulated at the north end of the site, beneath the dock area and fish processing plant.
By August 1989, approximately 8,700 gallons of fuel and emulsified sludge had been recovered using the groundwater recovery system, and RZA estimated that an additional 4,700 gallons of liquid gasoline had been recovered by the vapor extraction system, for a total of 13,400 gallons of product recovered. The systems were shut down for the winter. The vapor extraction system was reactivated and operated from May to October 1990, at which time product recovery was described as having dropped to 'trace' levels.

Consultant RZA was replaced by consultant PTI Environmental Services (PTI) in 1991 and reported on cleanup progress as required by the COBC. PTI reported on June 4, 1991 that the vapor extraction system continued to operate but the monitoring wells showed no accumulation of product. The groundwater recovery system was not operated again due to the low accumulations of floating product.

From June 10 through June 13, 1991, PTI collected soil and groundwater samples from the site.[8] PTI's work included collecting water samples from 15 existing wells and soil samples from 9 backhoe-excavated test pits. Wells that were sampled included MW-1, MW-2, MW-7, MW-8, MW-11, MW-12, RW-1 through RW-7, and the groundwater depression wells associated with SV-1 and SV-2. Wells MW-3, MW-4 and MW-6 could not be found, and MW-9 and MW-10 could not be sampled due to ice in the wells. Total petroleum hydrocarbons (TPH) by now-obsolete EPA Method 418.1 were detected in all wells sampled except MW-7 and MW-12 with TPH concentrations ranging from 0.34 mg/L to 94.1 mg/L. BTEX was found in all samples that had detectable concentrations of TPH with the exception of MW-11. Detectable total BTEX ranged from 0.001 mg/L in MW-8 to 37.96 mg/L in RW-2. The highest level of benzene detected was 2.04 mg/L in RW-6.

Soil samples from nine test pits were analyzed for diesel range organics (DRO). Six of the samples were analyzed for gasoline-range hydrocarbons. Diesel-range compounds were detected in each of the nine

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[7]RZA Reports: (1988a) Petroleum recovery operations, *Togiak, Alaska. No. A- 1207, February 1988* and (1988b) Site remediation plan, *Togiak, Alaska. No. A-1207-1, March 1988;* (1988c)

[8] Sept. 3, 1991 report by PTI: *Field Report and Sampling Results.*

samples tested, with concentrations ranging from 42.3 mg/kg to 2,026 mg/kg. Gasoline-range compounds were detected in each of the six samples tested, with concentrations ranging from 4.22 mg/kg to 2,200 mg/kg.

Based on the analytical results, PTI concluded that total petroleum hydrocarbons (TPH) concentrations had decreased 75 to 85 percent in the wells since 1989. PTI reported that the number of wells with occurrences of floating hydrocarbons on the water table had decreased from five in June 1989, to one in June 1991. The single well that had a measured thickness of 0.01 feet of product in 1991 was scavenger well SV-2, a 36-inch diameter well that could not be purged due to the presence of ice. It is not known whether the presence of ice or other factors affected the measured thickness of product in the well. Many factors, including improper well screen placement and frozen soil strata may result in increased or decreased apparent thickness of product on the water table. PTI noted that a groundwater depression well located 10 feet away from SV-2 had 0.1 feet of floating product before the well was purged, and after purging was described as having a heavy sheen and strong petroleum odor. PTI agreed with RZA's findings that soil and groundwater contamination was widespread in the north part of the spit, north of the fuel tank farm and laundry, and that the bay mud immediately north of the docks was also contaminated.

The SVE system was operated intermittently until 1991 when it and the free product recovery system were shut down. The identified objectives of the COBC were to mitigate free product and explosive vapors. PTI concluded that these objectives appeared to have been met by 1991, based on the diminished free product in monitoring wells so that only one well contained measurable product, and by sufficiently diminished levels of explosive vapors. Also in 1989 and 1991, all existing fuel storage tanks were removed and a new self-diked storage and aboveground fuel distribution system was installed at the TFI facility.

1992 through 2004 Activities

ADEC's file contains no record of environmental actions taken between 1992 and 1999.

As described below, all excavation of soil and sediment contaminated by releases before the late 1980s took place from 2001 through 2003 with oversight by consultant Brady Environmental, LLC (Brady). No other soil was excavated at the site with the exception of soil contaminated by a diesel spill that took place in 2005.

Site activity resumed following a several year hiatus in April 2000, when ADEC staff met with NPPI (which as previously noted merged with TFI in 1996) and NPPI's consultant, Brady regarding ADEC requirements for cleanup.

Soil and groundwater sampling and analysis work was conducted by Brady in June 2000 and reported in the *Togiak Fisheries Soil and Groundwater Investigation report, August 2000.* The soil investigation focused on six areas that included the low tide beach area along the western portion of the site; the tank farm series at the location of the former tank farm in the southwestern portion of the site; the processor/office building; the soil under the new powerhouse building located in the central portion of the site; the soil under the old powerhouse located in the southeastern portion of the site including one sample collected beneath an underground line that ran from the former tank farm to the old powerhouse; and the landfill. Groundwater samples were collected from the existing monitoring wells, with the note that scavenger wells SV-1 and SV-2 could not be sampled because SV-1 was frozen and a building was located over SV-2. Brady concluded that while there was no significant free product at the site, there were two significant soil and groundwater contaminant plumes at the site including a diesel-range organics (DRO) plume in the vicinity of the former tank farm, and a combined DRO and gasoline-range organics (GRO) plume under the process and office buildings. The report also described three additional minor contaminant plumes.

NPPI submitted the *Togiak Fisheries Interim Remedial Action Measure Plan* on March 14, 2001. In a conditional approval letter dated March 30, 2001 ADEC requested additional characterization and approved the Method 1 Category B cleanup levels of 100 mg/kg, 200 mg/kg, and 2000 mg/kg for GRO, DRO, and residual-range organics (RRO) respectively that were proposed in the work plan. ADEC also approved a site-specific operations plan for a portable thermal treatment facility and later approved a *Supplemental Site Characterization Work Plan* dated April 11, 2001.

The 1988 COBC was terminated by ADEC in a letter dated July 25, 2001 to Jim Kudwa of NPPI.

Work proposed in the March 14, 2001 plan and April 11, 2001 supplemental plan was conducted during the summer 2001 field season. Work was documented in two reports submitted on January 29, 2002; the *Togiak Fisheries Interim Remedial Action Measure Summer 2001 Status Report* and the *Togiak Fisheries Supplemental Site Characterization Report*, both dated January 25, 2002. Work documented in the summer status report included the excavation of approximately 10,000 wet tons of hydrocarbon-impacted soil within the hydrocarbon smear zone in areas within and adjacent to the identified plume areas. Approximately 7,500 wet tons of the hydrocarbon-impacted soil were treated on-site using Brady's thermal treatment process; the remaining 2,500 wet tons were stockpiled. The supplemental site characterization report included groundwater sampling results from existing monitoring wells on-site, soil and groundwater sampling from the new and old powerhouse areas and the former drum storage area, sampling of soils, ash and groundwater from the landfill/incinerator area, and sampling of soils that had been thermally-treated on-site.

ADEC's letter dated March 27, 2002 approved the site characterization report dated January 25, 2002. ADEC's letter dated March 28, 2002 approved the interim removal action report dated January 25, 2002 and requested submittal of additional information and a cleanup plan by May 15, 2002. NPPI notified ADEC that it was negotiating with its insurance carrier and would be submitting an interim removal plan instead of the requested cleanup plan.

By May 15, 2002 ADEC received and approved the *Togiak Fisheries Offsite Soil Treatment Facility Operations Plan* dated March 7, 2002 and subsequent plan modifications requested by ADEC. The plan modified the existing soil treatment facility to meet requirements for an offsite soil treatment facility. No soils originating off-site were treated at the facility.

On June 10, 2002 NPPI submitted the *Togiak Fisheries Interim Remedial Actions Measures Plan Summer 2002* and the *Sampling and Analysis Plan for post treatment sampling at the Togiak Fisheries Soil Treatment Facility*. ADEC approved the interim remedial actions plan in a letter dated June 20, 2002.

Following approval of the interim remedial actions plan ADEC and NPPI communicated for several months regarding the next steps, with the delays attributed to the involvement of insurance carriers. On November 21, 2002 NPPI submitted the *Evaluation of Remedial Activities and Suggested Next Steps for the North Pacific Processors, Inc (NPPI) Site* dated November 1, 2002 for ADEC review. The report summarized past activities at the site and recommended pursuing a risk assessment as the risk assessment may demonstrate there is no risk to human health or the environment, so that no further removal of contaminated soil would be necessary. ADEC's review letter dated December 19, 2002 declined to approve a risk assessment approach and requested that NPPI remove and treat additional soil according to the conditionally approved *Interim Removal Action Work Plan* dated June 10, 2002. ADEC noted in the letter that a risk assessment was premature as the contaminated soil at the site could be excavated and successfully treated, and the depth of contamination had not been fully characterized.

Discussions between ADEC and NPPI and its consultant Brady regarding possible risk-based approaches to cleanup continued through early 2003. A potential approach discussed during a January 28, 2003 meeting

included tentative agreement to complete the approved interim removal action during field season 2003, thermally treat on-site the remaining soil from the 2001 excavation, and conduct sampling for possible alternative cleanup levels. Also discussed were surface water quality issues, as there was documented impact to the surface water of Togiak Bay. 2002 water sample results were 9.10 mg/L GRO, 3.71 mg/L DRO and 0.0399 mg/L benzene. NPPI proposed excavating the soils and sediments from the area most likely impacting surface water and treating it to a to-be-determined Method Three cleanup level per 18 AAC 75.341, and depositing it in the area to be covered by the alternative cleanup level. Brady also proposed evaluating the site for a possible groundwater use determination under 18 AAC 75.350 given the tidal influence on the present monitoring wells on site. ADEC noted that long-term monitoring would be a requirement for conditional closure.

In February 2003 Brady submitted the *Togiak Fisheries Offsite Soil Treatment Facility - Soil Containment Structure Construction Report and As-Built Documentation, September 2002.* The report was approved by ADEC in April 2003.

On March 13, 2003 NPPI submitted the *Addendum to 2002 Interim Remedial Action Measure Plan*" dated March 12, 2003. ADEC approved the addendum in a letter dated March 25, 2003. The original plan proposed excavation of contaminated soil in areas most likely to impact the adjacent surface water and was approved by ADEC on June 20, 2002. The addendum proposed background soil sampling and analysis for metals and total organic carbon (TOC); the replacement of all groundwater monitoring wells and sampling of the replacement wells for petroleum constituents and salinity. The addendum was approved with the conditions that soil samples analyzed for TOC would also be analyzed for specified petroleum hydrocarbons and groundwater sample analysis would include GRO and DRO.

On March 28, 2003 Brady submitted to the U.S. Army Corps of Engineers a Nationwide Permit Application to obtain permits allowing the removal of contaminated fill and repair of the existing seawall and dock facilities. The permits were issued in May 2003.

On April 21, 2003 ADEC approved the June 2002 *Togiak Fisheries Evaporative Desorption Remediation Sampling and Analysis Plan* received on June 10, 2002. Between June and October 2003 ADEC received a series of reports documenting post-treatment thermal remediation results below applicable site cleanup levels.

On March 24, 2004 ADEC received the *Togiak Fisheries Final Remedial Action and Supplemental Site Characterization Report* dated March 17, 2004 documenting work done during the 2002 and 2003 field seasons and requesting approval to treat and dispose of soils off-site. The report documented the repair and replacement of the storm-damaged seawall and fill at the north end of the site under the U.S. Army Corps of Engineers Nationwide Permit, and remedial excavations from three general locations described as the (1) north dock area, (2) the office/lower warehouse area and (3) the historic tank farm/fuel dispenser area.

At the north dock area contaminated fill within the seawall boundary was removed and the excavation was lined with non-woven geosynthetic liner and re-filled with clean sand and gravel fill. Excavations in this area were extended under the dock to at least 25 feet from the seawall. The report noted that free phase hydrocarbons and heavy sheen were observed on the groundwater during excavation. Free phase hydrocarbons were recovered, mixed with contaminated soils and thermally treated on site. Following excavation of contaminated soil, seawall repair was done by driving additional steel pilings approximately 20 feet below ground surface in selected areas along the existing pile seawall. Brady reported that contaminated soils remained under the dock in locations that were beyond the reach of the excavator.

DRO, GRO and benzene were documented at levels exceeding the 18 AAC 75.341 method two, migration to groundwater standards in soil and sediments from two to 15 feet below the surface of the ground and

intertidal area of the beach along the north dock area of the NPSI property. The maximum contaminant levels documented in soil and sediments remaining at the north dock area were collected from the limits of excavation on the landward side of the excavation. The maximum contaminant levels in a near surface sample were documented at a depth of two feet below the ground surface and contained 1,640 mg/kg GRO, 924 mg/kg DRO and 2.42 mg/kg benzene (Sample RE61-2). The maximum contaminant levels documented within the north dock area were from a sample collected at a depth of 10 feet below the ground surface that contained 7,120 mg/kg GRO, 1,910 mg/kg DRO and 15.2 mg/kg benzene (Sample RE52-10). Three monitoring wells designated RW3R, RW4R and RW5R were placed in the clean backfill between the seawall and the unexcavated bank of the NPSI property to monitor groundwater quality.

Soil at the office/lower warehouse area was excavated to the existing buildings. The excavations could not be safely advanced under the buildings due to the depth of the contamination and the structural risk to the shallow pilings supporting the building foundations. Free phase hydrocarbons and heavy sheen were observed on the groundwater during excavation and were recovered and mixed with contaminated soils that were later thermally treated. Monitoring wells were placed in the backfill to monitor groundwater quality.

Contamination associated with the historical tank farm and fuel dispenser was described by Brady as a major source area for subsurface hydrocarbon contamination, with petroleum contamination present near the ground surface and extending to groundwater 12 feet below surface in the vicinity of the historic tank farm. Recovery wells were initially installed to remove free phase hydrocarbons in this area. Brady also noted that the subsurface spill occurred prior to installation of the existing facilities. The remedial excavation was advanced toward the existing tank farm and fuel dispenser where the contaminant horizon was found at depth. The remedial excavation was terminated where structures were present or where the contaminant zone thinned out at depth. Free phase hydrocarbons and heavy sheen were observed on the groundwater during excavation and were recovered and mixed with contaminated soils that were later thermally treated. Monitoring wells were placed in the clean backfill to monitor groundwater quality.

The report also documented that during the 2003 field season 11 existing wells, most of which were installed during the 1980's, were removed by excavation and replaced. The wells were redeveloped during the summers of 2000, 2001 and 2002 and in some instances, the wells were bailed dry. The screens of the wells that were replaced in 2003 were described as entirely blocked by a black substance. Consultant Brady noted that the groundwater analytical data appeared not to be representative of water quality in the contaminant zone because the original monitoring well screens were plugged in the contaminant zone in the upper portions of the groundwater column.

The cover letter accompanying the report requested no further remedial action by ADEC based on the report findings that all contaminated soils that could safely be removed without demolishing site structures had been excavated, the seawall located under the north dock had been reinforced so that it functioned as a more effective barrier, and groundwater quality had significantly improved.

ADEC's review letter dated April 14, 2004 conditionally approved the treatment and off-site disposal of the remaining 7,000 wet tons of stockpiled soils and requested a groundwater monitoring plan. Soil was excavated from three major areas corresponding to the north dock area, office/lower warehouse area and historic tank farm/fuel dispenser area. Soil samples were collected at the final limits of the remedial excavations, with ADEC's 18 AAC 75.341 Method 2 migration to groundwater cleanup levels exceeded in numerous locations noted on Figure 4, attached to the enclosed Notice of Environmental Contamination (NEC).

On June 9, 2004 ADEC received the *Togiak Fisheries Groundwater and Sediment Monitoring Plan* dated June 7, 2004, prepared by Brady. The plan noted that substantial cleanup of soil and groundwater had been

completed at the site, including the excavation and thermal treatment of a total of approximately 27,000 tons of contaminated soils, and the installation of a new sea wall designed to mitigate erosion. The plan proposed using six existing monitoring wells as compliance monitoring points (MW-1R, MW-A, MW-8, RW-3R, RW-4R, and RW-5R) and sampling sediment only if there is a documented breach of the sea wall.

2005 through May 2009 Activities

In early January 2005, NPPI notified ADEC that it had changed consultants from Brady to SLR Alaska (SLR) and that SLR would complete the reporting for the most recent work done by Brady and undertake the ground water sampling activities as specified in the ADEC approved monitoring plan. SLR conducted ground water monitoring at the site in June 2005 and August 2005 in accordance with the plan. NPPI also elected to self-operate the on-site thermal treatment system previously operated by Brady and received a permit extension from ADEC to do so in accordance with the Brady operations plan that was conditionally approved in 2004. The remediation system was turned off in the fall of 2005, and has not been used since. NPSI contracted with Platt Environmental (Platt) to conduct confirmation sampling of the post-treated soils, as Brady had done in prior years.

ADEC's letter to NPPI dated January 18, 2005 approved the *Togiak Fisheries Groundwater and Sediment Monitoring Plan* dated June 7, 2004 and acknowledged the change of contractors to SLR.

NPPI's name was changed to NPSI by March 2005. On April 27, 2005 NPSI submitted the *Togiak Fisheries Environmental Cleanup Project, 2004 Summary Report* dated April 2005 and prepared by SLR. The report summarized remedial actions and supplemental site characterization work conducted by former consultant Brady that took place during the summer 2004 field season. During the time period reported on, a total of approximately 7,300 cubic yards of petroleum contaminated soil was treated successfully to the approved ADEC soil cleanup levels in the 2004 field season; 5,400 cubic yards of this total was re-graded on-site in accordance with the ADEC-approved work plan; 1,900 cubic yards remained in long term stockpiles over the winter season to be graded onsite in a similar manner to previous batches at the start of the 2005 field season; and a total of approximately 750 cubic yards of petroleum contaminated remained in a long term stockpile awaiting treatment in the 2005 field season.

On August 1, 2005, NPSI discovered a recent release of an estimated 260 gallons of diesel fuel from a valve between a supply tank and the incinerator that had reportedly been mistakenly opened by a worker. The impacted soil was investigated and excavated during August and September 2005, with the results documented in the *Togiak Fisheries 2005 Incinerator Release Site Assessment and Interim Corrective Action Report* by SLR, dated January 2006. During the August 2005 work, six test pits were excavated in the vicinity of the incinerator spill, with samples collected from depths ranging from 8 to 11 feet bgs. Impacted soil above the top of the zone of water table fluctuation (10 feet bgs) was excavated in September 2005, with confirmation samples at the 10-foot and above depth meeting the Method 2 migration to groundwater cleanup level. Approximately 350 cubic yards of petroleum-impacted soil was separated from clean overburden and was stockpiled and later thermally treated with ADEC approval. During excavation, groundwater was observed to be impacted and was investigated during the 2006 field season.

In March 2006 ADEC approved NPSI's request to conduct a risk assessment for the Togiak Fisheries site. Between May 2006 and November 2007, when ADEC approved the risk assessment, NPSI submitted and ADEC responded to drafts of the risk assessment work plan and risk assessment document and ADEC and NPSI held comment resolution meetings to resolve issues related to the risk assessment. The draft risk assessment report, titled *Method 4 Human Health and Screening Ecological Risk Assessment, North Pacific Seafoods, Inc., Togiak, Alaska,* was submitted on January 8, 2007.

On July 28, 2006, NPSI submitted the *2006 Sampling and Analysis Plan, Togiak Fisheries, August 2006* that proposed stockpile sampling and monitoring well installation and other actions related to investigation of the incinerator spill and completion of the risk assessment. ADEC conditionally approved the work plan on July 31, 2006, and later approved revisions to the plan in a letter dated August 4, 2006. The proposed work was done in August 2006 and included soil stockpile sampling; ground water sampling during June and August 2006; monitoring well installation, development, and sampling at the incinerator site; and sediment and surface water sampling. The results for the August 2006 work are reported in the final risk assessment report dated August 2007 and in the *2007 Soil and Ground Water Characterization Report, November 2007* documenting work done according to the *2007 Sampling and Analysis Plan* submitted on August 10, 2007.

On August 10, 2007 NPSI submitted the *2007 Sampling and Analysis Plan, August 2007*. The plan proposed additional sampling of the on-site stockpiles and collecting groundwater samples from five monitoring wells. ADEC approved the plan in a letter dated August 15, 2007.

On August 14, 2007 ADEC received the final *Method 4 Human Health and Screening Ecological Risk Assessment, North Pacific Seafoods, Inc., Togiak, Alaska, August 2007*. The report concluded that the contaminant concentrations in soil, ground water, and surface water did not pose a threat to human health, even under unrestricted land use, with the assumption that ground water would not be used for domestic purposes. Consultant SLR also found that the current concentrations in soil, sediment, ground water, and surface water did not pose a threat to ecological receptors.

ADEC approved the risk assessment in a letter dated November 9, 2007. In the approval letter ADEC advised NPSI that institutional controls and other conditions would be set forth in the Conditional Closure and Record of Decision documents.

On December 12, 2007 ADEC received the *2007 Soil and Ground Water Characterization Report, November 2007* documenting work done according to the *2007 Sampling and Analysis Plan* submitted on August 10, 2007. Site-wide, BTEX concentrations were not detected in the ground water samples collected in August 2007. The wells installed to document ground water quality near the 2005 incinerator release location (EX-MW-1 through EX-MW-4) contained detectable concentrations of DRO and RRO, but these values were less than the most stringent ADEC cleanup levels. The report also found that GRO, RRO, BTEX, and polynuclear aromatic hydrocarbons (PAH) concentrations in the soil stockpile samples were less than the most stringent established ADEC cleanup levels for the site which are the Migration to Groundwater cleanup levels for the over 40-inch precipitation climatic zone under 18 AAC 75.341.

On January 23, 2008 NPSI submitted a *Proposed Record of Decision - Togiak Fisheries Site, Togiak, Alaska* to ADEC for review.

In December 2008 ADEC requested additional information regarding the data used in the risk assessment and information regarding contamination remaining in three locations at the site that were not included in the risk assessment. These were the historic tank area, the dock area, and the office area. NPSI responded to the request in February 2009 by submitting an addendum to the risk assessment *Addendum)*[9] and *Findings from ADEC Inquiry Regarding Remaining Contamination (Findings)*[10] dated February 4, 2009.

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[9] *Addendum to Method 4 Human Health and Screening Ecological Risk Assessment* prepared by SLR and dated February 2, 2009.

[10] *Findings from ADEC Inquiry Regarding Remaining Contamination* prepared by SLR and dated February 4, 2009.

SLR's email dated March 25, 2009 notified ADEC that 1,100 cubic yards of soil remain stockpiled at the site. On April 22, 2009 SLR submitted figures showing remaining contamination at the site. ADEC staff met with SLR on May 5, 2009 to discuss outstanding requirements for closure complete with institutional controls status for the site.

The February 2009 *Addendum* to the risk assessment responded to ADEC's request that all available data be included in the risk assessment and used in risk calculations. According to the *Addendum*, SLR's original soil dataset included samples from 2003 to 2006. The revised soil dataset includes analytical data back to 2000.

Risk-based cleanup levels for the site were recalculated by SLR using the expanded data set with the result that residual range organics (RRO) were identified as Chemicals of Potential Concern (COPCs) and were added to the list of COPCs for the site. The calculated hazardous substance concentrations for the COPCs, referred to as Target Cleanup Levels in the *Addendum* and as Alternative Cleanup Levels in the August 2007 risk assessment are not approved as site cleanup levels. The site cleanup levels for hazardous substances in site soil are set by 18 AAC 75.341, Method Two, Tables B1 and B2, Migration to Groundwater for the over 40-inch (precipitation) zone. ADEC cleanup levels for groundwater are set by 18 AAC 75.345, Groundwater and surface water cleanup levels, Table C.

SLR concluded in the *Addendum* that the revised risk estimates are below the target cancer risks and non-cancer hazards identified by ADEC, and the revised datasets support the risk assessment finding that current concentrations in soil do not pose a threat to human health.

On May 11, 2009 ADEC received a groundwater characterization report[11] that reported on the 2008 groundwater sampling from select monitoring wells at the site and that summarized groundwater monitoring results from 2003 through 2008.

June 2009 through January 2011 Activities

On August 14, 2009, ADEC staff and NPSI and SLR representatives met to discuss the terms of the Record of Decision (ROD) for the site. Following the meeting SLR submitted by email a soil stockpile decommissioning plan[12] proposing work in September 2009 to place a total of approximately 1,100 cubic yards of soil containing petroleum hydrocarbons into the 2005 incinerator release excavation, with additional soil to be spread elsewhere on the site. NPSI noted that the ROD to be signed later would then refer to this in the past tense as a completed activity. ADEC issued a conditional approval for the plan in a letter dated August 28, 2009.

On January 6, 2010, NPSI submitted a letter in response to ADEC's August 28, 2009 review and two work plans, one for decommissioning a stockpile[13] and the other a sampling and analysis plan.[14] On January 11, 2010, ADEC met with SLR and NPSI representatives to discuss the work plans and schedule. ADEC and NPSI agreed that the ROD would be completed following rather than prior to the proposed June 2010 work.

On March 8, 2010 ADEC approved the stockpile decommissioning plan received on January 6, 2010. The plan was a revision of the August 2009 *Draft Togiak Fisheries Soil Stockpile Decommissioning Plan* in response to

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[11] *2008 Ground Water Characterization Report, Togiak Fisheries, Inc., Togiak, Alaska...May 2008* prepared by SLR.

[12] *Draft Togiak Fisheries Soil Stockpile Decommissioning Plan ... August* 2009 prepared by SLR.

[13] *Togiak Fisheries Soil Stockpile Decommissioning Plan...January 2010* prepared by SLR.

[14] *Togiak Fisheries Sampling and Analysis Plan, 2010 through 2012* prepared by SLR.

ADEC's review letter dated August 28, 2009. The plan proposed removing clean fill from the 2005 spill excavation so that two feet of clean fill remains above the top of the zone of groundwater fluctuation; placing the contaminated soil from the 2005 spill into the excavation, and placing a minimum two-foot thickness of clean fill at the surface of the filled-excavation. Soil that is not placed in the excavation will be spread on the surface of the ground.

ADEC approved the sampling and analysis plan received January 6, 2010 in a letter dated May 7, 2010. The plan proposed sampling groundwater from nine monitoring wells at the site; collecting six pore water samples from intertidal sediment; rehabilitating two monitoring wells located beneath the dock that were installed in 2003 (RW-3R and RW-4R); and decommissioning 11 monitoring wells that did not include the nine to be sampled.

On June 24, 2010, NPSI notified ADEC that site work had been completed by June 23, 2010 including (1) sampling all wells scheduled for monitoring, with the exception of MW-B that was not accessible; (2) rehabilitating and sampling two wells (RW 3R and RW 4R) that were damaged or silted-in; and (3) installing and sampling all pore water devices (PW-1 through PW-6). NPSI noted that the locations of 2 of the 6 pore water devices were modified because a container barge anchored north of the dock prevented sampling in the original locations.
SLR submitted a letter report[15] for the June 2010 sampling on July 30, 2010. Results of pore water sampling are described in detail under the Surface Water section below.

ADEC's quality assurance officer made a site inspection at the Togiak fisheries site on September 7, 2010. The quality assurance officer, Brent Porter, accompanied by Jeff Backlund from North Pacific Seafoods and Andy Dimitriou and Aaron Nash from SLR consulting, observed groundwater monitoring sampling and reviewed areas that had been recently excavated and the locations of the pore water samples collected in June 2010.

On December 22, 2010, ADEC received two reports; the *September 2010 Ground Water Monitoring Event - Summary Report* and the *September 2010 Stockpile Decommissioning - Summary Report* both dated December 22, 2010. The summary report documented field groundwater monitoring from select monitoring wells done in September 2010 and monitoring well decommissioning completed by August 2010. BTEX concentrations and diesel range organics (DRO) concentrations were not detected above the method reporting limits (MRLs) in the groundwater samples collected in September 2010. The stockpile decommissioning report documented the decommissioning of the soil stockpiles located at the site and placement of the soil in an existing onsite excavation.

Contaminants of Concern (COCs) and Site Cleanup Levels

Soil Site Cleanup Levels

The contaminants of concern in site soils are GRO, DRO, RRO and the individual BTEX constituents. Soil cleanup levels for the site are established by 18 AAC 75.341, Method Two, Table B2, Under 40 Inch Zone, Migration to Groundwater. The soil cleanup levels for the COCs and the maximum contaminant concentrations that were present in excavation confirmation samples at the site are found in Table 1; maximum concentrations remaining for each excavated area are shown on Figure 4.

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[15] *June 2010 Field Event – Letter Report, Togiak Fisheries, Togiak, Alaska* prepared by SLR and dated July 15, 2010.

Table 1 - Soil Cleanup levels: 18 AAC 75.341 Method Two, Table B2, Under 40 Inch Zone				
Contaminants of Concern (COCs)	Cleanup Level* (mg/kg)	Maximum concentration remaining at site (mg/kg)	Regulatory Maximum Allowable** (mg/kg)	Exposure Pathway
Benzene	0.025	15.2	-	Migration to Groundwater
Toluene	6.5	10.9	-	Migration to Groundwater
Ethylbenzene	6.9	14.2	-	Migration to Groundwater
Xylenes (total)	63	177	-	Migration to Groundwater
GRO	300	7,120	1,400	Migration to Groundwater
DRO	250	15,400	12,500	Migration to Groundwater
RRO	10,000	7,230	22,000	Ingestion

* Cleanup levels are from18 AAC 75.341, Method Two, Tables B1 and B2: "Under 40- inch Zone" refers to mean annual precipitation of less than 40 inches each year.

** Maximum allowable concentrations exist in the regulations for these compounds and are found in Table B2 of 18 AAC 75.341(d). Under 18 AAC 75.340(j)(3) these concentrations must be attained for the petroleum hydrocarbon compounds indicated in the surface soil and the subsurface soil.

- No maximum allowable concentration exists in the regulations for these compounds.

Groundwater

The contaminants of concern in site groundwater are GRO, DRO, RRO and benzene. Groundwater cleanup levels for the site are established in 18 AAC 75.345, Table C. Groundwater Cleanup Levels and maximum contaminant groundwater concentrations encountered in site groundwater in 2007 and 2008 are included in Table 2 below.

Table 2 – Groundwater Contaminants of Concern, 18 AAC 75.345 Table C Groundwater Cleanup Levels and Maximum Concentrations		
Contaminant of Concern (COC)	Cleanup Levels (mg/L)	Maximum concentration remaining in site monitoring wells (mg/L)
Benzene	0.005	<0.0005
Toluene	1.0	<0.0020
Ethylbenzene	0.7	<0.0020
Xylenes (total)	10	<0.0020
GRO	1.3	<0.1
DRO	1.5	1.25
RRO	1.1	0.986

Surface Water (including Pore Water in Sediments)

Surface water quality standards applicable to this site are the numeric water quality criteria adopted into the Alaska Water Quality Standards specified in 18 AAC 70.020(b)(23) for aquatic life criteria for marine water.[16]

[16] Aquatic life criteria for marine water: Water quality standards for toxic and other deleterious substances for marine water uses of aquaculture, seafood processing, growth and propagation of fish, shellfish, other aquatic life and wildlife, and harvesting for consumption of raw mollusks or other raw aquatic life in 18 AAC 70.020(b)(23) must be based on aquatic life criteria for marine water in the table found in the *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances As Amended Through December 12, 2008.*

Sampling locations to ensure compliance with groundwater that is hydrologically connected with surface water can be measured in sentry monitoring wells or in pore water.

Several of the 11 monitoring wells installed in 2003 replaced product recovery wells installed in the 1980's. Of these, the three northernmost wells adjacent to the marine environment are RW3R, RW4R and RW5R. These three wells were placed in clean sand and gravel fill within an approximately 25-foot-wide excavation, lined with non-woven geosynthetic fabric, between the newly rebuilt seawall and the unexcavated bank landward of the seawall. The height of the seawall and fill is reportedly approximately 6 feet above the adjacent beach surface.

The three monitoring wells had been installed to measure potential contamination to the marine waters were installed in 2003, i.e., RW3R, RW4R and RW5R. These wells replaced recovery wells that were installed in the 1980s. The three wells were installed within a filled area landward from a retaining wall. Benzene concentrations in RW4R and RW5R, respectively 0.00898 mg/L and 0.00662 mg/L exceeded the applicable water quality standard of 0.005 mg/L during one sampling event on June 10, 2005.

Wells RW3R, RW4R and RW5R were among the six wells proposed as compliance monitoring points in the ADEC-approved *Togiak Fisheries Groundwater and Sediment Monitoring Plan* dated June 7, 2004. The other wells designated as compliance points are MW-1R, MW-A, and MW-8.

A total of six surface water samples have been collected from the water column at the site during a single monitoring event in August 2006. While surface water is not considered a measuring point for compliance under the Water Quality Standards, the sample results are considered indicators. The surface water samples were collected during an outgoing high tide and were analyzed for BTEX and PAHs. No PAHs were detected; benzene and p&m-xylene were detected in two surface water samples. The maximum concentration of benzene in surface water was 0.00498 mg/L.

The 2007 risk assessment conservatively estimated that surface water concentrations are equal to those for groundwater because they are hydraulically connected. To identify surface water Chemicals of Potential Ecological Concern (COPECs) for ecological receptors, maximum chemical concentrations in groundwater and in surface water were compared to surface water screening levels found in the SQuiRTs (NOAA, 2008), which include national ambient water quality criteria (NAWQC). The NAWQC representing the chronic continuous concentration (CCC) for saltwater were preferentially used if available; otherwise the chronic maximum concentration (CMC) for saltwater were used. Chemicals present at concentrations greater than screening levels were identified as preliminary COPECs for surface water, and were further evaluated in the risk assessment. Chemicals present at concentrations lower than cleanup levels were not further evaluated.

The chemicals fluoranthene and phenanthrene had maximum ground water concentrations exceeding surface water screening levels. Only the CCC was exceeded for fluoranthene (0.0199 mg/L maximum compared with a CCC of 0.016 mg/L), and both the CCC and CMC were exceeded for phenanthrene (0.0293 mg/L maximum compared with a CCC of 0.0046 mg/L and a CMC of 0.0077 mg/L). Therefore, these two PAHs were further evaluated in the risk assessment as preliminary COPECs in surface water. No COPECs were identified based on surface water data. This may indicate that dilution of the COPECs in ground water is resulting in receiving water concentrations below limits of detection.

Pathway Evaluation

Following investigation and cleanup at the site, exposure to the remaining contaminants was evaluated using ADEC's Exposure Tracking Model (ETM). The pathway evaluation also included review of a risk assessment performed regarding the site. Exposure pathways are the conduits by which contamination may reach human or ecological receptors. ETM results show all pathways to be one of the following: De Minimis Exposure, Exposure Controlled, or Pathway Incomplete. A summary of this pathway evaluation is included in Table 4 below.

Pathway identification and evaluation during the risk assessment process is detailed in the risk assessment and includes the following potential exposure pathways:

Current onsite commercial worker/resident receptor:
Indoor vapor inhalation from the subsurface (passive vapor intrusion; i.e., volatilization from soil and ground water)

Future onsite construction worker:

- Incidental soil ingestion
- Dermal exposure to soil
- Inhalation of outdoor vapors during soil excavation activities
- Inhalation (outdoor) of metals and semi-volatile organic compounds (SVOCs) via dust entrainment
- Future onsite resident receptor (adult and child):
- Fish and game ingestion (food chain accumulation)
- Indoor vapor inhalation from the subsurface (passive vapor intrusion; i.e., volatilization from soil and ground water)
- Future onsite commercial worker receptor:
- Indoor vapor inhalation from the subsurface (passive vapor intrusion; i.e., volatilization from soil and ground water)

Future offsite resident receptor (adult):

- Fish and game ingestion (food chain accumulation)
- Current/future onsite/offsite recreational users and residents:
- Fish and game ingestion (food chain accumulation).

Direct contact with sediment is considered a potentially complete and significant pathway for the on-site and off-site benthic invertebrate receptors because benthic invertebrates feed directly off the sediment. However, data indicate that for most areas of the site the contaminants of concern are not present in the upper four feet of soil, the maximum depth in sediment for benthic organisms.

Each of these potential exposure pathways are addressed as appropriate through the institutional controls required as conditions under which Cleanup Complete with Institutional Controls status is granted and will remain in effect.

Contamination originating from the major petroleum hydrocarbon releases documented in the mid-to late-1980's remains widespread in subsurface soil, in inaccessible areas adjacent to pilings and beneath structures, and in marine sediments generally below a depth of four feet and possibly continuing seaward of the maximum horizontal extent of excavation shown on Figure 4. In many cases contaminated soil was not accessible due to the presence of structures, including docks and buildings constructed on pilings, and below varying depths, with the result that neither the horizontal nor vertical extent of soil, groundwater and marine sediment contamination has been fully characterized in several areas of the site. In addition, contaminant concentrations remaining in adjacent marine and estuarine sediments exceed the 2008 marine sediment

screening levels from the NOAA SQuiRTs tables for ethylbenzene, xylenes and phenanthrene as shown in Table 3 above.

The risk assessment states that in marine sediments, benzene and toluene, for which screening levels are not applicable as detailed in the sediment section above; and for ethylbenzene and xylenes, for which screening levels are applicable; concentrations that could lead to toxicity will not—in the absence of ongoing sources--persist in sediments due to the volatility of these compounds.[20] Assuming that contaminants documented in sediments during 2003 work are the result of the releases that took place through 1987, ADEC notes that concentrations of volatile compounds that exceed the applicable screening levels are persistent in sediments at the site.

A total of six sediment samples from the site have been analyzed for PAHs. The samples were collected from surface sediment around the perimeter of the NPSI property in August 2006. Phenanthrene was present above screening levels in one of the samples and identified as a COPEC in the risk assessment. Figure 9 of the risk assessment indicates that none of the sediment samples were collected under the dock. The highest level of phenanthrene at 0.273 mg/kg was present in sediment within the tidal zone located seaward of the current and former tank farms. ADEC does not find that the limited number of samples collected is sufficient to conclude that phenanthrene concentrations are localized.[21]

Photographs taken by ADEC during excavation in 2002 and other file information suggest there is a petroleum hydrocarbon-contaminated smear zone present throughout as much as a third of the land area of the site, primarily at the north end of the NPSI property although the highest remaining DRO concentrations in soil of 15,400 mg/kg are present at a depth of 8 feet within the area identified on Figure 2 as the Former Tank Farm area. ADEC finds that large areas of the site where site soil and sediment that are known to be, or expected to be contaminated are not fully characterized in part because the soil is not currently accessible for characterization or excavation, as is the case for the north end of the site, or that such remediation is impractical due to physical limitations that include the difficulty of working within the intertidal environment adjacent to the site and the presence of structures over much of the impacted area.

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[20] See Section 7.4 Results of Ecological Screening Assessment of the *Method 4 Human Health and Screening Ecological Risk Assessment, North Pacific Seafoods, Inc., Togiak, Alaska. August 2007* (This section concludes that potential exposure to benzene and toluene in sediment does not warrant quantitative evaluation because the regulatory standard assumes that concentrations will not persist in sediments due to the volatility of these compounds and that based on a combination of factors SLR concluded that "...the viability of aquatic populations will not be impacted by the concentrations of ethylbenzene and xylenes detected in sediments at the site, and quantitative evaluation is not necessary."

[21] See Section 7.4 Results of Ecological Screening Assessment of the *Method 4 Human Health and Screening Ecological Risk Assessment, North Pacific Seafoods, Inc., Togiak, Alaska. August 2007* () re phenanthrene in which SRL notes that "Phenanthrene is present above screening levels in ground water and sediment. This could indicate that previous excavation activities at the site did not remove all of the targeted sediment contamination. However, the area of impact is limited to beneath the dock, which has ongoing activities, and populations of organisms would not be further at risk from the localized concentrations of phenanthrene in sediment. Therefore, we do not recommend any further action on the basis of these results."

Table 4- Pathway Evaluation		
Pathway	**Result**	**Explanation**
Direct Contact with Surface Soil	Exposure Controlled	Impacted surface soil remains but is inaccessible due to location below buildings on pilings.
Direct Contact with Sub-Surface Soil	Exposure Controlled	Institutional controls are in place requiring prior notification to and approval by ADEC and proper handling of soil if potentially contaminated media will be exposed or excavated.
Inhalation-Outdoor Air	De Minimis	Volatile contaminants capable of creating risk via this pathway are present at concentrations that are not expected to exceed risk levels at the site.
Inhalation-Indoor Air	De Minimis	Volatile contaminants capable of creating risk via this pathway are present at the site but construction of site buildings on pilings minimizes the likelihood of vapor intrusion into occupied buildings. (See ADEC *Draft Vapor Intrustion Guidance for Contaminated Sites, 2009).*
Groundwater Ingestion	Exposure Controlled	Groundwater is currently not used for drinking water and institutional controls are in place to prevent the use of water for drinking. The shallow groundwater at the site is tidally influenced and in most areas is not suitable for drinking because it is brackish based on salinity content. Groundwater in monitoring wells at the incinerator release area near the southern NPSI property boundary was fresh to slightly brackish.
Surface Water Ingestion	Pathway Incomplete	Marine and estuarine surface water is not utilized as a drinking water source in this area. Surface river water is used for drinking water at the NPSI facility but the area of the site impacted by subsurface contamination is downstream from all fresh water drinking water intakes.
Wild Foods Ingestion	Pathway Incomplete	Marine and estuarine invertebrates and fish are not impacted as surface contaminated soil and sediments at the shore and intertidal areas have been removed. There are no other known wild foods that could be impacted.
Exposure to Ecological Receptors	Low Potential Exposure	Phenanthrene was present above screening levels in sediment adjacent to the northern area of the site that is covered by buildings and docks. The 2007 Risk Assessment concluded that populations of organisms would not be further at risk from the localized concentrations of phenanthrene in sediment and did not recommend further evaluation or action with respect to this exposure pathway.

Notes to Table 1: "Pathway incomplete" means that in ADEC's judgment contamination has no potential to contact receptors. "Exposure controlled" means there is an administrative mechanism in place limiting land or groundwater use, or a physical barrier in place that deters contact with residual contamination. "De minimis" means the exposure risk is minimal based on site conditions, volume of contaminated media and/or contaminant concentrations.

ADEC Decision: Cleanup Complete with Institutional Controls

ADEC has determined that contamination remaining at the site does not present an unacceptable risk to human health or the environment under current conditions and grants Cleanup Complete with Institutional Controls status. This status will remain in effect subject to the following conditions:

1) Groundwater is currently not used at the site and may not be used in the future for any purpose including drinking water or food processing without prior ADEC plan review and approval. Any use

of the groundwater including placement of additional monitoring wells requires prior review and plan approval by ADEC.

2) Notify ADEC if NPSI becomes aware that groundwater use is taking place or is proposed within 600 feet of NPSI's only landward property boundary. (See Figure 3). ADEC will provide public notice of this decision and make copies of the decision document available to nearby communities including Togiak and Twin Hills, and to the owners, users, and or operators of the adjacent property. NPSI reported to ADEC that groundwater is currently not used within at least 800 feet of NPSI's southern property boundary. If groundwater use occurs or is proposed within 600 feet of the NPSI property line, ADEC may impose additional requirements to ensure that groundwater pumping on the adjacent property does not cause contaminant migration and/or contamination of a water source on the adjacent property.
3) Conduct groundwater monitoring in accordance with the Sampling and Analysis Plan dated June 20, 2012 and conditionally approved by ADEC in a letter dated June 25, 2012. Changes to the plan must be approved in writing. Long-term monitoring requirements will be determined based on the results of the 2012 and 2013 monitoring events.
4) Groundwater monitoring analytical data shall be submitted to ADEC within 30 days following receipt of analytical results for the monitoring event, and a report within 60 days of receipt of results.
5) Groundwater monitoring reports shall include, but not be limited to, analytical data, results, discussion of findings, charts showing contaminant concentrations per well over time, discussion of quality assurance/qualify control (QA/QC) aspects of the sampling effort, field notes, including photographic documentation, conclusions and recommendations, including recommendations, as appropriate, to modify the long-term groundwater monitoring plan.
ADEC may require adjustments in future sampling frequency and well selection based on monitoring report findings and/or field observations.
6) NPSI will replace MW-B, determined to be non-functional during September 2010 sampling, with a new well or rehabilitate the existing well for future use, allowing for more complete data to be collected along the slough that is influenced by tidal fluctuations. If the construction or functionality of other wells is not adequate, ADEC may require action including replacement of the wells.
7) NPSI will provide ADEC with 20 days advance notice prior to groundwater sampling events or work associated with the monitoring wells to allow ADEC to inspect.
8) Monitoring wells determined to be unnecessary for carrying out the requirements of long-term monitoring must be decommissioned in accordance with ADEC guidance as soon as possible and no later than 12 months after it is determined, with ADEC concurrence, that the monitoring wells are no longer needed.
9) Any future change in land use may impact the exposure assumptions cited in this document. If land use changes the current institutional controls may not be protective and ADEC may require additional remediation and/or institutional controls. The current owner and/or other party responsible for the site shall report to ADEC every five years to document land use, or report as soon as the current owner and/or other responsible party become aware of any change in land ownership and/or use, if earlier. Planned changes in land use should be reported to ADEC's local ADEC office or electronically to DEC.ICUnit@alaska.gov.
10) Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.
11) NPSI shall provide a plan to ADEC at least 30 days prior to conducting activities at the site, including within the adjacent tidelands, that could reasonably be expected to result in disturbance of contaminated soil or sediments shown on Figure 4 or that could render accessible soils previously inaccessible including earthmoving, excavating; filling; dredging; building, dock or piling demolition; or that might include dewatering of groundwater at the site. Notification should include a description of the nature and extent of the planned activity. ADEC reserves the right to require an environmental management plan for control of contaminated media during activities that may disturb contaminated

med, including but not limited to handling of groundwater if dewatering is proposed; dust suppression; control of storm water runoff; monitoring the marine environment for a sheen, etc. ADEC approval of any plan that may be required is expected to include a request by ADEC for updates on scheduling and project status.

12) ADEC may require characterization and/or cleanup of areas that become accessible through removal or alteration of structures.
13) Prior to construction of any structure intended for human occupancy, submit for ADEC approval an updated Conceptual Site Model (CSM) and supporting documentation that potential exposure pathways have been abated or mitigated, shown to be incomplete, or otherwise determined not to pose an unacceptable risk to human health.
14) The enclosed Notice of Environmental Contamination (NEC or deed notice) with Figure 4 attached to it shall be recorded in the State Recorder's Office within 120 days of signing of this decision document. The deed notice identifies the nature and extent of contamination at the property and any conditions that the owners and operators are subject to in accordance with this decision document.

The ADEC Contaminated Sites Database will be updated to reflect the change in site status as detailed above. If and when the site meets the requirements for a Cleanup Complete determination, then the Institutional Controls will be terminated.

This Cleanup Complete – Institutional Controls determination was made in accordance with 18 AAC 75.380(d) and does not preclude ADEC from requiring additional assessment and/or cleanup action if future information indicates that this site may pose an unacceptable risk to human health or the environment. This decision is applicable only to existing contamination and not to any future hazardous substance releases.

Appeal

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 -18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 15 days after receiving the department's decision reviewable under this section. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 30 days after the date of issuance of this letter, or within 30 days after the department issues a final decision under 18 AAC 15.185. If a hearing is not requested within 30 days, the right to appeal is waived.

Please sign and return *Attachment A* to ADEC <u>within 30 days of receipt of this letter</u>. If you have questions about this closure decision, please contact the ADEC project manager, Eileen Olson at (907) 269-7527.

Approved By,

For

Rich Sundet
Environmental Manager

Recommended By

Eileen Olson
Environmental Program Specialist

Attachments:
Attachment A: Cleanup Complete - ICs Agreement Signature Page
Figure 1-Togiak Bay area topographic map
Figure 2-ADNR tideland tract and NPSI property survey diagram
Figure 3-Air photo of site depicting accurate location of southern NPSI property boundary
Figure 4-Areas of Impacted or Potentially Impacted Sediment, Groundwater and Soil

Enclosures:
Notice of Environmental Contamination (NEC) with Figure 4 attached to it.
Figure 4-Areas of impacted or potentially impacted sediment, groundwater and/or soil as identified by ADEC.

cc Andy Dimitriou, SLR Anchorage
Adam Smith, DNR Division of Mining, Land and Water, Anchorage

Attachment A: Cleanup Complete - ICs Agreement Signature Page

Togiak Fisheries, ADEC Hazard I.D. No. 322
Cleanup Complete - Institutional Controls (ICs)

_____, owner and responsible party or designated representative for the Togiak Fisheries site described in the accompanying Record of Decision (ROD) dated August 7, 2012, agrees to the conditions set forth in the ROD. Failure to comply with the terms of this agreement may result in ADEC reopening this site and/or requiring additional remedial action in accordance with 18 AAC 18 AAC 75.380(d).

_____ , 2012

Signature of Responsible Party, Owner, and/or Authorized Representative/ Date

_____

Printed Name and Title

Note to Responsible Person (RP):
Please return a signed copy of this Agreement within 30 days of receipt of this letter to:

Eileen Olson, Project Manager
ADEC Contaminated Sites Program
555 Cordova Street
Anchorage, AK 99501-2617

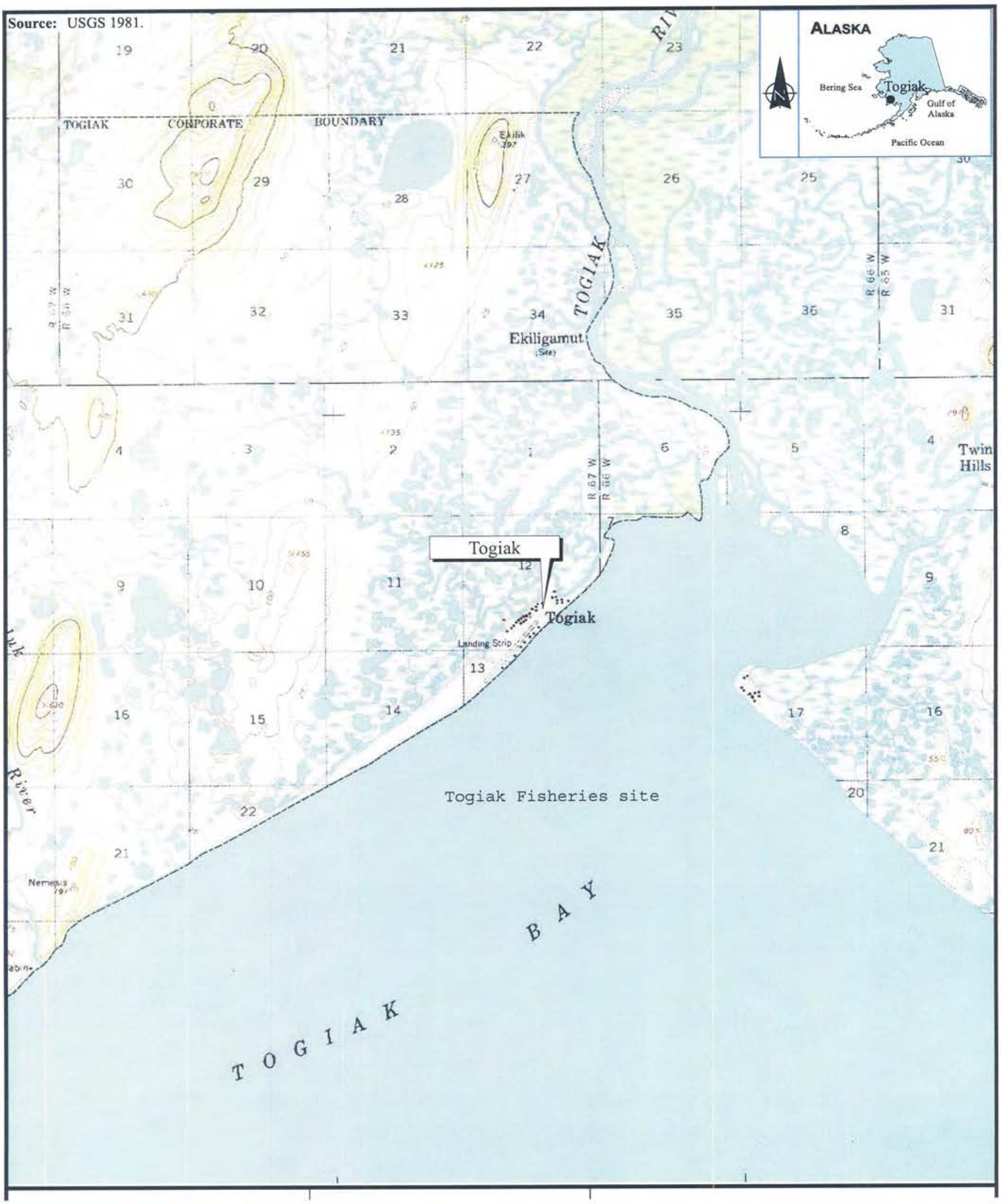
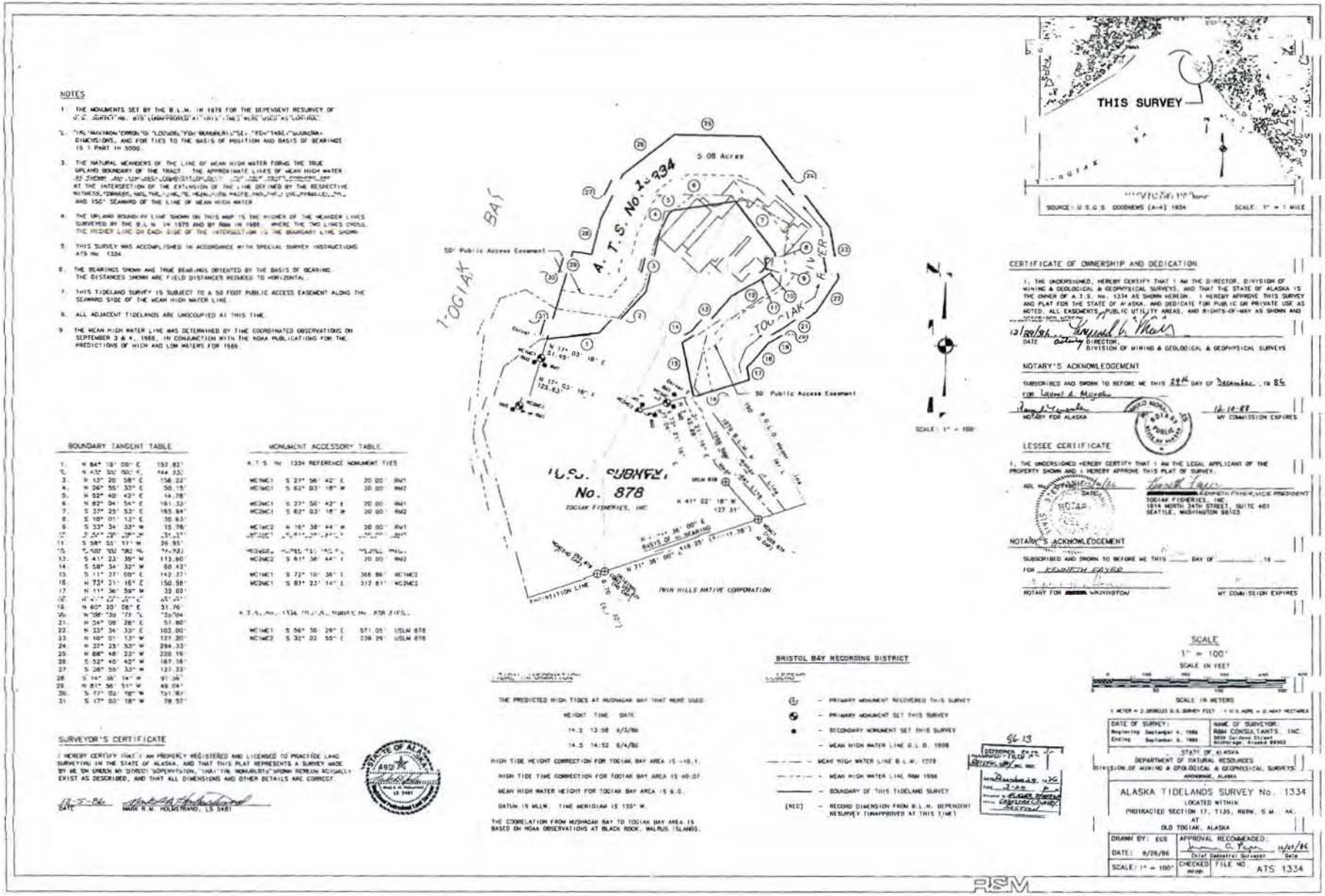


FIGURE 1 (ADEC ROD)



BOUNDARY TANGENT TABLE			
1.	N 84° 19' 09" E	157.82'	
2.	N 43° 32' 00" E	144.33'	
3.	N 13° 20' 58" E	156.22'	
4.	N 26° 55' 33" E	50.15'	
5.	N 52° 40' 42" E	14.38'	
6.	N 82° 04' 54" E	161.53'	
7.	S 37° 25' 53" E	165.84'	
8.	S 10° 01' 13" E	30.83'	
9.	S 33° 34' 33" W	10.78'	
10.	S 54° 28' 28" W	34.37'	
11.	S 58° 55' 17" W	36.95'	
12.	S 58° 30' 00" W	74.92'	
13.	S 41° 23' 39" W	113.60'	
14.	S 58° 34' 32" W	60.42'	
15.	S 11° 37' 00" E	142.37'	
16.	N 73° 21' 16" E	150.58'	
17.	N 11° 36' 59" W	33.03'	
18.	N 47° 27' 45" E	65.25'	
19.	N 60° 20' 08" E	31.76'	
20.	N 58° 59' 22" E	30.04'	
21.	N 54° 09' 28" E	51.80'	
22.	N 33° 34' 33" E	103.00'	
23.	N 10° 01' 13" W	129.20'	
24.	N 37° 25' 53" W	294.33'	
25.	N 88° 48' 23" W	220.19'	
26.	S 52° 40' 42" W	187.16'	
27.	S 28° 55' 33" W	127.33'	
28.	S 14° 36' 14" W	97.36'	
29.	N 81° 56' 51" W	48.04'	
30.	S 52° 04' 18" W	131.80'	
31.	S 17° 03' 18" W	78.52'	

MONUMENT ACCESSORY TABLE			
MC1NC1	S 27° 56' 42" E	20.00'	RM1
MC1NC1	S 62° 03' 18" W	20.00'	RM2
MC2NC1	S 27° 56' 42" E	20.00'	RM1
MC2NC1	S 62° 03' 18" W	20.00'	RM2
MC1NC2	N 16° 38' 44" W	20.00'	RM1
MC1NC2	[illegible]	[illegible]	[illegible]
MC2NC2	S 61° 38' 44" E	20.00'	RM2
MC1NC1	S 72° 10' 36" E	366.86'	MC1NC2
MC2NC1	S 83° 23' 14" E	312.81'	MC2NC2

A.T.S. No. 1334 TO U.S. SURVEY No. 878 TIES			
MC1NC1	S 56° 36' 28" E	571.05'	USLM 878
MC1NC2	S 32° 02' 55" E	239.29'	USLM 878

Legend

Monitoring Well Installed by SLR August 2006

100 0 50 100

SLR Alaska
4601 Business Park Blvd, Suite K42
Anchorage, AK 99503
(907)222-1112 Fax (907)222-1113

330 Wendell Avenue, Suite C
Fairbanks, AK 99701
(907)455-9005 Fax (907)455-9015

CLIENT:

NORTH PACIFIC SEAFOODS, INC.
TOGIAK FISHERIES
TOGIAK, ALASKA

AUGUST 2006 GROUND WATER SAMPLING INCINERATOR RELEASE AREA

PROJECT MANAGER:	APPROVED:	DESIGNED:	APPROX. SCALE:	REVISION:	FIGURE:
A. Dimitriou	D. Gaughan	D. Bailey	1" = 100'	1	7
PROJECT NO.:	DRAWN:	DATE:	FILE:		

FIGURE 3 (ADEC ROD)

EXCEEDANCES TO 18 AAC 75.341 AND 18 AAC 75.345

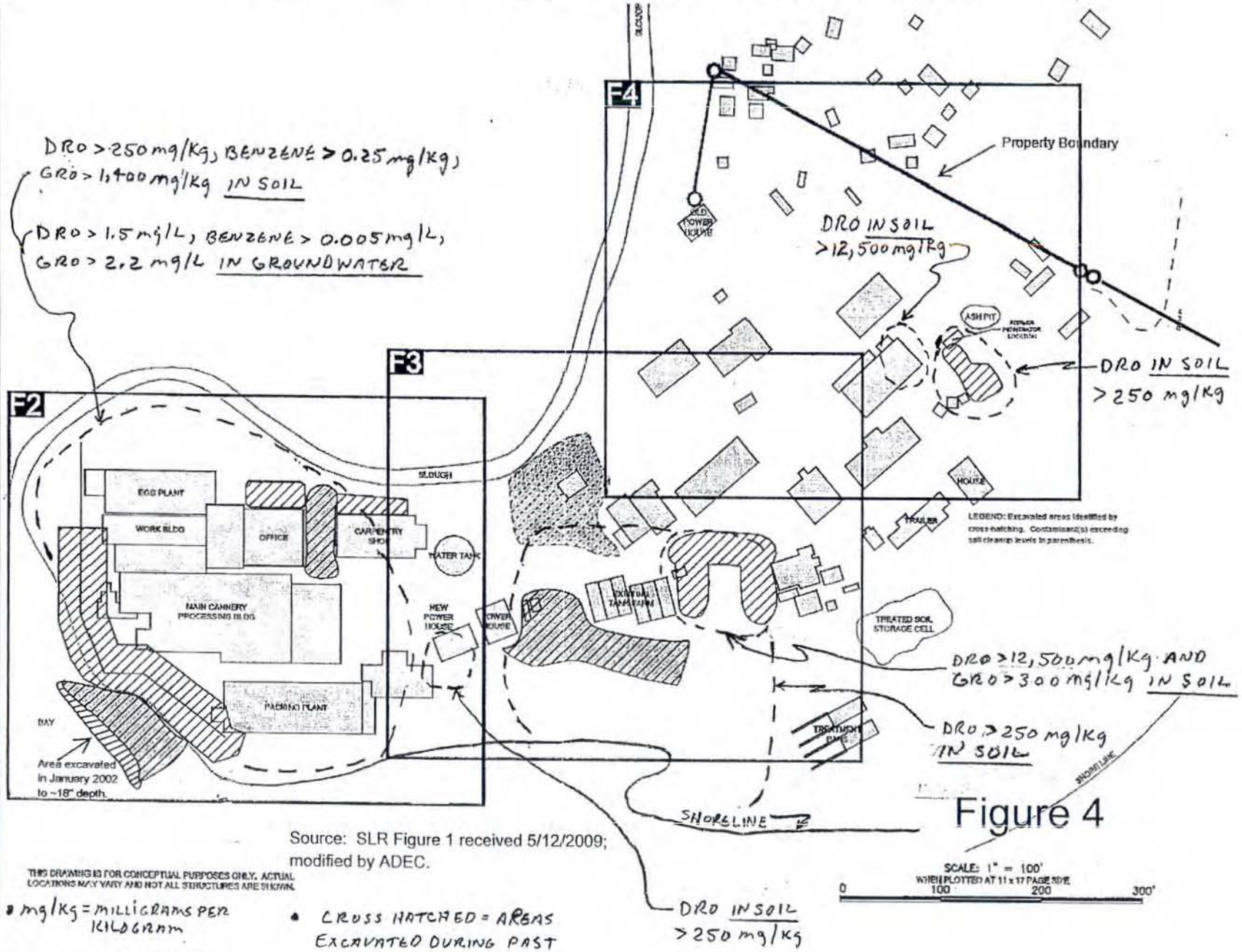


Figure 4

Source: SLR Figure 1 received 5/12/2009; modified by ADEC.

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

- mg/Kg = MILLIGRAMS PER KILOGRAM
- > = GREATER THAN
- mg/L = MILLIGRAMS PER LITER
- CROSS HATCHED = AREAS EXCAVATED DURING PAST REMEDIAL ACTIONS
- – – – = ESTIMATED CONTAMINANT EXTENT

Notice of Environmental Contamination (NEC)

Recording District: **Bristol Bay**
Togiak Fisheries Site

As required by the Alaska Department of Environmental Conservation, Grantee, pursuant to 18 AAC 75.375 Northern Pacific Seafoods, Inc. (NPSI), Grantor, as the owner and operator of the subject property, hereby provides public notice that the property located on the east side of Togiak Bay, across the bay from Togiak, Alaska, 99678 in the Bristol Bay region of southwest Alaska, and more particularly described as follows:

> Within U.S. Survey 878 comprising approximately 5.21 acres and adjacent Alaska Tideland Survey No. 1334 (Tideland Lease Agreement ADL No. 217490) comprising approximately 5.08 acres, both located within protracted Section 17, Township 13 South, Range 66 West, Seward Meridian, Alaska, according to survey plats filed in the Bristol Bay Recording District.

has been subject to a discharge or release and subsequent cleanup of oil or other hazardous substances, regulated under 18 AAC 75, Article 3, revised as of October 1, 2011.

The release and cleanup are documented in the Alaska Department of Environmental Conservation (ADEC) on-line contaminated sites database for the Togiak Fisheries site at http://dec.alaska.gov/Applications/SPAR/CCReports/Site_Report.aspx?Hazard_ID=322. A copy of the record of decision for the site granting Cleanup Complete with Institutional Controls status and dated August 7, 2012 is available by accessing the online database for the site and is also on file at the ADEC offices at 555 Cordova Street, Anchorage, Alaska.

ADEC reviewed and approved, subject to this NEC and other institutional controls set forth in the record of decision that the cleanup is protective of human health, safety, welfare, and the environment. ADEC determined, in accordance with the 18 AAC 75.325 – 390 site cleanup rules, that cleanup has been performed to the maximum extent practicable even though residual fuel-contaminated soil, groundwater and sediments exist on site.

No further cleanup is required unless information becomes available that indicates to ADEC that the site may pose an unacceptable risk to human health, safety, welfare, or the environment. If the remaining contaminated soil becomes accessible, for example by removal of one or more structures within the contaminated areas shown on attached Figure 4, or other information becomes available which indicates that the site may pose an unacceptable risk to human health, safety, welfare or the environment, the land owner and/or operator are required under 18 AAC 75.300 to notify ADEC. ADEC may require evaluation of the environmental status of the

contamination in accordance with applicable laws and regulations; including requiring further site characterization and cleanup under 18 AAC 75.325-.390.

In granting cleanup complete with institutional controls status, ADEC considered site specific conditions including the lack of accessibility to contamination remaining from major fuel releases in the 1980s, much of which is located beneath structures constructed on pilings; the fact that extensive source removal of approximately 7,650 cubic yards of petroleum hydrocarbon contaminated soil took place from 2001 to 2005; and the status of health and ecological exposure pathways following cleanup activities that included 'exposure controlled', 'de minimis' exposure, and 'low potential' ecological exposure. Although a contaminant smear zone is present in soil and sediment beneath and adjacent to cannery facility structures, pore water sampling and groundwater monitoring indicate that contaminant migration is not occurring.

The institutional controls set forth in the record of decision are copied below, with the exception of the item requiring the recordation of this deed notice, and are applicable to NPSI and any successor owners and/or operators:

1) Groundwater is currently not used at the site and may not be used in the future for any purpose including drinking water or food processing without prior ADEC plan review and approval. Any use of the groundwater including placement of additional monitoring wells requires prior review and plan approval by ADEC.

2) Notify ADEC if NPSI becomes aware that groundwater use is taking place or is proposed within 600 feet of NPSI's only landward property boundary. (See Figure 3). ADEC will provide public notice of this decision and make copies of the decision document available to nearby communities including Togiak and Twin Hills, and to the owners, users, and or operators of the adjacent property. NPSI reported to ADEC that groundwater is currently not used within at least 800 feet of NPSI's southern property boundary. If groundwater use occurs or is proposed within 600 feet of the NPSI property line, ADEC may impose additional requirements to ensure that groundwater pumping on the adjacent property does not cause contaminant migration and/or contamination of a water source on the adjacent property.

3) Conduct groundwater monitoring in accordance with the Sampling and Analysis Plan dated June 20, 2012 and conditionally approved by ADEC in a letter dated June 25, 2012. Changes to the plan must be approved in writing. Long-term monitoring requirements will be determined based on the results of the 2012 and 2013 monitoring events.4)Groundwater monitoring analytical data shall be submitted to ADEC within 30 days following receipt of analytical results for the monitoring event, and a report within 60 days of receipt of results.

4) Groundwater monitoring reports shall include, but not be limited to, analytical data, results, discussion of findings, charts showing contaminant concentrations per well over time, discussion of quality assurance/qualify control (QA/QC) aspects of the sampling effort, field notes, including photographic documentation, conclusions and recommendations, including recommendations, as appropriate, to modify the long-term groundwater monitoring plan. ADEC may require adjustments in future sampling frequency and well selection based on monitoring report findings and/or field observations.

5) NPSI will replace MW-B, determined to be non-functional during September 2010 sampling, with a new well or rehabilitate the existing well for future use, allowing for more complete data to be collected along the slough that is influenced by tidal fluctuations. If the construction or functionality of other wells is not adequate, ADEC may require action including replacement of the wells.

6) NPSI will provide ADEC with 20 days advance notice prior to groundwater sampling events or work associated with the monitoring wells to allow ADEC to inspect.

7) Monitoring wells determined to be unnecessary for carrying out the requirements of long-term monitoring must be decommissioned in accordance with ADEC guidance as soon as possible and no later than 12 months after it is determined, with ADEC concurrence, that the monitoring wells are no longer needed.

8) Any future change in land use may impact the exposure assumptions cited in this document. If land use changes the current institutional controls may not be protective and ADEC may require additional remediation and/or institutional controls. The current owner and/or other party responsible for the site shall report to ADEC every five years to document land use, or report as soon as the current owner and/or other responsible party become aware of any change in land ownership and/or use, if earlier. Planned changes in land use should be reported to ADEC's local ADEC office or electronically to DEC.ICUnit@alaska.gov.

9) Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.

10) NPSI shall provide a plan to ADEC at least 30 days prior to conducting activities at the site, including within the adjacent tidelands, that could reasonably be expected to result in disturbance of contaminated soil or sediments shown on Figure 4 or that could render accessible soils previously inaccessible including earthmoving, excavating; filling; dredging; building, dock or piling demolition; or that might include dewatering of groundwater at the site. Notification should include a description of the nature and extent of the planned activity. ADEC reserves the right to require an environmental management plan for control of contaminated media during activities that may disturb contaminated med, including but not limited to handling of groundwater if dewatering is proposed; dust suppression; control of storm water runoff; monitoring the marine environment for a sheen, etc. ADEC approval of any plan that may be required is expected to include a request by ADEC for updates on scheduling and project status.

11) ADEC may require characterization and/or cleanup of areas that become accessible through removal or alteration of structures.

12) Prior to construction of any structure intended for human occupancy, submit for ADEC approval an updated Conceptual Site Model (CSM) and supporting documentation that potential exposure pathways have been abated or mitigated, shown to be incomplete, or otherwise determined not to pose an unacceptable risk to human health.

Attached Figure 4 identifies site and property boundaries, approximate locations of existing structures, the areas where contaminated soil was excavated, and the type of contaminants and approximate location and extent of remaining soil and groundwater contamination at the site.

Attachment A: Cleanup Complete - ICs Agreement Signature Page

Togiak Fisheries, ADEC Hazard I.D. No. 322
Cleanup Complete - Institutional Controls (ICs)

North Pacific Seafoods, Inc, owner and responsible party or designated representative for the Togiak Fisheries site described in the accompanying Record of Decision (ROD) dated August 7, 2012, agrees to the conditions set forth in the ROD. Failure to comply with the terms of this agreement may result in ADEC reopening this site and/or requiring additional remedial action in accordance with 18 AAC 18 AAC 75.380(d).

[signature] 9/6 , 2012
Signature of Responsible Party, Owner, and/or Authorized Representative/ Date

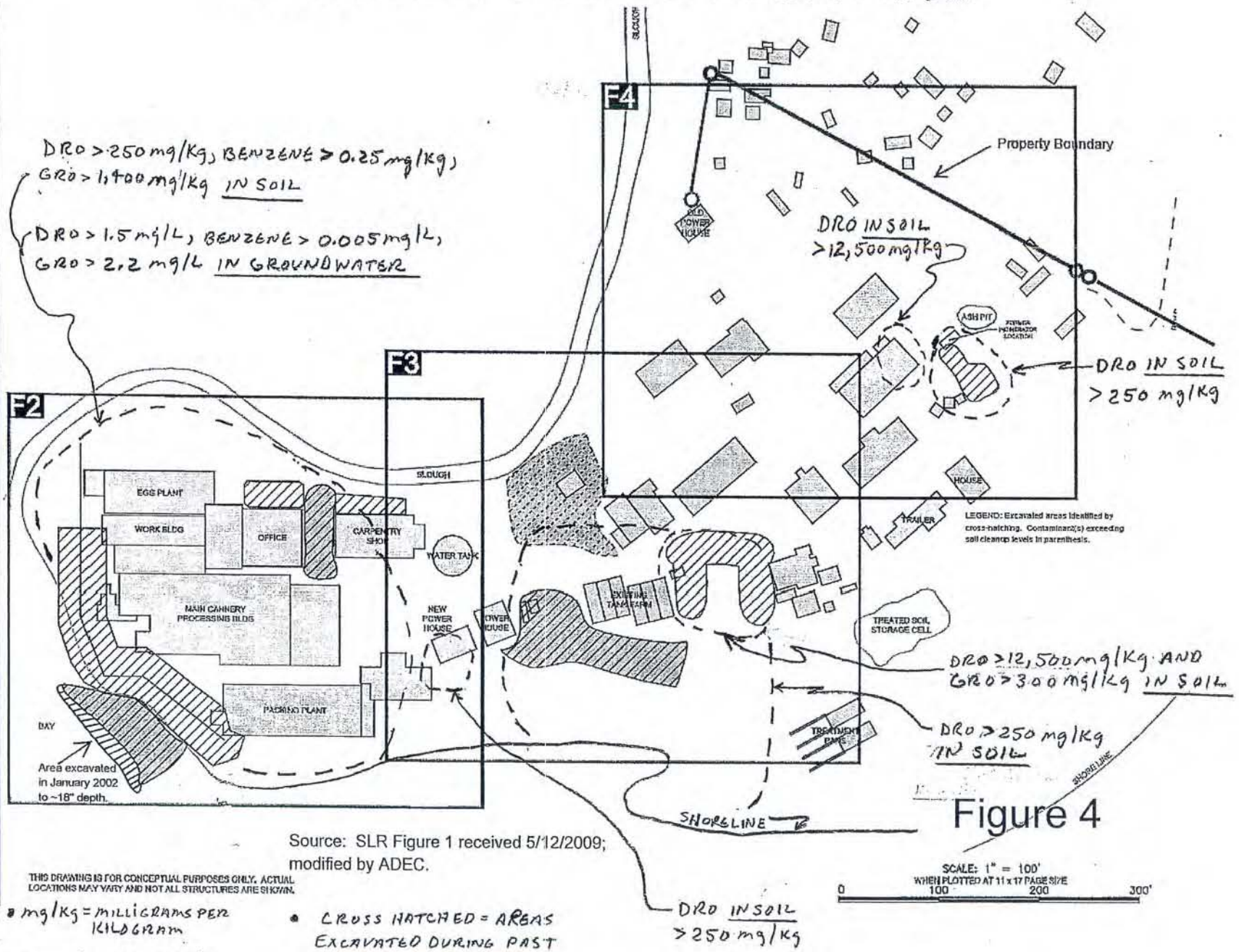
Jeffrey Backlund, VP
Printed Name and Title

Note to Responsible Person (RP):
Please return a signed copy of this Agreement within 30 days of receipt of this letter to:

Eileen Olson, Project Manager
ADEC Contaminated Sites Program
555 Cordova Street
Anchorage, AK 99501-2617

exceed 8.5" x 14". This form is intended to comply with the recording requirements of AS 40.17.030 and 11 AAC 06.040, please double-check recording requirement.

EXCEEDANCES TO 18 AAC 75.341 AND 18 AAC 75.345



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