Alaska Department of Environmental Conservation

Reuse & Redevelopment Initiative

Brownfield Assessment

PROPERTY ASSESSMENT AND CLEANUP PLAN

Old Power Plant

Tuluksak, Alaska

Submitted to:
Alaska Department of Environmental Conservation
Brownfield Program

By:
SLR International Corp
June 2010

PROPERTY ASSESSMENT AND CLEANUP PLAN
OLD POWER PLANT
TULUKSAK, ALASKA

Prepared for

Alaska Department of Environmental Conservation
Contaminated Sites Program
Division of Spill Prevention and Response
610 University Avenue
Fairbanks, AK 99709-3643

June 2010

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This document has been prepared by SLR International Corp. The material and data in this report were prepared under the supervision and direction of the undersigned.

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ACRONYMS

AAC	Alaska Administrative Code
ADF&G	Alaska Department of Fish and Game
AST	aboveground storage tank
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CSM	conceptual site model
cy	cubic yards
DBA	DEC Brownfield Assessment
DCCED	Alaska Department of Commerce, Community and Economic Development
DEC	Alaska Department of Environmental Conservation
DNR	Alaska Department of Natural Resources
DRO	diesel range organics
EPA	U.S. Environmental Protection Agency
ESA	environmental site assessment
ETM	exposure tracking model
HAZWOPER	hazardous waste operations and emergency response
IGAP	Indian General Assistance Program
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MKC	Middle Kuskokwim Consortium
NAD83	North American Datum of 1983
PAPC	Property Assessment and Cleanup Plan
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyls
PID	photoionization detector
R&R	Reuse and Redevelopment
RCRA	Resource Conservation and Recovery Act
RRO	residual range organics
SLR	SLR International Corp
TAH	Total Aromatic Hydrocarbons
TAqH	Total Aqueous Hydrocarbons
TNC	Tuluksak Native Community
USACE	U.S. Army Corps of Engineers

ACRONYMS (CONTINUED)

VOC	volatile organic compound
VSW	Village Safe Water
WRCC	Western Regional Climate Center

EXECUTIVE SUMMARY

SLR International Corp is pleased to submit this Property Assessment and Cleanup Plan (PACP) to the Alaska Department of Environmental Conservation (DEC) for the Old Power Plant site (the Site) in Tuluksak, Alaska. The Site is located approximately 128 feet south of the Tuluksak River at the east end of the Native Village of Tuluksak in Section 27, Township 12 North, Range 66 West of the Seward Meridian.

The objective of this PACP is to provide information to the community for the purpose of acquiring funding to clean up and reuse the Site. The Site, owned by the Tulkisarmute Corporation, is the location of the Old Power Plant and includes one 25,000-gallon above ground storage tank (AST). The Site has not been used for power generation since the new power plant was built in 2003, however; the 25,000-gallon AST at the Site has been used on an as-needed basis for fuel needs within the community.

Interested parties in this PACP include the Tuluksak Native Community, the Tulkisarmute Corporation, the Middle Kuskokwim Consortium, and DEC. The reuse of the Site has been determined as a residential development because of the Site's proximity to new residential building expansion in the community.

In order to reuse the Site, it is recommended that all debris and solid waste be removed. In addition, further characterization of the soil and ground water at the Site is recommended to evaluate the extent and magnitude of contamination, and to define appropriate remedial actions for the property. A cost estimate for guiding future funding requests was prepared for the preferred environmental actions based on local equipment and labor available in Tuluksak based on an assumed in-place volume of 75 cubic yards of petroleum hydrocarbon contaminated soil.

SLR performed a Phase I Environmental Site Assessment (ESA) of the old power plant located in Tuluksak Alaska. The Phase I ESA was performed in conformance with the scope and limitations of American Society for Testing and Materials (ASTM) Practice E 1527-05. Exceptions to, or deletions from, this practice are described in Section 5.0 of this report. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the *Site,* with the exception of the following:

- Evidence that the area beneath the building has been impacted by past releases of diesel fuel and/or used oil.
- Hazardous materials consisting of old mechanical devices and other debris, approximately one hundred 5-gallon buckets containing used oil and glycol, lead-acid batteries, generators, and transformers stored with no secondary containment and with evidence of past releases, as well as reported past practices of burning used oil in open containers without secondary containment.

- Three transformers, twenty-five 55-gallon drums, six old generators, and up to 15 heavy equipment batteries stored directly on the ground on the west and southwest areas of the *Site*. The area to the west also had fuel-stained snow and a strong petroleum odor.

This Phase I assessment revealed no evidence of *historical recognized environmental conditions* in connection with the *Site*, with the exception of the following:

- A documented 1,900 gallon diesel fuel spill from an overfilled day tank within the old power plant building.

1. INTRODUCTION

In the spring of 2009, the Native Village of Tuluksak submitted a Brownfield Assessment (DBA) request to the Alaska Department of Environmental Conservation (DEC) to address contamination concerns at the Old Power Plant site (the Site). The DBA request form is included as Appendix A. The Site is located approximately 128 feet south of the Tuluksak River at the eastern end of the Native Village of Tuluksak, Alaska in Section 27, Township 12 North, Range 66 West of the Seward Meridian (Figure 1). The property is owned by Tulkisarmute, Incorporated.

The Old Power Plant and fuel storage tank are located on property on Interim Conveyance No. 542 on U.S. Survey No 4435. A copy of plat map 2003-10 from the Bethel Recording District has been modified to show the outline of the old power plant and fuel tank locations east of Tuluksak River Subdivision and is provided as Appendix B.

This Property Assessment and Cleanup Plan (PACP) has been prepared by SLR International Corp (SLR) on behalf of DEC in response to the DBA request to recommend property assessment and cleanup actions with general cost estimates to enable sufficient and productive reuse of the property (as appropriate).

Funding for this work was provided by DEC through its State & Tribal Response Program grant from the U.S. Environmental Protection Agency (EPA). It is unknown if the Community of Tuluksak has already sought funding for the demolition and cleanup of the Old Power Plant building and contamination on the property.

1.1 PURPOSE OF PROJECT

The purpose of this PACP is to provide background, regulatory, and remedial option information to support the community's efforts in obtaining funding to clean up and reuse the property.

1.2 SCOPE OF SERVICES SUMMARY

SLR completed the tasks outlined below to develop this PACP.

1.2.1 TASK 1 – STAKEHOLDER SCOPING AND PLANNING MEETING

In September 2009, SLR participated in a stakeholder and planning teleconference with stakeholders in the project. Attendees included representatives from The Tuluksak Native Community (TNC), the Middle Kuskokwim Consortium (MKC), Yukon Kuskokwim Health Board, the EPA, DEC, and SLR. The purpose of the meeting was to define the project objectives

and also identify the path through the Brownfield process to reuse the Site. SLR prepared a summary record of the meeting and provided it to the stakeholders and DEC. A copy of this summary for the scoping meeting is included as Appendix C.

1.2.2 TASK 2 – PACP PREPARATION

The PACP, which was developed following SLR's site visit, is based on a review of information gathered from the stakeholder meeting, DEC site files, communication with individuals familiar with the community and the Site, and observations made during the SLR's site visit in March 2010. This plan includes a comprehensive summary of the existing site conditions and recommendations for property assessment and corrective actions to supply interested stakeholders with a guideline document suitable for progressing the Site through the remediation process.

1.3 OBJECTIVES

The objective of this PACP is to provide the following:

- Historical summary for the Site, including historical land use, environmental incidents, and assessment/response activities to date;
- A description of the proposed reuse of the property;
- A qualitative assessment of risk to human receptors from potential contamination at the Site;
- A summary of specific data gaps that are necessary to fill, in order to fully evaluate cleanup requirements;
- A description of the steps necessary to make the property suitable to meet the community reuse objectives; and
- A summary of practical remediation options for the Site including cost estimates.

2. COMMUNITY OVERVIEW AND INFORMATION

This section provides information about the community of Tuluksak, including pertinent information about the stakeholders involved, and summarizes the level of community involvement for the property.

2.1 COMMUNITY GENERAL INFORMATION

2.1.1 LOCATION AND CLIMATE

Tuluksak is located on the south bank of the Tuluksak River at its junction with the Kuskokwim River, 35 air miles north of Bethel and approximately 350 miles west of Anchorage. Tuluksak lies near the mouth of the Tuluksak River which is a tributary of the Kuskokwim River. The community lies at approximately 61.1025 degrees north latitude and 160.964670 degrees west longitude relative to the North American Datum of 1983 (NAD83) (Section 27, Township 12 North, Range 66 West of the Seward Meridian) (DCCED, 2009).

Tuluksak has a subarctic climate with maritime influences. The nearest weather station is located at the Bethel Airport, where the average annual precipitation is 17.28 inches and the average annual snowfall is 55.3 inches (WRCC, 2009).

2.1.2 COMMUNITY RESOURCES AND INFRASTRUCTURE

The Native Village of Tuluksak has a population of approximately 471 people, who rely heavily on subsistence hunting and fishing activities. Tuluksak is a traditional Yup'ik Eskimo village with a federally-recognized tribe, the Tuluksak Native Community (DCCED, 2009).

Treated water is hauled by village residents. Two new wells were drilled at the village washeteria in 2003 to supply water to residents. The school and health clinic are connected directly to the water plant. Interviews with individuals familiar with Tuluksak indicated that only about half of the residents can afford water from the water plant and the other half haul water from the Kuskokwim River. A piped water and gravity sewer system is under construction with household plumbing. Houses without piped water and sewer currently dispose of sewage honey buckets at centralized collection points. Electricity is provided by the Tuluksak Traditional Power Utility (DCCED, 2010).

Two wells were drilled in 2003 in the vicinity of the Water Treatment Plant in Tuluksak (Figure 2); Tuluksak Well No. 1 and Tuluksak Well No. 2. The wells were drilled to total depths of 211.83 feet below ground surface (bgs) and 179 feet bgs, respectively, and are currently in use.

Tuluksak has an airport with a 2,461-foot long gravel runway in good condition; the strip provides chartered or private air access year-round. Snow machines, all terrain vehicles, and skiffs are used extensively for local transportation to nearby villages. There are no docking facilities (DCCED, 2010). Future construction plans include sewer and water improvements, a new clinic, new bulk fuel storage, and landfill relocation.

2.2 COMMUNITY INVOLVEMENT

The following entities are considered stakeholders for the Old Power Plant Site.

Tuluksak Native Community – TNC is a federally recognized tribe governed by a traditional council.

The Tulkisarmute Corporation – Tulkisarmute, Inc. is the owner of the land on which the Site resides.

Middle Kuskokwim Consortium – MKC is a current State and Tribal Response Program grantee.

Alaska Department of Environmental Conservation – DEC's Reuse and Redevelopment (R&R) Program targets specific assessment and cleanup projects on behalf of state agencies. In addition to work being conducted on state-owned properties, DEC also receives a grant from the EPA (State and Tribal Response Program) for assessment work that can be conducted on non-state owned land.

2.2.1 COMMUNITY CONCERNS

Community concerns identified in the 2009 DBA application and discussed during the 2010 SLR site visit included:

- Hazardous materials are present on the Site (e.g., oil, glycol, lead acid batteries, transformers), and a spill would allow contaminants to seep into the ground water. The water plant and community wells, which provides drinking water for the village, is down river from the Site; and
- The Site lies in the path of a planned expansion of community housing projects that are on hold until the Site can be cleaned up.

2.2.2 STAKEHOLDER MEETING SUMMARY

In September 2009, a stakeholder and planning teleconference was held and included attendees from the TNC, the MKC, Yukon Kuskokwim Health Board, the EPA, DEC, and SLR. The purpose of the meeting was to define the project objectives; gather information from the stakeholders about Site conditions, history, and planned future uses; describe SLR's planned Site visit and schedule; and describe the Brownfield process to make the Site suitable for beneficial

reuse. SLR prepared a summary record of the meeting and provided it to the stakeholders and DEC. A copy of this summary is included as Appendix C.

2.2.3 PROPOSED COMMUNITY DEVELOPMENT AND LAND USE

The proposed use for the property is as a residential area.

2.2.4 INTERVIEWS AND COMMUNITY INPUT

Interviews were conducted during and after the Site visit with individuals knowledgeable about current and historic conditions of the property and other information necessary to prepare the PACP. Interviews were conducted with Bobby Peter, Willie Phillip, Joe DeMantle, and Bob Carlson. These interviews are summarized below to provide the pertinent information gathered. Interview notes and field notes are provided as Appendix E. A photographic log of the Site visit is presented as Appendix F.

Willie Phillip – Willie Phillip worked as an operator at the Old Power Plant site from 1989 until the new power plant was built in 2003. Mr. Phillip now resides in Goodnews Bay, Alaska. Mr. Phillip described petroleum sources at the Site as:

- One aboveground storage tank (AST) – with a capacity of 25,000 gallons;
- One day tank of undetermined volume, which is located inside the generator building and;
- Used motor oil.

Mr. Phillip indicated that the AST was filled every fall and spring. In February of 1999, there was an approximately 1,900-gallon overfill of the day tank in the Old Power Plant building. Fuel was recovered from the spill area beneath and west of the building by pumping and drumming. When clean enough, recovered fuel was used in the generator at the Old Power Plant. Fuel too dirty to reuse was burned in drums with sorbents, but most was reused in the Old Power Plant. This was the only fuel spill Mr. Phillip was aware of during his time as power plant operator.

There were approximately 20 to 25 old drums in a debris area in the woods southwest of the generator facility noted during SLR's March 2010 Site visit. Only one drum was noted to have contents during the Site visit and many of the drums indicated bulging and cracking. Mr. Phillip said these drums were in the woods and empty in 1989 when he started as power plant operator. Mr. Phillip said he managed used oil by burning it in a 55-gallon drum cut in half lengthwise. This made a trough in which used oil could be burned in the open. Used oil was stored in 5-gallon buckets until it was burned in the drum. Mr. Phillip said he was unaware of any facility in the Village that could burn the used oil for heat recovery.

Mr. Phillip said he was not aware of any transformer oil leaks while he worked at the Old Power Plant. Mr. Phillip was not aware if transformers at the Site contained polychlorinated biphenyls (PCBs) or if lead-based paint was used in the generator building. Two transformers inspected

during the SLR Site visit in March 2010 were stamped "Non-PCB." A third transformer of similar make could not be inspected because it was frozen to the ground on its side.

Bobby Peter – Bobby Peter, the Acting Tribal Administrator for TNC, has lived in Tuluksak his entire life, and is familiar with the Old Power Plant site. Mr. Peter stated that planned future use of the Site was residential. Mr. Peter said the 25,000-gallon capacity AST at the Site was still being used to supply fuel to the new power plant. Apparent fuel staining was noted on the ice and snow immediately west of the Old Power Plant building entrance during SLR's March 2010 Site visit. SLR personnel asked Mr. Peter about this apparent contamination and Mr. Peter said fuel is pumped from the 25,000 gallon AST and loaded into a portable tank for transport to the new power plant when needed. New bulk fuel storage is under construction at the new power plant to be completed in the summer of 2010. Mr. Peter said he suspected small spills over the years have likely contaminated the land around and beneath the Old Power Plant building. He said that old batteries and lead-based paint may also be of concern. Mr. Peter said buckets of used oil and some batteries were hauled off from the property prior to the shutdown of the Old Power Plant in 2003 and that current buckets and batteries should only account for the last two or so years of operation.

Mr. Peter said the village has a Hitachi excavator, a front end loader with bucket and forks, and a small John Deere bulldozer, approximately the size of a Cat D-3, with an excavator attachment. Mr. Peter stated that there were two to three residents in Tuluksak with 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training.

Joe DeMantle – Joe DeMantle, President of the Tulkisarmute Corporation. Mr. DeMantle indicated that the Tulkisarmute Corporation owns the Site. According to Mr. DeMantle, the Site is not currently used and was previously used for the community's generator system and associated tank farm. He was unsure of any fuel spills in the area, but said he had once seen a large amount of used oil on the floor of the building. He expected the ground beneath the building to be contaminated from used oil. He said the buckets inside and under the building contained used oil and glycol. He had no knowledge of whether the transformers outside the building had been drained or not.

Bob Carlson – Bob Carlson, Environmental Specialist III with DEC's Spill Prevention and Response Program, worked on the spill cleanup efforts following the 1999 day tank overfill at the Old Power Plant. Mr. Carlson said the spill cleanup was successful and the spill file was closed and not transferred to contaminated sites. Mr. Carlson said that in 1999 he noted the drums in the woods southwest of the Old Power Plant building and asked community members to dispose of the contents. He was not sure whether this was done or not. Mr. Carlson said that used oil management at the Old Power Plant building was through a hole in the floor of the building to containers underneath. Mr. Carlson said he noted used oil on the floor of the Old Power Plant building during his spill response work in 1999.

David Phillip – David Phillip worked as an operator at the Old Power Plant site and currently works as an operator at the new power plant. Mr. Phillip said the fuel line running from the header near the bank of the Tuluksak River to the 25,000-gallon AST and generator building at the Old Power Plant site was constructed on the ground surface. None of the pipe is buried, but grass grows over it every year. Mr. Phillip said that there were at least three members of the

community, including himself, who have taken the 40-hour HAZWOPER class and there could be up to five who could be current with an 8-hour refresher class. Mr. Phillip said that Eric Phillip of the MKC has offered to backhaul spent lead-acid batteries from Tuluksak.

Eric Phillip – Eric Phillip is the Environmental Manager for the MKC in Akiachak. Mr. Phillip said that there are used oil burners in Akiachak and Akiachak has accepted used oil from other villages for use as fuel. Mr. Phillip said that lead-acid batteries can be sent for recycling to the NAPA auto parts store in Bethel. He added that the need for these services must be coordinated by the Indian General Assistance Program (IGAP) coordinator within Tuluksak to start the process. Mr. Phillip added that the Village of Akiak, also a member of the MKC, started purchasing equipment and supplies to burn used oil, but Tuluksak has not contacted him regarding similar planning. He said that Crowley Marine could be contracted to backhaul the used oil to Akiachak and batteries on to Bethel, but that the MKC doesn't currently have the budget to coordinate or pay for waste backhaul services; however, a proposal could be written to fund this activity.

3. PROPERTY/SITE OVERVIEW

This section provides a historical overview of the property including the historical and current use of the property and its geologic setting. It also summarizes the records review conducted for this work.

3.1 OVERVIEW OF SITE PROPERTY

The community lies at approximately 61.1025 degrees north latitude and 160.964670 degrees west longitude relative to NAD83. The Site is located in the eastern portion of Tuluksak, approximately 128 feet south of the Tuluksak River (Figures 1 and 2). An aboveground pipeline running approximately 200 feet between the 25,000-gallon AST and the Old Power Plant was used while the plant was operating. The AST and fuel piping is still used for fueling the new power plant; thus, the area of the Site, as described in this assessment, encompasses both facilities.

No sampling has been performed at the Site.

The former power plant building, which remains on the Site, is approximately 25 feet by 30 feet in size and was built in the early 1980s. The building is elevated on wood pilings. The floor of the building was heavily stained and approximately 100 5-gallon plastic pails containing used oil, lead-acid batteries, generators, and transformers are stored in and beneath the building. The building was used as a power generation facility until 2003 when a new plant was built.

3.2 GEOLOGIC SETTING

Tuluksak is located in the Yukon-Kuskokwim Delta area which is comprised largely of Quaternary alluvial deposits that have been built up through the slow accumulation of sand and silt deposited by the Yukon and Kuskokwim rivers. Most of the region is flat with a few feet of elevation marking the boundaries of major drainages and much of the surface is covered with water.

Two wells were drilled in 2003 in the vicinity of the Water Treatment Plant in Tuluksak; Tuluksak Well No. 1 and Tuluksak Well No. 2. The wells were drilled to total depths of 211.83 feet bgs and 179 feet bgs, respectively. Screens were installed from 174.25 feet to 211.83 feet bgs in Well No. 1, and from 152 feet to 177 feet bgs in Well No. 2. Based on the drilling logs, the lithology in this area consists of tundra or topsoil to approximately 3 feet bgs underlain by frozen silt to at least 47 feet bgs. Below 50 feet bgs, silty sand, and clay layers are present. Wet fine sand was observed in Well No. 1 at 76 feet bgs. Wet fine sand was not observed until 54 feet bgs in Well No. 2. Water-bearing sands and gravels were first encountered at 178 feet bgs in

Well No. 1 and 172 feet bgs in Well No. 2. The static water levels in Wells 1 and 2 were measured at 13.83 feet and 8.5 feet bgs, respectively. Well logs for Tuluksak Wells 1 and 2 are provided in Appendix D.

Drill logs for two older, and currently unused, wells are also included in Appendix D. These older wells, both drilled in 1964, were installed to serve the Tuluksak community and the Old BIA School, and were installed to depths of 47 feet bgs and 56 feet bgs, respectively. Both of these wells indicated frozen permafrost overlying coarse water-bearing sand ranging from 37 to 42 feet bgs. Locations for these four wells are presented on Figure 2.

3.3 PROPERTY USE

3.3.1 HISTORICAL USE

Before the power plant was built in the early 1980s, the Site was undeveloped.

3.3.2 CURRENT USE

The Site has been used for fuel storage and transfer since the new power plant was built in 2003. The 25,000-gallon capacity AST and piping, the old power plant building and contents, seven old generators, three transformers, and miscellaneous equipment remain on the Site. Access to the Site is unrestricted and a trail to the airport extends from the eastern end of the gravel road running north of Tuluksak Heights Subdivision. The trail runs southeast past the generator building and the 25,000-gallon AST.

3.4 OWNERSHIP INFORMATION

The Site is owned by the Tulkisarmute Corporation. A plat modified to show the Site location is included as Appendix B.

3.5 RECORDS REVIEW

Records reviewed to prepare this PACP included the DBA application (Appendix A). A review of the DEC spills database indicates the 1,900-gallon diesel spill on February 25, 1999 was closed with no further action required on December 26, 2007.

The records review also included files from DEC's Drinking Water Program (DEC, 2010). As a Class C public water system in Alaska, the city water system source consists of ground water collected from one or more wells in Tuluksak. The drinking water in Tuluksak is sampled regularly in accordance with the requirements of DEC's Division of Environmental Health's Drinking Water Program. The Drinking Water Program maintains records of drinking water sample analysis results. Volatile organic compound (VOC) sampling has been conducted regularly for the City of Tuluksak. The most recent analytical results available for the Tuluksak

water treatment system were from samples collected in April 2005. The most recent monitoring period documented on DEC's web site is January 1, 2005 through December 31, 2007. A review of the most recent water quality violations did not indicate VOC contamination in the water supply (DEC, 2010).

4. SITE RECONNAISSANCE

On March 23 and 24, 2010 an SLR representative assessed the current condition of the Old Power Plant site. In addition, the SLR representative conducted interviews with individuals familiar with the property (during and after the Site visit) and evaluated potential remedial strategies. Interviews conducted during the Site visit are presented in Section 2.2.4 of this document. Evaluation of the property's current condition is discussed below. Written and photographic documentation of the Site are included in Appendices E and F, respectively. Additional information regarding the Site can be found in the Phase I Environmental Site Assessment (ESA) by SLR included as Appendix G.

4.1 METHODOLOGY

To assess the conditions of the Site, SLR traversed the property in search of surface staining or other visual signs of contamination. SLR also noted the presence and condition of potential environmental liabilities, including waste material and derelict equipment located on the Site. A log of photographs taken during the March 2010 Site visit is presented as Appendix F.

4.2 OBSERVATIONS

SLR visited the Site on March 23 and 24, 2010.

The AST was noted to be full at the time the Site was visited by SLR. No stained soil or pooled liquids indicating a recent release were observed near the AST, although historical petroleum contamination has been documented as a concern at the Site (Appendix A). There was staining on the building floor timbers around the entire structure, and on snow and ice immediately west of the Old Power Plant building. Locks on valves on the fuel line supplied by the 25,000-gallon AST indicated a level of security being implemented on fuel handling at the AST (Photo 4). The fuel header to the barge line is shown in Photo 15. The aboveground fuel line between the barge header, the generator building, and the 25,000-gallon AST was covered with snow and could not be inspected.

During the March 2010 Site visit, contamination was not observed at the location of the 1999 spill (described above), although the crawl space beneath the building was not entered for inspection. A petroleum hydrocarbon-like odor and visible staining was noted in the snow and ice immediately west of the generator building (Photo 14). Mr. Bobby Peter indicated that this fuel contamination was likely associated with filling smaller fuel tanks for use at the new generator building.

Up to 25 55-gallon drums were observed in the willows to the southwest of the generator building (Photos 6 through 8). All but one of the drums were empty and most had visible bulging or cracks (Photo 13).

Six abandoned generator sets were located in debris areas northwest and southwest of the generator building (Photos 9 and 12), and one was located inside the building.

Up to 100 buckets of used oil and/or glycol were located within and beneath the generator building (Photos 3 and 5).

Up to 15 heavy equipment batteries were on pallets in a treed area to the southwest of the generator building (Photo 16), and other similar batteries were noted on the floor of the generator building (Photo 3).

Three transformers were observed in the willows southwest of the Old Power Plant building (Photos 8 and 10). A tag on the two collocated transformers seen in Photo 10 indicated the oils in the transformer were non-PCB oils (Photo 11).

The location of the northwest and southwest debris areas in relation to the Old Power Plant generator building are presented on Figure 3.

4.3 SITE SAMPLING

Due to a delay in acquiring permission to sample on the subject property, no sampling was conducted as part of this project.

5. ENVIRONMENTAL REVIEW AND SUMMARY OF FINDINGS

This section summarizes previous environmental reviews conducted at the property. It also provides a summary of the findings of this PACP.

5.1 HISTORICAL ENVIRONMENTAL REVIEW

A documented release of approximately 1,900 gallons of diesel fuel at the Old Power Plant day tank was reported on February 25, 1999. Spill response included pumping recoverable fuel into drums for future use in the generator. The spill file was closed with no further action required on December 26, 2007 under Spill Identification Number 14425.

5.1.1 POTENTIAL SOURCE AREAS

Obvious potential source areas at the Site include:

- The ground beneath and around the AST and the fuel pipeline;
- The ground beneath the perimeter of the power plant building potentially affected by fuel spills and used oil handling and storage activities (up to 100 5-gallon buckets of used oil), including topographic low areas adjacent to the building where fuel may have pooled during the 1999 spill response activities;
- The west side of the power plant building in the area of current fuel transfer activities;
- The ground beneath hazardous materials (consisting of old mechanical devices and other debris, lead-acid batteries, generators, and transformers) present southwest and northwest of the Old Power Plant. Several potentially hazardous materials were located outside of the building including three transformers, six old generators, drums, and up to 15 batteries. These items are shown in the photograph log which is included as Appendix C. The location of the transformers, batteries, drums, and old generators are also depicted as the southwest and northwest debris areas on Figure 3.

5.2 KNOWN OR PERCEIVED DATA GAPS

Two major data gaps have been identified at the Site:

- The extent of soil impacted by previous activity at the Site has not been adequately characterized. No information on the horizontal or vertical extent of contamination is known. As indicated in an interview with Bobby Peter in Section 2.2.4, he believes that some contamination remains at this location. The extent and magnitude of contamination

beneath and around the Old Power Plant are unknown, and the area has not been characterized.

- Drill logs do not indicate the presence of suprapermafrost ground water over frozen soil in the area, and no information is available to determine whether suprapermafrost ground water in the vicinity of the Site is impacted.

5.3 CONCEPTUAL SITE MODEL

SLR developed a conceptual site model (CSM) to qualitatively assess the ways in which potential human receptors may be exposed to contamination as a result of activities at the property. The CSM is based upon observations made by SLR during a Site visit in 2010, information provided by DEC, and information gathered through interviews with persons knowledgeable about the Site. The following describes the potential exposure scenarios for current and future receptors. The CSM is included as Appendix H of this report.

The CSM identified the following potentially complete exposure pathways:

- Incidental soil ingestion,
- Dermal absorption of contaminants from soil,
- Ingestion of ground water,
- Dermal absorption of contaminants in ground water,
- Inhalation of volatile compounds in household water (ground water),
- Inhalation of outdoor air,
- Ingestion of surface water,
- Dermal absorption of contaminants in surface water,
- Inhalation of volatile compounds in household water (surface water), and
- Ingestion of wild foods.

A discussion of these exposure pathways is described below and the complete CSM is provided in Appendix H.

5.3.1 POTENTIALLY COMPLETE EXPOSURE PATHWAYS

The direct contact exposure pathway via incidental soil ingestion is considered potentially complete because soil contamination exists between 0 feet and 15 feet bgs and the Site is expected to be used by human receptors.

The dermal absorption of contaminants from soil exposure pathway is considered potentially complete because polynuclear aromatic hydrocarbons (PAHs), which can permeate the skin, may be present at the Site between 0 feet and 15 feet bgs based on historical use information.

Collection of soil samples for PAH analysis would allow for a definitive determination of whether this pathway is complete and/or significant.

The ingestion of ground water pathway is considered potentially complete because ground water has not been ruled out as a future drinking water source by DEC in accordance with 18 Alaska Administrative Code (AAC) 75.350. However, the potential for exposure via this pathway is considered to be low because there is already an established drinking water system within the community, making the use of ground water at the Site unlikely. The community drinking water system relies on ground water wells, which are located more than 2,000 feet from the Site; a review of the most recent water quality violations did not indicate VOC contamination in the water supply (DEC, 2010a). A review of results of VOC analyses from the most recent documented drinking water sample collected from the Tuluksak public water system in April, 2005 indicated low-level chloroform and bromodichloromethane detections below their respective maximum contaminant levels (DEC, 2010b). These compounds are both trihalomethanes and are chemicals that can be formed as by-products when chlorine or other disinfectants are used to control microbial contaminants in drinking water. In addition, permafrost is present in Tuluksak at approximately 3 feet bgs; permafrost acts as a confining layer limiting the migration of contaminants from the Site to aquifers below the permafrost that may be utilized as a drinking water source.

The dermal exposure to contaminants in ground water pathway and the inhalation of volatile compounds in household water pathway are considered potentially complete because although DEC water quality standards may be applied as cleanup levels at the Site, ground water is still considered an exposure medium and could be used by residents in the vicinity of the Site for household purposes in the future. VOCs have not been detected in ground water from the community well and with no other known wells in the area, these pathways are not considered as current exposure pathways. They are therefore included on the CSM Diagram only as future exposure pathways.

The inhalation of outdoor air exposure pathway is considered potentially complete because of the potential presence of volatile contaminants in soil between 0 feet and 15 feet bgs and the use of the Site by human receptors.

The ingestion of surface water pathway is considered potentially complete because nearby surface water, the Tuluksak and Kuskokwim rivers, are used for subsistence fishing and drinking water by some members of the community.

The dermal exposure to contaminants in surface water pathway and the inhalation of volatile compounds in household water pathway are considered potentially complete because although DEC water quality standards may be applied as cleanup levels at the Site, surface water is still considered an exposure medium and may be used by some residents of the community for household purposes.

The ingestion of wild foods exposure pathway is considered potentially complete because of potential contamination present in the top 6 feet of soil, where it is available for uptake, and the proximity of the Site to potential subsistence hunting and gathering areas. In addition, based on historical usage, PAHs, which have the potential to bioaccumulate, may be present at the Site.

Collection of soil samples for PAH analysis would allow for a definitive determination of whether this pathway is complete and/or significant.

5.3.2 INCOMPLETE EXPOSURE PATHWAYS

The remaining exposure pathways were determined to be incomplete based on site data, features, or other pertinent information in accordance with the DEC Draft Human Health CSM Scoping Form. These incomplete pathways are discussed briefly below.

The inhalation of indoor air pathway is not considered complete because buildings in Tuluksak are located on pilings, which eliminates preferential or direct pathways for soil contaminant vapors to migrate to indoor air. Soil contaminant vapors would be released to outdoor air, making the inhalation of indoor pathway incomplete. In addition, the only building within 100 feet of potential sources of contamination is the old power plant building, which is located on pilings and not occupied.

The inhalation of fugitive dust exposure pathway is not considered complete because DEC soil ingestion cleanup levels, which are being applied at the Site, are protective of this pathway for all analytes except chromium. Based on historical Site use information, chromium is not considered a potential contaminant of concern at the Site.

The direct contact with sediment pathway is not considered complete because DEC soil ingestion cleanup levels are assumed to also be protective of this pathway. In addition, sediment is not considered an exposure medium.

5.3.3 CURRENT AND FUTURE RECEPTORS

The main portion of the Site has not been used since the new power plant went online in approximately 2003. The Site is at the edge of town and current use from visitors, trespassers, recreational users, or subsistence harvesters and consumers cannot be ruled out. The Site is also the proposed location for future residential properties. Any future work at the Site (environmental or construction) will require construction workers. Based on current development plans, the following human receptors are considered to be potentially exposed to site contaminants:

- Residents (future);
- Construction workers (future);
- Site visitors, trespassers, or recreational users (current and future); and,
- Subsistence harvesters and consumers (current and future).

5.4 CLEANUP CRITERIA

This section describes the cleanup criteria that currently apply to soil, ground water, and solid waste at the property. However, based on the future use of the property, Site-specific cleanup levels may be developed in the future as determined by the risk of exposure.

5.4.1 SOIL CLEANUP LEVELS

DEC soil cleanup levels specified in Title 18 of the AAC, Chapter 75, *Oil and Other Hazardous Substances Pollution Control*, Tables B1 and B2, DEC Method Two, for the under 40-inch zone (DEC, 2008) are applicable for the Site. The most stringent of the direct contact, outdoor inhalation, ingestion and inhalation for diesel range organics (DRO) and residual range organics (RRO) or migration to ground water soil cleanup levels, whichever is less, is used; the soil cleanup levels for compounds of potential interest are listed below.

- Benzene, 0.025 milligrams per kilogram (mg/kg) (migration to ground water)
- Toluene, 6.5 mg/kg (migration to ground water)
- Ethylbenzene, 6.9 mg/kg (migration to ground water)
- Total xylenes, 63 mg/kg (outdoor inhalation and migration to ground water)
- DRO, 250 mg/kg (migration to ground water)
- RRO, 10,000 mg/kg (ingestion)
- PCBs, 1 mg/kg (direct contact)
- PAH compounds at varying concentrations listed in 18 AAC 75
- Resource Conservation and Recovery Act (RCRA) metals at varying concentrations listed in 18 AAC 75

5.4.2 GROUND WATER CLEANUP LEVELS

DEC ground water cleanup levels, as specified in 18 AAC 75.345, Table C (DEC, 2008), may be applicable at the property (if ground water is encountered). The ground water cleanup levels for the compounds of potential interest are listed below.

- Benzene, 0.005 milligrams per liter (mg/L)
- Toluene, 1.0 mg/L
- Ethylbenzene, 0.7 mg/L
- Total xylenes, 10 mg/L
- DRO, 1.5 mg/L
- RRO, 1.1 mg/L

- PCBs, 0.0005 mg/L
- PAH compounds at varying concentrations listed in 18 AAC 75, Table C
- RCRA metals at varying concentrations listed in 18 AAC 75, Table C

5.4.3 SURFACE WATER QUALITY CRITERIA

DEC surface water cleanup levels, as specified in 18 AAC 70, *Water Quality Standards* (DEC, 2009), are applicable to the Site. The surface water cleanup levels for the compounds of interest are listed below.

- Arsenic, 0.010 mg/L
- Barium, 2.0 mg/L
- Cadmium, 0.005 mg/L
- Chromium, 0.100 mg/L
- Mercury, 0.002 mg/L
- Selenium, 0.050 mg/L
- Total Aromatic Hyrocarbons (TAH), 0.010 mg/L
- Total Aqueous Hydrocarbons (TAqH), 0.015 mg/L

For compounds for which no surface water cleanup level exists, concentrations in surface water samples should be compared to ground water cleanup levels.

5.4.4 OTHER REGULATED CLEANUP CRITERIA

All material to be disposed offsite will be inventoried prior to handling. Although the presence of PCB-, asbestos-, and lead-containing material has not been confirmed at the Site, if encountered, this material will require special handling in accordance with state and federal regulations.

5.4.5 NON-REGULATED CLEANUP CRITERIA

For non-hazardous, non-regulated waste material, cleanup criteria do not include the acquisition of a DEC solid waste permit. Material including, but not limited to, cement, rebar, crushed glass, brick, and mortar are usually not regulated.

5.5 GENERAL ENVIRONMENTAL OVERVIEW

Based on the CSM provided as Appendix H of this PACP, the lack of soil characterization data, and planned land reuse objective (residential), additional site characterization and remedial action is necessary to reduce the risk to human receptors prior to reuse. Potential near-surface soil contamination poses a risk to human receptors through incidental soil ingestion, dermal

absorption of contaminants from soil, ingestion of ground water, dermal absorption of contaminants in ground water, inhalation of volatile compounds in household water (ground water), inhalation of outdoor air, ingestion of surface water, dermal absorption of contaminants in surface water, inhalation of volatile compounds in household water (surface water), and ingestion of wild foods.

Because the Site is currently near existing residential areas with no site access control, Tuluksak residents may be exposed to contaminants at the Site. This, along with the fact that the Site is located within the flood zone for the Kuskokwim River, increases the potential for exposure of residents to contamination at the Site. Cleanup activities would significantly reduce the potential exposure to contaminants by human and ecological receptors.

6. RECOMMENDED ACTIONS

The following section summarizes the actions recommended to reuse the land at the Site as a residential development.

6.1 ENVIRONMENTAL ACTIONS

SLR recommends the following environmental actions to allow the community of Tuluksak to reuse the land at the Site: 1) solid waste removal, and 2) soil and ground water investigation. At this time, excavation of contaminated soil is not recommended until data gaps discussed in Section 5.2 regarding the extent of contamination at the Site can be addressed. However, general information regarding excavation of contaminated soil and soil management alternatives are provided to aid the community to proceed with Site cleanup. Environmental actions are described in detail below.

In order to maximize efficiency and minimize costs, SLR recommends that all operable equipment and items with beneficial use be reused within the community, if possible, and solid waste be disposed of locally.

6.1.1 SOLID WASTE REMOVAL

Debris located in and around the Old Power Plant property currently precludes the reuse of the Site and may be negatively impacting the surrounding environment. This material includes, but is not limited to, the items described below. It is recommended that debris be removed from the Site and surrounding land. Prior to the removal of any of the debris listed below, it is recommended that the location of debris be marked with swing ties and geographic locations be recorded using a handheld global positioning system receiver to assist in a targeted surface and subsurface soil investigation and contaminated soil excavation. An environmental consultant will be on site to assist with the segregation of solid waste and also to perform the soil and ground water investigation activities described in Section 6.3.

- One AST associated with the former tank farm is located on the Site; the tank will no longer be in use after construction of the new bulk fuel storage facility at the new power plant building in summer 2010. It is recommended that this tank, associated piping, and the generator day tank be decommissioned by a qualified contractor, and either reused, or cut up, recycled or disposed of in the local landfill.
- Approximately 100 5-gallon buckets were used inside and beneath the old power plant building; interviews indicated these buckets contain used motor oil and some glycol. It is recommended that this used oil be combusted in a used oil burner for energy recovery. The used oil would require testing to determine if it complies with state and federal

regulations for this purpose; for example, to check for the presence of chlorinated hydrocarbons. Once empty, the buckets should be disposed of in the local landfill.

- Seven generators are present at the Site (one inside the old power plant building and six outside in the brush) It is recommended that the generators be reused within the community, if possible. If reuse of the generators is not feasible they should be disposed of in accordance with state regulations, which may require offsite shipment if they cannot be disposed of in the local landfill.
- Up to 25 steel 55-gallon drums were noted in the brush to the southwest of the old power plant building. These drums should be verified as empty and disposed of in the landfill. Any liquid contents should be accumulated for either energy recovery or disposal in accordance with all applicable state and federal regulations.
- Three transformers were observed at the Site. The oil within the transformers should be sampled and analyzed for PCBs or other hazardous substances. Operational equipment should be reused within the community; non-operational equipment should be disposed of in the local landfill, if it does not contain PCBs or other hazardous substances. Any PCB containing transformers should be disposed of properly by a certified contractor.
- Several lead-acid batteries were observed at the Site. These require special handling and should be disposed of or recycled in accordance with all applicable state and federal regulations.

All activities for the removal of materials off the Site will be conducted according to all applicable state and federal regulations. The best and most cost-effective alternative for removal and disposal of the materials listed above would be either reuse within the community, recycle using a backhaul program if applicable, or disposal at the local landfill.

6.1.2 SOIL AND GROUND WATER INVESTIGATION

In order to excavate contaminated soil in an efficient manner, it is recommended that a soil investigation be performed prior to excavation to confirm the contaminants of concern present at the Site and the extent of contaminated soil. Based on the soil conditions in Tuluksak and to keep project costs down, it is proposed that this investigation be conducted using a hand auger with extensions capable of advancing to a depth of 15 bgs.

Unless otherwise specified by DEC, it is expected that one or more monitoring wells would be required to assess for contamination in suprapermafrost ground water. SLR recommends using a hand auger to advance the holes to at least 10 feet bgs and then using a hand-driven Geoprobe point to reach either frozen soil or ground water. This work is proposed to occur directly following the solid waste removal when an environmental consultant is already recommended to be on the Site.

The soil investigation should be designed to define the extent of petroleum hydrocarbon-impacted soil and confirm the presence or absence of contaminants that may not be detected using field screening methods (i.e., total petroleum hydrocarbons using PetroFlag® and volatile hydrocarbons using the heated headspace method with a photoionization detector [PID]); these

include PCBs, chlorinated solvents, and RCRA metals, which could be present at the Site based on historical site use. Soil sampling should be started at known or suspected areas of contamination based on spill records, operational history, or hazardous material storage practices observed at the site. Further sampling should be guided by field screening and observations. Soil samples should be collected for the compounds listed in Section 5.5.1 as detailed in a site characterization work plan.

SLR recommends installing three temporary ground water monitoring points to determine if ground water has been impacted by activities at the Site. One well will be located in the assumed source area, and two wells would be completed downgradient from the source area. Ground water samples would be collected from these wells and submitted for laboratory analysis for concentrations of contaminants identified in Section 5.4.2.

SLR recommends inspecting the river bank near the Site and sampling surface water in the Tuluksak River immediately downstream from the Site for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and PAH compounds to compare levels to Alaska Water Quality Standards.

SLR also recommends scheduling site assessment work for late August or early September to assure maximum thaw depth in soils at the Site.

A utility clearance must be obtained prior to any subsurface work.

6.1.3 CONTAMINATED SOIL EXCAVATION

Although the total in-place volume of future proposed excavation area(s) cannot be determined without a soil investigation, the following information should provide the community of Tuluksak with a proposed plan for removal of impacted soil once site characterization activities are complete. During contaminated soil removal, field screening samples should be collected to guide the lateral extent of the excavation. Once field screening indicates contaminated soil has been excavated to within the targeted cleanup levels, confirmation samples should be collected from the excavation sidewall and floor.

For estimating purposes only, it is assumed that 75 cubic yards (cy) of petroleum hydrocarbon-impacted soil are present at the Site. The costs for removing less or more soil than this would have to be evaluated on a line-item basis, as there is not a linear relationship between volume of impacted soil and cost.

It is also assumed that no PCB-, chlorinated solvent-, or metals-impacted soil is present at the Site. If present, these soils will require special handling and will most likely need to be shipped off the Site for disposal at an approved facility.

The proposed soil excavation volume is an in-place estimate. Due to the swell of soils during handling, the anticipated ex situ management volume is expected to increase by 33 percent to require the management of an estimated 100 cy of soil.

6.2 SOIL MANAGEMENT ALTERNATIVES

The results of the evaluation of the selected soil remedial actions are presented in Table 1. The following alternatives were considered for the management of contaminated soil.

- **Passive Biopile Construction** – In this option, excavated soils are mixed with clean soil, placed on a treatment area, and covered. Aeration is provided passively through perforated pipe extending into the pile. Fertilizer may be added to soils in the pile to enhance microbial activity. The pile is covered and a leachate collection sump is included to manage water if the cover is damaged. The pile is left until the soils meet specified cleanup levels for land spreading or beneficial reuse.
- **Road Base Encapsulation** – This alternative method would only apply to Tuluksak if a road bed is constructed to provide zero net infiltration, the road is located in an area that meets the requirements of 18 AAC 75.360(11)(G), and with the concurrence of the community.
- **Daily Landfill Cover** – Under this option, contaminated soils could be used for landfill cover. This option requires permission from DEC's Solid Waste Program, and typically is contingent on pre-treatment and sampling of the soil prior to use as landfill cover. This alternative is a common form of beneficial reuse of contaminated soil, is less expensive than many other options at remote sites, and effectively manages risks associated with contaminated soil.
- **Landfarming** – This method includes spreading the contaminated soil into a 1-foot-thick layer. The soil is tilled periodically during the summer months using a rototiller. Tilling aerates the soils to promote aerobic degradation of contaminants in the soil. The addition of fertilizer is also used to promote biological activity. Initial landfarm characterization samples are collected to document contaminant levels at the time of placement. Characterization samples are collected on an annual basis to determine when cleanup goals are met. The DEC Solid Waste Program will specify the cleanup requirements prior to using landfarmed soils as daily landfill cover. The community landfill in Tuluksak is currently the best location for landfarming contaminated soils. The land is owned by the Tulkisarmute Corporation and leased to the Tuluksak Native Community. Although the community landfill is relatively close to the community, it is topographically higher than land to the west or south along the Tuluksak or Kuskokwim rivers and the community wishes to close the facility.
- **Thermal Remediation** – Thermal remediation of contaminated soil is generally expensive at remote locations both to ship in treatment equipment and for the fuel required, and it is most likely not a feasible option for Tuluksak.
- **Shipment Off-Site for Treatment or Disposal** – This option is employed if soils cannot be reasonably treated onsite and is most feasible when inexpensive transportation is available. If soils are determined to be hazardous, or no appropriate area exists for onsite treatment, it may have to be containerized and transported to a facility for treatment or disposal. In these instances, treatment typically involves incineration, and disposal typically involves placement in a permitted landfill.

The matrix for remedial option selection is presented in Table 1. The alternatives are ranked according to the five parameters of environmental protection, regulatory compliance, effectiveness, implementability, and cost. Remediation options with the best overall rating are compared for use at a particular site.

6.3 PREFERRED ALTERNATIVE

The preferred alternative for managing contaminated soil from the Old Power Plant site would be landfarming, followed by use as daily landfill cover. Precedence exists for using contaminated soils as landfill cover in rural communities, but it requires approval by DEC's Solid Waste Program. The DEC Solid Waste Program requires that contaminated soil be managed prior to use as landfill cover. Landfarming, in an area not subjected to flooding, should be implemented to reduce contaminant concentrations to acceptable levels for use as landfill cover material, which are assumed to be DEC Method Two ingestion and inhalation cleanup levels.

Initial work will include landfarm construction, which is anticipated to require an area of approximately 52 feet by 52 feet. Each year that landfarming is conducted, two rounds of tilling and fertilizer application will occur using local labor. In addition, analytical soil samples are required to determine if the contaminant levels are acceptable for landfill cover soil. It is estimated that three successive field seasons of landfarm fertilizer application, tilling, and sampling may be required to meet DEC requirements for use of the soil as landfill cover. Targeted reuse levels may be attained in fewer seasons of soil management.

6.4 LONG-TERM SOIL TREATMENT LOCATIONS

Landfarming is considered a long-term treatment option because it typically takes several years to meet required cleanup or soil reuse objectives. No existing landfarming containment unit is available; thus, implementation of the landfarming alternative will likely require construction of a new landfarm cell at the location of the community landfill. The land on which the community landfill was constructed is owned by the Tulkisarmute Corporation and is leased to the Tuluksak Native Community. The existing community landfill is not completely fenced and is located approximately 600 feet from the nearest residence; the entire Tuluksak region is relatively flat and the landfill may be subject to flooding from the Kuskokwim River. The location of the current landfill makes it less prone to flooding than surrounding land to the west and south along the Tuluksak and Kuskokwim rivers. The landfill will be replaced in several years and the landfarmed soil could be used to provide cover and cap material for the landfill. The existing landfill location would limit contact with contaminated soil by village residents and reduce the potential for exposure of contaminants to surface water or ground water as locations further south are more prone to flooding by waters of the Kuskokwim River.

Criteria for selecting the landfarming location for soils removed at the Site include the following:

- Elevation above the river to prevent erosion during future flooding events;
- Distance from the village to limit contact with residents during course of treatment; and

- Preparation work of soils beneath selected area has previously been completed (i.e., leveling of area for landfarm construction).

Although it should be averted to the extent possible to reduce the additional cost of handling contaminated soil more than once, storage or stockpiling of soil prior to landfarming may be required in the event of unforeseen delays to the project schedule, or if the storage is a means of staging the material for a future, currently unidentified, beneficial use. Stockpile construction is frequently a long-term or short-term intermediate step to developing soil treatment options and must be constructed in accordance with 18 AAC 78.274.

6.5 SOURCE OF BACKFILL MATERIAL

According to Mr. DeMantle, sand has been mined from the mouth of the Tuluksak River near its confluence with the Koyukuk River for construction projects in Tuluksak.

Use of river bank gravel and sand requires a permit from the Alaska Department of Natural Resources (DNR). This Material Sale Contract carries a cost of $1.50 per cy for material taken from below the normal high water line of the Tuluksak River and is payable to DNR.

The Alaska Department of Fish and Game (ADF&G) Habitat Division requires a Fish Habitat Permit which is informational only and is not fee-based (i.e., there is no cost for this permit).

The U.S. Army Corps of Engineers (USACE) also requires a permit to operate below the normal high water line of the Tuluksak River for the purpose of resource extraction. Contact information for these agencies follow:

- DNR – Material Sale Contracts - Frank Maxwell, (907) 451-2728
- ADF&G – Habitat Division – Mac McLean, (907) 459-7281
- USACE – USACE Permit – Mary Leykom, (907) 753-2711

Coordination with the Tuluksak Village Council regarding the availability of sufficient quantities of backfill material, and the timing for mining and hauling, should be coordinated during the planning stage of any excavation work.

6.6 WATER MANAGEMENT OPTIONS

Ground water is not expected to be encountered during any subsurface investigation activities or excavations. This assumption is based on drill logs provided in Appendix D. However, if ground water is encountered, dewatering will not be conducted and the excavation will not proceed below the static water level.

6.7 EQUIPMENT AND LABOR REQUIREMENTS

The equipment and labor requirements to implement the preferred alternative require the use of an excavator, haul trucks capable of carrying up to 10 cy of material, and a loader to spread the

soil at the landfarm location. These activities can be carried out simultaneously to minimize the time required to complete the work. In this manner, the excavator will fill haul trucks that dump at the landfarm location while a backhoe consolidates the material to the 1-foot-depth specification. In addition, qualified personnel will be required to operate heavy equipment.

6.8 AVAILABLE RESOURCES

This section describes the equipment currently available in Tuluksak. As a cost control, Site remediation should be timed with other large construction activities within the community, if possible, in order to take advantage of resource leveraging opportunities. Ongoing or upcoming projects planned in Tuluksak are described in Section 6.8.3.

6.8.1 EQUIPMENT

Heavy equipment available and owned by the TNC includes one Hitachi excavator, one loader with exchangeable bucket and forks, and one small John Deere bulldozer with a backhoe attachment. No other heavy equipment is owned by the TNC. Persons who are qualified heavy equipment operators reside in the community.

At this time (June 2010), Knik Construction is in Tuluksak working on civil projects. Knik has a 10-yard dump truck that may be available for working on hauling soil and backfill. In addition, the State of Alaska Village Safe Water (VSW) program has equipment on site for water and wastewater upgrade projects. The VSW project manager in Anchorage is Mr. David Longtin. Mr. Longtin indicated that project work in Tuluksak would be taking place over the next several summers. The VSW owns a Cat D8N bulldozer, a Hamm 2320D vibratory compactor, a Volvo EC360B excavator, a Case 550 HLT bulldozer, and a Volvo A30D 10-yard haul truck.

6.8.2 LABOR

Mr. Bobby Peter indicated that two to three village residents currently have 40-hour HAZWOPER training. There is currently no 40-hour HAZWOPER training course planned for Tuluksak.

6.8.3 RESOURCE LEVERAGING OPPORTUNITIES

The DBA request form filed in 2009 indicated that ongoing or upcoming projects planned for Tuluksak include the following:

- Construction of a new airstrip.
- Construction of a new clinic.
- Installation of new bulk fuel tanks at the new power plant building.
- Construction of new sewage lagoons.

Conversations with Mr. David Longtin of VSW indicated that these projects would be taking place over the next several summer construction seasons.

Funding sources to support cleanup/demolition of the Site for which the community may apply can be found on the spreadsheet in Appendix J.

6.8.4 PERSONNEL QUALIFICATIONS

Personnel working on the field component of this project must be trained to the HAZWOPER standard per the Occupational Safety and Health Administration requirement in Code of Federal Regulations, Title 29 Section 1910.120. Equipment operators must be able to verify their training and experience to operate equipment required for this project.

7. CONCLUSIONS

In order to allow the community to reuse the Site, used oil, used glycol, derelict equipment, and other solid waste will need to be removed. It is recommended that, to the extent possible, equipment on Site be beneficially reused within the community or disposed of in the local landfill. Materials requiring special handling may require offsite disposal at an approved facility. At this time, excavation activities are not recommended until the volume of contaminated soil present at the Site is known to allow appropriate planning for removal and treatment. SLR recommends that a soil and ground water assessment be conducted to determine the extent of petroleum hydrocarbon contamination and determine if non-petroleum contaminants are present.

The cost estimates for site work are as follows, and are detailed in Appendix K. A comprehensive corrective action plan, which includes modification of the existing work plan for site assessment, is estimated to cost $6,220. The soil and ground water investigation task, which includes removal of debris and soil investigation via hand auger and ground water investigation using a hand auger and hand-driven Geoprobe tools, is estimated to cost $96,293. Included in this total is the estimated cost of $25,000 for a contractor to decommission the AST, the generator building day tank, and associated piping. Solid waste removal and assessment activities could be conducted in a single field season.

Once the extent of contamination has been determined, excavation of contaminated material can proceed. The most appropriate method of soil treatment and disposal was found to be landfarming followed by use as landfill cover material. Excavation and landfarm preparation can be implemented in one field season. It is estimated that three successive field seasons of landfarm fertilization and tilling may be required to meet closure standards established by the DEC for an assumed in-place volume of 75 cy of contaminated soil (100 cy volume when excavated). Sampling of the soil may also be required before use as landfill cover. The preliminary cost estimate for construction of the landfarm area, soil excavation and backfill, placing soil in the landfarm area, tilling and fertilizing the landfarm, landfarm maintenance, and decommissioning the landfarm is $73,220.

The project will rely on consultant assistance for documentation and reporting to DEC, and the estimated final project reporting costs are an additional $7,250. The total project costs for all phases of work are estimated to be $182,983. It should be emphasized that the assumed 75 cy in place volume of contaminated soil for which this cost estimate has been prepared has not been defined by a field investigation, and project costs may be different based on the actual volume of contaminated soil.

SLR performed a Phase I ESA of the old power plant located in Tuluksak Alaska. The Phase I ESA was performed in conformance with the scope and limitations of American Society for Testing and Materials (ASTM) Practice E 1527-05. Exceptions to, or deletions from, this practice are described in Section 5.0 of this report. This assessment has revealed no evidence

of *recognized environmental conditions* in connection with the *Site*, with the exception of the following:

- Evidence that the area beneath the building has been impacted by past releases of diesel fuel and/or used oil.
- Hazardous materials consisting of old mechanical devices and other debris, approximately one hundred 5-gallon buckets containing used oil and glycol, lead-acid batteries, generators, and transformers stored with no secondary containment and with evidence of past releases, as well as reported past practices of burning used oil in open containers without secondary containment.
- Three transformers, twenty-five 55-gallon drums, six old generators, and up to 15 heavy equipment batteries stored directly on the ground on the west and southwest areas of the *Site*. The area to the west also had fuel-stained snow and a strong petroleum odor.

This Phase I assessment revealed no evidence of *historical recognized environmental conditions* in connection with the *Site*, with the exception of the following:

- A documented 1,900 gallon diesel fuel spill from an overfilled day tank within the old power plant building.

8. REFERENCES

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Western Regional Climate Center (WRCC), 2009. http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ak6058, September.

LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

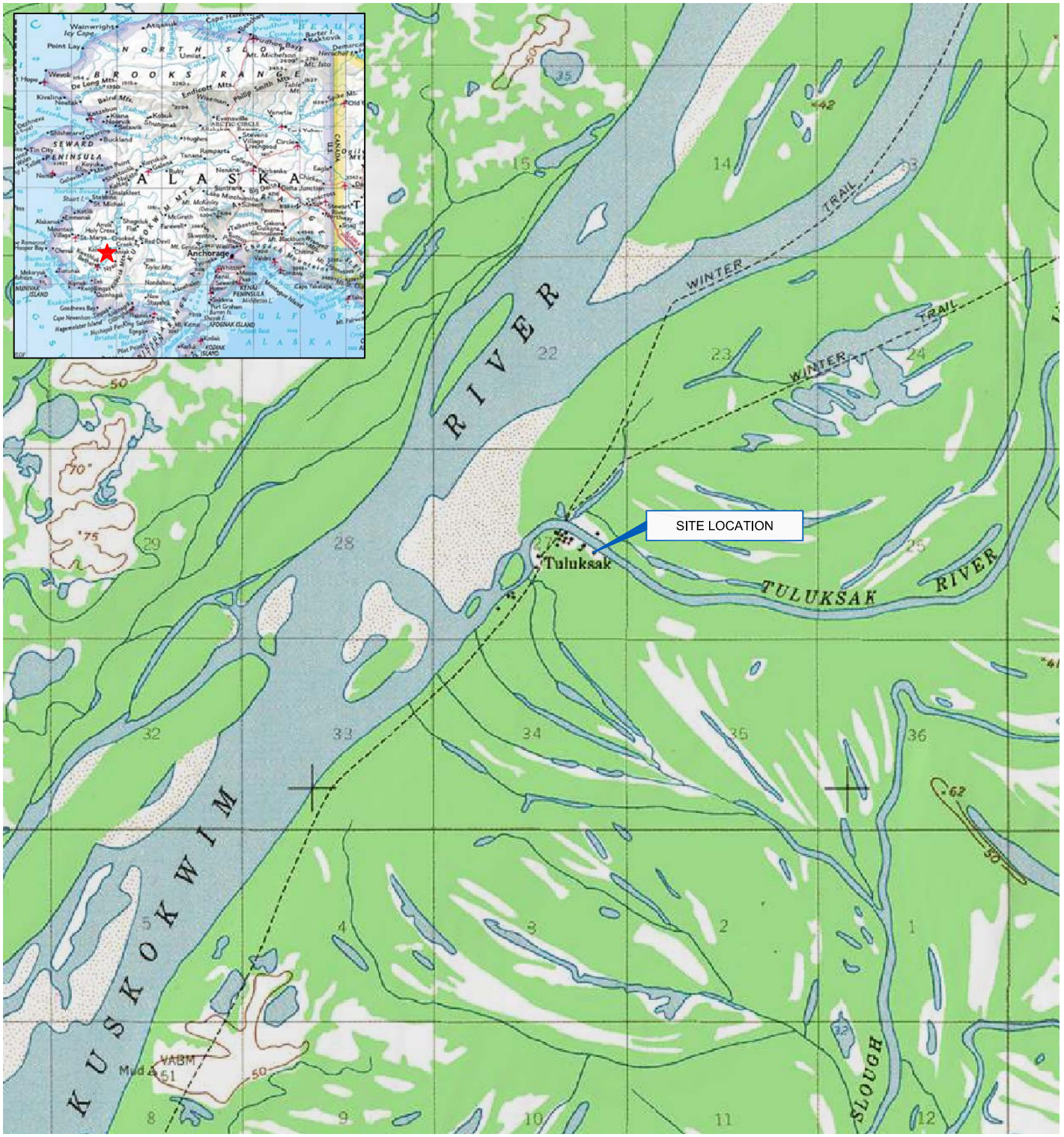
The purpose of an environmental assessment is to reasonably evaluate the potential for or actual impact of past practices on a given site area. In performing an environmental assessment, it is understood that a balance must be struck between a reasonable inquiry into the environmental issues and an exhaustive analysis of each conceivable issue of potential concern. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation is thorough enough to exclude the presence of hazardous materials at a given site. If hazardous conditions have not been identified during the assessment, such a finding should not therefore be construed as a guarantee of the absence of such materials on the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

Environmental conditions may exist at the site that cannot be identified by visual observation. Where subsurface work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.

Except where there is express concern of our client, or where specific environmental contaminants have been previously reported by others, naturally occurring toxic substances, potential environmental contaminants inside buildings, or contaminant concentrations that are not of current environmental concern may not be reflected in this document.

FIGURES



REFERENCED FROM : TOPO!® ©2003 NATIONAL GEOGRAPHIC

N

SCALE: 1" = 0.75mi

WHEN PLOTTED AT 8.5 x 11 PAGE SIZE

0 0.75 1.50 2.25mi

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

SLR

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Report PROPERTY ASSESSMENT AND CLEANUP PLAN
OLD POWER PLANT
TULUKSAK, ALASKA

Drawing
SITE LOCATION MAP

Date June 3, 2010	Scale 1" = 0.75 Mile	Fig. No. 1
File Name Tuluksak_PP	Project No. 105.00065.09018	

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Report PROPERTY ASSESSMENT AND CLEANUP PLAN
OLD POWER PLANT
TULUKSAK, ALASKA

Drawing
SITE VICINITY MAP

SLR

ABBREVIATIONS

BIA	BUREAU OF INDIAN AFFAIRS
YSD	YUPIIT SCHOOL DISTRICT

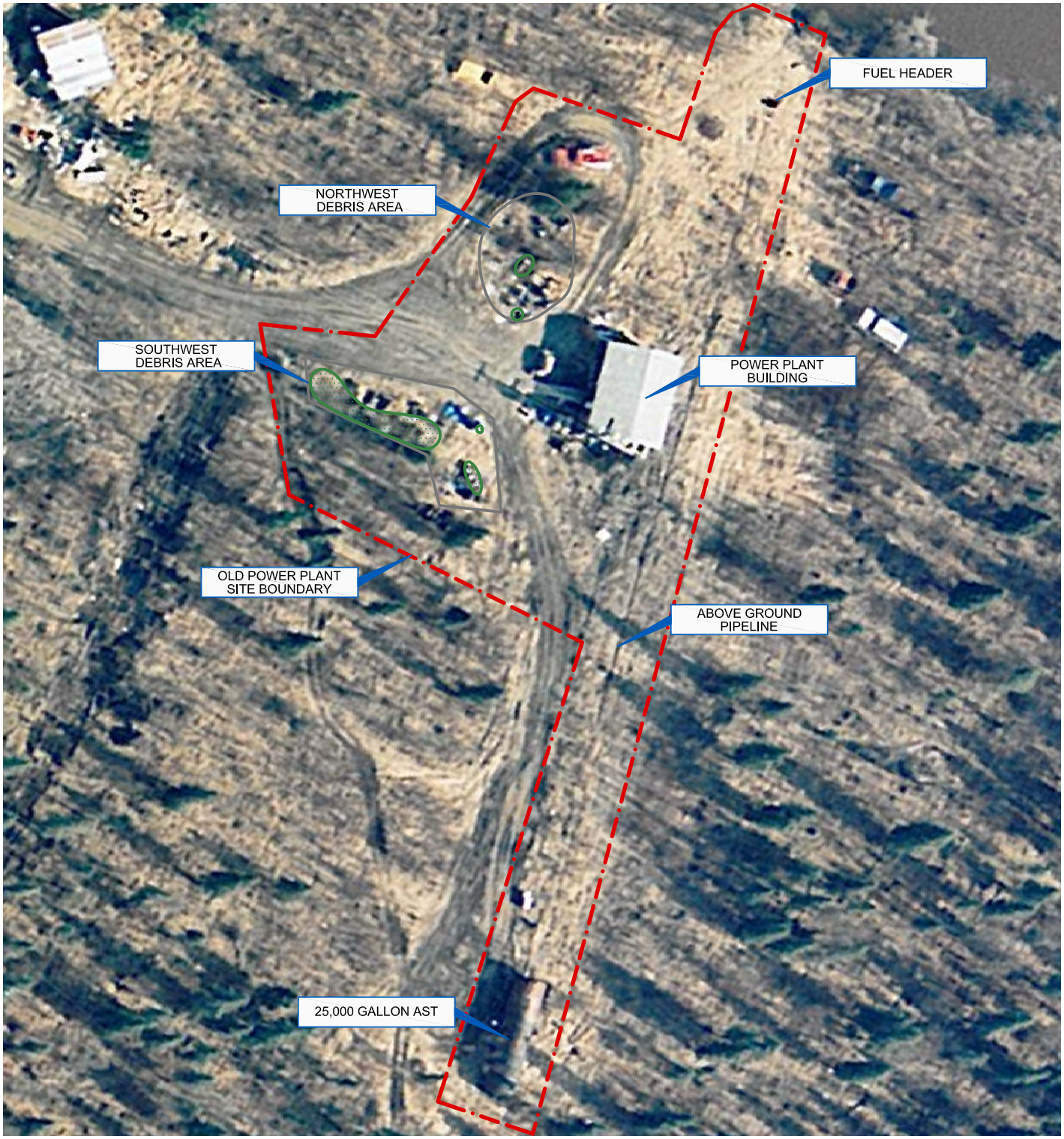
N

SCALE: 1" = 550'
WHEN PLOTTED AT 8.5x 11 PAGE SIZE

0 550 1100 1650'

Date	June 3, 2010	Scale	1" = 550'
File Name	Tuluksak_PP	Project No.	105.00065.09018

Fig. No. 2



2003 AERIAL PHOTOGRAPH REFERENCED FROM AEROMETRIC INC.

N

SCALE: 1" = 50'

WHEN PLOTTED AT 8.5 x 11 PAGE SIZE

0 50 100 150'

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SLR

ABBREVIATIONS / LEGEND

AST ABOVE GROUND STORAGE TANK

3-24-10 OBSERVED DRUM AREAS

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Report PROPERTY ASSESSMENT AND CLEANUP PLAN
OLD POWER PLANT
TULUKSAK, ALASKA

Drawing SITE DETAIL

Date June 3, 2010	Scale 1" = 50'	Fig. No. 3
File Name Tuluksak_PP	Project No. 105.00065.09018	

TABLES

TABLE 1
Evaluation of Remedial Alternatives for Soil

ALTERNATIVE	ENVIRONMENTAL PROTECTION	REGULATORY COMPLIANCE	EFFECTIVENESS	IMPLEMENT-ABILITY	COST	OVERALL RATING
No Action	Poor	Fair	Poor	Excellent	Excellent; ground water monitoring required	Fair
Passive Biopile Construction	Good	Good	Fair	Fair	Fair	Fair
Road Base Encapsulation	Good	Good	Fair; request longer treatment than land filling	Poor; requires cooperation of ADOT&PF and community	Good	Good
Daily Landfill Cover	Good	Fair	Good	Good; may require pre-treatment of soils to reduce contaminant concentrations before use.	Good	Good
Landfarming	Good	Good	Fair	Fair; the community of Tuluksak is located within a flood plain.	Good	Good
Thermal Remediation	Good	Good	Good	Fair- require mobilization of specialized equipment	Poor; extremely high cost for small projects	Fair
Offsite Shipment and Disposal	Excellent	Good	Good	Poor; only practical if non-petroleum hydrocarbon-impacted soils are present.	Poor; extremely high cost for small projects	Fair

Poor = inferior, inadequate, or unsatisfactory

Fair = sufficient but not preferred

Good = favorable; reliable

Excellent = exceptionally good; superior method

APPENDIX A

DEC BROWNFIELD ASSESSMENT REQUEST FORM – 2009

has bf file # 2451.57.001

DEC Brownfields Assessment Request Form – 2009

Please check the appropriate box for each question at the top of this page, and then answer questions 1–5 by inserting text in the blank area under each question, using as much space as you need. The deadline for receipt of requests is March 3, 2009.

Eligibility Determination—General Questions:

Is the applicant in any way responsible for the potential contamination at the site, or related to those who may be responsible?

☒ Yes ☐ No

Is the site federally owned?

☐ Yes ☒ No

Has the site or facility received funding for remediation from the Leaking Underground Storage Tank (LUST) Trust Fund?

☐ Yes ☒ No ☐ Unknown

If you answered "yes" to any of the above questions, we recommend that you please call DEC to discuss the specifics of your eligibility determination.

To the best of your knowledge, is the *owner* of the property in question:

☐ Private ☐ City/Public ☐ State ☐ Native Corp ☒ Tribal ☐ Unknown

Known or suspected contaminant(s) (check one):

☐ Hazardous Substances ☒ Petroleum Only ☐ Hazardous Substances and Petroleum

Is this site currently listed on DEC's *contaminated sites* database?

☒ Yes ☒ No ☐ Unknown

If yes, please list the project name, if known: Tuluksak Old Power Plant 2451.57.001

---

1. **Applicant/Owner**

a) ***Applicant*** - Provide the name and address of the organization applying for a DBA, the name of the contact person, email, telephone, and fax numbers.

Laura Kashatok
P.O. Box 95
Tuluksak, AK, 99679

Temp. phone # 695-6420
Temp. fax # 695-6932
I'm waiting for my Internet hook-up as of now - networking.

If Applicant is IGAP staff, please provide name of EPA project officer:

b) ***Project Team*** - Because no one person can be responsible for all aspects of a brownfield project, we request that you form a *project team* to ensure continued action beyond this DBA. Attach a letter from each team member acknowledging their support and willingness to participate. (Team members may include: city or village government representatives, tribal council representatives, environmental managers, elders or other community leaders, and other interested parties.)

George Lamont - Tribal Administrator
Peter J. Andrew - YKC Council Representative for Tuluksak
Laura Kashatok - Brownfields Coord - TLT
Eric Phillip - IGAP YKT / Edward Nicoki - Brownfields Program Director

c) ***Property Owner*** - The owner of the property must allow DEC access to the site. If the applicant is different from the owner, include written consent for access from the owner. *(Note: the applicant must be able to secure access for DEC and its contractors to conduct the assessment.)*

Tuluksak Native Community – Tribal Council gives DEC Access to the Old Power Plant Site.

#23 on map DCCED

FY2010

DEC Brownfield Assessment Request Form

2. Site Information

a) ***Historical Site Use*** - Describe, to the best of your ability, the previous known uses of the site, when the different activities occurred, and any historic or cultural significance of the property. Identify when and how the site became or may have become contaminated, with what substance(s), and where the contamination is likely to be found.

The Old Powar plant was Built in the Early 1980's The ground around the Building and the Pipes are contaminated with Petroleum.

b) ***Current Site Condition and Use*** - Provide the common name of the site, address, approximate acreage, zoning, and types of buildings. Please attach a site map or aerial photograph showing the site's location in the community, adjacent land use, and areas of known or suspected contamination. Identify approximate property boundaries.

Old power Plant, Lot # 23 on the Tuluksak map. 80 x 80 - estimate size of Building. Near the New Tuluksak River Sub-division. Old power Plant 100 x 300 feet Boundary.

c) ***Prior Environmental Assessment Activities*** - Please describe any prior site assessment or cleanup activities at the site and briefly state what you know about the findings of that work. Attach the summary or conclusion sections of the reports if available. If reports are not available, provide the consultant, client, approximate date of the study, and any other pertinent information.

No prior site assessment done - But was Surveyed by IGAP Picture's could be found at http://doimeister.bizware.com/manual_index-nf.php, tuluksa

3. Environmental Concerns

a) ***Reason for Concern*** - What is the reason for concern by the community, and what do you hope to gain by our involvement? Is there specific information that you are seeking? Please discuss community concerns in general, and identify any specific problems if possible.

Tuluksak Native Community Council and AVCP-Housing are Currently Building the New Tuluksak River Sub-division eight new houses sit at the site now - But the Ground around it needs to be cleaned up before the new housing's get built, because of fire hazards.

b) ***Proposed Project Need*** - Describe to the best of your ability what your project team believes are the needed assessment activities, and what result you would like to see from this project. Indicate any constraints as to when this work must be completed (e.g., to meet construction timeline, property transaction pending, etc.).

Tuluksak Native Community Tribal Council would like to see the site Cleaned up before further housing's are Built. The last house was built in 2003. Community Members are in need of housing.

DEC Brownfield Assessment Request Form FY2010

4. **Community Planning and Reuse Goals**

a) ***Other Community Plans or Projects*** - It is helpful to know if other state or federal agencies are planning work in your community. List any community *plans* that may exist or are in development such as: economic development plans, hazard mitigation plans, or erosion studies. Describe any other community *projects* that may be scheduled or pending, such as: water and sewer construction, a new landfill, road or airport construction, a new school or addition, fuel-storage tank farms, new housing, or other facilities.

New Airstrip
New Clinic
New Bulk fuel tanks
New Sewer Lagoons

These are the projects that hopefully start this Summer. 2009

b) ***Reuse or Redevelopment Plans*** - Does the community have well defined plans for how they would like to reuse this site if it were not for the real or perceived environmental problems? Is this site affecting the use of adjacent properties, subsistence habitat, or other resources? Do reuse plans include the incorporation of greenspace or sustainable, green building practices? If so, please describe.

Tuluksak Native Community NAHASDA Housing & AVCP Housing, recently built (8) eight new houses near the old power plant, But the site needs to be Cleaned up before further expansion of the Sub-division is to be built. (28) houses are Supposed to be built at the Site.

5. **Public Involvement**

a) ***Public Benefit*** - Briefly discuss how your proposed reuse or redevelopment plans for the property will provide a benefit to the public. Why is this important to your community? (Things to consider: creation of jobs, preservation of historically or culturally significant property, preservation of subsistence habitat, reuse or recycling of materials, cost savings to the community, or increased property values.)

(28) houses to be built at the Tuluksak River Sub-division housing is really needed here in Tuluksak. Jobs are on hold because of the Contaminated site of the old power plant site.

b) ***Community Support*** - Is the community strongly supportive of this project? Please identify other organizations in your community with whom you are coordinating on this reuse or redevelopment project. (Providing names and phone numbers of contacts is helpful here, and include resolutions or letters of support as applicable.)

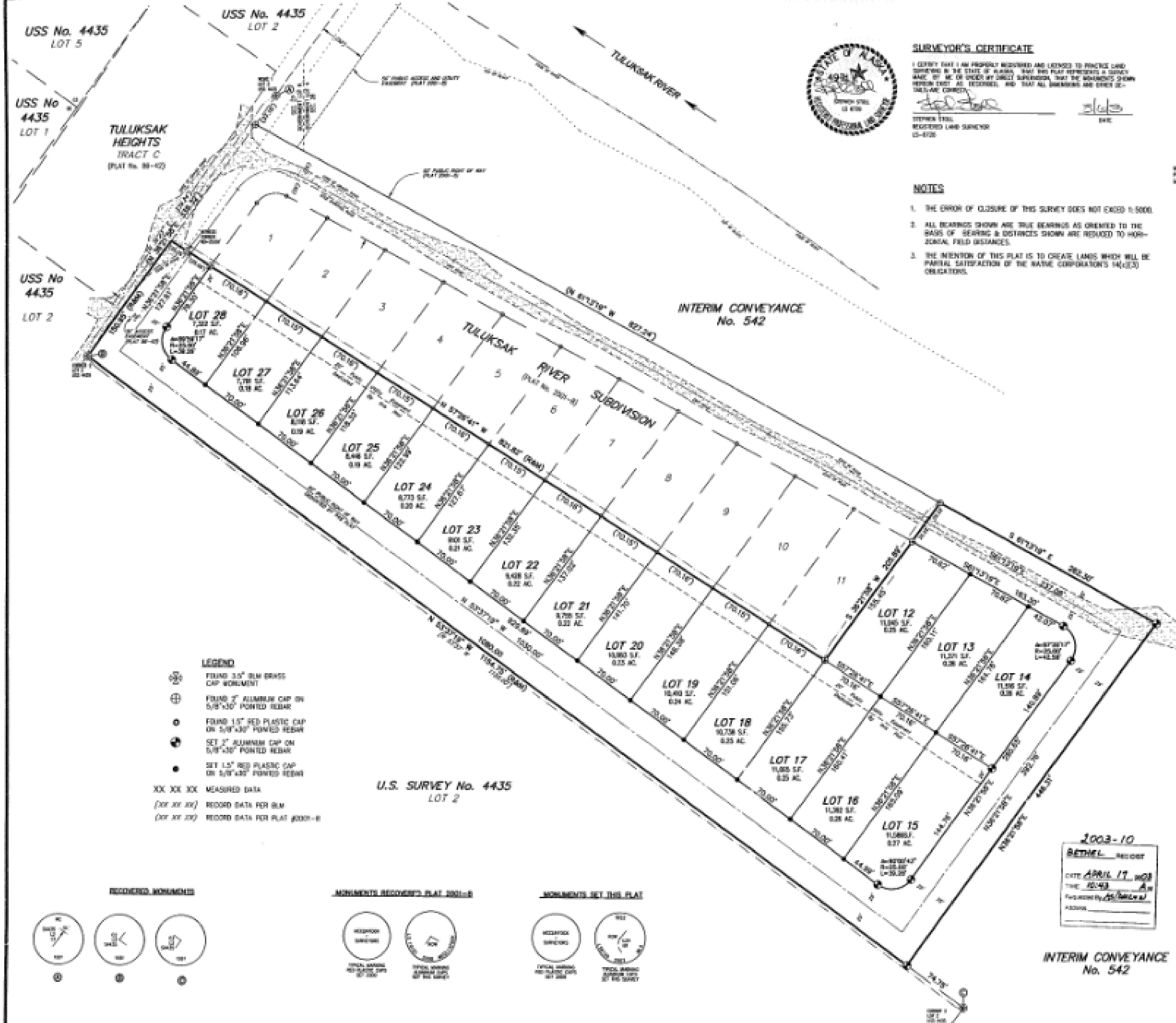
Tuluksak Native Community Council and the Community members themselves are Strongly in support of this Clean-up. AVCP-Housing - Bethel, AK 99559 - But the land is leased under Tuluksak Native Community.

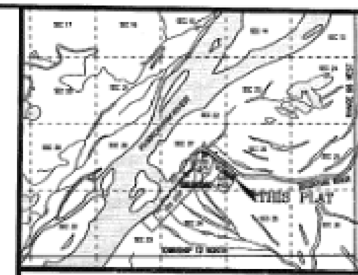
c) ***Community Resources*** - Our assessment often requires local assistance with site visits, lodging, excavation equipment, and transportation. Describe local resources that are available for this project. Does the community have financial or other resources to supplement this DBA or for other phases of the project, such as equipment, in-kind services, or funding for cleanup or new construction? Can this DBA be used to leverage other funding or services for the project?

Tuluksak Native Community has lodging available
TNC has these equipments: Excavator, Loader & Bull Dozer.
IGAP fundins is Available.

APPENDIX B

PLAT 2003-10 BETHEL RECORDING DISTRICT





VICINITY MAP SCALE: 1"= 1 mile
USGS QUAD MAP RUSSIAN MISSION (A-6), 1954

MAGNETIC DECLINATION PER USGS QUADRANGLE MAP RUSSIAN MISSION (A-6) 1954

SURVEYOR'S CERTIFICATE

I CERTIFY THAT I AM PROPERLY REGISTERED AND LICENSED TO PRACTICE LAND SURVEYING IN THE STATE OF ALASKA, THAT THIS PLAT REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION, THAT THE MONUMENTS SHOWN HEREON EXIST AS DESCRIBED, AND THAT ALL DIMENSIONS AND OTHER DETAILS ARE CORRECT.

STEPHEN STOLL
REGISTERED LAND SURVEYOR
LS-6720

3/6/03
DATE

NOTES

1. THE ERROR OF CLOSURE OF THIS SURVEY DOES NOT EXCEED 1:5000.
2. ALL BEARINGS SHOWN ARE TRUE BEARINGS AS ORIENTED TO THE BASIS OF BEARING & DISTANCES SHOWN ARE REDUCED TO HORIZONTAL FIELD DISTANCES.
3. THE INTENTION OF THIS PLAT IS TO CREATE LANDS WHICH WILL BE PARTIAL SATISFACTION OF THE NATIVE CORPORATION'S 14(c)(3) OBLIGATIONS.

CERTIFICATE OF OWNERSHIP AND DEDICATION

I, THE UNDERSIGNED, HEREBY CERTIFY THAT TULKSARMUTE, INCORPORATED, IS THE OWNER OF TULUKSAK RIVER SUBDIVISION, PHASE 2, AS SHOWN ON THIS PLAT. ON BEHALF OF TULKSARMUTE, INCORPORATED, I APPROVE THIS SURVEY AND PLAT AND DEDICATE OR RESERVE FOR PUBLIC OR PRIVATE USE AS NOTED, ALL EASEMENTS, PUBLIC UTILITY AREAS, AND RIGHTS-OF-WAY AS SHOWN AND DESCRIBED ON THIS PLAT. I ALSO CERTIFY THAT THE LAND DEDICATED FOR PUBLIC USE DOES NOT CONTAIN CLAIMS UNDER SECTION 14(c)(1) AND (2) OF THE ALASKA NATIVE CLAIMS SETTLEMENT ACT.

NAME: BOBBY J. PETER 03-17-03 DATE

TITLE: BOARD MEMBER

TULKSARMUTE, INCORPORATED
GENERAL DELIVERY
TULUKSAK, ALASKA 99679

NOTARY'S ACKNOWLEDGEMENT

SUBSCRIBED AND SWORN BEFORE ME THIS 17th DAY OF March 2003

FOR Bobby Peter

Carrie Peter
NOTARY FOR THE STATE OF ALASKA

MY COMMISSION EXPIRES: ____

PLAT APPROVAL

THIS PLAT IS APPROVED BY THE COMMISSIONER OF THE DEPARTMENT OF NATURAL RESOURCES, OR THE COMMISSIONER'S DESIGNEE, IN ACCORDANCE WITH ALASKA STATUTE 40.15.

COMMISSIONER 11Apr03 DATE

BY APPROVAL OF THIS PLAT, THE COMMISSIONER OF THE DEPARTMENT OF NATURAL RESOURCES HEREBY ACCEPTS FOR PUBLIC USES AND FOR PUBLIC PURPOSES THE REAL PROPERTY DEDICATED TO THE PUBLIC BY THIS PLAT INCLUDING EASEMENTS, RIGHTS-OF-WAY, ALLEYS, AND ROADWAYS SHOWN ON THIS PLAT. THE ACCEPTANCE OF LANDS FOR PUBLIC USE OR PUBLIC PURPOSES DOES NOT OBLIGATE THE PUBLIC OR ANY GOVERNING BODY TO CONSTRUCT, OPERATE, OR MAINTAIN IMPROVEMENTS.

BASIS OF BEARING

THE BASIS OF BEARING ON THIS PLAT WAS DETERMINED BY A HIGH PRECISION GPS SURVEY USING TOPCON JAVAD RECEIVERS DIFFERENTIALLY CORRECTED AND PROCESSED USING GEO-GENIUS 2000 AND TRIPOD DATA SYSTEMS SURVEY-PRO SOFTWARE. THE MEASURED BEARINGS RELATE TO A CENTRAL MERIDIAN PASSING THROUGH THE GPS BASE STATION IN THE SE CORNER OF SECTION 27, LOCATED NEAR THE NATIONAL GUARD ARMORY WITHIN LOT 3, U.S. SURVEY No. 4435.

TAX CERTIFICATE

THIS SUBDIVISION LIES OUTSIDE OF ANY TAXING AUTHORITY AT THE TIME OF FILING.

SCALE: 1"=50'
50 0 50 100 150
SCALE IN FEET

PLAT OF
TULUKSAK RIVER SUBDIVISION PHASE 2

A SUBDIVISION OF A PORTION OF
INTERIM CONVEYANCE No. 542
SITUATED WITHIN
SECTIONS 26 & 27, TOWNSHIP 12 NORTH, RANGE 60 WEST,
SEWARD MERIDIAN, ALASKA
CONTAINING 5.93 ACRES MORE OR LESS
BETHEL RECORDING DISTRICT

PREPARED BY
McCLINTOCK LAND ASSOCIATES, INC.

APPENDIX C

STAKEHOLDER MEETING MINUTES

Meeting Summary

Date: September 30, 2009, 2:00 P.M. to 3:00 P.M.

Re: Tuluksak Property Assessment and Cleanup Plan Stakeholder Meeting

Attendees: Laura Kashatok – Kuskokwim Brownfield Coordinator, Tuluksak Native Community
Joe Alexie – President, Native Village of Tuluksak
Peter Andrew – Tribal Council Vice President, Native Village of Tuluksak
Noah Carl Alexie Sr. – Tribal Council Member, Native Village of Tuluksak
Elena Gregory – Tribal Secretary, Native Village of Tuluksak
Noah Andrew – Elder, Native Village of Tuluksak
Moses Peter – Y.K. Health Board, Native Village of Tuluksak
Angela Alexie – Tribal Finance Clerk, Native Village of Tuluksak
Eric Phillips – NKC Environmental Manager, Middle Kuskokwim Consortium Brownfields Program
John Napoka – Elder, Native Village of Tuluksak
Deborah Williams, Brownfield Project Manager, Alaska Department of Environmental Conservation (DEC)
Sonja Benson, Brownfield Project Manager, DEC
Michael Rieser, Program Director, SLR
Carl Benson, Project Manager, SLR

Meeting Opening:

The planning meeting was opened with brief introductions from each of the meeting attendees. Ms. Benson then spoke briefly about the EPA-funded Brownfield, reuse and development, program and how the focus of the Brownfields program is safe reuse of properties with environmental concerns. Ms. Benson spoke to how the program looks at assessments of sites with potential hazards to human health and the environment, and evaluates options for funding and community resources to achieve cleanup for safe reuse. Ms. Benson added that there was little existing information available for the old BIA school site history. Soil sampling will be conducted as part of this project. It was noted that the old community power plant site was holding up new housing construction and redevelopment at that property.

Ms. Kashatok asked whether there were funds available to manage the underground storage tanks (USTs) reported to be at the old BIA school site. Ms. Benson said there was economic

stimulus funding available for regulated USTs, but didn't think these USTs would qualify. Ms. Williams asked if there were three USTs on site and Ms. Kashatok said yes. Mr. Peter asked if the Brownfield funding would be available to assess USTs on the old BIA school property. Ms. Benson said this project would help assess whether the USTs were associated with spills or releases. Mr. Peter said that the BIA pulled out of Tuluksak in June of 1985 and turned the BIA facility over to the Native Village of Tuluksak. Mr. Peter expressed uncertainty about the exact date the land ownership transfer took place, but that the village has responsibility to clean up the site for community safety. Ms. Benson said the Alaska Department of Education had no information of the old BIA site or property, perhaps because it was transferred to the community (Tuluksak, Inc.) and not to the state. Ms. Benson asked if there was record of the Moravian Church. Mr. Andrew said that BIA had some equipment at the facility and the land transfer process from BIA involved the filing of an interest of ownership. Mr. Andrew said that nobody claimed ownership and the land and equipment was turned over to the community of Tuluksak. Mr. Andrew said there is a quitclaim deed to Tuluksak dated August 1997. Ms. Benson asked if anyone knew of a relationship between the Moravian Mission and the BIA. No mention was made of knowledge of such a relationship. Ms. Benson said she was aware that the area in the vicinity of the old BIA school was a clear zone for the runway. Ms. Kashatok said it was in the second clear zone.

Ms. Benson continued by saying this project was about planning and compiling a document, a property assessment and cleanup plan (PACP), and then evaluating what can be done to reuse the property. Ms. Kashatok noted that she would be out of Tuluksak from the 5th to the 10th of October.

A project overview was then given by Mr. Rieser from SLR.

SLR Project Summary:

Mr. Rieser explained the objectives of SLR to accomplish the project and the PACP process. The project includes a review of the available documentation from the DEC, ownership records for the property, aerial photographs, a site visit, and interviews with key persons involved with the property/project area. This process would include an assessment involving soil sampling to confirm the extent of contamination and plan a cleanup operation in a way the site will be safe to reuse. Both sites (the old BIA school and the former community power plant) are expected to have petroleum contamination because of the generator facilities on site and that no assessment history exists for either site. Assessment activities would start at the most likely problem areas, indicated by soil staining or past activities of fuel storage and handling, and that locating the UST at the old BIA school site would be difficult. Locating three USTs will be even more difficult. Assessment work will begin by clearing any buried utilities on site. A backhoe will be used to dig to frozen ground to collect laboratory samples and screen to delineate the extent of contamination. The river bank will be walked to see if petroleum is leaking and surface water samples will be collected. The PACP will also summarize local resources, qualified labor and village equipment, available for managing contaminated soil, and will include options available to the Village of Tuluksak for treating the soil and removing the old BIA school and former community power plant sites. Examples of soil management options provided by Mr. Rieser were use as land fill cover or shipping off site. Interviews will be conducted with knowledgeable

residents to gain a comprehensive background to the site. The background will be reviewed as a basis of starting the assessment. The PACP will then provide a plan for treatment and ultimate reuse of the site.

Ms. Kashatok said she had photographs of the beach with evidence of gas and fuel contamination. Ms. Williams requested the photographs on line, but Ms. Kashatok said they take a long time to transfer. Ms. Williams asked where the fuel was coming from. Ms. Kashatok said it was coming from the old community power plant and staining all the way to the old BIA reserve. Mr. Andrew asked how deep the test pits would be excavated. Mr. Rieser said small test pits would be excavated to see the extent of contamination and soils will be sampled, but no soils will be removed from the site. Mr. Andrew said there were drums in the ground and there could be drums in the area. Ms. Benson said elders would need to be scheduled for interviews to help understand past activities at both sites. Mr. Napoka said that he was a maintenance man for the BIA facility in the 1960s and thousands of gallons of waste oil were disposed of underground to the subsurface, and that old batteries with mercury were disposed of as well. Mr. Rieser asked if the disposal took place in a landfill or dump on site. Mr. Napoka said there was a large container for waste oil and transformers buried at the site. Ms. Kashatok said she would ask elders about those who would be available for interviews. Mr. Andrew said that elders found mercury at the river line, and that batteries and transformers were buried at the BIA site. Mr. Rieser said a work plan would be prepared after the meeting and needed to know when the old community power plant was built and where fuel was stored. Mr. Peter said it was built in 1974 or 1975. Ms. Kashatok said fuel was stored south of the generator building in an above ground storage tank and that the tank was filled from a barge header at the river bank. Mr. Rieser asked if the line was still there and Ms. Kashatok said it was still there. Mr. Andrew said the tank was a double walled tank.

Mr. Rieser asked how deep frozen soils could be expected. Ms. Kashatok said that frozen soils were anywhere from 3 to 4 feet deep. Mr. Rieser said contamination would usually stop at the maximum thaw depth. Mr. Rieser asked where contaminated soil had been found. Ms. Kashatok said it would be found at fuel pipes and tanks, and the generator buildings. Mr. Andrew said the soils in the area were sandy. Mr. Rieser asked if there were any buried utilities and Mr. Andrew said there were buried fuel lines at the old BIA school site for tank filling, and Mr. Napoka said that buried lines existed for fueling the old community generator facility. Mr. Rieser asked if the old BIA school tanks had also been filled by barge and Mr. Andrew said yes. Mr. Rieser said there was a figure from the BIA school well drillers log with a layout of the property and asked if the old well is still visible. Ms. Kashatok said it was visible and she had photos that could be transferred during the site visit. Mr. Rieser said the drillers log indicated frost to 40 feet below ground surface and the well was screened below the frost. Mr. Rieser added that the well needs to be abandoned properly using an excavator to expose the top section of casing and tremmie bentonite into the well.

Ms. Benson asked about arranging equipment for the site visit. Mr. Rieser said it had not been arranged yet, but the village had given an hourly rate including an operator and fuel for a backhoe. Ms. Kashatok said the backhoe was available. Mr. Rieser asked about lodging and Ms. Kashatok said there was a camp available. Ms. Benson said it sounded like arrangements were being made and all communications needed to copy Ms. Williams at ADEC.

A discussion ensued regarding village resources and logistics and it was stated that the project would be paying for all of SLR's logistical needs including on-site equipment, meals, lodging, and transportation.

Mr. Andrew said the removal of the USTs on the old BIA school site would be tricky and must be done carefully to address concerns about community health, safety and welfare. Mr. Andrew recommended communicating this problem to the state representative and Washington DC for help in doing this work. Ms. Benson said that requests to representatives could help find sources of funding for that work and added that this project was being performed by DEC and would only need help from local community members for performing interviews. Mr. Andrew said that with winter coming, this project should be scheduled for the soonest time possible.

Ms. Benson asked if there were any questions and said that Ms. Kashatok would be receiving a copy of the meeting notes for review by the village. Mr. Peter asked Ms. Williams if there was conservation foundation funding available and mentioned a preservation foundation tribal conservation district. Ms. Williams said that the DEC has State Tribal Response Program (STRP) funding, but DEC was funded through the EPA and the state legislature and no foundation funding was being used through DEC. Mr. Andrew said there were conservation groups that work on tribal concerns and reemphasized the need to perform this work soon.

Meeting Closing:

Ms. Williams concluded the meeting by thanking the attendees, and requested to SLR prepare the meeting notes. Ms. Williams said that she would start preparation of a list of the meeting attendees for distribution with the minutes.

APPENDIX D

WELL LOGS FOR TULUKSAK WELLS

31461

STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINING, LAND & WATER
WATER WELL LOG

Drilling Started: 06 / 23 / 2003, Completed: 07 / 24 / 2003

City/Borough:	Subdivision:	BLOCK	LOT	Property Owner Name & Address:
Tuluksak	U. S. Survey 3797		1	Alaska Department of Transportation & Public Facilities P.O. Box 196900, Anchorage, AK 99519

Meridian Seward Township 12 N Range 66 W Section 27 , ____ 1/4 of ____ 1/4 of ____ 1/4 of SW 1/4

BOREHOLE DATA: (from ground surface) **Depth**

Material: Type, Color & wetness	From	To
Tundra	0	1'
Frozen Gray Silt	1'	56'
Fine to Medium Sand	56'	69'
Pack sand No Water	69'	76'
Fine to Medium Sand / Some Water	76'	81'
Pack Sand No Water	81'	88'
Fine Sand / Little Water	88'	93'
Hard Pack Sand No Water	93'	178'
Pea Gravel & Coarse Sand / Water	178'	191'
Coarse to Fine Sand - Cracks w/Water	191'	211' 10"

DEPARTMENT OF
NATURAL RESOURCES
DIV. OF MINING, LAND & WATER

OCT 11 2005

DIRECTOR'S OFFICE
ANCHORAGE

Drilling method: ☐ Air rotary, ☒ Cable tool ☐ Other _____

Well use: ☒ Public supply, ☐ Domestic, ☐ Other _____

Depth of hole: 211' 10" ft, Casing stickup: 3'6" ft

Casing type: Steel Thickness 0.322 inches

Casing diameter: 8 inches Casing depth 174' 3" ft

Liner type: None Diameter: ____ inches Depth: ____ ft

Note: .....

Static water (from top of casing): 13' 10" ft on 07 / 24 / 2003

Pumping level & yield: 26' 4" feet after 28 hours at 150 gpm

Recovery rate: _____ gpm, Method of testing: _____

Development method: surge & bail Duration: 48 hours

Well intake opening type: ☐ Open end ☐ Open hole, Other ☐

☒ Screened; Start: 174' 3" ft, Stopped 211' 10" ft

Screen type: 10 slot Slot/mesh size 0.010

☐ Perforated; Start: _____ ft, Stopped _____ ft

Start: _____ ft, Stopped _____ ft

Gravel packed ☐ Yes ☒ No From _____ ft to _____ ft

Note: 8-8" x 5' screens w/ packer

Grout type: Bentonite Volume 200 lbs

Depth; from 10 ft, to 20 ft

Pump intake depth: _____ ft

Pump size _____ hp Brand name _____

Was well disinfected upon completion? ☒ Yes ☐ No

Method of disinfection: Sodium Hypochlorite Solution

Driller comments/ disclaimers: .....

Tuluksak Well Number One

Well driller name: Roy Longbotham, Jr.

Company name: R & L Drilling & Leasing

Mailing address: 18957 Avenue 318

City: Visalia State: CA Zip 93292

Phone number : (_____) _____ - _____

Drillers signature: Roy Longbotham Jr

Date: 9 / 19 / 05

Alaska state law requires that a copy of this well log be forwarded to the Department of Natural Resources within 45 days (AK statutes 38.05.020, 38.05.035, 41.08.020, 46.15.020 and AK regulations 11 AAC 93.140). Faxes are acceptable.

Alaska DNR, Division of Mining, Land and Water,
550 W 7th Avenue, Suite 1020
Anchorage, AK 99501-3562

Phone (907)269-8639 and fax (907)269-8947

If the well is within city limits, the City of Anchorage requires that a copy of this well log be forwarded to the city within 60 days and another copy of this log be forwarded to the owner of the property, on which the well is located, within 30 days.

City Permit Number: _____

Date of Issue: ____ / ____ / _____

Parcel Identification Number: _____ - _____ - _____

Is well located at approved permit location? Yes ☐ or No ☐

31462

STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINING, LAND & WATER
WATER WELL LOG

Drilling Started: 07 / 26 / 2003, Completed: 08 / 21 / 2003

City/Borough:	Subdivision:	BLOCK	LOT	Property Owner Name & Address:
Tuluksak	U. S. Survey 3797		1	Alaska Department of Transportation & Public Facilities P. O. Box 196900, Anchorage, Alaska 99519

Meridian Seward Township 12 N Range 66 W Section 27 , ____ 1/4 of ____ 1/4 of ____ 1/4 of SW 1/4

BOREHOLE DATA: (from ground surface) **Depth**

Material: Type, Color & wetness	From	To
Topsoil	0	3'
Frozen Silt	3'	47' 3"
Soft Clay (Black)	47' 3"	48'
Frozen Ground (Blue)	48'	54'
Fine Sand, Wood Chips & Water	54'	83'
Pack Sand	83'	96'
Strips of Pack Sand/Fine Sand & Water	96'	142'
Pack Sand--No Water	142'	149'
Strips Fine Sand & Coarse Sand-Water	149'	172'
Coarse Sand--Pea Gravel--Water	172'	175'
Hard Pan--No Water	175'	179'

DEPARTMENT OF NATURAL RESOURCES
DIV. OF MINING, LAND & WATER
OCT 11 2005
DIRECTOR'S OFFICE
ANCHORAGE

Drilling method: ☐ Air rotary, ☒ Cable tool ☐ Other _____
Well use: ☒ Public supply, ☐ Domestic, ☐ Other _____

Depth of hole: 177' ft, Casing stickup: 3' ft
Casing type: Steel Thickness 0.322 inches
Casing diameter: 8 inches Casing depth 152' ft
Liner type: None Diameter: ____ inches Depth: ____ ft
Note: .....

Static water (from top of casing): 8' 6" ft on 08 / 21 / 2003
Pumping level & yield: 27' 7 " feet after 24 hours at 150 gpm
Recovery rate: _____ gpm, Method of testing: _____
Development method: Surge & Bail Duration: 48 hours

Well intake opening type: ☐ Open end ☐ Open hole , Other ☐
☒ Screened; Start: 152' ft, Stopped 177' ft
Screen type: 10 Slot Slot/mesh size See Note
☐ Perforated; Start: _____ ft, Stopped _____ ft
Start: _____ ft, Stopped _____ ft
Gravel packed ☐ Yes ☒ No From _____ ft to _____ ft
Note: 25' Screen--Bottom Up--5'-.020,5'-.015,15'-.010 w/ Packer

Grout type: Bentonite Volume 200 lbs
Depth; from 10 ft, to 20 ft

Pump intake depth: _____ ft
Pump size _____ hp Brand name _____

Was well disinfected upon completion? ☒ Yes ☐ No
Method of disinfection: Sodium Hypochlorite Solution

Driller comments/ disclaimers: .....
Tuluksak Well Number Two

Well driller name: Roy Longbothham, Jr.
Company name: R & L Drilling & Leasing
Mailing address: 18957 Avenue 318
City: Visalia State: CA Zip 93292
Phone number : (____) _____ - _____
Drillers signature: Roy Longbothham
Date: 9 / 19 / 05

Alaska state law requires that a copy of this well log be forwarded to the Department of Natural Resources within 45 days (AK statutes 38.05.020, 38.05.035, 41.08.020, 46.15.020 and AK regulations 11 AAC 93.140). Faxes are acceptable.

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City Permit Number: _____
Date of Issue: ____/____/_____

Parcel Identification Number: _____-_____-_____

Is well located at approved permit location? Yes ☐ or No ☐

WELL DRILLING LLC 3581

PROJECT NO: LE00-029 TITLE: W.O. 4021 - P.D. & C. WELL #1

LOCATION: Tuluksak, Alaska

DRILLER: Roy Longbotham TYPE OF RIG: Cable Tools

DATE	STARTED IN FEET	STOP DEPTH FEET	DEPTH TO WATER	SAMPLE CLASSIFICATION
	0	37		PERMAFROST
	37	40		Course Sand (Very Little Water)
	40	50	39	Very Fine Sand (Small Amount of Water)
	50	56	18'-10"	Gravel - Course Sand (Water)
		56		TOTAL Depth of Drilled Well

MATERIAL LEFT IN WELL

	OPENING	DIAM.	LENGTH - FEET	MATERIAL
Screen	.030	4"	5'-8"	Silicon Brass
Diam. of Casing		4"	51 ft	Steel

TEST OF WELL

Hours Pumped	YIELD GPM	PUMPING W.L.	REMARKS
96 Hours	30	30' 10"	Iron in Water

SB 12-66-77 DABB 1-1

BUREAU OF INDIAN AFFAIRS
RECEIVED
DEC 9 1964
BRANCH OF
PLANT DESIGN & CONSTRUCTION

3581

2SW

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER ANALYSIS

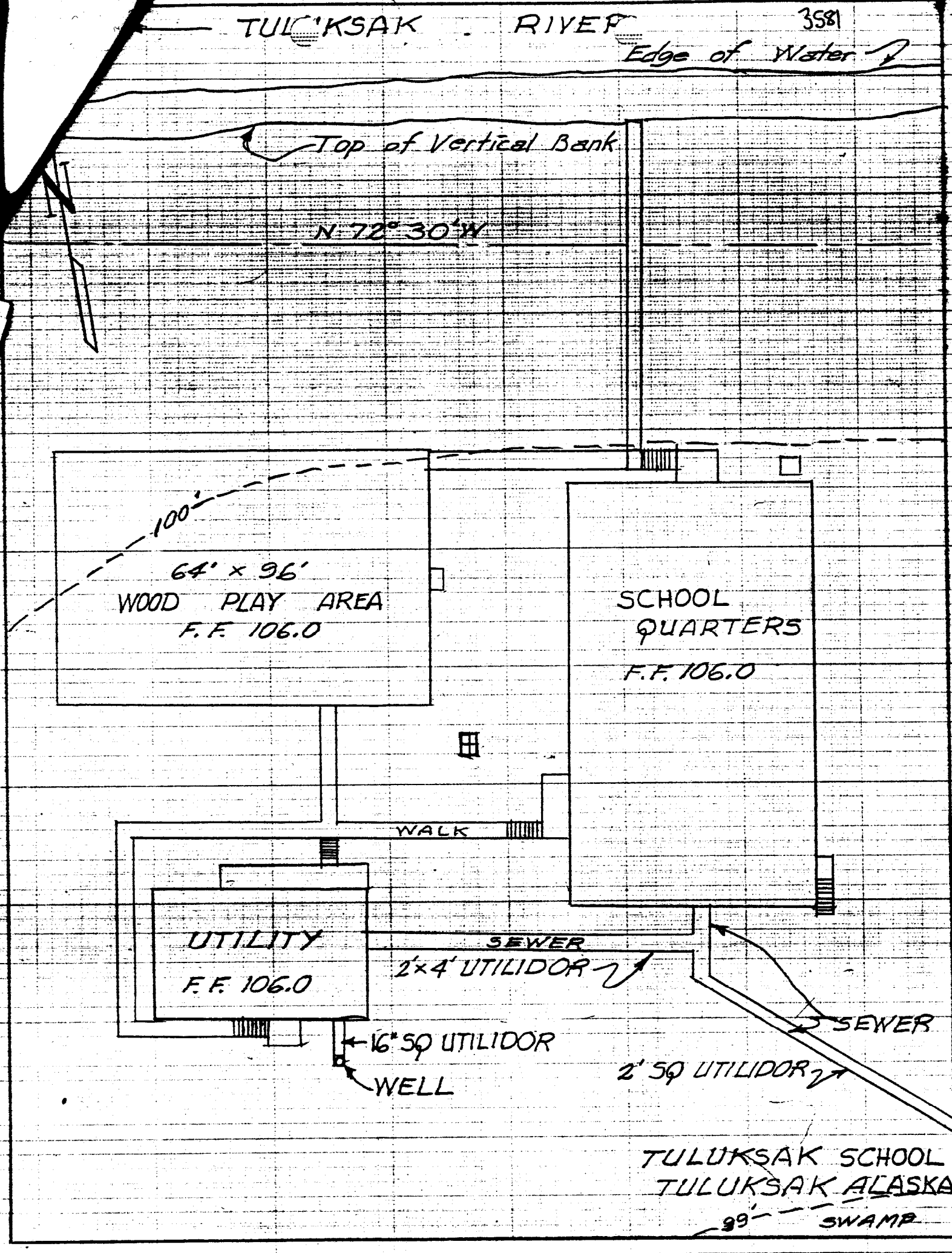
Location Bureau of Indian Affairs at Tuluksak, Alaska. County
Source
Point of coll. W. O. 4021 PD&C
Owner Treatment
Use Gage height (ft) Discharge (cfs) Temp (°F)
Appear. when coll.
Collected 11/5/64 By
Remarks

	ppm	epm		ppm	epm
Silica (SiO_2)	23	XXXX	Bicarbonate (HCO_3)	220	3.60
Aluminum (Al)			Carbonate (CO_3)	0	0.00
Iron (Fe) (dis)	* 0.06				
			Sulfate (SO_4)	24	0.51
			Chloride (Cl)	23	0.64
			Fluoride (F)	0.1	0.01
Calcium (Ca)	50	2.50			
Magnesium (Mg)	21	1.74	Nitrate (NO_3)	1.8	.03
Sodium (Na)	12	0.52			
Potassium (K)	0.2	0.01			
Total		4.77	Total		4.79

	ppm		
Dissolved solids:		Specific conductance (micromhos at 25° C)	437
Calculated	263	pH	7.4
Residue on evaporation at 180°C			
Hardness as $CaCO_3$	212	Color	*10
Noncarbonate	32		
Alkalinity as $CaCO_3$	180		
* Fe PCPT ON BOTTLE			

Lab. No. 8297 Field No. Project

SB 12-66-27 DABB 1-1



SB 12-64-27 DWG 1-1

21624

WELL LOG

U.S. PUBLIC HEALTH SERVICE, DIVISION OF INDIAN HEALTH

LOCATION TULUKSAK, ALASKA DATE STARTED 11/2/64

DATE COMPLETED 11/8/64 DRILLER RALPH W. DONALSON SUP'T ROY LONGBOTHAM DRILLER

TOTAL DEPTH OF WELL 47' FT. CASING INSTALLED 44' DIAMETER 6"

GROUT NONE SCREEN SIZE .020 MFG. Not Avail. LENGTH 5' 8" 25 Gauge

STATIC WATER LEVEL 20' 4" HRS. PUMPED Not Avail @ 30 GPM DRAWDOWN Not Avail FT.

HOLE DIAMETER
CASING DIAMETER

DEPTH	FORMATION
	Permafrost
6'	
	Permafrost, Some Fine Sand
42'	Coarse Sand
	Coarse Gravel
47'	Tight Sand
	No Water

SOIL DATA TO 15 FT.
FEET THAWED
BOTTOM OF FROST & MATERIAL
SEASONAL OR PERMA FROST

WATER DATA FIELD TEST
TASTE
APPEARANCE FRESH
AFTER 24 HOURS
IRON
CHLORIDES
TDS

PUMP TEST 20' 4" STATIC LEVEL
PUMPING LEVEL 33' @ 30 GPM
AFTER Not Avail HRS.

HIGHEST RECOMMENDED PUMP RATE
WILL STATIC LEVEL CHANGE WITH TIDES OR FROST

DEVELOP PROCEDURE

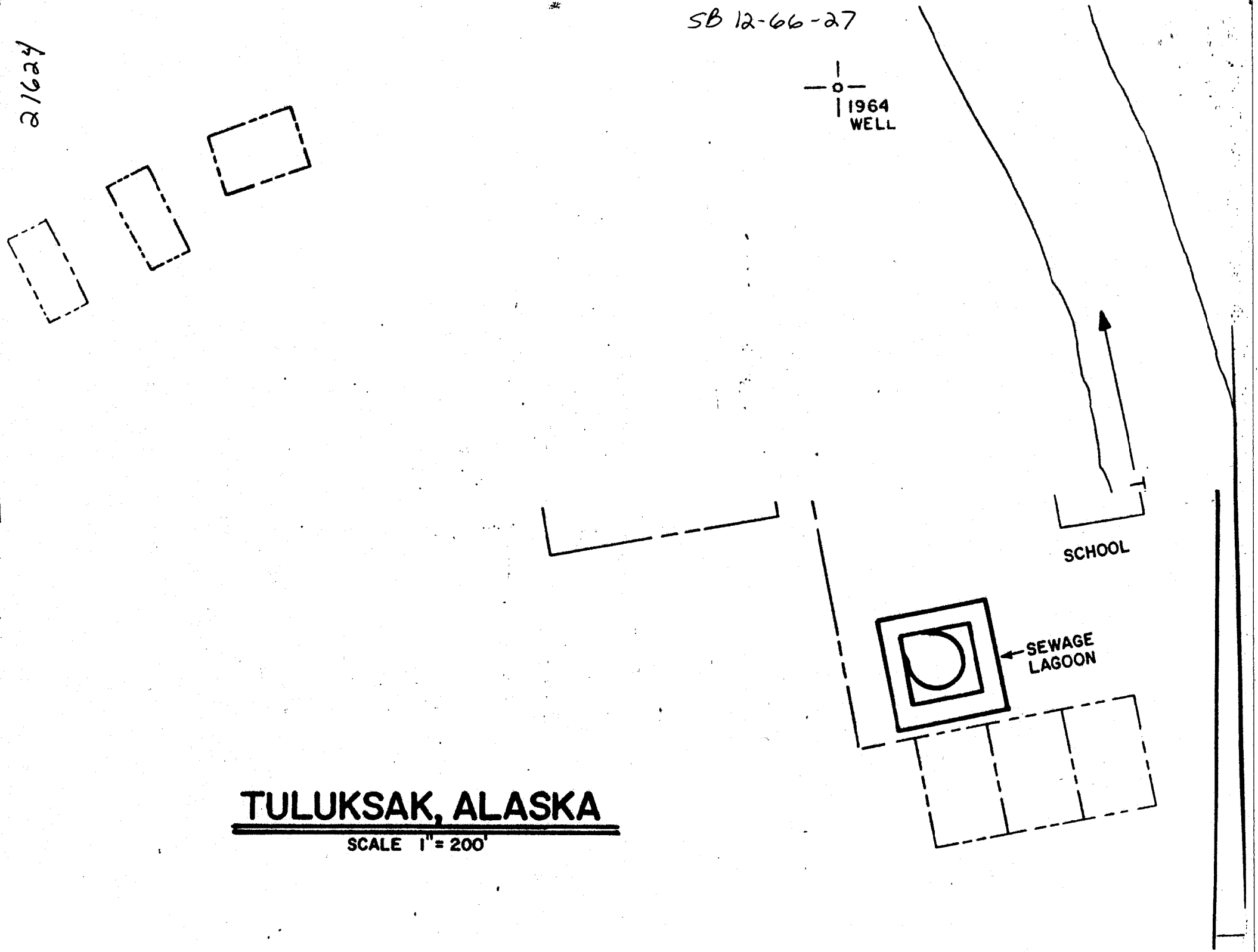
ESTIMATED MAN HOURS FOR DRILLING HOURS FOR TOTAL JOB

CREW

SB 12-66-27

SB 12-66-27

21624



TULUKSAK, ALASKA

SCALE 1" = 200'

21624

CHEMICAL & GEOLOGICAL LABORATORIES OF ALASKA, INC.

TELEPHONE (907)-279-4014
274-3364
ANCHORAGE INDUSTRIAL CENTER
5633 B Street

ANALYTICAL REPORT

CUSTOMER Alaska Area Native Health SAMPLE LOCATION: 1964 OEH Well Tuluksak

DATE COLLECTED Unknown TIME COLLECTED: Unknown

SAMPLED BY _____ SOURCE Water Well drilled by BIA

REMARKS Drilled by Roy Longbotham

FOR LAB USE ONLY
RECVD. BY _____ LAB # _____
DATE RECEIVED _____
DATE COMPLETED _____
DATE REPORTED _____
SIGNED _____

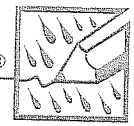
	mg/l		mg/l		mg/l
[]Ag, Silver		[]P, Phosphorous		[]Cyanide	
[]Al, Aluminum		[]Pb, Lead		[]Sulfate	25
[]As, Arsenic		[]Pt, Platinum		[]Phenol	
[]Au, Gold		[]Sb, Antimony		[]Total Dissolved Solids	
[]B, Boron		[]Se, Selenium		[]Total Volatile Solids	
[]Ba, Barium		[]Si, Silicon		[]Suspended Solids	
[]Bi, Bismuth		[]Sn, Tin		[]Volatile Suspended Solids	
[]Ca, Calcium	50	[]Sr, Strontium		[]Hardness as $CaCO_3$	214
[]Cd, Cadmium		[]Ti, Titanium		[]Alkalinity as $CaCO_3$	182
[]Co, Cobalt		[]W, Tungsten		[]	
[]Cr, Chromium		[]V, Vanadium		[]	
[]Cu, Copper		[]Zn, Zinc		[]	
[]Fe, Iron	.04	[]Zr, Zirconium		[]	
				* * * * * *	
[]Hg, Mercury		[]Ammonia Nitrogen-N		[]mmhos Conductivity	
[]K, Potassium	0.2	[]Kjedahl Nitrogen-N		[]pH Units	7.4
[]Mg, Magnesium	22	[]Nitrate-N	1.8	[]Turbidity NTU	
[]Mn, Manganese	[illegible]	[]Nitrite-N		[]Color Units	10
[]Mo, Molybdenum		[]Phosphorus (Ortho)-P		[]T.Coliform/100ml	
[]Na, Sodium	12	[]Chloride	23	[]	
[]Ni, Nickel		[]Fluoride	10	[]	

SB 12-66-27

APPENDIX E

FIELD NOTES AND INTERVIEW NOTES

"Rite in the Rain"®
ALL-WEATHER WRITING PAPER



Name Earl Benson

Address 3455 Ranch Drive

Phone (907) 455-9005

Project Tuluksak Old BIA School and Old Community Power Plant Site visit and Phase I Interviews

"Rite in the Rain" - a unique all-weather writing surface created to shed water and to enhance the written image. Makes it possible to write sharp, legible field data in any kind of weather.

a product of

J. L. DARLING CORPORATION
TACOMA, WA 98424-1017 USA
www.RiteintheRain.com

CONTENTS

PAGE	REFERENCE	DATE

Carl Benson — 10°F, clear

3/23/2010 @ 1630

Met with Eric Alexie, Robbie Peter, and Noah Carl Alexie about sites.

Hitachi EX300LC excavator has broken batteries.

There may be a scheduling conflict for using Hitachi in May/June due to VSW commitments with the 4VSW.

• There is no used oil burner in the village.

• The old BIA school well could not be located. It was a hand pump w/ no downhole pump.

• 3 USTs were buried @ old BIA school - 2 remain. 1959 photo shows 3 upright tanks. Robbie Peter remembers tanks being filled from barge line using hose. No hard line to river.

• No known used oil history @ BIA school.

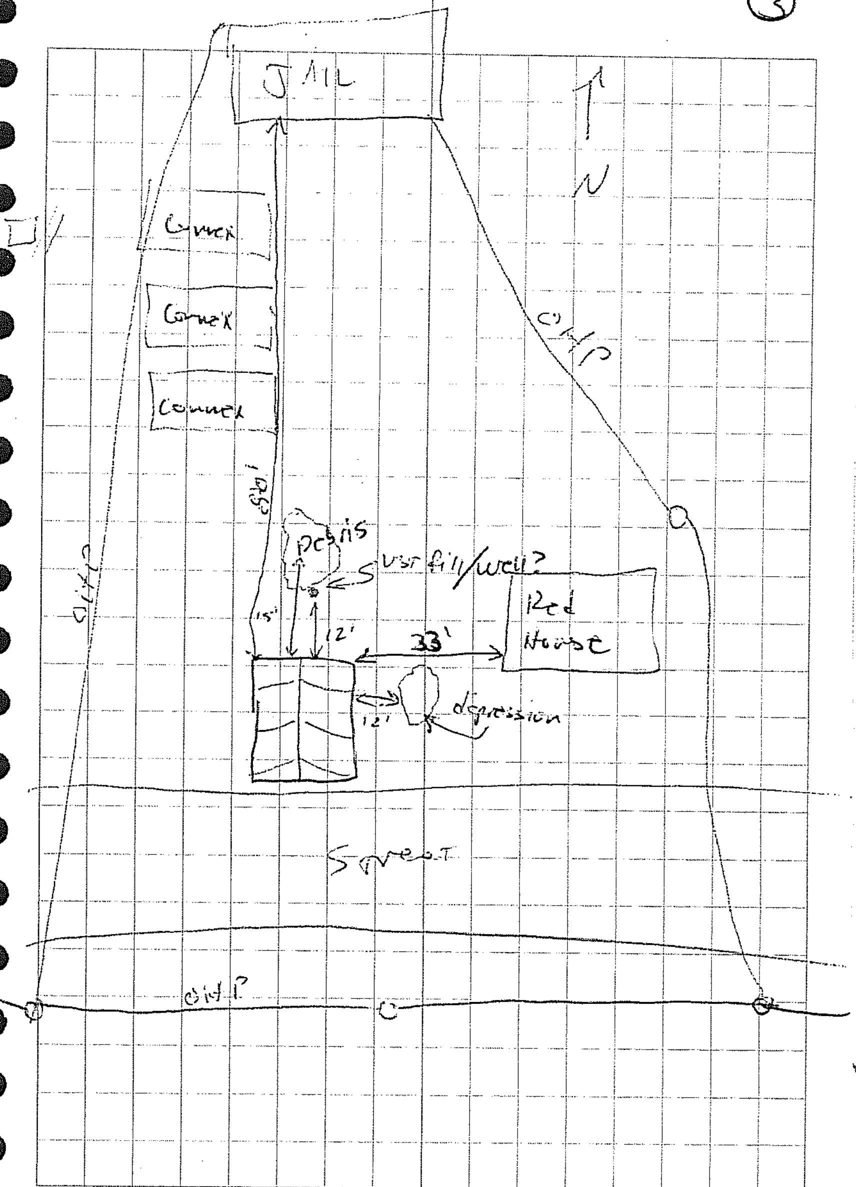
• Landfill being moved further SE from town. ——— End of Day Carl Benson

0845 mapping area around old BIA school.

(2)

Photo to north west from Street shows house (red) 33 feet east of gen. bldg.
3 old generators inside building
Photo of interior. Photo of old generator equipment outside gen bldg. 15' north with concrete slab of old structure.
Photo of suspected UST fill pipe 12' north of north wall of gen bldg.
Photo of area of depression 12' East of generator building. (Suspect UST Area).
Photo of 3 X 20' Storage Connexes 20' NW of gen bldg.
2 Photos of low overhead utilities to jail (80' north of gen bldg).
Photo of 1000 gal former UST Ribbie Peter Said Came from old BIA School.
Photo 2 more 20' Connex units west of other 3 Connex units.

(3)



"Rite in the Rain"

3/24/2010

1008 Visiting old generator to see site conditions. Photo of 40k Diesel tank south of bldg. Single-wall tank, no containment, no liners. Tank is currently full and locked. Reserve fuel storage.

Photos of Drums ~20-25
Batteries ~10-15
Old gen sets 6
Transformers ~3

South and east of old Generator Building.

B - batteries
T - Transformers
G - old gen set

3/24/2010

The generator building fill line is stained, solid structure around it stained and an odor is in the area.

Photos of Dozens of full ~~and empty~~ [illegible] buckets containing used oil per Bobbie Peter.

Cut batteries under entrance.

Fuel odor and staining within snow pile west of Gen bldg.

Photo of Stained snow west of Gen bldg.

Photo of ID plate on transformer, non PCB. Smaller of pair had same plate. 3rd ~~large~~ [illegible] Transformer (large size) was frozen to ground and plate could not be seen.

1143 - Spoke with Bobbie Peterend he said he did not know of freezer facilities to use for keeping ice frozen during site visit. Perhaps CEZ or School would have one.

Fully burdened rate for the loader with operator will be $150.00/hour.

BIA Land owned by TVE

Old Generator building owned by Corporation.

⑥

Spill + knowledge of BIA school operations

Couldn't speak with John Napoka as he was out of village. John Napoka – 695-2056

Robbie Peter – water use is 50% from public well @ 16 cents per gallon. 50% go to Muskegum River to gather their own water.

History of fluid management:
used oil only hauled off site once in 1983 or 84. 2 years before power was generated to new power plant. 1 or 2 years of operation debris + used oil remain. Containers. (coolant, oil batteries, transformers)

Note 1:
Hand auger will be required at old BIA school site where Hitachi cannot access.

Note 2:
3 Connex boxes will need to be moved prior to BIA school assess.

⑦

Calls to make ⇒

- David Longfox 269-7606 Re: tracker + to log in
- School Principal (Lance Jackson) – 695-5026 Re: [illegible]
- John Napoka – BIA ops – 695-2056
- Willie Philip – Community Gen. Operator – 967-8329.
- Maxie Alexie – Property – 543-7367
  maxie@aucp.org

3/30/10

Move Tract III of parent Reserve US Survey 875. and subdivided back in 86-[illegible] plat III US Survey 3797 Old Power plant (2003-10 housing property plan – two monuments) is [illegible] east of Tululiksah heights Subdivision.

- Maxie said that Sharon River told him the "old BIA school" is actually old mission school started by the Moravians. With "mission house" torn down in ~1995 – was used as a school 2-story w/lots of rooms. Don't know who run it – Sharon went there in 1st grade.
- Best Contact for land transfers is Moses Peter. (Bobbie's uncle)

- Quit Claim Deed referencing tract III of US 875 establishes ownership.

Tract II & Tract III ~~not~~ Surveyed and USS 3797 ~~[illegible]~~ isn't recorded.

So, the quit claim Deed must be used to describe the land.
(Tracts Recorded on DOT Survey.)

Dave Longtin - Can stay @ CC2 Camp if projects are ongoing and Camp is being used.

Lance Jackson - Apartment open and shall be available. Call May 3 or May 10 to confirm. Apartment rental rate - ~~[illegible]~~ Arrange w/ Superintendent - 885-3601 Howard Diamond.

1410
• Called Joe DeMuth for permission to access Corporation Land ~~[illegible]~~ 695-2019 & ownership of land @ landfills, left messages and have not reached him yet.
John Repsher Bishops (mission Bldg School 3) 695-2056

4/2/2010
Left another message for Joe to ask permission to [illegible] @ old landfill & about who owns property @ old & new landfills. Message from [illegible]

Cont [illegible]
4/2/2010

(10)

5/3/2010 [signature]

1100: Met with John Cavalier, Deb Williams and Sonja Benson about path forward @ old Generator Building because no Permission had been granted by Fullbismuth Corporation to sample at the old Generator building east of the village. Deb asked when the latest time would be to still start field work to complete a report by June 30 2010. I said Thursday, May 6 would be the latest because we didn't order sample containers yet. Deb prepared a fax to have signed and faxed back to her to get the permission.

[signature] 5/3/2010

(11)

5/6/2010 [signature]

1700 Deb did not receive fax from Laura. An earlier conversation I had with Laura indicated she had mailed the signed form instead of faxing it back.

5/6/2010 [signature]

"Rite in the Rain"

(12)

5/7/2010 Cecil B

0900 Spoke with Sonja Benson @ ADEC about project and whether it was too late to mobilize. I told her it still could be done, but with the weekend approaching, it would be difficult. E-mailed later in the day stated that John Carnahan decided to terminate the field portion of the project and have a RACP written using existing information.

Cecil B
5/7/2010

(13)

5/17/2010 Cecil Ber

Questions for Tuluksak interviews come from Phase 2 report Section 1.6, 3.1, 3.2, 3.3

Interviews: users - Bobby Peter & Noah Carl Alexie,

- Operator - Willie Philip (~~695~~ 967-8329)
- Owner - Tulkisarmute Corp Joe Demantle (907) 695-2019
- Lewin Nashwak (907) 695-~~2007~~ 6420
- Bobby Peter - "
- Noah Alexie - "

1532 - Called Joe Demantle

Nick Jailhet: plant operator part time operator 695-6512.

Joe said he was not aware of any fuel spills at the facility, but once saw a large amount of oil on the floor. He expected the ground beneath the building to be contaminated from used oil. Barrels in and under the building are storing used oil and glycols. No knowledge of whether the transformers had been drained or not. Mr. Demantle

(14)

5/17/2016

Was not aware of any current or past regulatory action at or regarding the property. No release history knowledge other than the used oil on floor.

Could not reach Bobby Peter or work or on cellphone. Summarized Mr Peter interviews during site visit on March on phase I report form. Mr. Peter is being summarized as a "user" for the report.

1830 - Called Nick Jupiter, but he didn't know about material handling or spills - referred

- Willie Philip (Cell phone) — 695-2182 left message for Mr. Philip @ 1645.

En Route Pkg

(15)

5/21/2016

1530 Call to Bobby Peter - No answer on cell phone. Left message.

1544 Left message for Willie Philip to call.

1547 Called Stanley who said everyone would be back on Monday.

En Route Pkg

"Rain in the Rain"

5/24/2010

1000 Called for Willie Phillip and Bobby Peter. Bobby will be back @ the office after 1300 and Willie is not available until tomorrow morning at 0800–0900.

1155 Called John Nyaoka Jr. about past management of old BIA school generator building. Left message about calling him back to discuss site operational history at the old BIA school site.

1330 Called Tue and Bobby Peter's cell phone & left message that I would call early at office Tuesday.

End of calls

5/24/2010 [signature]

5/25/2010

0830 Call to Willie Phillip & spoke with him for 40 minutes. Filled out the user questionnaire.

1041 Called Bobby Peter @ the [illegible] got Alena Gregory, she did not know where he was. No answer on cell phone or at home phone.

1050 Wednesday John Nyaoka in Anchorage call in PM. Cell ~~[illegible]~~ 695-2056

1055 Reached Bobby Peter at home and completed questionnaire. Bobby is now Acting City Administrator after George Lomack's departure.

1055 Left message for John Nyaoka re: past activities @ old BIA school site.

1200 e-mailed David Longtin a list of questions regarding village project (wall) logistics at Tuluksak.

1215 ~~Sent~~ Set up to call Bob Carlson Re: spill @ Gen bldg.

(18)

5/26/2010

1129 Call to David Longpin. Could make equipment available payment is negotiable but David

Tululeah unit
Camp # 695-6254
~~[illegible]~~ wants high levels natural this summer

- Can mine sand from river bank, and in process of developing use agreement with Corporation but for sand only. Sand can be used locally.
  - DNR
  - Fish & Game
  - Fish & Wildlife
  - Army

- Tank Farm - Carl Hulse of CRW new install this summer to new Ca... 4 days (562-3252)

(19)

1520 Called Bob Carlson about 1999 1900 gallon spill. DEC participated and closed site without transfering UCs. Bob did note drain through floor for used oil to drain in containers beneath Can plant. March visit showed Barrels near gen plant all but 1 empty. Bob Carlson said he asked villagers empty and recharge contents. Bob noted used oil on floor of building.

"Rite in the Rain"

(20)

5/28/2010 695-2056

1155 – Call from John Wyeskie
waste oil was piped to one
large tank was buried and
used to hold used oil. So got
The purpose of the tank was
to hold used oil.
Fuel for generator came from
• Three upright ~10,000-gallon
tanks for diesel.
• upright Srely could have
been well.
• Tank was right near the
river. between Jail and Gen Bldg.
• Used oil tank was never
emptied – could not recall emptying.
• John had no memory of
transformers used on the old
generator building.
• No memory of spills, but there
were left over drums on trail
to ~~Nyak~~ Nyac mine.
• Barge filled old BIA school
AST fuel tanks – Pipes are
still underground.

(21)

5/28/2010
• No spills reported to state
• ASTs filled every summer
• Old buildings relocated to bethel using
barge.
• BIA school went from BIA to
mission use around 1960.
• John worked maintenance @ BIA school
1975 – until transfer in 1985 to (new school)

1445:
Joe Demantle – hunk [illegible] landing sent
this water, but were encouraging to
~~make~~ river deeper. Send river[illegible]
mouth of Tuluksak River. No
royalty to village or Corporation.
Permitting for approved used @
[illegible].

[signature]

"Rite in the Rain"

6/4/2010

Call

- Questions for old Power plant – is fuel line buried? (Pipes on ground surface) [David Phillip]
- Is trail to Nyac mine at old power plant? ~~(early 1980s)~~ (loops back to Airport) (Other trail goes ~~to Tuluks~~) – used by snow machiners
- Construction date for old powerplant? Early 1980s
- ~~Hazmat~~ er Class planned for future? (David Phillip / Mike Ayala / Larry Aldrin) – used refresher.
- Is landfill fenced? (no) does it flood? (no) (Partial old fencing)
- Is Tuluksak flood zone? (yes)
- Has landfill ever flooded? (no)
- How long have you been familiar with the open building site?
- Is it appropriate to ~~Specify~~ Propose wells in frozen soil? not beyond hand-driven geoprobe wells.

Call 695-6420 David Phillip about pipe

"Rite in the Rain"

695-2182 cell

907-8329 Goodnews Bay

Call @ 0900

(other questions on back)

SLR International Corp

6/25/2015

Past operator

USER QUESTIONNAIRE

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "Brownfields Amendments"), the user (client) must provide the following information (if available) to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" was not completed. Please use additional paper if needed for your answers.

Name of person completing the questionnaire: Carl Benson for Willie Phillip

1. Do you know of:
   (a.) Any pending, threatened or past litigation relevant to hazardous substances or petroleum products in, on, or from the property; > NO
   (b.) Any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property; and > NO
   (c.) Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products? > NO

2. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law? NO

3. Are you aware of any activity or land use limitations, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state, or local law?

   NO

Willie Phillips worked there from 1989 — 2000 (when new generator brought on line)

SLR
International Corp

4. As the User of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

- Diesel fuel, coolant, used oil were used
- used oil sometimes burned most put in containers on site - burned in old oil drums, Glycol put into 5-gal buckets, 55 gallon drums in most part[?] empty,
- oil spilling transformer[?]

5. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

N/A

6. Are you aware of commonly known or reasonable ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example:
   (a.) Do you know the past uses of the property? Yes power generation
   (b.) Do you know of specific chemicals that are present or once were present at the property? used oil, glycol, diesel
   (c.) Do you know of spills or other chemical releases that have taken place at the property? DEC there when day tank overflowed (DEC has records) >1,0[?] [illegible] Diesel most picked up[?] moved to main storage tank
   (d.) Do you know of any environmental cleanups that have taken place at the property? • only in response to day tank overflow.
   • No used oil spills

7. As the user of the ESA, based on you knowledge and experiences related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?

at Diesel spill site when day tank overfilled

8. What is the reason why the Phase I ESA is required?

Brownfield

SLR International Corp

9. What type of transaction is the property undergoing at this time?

NA

10. Describe the general use of the property. — abandoned building, was going to be made into a Sub, but no decision was made. BS

11. What is the complete address for the property? (If you have a map or site plan showing the property boundaries, please provide a copy to the environmental professional.) ✓ Site plan from village - Power Plant Site.

12. Do you need any additional services other than the assessment for the presence of recognized environmental conditions at the property, such as assessment for asbestos-containing materials, lead-based paint, radon gas, wetlands, or others?
NA - not known building there before will be started.

13. Is there anyone else, other than your company, that will require reliance on the Phase I report? If so, please list the complete corporate name.

NA

14. Do you have any of the following documents that may be helpful for the environmental professional to complete the Phase I assessment? If so, please provide copies to SLR.

True if they exist.

- Environmental site assessment reports
- Environmental compliance reports
- Environmental permits
- Registrations for underground or above-ground storage tanks — No UST on site
- Material safety data sheets
- Community right-to-know plan
- Safety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans, etc.

SLR International Corp

- Reports regarding hydrogeologic conditions on the property or surrounding area
- Notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the property
- Hazardous waste generator notices or reports
- Geotechnical studies
- Risk assessments

Please fax or scan and email the completed questionnaire to the person identified below. If you have documents or maps to be provided, please ship them to the address shown below.

Thank you!
SLR International Incorporated

Please return the questionnaire and documents to:

Completed on phone with former maintenance worker Willie Phillip

Name:
Phone:
Fax:
Email Address:
Postage Address:

(25,000 gallon tank)

- How often tank filled?
  - Fall and Spring time from Barge
  - Crowley filled tank & still runs there
  - Barges also bring equip & gravel when water is high.
- Any spills outside building ever?
  - only known tank from day tank overflow
- Drum storage - full or empty? - empty - when placed in work used oil burned in a ½ cut drum
  - When Willie started, the drums were there and empty.
- Past removal of used oil / batteries / Glycol or other wastes? (history of fluids management?)
  - Glycol in buckets
  - Used Oil burned in drum
  - Asked once to have batteries hauled off site, but it never happened.
- Transformer leaks, all non-PCB? - No leaks occurred 1999 - 2003. Prior to Willie's time there.

worked at New power plant for 3 years.

Only Spill - The one DEC responded to.
- Fuel was drummed, separated and ~~[illegible]~~ / When too dirty it was burned, most was reused in generator

695-6150 (home)
695-2037 (cell)
695-6420 (office)

(Other Questions on back)

SLR International Corp

5/25/2010

USER QUESTIONNAIRE

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "Brownfields Amendments"), the user (client) must provide the following information (if available) to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" was not completed. Please use additional paper if needed for your answers.

Name of person completing the questionnaire: Acting City Administrator Carl Brewer for Bobby Peters

1. Do you know of:
   (a.) Any pending, threatened or past litigation relevant to hazardous substances or petroleum products in, on, or from the property; NO
   (b.) Any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property; and NO
   (c.) Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products? NO

2. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law? NO

3. Are you aware of any activity or land use limitations, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state, or local law? No

SLR
International Corp

4. As the User of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?
Diesel, used oil, transformers, batteries. Drums may have had used oil.

5. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?
N/A

6. Are you aware of commonly known or reasonable ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example:
   (a.) Do you know the past uses of the property? General,
   (b.) Do you know of specific chemicals that are present or once were present at the property? Yes, Diesel, oil, glycol, batteries, transformers
   (c.) Do you know of spills or other chemical releases that have taken place at the property? None Specifically
   (d.) Do you know of any environmental cleanups that have taken place at the property? Once, used oil & buckets were hauled off. Also used batteries were hauled off. Prior to Shutdown in 2013, used oil recovery (heat recovery) system being removed.

7. As the user of the ESA, based on you knowledge and experiences related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?
Yes, chronic contamination from small spills over years.

8. What is the reason why the Phase I ESA is required?
Brownfield funding

SLR International Corp

9. What type of transaction is the property undergoing at this time?

NA

10. Describe the general use of the property.

Fuel storage @ 25,000-gallon tank transferred as needed.

11. What is the complete address for the property? (If you have a map or site plan showing the property boundaries, please provide a copy to the environmental professional.) (Will call Ulmer back in office).

12. Do you need any additional services other than the assessment for the presence of recognized environmental conditions at the property, such as assessment for asbestos-containing materials, lead-based paint, radon gas, wetlands, or others?

Yes, old batteries, lead based paint.

13. Is there anyone else, other than your company, that will require reliance on the Phase I report? If so, please list the complete corporate name.

yes, in Copy.

14. Do you have any of the following documents that may be helpful for the environmental professional to complete the Phase I assessment? If so, please provide copies to SLR.

- Environmental site assessment reports — no
- Environmental compliance reports –
- Environmental permits –
- Registrations for underground or above-ground storage tanks – NA
- Material safety data sheets
- Community right-to-know plan
- Safety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans, etc. – should have been, but does not know.

SLR International Corp

- Reports regarding hydrogeologic conditions on the property or surrounding area —Call David Loughlin about Soils testing
- Notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the property —no
- Hazardous waste generator notices or reports —No
- Geotechnical studies — Call Dave Loughlin
- Risk assessments— No

Please fax or scan and email the completed questionnaire to the person identified below. If you have documents or maps to be provided, please ship them to the address shown below.

Thank you!
SLR International Incorporated

Please return the questionnaire and documents to:

Name:
Phone:
Fax:
Email Address:
Postage Address:

Completed by Carl Benson on phone with Acting City Administrator Mr. Bobby Peters

Local Equipment — • Hitach Excavator
• Front End loader - 1 yard bucket & forks
• Cat Dozer - D3

Local Labor — 2 or 3 in village with
Hazmat training

APPENDIX F

PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Photograph 1:
25,000-gallon capacity AST at the Old Community Power Plant. The tank is filled twice each year. The piping from this tank still runs to the Old Community Power Plant. (March 2010)

Photograph 2:
Day tank, generator set, and batteries in Old Community Power Plant (March 2010).

Photograph 3:
Electrical panel, batteries and buckets in Old Community Power Plant (March 2010).

Photograph 4:
Locked valve on fuel line from 25,000-gallon capacity AST south of generator building. Timber staining also noted on building floor (March 2010).

Photograph 5:
Buckets of used oil and glycols stored under Old Community Power Plant (March 2010)

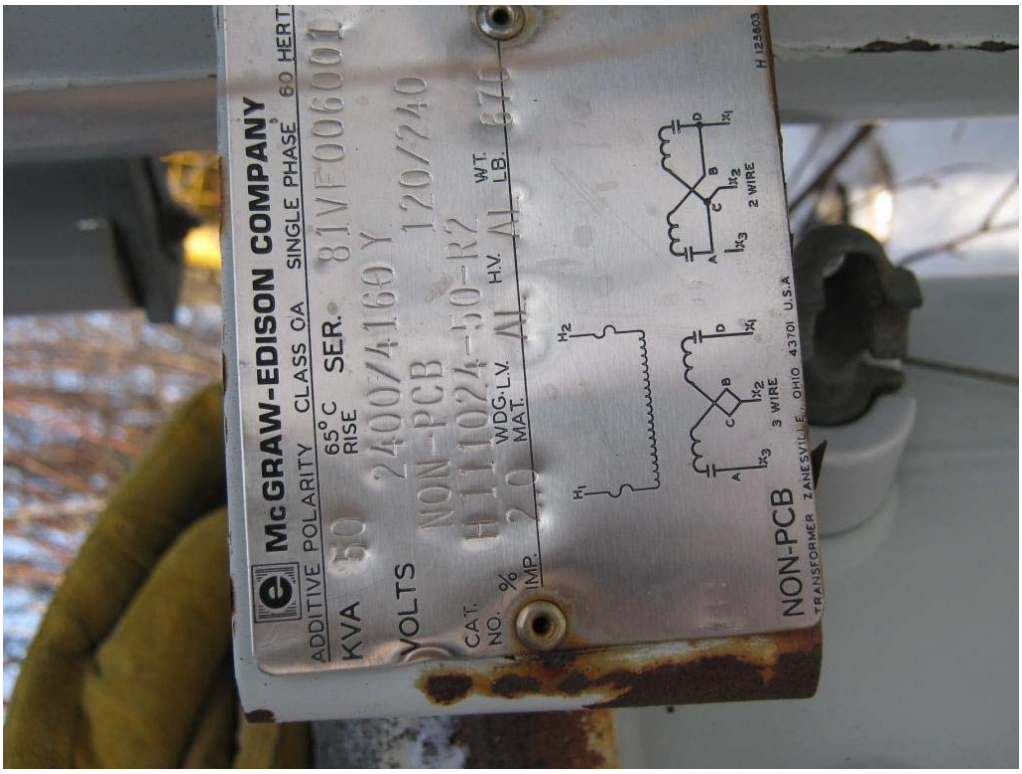
Photograph 6:
Drums, mostly empty, and batteries southwest of Old Community Power Plant building (March 2010).

Photograph 7:
Drums and buckets in woods southwest of Old Community Generator building (March 2010).

Photograph 8:
Drums and transformer in woods southwest of Old Community Generator building (March 2010).

Photograph 9:
Four abandoned generators and two transformers southwest of the Old Community Power Plant (March 2010).

Photograph 10:
Two of three transformers off road southwest of the Old Community Power Plant building (March 2010).



Photograph 11:
Transformer ID plate identifying oils in transformer as Non-PCB (March 2010).

Photograph 12:
Abandoned tractor with loader, generator set, and drum northwest of the Old Community Power Plant (March 2010).

Photograph 13:
Close-up of bulged drum (March 2010).

Photograph 14:
Stained snow on ground immediately west of Old Community Generator building entrance (March 2010).

Photograph 15:
Fueling header at north end of Old Power Plant site near the Tuluksak River (March 2010).

Photograph 16:
View of Tuluksak landfill from road looking southeast. Note alders and spruce branches used as fence along perimeter of landfill area (March 2010).

APPENDIX G

PHASE I ENVIRONMENTAL SITE ASSESSMENT

SLR INTERNATIONAL CORP
4601 Business Park Blvd., Suite K42
Anchorage, AK 99503

PHASE I SITE ASSESSMENT REPORT

OLD POWER PLANT
TULUKSAK, ALASKA

Prepared for:

Alaska Department of Environmental Conservation
Contaminated Sites Program
Division of Spill Prevention and Response
610 University Avenue
Fairbanks, Alaska 99709-3643

Prepared by:

Christina Bentz
Project Geologist

Reviewed by:

Eugene T. Watson, P.G.
Principal Geologist

June 2010
Project # 005.0065.09018

SITE DESCRIPTION

SLR International Corp (SLR) has performed a Phase I Environmental Site Assessment (ESA) of the Tuluksak Old Power Plant (the *Site*). The *Site* is located in the eastern end of Tuluksak, approximately 128 feet south of the Tuluksak River. The *Site* is includes the 25,000-gallon AST and the former power plant. An aboveground fuel line connects the 25,000-gallon tank to the former power plant; thus, the area of the *Site*, as described in this assessment, encompasses both facilities and the area between them (approximately 28,500 square feet). Access to the *Site* is unrestricted. The *Site* is shown on Figure 3 of the Property Assessment and Cleanup Plan (PACP).

The old power plant was replaced with a new power plant in 2003, but the 25,000-gallon aboveground storage tank (AST) used to fuel the old power plant is still in use supplying fuel to the new generator facility. A new tank farm facility is currently under construction to supply fuel to the new power generation facility. The *Site* is located at the eastern end of the Village of Tuluksak, Alaska in Section 27, Township 12 North, Range 66 West of the Seward Meridian. Tuluksak is located on the south bank of the Tuluksak River at its junction with the Kuskokwim River, 35 air miles north of Bethel and approximately 350 miles west of Anchorage. Tuluksak lies near the mouth of the Tuluksak River which is a tributary of the Kuskokwim River.

The Native Village of Tuluksak has a population of approximately 471 people, who rely heavily on subsistence hunting and fishing activities. Tuluksak is a traditional Yup'ik Eskimo village with a federally-recognized tribe, the Tuluksak Native Community (TNC) (DCCED, 2009).

The *Site* is owned by the Tulkisarmute Corporation. The building was originally built in the early 1980s and is approximately 25 feet by 30 feet in size. The building is elevated on pilings. The floor of the building was heavily stained by diesel fuel or used oil.

The following potentially hazardous substances and petroleum products were observed at the *Site*: old mechanical devices and other debris, approximately one hundred 5-gallon buckets containing used oil and glycol, lead-acid batteries, generators, and transformers. The majority of the buckets were noted within and beneath the former power plant building. At least six old generator sets, three liquid non-polychlorobiphenyl (PCB) transformers, 24 empty 55-gallon drums, one full 55-gallon drum with unknown contents, and 15 heavy equipment batteries are present outside of the building.

REPORT SUMMARY

REPORT SECTION	REC[1]	HREC[2]	DATA GAP	COMMENTS
Site Reconnaissance	Yes	No	No	Potentially hazardous materials and petroleum products were observed at the *Site*. Stained snow and ground was noted on the west side of the power plant building.
Surrounding Property Reconnaissance	Yes	No	No	Three transformers, twenty-five 55-gallon drums, six old generators, and up to 15 heavy equipment batteries.
Environmental Records Review	No	Yes	No	State of Alaska spills database review. EDR database search.
Historical Records Review	No	No	No	Historical records reviewed during this assessment included aerial photographs and topographic maps.
Interviews	Yes	Yes	No	An interview conducted with the former power plant operator indicated that petroleum hydrocarbon spills and leaks have occurred at the *Site*. An interview with the DEC site manager for the 1999 spill concluded that the spill file was closed with no further action requested. These are discussed in detail in Section 3 of this document.
User Information	Yes	No	No	Interviews with the site operator, the site owner, and DEC representatives indicated a previous spill, drums of waste oil stored at the *Site*, and soil impacted by petroleum hydrocarbons.

1 Recognized Environmental Condition (REC)

2 Historical Recognized Environmental Condition (HREC)

CONCLUSIONS

Recognized Environmental Conditions

SLR has performed a Phase I ESA of the old power plant located in Tuluksak Alaska. The Phase I ESA was performed in conformance with the scope and limitations of American Society for Testing and Materials (ASTM) Practice E 1527-05. Exceptions to, or deletions from, this practice are described in Section 5.0 of this report. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the *Site*, with the exception of the following:

- Evidence that the area beneath the building has been impacted by past releases of diesel fuel and/or used oil.
- Hazardous materials consisting of old mechanical devices and other debris, approximately one hundred 5-gallon buckets containing used oil and glycol, lead-acid batteries, generators, and transformers stored with no secondary containment and with evidence of past releases, as well as reported past practices of burning used oil in open containers without secondary containment.
- Three transformers, twenty-five 55-gallon drums, six old generators, and up to 15 heavy equipment batteries stored directly on the ground on the west and southwest areas of the *Site*. The area to the west also had fuel-stained snow and a strong petroleum odor.

Historical Recognized Environmental Conditions

This assessment has revealed no evidence of *historical recognized environmental conditions* in connection with the *Site*, with the exception of the following:

- A documented 1,900 gallon diesel fuel spill from an overfilled day tank within the old power plant building.

ENVIRONMENTAL PROFESSIONAL STATEMENTS

I declare that, to the best of my professional knowledge and belief, I meet the definition of *Environmental Professional*, as defined in Code of Federal Regulations (CFR) Title 40, Section 312.10;

And

I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the *Site.* I have developed and performed the all appropriate inquiry in conformance with the standards and practices set forth in 40 CFR Part 312.

Environmental Professional:

EP's Name:

Eugene T. Watson, P.G.

EP's Title:

Principal

DATE:

June 2010

TABLE OF CONTENTS

LIST OF APPENDICES

1.1 PROJECT INFORMATION

Client ("User") Information:	Tuluksak Native Community P.O. Box 65 Tuluksak, Alaska 99679	**Consultant Information:**	SLR International Corp 4601 Business Park Blvd., Suite K42 Anchorage, AK 99503
	Client Contact		**Program Manager**
Name:	Bobby Peter	**Name:**	Mike Rieser
Phone:	(907) 695-6420	**Phone:**	(907) 222-1112
		E-mail:	mrieser@slrcorp.com
***Site* Latitude / Longitude:**	61.102500° North Latitude / 160.961670° West Longitude NAD83	**Inspection Date:**	March 2010
***Site* Information:**	Old Tank Farm and Power Plant Tuluksak, Alaska	**Interview Date:**	May 2010
		Records Date:	May 2010
		Report Date:	June 2010
		***Site* Assessor:**	Carl Benson
		Senior Reviewer:	Gene Watson

1.2 OBJECTIVE

The objective of this Phase I Environmental *Site* Assessment (ESA) was to identify, to the extent feasible pursuant to the processes outlined in the scope of work, *recognized environmental conditions (RECs)*, or *historical recognized environmental conditions (HRECs)*, as defined by the ASTM Standard Practice for Environmental *Site* Assessments: Phase I Environmental *Site* Assessment Process, ASTM Practice E 1527-05 (ASTM E1527), and other environmental concerns that were neither *RECs* or *HRECs* for the *Site.*

The ASTM Practice defines a *REC* as:

"…the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicated an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is

not intended to include *de minimis conditions* that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies…"

The ASTM Practice defines a H*REC* as:

"…an environmental condition, which in the past would have been considered a *REC*, but which may or may not be considered a *REC* currently. The final decision rests with the *environmental professional* and will be influenced by the current impact of the *HREC* on the *Site*. If a past release of any hazardous substances or petroleum products has occurred in connection with the property and has been remediated, with such remediation accepted by the responsible regulatory agency, this condition shall be considered an *HREC*…"

1.3 PURPOSE

This assessment is intended to provide the due diligence necessary to allow for the Tuluksak Native Community (TNC) and the Middle Kuskokwim Consortium (MKC) to apply for federal funding to clean up the *Site*. This assessment constitutes all appropriate inquiry into the previous ownership and uses of the *Site* consistent with good commercial or customary practice, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) at U.S. Code Title 42, Chapter 103, Subchapter I, Section 9601(35)(B).

1.4 SCOPE OF WORK, SIGNIFICANT ASSUMPTIONS, TERMS AND CONDITIONS

The scope of work, significant assumptions, and terms and conditions applicable to this Phase I ESA are identified in the following documents:

- ASTM Standard Practice E 1527-05.
- Statement of Limitations presented as Appendix D of this report.

1.5 RELIANCE

This report was prepared for the exclusive use of the TNC, MKC, and the DEC. No other entity may rely on the information presented in the report without the express written consent of SLR International Corp (SLR). Any use of this Phase I ESA report constitutes acceptance of the terms and conditions under which it was prepared. SLR's liability extends only to its client and not to any other parties who may obtain or use this report.

1.6 USER-PROVIDED INFORMATION

SLR requested the following information from the *User* of this Phase I ESA report:

USER-PROVIDED INFORMATION	FINDINGS
Information on environmental liens on the *Site*:	The *User* indicated that there are no environmental liens on the *Site*. An Environmental LienSearch™ was requested from Environmental Data Resources Inc. (EDR) in May 2010. No environmental liens were reported by EDR.
Information on *Site* activity and use limitations (AULs):	The *User* indicated that there are no AULs on the *Site.* An Environmental LienSearch™ was requested from EDR in May 2010. No environmental AULs were reported by EDR.
Specialized knowledge or experience of the *User* that is material to RECs in connection with the *Site*:	The *User* has no specialized knowledge or experience regarding RECs at the *Site*.
Knowledge that *Site* purchase/sale price is significantly lower than market value:	This report was prepared for the purpose of helping the *User* prepare a property assessment and cleanup plan to ultimately clean up the *Site* and restore it to its natural state; there will not be a sale of real property.
Commonly known or reasonably ascertainable information about the *Site* material to RECs:	The *User* is not aware of commonly known or reasonable ascertainable information about RECs at the *Site*.
Reason why the *User* wants to have the Phase I ESA performed:	The Phase I ESA was requested to meet the requirements for the Brownfield application submitted by TNC through MKC

1.7 PROVIDED DOCUMENTS

No documents were provided by DEC regarding past assessment work at the *Site*. A copy of the Brownfield application was provided by DEC and is provided as Appendix A to the PACP.

2.1 FEDERAL/STATE ENVIRONMENTAL RECORDS

A regulatory agency database search report was obtained from a third-party environmental database search firm. A complete copy of the database, including the date the report was prepared, the date the information was last updated, and the definition of databases searched, is provided in Appendix C.

AGENCY LIST/DATABASE	SEARCH RADIUS	NUMBER OF LISTED SITES
Federal NPL	1.0 mile	0
Federal CERCLIS List	0.5 mile	0
Federal CERCLIS NFRAP	0.5 mile	0
Federal RCRA CORRACTS	1.0 mile	0
Federal RCRA Non-CORRACTS TSD	0.5 mile	0
Federal RCRA Generators	0.25 mile	0
Federal Institutional Control/Engineering Control Registry	0.5 mile	0
Federal ERNS	*Site* only	0
State and Tribal-Equivalent NPL	1.0 mile	0
State and Tribal – Hazardous Waste	0.5 mile	0
State and Tribal Solid Waste Facilities	0.5 mile	0
State and Tribal UST/AST Sites	0.25 mile	0
State and Tribal LUST Sites	0.5 mile	0
State and Tribal Institutional Control/Engineering Control Registry	0.5 mile	0
State and Tribal Voluntary Cleanup Sites	0.5 mile	0
State and Tribal Brownfields' Sites	0.5 mile	0

2.1.1 Listings for the *Site*

The *Site* was listed in the orphan summary as a State and Tribal Brownfields Site. This Phase I ESA is being conducted at the request of the DEC Brownfields' program.

2.1.2 Listings for Nearby Sites with Potential to Impact *Site*

Several sites were listed in the orphan summary in the report; the exact location of these sites was not presented in the report and some of the locations with respect to the *Site* are unknown. The sites listed in the orphan summary include:

- NYAC Tuluksak River Mine Site
- Tuluksak Landfill
- Tuluksak Tank Farm
- Tuluksak School Tank Farm in Containment
- Tuluksak River Upriver from Tuluksak at Lower Land
- Tuluksak River
- Tuluksak Kuskokwim River on Water Inside Boom
- Tuluksak High School
- Tuluksak Elementary School Tank Farm
- Tuluksak City Traditional Council Power Plant
- Tuluksak School

The majority of these listings were for spills that have occurred at the various properties. Since the *Site* is located at the far side of town and is at least 1,600 feet from the nearest listed property, it is unlikely that any of the properties listed above would have impacted the *Site*.

2.2 LOCAL/REGIONAL ENVIRONMENTAL RECORDS

SLR contacted the following sources to request information pertaining to *Site* use and/or indicative of *REC*s in connection with the *Site*. The following information was requested, as appropriate, from these agencies:

- Local Brownfield lists
- Local lists of landfills/solid waste disposal sites,
- Local lists of hazardous waste/contaminated sites,
- Local lists of registered storage tanks,
- Local land records (for activity and use limitations),
- Records of emergency release reports,
- Records of contaminated public wells, and
- Records of PCBs on *Site.*

The *Site* is managed by agencies located in the community of Tuluksak. The agencies knowledgeable about the *Site* include the TNC and MKC. Members of these agencies provided information regarding the *Site*; this information is described in Sections 1.6, 1.7, and 3.0 through 3.7 of this document.

2.3 HISTORICAL RECORDS

Obvious uses of the *Site* have been identified from the present, back to 1983. Historical data were reviewed in five-year intervals, unless it was determined that the specific use appeared unchanged over a period longer than five years.

2.3.1 Recorded Land Title Records

According to Joe DeMantle, the *Site* is owned by the Tulkisarmute Corporation; a plat map obtained from the Alaska Department of Natural Resources confirmed this. A copy of plat map 2003-10 from the Bethel Recording District has been modified to show the outline of the old power plant and fuel tank locations east of Tuluksak River Stage 1 and Stage 2 Subdivisions and is provided as Appendix B to the PACP.

2.3.2 Aerial Photographs

YEAR	SCALE	OBSERVATIONS, *SITE* AND ADJOINING PROPERTIES
1977	Unknown	Although the *Site* is not shown, the road leading to the Site is not visible and the area surrounding the *Site* appears to be largely undeveloped and heavily vegetated.
1983	1"=100'	The area around the AST and power plant building are mostly cleared. The area beyond the clearing surrounding the AST and power plant building is heavily vegetated. Access to the *Site* is visible as roads. Miscellaneous items are visible on the outside of the power plant building.
1991	1"=100	The *Site* looks similar to that described in the 1983 photo, with the following exceptions: the area that was cleared in the 1983 photo has some vegetation growing on it and there is a greater number of miscellaneous items outside the power plant building.
2003	1"=100'	The *Site* is configured similar to present day with the main road ending at the old power plant and a narrower road leading to the AST. Drums are present in several areas on the photograph.

Source of aerial photographs: Aero-Metric, Inc. 2014 Merrill Field Drive, Anchorage, Alaska 99501. Aerial photographs are available in Appendix B.

2.3.3 City Directories

The *Site* is located in a remote area of Alaska and is not included in a city directory.

2.3.4 Historical Fire Insurance Maps

YEAR	OCCUPANT OF *SITE*/ADJOINING PROPERTIES; HAZARDOUS MATERIAL STORAGE

	The *Site* is an unmapped property. No historical fire insurance maps exist for this area.

Name of maps and source: Environmental Data Resources Inc. Sanborn® Map report.

2.3.5 Historical Topographic Maps

YEAR	SCALE	OBSERVATIONS
1954	1:63,360'	The community of Tuluksak is visible on the map.
1980	1:250,000'	The community of Tuluksak is visible on the map.

Name of maps and source: Environmental Data Resources Inc. Historical Topographic Map report.

2.3.6 Other Historical Sources

The DEC Contaminated Sites Program spills database was consulted for spills in Tuluksak at the Power Plant. The search web site consulted was

http://www.dec.state.ak.us/spar/perp/search/search.asp.

2.4 PHYSICAL SETTING

PHYSICAL SETTING	INFORMATION
Topography	Most of the region surrounding the *Site* is relatively flat and slopes gently away from the Tuluksak River to the north. The *Site* is located at an elevation of 28 feet above sea level and is within the flood zone of the Kuskokwim River.
Soil/Bedrock Data	Tuluksak is located in the Yukon-Kuskokwim delta area, which is comprised largely of Quaternary alluvial deposits which have been built up through the slow accumulation of sand and silt deposited by the Kuskokwim river. The dominant soil composition in the general area of the *Site* consists of a histic pergelic cryaquepts with very slow infiltration rates. The depth to bedrock is greater than 60 inches; bedrock type was not specified.
Estimated Depth to Ground Water/ Direction of Gradient	Surface topography is likely indicative of the direction of the ground water flow; which, if true, would be toward the Tuluksak River. No ground water monitoring data were available for this assessment. Permafrost exists below the site.

Sources of this information: EDR Environmental Data

2.5 *SITE* AND SURROUNDING AREA RECONNAISSANCE

The *Site* is located at the eastern end of Tuluksak, approximately 128 feet south of the Tuluksak River. The former power plant building is located several hundred feet north of the 25,000-gallon AST. SLR's site visit was coordinated by Laura Kashatok, a Brownfield Representative for Tuluksak. SLR visited the *Site* on March 23 and 24, 2010. The weather conditions at the time of the visit were clear and approximately 10°F. There was approximately 6 inches of snow on the ground.

2.6 METHODOLOGY

SLR utilized the following methodology to observe the *Site*:

- Traverse the outer *Site* boundary.
- Traverse across the *Site.*

2.7 RESTRICTIONS

RESTRICTION TYPE	COMMENTS
Weather-related restrictions:	No weather-related restrictions were encountered during the March site visit; with the exception that snow was present on the ground prohibiting evaluation of the ground surface.
Facility access restrictions:	Access to the inside of the former power plant building is limited by the presence of approximately 30 5-gallon waste oil containers and other miscellaneous items that cover the floor of the building, and an icy wooden ramp.
Client-related restrictions:	None.

2.8 GENERAL DESCRIPTION

2.8.1 *Site* and Area Description

The *Site* consisted of the the Tuluksak Old Power Plant. The old power plant was replaced with a new power plant in 2003, but the 25,000-gallon aboveground storage tank (AST) used to fuel the old power plant is still in use supplying fuel to the new generator facility as needed. A new tank farm facility is currently under construction to supply fuel to the new power generation facility. The *Site* is located at the eastern end of the Village of Tuluksak, Alaska in Section 27, Township 12 North, Range 66 West, Seward Meridian. Tuluksak is located on the south bank of the Tuluksak River at its junction with the Kuskokwim River, 35 air miles north of Bethel and approximately 350 miles west of Anchorage. Tuluksak lies near the mouth of the Tuluksak River which is a tributary of the Kuskokwim River.

The Native Village of Tuluksak has a population of approximately 471 people, who rely heavily on subsistence hunting and fishing activities. Tuluksak is a traditional Yup'ik Eskimo village with a federally-recognized tribe, the Tuluksak Native Community (TNC) (DCCED, 2009).

The *Site* is located in the eastern end of Tuluksak, approximately 128 feet south of the Tuluksak River. The *Site* includes the 25,000-gallon AST and the former power plant. An aboveground fuel line connects the 25,000-gallon tank to the former power plant; thus, the area of the *Site*, as described in this assessment, encompasses both facilities and the area

between them (approximately 48,500 square feet). Access to the *Site* is unrestricted. The *Site* is shown on Figures 2 and 3 of the Property Assessment and Cleanup Plan (PACP).

The property at the *Site* is owned by the Tulkisarmute Corporation. The former power plant building remains on the *Site*. The building was originally built in the early 1980s and is approximately 25 feet by 30 feet in size. The building is elevated on pilings. The floor of the building was heavily stained by diesel fuel or used oil.

The following potentially hazardous substances and petroleum products were observed at the *Site*: old mechanical devices and other debris, approximately one hundred 5-gallon buckets containing used oil and glycol, lead-acid batteries, generators, and transformers. The majority of the buckets were noted within and beneath the former power plant building. At least six old generator sets, three liquid non-polychlorobiphenyl (PCB) transformers, 24 empty 55-gallon drums, one full 55-gallon drum, and 15 heavy equipment batteries are present outside of the building.

INFORMATION	FINDING
Estimated % of *Site* location covered by buildings and/or pavement:	3%
Observed evidence of past *Site* use(s):	One AST is present at the *Site*. The power plant consists of a single building that is approximately 25 feet by 30 feet. The building still contains generators, lead-acid batteries, and waste oil inside the building. Outside the building, at least six old generator sets, three liquid non- PCB transformers, 24 empty 55-gallon drums, one full 55-gallon drum, and 15 heavy equipment batteries are present.
Sewage disposal method (and age):	There is no sewage disposal at the *Site*.
Source of potable water:	There is no source of potable water at the *Site*.
Electric utility:	There is no electric utility currently at the *Site*. Overhead power lines are present and are located directly over the power plant building.

2.9 EXTERIOR OBSERVATIONS

SLR made the following observations during the reconnaissance of the *Site*.

OBSERVATION	DESCRIPTION
Roads or paths with no apparent outlet observed on the *Site*:	There is a road leading to the *Site* that connects to a trail. The end point for the trail is unknown.
On-site pits, ponds, or lagoons:	None observed.
Stained soil or pavement:	Stained snow and ground were observed underneath the former power plant building and west of the building near a piping elbow

OBSERVATION	DESCRIPTION
	during the *Site* visit.
Stressed vegetation:	None observed.
On-site solid waste disposal:	None observed.
Waste water:	None observed.
Storm water:	Storm water at the *Site* likely infiltrates.
Wells:	The closest known well in Tuluksak is approximately 2,415 feet from the *Site*. This is the location of the active city wells. Locations of old and currently unused wells installed in 1964 for the City and for the Old BIA School are located 2,415 feet and 1,700 feet west of the site, respectively.
Septic systems:	None observed.

2.10 INTERIOR OBSERVATIONS

The power plant consists of a single building that is approximately 25 feet by 30 feet. The building still contains a generator, lead-acid batteries, and used oil.

2.11 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS

SLR made the following visual and/or physical observations during the site reconnaissance and/or identified the presence of the following during the interview or records review portions of the assessment:

OBSERVATION	DESCRIPTION
Hazardous substances and petroleum products on site during site visit:	The following potentially hazardous substances and petroleum products were observed at the *Site*: old mechanical devices and other debris, approximately one hundred 5-gallon containers of used oil and glycol, 15 heavy equipment lead-acid batteries, six generators, and three transformers. The majority of these items are outside and to the west and southwest of the former power plant building.
Hazardous substances historically stored on site:	Diesel is stored in one 25,000-gallon AST and used to operate the new power plant. This tank was previously used to store fuel for use at the old generator facility. In addition, a day tank of unknown volume was present inside the old power plant building. Used oil was stored in 55-gallon drums west of the building until approximately 1990. Since that time, used oil has been stored in 5-gallon containers at the *Site*.
Strong, pungent, or noxious odors:	Fuel odor from stained snow immediately west of the Old Generator Building was observed.
Pools of liquid:	None observed.

OBSERVATION	DESCRIPTION
Unidentified substance containers:	Buckets containing unidentified liquids (assumed to be used oil and glycol) were present inside and underneath the Old Generator Building.
PCB-containing equipment:	Transformers and other power-generating equipment were observed at the *Site*. Tags on two of the three transformers identified the transformers as "Non-PCB". The tag on the third transformer could not be read because the transformer was frozen firmly to the ground, but it was similar in appearance to the other two.

2.12 UNDERGROUND STORAGE TANKS/STRUCTURES

UST/STRUCTURE	OBSERVATIONS
Existing USTs:	None observed.
Former USTs:	None observed.
Other Underground Structures:	Interviews indicated that no USTs were ever present at the *Site.*

2.13 ABOVEGROUND STORAGE TANKS

AST	OBSERVATIONS
Existing ASTs:	Two ASTs were observed at the *Site*. One AST, located outside the building, is still currently in use. The other AST was located inside the building was not in use.
Former ASTs:	None observed.

2.14 ADJOINING PROPERTIES

2.14.1 Current Uses of Adjoining Properties

North:	The Tuluksak River is approximately 128 feet to the north.
East:	Undeveloped land is directly east of the *Site.* Abandoned vehicles were observed in this area.
South:	Undeveloped land is directly south of the *Site.*
West:	Residential properties are located west of the *Site.*

2.14.2 Observed Evidence of Past Uses of Adjoining Properties

North:	There is no evidence of past uses of the adjoining property other than as undeveloped

	property.
East:	There is no evidence of past uses of the adjoining property other than as undeveloped property.
South:	There is no evidence of past uses of the adjoining property other than as undeveloped property.
West:	There is no evidence of past uses of the adjoining property other than as residential or undeveloped property.

2.14.3 Pits, Ponds or Lagoons on Adjoining Properties

North:	None observed.
East:	None observed.
South:	None observed.
West:	None observed.

2.15 OBSERVED PHYSICAL SETTING

OBSERVED PHYSICAL SETTING	
Topography of the *Site* locations and surrounding area:	Most of the region surrounding the *Site* is relatively flat and slopes gently toward the Tuluksak River to the north. The *Site* is located at an elevation of 28 feet above sea level and is within the flood zone of the Kuskokwim River.

3.1 FINDINGS FROM INTERVIEW WITH USER

INTERVIEW QUESTIONS	FINDINGS
Name, Title, Telephone Years Familiar with *Site*	Bobby Peter, Acting Tribal Administrator for the Tuluksak Native Community, (907) 695-6420.
Current Use of *Site*:	The *Site* is currently used for fuel storage. Mr. Peter stated that the 25,000 gallon AST was being used to supply fuel to the new power plant when needed.
Past Use(s) of *Site*:	Power generation.
Current Use of Surrounding Properties:	Residential to west of site.
Past Use(s) of Surrounding Properties:	Undeveloped land prior to 1977.
Current or Past Hazardous/ Petroleum Material Use, Storage, Disposal:	Mr. Peter indicated that used oil, diesel fuel, glycol, transformers, and batteries were stored at the *Site.*
Current or Past Regulatory Action(s):	None.
Past Releases of Hazardous/Petroleum Materials on the Property:	Mr. Peter did not have any specific knowledge of spills at the Site, but he stated that there have been small spills which may have resulted in contamination.
Other Environmental Information (Permits, etc.):	Mr. Peter stated that old batteries and lead-based paint may be concerns.

3.2 FINDINGS FROM INTERVIEW WITH KEY PROPERTY MANAGER

INTERVIEW QUESTIONS	FINDINGS
Name, Title, Telephone Years Familiar with *Site*	Willie Phillip, former power plant operator (1989 – 2000), (907) 695-2182. Intimately familiar with *Site* since 1989.
Current use of *Site*:	Use of the power plant ceased in approximately 2000, and the property has remained unused since that time.
Past Use(s) of *Site*:	The *Site* was previously used for power generation. No other previous uses were identified.
Current Use of Surrounding Properties:	Not discussed.

INTERVIEW QUESTIONS	FINDINGS
Past Use(s) of Surrounding Properties:	Not discussed.
Current or Past Hazardous/ Petroleum Material Use, Storage, Disposal:	Mr. Phillip indicated that used oil, diesel fuel, glycol, and coolant were stored at the *Site.* Mr. Phillip said he managed used oil by burning it in a 55-gallon drum cut in half lengthwise. This made a trough in which used oil could be burned in the open. Used oil was stored in 5-gallon buckets until it was burned in the drum.
Current or Past Regulatory Action(s):	None.
Past Releases of Hazardous/Petroleum Materials on the Property:	Mr. Phillip indicated he was aware of one past spill where approximately 1,900 gallons of diesel fuel was spilled from overfilling a day tank within the old power plant building. DEC was notified of the spill and the fuel was recovered by pumping and drumming. Mr. Phillip was unaware of any other past releases of hazardous/petroleum materials at the *Site.*
Other Environmental Information (Permits, etc.):	None.

3.3 FINDINGS FROM INTERVIEW WITH OWNER

INTERVIEW QUESTIONS	FINDINGS
Name, Title, Telephone Years Familiar with *Site*	Joe DeMantle, President of Tulkisarmute Corporation.
Current use of *Site*:	The *Site* is not currently used.
Past Use(s) of *Site*:	The *Site* was previously used for the community's generator system and associated tank farm.
Current Use of Surrounding Properties:	Not discussed.
Past Use(s) of Surrounding Properties:	Not discussed.
Current or Past Hazardous/ Petroleum Material Use, Storage, Disposal:	Mr. DeMantle indicated that used oil, fuel, and glycol had been used at the *Site.*
Current or Past Regulatory Action(s):	None.
Past Releases of Hazardous/Petroleum Materials on the Property:	Mr. DeMantle was unsure of any fuel spills in the area, but said he had once seen a large amount of used oil on the floor of the building. He reported that it is likely that the oil from the building in the past has leaked to the ground beneath the old power plant building he expected the ground to be contaminated from used oil.

INTERVIEW QUESTIONS	FINDINGS
Other Environmental Information (Permits, etc.):	None.

3.4 REQUIRED QUESTIONS

SLR interviewed the User/Owner and Key *Site* Manager regarding their awareness of any pending, threatened, or past incidences of the following:

INTERVIEW QUESTIONS	OWNER	KEY *SITE* MANAGER	USER
Litigation Relevant to Hazardous Substances or Petroleum Products in, on, or from the *Site*?	No	No	No
Administrative Proceedings Relevant to Hazardous Substances or Petroleum Products in, on, or from *Site* or either location?	No	Yes, diesel spill described in Section 3.2.	No
Notices From Any Governmental Entity Regarding Possible Violations of Environmental Laws or Possible Liability Relating to Hazardous Substances?	No	No	No

3.5 FINDINGS FROM INTERVIEWS WITH MAJOR OCCUPANTS

There are no other major occupants at the *Site*; therefore, no other occupants were interviewed.

3.6 FINDINGS FROM INTERVIEWS WITH PAST OWNERS AND OCCUPANTS

No past owners or occupants were interviewed other than the previous power plant operator, whose interview is presented in Section 3.2 of this document.

3.7 FINDINGS FROM INTERVIEWS WITH NEIGHBORING OWNERS OR OCCUPANTS

Neighboring owners or occupants are only interviewed if the *Site* was abandoned and there was evidence of potential unauthorized use or uncontrolled access to the *Site*. While the *Site* may be considered abandoned, no neighboring owners were identified and thus, were not interviewed.

3.8 FINDINGS FROM INTERVIEWS WITH OTHERS

Bob Carlson of DEC was also interviewed primarily to support preparation of the PACP, but the following information gained pertinent to this Phase I is described below.

Mr. Carlson worked on the spill cleanup efforts following the 1999 day tank overfill at the old power plant, described in Section 3.2. Mr. Carlson stated the spill cleanup was successful and the spill file was closed and not transferred to contaminated sites.

4.0 SIGNIFICANT DATA GAPS

Data gaps are a lack of or an inability to obtain information required by the ASTM Practice E 1527-05 despite good-faith efforts by the environmental professional to gather such information. Data gaps may have resulted from incompleteness in any of the activities required in ASTM Practice E 1527-05, including, but not limited to the site reconnaissance, records review, or interviews. The presence of a data gap may or may not present a REC due to the possibility that a REC could be discovered if the missing information is obtained.

One data gap was identified during the performance of this assessment: no records were available for the *Site* for the period of time before 1977. An attempt was made to fill this data gap; however, no information was available. This data gap does not likely impact the conclusions of this report.

5.1 RECOGNIZED ENVIRONMENTAL CONDITIONS

5.1.1 Recognized Environmental Conditions

SLR has performed a Phase I ESA of the old power plant located in Tuluksak Alaska. The Phase I ESA was performed in conformance with the scope and limitations of American Society for Testing and Materials (ASTM) Practice E 1527-05. Exceptions to, or deletions from, this practice are described in Section 5.0 of this report. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the *Site*, with the exception of the following:

- Evidence that the area beneath the building has been impacted by past releases of diesel fuel and/or used oil.
- Hazardous materials consisting of old mechanical devices and other debris, approximately one hundred 5-gallon buckets containing used oil and glycol, lead-acid batteries, generators, and transformers stored with no secondary containment and with evidence of past releases, as well as reported past practices of burning used oil in open containers without secondary containment.
- Three transformers, twenty-five 55-gallon drums, six old generators, and up to 15 heavy equipment batteries stored directly on the ground on west and southwest areas of the *Site*. The area to the west also had fuel-stained snow and a strong petroleum odor.

Historical Recognized Environmental Conditions

This assessment has revealed no evidence of *recognized environmental conditions* in connection with the *Site*, with the exception of the following:

- A documented 1,900 gallon diesel fuel spill from a overfilled day tank within the old power plant building.

~~This assessment has revealed no evidence of *historical recognized environmental conditions* in connection with the *Site*.~~ [m1]

AERIAL PHOTOGRAPHS

1977

1983

1991

2003

APPENDIX B

ENVIRONMENTAL REGULATORY AGENCY DATABASE REPORT

Tuluksak Old Power Plant
T12N, R66W, Seward Meridian, Alaska
Tuluksak, AK 99679

Inquiry Number: 2769141.2s
May 28, 2010

The EDR Radius Map™ Report with GeoCheck®

Prepared using the EDR FieldCheck® System

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of the environmental records was conducted by Environmental Data Resources, Inc. (EDR). SLR ALASKA used the EDR FieldCheck System to review and/or revise the results of this search, based on independent data verification by SLR ALASKA. The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

T12N, R66W, SEWARD MERIDIAN, ALASKA
TULUKSAK, AK 99679

COORDINATES

Latitude (North):	61.098300 - 61° 5' 53.9''
Longitude (West):	160.945800 - 160° 56' 44.9''
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	395091.8
UTM Y (Meters):	6775092.5
Elevation:	28 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	N/A
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No sites were identified in following databases.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

CERCLIS ---------- Comprehensive Environmental Response, Compensation, and Liability Information System

FEDERAL FACILITY..... Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP..... CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-SQG..... RCRA - Small Quantity Generators
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent CERCLIS

SHWS..... Contaminated Sites Database

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Solid Waste Facilities

State and tribal leaking storage tank lists

LUST..... Leaking Underground Storage Tank Database
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST..... Underground Storage Tank Database
AST..... Regulated Aboveground Storage Tanks
INDIAN UST..... Underground Storage Tanks on Indian Land
FEMA UST..... Underground Storage Tank Listing

State and tribal institutional control / engineering control registries

ENG CONTROLS..... Engineering Controls Site Listing
INST CONTROL..... Contaminated Sites with Institutional Controls

State and tribal voluntary cleanup sites

VCP..... Voluntary Cleanup Program sites

INDIAN VCP ---- Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS ---- Identified and/or Proposed Brownfields Sites

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9 ---- Torres Martinez Reservation Illegal Dump Site Locations
ODI ---- Open Dump Inventory
SWRCY ---- Recycling Facilities
INDIAN ODI ---- Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL ---- Clandestine Drug Labs
CDL ---- Illegal Drug Manufacturing Sites
US HIST CDL ---- National Clandestine Laboratory Register

Local Land Records

LIENS 2 ---- CERCLA Lien Information
LUCIS ---- Land Use Control Information System

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
SPILLS ---- Spills Database

Other Ascertainable Records

RCRA-NonGen ---- RCRA - Non Generators
DOT OPS ---- Incident and Accident Data
DOD ---- Department of Defense Sites
FUDS ---- Formerly Used Defense Sites
CONSENT ---- Superfund (CERCLA) Consent Decrees
ROD ---- Records Of Decision
UMTRA ---- Uranium Mill Tailings Sites
MINES ---- Mines Master Index File
TRIS ---- Toxic Chemical Release Inventory System
TSCA ---- Toxic Substances Control Act
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS ---- FIFRA/TSCA Tracking System Administrative Case Listing
SSTS ---- Section 7 Tracking Systems
ICIS ---- Integrated Compliance Information System
PADS ---- PCB Activity Database System
MLTS ---- Material Licensing Tracking System

RADINFO ..... Radiation Information Database
FINDS ..... Facility Index System/Facility Registry System
RAATS ..... RCRA Administrative Action Tracking System
DRYCLEANERS ..... Drycleaner Facility Listing
NPDES ..... Wastewater Discharge Permit Listing
AIRS ..... AIRS Facility Listing
INDIAN RESERV ..... Indian Reservations
SCRD DRYCLEANERS ..... State Coalition for Remediation of Drycleaners Listing
COAL ASH ..... Coal Ash Disposal Sites
COAL ASH DOE ..... Sleam-Electric Plan Operation Data
COAL ASH EPA ..... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ..... PCB Transformer Registration Database

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants ..... EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

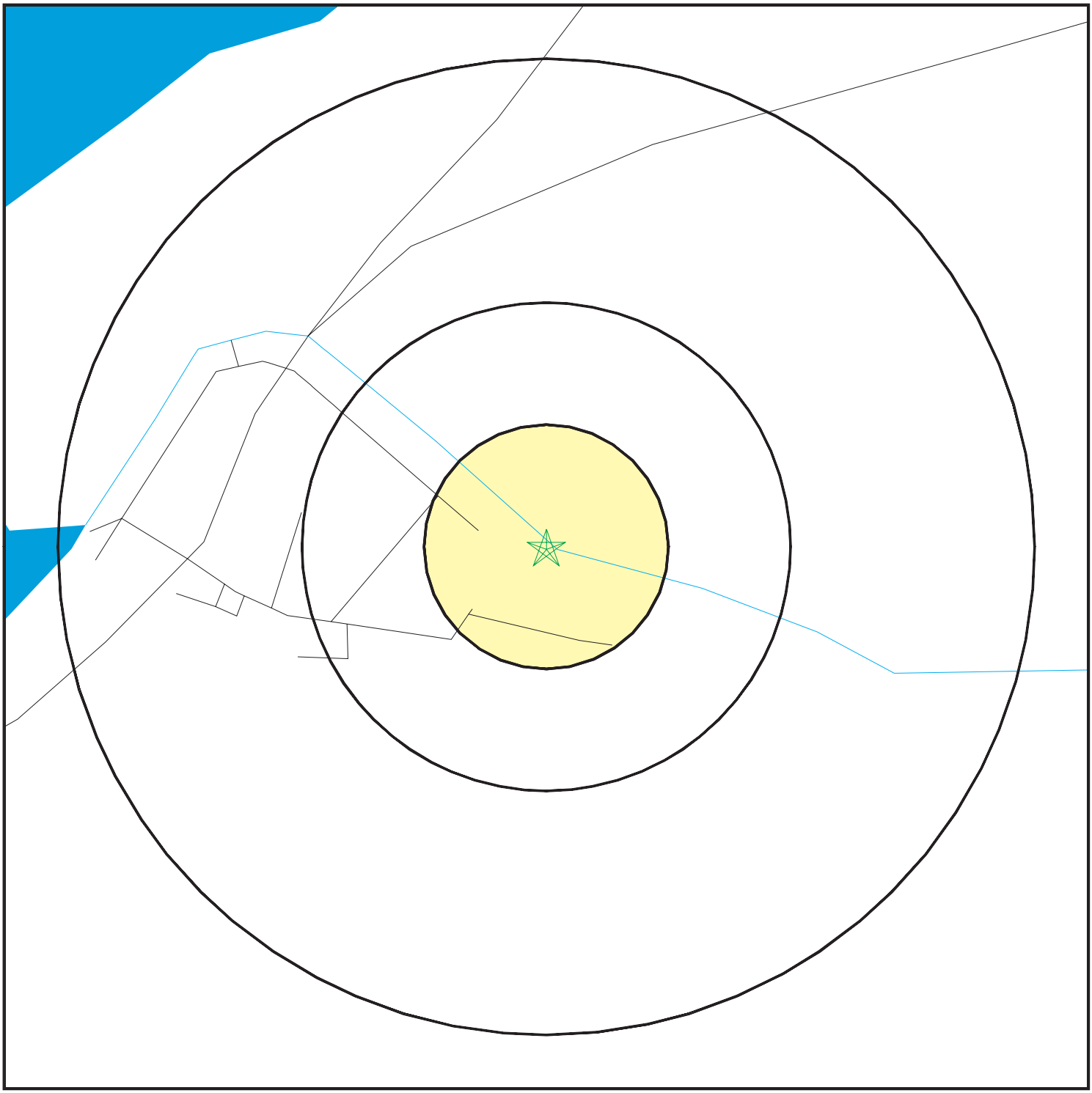
Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
BETHEL PUBLIC WORKS YARD	SHWS
IHS YK DELTA REG. HOSPITAL BETHEL	SHWS, INST CONTROL
IHS YK DELTA REGIONAL HOSPITAL BLDG. 600 BETHEL	SHWS
PUBLIC HEALTH SERVICE HOSPITAL-BETHEL	SHWS
CAMAI AIR - BETHEL	SHWS
ARCTIC CIRCLE AIR SERVICES - 1994	SHWS
D & G EXPRESS	SHWS
AKARNG BETHEL OLD AAOF	SHWS
ERA AVIATION BETHEL AIRPORT FAC.	SHWS, INST CONTROL
FAA BETHEL FLIGHT SERVICE STATION	SHWS
AKARNG BETHEL NEW AAOF	SHWS
USFWS - BETHEL AIRPORT, TANK #1	SHWS
ARCTIC CIRCLE AIR SERVICES - 2001	SHWS, INST CONTROL
BETHEL DUMP	SHWS, BROWNFIELDS
BANK STABILIZATION PROJECT	SHWS
FAA BETHEL STATION	SHWS
FAA BETHEL STATION TANK FARM	SHWS
BETHEL FUEL SALES PUMPHOUSE	SHWS
ADOT&PF BETHEL MAINTENANCE FACILITY	SHWS
BETHEL BIA SPILL - WHITE ALICE TANK	SHWS, INST CONTROL
NORTH STAR GAS COMPANY - BETHEL - 1993	SHWS
YUTE AIR BANKRUPTCY PROPERTIES	SHWS
BETHEL AIRPORT (FORMER)	SHWS
BETHEL UTILITIES CORP. POWER PLANT	SHWS
AT&T ALASCOM BETHEL EARTH STATION	SHWS, INST CONTROL
BETHEL RADIO RELAY STATION	SHWS
USFWS - YUKON DELTA NWR HEADQUARTERS	SHWS
KNIK CONSTRUCTION	SHWS
ROBAIR REPAIR-BETHEL AIRPORT	SHWS
BETHEL FUEL SALES	SHWS, INST CONTROL
DOC YUKON KUSKOKWIM CORRECTIONAL CENTER	SHWS
ALASKA COMMERCIAL CO. - BETHEL	SHWS, INST CONTROL
BETHEL POWER PRODUCTS	SHWS, BROWNFIELDS
AKARNG KONGIGANAK FSA	SHWS
NAPASKIAK INCORPORATED STORE FORMER TANK FARM	SHWS
NAPASKIAK FORMER BIA SCHOOL DAY TANKS	SHWS
AKARNG NAPASKIAK FSA	SHWS
AKARNG NEWTOK FSA	SHWS
TULUKSAK OLD POWER PLANT	SHWS, BROWNFIELDS
TULUKSAK RIVER	CERCLIS
ATMAUTLAUK, LANDFILL	SWF/LF
KONGIGANAK, LANDFILL	SWF/LF
OSCARVILLE, LANDFILL	SWF/LF
NEWTOK, LANDFILL	SWF/LF
TULUKSAK LANDFILL	SWF/LF
BETHEL POWER PRODUCTS	UST
YUKON-KUSKOKWIM DELTA REGIONAL H	UST
SEAIR ALASKA AIRLINES, INC.	UST
ADOC - YUKON-KUSKOKWIM CORRECTIONAL CENTER	UST
BETHEL FUEL SALES BULK PLANT	AST
YUKON-KUSKOKWIM HEALTH CORPORATION	RCRA-SQG
USDHHS PHS OLD HOSPITAL SITE-CLOSED	RCRA-CESQG, FINDS

EXECUTIVE SUMMARY

NYAC TULUKSAK RIVER MINE SITE	FINDS
NYAC TULUKSAK RIVER MINE SITE	FINDS
NYAC TULUKSAK RIVER MINE SITE	FINDS
TULUKSAK RIVER	FINDS
TULUKSAK SCHOOL	FINDS
TULUKSAK TANK FARM	SPILLS
TULUKSAK SCHOOL TANK FARM IN CONTAINMENT	SPILLS
TULUKSAK RIVER UPRIVER FROM TULUKSAK AT LOWER LAND	SPILLS
TULUKSAK KUSKOKWIM RIVER ON WATER INSIDE BOOM	SPILLS
TULUKSAK HIGH SCHOOL	SPILLS
TULUKSAK ELEMENTARY SCHOOL TANK FARM	SPILLS
TULUKSAK CITY TRADITIONAL COUNCIL POWER PLANT	SPILLS

OVERVIEW MAP - 2769141.2s



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

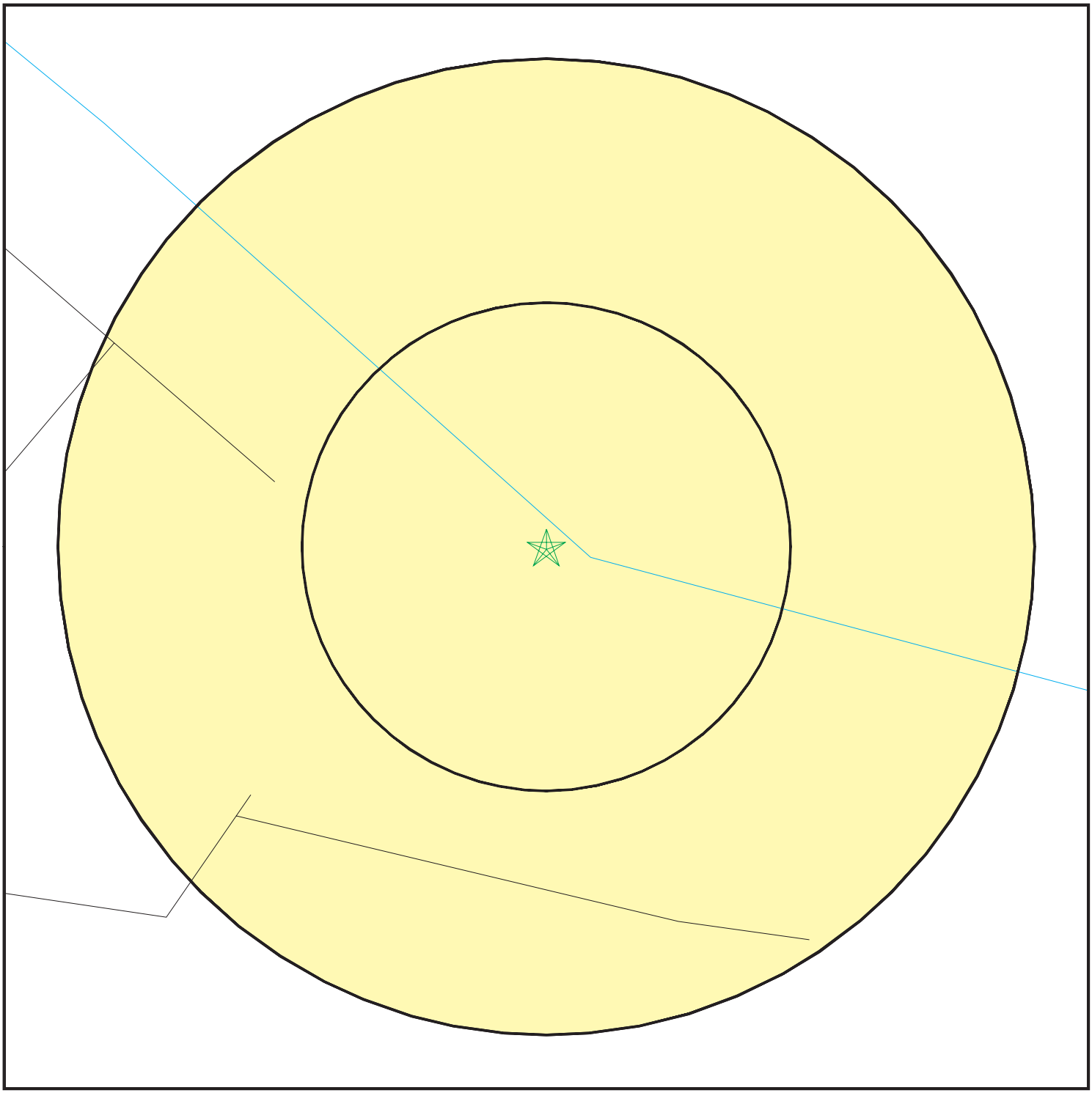
Indian Reservations BIA

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Tuluksak Old Power Plant	CLIENT:	SLR Alaska
ADDRESS:	T12N, R66W, Seward Meridian, Alaska Tuluksak AK 99679	CONTACT:	Christina Bentz
		INQUIRY #:	2769141.2s
LAT/LONG:	61.0983 / 160.9458	DATE:	May 28, 2010 4:29 pm

DETAIL MAP - 2769141.2s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA

0 1/16 1/8 1/4 Miles

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Tuluksak Old Power Plant	CLIENT: SLR Alaska
ADDRESS: T12N, R66W, Seward Meridian, Alaska Tuluksak AK 99679	CONTACT: Christina Bentz INQUIRY #: 2769141.2s
LAT/LONG: 61.0983 / 160.9458	DATE: May 28, 2010 4:29 pm

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
NPL LIENS		TP	NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL		1.000	0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS		0.500	0	0	0	NR	NR	0
FEDERAL FACILITY		1.000	0	0	0	0	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP		0.500	0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS		1.000	0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF		0.500	0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG		0.250	0	0	NR	NR	NR	0
RCRA-SQG		0.250	0	0	NR	NR	NR	0
RCRA-CESQG		0.250	0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
Federal ERNS list								
ERNS		TP	NR	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
SHWS		1.000	0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF		0.500	0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST		0.500	0	0	0	NR	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST		0.250	0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
AST		0.250	0	0	NR	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
FEMA UST		0.250	0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
ENG CONTROLS		0.500	0	0	0	NR	NR	0
INST CONTROL		0.500	0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
VCP		0.500	0	0	0	NR	NR	0
INDIAN VCP		0.500	0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS		0.500	0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
DEBRIS REGION 9		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
SWRCY		0.500	0	0	0	NR	NR	0
INDIAN ODI		0.500	0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL		TP	NR	NR	NR	NR	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
US HIST CDL		TP	NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2		TP	NR	NR	NR	NR	NR	0
LUCIS		0.500	0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS		TP	NR	NR	NR	NR	NR	0
SPILLS		TP	NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA-NonGen		0.250	0	0	NR	NR	NR	0
DOT OPS		TP	NR	NR	NR	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MINES		0.250	0	0	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
HIST FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
ICIS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
RADINFO		TP	NR	NR	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
NPDES		TP	NR	NR	NR	NR	NR	0
AIRS		TP	NR	NR	NR	NR	NR	0
INDIAN RESERV		1.000	0	0	0	0	NR	0
SCRD DRYCLEANERS		0.500	0	0	0	NR	NR	0
COAL ASH		0.500	0	0	0	NR	NR	0
COAL ASH DOE		TP	NR	NR	NR	NR	NR	0
COAL ASH EPA		0.500	0	0	0	NR	NR	0
PCB TRANSFORMER		TP	NR	NR	NR	NR	NR	0
EDR PROPRIETARY RECORDS								
EDR Proprietary Records								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

NO SITES FOUND

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
ATMAUTLUAK	S110244242	ATMAUTLAUK, LANDFILL	P.O. BOX 6568	99559	SWF/LF
BETHEL	S109254958	BETHEL PUBLIC WORKS YARD	*	99559	SHWS
BETHEL	1000856023	USDHHS PHS OLD HOSPITAL SITE-CLOSED	ACROSS HOFFMAN HWY FR YUKON	99559	RCRA-CESQG, FINDS
BETHEL	S107028733	IHS YK DELTA REG. HOSPITAL BETHEL	AIRPORT ROAD	99559	SHWS, INST CONTROL
BETHEL	S107028731	IHS YK DELTA REGIONAL HOSPITAL BLDG. 600 BETHEL	AIRPORT ROAD	99559	SHWS
BETHEL	S109255661	PUBLIC HEALTH SERVICE HOSPITAL-BETHEL	AIRPORT RD.;	99559	SHWS
BETHEL	U004115874	BETHEL POWER PRODUCTS	262 3RD AVE	99559	UST
BETHEL	S109256702	CAMAI AIR - BETHEL	BETHEL REGIONAL AIRPORT BLDG 3594	99559	SHWS
BETHEL	S109255835	ARCTIC CIRCLE AIR SERVICES - 1994	BETHEL AIRPORT; P. O. BOX 907	99559	SHWS
BETHEL	S106687935	D & G EXPRESS	BETHEL AIRPORT	99559	SHWS
BETHEL	S107504831	AKARNG BETHEL OLD AAOF	BETHEL AIRPORT	99559	SHWS
BETHEL	S107028735	ERA AVIATION BETHEL AIRPORT FAC.	BETHEL AIRPORT	99559	SHWS, INST CONTROL
BETHEL	S107028732	FAA BETHEL FLIGHT SERVICE STATION	BETHEL AIRPORT	99559	SHWS
BETHEL	S107504763	AKARNG BETHEL NEW AAOF	BETHEL AIRPORT	99559	SHWS
BETHEL	S109256810	USFWS - BETHEL AIRPORT, TANK #1	BETHEL AIRPORT	99559	SHWS
BETHEL	S109254668	ARCTIC CIRCLE AIR SERVICES - 2001	BETHEL AIRPORT	99559	SHWS, INST CONTROL
BETHEL	S106687934	BETHEL DUMP	BETHEL	99559	SHWS, BROWNFIELDS
BETHEL	S109568381	BANK STABILIZATION PROJECT	BETHEL	99559	SHWS
BETHEL	S109568369	FAA BETHEL STATION	BETHEL	99559	SHWS
BETHEL	S109568368	FAA BETHEL STATION TANK FARM	BETHEL	99559	SHWS
BETHEL	S109568328	BETHEL FUEL SALES PUMPHOUSE	BETHEL	99559	SHWS
BETHEL	S109255314	ADOT&PF BETHEL MAINTENANCE FACILITY	BETHEL	99559	SHWS
BETHEL	S107028734	BETHEL BIA SPILL - WHITE ALICE TANK	BIA ROAD	99559	SHWS, INST CONTROL
BETHEL	A100161250	BETHEL FUEL SALES BULK PLANT	P.O. BOX 266	99559	AST
BETHEL	S109255318	NORTH STAR GAS COMPANY - BETHEL - 1993	1170 BRIDGE ST	99559	SHWS
BETHEL	1008402243	YUKON-KUSKOKWIM HEALTH CORPORATION	700 CHIEF EDDIE HOFFMAN HWY	99559	RCRA-SQG
BETHEL	U004116034	YUKON-KUSKOKWIM DELTA REGIONAL H	#1 EDDIE HOFFMAN HWY	99559	UST
BETHEL	S109255581	YUTE AIR BANKRUPTCY PROPERTIES	FISHER HANGAR LOT 4 BLOCK 11, BETHEL AIRPORT	99559	SHWS
BETHEL	S104892330	BETHEL AIRPORT (FORMER)	KUSKOKWIM RIVER, SE OF	99559	SHWS
BETHEL	S104892335	BETHEL UTILITIES CORP. POWER PLANT	1340 KWETHLUK LANE	99559	SHWS
BETHEL	S105074190	AT&T ALASCOM BETHEL EARTH STATION	265 MAIN STREET	99559	SHWS, INST CONTROL
BETHEL	S107504601	BETHEL RADIO RELAY STATION	5 MILES W OF	99559	SHWS
BETHEL	S109255466	USFWS - YUKON DELTA NWR HEADQUARTERS	P. O. BOX 346;	99559	SHWS
BETHEL	S105555590	KNIK CONSTRUCTION	1171 OLD 1ST AVENUE	99559	SHWS
BETHEL	S109255472	ROBAIR REPAIR-BETHEL AIRPORT	3241 NORTH R	99559	SHWS
BETHEL	S105961680	BETHEL FUEL SALES	STANDARD OIL ROAD	99559	SHWS, INST CONTROL
BETHEL	U003331016	SEAIR ALASKA AIRLINES, INC.	STATE OF AK LEASE # ADA0310	99559	UST
BETHEL	U004116140	ADOC - YUKON-KUSKOKWIM CORRECTIONAL CENTI	1000 STATE HWY	99559	UST
BETHEL	S109256855	DOC YUKON KUSKOKWIM CORRECTIONAL CENTER	1000 STATE HWY	99559	SHWS
BETHEL	S110118747	ALASKA COMMERCIAL CO. - BETHEL	STORE / MARINA	99559	SHWS, INST CONTROL
BETHEL	S109255044	BETHEL POWER PRODUCTS	262 THIRD AVE	99559	SHWS, BROWNFIELDS
KONGIGANAK	S110244363	KONGIGANAK, LANDFILL	P.O. BOX 5069	99559	SWF/LF

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
KONGIGANAK	S104893541	AKARNG KONGIGANAK FSA	UNNAMED ROAD	99559	SHWS
NAPASKIAK	S110244412	OSCARVILLE, LANDFILL	P.O. BOX 6129	99559	SWF/LF
NAPASKIAK	S109347340	NAPASKIAK INCORPORATED STORE FORMER TANK FARM	75 FEET NORTH OF Z. JOHN WILLIAMS SCHOOL	99559	SHWS
NAPASKIAK	S109347341	NAPASKIAK FORMER BIA SCHOOL DAY TANKS	NORTHWEST OF Z. JOHN WILLIAMS SCHOOL	99559	SHWS
NAPASKIAK	S104893649	AKARNG NAPASKIAK FSA	UNNAMED BOARDWALK	99559	SHWS
NEWTOK	S110244395	NEWTOK, LANDFILL	P.O. BOX 5528	99559	SWF/LF
NEWTOK	S104893657	AKARNG NEWTOK FSA	UNNAMED BOARDWALK	99559	SHWS
TULUKSAK	1005589487	NYAC TULUKSAK RIVER MINE SITE	BETHEL D-3,D-4	99679	FINDS
TULUKSAK	1006229144	NYAC TULUKSAK RIVER MINE SITE	BETHEL D-3 SM T12N R60W MULTI	99679	FINDS
TULUKSAK	S110244479	TULUKSAK LANDFILL	P.O. BOX 95	99679	SWF/LF
TULUKSAK	S109568226	TULUKSAK OLD POWER PLANT	FORMER POWER PLANT	99679	SHWS, BROWNFIELDS
TULUKSAK	1005692025	NYAC TULUKSAK RIVER MINE SITE	RUSSIAN MISSION A-3	99679	FINDS
TULUKSAK	S106347787	TULUKSAK TANK FARM	TULUKSAK TANK FARM		SPILLS
TULUKSAK	S103579398	TULUKSAK SCHOOL TANK FARM IN CONTAINMENT	TULUKSAK SCHOOL TANK FARM IN CONTAINMENT		SPILLS
TULUKSAK	S103579589	TULUKSAK RIVER UPRIVER FROM TULUKSAK AT LOWER LAND	TULUKSAK RIVER UPRIVER FROM TULUKSAK AT LOWER LAND		SPILLS
TULUKSAK	1010417133	TULUKSAK RIVER	TULUKSAK RIVER (RM78-RM15)	99679	CERCLIS
TULUKSAK	1010499049	TULUKSAK RIVER	TULUKSAK RIVER (RM78-RM15)	99679	FINDS
TULUKSAK	S103579383	TULUKSAK KUSKOKWIM RIVER ON WATER INSIDE BOOM	TULUKSAK KUSKOKWIM RIVER ON WATER INSIDE BOOM		SPILLS
TULUKSAK	S106347786	TULUKSAK HIGH SCHOOL	TULUKSAK HIGH SCHOOL		SPILLS
TULUKSAK	S103578221	TULUKSAK ELEMENTARY SCHOOL TANK FARM	TULUKSAK ELEMENTARY SCHOOL TANK FARM		SPILLS
TULUKSAK	S103822074	TULUKSAK CITY TRADITIONAL COUNCIL POWER PLANT	TULUKSAK CITY TRADITIONAL COUNCIL POWER PLANT		SPILLS
TULUKSAK	1008299559	TULUKSAK SCHOOL	TULUKSAK # 115	99679	FINDS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 03/31/2010
Date Data Arrived at EDR: 04/02/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 05/07/2010
Next Scheduled EDR Contact: 07/26/2010
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 03/31/2010
Date Data Arrived at EDR: 04/02/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 05/07/2010
Next Scheduled EDR Contact: 07/26/2010
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 05/17/2010
Next Scheduled EDR Contact: 08/30/2010
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 03/31/2010
Date Data Arrived at EDR: 04/02/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 10

Source: EPA
Telephone: N/A
Last EDR Contact: 05/07/2010
Next Scheduled EDR Contact: 07/26/2010
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 01/29/2010
Date Data Arrived at EDR: 02/09/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 62

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/07/2010
Next Scheduled EDR Contact: 07/12/2010
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of NPL and Base Realighnment & Closure sites found in the CERCLIS database where FERRO is involved in cleanup projects.

Date of Government Version: 06/23/2009
Date Data Arrived at EDR: 01/15/2010
Date Made Active in Reports: 02/10/2010
Number of Days to Update: 26

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/30/2010
Next Scheduled EDR Contact: 07/26/2010
Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 06/23/2009
Date Data Arrived at EDR: 09/02/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 19

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/07/2010
Next Scheduled EDR Contact: 06/14/2010
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/25/2010
Date Data Arrived at EDR: 03/31/2010
Date Made Active in Reports: 05/27/2010
Number of Days to Update: 57

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 05/17/2010
Next Scheduled EDR Contact: 08/30/2010
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 02/17/2010
Date Data Arrived at EDR: 02/19/2010
Date Made Active in Reports: 05/17/2010
Number of Days to Update: 87

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 04/29/2010
Next Scheduled EDR Contact: 07/19/2010
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 02/17/2010
Date Data Arrived at EDR: 02/19/2010
Date Made Active in Reports: 05/17/2010
Number of Days to Update: 87

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 04/29/2010
Next Scheduled EDR Contact: 07/19/2010
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 02/17/2010
Date Data Arrived at EDR: 02/19/2010
Date Made Active in Reports: 05/17/2010
Number of Days to Update: 87

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 04/29/2010
Next Scheduled EDR Contact: 07/19/2010
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 02/17/2010
Date Data Arrived at EDR: 02/19/2010
Date Made Active in Reports: 05/17/2010
Number of Days to Update: 87

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 04/29/2010
Next Scheduled EDR Contact: 07/19/2010
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 12/20/2009
Date Data Arrived at EDR: 01/20/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 03/15/2010
Next Scheduled EDR Contact: 06/28/2010
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 12/20/2009
Date Data Arrived at EDR: 01/20/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 03/15/2010
Next Scheduled EDR Contact: 06/28/2010
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 01/22/2010
Date Made Active in Reports: 02/11/2010
Number of Days to Update: 20

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 04/07/2010
Next Scheduled EDR Contact: 07/19/2010
Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SHWS: Contaminated Sites Database

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 03/08/2010
Date Data Arrived at EDR: 03/09/2010
Date Made Active in Reports: 03/30/2010
Number of Days to Update: 21

Source: Department of Environmental Conservation
Telephone: 907-451-2143
Last EDR Contact: 05/24/2010
Next Scheduled EDR Contact: 09/06/2010
Data Release Frequency: Semi-Annually

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Solid Waste Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 04/09/2010
Date Data Arrived at EDR: 04/09/2010
Date Made Active in Reports: 05/05/2010
Number of Days to Update: 26

Source: Department of Environmental Conservation
Telephone: 907-269-7632
Last EDR Contact: 04/05/2010
Next Scheduled EDR Contact: 07/19/2010
Data Release Frequency: Semi-Annually

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 05/24/2010
Date Data Arrived at EDR: 05/25/2010
Date Made Active in Reports: 05/27/2010
Number of Days to Update: 2
Source: Department of Environmental Conservation
Telephone: 907-465-5301
Last EDR Contact: 05/25/2010
Next Scheduled EDR Contact: 09/06/2010
Data Release Frequency: Semi-Annually

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 02/25/2010
Date Data Arrived at EDR: 02/25/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 46
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 05/03/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/24/2009
Date Data Arrived at EDR: 05/20/2009
Date Made Active in Reports: 06/17/2009
Number of Days to Update: 28
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 05/04/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/03/2010
Date Data Arrived at EDR: 05/05/2010
Date Made Active in Reports: 05/27/2010
Number of Days to Update: 22
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 05/03/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/19/2009
Date Data Arrived at EDR: 02/19/2009
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 25
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/03/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 05/04/2010
Date Data Arrived at EDR: 05/05/2010
Date Made Active in Reports: 05/27/2010
Number of Days to Update: 22
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/03/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/01/2010
Date Data Arrived at EDR: 03/03/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 05/03/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 03/10/2010
Date Data Arrived at EDR: 03/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 27

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 05/03/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Semi-Annually

State and tribal registered storage tank lists

UST: Underground Storage Tank Database
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 05/24/2010
Date Data Arrived at EDR: 05/25/2010
Date Made Active in Reports: 05/27/2010
Number of Days to Update: 2

Source: Department of Environmental Conservation
Telephone: 907-269-7504
Last EDR Contact: 05/25/2010
Next Scheduled EDR Contact: 09/06/2010
Data Release Frequency: Semi-Annually

AST: Regulated Aboveground Storage Tanks
The list covers "regulated" facilities with storage capacities above 10,000 barrels (or 5,000 barrels of crude).

Date of Government Version: 01/05/2005
Date Data Arrived at EDR: 01/06/2005
Date Made Active in Reports: 02/02/2005
Number of Days to Update: 27

Source: Department of Environmental Conservation
Telephone: 907-465-5231
Last EDR Contact: 03/08/2010
Next Scheduled EDR Contact: 06/21/2010
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 02/11/2010
Date Data Arrived at EDR: 02/11/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 60

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 05/03/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/19/2009
Date Data Arrived at EDR: 02/19/2009
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 25

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/03/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 05/04/2010
Date Data Arrived at EDR: 05/05/2010
Date Made Active in Reports: 05/27/2010
Number of Days to Update: 22

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/03/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/01/2008
Date Data Arrived at EDR: 12/30/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 76

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 05/12/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 02/25/2010
Date Data Arrived at EDR: 02/25/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 46

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 05/03/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/01/2010
Date Data Arrived at EDR: 03/03/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 40

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 05/03/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 03/10/2010
Date Data Arrived at EDR: 03/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 27

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 05/03/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Semi-Annually

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/03/2010
Date Data Arrived at EDR: 05/05/2010
Date Made Active in Reports: 05/27/2010
Number of Days to Update: 22

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 05/03/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Semi-Annually

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/19/2010
Next Scheduled EDR Contact: 08/02/2010
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

ENG CONTROLS: Engineering Controls Site Listing
A listing of sites with engineering controls in place included in the Contaminated Sites.

Date of Government Version: 03/08/2010
Date Data Arrived at EDR: 03/09/2010
Date Made Active in Reports: 03/30/2010
Number of Days to Update: 21

Source: Department of Environmental Conservation
Telephone: 907-451-2143
Last EDR Contact: 05/24/2010
Next Scheduled EDR Contact: 09/06/2010
Data Release Frequency: Quarterly

Inst Control: Contaminated Sites with Institutional Controls
Contaminated sites that have institutional controls.

Date of Government Version: 03/08/2010
Date Data Arrived at EDR: 03/09/2010
Date Made Active in Reports: 03/30/2010
Number of Days to Update: 21

Source: Department of Environmental Conservation
Telephone: 907-451-2143
Last EDR Contact: 05/24/2010
Next Scheduled EDR Contact: 09/06/2010
Data Release Frequency: Semi-Annually

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 04/02/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 04/05/2010
Next Scheduled EDR Contact: 07/19/2010
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program sites
Sites involved in the Voluntary Cleanup Program.

Date of Government Version: 03/08/2010
Date Data Arrived at EDR: 03/10/2010
Date Made Active in Reports: 03/30/2010
Number of Days to Update: 20

Source: Department of Environmental Conservation
Telephone: 907-451-2143
Last EDR Contact: 03/10/2010
Next Scheduled EDR Contact: 06/21/2010
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Identified and/or Proposed Brownfields Sites
Brownfield properties are defined by U.S Environmental Protection Agency (EPA) as "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contamination." DEC is developing resources to assist eligible entities in Alaska in applying for EPA brownfields grants. The program also will provide technical assistance and perform some site assessments, The purpose of these assessments is to assist local redevelopment efforts on previously contaminated properties that are vacant or underused.

Date of Government Version: 03/08/2010
Date Data Arrived at EDR: 03/09/2010
Date Made Active in Reports: 03/30/2010
Number of Days to Update: 21

Source: Department of Environmental Conservation
Telephone: 907-451-2166
Last EDR Contact: 05/24/2010
Next Scheduled EDR Contact: 09/06/2010
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 03/02/2010
Date Data Arrived at EDR: 03/23/2010
Date Made Active in Reports: 05/17/2010
Number of Days to Update: 55

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/23/2010
Next Scheduled EDR Contact: 07/12/2010
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-972-3336
Last EDR Contact: 03/22/2010
Next Scheduled EDR Contact: 06/21/2010
Data Release Frequency: Varies

SWRCY: Recycling Facilities

A listing of Recycling centers in the state of Alaska.

Date of Government Version: 10/27/2009
Date Data Arrived at EDR: 10/29/2009
Date Made Active in Reports: 11/09/2009
Number of Days to Update: 11

Source: Department of Environmental Conservation
Telephone: 907-269-7802
Last EDR Contact: 04/05/2010
Next Scheduled EDR Contact: 07/19/2010
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52
Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 05/24/2010
Next Scheduled EDR Contact: 08/23/2010
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 08/19/2009
Date Data Arrived at EDR: 12/29/2009
Date Made Active in Reports: 02/10/2010
Number of Days to Update: 43
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 12/14/2009
Next Scheduled EDR Contact: 03/22/2010
Data Release Frequency: Quarterly

CDL: Illegal Drug Manufacturing Sites
A list of properties that have been determined to be illegal drug manufacturing sites.

Date of Government Version: 03/10/2010
Date Data Arrived at EDR: 05/25/2010
Date Made Active in Reports: 05/27/2010
Number of Days to Update: 2
Source: Department of Environmental Conservation
Telephone: 907-269-7543
Last EDR Contact: 05/25/2010
Next Scheduled EDR Contact: 09/06/2010
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/05/2010
Date Data Arrived at EDR: 02/11/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 60
Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 05/03/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/24/2010
Next Scheduled EDR Contact: 09/06/2010
Data Release Frequency: Varies

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 04/06/2010
Date Data Arrived at EDR: 04/07/2010
Date Made Active in Reports: 05/27/2010
Number of Days to Update: 50

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 04/07/2010
Next Scheduled EDR Contact: 07/19/2010
Data Release Frequency: Annually

SPILLS: Spills Database

Oil and hazardous substance releases to be reported to the Department of Environmental Conservation.

Date of Government Version: 04/12/2010
Date Data Arrived at EDR: 04/13/2010
Date Made Active in Reports: 05/05/2010
Number of Days to Update: 22

Source: Department of Environmental Conservation
Telephone: 907-465-5242
Last EDR Contact: 04/12/2010
Next Scheduled EDR Contact: 07/26/2010
Data Release Frequency: Semi-Annually

Other Ascertainable Records

RCRA-NonGen: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 02/17/2010
Date Data Arrived at EDR: 02/19/2010
Date Made Active in Reports: 05/17/2010
Number of Days to Update: 87

Source: Environmental Protection Agency
Telephone: (206) 553-1200
Last EDR Contact: 04/29/2010
Next Scheduled EDR Contact: 07/19/2010
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/12/2010
Date Data Arrived at EDR: 02/09/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 62

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 05/12/2010
Next Scheduled EDR Contact: 08/23/2010
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 04/21/2010
Next Scheduled EDR Contact: 08/02/2010
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 09/30/2009
Date Made Active in Reports: 12/01/2009
Number of Days to Update: 62

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 03/18/2010
Next Scheduled EDR Contact: 06/28/2010
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 04/11/2010
Date Data Arrived at EDR: 04/19/2010
Date Made Active in Reports: 05/17/2010
Number of Days to Update: 28

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 04/05/2010
Next Scheduled EDR Contact: 07/19/2010
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/29/2010
Date Data Arrived at EDR: 05/07/2010
Date Made Active in Reports: 05/27/2010
Number of Days to Update: 20

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 05/07/2010
Next Scheduled EDR Contact: 06/28/2010
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 01/05/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 05/08/2009
Number of Days to Update: 1

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 01/21/2010
Next Scheduled EDR Contact: 06/14/2010
Data Release Frequency: Varies

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/12/2010
Date Data Arrived at EDR: 03/10/2010
Date Made Active in Reports: 05/17/2010
Number of Days to Update: 68

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/10/2010
Next Scheduled EDR Contact: 06/21/2010
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 01/13/2010
Date Made Active in Reports: 02/18/2010
Number of Days to Update: 36

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 03/02/2010
Next Scheduled EDR Contact: 06/14/2010
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 04/21/2010
Next Scheduled EDR Contact: 07/12/2010
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 03/01/2010
Next Scheduled EDR Contact: 06/14/2010
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 03/01/2010
Next Scheduled EDR Contact: 06/14/2010
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 01/06/2010
Date Made Active in Reports: 02/10/2010
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 05/03/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 04/24/2010
Date Data Arrived at EDR: 04/29/2010
Date Made Active in Reports: 05/17/2010
Number of Days to Update: 18

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 03/29/2010
Next Scheduled EDR Contact: 07/12/2010
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/01/2009
Date Data Arrived at EDR: 10/21/2009
Date Made Active in Reports: 12/01/2009
Number of Days to Update: 41

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/22/2010
Next Scheduled EDR Contact: 08/02/2010
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/18/2010
Date Data Arrived at EDR: 04/06/2010
Date Made Active in Reports: 05/27/2010
Number of Days to Update: 51

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 03/15/2010
Next Scheduled EDR Contact: 06/28/2010
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 04/13/2010
Date Data Arrived at EDR: 04/14/2010
Date Made Active in Reports: 05/17/2010
Number of Days to Update: 33

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/14/2010
Next Scheduled EDR Contact: 07/26/2010
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/14/2010
Date Data Arrived at EDR: 04/16/2010
Date Made Active in Reports: 05/27/2010
Number of Days to Update: 41

Source: EPA
Telephone: (206) 553-1200
Last EDR Contact: 03/15/2010
Next Scheduled EDR Contact: 06/28/2010
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 02/25/2010
Date Made Active in Reports: 05/12/2010
Number of Days to Update: 76

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 05/25/2010
Next Scheduled EDR Contact: 09/06/2010
Data Release Frequency: Biennially

DRYCLEANERS: Drycleaner Facility Listing

A listing of drycleaning facilities in Alaska.

Date of Government Version: 02/15/2006
Date Data Arrived at EDR: 02/16/2006
Date Made Active in Reports: 03/15/2006
Number of Days to Update: 27

Source: Department of Environmental Conservation
Telephone: 907-269-7577
Last EDR Contact: 04/05/2010
Next Scheduled EDR Contact: 07/19/2010
Data Release Frequency: No Update Planned

NPDES: Wastwater Discharge Permit Listing

A listing of permitted wastewater facilities.

Date of Government Version: 03/29/2010
Date Data Arrived at EDR: 03/30/2010
Date Made Active in Reports: 05/05/2010
Number of Days to Update: 36

Source: Department of Environmental Conservation
Telephone: 907-465-5480
Last EDR Contact: 03/30/2010
Next Scheduled EDR Contact: 07/12/2010
Data Release Frequency: Varies

AIRS: AIRS Facility Listing

A listing of permitted airs facilities.

Date of Government Version: 04/20/2010
Date Data Arrived at EDR: 04/21/2010
Date Made Active in Reports: 05/05/2010
Number of Days to Update: 14

Source: Department of Environmental Conservation
Telephone: 907-451-2103
Last EDR Contact: 04/19/2010
Next Scheduled EDR Contact: 08/02/2010
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/21/2010
Next Scheduled EDR Contact: 08/02/2010
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 02/10/2010
Date Data Arrived at EDR: 02/11/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 60

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/10/2010
Next Scheduled EDR Contact: 08/09/2010
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 11/09/2009
Date Data Arrived at EDR: 12/18/2009
Date Made Active in Reports: 02/10/2010
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/16/2010
Next Scheduled EDR Contact: 06/28/2010
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/21/2010
Next Scheduled EDR Contact: 08/02/2010
Data Release Frequency: N/A

COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 04/21/2010
Next Scheduled EDR Contact: 08/02/2010
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 01/01/2008
Date Data Arrived at EDR: 02/18/2009
Date Made Active in Reports: 05/29/2009
Number of Days to Update: 100

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 05/14/2010
Next Scheduled EDR Contact: 08/16/2010
Data Release Frequency: Varies

COAL ASH: Coal Ash Disposal Sites

A listing of coal ash disposal site locations.

Date of Government Version: 04/07/2010
Date Data Arrived at EDR: 04/08/2010
Date Made Active in Reports: 05/05/2010
Number of Days to Update: 27

Source: Department of Environmental Conservation
Telephone: 907-451-2135
Last EDR Contact: 04/05/2010
Next Scheduled EDR Contact: 01/18/2010
Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/04/2010
Date Data Arrived at EDR: 02/11/2010
Date Made Active in Reports: 03/17/2010
Number of Days to Update: 34

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/13/2010
Next Scheduled EDR Contact: 08/23/2010
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Child Care Facilities Database
Source: Department of Education & Early Development
Telephone: 907-465-2800

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2009 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory Data
Source: Department of Fish & Game
Telephone: 907-465-4100

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

TULUKSAK OLD POWER PLANT
T12N, R66W, SEWARD MERIDIAN, ALASKA
TULUKSAK, AK 99679

TARGET PROPERTY COORDINATES

Latitude (North):	61.09830 - 61° 5' 53.9''
Longitude (West):	160.9458 - 160° 56' 44.9''
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	395091.8
UTM Y (Meters):	6775092.5
Elevation:	28 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property:	N/A
Source:	USGS 7.5 min quad index

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

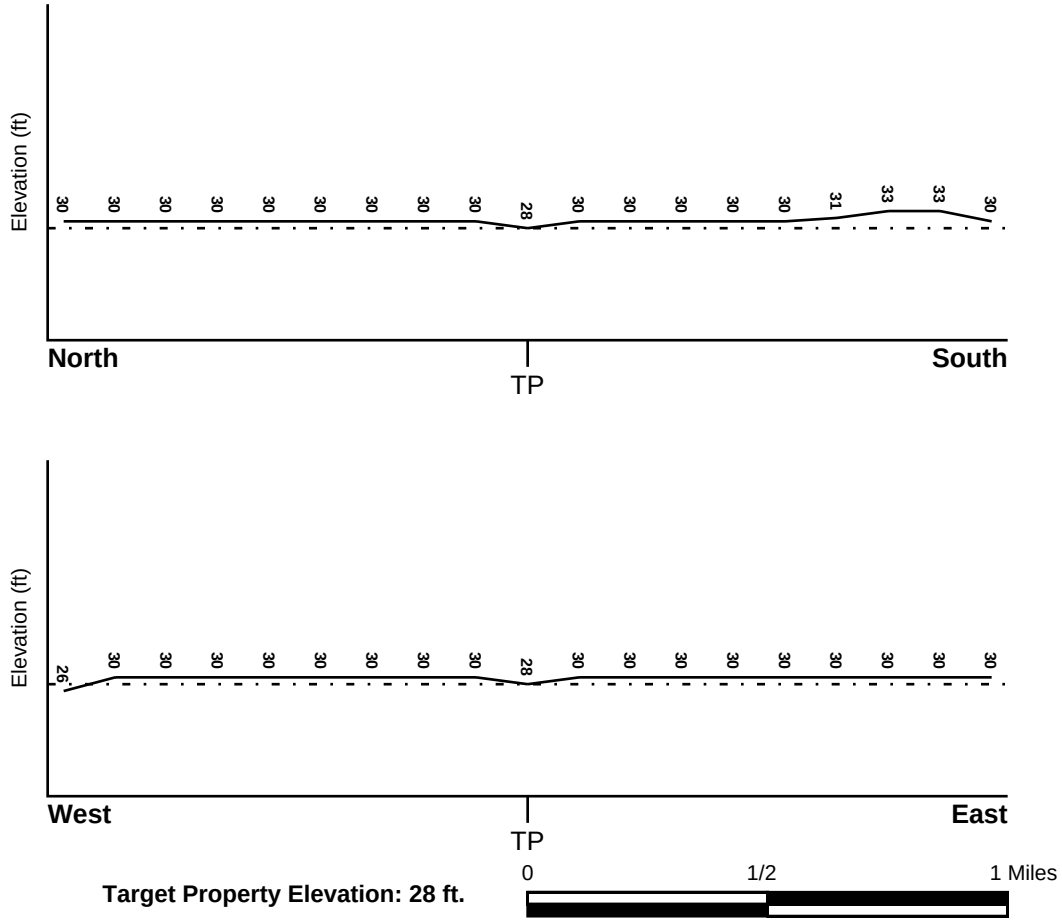
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: Undeterminable

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
BETHEL, AK	Not Available

Flood Plain Panel at Target Property: Not Reported

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
Not Reported	N

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era: -
System: -
Series: -
Code: N/A *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: -

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: HISTIC PERGELIC CRYAQUEPTS

Soil Surface Texture: peat

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly. Soils may have a saturated zone, a layer of low hydraulic conductivity, or seepage. Depth to water table is less than 1 foot.

Hydric Status: Soil meets the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	8 inches	0 inches	peat	A-8	Highly organic soils, Peat.	Max: 2.00 Min: 0.60	Max: 5.00 Min: 4.50
2	9 inches	60 inches	ice or frozen soil	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: silt loam

Surficial Soil Types: silt loam

Shallow Soil Types: No Other Soil Types

Deeper Soil Types: stratified
very gravelly - sand

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	USGS2045314	1/2 - 1 Mile WNW
A2	USGS2045316	1/2 - 1 Mile WNW
A3	USGS2045315	1/2 - 1 Mile WNW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

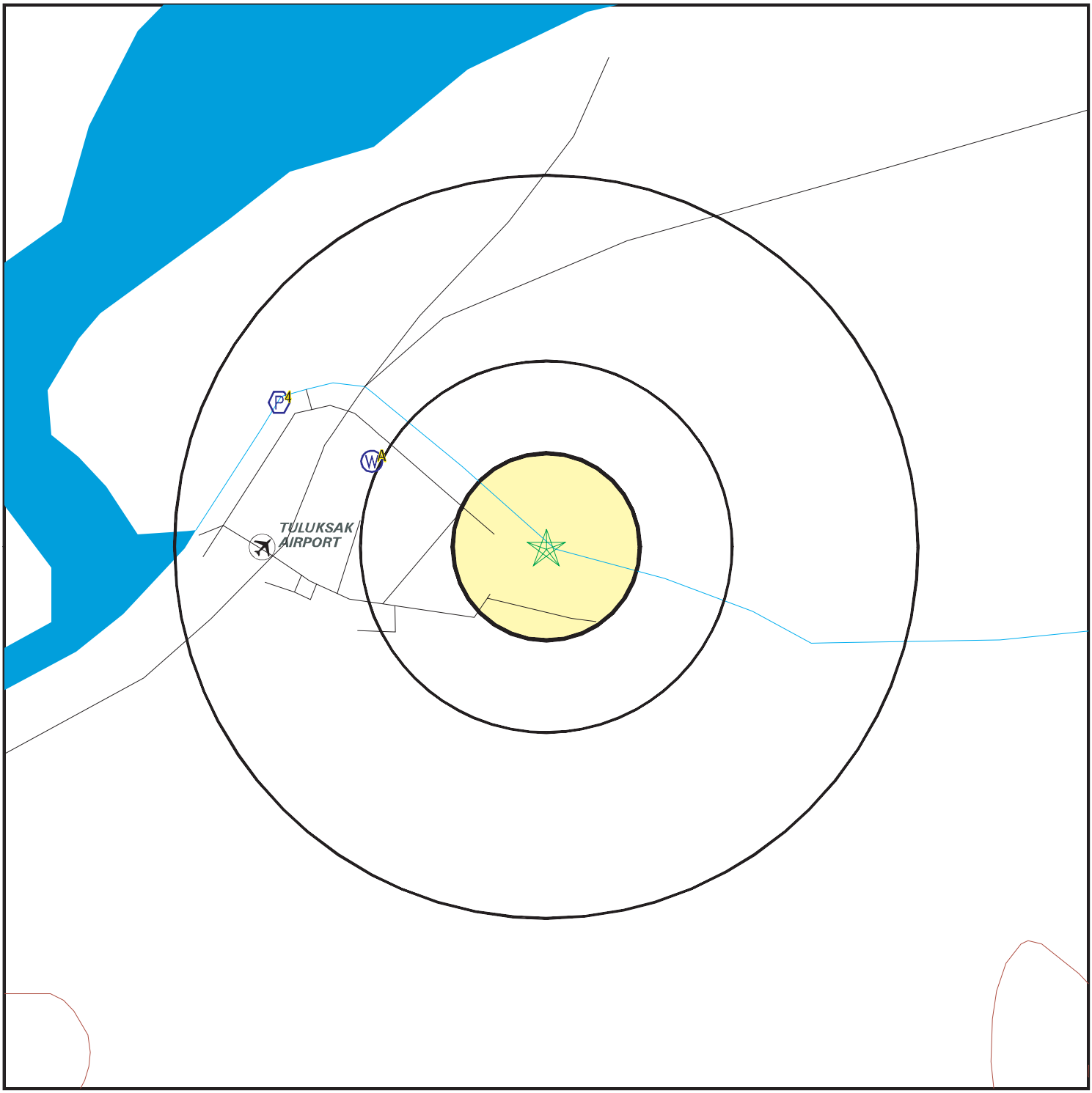
GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
4	AK2270223	1/2 - 1 Mile WNW

Note: PWS System location is not always the same as well location.

PHYSICAL SETTING SOURCE MAP - 2769141.2s



County Boundary
Major Roads
Contour Lines
Airports
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location

N

SITE NAME:	Tuluksak Old Power Plant	CLIENT:	SLR Alaska
ADDRESS:	T12N, R66W, Seward Meridian, Alaska Tuluksak AK 99679	CONTACT:	Christina Bentz
		INQUIRY #:	2769141.2s
LAT/LONG:	61.0983 / 160.9458	DATE:	May 28, 2010 4:29 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A1
WNW
1/2 - 1 Mile
Higher

FED USGS **USGS2045314**

Agency cd:	USGS	Site no:	610605160573001
Site name:	SB01206627DABB2 001		
Latitude:	610605	EDR Site id:	USGS2045314
Longitude:	1605730	Dec lat:	61.10065134
Dec lon:	-160.96063946	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	02
State:	02	County:	050
Country:	US	Land net:	NWNESES27 T012N R066W S
Location map:	RUSSIAN MISSION A-6	Map scale:	63360
Altitude:	35.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	15		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	19030502		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19641108
Date inventoried:	Not Reported	Mean greenwich time offset:	AKST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	45.1	Hole depth:	45.1
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1964-11-03
Water quality data end date:	1964-11-03	Water quality data count:	1
Ground water data begin date:	1964-11-08	Ground water data end date:	1964-11-08
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1964-11-08	18.30	

A2
WNW
1/2 - 1 Mile
Higher

FED USGS **USGS2045316**

Agency cd:	USGS	Site no:	610605160573003
Site name:	SB01206627DABB3 001		
Latitude:	610605	EDR Site id:	USGS2045316
Longitude:	1605730	Dec lat:	61.10065134
Dec lon:	-160.96063946	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	02
State:	02	County:	050
Country:	US	Land net:	NWNESES27 T012N R066W S
Location map:	RUSSIAN MISSION A-6	Map scale:	63360
Altitude:	35.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	15		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	19030502		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	AKST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1955-12-14
Water quality data end date:	1955-12-14	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

A3
WNW
1/2 - 1 Mile
Higher

FED USGS **USGS2045315**

Agency cd:	USGS	Site no:	610605160573002
Site name:	SB01206627DABB1 001		
Latitude:	610605	EDR Site id:	USGS2045315
Longitude:	1605730	Dec lat:	61.10065134
Dec lon:	-160.96063946	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	02
State:	02	County:	050
Country:	US	Land net:	NWNESES27 T012N R066W S
Location map:	RUSSIAN MISSION A-6	Map scale:	63360
Altitude:	35.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	15		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	19030502		
Topographic:	Flat surface		
Site type:	Ground-water other than Spring	Date construction:	19641110
Date inventoried:	Not Reported	Mean greenwich time offset:	AKST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	54.9	Hole depth:	56.0
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1964-11-05
Water quality data end date:	1975-02-03	Water quality data count:	3
Ground water data begin date:	1964-11-10	Ground water data end date:	1964-11-10
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1964-11-10	18.90	

4
WNW **FRDS PWS** **AK2270223**
1/2 - 1 Mile
Higher

Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	31709		
Facility name:	ST TULUKSAK WATER SYSTEM		
Facility type:	Storage	Treatment process:	filtration, greensand
Treatment objective:	iron removal		
Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		

Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	32605		
Facility name:	TP FOR TULUKSAK WATER SYSTEM		
Facility type:	Treatment_plant	Treatment process:	filtration, greensand
Treatment objective:	iron removal		

Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		
Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	35359		
Facility name:	WL TULUKSAK WATER SYSTEM		
Facility type:	Well	Treatment process:	filtration, greensand
Treatment objective:	iron removal		
Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		
Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	38927		
Facility name:	DS TULUKSAK WATER SYSTEM		
Facility type:	Distribution_system_zone	Treatment process:	filtration, greensand
Treatment objective:	iron removal		
Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		
Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	39296		
Facility name:	SS TULUKSAK WATER SYSTEM		
Facility type:	Sampling_station	Treatment process:	filtration, greensand
Treatment objective:	iron removal		

Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		
Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	31709		
Facility name:	ST TULUKSAK WATER SYSTEM		
Facility type:	Storage	Treatment process:	filtration, greensand
Treatment objective:	manganese removal		
Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		
Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	32605		
Facility name:	TP FOR TULUKSAK WATER SYSTEM		
Facility type:	Treatment_plant	Treatment process:	filtration, greensand
Treatment objective:	manganese removal		
Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		
Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	35359		
Facility name:	WL TULUKSAK WATER SYSTEM		
Facility type:	Well	Treatment process:	filtration, greensand
Treatment objective:	manganese removal		

Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		

Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	38927		
Facility name:	DS TULUKSAK WATER SYSTEM		
Facility type:	Distribution_system_zone	Treatment process:	filtration, greensand
Treatment objective:	manganese removal		
Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		

Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	39296		
Facility name:	SS TULUKSAK WATER SYSTEM		
Facility type:	Sampling_station	Treatment process:	filtration, greensand
Treatment objective:	manganese removal		
Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		

Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	31709		
Facility name:	ST TULUKSAK WATER SYSTEM		
Facility type:	Storage	Treatment process:	permanganate
Treatment objective:	iron removal		

Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		
Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	32605		
Facility name:	TP FOR TULUKSAK WATER SYSTEM		
Facility type:	Treatment_plant	Treatment process:	permanganate
Treatment objective:	iron removal		
Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		
Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	35359		
Facility name:	WL TULUKSAK WATER SYSTEM		
Facility type:	Well	Treatment process:	permanganate
Treatment objective:	iron removal		
Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		
Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	38927		
Facility name:	DS TULUKSAK WATER SYSTEM		
Facility type:	Distribution_system_zone	Treatment process:	permanganate
Treatment objective:	iron removal		

Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		

Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	39296		
Facility name:	SS TULUKSAK WATER SYSTEM		
Facility type:	Sampling_station	Treatment process:	permanganate
Treatment objective:	iron removal		
Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		

Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	31709		
Facility name:	ST TULUKSAK WATER SYSTEM		
Facility type:	Storage	Treatment process:	hypochlorination, pre
Treatment objective:	disinfection		
Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		

Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	32605		
Facility name:	TP FOR TULUKSAK WATER SYSTEM		
Facility type:	Treatment_plant	Treatment process:	hypochlorination, pre
Treatment objective:	disinfection		

Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		

Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	35359		
Facility name:	WL TULUKSAK WATER SYSTEM		
Facility type:	Well	Treatment process:	hypochlorination, pre
Treatment objective:	disinfection		
Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		

Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	38927		
Facility name:	DS TULUKSAK WATER SYSTEM		
Facility type:	Distribution_system_zone	Treatment process:	hypochlorination, pre
Treatment objective:	disinfection		
Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		

Pwsid:	AK2270223	Epa region:	10
State:	AK	County:	Bethel
Pws name:	TULUKSAK WATER SYSTEM		
Population Served:	310	Pwssvcconn:	1
PWS Source:	Groundwater		
Pws type:	CWS		
Status:	Active	Owner type:	Native_Am
Facility id:	39296		
Facility name:	SS TULUKSAK WATER SYSTEM		
Facility type:	Sampling_station	Treatment process:	hypochlorination, pre
Treatment objective:	disinfection		

Contact name:	ANDREW, PETER		
Original name:	ANDREW, PETER		
Contact phone:	907-695-6420	Contact address1:	27 Water Plant Drive
Contact address2:	Not Reported		
Contact city:	TULUKSAK		
Contact zip:	99679		

PWS ID:	AK2270223		
Date Initiated:	Not Reported	Date Deactivated:	Not Reported
PWS Name:	TULUKSAK WATER SYSTEM RALPH KINEGAK/YUPIIT SCH P.O. BOX 115 TULUKSAK, AK 99679		

Addressee / Facility:	Not Reported		
Facility Latitude:	61 06 00	Facility Longitude:	160 58 00
City Served:	Not Reported		
Treatment Class:	Treated	Population:	310

Violations information not reported.

ENFORCEMENT INFORMATION:

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Vioid:	5791304	Contaminant:	7000
Viol. Type:	CCR Complete Failure to Report		
Complperbe:	7/1/2003 0:00:00		
Complperen:	8/4/2003 0:00:00	Enfdate:	12/20/2004 0:00:00
Enf action:	State Compliance Meeting Conducted		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Vioid:	5791304	Contaminant:	7000
Viol. Type:	CCR Complete Failure to Report		
Complperbe:	7/1/2003 0:00:00		
Complperen:	8/4/2003 0:00:00	Enfdate:	8/4/2003 0:00:00
Enf action:	State Compliance Achieved		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Vioid:	5791404	Contaminant:	NITRATE
Viol. Type:	3		
Complperbe:	1/1/2003 0:00:00		
Complperen:	12/31/2003 0:00:00	Enfdate:	12/20/2004 0:00:00
Enf action:	State Compliance Achieved		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Vioid:	5791404	Contaminant:	NITRATE
Viol. Type:	3		
Complperbe:	1/1/2003 0:00:00		
Complperen:	12/31/2003 0:00:00	Enfdate:	12/9/2004 0:00:00
Enf action:	State Other		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Vioid:	5791504	Contaminant:	LEAD & COPPER RULE
Viol. Type:	Follow-up and Routine Tap Sampling		
Complperbe:	1/1/2004 0:00:00		
Complperen:	12/31/2025 0:00:00	Enfdate:	12/9/2004 0:00:00
Enf action:	State Other		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Vioid:	5794605	Contaminant:	7000
Viol. Type:	CCR Complete Failure to Report		
Complperbe:	7/1/2004 0:00:00		
Complperen:	12/20/2004 0:00:00	Enfdate:	12/20/2004 0:00:00
Enf action:	State Compliance Meeting Conducted		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Vioid:	5794605	Contaminant:	7000
Viol. Type:	CCR Complete Failure to Report		
Complperbe:	7/1/2004 0:00:00		
Complperen:	12/20/2004 0:00:00	Enfdate:	6/15/2005 0:00:00
Enf action:	State Compliance Meeting Conducted		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Vioid:	5794605	Contaminant:	7000
Viol. Type:	CCR Complete Failure to Report		
Complperbe:	7/1/2004 0:00:00		
Complperen:	12/20/2004 0:00:00	Enfdate:	12/20/2004 0:00:00
Enf action:	State Compliance Achieved		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Vioid:	5794705	Contaminant:	Not Reported
Viol. Type:	Sanitary Survey (TCR)		
Complperbe:	1/1/2000 0:00:00		
Complperen:	12/31/2004 0:00:00	Enfdate:	4/13/2005 0:00:00
Enf action:	State Compliance Achieved		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Vioid:	5794705	Contaminant:	Not Reported
Viol. Type:	Sanitary Survey (TCR)		
Complperbe:	1/1/2000 0:00:00		
Complperen:	12/31/2004 0:00:00	Enfdate:	6/15/2005 0:00:00
Enf action:	State Compliance Meeting Conducted		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Vioid:	5794805	Contaminant:	0999
Viol. Type:	Monitoring and Reporting Stage 1		
Complperbe:	10/1/2004 0:00:00		
Complperen:	12/31/2004 0:00:00	Enfdate:	6/15/2005 0:00:00
Enf action:	State Compliance Meeting Conducted		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Vioid:	5795105	Contaminant:	0999
Viol. Type:	Monitoring and Reporting Stage 1		
Complperbe:	7/1/2004 0:00:00		
Complperen:	9/30/2004 0:00:00	Enfdate:	6/15/2005 0:00:00
Enf action:	State Compliance Meeting Conducted		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Vioid:	5795405	Contaminant:	0999
Viol. Type:	Monitoring and Reporting Stage 1		
Complperbe:	4/1/2004 0:00:00		
Complperen:	6/30/2004 0:00:00	Enfdate:	6/15/2005 0:00:00
Enf action:	State Compliance Meeting Conducted		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Vioid:	5795705	Contaminant:	0999
Viol. Type:	Monitoring and Reporting Stage 1		
Complperbe:	1/1/2004 0:00:00		
Complperen:	3/31/2004 0:00:00	Enfdate:	6/15/2005 0:00:00
Enf action:	State Compliance Meeting Conducted		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Vioid:	5795905	Contaminant:	0999
Viol. Type:	Monitoring and Reporting Stage 1		
Complperbe:	1/1/2005 0:00:00		
Complperen:	3/31/2005 0:00:00	Enfdate:	6/15/2005 0:00:00
Enf action:	State Compliance Meeting Conducted		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Violid:	5796005	Contaminant:	0999
Viol. Type:	Monitoring and Reporting Stage 1		
Complperbe:	4/1/2005 0:00:00		
Complperen:	6/30/2005 0:00:00	Enfdate:	No Enf Action as of
Enf action:	7/8/2009 0:00:00		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Violid:	5796306	Contaminant:	NITRATE
Viol. Type:	3		
Complperbe:	1/1/2005 0:00:00		
Complperen:	12/31/2005 0:00:00	Enfdate:	No Enf Action as of
Enf action:	7/8/2009 0:00:00		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Violid:	5796508	Contaminant:	7000
Viol. Type:	CCR Complete Failure to Report		
Complperbe:	7/1/2007 0:00:00		
Complperen:	12/31/2025 0:00:00	Enfdate:	No Enf Action as of
Enf action:	7/8/2009 0:00:00		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Violid:	5796608	Contaminant:	0999
Viol. Type:	Monitoring and Reporting Stage 1		
Complperbe:	10/1/2007 0:00:00		
Complperen:	12/31/2007 0:00:00	Enfdate:	No Enf Action as of
Enf action:	7/8/2009 0:00:00		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Violid:	5796708	Contaminant:	COLIFORM (TCR)
Viol. Type:	Monitoring, Routine Major (TCR)		
Complperbe:	2/1/2008 0:00:00		
Complperen:	2/29/2008 0:00:00	Enfdate:	No Enf Action as of
Enf action:	7/8/2009 0:00:00		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Violid:	5796908	Contaminant:	0999
Viol. Type:	Monitoring and Reporting Stage 1		
Complperbe:	1/1/2008 0:00:00		
Complperen:	3/31/2008 0:00:00	Enfdate:	No Enf Action as of
Enf action:	7/8/2009 0:00:00		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Violid:	5797108	Contaminant:	0999
Viol. Type:	Monitoring and Reporting Stage 1		
Complperbe:	4/1/2008 0:00:00		
Complperen:	6/30/2008 0:00:00	Enfdate:	No Enf Action as of
Enf action:	7/8/2009 0:00:00		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Violid:	5797308	Contaminant:	COLIFORM (TCR)
Viol. Type:	Monitoring, Routine Major (TCR)		
Complperbe:	7/1/2008 0:00:00		
Complperen:	7/31/2008 0:00:00	Enfdate:	No Enf Action as of
Enf action:	7/8/2009 0:00:00		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Violid:	5797409	Contaminant:	0999
Viol. Type:	Monitoring and Reporting Stage 1		
Complperbe:	7/1/2008 0:00:00		
Complperen:	9/30/2008 0:00:00	Enfdate:	No Enf Action as of
Enf action:	7/8/2009 0:00:00		
Violmeasur:	Not Reported		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Violid:	8888800	Contaminant:	7000
Viol. Type:	CCR Complete Failure to Report		
Complperbe:	7/1/2000 0:00:00		
Complperen:	4/26/2002 0:00:00	Enfdate:	4/26/2002 0:00:00
Enf action:	Fed Compliance Achieved		
Violmeasur:	0		

Truedate:	03/31/2009	Pwsid:	AK2270223
Pwsname:	TULUKSAK WATER SYSTEM		
Retpopsrvd:	310	Pwstypecod:	C
Violid:	9999900	Contaminant:	7000
Viol. Type:	CCR Complete Failure to Report		
Complperbe:	10/19/1999 0:00:00		
Complperen:	1/20/2000 0:00:00	Enfdate:	1/20/2000 0:00:00
Enf action:	Fed Compliance Achieved		
Violmeasur:	0		

System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	1999-10-19 - 2000-01-20		
Violation ID:	0053279		
Enforcement Date:	2000-01-20	Enf. Action:	Fed Compliance Achieved

ENFORCEMENT INFORMATION:

System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	1999-10-19 - 2000-01-20		
Violation ID:	0099999		
Enforcement Date:	2000-01-20	Enf. Action:	Fed Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	7/1/2003 0:00:00 - 8/4/2003 0:00:00		
Violation ID:	5791304		
Enforcement Date:	12/20/2004 0:00:00	Enf. Action:	State Compliance Meeting Conducted
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	07/01/03 - 08/04/03		
Violation ID:	5791304		
Enforcement Date:	12/20/04	Enf. Action:	State Compliance Meeting Conducted
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	07/01/03 - 08/04/03		
Violation ID:	5791304		
Enforcement Date:	08/04/03	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	7/1/2003 0:00:00 - 8/4/2003 0:00:00		
Violation ID:	5791304		
Enforcement Date:	8/4/2003 0:00:00	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	3		
Contaminant:	NITRATE		
Compliance Period:	1/1/2003 0:00:00 - 12/31/2003 0:00:00		
Violation ID:	5791404		
Enforcement Date:	12/20/2004 0:00:00	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	3		
Contaminant:	NITRATE		
Compliance Period:	1/1/2003 0:00:00 - 12/31/2003 0:00:00		
Violation ID:	5791404		
Enforcement Date:	12/9/2004 0:00:00	Enf. Action:	State Other
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	3		
Contaminant:	NITRATE		
Compliance Period:	01/01/03 - 12/31/03		
Violation ID:	5791404		
Enforcement Date:	12/20/04	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	3		
Contaminant:	NITRATE		
Compliance Period:	01/01/03 - 12/31/03		
Violation ID:	5791404		
Enforcement Date:	12/09/04	Enf. Action:	State Other

ENFORCEMENT INFORMATION:

System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Follow-up and Routine Tap Sampling		
Contaminant:	LEAD & COPPER RULE		
Compliance Period:	1/1/2004 0:00:00 - 12/31/2025 0:00:00		
Violation ID:	5791504		
Enforcement Date:	12/9/2004 0:00:00	Enf. Action:	State Other
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Follow-up and Routine Tap Sampling		
Contaminant:	LEAD & COPPER RULE		
Compliance Period:	01/01/04 - 12/31/25		
Violation ID:	5791504		
Enforcement Date:	12/09/04	Enf. Action:	State Other
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	7/1/2004 0:00:00 - 12/20/2004 0:00:00		
Violation ID:	5794605		
Enforcement Date:	6/15/2005 0:00:00	Enf. Action:	State Compliance Meeting Conducted
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	7/1/2004 0:00:00 - 12/20/2004 0:00:00		
Violation ID:	5794605		
Enforcement Date:	12/20/2004 0:00:00	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	7/1/2004 0:00:00 - 12/20/2004 0:00:00		
Violation ID:	5794605		
Enforcement Date:	12/20/2004 0:00:00	Enf. Action:	State Compliance Meeting Conducted
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	07/01/04 - 12/20/04		
Violation ID:	5794605		
Enforcement Date:	12/20/04	Enf. Action:	State Compliance Meeting Conducted
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	07/01/04 - 12/20/04		
Violation ID:	5794605		
Enforcement Date:	12/20/04	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	07/01/04 - 12/20/04		
Violation ID:	5794605		
Enforcement Date:	06/15/05	Enf. Action:	State Compliance Meeting Conducted
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Sanitary Survey (TCR)		
Contaminant:	Not Reported		
Compliance Period:	1/1/2000 0:00:00 - 12/31/2004 0:00:00		
Violation ID:	5794705		
Enforcement Date:	6/15/2005 0:00:00	Enf. Action:	State Compliance Meeting Conducted

ENFORCEMENT INFORMATION:

System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Sanitary Survey (TCR)		
Contaminant:	Not Reported		
Compliance Period:	1/1/2000 0:00:00 - 12/31/2004 0:00:00		
Violation ID:	5794705		
Enforcement Date:	4/13/2005 0:00:00	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Sanitary Survey (TCR)		
Contaminant:	Not Reported		
Compliance Period:	01/01/00 - 12/31/04		
Violation ID:	5794705		
Enforcement Date:	06/15/05	Enf. Action:	State Compliance Meeting Conducted
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Sanitary Survey (TCR)		
Contaminant:	Not Reported		
Compliance Period:	01/01/00 - 12/31/04		
Violation ID:	5794705		
Enforcement Date:	04/13/05	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	10/01/04 - 12/31/04		
Violation ID:	5794805		
Enforcement Date:	06/30/06	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	10/01/04 - 12/31/04		
Violation ID:	5794805		
Enforcement Date:	06/15/05	Enf. Action:	State Compliance Meeting Conducted
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	10/01/04 - 12/31/04		
Violation ID:	5794805		
Enforcement Date:	06/06/06	Enf. Action:	State Violation/Reminder Notice
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	07/01/04 - 09/30/04		
Violation ID:	5795105		
Enforcement Date:	06/30/06	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	07/01/04 - 09/30/04		
Violation ID:	5795105		
Enforcement Date:	06/15/05	Enf. Action:	State Compliance Meeting Conducted
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	07/01/04 - 09/30/04		
Violation ID:	5795105		
Enforcement Date:	06/06/06	Enf. Action:	State Violation/Reminder Notice

ENFORCEMENT INFORMATION:

System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	04/01/04 - 06/30/04		
Violation ID:	5795405		
Enforcement Date:	06/15/05	Enf. Action:	State Compliance Meeting Conducted
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	04/01/04 - 06/30/04		
Violation ID:	5795405		
Enforcement Date:	06/30/06	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	04/01/04 - 06/30/04		
Violation ID:	5795405		
Enforcement Date:	06/06/06	Enf. Action:	State Violation/Reminder Notice
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	01/01/04 - 03/31/04		
Violation ID:	5795705		
Enforcement Date:	06/06/06	Enf. Action:	State Violation/Reminder Notice
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	01/01/04 - 03/31/04		
Violation ID:	5795705		
Enforcement Date:	06/30/06	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	01/01/04 - 03/31/04		
Violation ID:	5795705		
Enforcement Date:	06/15/05	Enf. Action:	State Compliance Meeting Conducted
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	01/01/05 - 03/31/05		
Violation ID:	5795905		
Enforcement Date:	06/15/05	Enf. Action:	State Compliance Meeting Conducted
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	01/01/05 - 03/31/05		
Violation ID:	5795905		
Enforcement Date:	06/30/06	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	01/01/05 - 03/31/05		
Violation ID:	5795905		
Enforcement Date:	06/06/06	Enf. Action:	State Violation/Reminder Notice

ENFORCEMENT INFORMATION:

System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	04/01/05 - 06/30/05		
Violation ID:	5796005		
Enforcement Date:	06/06/06	Enf. Action:	State Violation/Reminder Notice
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring and Reporting Stage 1		
Contaminant:	0999		
Compliance Period:	04/01/05 - 06/30/05		
Violation ID:	5796005		
Enforcement Date:	06/30/06	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	3		
Contaminant:	NITRATE		
Compliance Period:	1/1/2005 0:00:00 - 12/31/2005 0:00:00		
Violation ID:	5796306		
Enforcement Date:	5/22/2006 0:00:00	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	3		
Contaminant:	NITRATE		
Compliance Period:	01/01/05 - 12/31/05		
Violation ID:	5796306		
Enforcement Date:	05/22/06	Enf. Action:	State Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	07/01/00 - 04/26/02		
Violation ID:	8888800		
Enforcement Date:	04/26/02	Enf. Action:	Fed Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	7/1/2000 0:00:00 - 4/26/2002 0:00:00		
Violation ID:	8888800		
Enforcement Date:	4/26/2002 0:00:00	Enf. Action:	Fed Compliance Achieved
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring, Routine Major (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1995-11-01 - 1995-11-30		
Violation ID:	9651105		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	Monitoring, Routine Major (TCR)		
Contaminant:	COLIFORM (TCR)		
Compliance Period:	1999-05-01 - 1999-05-31		
Violation ID:	9957370		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	10/19/99 - 01/20/00		
Violation ID:	9999900		
Enforcement Date:	01/20/00	Enf. Action:	Fed Compliance Achieved

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

ENFORCEMENT INFORMATION:

System Name:	TULUKSAK WATER SYSTEM		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	10/19/1999 0:00:00 - 1/20/2000 0:00:00		
Violation ID:	9999900		
Enforcement Date:	1/20/2000 0:00:00	Enf. Action:	Fed Compliance Achieved

CONTACT INFORMATION:

Name:	TULUKSAK WATER SYSTEM	Population:	310
Contact:	LAMONT, GEORGE	Phone:	Not Reported
Address:	P.O. BOX 95		
Address 2:	TULUKSAK		
	AK, 99 907-6		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for BETHEL County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2009 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory Data
Source: Department of Fish & Game
Telephone: 907-465-4100

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

RADON

State Database: AK Radon
Source: University of Alaska Fairbanks
Telephone: 907-474-7201
Radon Information

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

STREET AND ADDRESS INFORMATION

Tuluksak Old Power Plant
T12N, R66W, Seward Meridian, Alaska
Tuluksak, AK 99679

Inquiry Number: 2769141.3
May 13, 2010

Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

5/13/10

Site Name:
Tuluksak Old Power Plant
T12N, R66W, Seward Meridian,
Tuluksak, AK 99679

Client Name:
SLR Alaska
4601 Business Park Blvd
Anchorage, AK 99503

EDR Inquiry # 2769141.3

Contact: Christina Bentz

EDR® Environmental Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by SLR Alaska were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: Tuluksak Old Power Plant
Address: T12N, R66W, Seward Meridian, Alaska
City, State, Zip: Tuluksak, AK 99679
Cross Street:
P.O. # NA
Project: 105.00065.09018
Certification # 7993-4F68-BBAB

Sanborn® Library search results
Certification # 7993-4F68-BBAB

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✓ Library of Congress
- ✓ University Publications of America
- ✓ EDR Private Collection

The Sanborn Library LLC Since 1866™

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Tuluksak Old Power Plant
T12N, R66W, Seward Meridian, Alaska
Tuluksak, AK 99679

Inquiry Number: 2769141.4
May 17, 2010

The EDR Historical Topographic Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

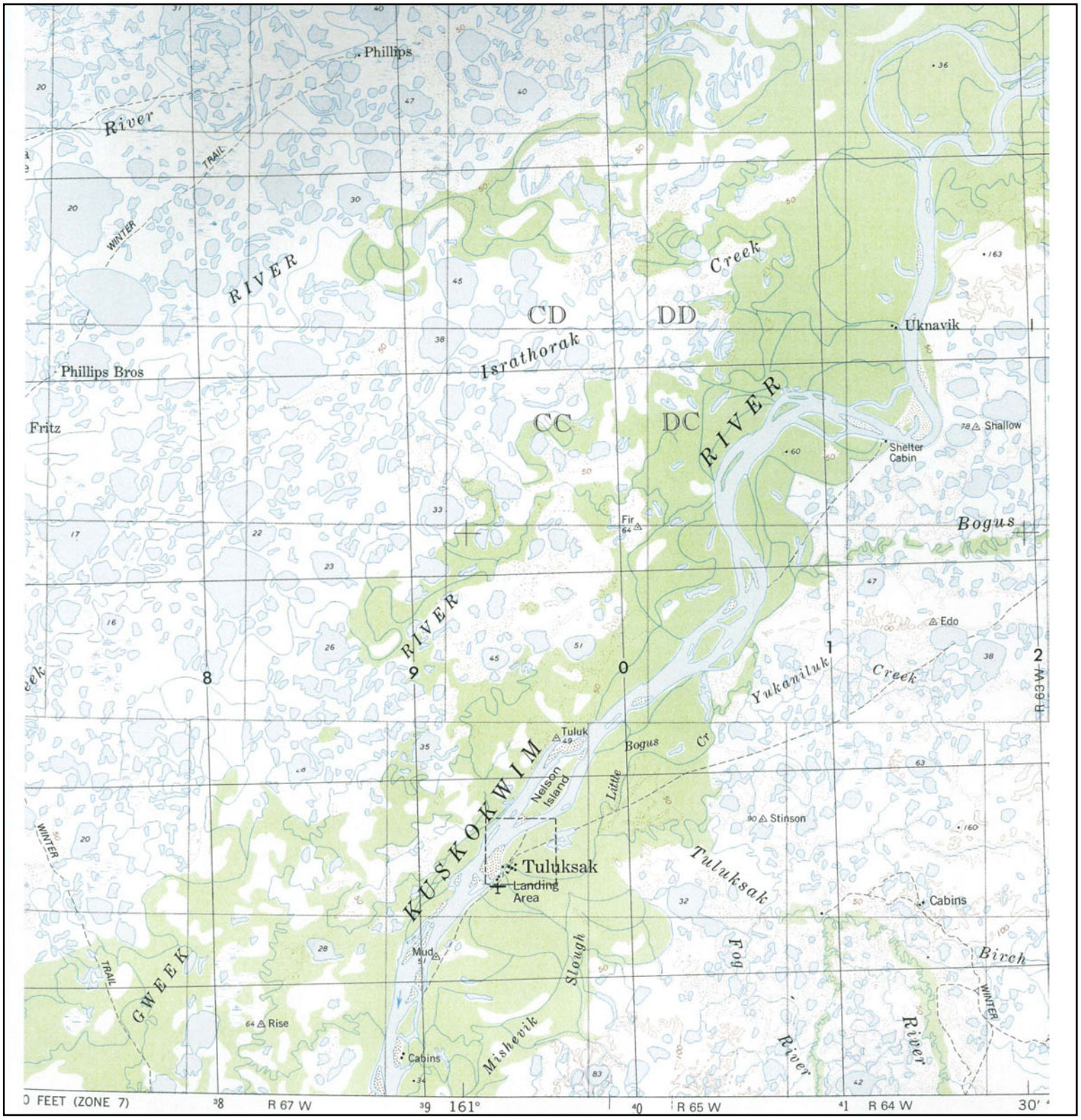
Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Historical Topographic Map

N	TARGET QUAD NAME: Russian Mission (A-6), AK MAP YEAR: 1954 SERIES: 15 SCALE: 1:63,360	SITE NAME: Tuluksak Old Power Plant ADDRESS: T12N, R66W, Seward Meridian, Alaska Tuluksak, AK 99679 LAT/LONG: 61.0983 / 160.9458	CLIENT: SLR Alaska CONTACT: Christina Bentz INQUIRY#: 2769141.4 RESEARCH DATE: 05/17/2010

Historical Topographic Map



N	TARGET QUAD NAME: Russian Mission, AK MAP YEAR: 1980 SERIES: 60 SCALE: 1:250,000	SITE NAME: Tuluksak Old Power Plant ADDRESS: T12N, R66W, Seward Meridian, Alaska Tuluksak, AK 99679 LAT/LONG: 61.0983 / 160.9458	CLIENT: SLR Alaska CONTACT: Christina Bentz INQUIRY#: 2769141.4 RESEARCH DATE: 05/17/2010

STATEMENT OF LIMITATIONS

STATEMENT OF LIMITATIONS

The conclusions presented in this report are professional opinions based on data described in this report. These opinions have been arrived at in accordance with currently accepted environmental industry standards and practices applicable to the work described in this report. The opinions presented are subject to the following inherent limitations:

1. This report was prepared for the exclusive use of the entity referenced in Section 1.6. No other entity may rely on the information presented in the report without the expressed written consent of SLR.

2. This Phase I ESA report is subject to the terms and conditions in the SLR proposal referenced in Section 1.4 and in the contract between SLR and its client under which the work was performed. Any use of the Phase I report constitutes acceptance of the limits of SLR's liability specified in the contract. SLR's liability extends only to its client and not to any other parties who may obtain the Phase I report.

3. SLR derived the data in this report primarily from visual inspections, examination of records in the public domain, and interviews with individuals having information about the *Site*. The passage of time, manifestation of latent conditions, or occurrence of future events may require further study at the *Site*, analysis of the data, and reevaluation of the findings, observations, and conclusions in the report.

4. The data reported and the findings, observations, and conclusions expressed in the report are limited by the scope of work. The scope of work is presented in Section 1.4 and was agreed to by the client.

5. SLR's Phase I ESA reports present professional opinions and findings of a scientific and technical nature. The report shall not be construed to offer legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations, or policies of federal, state, or local governmental agencies.

6. The conclusions presented in this report are professional opinions based on data described in this report. They are intended only for the purpose, *Site* location, and project indicated. This report is not a definitive study of contamination at the *Site* and should not be interpreted as such. An evaluation of subsurface soil and groundwater conditions was not performed as part of this investigation, unless indicated in Section 1.4. No sampling or chemical analyses of structural materials or other media was completed as part of this study unless explicitly stated in Section 1.4.

7. This report is based, in part, on unverified information supplied to SLR by third-party sources. While efforts have been made to substantiate this third-party information, SLR cannot guarantee its completeness or accuracy.

QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

IEugene T. Watson, P. Geo. (VA)

Principal Financial & Professional Services

EDUCATION

- B.A. Environmental Sciences, University of Virginia, 1977
- M. Sc. Geological Engineering, University of Missouri, 1980

MAIN SPECIALTY

- M&A Environmental Due Diligence/Timberland Acquisition and Divestiture/Environmental Compliance Management

AREAS OF EXPERTISE

- Corporate M&A and Timberland Due Diligence
- Environmental Regulatory Compliance Management
- Due Diligence/Environmental Expenditure Analysis
- Environmental Approvals/Permitting
- Contaminant Assessment
- Mitigation/Remediation Design
- Baseline Environmental Studies

RELEVANT INDUSTRY EXPERIENCE

- Commercial Real Estate
- Industrial M&A
- Timberland and Forest Products
- Automotive & Transportation
- Retail Commercial
- Oil & Gas

Biography

Mr. Watson has over 29 years of professional experience in the petroleum and environmental consulting fields. His environmental experience has focused primarily on providing due diligence services to the legal and corporate sectors. This has included site assessment, contamination assessment, cost estimating, and site remediation for commercial, industrial and utility properties. Mr. Watson manages SLR's Timberland Specialty Group. This group provides due diligence and assessment services to the Timberland and Forest Products Sectors, including contamination assessment and compliance services. Mr. Watson has assisted several Fortune 100 companies in their site acquisition programs involving hundreds of facilites throughout North America, and in Europe, South America and Southeast Asia. His areas of responsibility have included project planning, cost estimating, budgeting, contract compliance, and technical review of environmental assessment projects. Mr. Watson has authored and coauthored Phase I and Phase II Environmental Site Assessments (ESAs) involving thousands of real estate transactions, as well as performed peer reviews of similar work performed by other consultants. He has also prepared site characterization reports, Corrective Action Plans (CAPs), and remediation designs for leaking underground storage tanks (LUSTs) and other sources of subsurface contamination. Mr. Watson is also actively involved in the development of standards for the industry through his membership on the ASTM E50 Committee and the 1527 and 2247 Task Groups, which produced the ASTM Phase I Practices, as well as other real estate transactional assessment guidelines. Mr. Watson has given numerous presentations at environmental seminars and training sessions, addressing such topics as Environmental Due Diligence, UST Management, Lender Liability, and Corporate Management of Environmental Liability. In addition, Mr. Watson has performed surveys for asbestos-containing materials (ACM), developed management plans, and prepared specifications for ACM abatement. He has also lectured at the Medical College of Virginia EPA-accredited Asbestos Training Series.

Career Experience

- Managed and performed timberland and sawmill due diligence projects throughout the U.S. on behalf of both sellers and buyers. Having been actively involved on the ASTM committee that produced the E 1527-05 and 2247-08 standard practices, Mr. Watson has also performed peer reviews of due diligence reports prepared by other consultants for compliance to the ASTM and AAI protocol.
- Conducted environmental due diligence on corporate acquisitions in the U.S., Europe and Southeast Asia, and also provided environmental compliance services to acquired operations.
- Managed several national programs of Phase I and II ESAs for commercial and light industrial properties throughout the U.S. that involved hundreds of properties per year. Responsible for coordinating services from a large number of SLR offices in the US and Europe in order to produce a consistent work product for facilities throughout the world.
- Provided underground storage tank services, including management compliance issues, tank removal and disposal, closure reports, and soil and groundwater contamination investigations and mitigation.
- Conducted compliance audits for light industrial facilities, including review of hazard communication procedures, status of required permitting, and development of baseline assessments for future monitoring.
- Developed and implemented a personnel monitoring protocol for construction workers in a potentially hazardous environmental of naturally occurring asbestos.

SLR Consulting (Canada) Ltd.

- Provided project administration, including the preparation of specifications and bid documents, for the abatement of asbestos in an occupied, 12-story office building.

Project Experience (continued)

- Responsible for all aspects of the development and operation of a regional environmental consulting and contracting firm. Services provided included removal and closure of USTs, testing and disposal of hazardous wastes, application for state reimbursement of UST cleanup costs, and site characterization studies of contaminated UST sites.
- Vice President and General Manager of an environmental and engineering consulting company that provided a broad range of environmental and geotechnical services, including UST management, M&A due diligence, and contaminated site mitigation and closure.
- Vice President of Engineering and Production for an oil and gas exploration and production company, responsible for all engineering and production matters involved in the production of oil and gas from fields in Pennsylvania and Virginia.
- Served as Senior Geological Engineer for an international oil and gas company, performing geological assessments of known petroleum producing areas with the objective of developing additional reserves and increasing existing production.

SLR Consulting (Canada) Ltd.

CHRISTINA BENTZ

PROJECT GEOLOGIST

Ms. Bentz has over 6 years of experience as a geologist in the environmental consulting field with over 5 years in Alaska. In the office, Ms. Bentz has been involved in the preparation of work plans, technical reports, conceptual site models, property assessment and cleanup plans, phase I site assessments, exploration and monitoring well logs, and other related documents. In the field, Ms. Bentz has acted as a site manager, site safety and health officer, geologist, and lead sampler on several projects. In addition, Ms. Bentz has experience overseeing subcontractors, working as a rig geologist, collecting soil, sediment, and ground water samples, and acting as a quality control/quality assurance representative. Ms. Bentz has provided support for projects for the government and private sector clients including: Alaska Department of Environmental Conservation, Alyeska Pipeline Services Company, British Petroleum, Northern Dynasty Mines, The Pebble Partnership, U.S. Army Engineering District, Alaska, the U.S. Air Force Center for Environmental Excellence, and the U.S. Coast Guard,. Ms. Bentz has primarily been involved with the planning and implementation of environmental baseline studies, site investigations, and remediation projects across the State of Alaska.

SELECTED PROJECT EXPERIENCE

- Ms. Bentz has been involved in several site assessments and site visits for the State of Alaska Department of Environmental Conservation. As part of these, Ms. Bentz has coordinated worked closely with members of villages across the state to develop cleanup plans to assist communities in moving through the Brownfield process.
- Ms. Bentz has written more than twenty Conceptual Site Models (CSMs) for sites across the state of Alaska in accordance with State of Alaska Department of Environmental Conservation regulations. These CSMs involve a complete review of site specific conditions, historical operations, and sampling results to assess risks to human receptors.
- Project lead for routine monitoring and testing of a Westbay multilevel ground water monitoring well. Ms. Bentz performs monthly profiles, manages data, and has been involved with pumping tests. In addition, Ms. Bentz coordinates directly with the client.
- Ms. Bentz has provided support for hydrogeologic testing including observing core to determine the locations of water-bearing zones, set-up and administering pumping tests, managing and reviewing data from twenty-one transducers, communicating results and testing status to key project and client personnel.
- Project lead for a complex helicopter-portable drilling program in Iliamna, Alaska. Ms. Bentz oversaw the drilling and installation of piezometers and monitoring wells in 2007 and 2008. Her role included logistics planning and coordination, sampling and logging cuttings collected via ODEX air and mud rotary drilling, conducting flow tests, transmission of information, and coordination with project personnel on a daily basis. As the onsite geologist, Ms. Bentz, was also responsible for ensuring compliance with permits and protection of the environment.
- Ms. Bentz provides expertise in the area of boring log and monitoring well completion log creation, editing, and management using gINT. Ms. Bentz has created and modified templates to meet project and client needs as well as developed innovative ways for

entering data in the field. Ms. Bentz has completed over 200 logs using gINT and has trained others in the use of the program.

- Preparation of a comprehensive report of spills and contaminated sites at pump stations along the Trans-Alaska Pipeline to assess potential environmental liabilities. This project included extensive research of existing information to compile text, lists, and corresponding figures presenting relevant information. This report is an invaluable tool to our client.
- Conducted site assessments including work plan preparation; drilling oversight; lithologic descriptions; field screening; well development; soil and ground water sampling; and reporting activities for the State of Alaska Department of Environmental Conservation. Ms. Bentz has been involved in multiple projects of this nature for this specific client.
- Managed the subsurface investigation of a 3,200 barrel crude oil spill. Ms. Bentz directed the installation of trenches and excavations to delineate the vertical and lateral extent of contamination. Ms. Bentz was responsible for coordinating personnel and equipment and designed the sampling plan. The site investigation identified the area of impact and will be used to develop a corrective action plan.
- Provided management and technical support for the preparation, execution, and technical reporting for an investigation/remedial action in Yakutat, Alaska. Under Ms. Bentz's leadership, the Yakutat project was completed successfully ahead of schedule, under budget, accident free, and with excellent client satisfaction.
- Provided management and technical support for a treatability study based in Kodiak, Alaska. On this project, Ms. Bentz took an active roll in field work, preparing and reviewing technical reports, conducting cost estimates, preparation of requests for proposals, and coordination of field work. In addition, Ms. Bentz was responsible for managing a $1.2 million dollar budget, schedule, overseeing the execution of work done by others, and communicating directly with the client. Under Ms. Bentz's leadership, deliverables were submitted to the client on schedule, work was being completed within the allocated budget, and client perception and satisfaction improved.
- Offered technical support to multiple projects in the form of preparation and revision of technical reports, planning and procurement activities, document reviews, coordination with clients and regulators, and field support (rig geologist overseeing drilling, lead sampler and assistant sampler performing soil, sediment, and groundwater development and sampling, and onsite training of personnel in sampling, shipping, and proper documentation procedures).

EDUCATION

M.S., Geology, The University of Michigan, Ann Arbor, Michigan, 2003

B.S., Geosciences, Pacific Lutheran University, Tacoma, Washington, 2001

CARL F. BENSON

PRINCIPAL HYDROLOGIST

Mr. Benson is a hydrologist with 20 years of technical and professional experience, including 13 years managing environmental assessment, remediation, and monitoring projects, and 7 years of analytical and industrial compliance experience.

Mr. Benson's responsibilities as Principal Hydrologist include supervision of technical staff, project management, and technical oversight. He has performed site hydrogeologic assessments and long-term monitoring at over 40 sites throughout Alaska, and has specific experience in site characterization, determination of natural attenuation capacities, soil and groundwater remediation, human and ecological risk assessments, feasibility studies, and agency negotiations. Mr. Benson's analytical and industrial compliance experience includes analytical method development, project chemical quality control review for federal and state clients, and compliance monitoring and reporting for solid waste, remediation, and water and wastewater programs in the petroleum industry.

SELECTED TECHNICAL & MANAGEMENT EXPERIENCE

- Field Team Leader for a study determining baseline background concentrations of metals in soils at British Petroleum Exploration, Alaska's (BPXA's) Prudhoe Bay Unit (PBU) on the North Slope of Alaska. Ground water and soil samples were collected at twenty randomly chosen locations at the Put River 23 borrow pit to characterize background metal concentrations in construction materials at the PBU. Duties included work plan preparation, field coordination, direction and execution of field work, and report preparation.

- Internal audit of field activities during 2009 surface water sampling at inactive unexcavated reserve pits for BPXA. Report preparation for soil and surface water sampling performed for BPXA in 2007 and 2008.

- Sampling of reserve pit floors after drill mud removal in support of Alaska Department of Environmental Conservation (ADEC) closure of inactive production reserve pits at the PBU and Kuparuk fields for BPXA and Conoco Philips Alaska.

- Compliance system owner (CSO) for soil and groundwater remediation programs at the Flint Hills Resources, Alaska (FHR) North Pole refinery, Fairbanks airport terminal, and Anchorage terminal facilities. Reviewed contractor proposals for ongoing remediation and groundwater monitoring projects, coordinated soil transport with the Alaska Department of Environmental Conservation (ADEC), and prepared monthly groundwater status and wastewater discharge monitoring reports for ADEC, and quarterly water use reports for the Alaska Department of Natural Resources (DNR).

- CSO for the solid waste program at the FHR facilities. Prepared solid waste determinations and hazardous waste characterizations using RCRA criteria, reviewed weekly waste inspections, coordinated hazardous waste shipments and used Department of Transportation (DOT) hazardous material regulations to manage solid waste at FHR facilities. Prepared RCRA biennial reports for FHR facilities. Provided technical support for waste management during refinery maintenance and construction projects.

- CSO for wastewater monitoring and discharge reporting under the NPDES industrial pre-treatment program. Reviewed daily operations monitoring data of permitted wastewater treatment and discharge system. Prepared quarterly discharge monitoring reports for submittal to EPA Region 10 program administrator. Maintained wastewater discharge, temporary water use, and water appropriation permits. Obtained temporary water use appropriations and contained-water discharge permits for FHR maintenance and construction projects. Coordinated wetland surveys on refinery property for jurisdictional wetland determinations to determine the need for Department of the Army permits. Determined the need for a storm water multi-sector general permit (MSGP) existed at the FHR Anchorage terminal and coordinated preparation of facility storm water pollution prevention plan (SWPPP). Provided technical project support for refinery maintenance and wastewater system improvement projects.

- Project manager and field scientist assisting Alyeska Pipeline Service Company (Alyeska) during pipeline maintenance projects. Investigated the use of a decanting centrifuge and geotextile dewatering tubes for attaining National Pollution Discharge Elimination System (NPDES) permit requirements and pipeline right of way permit stipulations.

- Project manager and field team leader for evaluation of storm water runoff potential from material mining sites operated along the trans-Alaska pipeline in 1998 and 2004. Provided basis for Alyeska to prepare notices of intent under the storm water MSGP.

- Environmental scientist and Quality Assurance Officer for an ADEC-sponsored project evaluating storm water best-management-practices at Airports in Anchorage, Fairbanks, and Juneau.

- Project Chemist and Quality Assurance Officer performing data evaluation for multiple clients including BPXA, the U.S. Army Corps of Engineers (USACE), U.S. Air Force 611th Civil Engineering Squadron, and ADEC.

- Field team leader and project manager during an assessment of PCB contamination in Drury Gulch on Kodiak Island for the U.S. Navy.

- Project manager and field team leader for contamination assessments for tank farm upgrades planned in the villages of Chalkyitsik, Chefornak, Nightmute, and Arctic Village under funding provided by the Denali Commission.

- Project manager and field team leader for contamination assessment, remediation, and closure of the former Healy Roadhouse under the State of Alaska financial assistance program. Duties included site characterization, design and installation of a soil vapor extraction (SVE) remediation system, quantitative air emission calculations and modeling for operation of the SVE system, record of decision development, and site closure.

- Project manager and field team leader on an expedited contamination assessment, remediation, risk assessment, and closure of the Fairbanks International Airport fuel

hydrant distribution system contaminated site. Evaluated Title V permit limitations for operation of vacuum-enhanced product recovery remediation system at the Fairbanks International Airport.

- Project manager and field team leader on Phase 2 assessments for airport expansion projects in the villages of Atka and Anvik, Alaska.

- Project manager for remediation system operation and maintenance, and long-term groundwater monitoring at six former Chevron/Texaco sites in Fairbanks.

- Process chemist on EPA Site Program demonstrations and full-scale projects remediating small-arms range soils using soil washing technology. Assisted in the design, construction, and operation of soil leaching and soil washing plants used to remediate small-arms range soils at Fort Polk, LA, and Twenty Nine Palms, CA. Wrote and implemented field quality control monitoring programs employing atomic absorption and X-ray fluorescence techniques to assess plant performance during and after soil treatment. Profiled recovered metals for highway transport and recycling. Performed treatability studies and feasibility studies, laboratory testing and reporting

- Project manager and field team leader on U.S. Army Corps of Engineers (USACE) contamination assessments at Fort Richardson and the Seward Army Recreation Camp, Alaska. Performed soil sample collection, monitoring well installation and sampling, report preparation and data review on several release investigations for the USACE.

- Project manager and field team leader on contamination assessment and corrective action projects for Alyeska including a three-phase release investigation with corrective action and risk assessment at the former Galbraith Lake construction camp.

SELECTED TECHNICAL EXPERIENCE

- Field scientist performing wetland delineations on pipeline rights-of-way for construction projects, and on agricultural parcels to determine benefits under the U.S. Department of Agriculture's wetland programs.

- Research assistant with the University of Alaska Institute of Marine Science responsible for assembly and operation of a vacuum line for analysis of stable carbon isotope variations in intertidal organisms affected by the Exxon Valdez oil spill. Set up and operated a mobile lab to assess hydrocarbon impact to shallow near-shore sediments in Prince William Sound.

- Chemist II assisting the Alaska Department of Environmental Conservation during damage assessment from the Exxon Valdez oil spill. Set up extraction labs, wrote and implemented state-approved sample extraction procedures, and tracked the analysis of environmental samples from the Exxon Valdez oil spill. Performed analyses on environmental samples and provided bulk oil results to state and EPA scientists evaluating the effectiveness of bioremediation and dispersant application.

- Process chemist responsible for all wet-chemical, gas-chromatographic and physical tests for preventive maintenance, quality control, and corrosion inhibition programs at the ARCO-Kuparuk oil field. Collected samples of produced and process fluids and gases for analysis at the Kuparuk lab. Set up and operated a seawater treatment monitoring lab for the Kuparuk seawater treatment plant. Documented field-wide H2S levels at all producing wells for safety and environmental permit compliance reports.

- Chemical analyst responsible for total and leachable metal determinations using atomic absorption instrumentation. Implemented EPA Standard Methods for the analysis of environmental and municipal waste samples.

EDUCATION

Bachelor of Science, Chemistry, University of Alaska, Fairbanks, 1986

Master of Science, Hydrology, New Mexico Institute of Mining and Technology, Socorro, 1993

TRAINING

Clean Water Act Permitting and Compliance, Trinity Consultants, October 2007.

DOT Hazardous Material Regulations Training, 24-hours, Certification for function-specific training under 49 CFR Parts 100 – 185, April 2007.

DOT Hazard Classification and Shipping Name Determinations, Lion Technologies, March 2007.

RCRA Solid Waste Management Training, McCoy & Associates, December 2006.

Wetlands Delineation & Management Training, July 2001.

40-Hour Hazardous Waste Operations and Emergency Response (HAZWOPER) Certification Training Course. EMCON Alaska, Fairbanks, AK. 1993. Refresher courses: 1994-2008.

8-Hour HAZWOPER Site Supervisor Training, April 1995.

First Aid and CPR Training.

National Ground Water Association Short Courses:

- Treatment Technology for Contaminated Soils and Groundwater, January 1995
- Risk Assessment (Part I) – October 1995.

PUBLICATIONS

Benson, C.F. and R.S. Bowman, 1994, Tri-and tetrafluorobenzoates as nonreactive tracers in soil and groundwater: Soil Science Society of America Journal, v. 58, no. 4, p. 1123-1129.

Bowman, R.S., C.F. Benson, and J. Verploegh, 1995, An expanded suite of tracers for hydrological investigations: New Mexico Water Resources Research Institute, WRRI Technical Completion Report No. 294, 26 p.

APPENDIX H

CONCEPTUAL SITE MODEL

APPENDIX H

TULUKSAK OLD POWER PLANT
CONCEPTUAL SITE MODEL

This Conceptual Site Model (CSM) was developed to qualitatively assess the risk to potential human receptors from petroleum hydrocarbons and associated chemicals in soil at the Tuluksak Old Power Plant site, hereafter referred to as the Site. This CSM is based upon observations made by SLR during a site visit in 2010, information provided by the Alaska Department of Environmental Conservation (DEC), and information gathered through interviews with persons knowledgeable about the Site. The CSM describes the potential exposure scenarios for current and future site receptors. This CSM was prepared in accordance with the DEC *Draft Guidance on Developing Conceptual Site Models* (DEC, 2005) using the DEC Draft Human Health CSM Scoping Form. The DEC Draft Human Health CSM Diagram was used to summarize the results of the checklist. All cleanup levels referenced in this CSM are with respect to DEC Method Two cleanup levels (DEC, 2008).

1.1 Impacted Media

Impacted media at the Site are the environmental compartments into which a contaminant is directly released (DEC, 2005). All media are discussed in the subsequent sections with respect to whether the media are impacted or not.

1.1.1 Surface Soil

Surface soil is defined as the interval from 0 foot to 2 feet below ground surface (bgs) (DEC, 2005). Previous activities at the Site would likely have resulted in impacts in the immediate vicinity of the power plant, above ground storage tank (AST), drums, and equipment; a release or discharge associated with the activities at this Site would therefore directly affect surface soil. In addition, stained snow and ground were observed underneath the former power plant building and west of the building near a piping elbow during SLR's site visit in March 2010. For this CSM, surface soil is considered an impacted medium.

No known surface soil samples have been collected from the Site.

1.1.2 Subsurface Soil

Subsurface soil is defined as the interval from 2 feet to 15 feet bgs (DEC, 2005); soil below 15 feet bgs is not considered in this CSM because it is below the depth interval considered for direct contact by human receptors. Previous activities at the Site would likely have resulted in impacts in the immediate vicinity of the power plant, AST, drums, and equipment, and thus surface soil rather than subsurface soil would have been the receiving medium. Thus, for this CSM, subsurface soil is not considered an impacted medium.

No known subsurface soil samples have been collected from the Site.

1.1.3 Ground Water

The community relies upon a washeteria for its water; treated water is hauled from the washeteria by village residents. A piped water and gravity sewer system is under construction with household plumbing. The washeteria derives its water from wells; two new wells were drilled in 2003 to supply water to residents (DCCED, 2010). Interviews with individuals familiar with Tuluksak indicated that only about half of the residents can afford water from the water plant and the other half haul water from the Kuskokwim River.

Two wells were drilled in the vicinity of the Water Treatment Plant in Tuluksak in 2003; Tuluksak Well No. 1 and Tuluksak Well No. 2. These wells were drilled to total depths of 211.83 feet bgs and 179 feet bgs, respectively. Screens were installed from 174.25 feet to 211.83 feet bgs in Well No. 1, and from 152 feet to 177 feet bgs in Well No. 2. Based on the drilling logs, the lithology in this area consists of tundra or topsoil to approximately 3 feet bgs underlain by frozen silt to at least 47 feet bgs. Below 50 feet bgs, silty sand and clay layers are present. Wet fine sand was observed in Well No. 1 at 76 feet bgs and at 54 feet bgs in Well No. 2. Water-bearing sands and gravels were first encountered at 178 feet bgs in Well No. 1 and 172 feet bgs in Well No. 2. The static water levels in Wells No. 1 and 2 were measured at 13.83 feet and 8.5 feet bgs, respectively.

Two other wells have been previously drilled in Tuluksak. These wells, drilled in 1964, were installed to depths of 47 feet bgs and 56 feet bgs, respectively. Both of these wells indicated permafrost overlying coarse water-bearing sand ranging from 37 to 42 feet bgs. The locations of all four wells and associated boring logs are presented on Figure 2 and in Appendix D, respectively, of the Property Assessment and Cleanup Plan to which this document in attached. The nearest well is over 2,000 feet from the Site.

The drinking water in Tuluksak is sampled regularly in accordance with the requirements of DEC's Division of Environmental Health's Drinking Water Program. The Drinking Water Program maintains records of drinking water sample analysis results. Volatile organic compound (VOC) sampling has been conducted regularly for the City of Tuluksak. A review of the most recent water quality violations did not indicate VOC contamination in the water supply (DEC, 2010).

Previous activities at the Site would likely have resulted in impact to the immediate vicinity of the power plant, AST, drums, and equipment; thus, soil, rather than ground water, would have been the receiving medium. For the purposes of this CSM, ground water is therefore not considered an impacted medium, but is considered an exposure medium; exposure media are discussed in Section 1.2.

No known ground water samples have been collected from the Site.

1.1.4 Surface Water

Previous activities at the Site would likely have resulted in impact to the immediate vicinity of the power plant, AST, drums, and equipment; thus, soil, rather than surface water, would have been the receiving medium. For this CSM, surface water is not considered an impacted medium. Surface water is, however, considered an exposure medium based on the potential for overland

or subsurface migration of contaminants to surface water; exposure media are discussed in Section 1.2.

The nearest surface water body to the Site (approximately 128 feet north of the Site) is the Tuluksak River. The Tuluksak River is a tributary to the Kuskokwim River. The Kuskokwim River is subject to flooding, with the worst floods remembered by residents being in the 1970s (USACE, 2010, increasing the risk of overland migration of contaminants from the Site.

No known surface water samples have been collected from the Site.

1.1.5 Sediment

A release at the Site would not directly affect sediments associated with nearby surface water for the same reasons as discussed above. Therefore, for this CSM, sediment is not considered an impacted medium.

No known sediment samples have been collected from the Site.

1.2 Transport Mechanisms and Exposure Media

Transport mechanisms are the pathways through which contaminants may move from impacted media to other exposure media. Exposure media are the media to which contaminants are released or transported that may result in exposure by human receptors to the contaminants. Six transport mechanisms were identified at the Site, all from soil, including:

- Direct release to surface soil,
- Migration or leaching to subsurface soil,
- Migration or leaching to ground water,
- Volatilization,
- Runoff or erosion, and
- Uptake by plants and animals.

Based on the impacted media and transport mechanisms, five exposure media (soil, ground water, air, surface water, and biota) are present.

Possible transport mechanisms and exposure media are depicted on the DEC Draft Human Health CSM Diagram included at the end of this CSM.

1.3 Exposure Pathways

Each potential exposure pathway was evaluated using the DEC Draft Human Health CSM Scoping Form. Based on this evaluation, ten potentially complete exposure pathways were identified. These pathways include:

- Incidental soil ingestion,

- Dermal absorption of contaminants from soil,
- Ingestion of ground water,
- Dermal absorption of contaminants in ground water,
- Inhalation of volatile compounds in household water (ground water),
- Inhalation of outdoor air,
- Ingestion of surface water,
- Dermal absorption of contaminants in surface water,
- Inhalation of volatile compounds in household water (surface water), and
- Ingestion of wild foods.

A description of potentially complete and incomplete exposure pathways is provided in the following sections.

1.3.1 Potentially Complete Exposure Pathways

The direct contact exposure pathway via incidental soil ingestion is considered potentially complete because soil contamination exists between 0 foot and 15 feet bgs and the Site is expected to be used by human receptors.

The dermal absorption of contaminants from soil exposure pathway is considered potentially complete because polynuclear aromatic hydrocarbons (PAHs), which can permeate the skin, may be present at the Site between 0 foot and 15 feet bgs based on historical use information. Collection of soil samples for PAH analysis would allow for a definitive determination of whether this pathway is complete and/or significant.

The ingestion of ground water pathway is considered potentially complete because ground water has not be ruled out as a future drinking water source by DEC in accordance with 18 AAC 75.350. However, the potential for exposure via this pathway is considered to be low because there is already an established drinking water system within the community, making the use of ground water at the site unlikely. The community drinking water system relies on ground water wells, which are located more than 2,000 feet from the Site; a review of the most recent water quality violations did not indicate VOC contamination in the water supply (DEC, 2010). In addition, permafrost is present in Tuluksak at approximately 3 feet bgs; permafrost acts as a confining layer limiting the migration of contaminants from the Site to aquifers below the permafrost that may be utilized as a drinking water source.

The dermal exposure to contaminants in ground water pathway and the inhalation of volatile compounds in household water pathway are considered potentially complete because although DEC water quality standards may be applied as cleanup levels at the Site, ground water is still considered an exposure medium and could be used by residents in the vicinity of the Site for household purposes in the future. VOCs have not been detected in ground water from the community well and with no other known wells in the area, these pathways are not considered as

current exposure pathways. They are therefore included on the CSM Diagram only as future exposure pathways.

The inhalation of outdoor air exposure pathway is considered potentially complete because of the potential presence of volatile contaminants in soil between 0 foot and 15 feet bgs and the use of the Site by human receptors.

The ingestion of surface water pathway is considered potentially complete because nearby surface water, the Tuluksak and Kuskokwim Rivers, are used for subsistence fishing and drinking water for some members of the community.

The dermal exposure to contaminants in surface water pathway and the inhalation of volatile compounds in household water pathway are considered potentially complete because although DEC water quality standards may be applied as cleanup levels at the Site, surface water is still considered an exposure medium and may be used by some residents of the community for household purposes.

The ingestion of wild foods exposure pathway is considered potentially complete because of potential contamination present in the top 6 feet of soil, where it is available for uptake, and the proximity of the Site to potential subsistence hunting and gathering areas. In addition, based on historical usage, PAHs, which have the potential to bioaccumulate, may be present at the Site. Collection of soil samples for PAH analysis would allow for a definitive determination of whether this pathway is complete and/or significant.

1.3.2 Incomplete Exposure Pathways

The remaining exposure pathways were determined to be incomplete based on site data, features, or other pertinent information in accordance with the DEC Draft Human Health CSM Scoping Form. These incomplete pathways are discussed briefly here.

The inhalation of indoor air pathway is not considered complete because buildings in Tuluksak are located on pilings, which eliminates any preferential or direct pathways for soil contaminant vapors to migrate into indoor air. Any soil contaminant vapors would be released into outdoor air, making the inhalation of indoor pathway incomplete. In addition, the only building within 100 feet of potential sources of contamination is the old power plant building, which is located on pilings and not occupied.

The inhalation of fugitive dust exposure pathway is not considered complete because DEC soil ingestion cleanup levels, which are being applied at the Site, are protective of this pathway for all analytes except chromium. Based on historical Site use information, chromium is not considered a potential contaminant of concern at the Site.

The direct contact with sediment pathway is not considered complete because DEC soil ingestion cleanup levels are assumed to also be protective of this pathway. In addition, sediment is not considered an exposure medium.

1.4 Current and Future Receptors

The main portion of the Site has not been used since the new power plant went online in approximately 2000. The Site is at the edge of town and current use from visitors, trespassers, recreational users, or subsistence harvesters and consumers cannot be ruled out. The Site is also the proposed location for future residential properties. Any future work at the Site (environmental or construction) will require construction workers. Based on current development plans, the following human receptors are considered to be potentially exposed to site contaminants:

- Residents (future);
- Construction workers (future);
- Site visitors, trespassers, or recreational users (current and future); and,
- Subsistence harvesters and consumers (current and future).

1.5 References

Alaska Department of Commerce, Community, and Economic Development (DCCED), Division of Community and Regional Affairs (DCRA), 2010. www.commerce.state.ak.us/deca/commdb/CIS.cfm, June.

Alaska Department of Environmental Conservation (DEC), 2005. *Draft Guidance on Developing Conceptual Site Models*. Alaska Department of Environmental Conservation, Division of Spill Prevention and Response. November 30.

DEC, 2008. Title 18 of the Alaska Administrative Code (AAC), Chapter 75 (18 AAC 75) *Oil and Other Hazardous Substances Pollution Control* as amended through October 9.

DEC, Division of Environmental Health, Drinking Water Program, 2010. http://map.dec.state.ak.us:8080/dww/JSP/Violations.jsp?tinwsys_is_number=1244&tinwsys_st_code=AK, June.

U.S. Army Corps of Engineers (USACE), 2010. http://www.poa.usace.army.mil/en/cw/fld_haz/tuluksak.htm, June.

Human Health Conceptual Site Model
Scoping Form

Site Name: Old Power Plant,Tuluksak, Alaska

File Number: 2451.57.001

Completed by: SLR International Corp

Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, a CSM graphic and text must be submitted with the site characterization work plan.

General Instructions: Follow the italicized instructions in each section below.

1. *General Information:*

Sources *(check potential sources at the site)*

- ☐ USTs
- ☑ ASTs
- ☐ Dispensers/fuel loading racks
- ☑ Drums
- ☐ Vehicles
- ☐ Landfills
- ☑ Transformers
- ☑ Other: Power Plant

Release Mechanisms *(check potential release mechanisms at the site)*

- ☑ Spills
- ☑ Leaks
- ☑ Direct discharge
- ☐ Burning
- ☐ Other: _____

Impacted Media *(check potentially-impacted media at the site)*

- ☑ Surface soil (0-2 feet bgs*)
- ☐ Subsurface Soil (>2 feet bgs)
- ☐ Air
- ☐ Groundwater
- ☐ Surface water
- ☐ Other: _____

Receptors (*check receptors that could be affected by contamination at the site)*

- ☑ Residents (adult or child)
- ☐ Commercial or industrial worker
- ☑ Construction worker
- ☑ Subsistence harvester (i.e., gathers wild foods)
- ☑ Subsistence consumer (i.e., eats wild foods)
- ☑ Site visitor
- ☑ Trespasser
- ☑ Recreational user
- ☐ Farmer
- ☐ Other: _____

* bgs – below ground surface

2. *Exposure Pathways:* *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact –

1 Incidental Soil Ingestion

Is soil contaminated anywhere between 0 and 15 feet bgs? ☑

Do people use the site or is there a chance they will use the site in the future? ☑

If both boxes are checked, label this pathway complete: Complete

2 Dermal Absorption of Contaminants from Soil

Is soil contaminated anywhere between 0 and 15 feet bgs? ☑

Do people use the site or is there a chance they will use the site in the future? ☑

Can the soil contaminants permeate the skin? (Contaminants listed below, or within the groups listed below, should be evaluated for dermal absorption). ☑

Arsenic	Lindane
Cadmium	PAHs
Chlordane	Pentachlorophenol
2,4-dichlorophenoxyacetic acid	PCBs
Dioxins	SVOCs
DDT	

If all of the boxes are checked, label this pathway complete: Complete

b) Ingestion –

1 Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, OR are contaminants expected to migrate to groundwater in the future? ☑

Could the potentially affected groundwater be used as a current or future drinking water source? *Please note, only leave the box unchecked if ADEC has determined the groundwater is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350.* ☑

If both the boxes are checked, label this pathway complete: Complete

2 Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water OR are contaminants expected to migrate to surface water in the future? ☑

Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? *Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities).* ☑

If both boxes are checked, label this pathway complete: Complete

3 Ingestion of Wild Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild food? ☑

Do the site contaminants have the potential to bioaccumulate (*see* Appendix A)? ☑

Are site contaminants located where they would have the potential to be taken up into biota? (i.e. the top 6 feet of soil, in groundwater that **could be** connected to surface water, etc.) ☑

If all of the boxes are checked, label this pathway complete: Complete

c) Inhalation

1 Inhalation of Outdoor Air

Is soil contaminated anywhere between 0 and 15 feet bgs? ☑

Do people use the site or is there a chance they will use the site in the future? ☑

Are the contaminants in soil volatile (*See Appendix B*)? ☑

If all of the boxes are checked, label this pathway complete: Complete

2 Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be placed on the site in an area that could be affected by contaminant vapors? (i.e., within 100 feet, horizontally or vertically, of the contaminated soil or groundwater, <u>or</u> subject to "preferential pathways" that promote easy airflow, like utility conduits or rock fractures) ☐

Are volatile compounds present in soil or groundwater (*See Appendix C*)? ☑

If both boxes are checked, label this pathway complete: _____

3. Additional Exposure Pathways: *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

Dermal Exposure to Contaminants in Groundwater and Surface Water

Exposure from this pathway may need to be assessed only in cases where DEC water-quality or drinking-water standards are not being applied as cleanup levels. Examples of conditions that may warrant further investigation include:

- Climate permits recreational use of waters for swimming,
- Climate permits exposure to groundwater during activities, such as construction, without protective clothing, or
- Groundwater or surface water is used for household purposes.

Check the box if further evaluation of this pathway is needed: ☑

Comments:

Potentially complete; requires further evaluation.

Inhalation of Volatile Compounds in Household Water

Exposure from this pathway may need to be assessed only in cases where DEC water-quality or drinking-water standards are not being applied as cleanup levels. Examples of conditions that may warrant further investigation include:

- The contaminated water is used for household purposes such as showering, laundering, and dish washing, and
- The contaminants of concern are volatile (common volatile contaminants are listed in Appendix B)

Check the box if further evaluation of this pathway is needed: ☑

Comments:

Potentially complete; requires further evaluation.

Inhalation of Fugitive Dust

Generally DEC soil ingestion cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway, although this is not true in the case of chromium. Examples of conditions that may warrant further investigation include:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- Dust particles are less than 10 micrometers. This size can be inhaled and would be of concern for determining if this pathway is complete.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

No further evaluation is necessary because DEC soil ingestion cleanup levels are protective of this pathway and chromium is not considered a contaminant of potential concern at this Site.

Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during recreational or some types of subsistence activities. People then incidentally **ingest** sediment from normal hand-to-mouth activities. In addition, **dermal absorption of contaminants** may be of concern if people come in contact with sediment and the contaminants are able to permeate the skin (see dermal exposure to soil section). This type of exposure is rare but it should be investigated if:

- Climate permits recreational activities around sediment, and/or
- Community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

ADEC soil ingestion cleanup levels are protective of direct contact with sediment. If they are determined to be over-protective for sediment exposure at a particular site, other screening levels could be adopted or developed.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

No further evaluation of this pathway is necessary as DEC soil ingestion cleanup levels are protective of this pathway and sediment is not considered an exposure media for this Site.

4. Other Comments (*Provide other comments as necessary to support the information provided in this form.)*

APPENDIX A

BIOACCUMULATIVE COMPOUNDS

Table A-1: List of Compounds of Potential Concern for Bioaccumulation

Organic compounds are identified as bioaccumulative if they have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5. Inorganic compounds are identified as bioaccumulative if they are listed as such by EPA (2000). Those compounds in Table X of 18 AAC 75.345 that are bioaccumulative, based on the definition above, are listed below.

Aldrin	DDT	Lead
Arsenic	Dibenzo(a,h)anthracene	Mercury
Benzo(a)anthracene	Dieldrin	Methoxychlor
Benzo(a)pyrene	Dioxin	Nickel
Benzo(b)fluoranthene	Endrin	PCBs
Benzo(k)fluoranthene	Fluoranthene	
Cadmium	Heptachlor	Pyrene
Chlordane	Heptachlor epoxide	Selenium
Chrysene	Hexachlorobenzene	Silver
Copper	Hexachlorocyclopentadiene	Toxaphene
DDD	Indeno(1,2,3-c,d)pyrene	Zinc
DDE		

Because BCF values can relatively easily be measured or estimated, the BCF is frequently used to determine the potential for a chemical to bioaccumulate. A compound with a BCF greater than 1,000 is considered to bioaccumulate in tissue (EPA 2004b).

For inorganic compounds, the BCF approach has not been shown to be effective in estimating the compound's ability to bioaccumulate. Information available, either through scientific literature or site-specific data, regarding the bioaccumulative potential of an inorganic site contaminant should be used to determine if the pathway is complete.

The list was developed by including organic compounds that either have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5 and inorganic compounds that are listed by the United States Environmental Protection Agency (EPA) as being bioaccumulative (EPA 2000). The BCF can also be estimated from a chemical's physical and chemical properties. A chemical's octanol-water partitioning coefficient (K_{ow}) along with defined regression equations can be used to estimate the BCF. EPA's Persistent, Bioaccumulative, and Toxic (PBT) Profiler (EPA 2004) can be used to estimate the BCF using the K_{ow} and linear regressions presented by Meylan et al. (1996). The PBT Profiler is located at http://www.pbtprofiler.net/. For compounds not found in the PBT Profiler, DEC recommends using a log K_{ow} greater than 3.5 to determine if a compound is bioaccumulative.

APPENDIX B

VOLATILE COMPOUNDS

Table B-1: List of Volatile Compounds of Potential Concern
Common volatile contaminants of concern at contaminated sites. A chemical is defined as volatile if the Henry's Law constant is 1 x 10^{-5} atm-m^3/mol or greater and the molecular weight less than 200 g/mole (g/mole; EPA 2004a). Those compounds in Table X of 18 AAC 75.345 that are volatile, based on the definition above, are listed below.

Acenaphthene	1,4-dichlorobenzene	Pyrene
Acetone	1,1-dichloroethane	Styrene
Anthracene	1,2-dichloroethane	1,1,2,2-tetrachloroethane
Benzene	1,1-dichloroethylene	Tetrachloroethylene
Bis(2-chlorethyl)ether	Cis-1,2-dichloroethylene	Toluene
Bromodichloromethane	Trans-1,2-dichloroethylene	1,2,4-trichlorobenzene
Carbon disulfide	1,2-dichloropropane	1,1,1-trichloroethane
Carbon tetrachloride	1,3-dichloropropane	1,1,2-trichloroethane
Chlorobenzene	Ethylbenzene	Trichloroethylene
Chlorodibromomethane	Fluorene	Vinyl acetate
Chloroform	Methyl bromide	Vinyl chloride
2-chlorophenol	Methylene chloride	Xylenes
Cyanide	Naphthalene	GRO
1,2-dichlorobenzene	Nitrobenzene	DRO

APPENDIX C

COMPOUNDS OF CONCERN FOR VAPOR MIGRATION

Table C-1: List of Compounds of Potential Concern for the Vapor Migration

A chemical is considered sufficiently toxic if the vapor concentration of the pure component poses an incremental lifetime cancer risk greater than 10-6 or a non-cancer hazard index greater than 1. A chemical is considered sufficiently volatile if it's Henry's Law constant is 1 x 10^{-5} atm-m^3/mol or greater.

Acenaphthene	Dibenzofuran	Hexachlorobenzene
Acetaldehyde	1,2-Dibromo-3-chloropropane	Hexachlorocyclopentadiene
Acetone	1,2-Dibromoethane (EDB)	Hexachloroethane
Acetonitrile	1,3-Dichlorobenzene	Hexane
Acetophenone	1,2-Dichlorobenzene	Hydrogen cyanide
Acrolein	1,4-Dichlorobenzene	Isobutanol
Acrylonitrile	2-Nitropropane	Mercury (elemental)
Aldrin	N-Nitroso-di-n-butylamine	Methacrylonitrile
alpha-HCH (alpha-BHC)	n-Propylbenzene	Methoxychlor
Benzaldehyde	o-Nitrotoluene	Methyl acetate
Benzene	o-Xylene	Methyl acrylate
Benzo(b)fluoranthene	p-Xylene	Methyl bromide
Benzylchloride	Pyrene	Methyl chloride chloromethane)
beta-Chloronaphthalene	sec-Butylbenzene	Methylcyclohexane
Biphenyl	Styrene	Methylene bromide
Bis(2-chloroethyl)ether	tert-Butylbenzene	Methylene chloride
Bis(2-chloroisopropyl)ether	1,1,1,2-Tetrachloroethane	Methylethylketone (2-butanone)
Bis(chloromethyl)ether	1,1,2,2-Tetrachloroethane	Methylisobutylketone
Bromodichloromethane	Tetrachloroethylene	Methylmethacrylate
Bromoform	Dichlorodifluoromethane	2-Methylnaphthalene
1,3-Butadiene	1,1-Dichloroethane	MTBE
Carbon disulfide	1,2-Dichloroethane	m-Xylene
Carbon tetrachloride	1,1-Dichloroethylene	Naphthalene
Chlordane	1,2-Dichloropropane	n-Butylbenzene
2-Chloro-1,3-butadiene (chloroprene)	1,3-Dichloropropene	Nitrobenzene
Chlorobenzene	Dieldrin	Toluene
1-Chlorobutane	Endosulfan	trans-1,2-Dichloroethylene
Chlorodibromomethane	Epichlorohydrin	1,1,2-Trichloro-1,2,2-trifluoroethane
Chlorodifluoromethane	Ethyl ether	1,2,4-Trichlorobenzene
Chloroethane (ethyl chloride)	Ethylacetate	1,1,2-Trichloroethane
Chloroform	Ethylbenzene	1,1,1-Trichloroethane
2-Chlorophenol	Ethylene oxide	Trichloroethylene
2-Chloropropane	Ethylmethacrylate	Trichlorofluoromethane
Chrysene	Fluorene	1,2,3-Trichloropropane
cis-1,2-Dichloroethylene	Furan	1,2,4-Trimethylbenzene
Crotonaldehyde (2-butenal)	Gamma-HCH (Lindane)	1,3,5-Trimethylbenzene
Cumene	Heptachlor	Vinyl acetate
DDE	Hexachloro-1,3-butadiene	Vinyl chloride (chloroethene)

Source: EPA 2002.

HUMAN HEALTH CONCEPTUAL SITE MODEL

Site: Old Power Plant
Tuluksak, Alaska
DEC File Number: 2451.57.001

Completed By: SLR International Corp

Date Completed: June 2010

Follow the directions below. Do not consider engineering or land use controls when describing pathways.

(1)
Check the media that could be directly affected by the release.

(2)
For each medium identified in (1), follow the top arrow and check possible transport mechanisms. Briefly list other mechanisms or reference the report for details.

(3)
Check exposure media identified in (2).

(4)
Check exposure pathways that are complete or need further evaluation. The pathways identified must agree with Sections 2 and 3 of the CSM Scoping Form.

(5)
Identify the receptors potentially affected by each exposure pathway: Enter "C" for current receptors, "F" for future receptors, or "C/F" for both current and future receptors.

Media	Transport Mechanisms	Exposure Media	Exposure Pathways	Current & Future Receptors: Residents (adults or children)	Commercial or industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
☑ Surface Soil (0-2 ft bgs)	☑ Direct release to surface soil → *check soil*	☑ soil	☑ Incidental Soil Ingestion	F		C/F	F	C/F	C/F	
	☑ Migration or leaching to subsurface → *check soil*		☑ Dermal Absorption of Contaminants from Soil	F		C/F	F	C/F		
	☑ Migration or leaching to groundwater → *check groundwater*	☑ groundwater	☑ Ingestion of Groundwater	F						
	☑ Volatilization → *check air*		☑ Dermal Absorption of Contaminants in Groundwater	F						
	☑ Runoff or erosion → *check surface water*		☑ Inhalation of Volatile Compounds in Tap Water	F						
	☑ Uptake by plants or animals → *check biota*	☑ air	☑ Inhalation of Outdoor Air	F		C/F	F	C/F		
	☐ Other (*list*):		☐ Inhalation of Indoor Air							
☐ Subsurface Soil (2-15 ft bgs)	☐ Direct release to subsurface soil → *check soil*		☐ Inhalation of Fugitive Dust							
	☐ *Migration to groundwater* → *check groundwater*	☑ surface water	☑ Ingestion of Surface Water	F				C/F		
	☐ *Volatilization* → *check air*		☑ Dermal Absorption of Contaminants in Surface Water	F						
	☐ *Other (list):*		☑ Inhalation of Volatile Compounds in Tap Water	F						
☐ Ground-water	☐ Direct release to groundwater → *check groundwater*	☐ sediment	☐ Direct Contact with Sediment							
	☐ *Volatilization* → *check air*	☑ biota	☑ Ingestion of Wild Foods	F				C/F	C/F	
	☐ *Flow to surface water body* → *check surface water*									
	☐ *Flow to sediment* → *check sediment*									
	☐ *Uptake by plants or animals* → *check biota*									
	☐ *Other (list):*									
☐ Surface Water	☐ Direct release to surface water → *check surface water*									
	☐ *Volatilization* → *check air*									
	☐ *Sedimentation* → *check sediment*									
	☐ *Uptake by plants or animals* → *check biota*									
	☐ *Other (list):*									
☐ Sediment	☐ Direct release to sediment → *check sediment*									
	☐ *Resuspension, runoff, or erosion* → *check surface water*									
	☐ *Uptake by plants or animals* → *check biota*									
	☐ *Other (list):*									

Revised 3/21/06

APPENDIX I

DEC EXPOSURE TRACKING MODEL

Exposure Tracking Model - Evaluation Summary

Navigation Lock Initial

Site Information:

Site: Tuluksak Old Power Plant
Source: Tuluksak Old Power Plant
Evaluation Date: 1/6/2009 3:56:39 PM
Initial/Updated: Initial

Results Summary:

Human Health Exposure Category: High Potential Exposure
Controlling Pathway(s): Surface Soil, Subsurface Soil, Outdoor Inhalation, Groundwater Ingestion, Surface Water Ingestion, Wild Foods, Vapor Intrusion
Score: 4

Ecological Site Exposure Category: High Potential Exposure

Potentially-Contaminated Media: Surface Soil, Subsurface Soil, Groundwater, Surface Water
Other Site Concerns: None

Exposure Assessment:

Pathway	Exposure Categories Initial Ranking 1/6/2009 4:14:35 PM	Updated Ranking
Direct Contact with Surface Soil:	High Potential Exposure	
Direct Contact with Subsurface Soil:	High Potential Exposure	
Outdoor Air Inhalation:	High Potential Exposure	
Groundwater Ingestion:	High Potential Exposure	
Surface Water Ingestion:	High Potential Exposure	
Wild or Farmed Foods Ingestion:	High Potential Exposure	
Indoor Air Inhalation (Vapor Intrusion):	High Potential Exposure	
Other Human Health:	Pathway Incomplete	
Ecological:	High Potential Exposure	

Initial Ranking Comments

Direct Contact With Surface Soil: (comments - page)
No soil samples have been collected yet but local residents have stated that residences have no longer been built in the area due to the contamination at the former plant. Photos of the site indicate substantial contamination around the former building.

Direct Contact With Subsurface Soil: (comments - page)
Uncertain what the future plans are for construction in the area.

Outdoor Air Inhalation: (comments - page)
Need to conduct sampling to verify levels of contaminants.

Groundwater Ingestion: (comments - page)
Uncertain if groundwater is contaminated in the area and the depth to groundwater.

Surface Water Ingestion: (comments - page)
The site is located within 140 feet of the Tuluksak River. According to the local information, surface water sources are used as a source of drinking water in the village.

Wild or Farmed Foods Ingestion: (comments - page)
The predominant contaminant of concern is probably DRO, however sampling is required to determine if bioaccumulative compounds are present at the site.

Indoor Air Inhalation (Vapor Intrusion): (comments - page)
The former power plant building is located on-site but it is uncertain whether or not it is currently occupied. The next nearest building is located 200 feet from the site.

Aquatic and Terrestrial: (comments - page)
Need to confirm the extent of contamination.

Munitions, Radiation, and Other Concerns: (comments - page)
The Village is concerned regarding this site.

Updated Ranking Comments

APPENDIX J

LISTING OF POTENTIAL FUNDING SOURCES

Funding for Brownfield Redevelopment Projects

Alaska

Program Name	Grant/Loan	Who is Eligible	Site Eligibility	Eligible Costs	Typical Amount Per Site	Deadline	Contact
US Environmental Protection Agency (EPA):							
Assessment	Grant	States, local government, Intertribal Consortia (excluding Alaskan tribes), Alaska Native Regional Corporation, Alaska Native Village Corporation, and Metlakatla Indian Community.	Petroleum or Hazardous & Site-Specific or Community-wide	Site assessment, community planning & outreach	$200K for Petroleum; $200K for Hazardous; or $350K for single site with EPA waiver $1M for coalitions of 3 eligible entities	Fall 2010	Mary Goolie goolie.mary@epa.gov 907.271.3414 Susan Morales morales.susan@epa.gov 206.553.7299 http://yosemite.epa.gov/R10/cleanup.nsf/sites/bf
Cleanup	Grant	Same as above; Nonprofits. Eligible party must own site	Petroleum or Hazardous	Cleanup	$200K/site, up to 3 sites (requires 20% cost share)	Fall 2010	same as above
Revolving Loan Fund (RLF)	Grant	States, local government, Intertribal Consortia (excluding Alaskan tribes), Alaska Native Regional Corporation, Alaska Native Village Corporation, and Metlakatla Indian Community.	Petroleum or Hazardous	Cleanup	$1M/entity (requires 20% cost share) May subgrant 40% of award to nonprofits & municipalities with site ownership	Fall 2010	same as above
Targeted Brownfield Assessments (TBAs)	In-kind Technical Service	State and Local Governments, Tribes, and Nonprofits	Any brownfield	Site assessment	Site assessment services	Ongoing	Joanne LaBaw labaw.joanne@epa.gov 206.553.2594
US Department of Housing & Urban Development (HUD):							
Community Development Block Grant (CDBG)	Grant or loan	State, urban county, or entitlement city who decides use of funds & to whom funds will be made available	Anything that passes HUD's Environmental Review	Site assessment, cleanup, rehabilitation, site improvements, limited construction	Depends on needs/size of community (average project award ranges from $200K - $1M)	Ongoing	Colleen Bickford colleen.bickford@hud.gov 907.677-9800
Section 108	Loan	same as CDBG	same as CDBG	same as CDBG	Up to five times the annual allocation less any outstanding loan amounts	Ongoing	same as above
Sustainable Communities Regional Planning Grants	Grant	Multijurisdictional and multisector partnership consisting of a consortium of government entities and non-profit partners.	Multiple jurisdictions	Planning	$1M - $5M, depending on community size and number of coalition members	August 2010	Zuleika K. Morales-Romero 202-402-7683 Zuleika.K.Morales@hud.gov http://www.hud.gov/offices/adm/grants/nofa10/scrpgsec.pdf

Funding for Brownfield Redevelopment Projects

Alaska

Program Name	Grant/Loan	Who is Eligible	Site Eligibility	Eligible Costs	Typical Amount Per Site	Deadline	Contact
Sustainable Communities Challenge Grants	Grant	State and local governments, including U.S. territories, tribal governments, transit agencies, port authorities	Priority area	Planning	$3M	August 2010	Zuleika K. Morales-Romero 202-402-7683 Zuleika.K.Morales@hud.gov http://www.dot.gov/livability/source/FINAL%20Joint%20Planning%20NOFA%20061810.pdf
Brownfields Economic Development Initiative (BEDI)	Grant	same as CDBG	same as CDBG	same as CDBG	Up to $2M; may not exceed 1:1 ratio with Section 108 loan	July 2010	Same as above
Alaska Office of Native American Programs (ONAP)	Grant	Native Alaskan communities	same as CDBG	same as CDBG	Contact staff	Contact staff	Carma Reed carma.reed@hud.gov 907.677.9800 http://www.hud.gov/offices/pih/ih/codetalk/onap/akonap/
Indian Community Development Block Grant (ICDBG)	Grant	Any Indian tribe, band, group, or nation (including Alaska Indians, Aleut, and Eskimos) or Alaska Native village which has established a relationship to the Federal government as defined in the program regulations. In certain instances, tribal organizations may be eligible to apply.	same as CDBG	Housing - Rehabilitation, land acquisition, and under limited circumstances, new housing construction. Community Facilities - Infrastructure, e.g., roads, water and sewer facilities; and, single or multipurpose community buildings. Economic Development - Commercial, industrial, agricultural projects which may be recipient-owned and operated or which may be owned and/or operated by a third party.	Contact staff	Contact Staff	Deb Alston deb.alston@hud.gov 907.677.9863 http://www.nls.gov/offices/pih/ih/grants/icdbg.cfm
US Department of Commerce, Economic Development Administration (EDA):							
Public Works	Grant	States & political subdivisions of states; tribes, nonprofits, higher education institutions; BRAC impacted communities	Sites in areas with one or more of the following: high unemployment, low per capita income, or special needs; must be part of a Comprehensive Economic Development Strategy	Construction or rehab of public infrastructure & facilities that generate or retain private sector jobs & capital investment	No more than 50-80% of the total project cost (with exceptions); (average project award $1.4M)	Ongoing	Shirley Kelly skelly@eda.doc.gov 907-677.9800 http://www.eda.gov/InvestmentsGrants/Investments.xml

Funding for Brownfield Redevelopment Projects

Alaska

Program Name	Grant/Loan	Who is Eligible	Site Eligibility	Eligible Costs	Typical Amount Per Site	Deadline	Contact
Economic Adjustment	Grant	States & political subdivisions of states; tribes, nonprofits, higher education institutions; BRAC impacted communities	Sites in areas with one or more of the following: high unemployment, low per capita income, or special needs; must be part of a Comprehensive Economic Development Strategy	Strategy development, infrastructure construction, & revolving loan fund capitalization in communities & regions experiencing adverse economic changes	No more than 50-80% of the total project cost (with exceptions); (average project award $570K)	Ongoing	same as above
Local Technical Assistance	Grant	States & political subdivisions of states; tribes, nonprofits, higher education institutions	Sites in areas of economic distress	Technical assistance (project planning, economic analyses, feasibility studies, etc.)	No more than 50-80% of the total project cost (with exceptions)	Ongoing	same as above
Partnership Planning	Grant	States & political subdivisions of states; tribes, nonprofits, higher education institutions	Sites in areas of economic distress	Economic development planning assistance	No more than 50-80% of the total project cost (with exceptions)	Ongoing	same as above
US Department of Agriculture (USDA):							
Community Facilities	Grant or Loan	Political subdivisions of the State, NonProfits, and federally recognized Alaska Native Tribes	In a rural community	Costs for essential facilities, usually construction costs, for essential community services that are typically provided by local government or a community based organization for the benefit of the community	Contact staff	Ongoing	Regional contacts: Bethel - Gene Kane Gene.Kane@ak.usda.gov 907.543.3858 Dillingham - Spud Williams William.C.William@ak.usda.gov 907.842.3921 Fairbanks / Nome - James Polhman James.Polhlman@ak.usda.gov 907.479.6767.4 Kenai - Michelle Hoffman Michelle.Hoffman@ak.usda.gov 907.283.6640.4 Sitka - Keith Perkins Keith.Perkins@ak.usda.gov 907.747.3506 http://www.rurdev.usda.gov/ak/Community.htm

Funding for Brownfield Redevelopment Projects

Alaska

Program Name	Grant/Loan	Who is Eligible	Site Eligibility	Eligible Costs	Typical Amount Per Site	Deadline	Contact
Rural Development - Renewable Energy and Energy Efficiency; Housing; Community Facilities; Business; Cooperatives; Electric; Telecommunication; Utility; Water and Environment; Community Development	Grant, Loan or technical assistance	Varies - depends on program	Varies	Loans, loan guarantees, downpayment assistance, construction	Contact staff	Ongoing	Same as above http://www.usda.gov/rus/
Rural Housing	Grant or Loan	Varies - depends on program	Varies	Loans, loan guarantees, downpayment assistance, construction	Contact staff	Ongoing	Same as above http://www.rurdev.usda.gov/ak/Housing.htm
US Army Corps of Engineers (USACE):							
Planning Assistance to States	Cost share/match 50% / in-kind services	State, local government, Native Alaskan communities	Sites affected by coastal areas and waterways	Technical services provided by USACE	Maximum of $500,000 per year per state; $25K - $100K per project	Ongoing	Valerie Hansen valerie.a.hansen@usace.army.mil 907.753.2521 http://www.poa.usace.army.mil/en/cw/cap/brochures/Planning%20Asst.%20to%20States.pdf
Alaska Department of Environmental Conservation (DEC):							
DEC Brownfields Assessments (DBAs)	In-kind Service	Public and nonprofits	Any brownfield.	Site assessment	Contact staff	Winter 2011	Sonja Benson Sonja.Benson@alaska.gov 907.451.2156 http://www.dec.state.ak.us/spar/csp/brownfields.htm#assess
Alaska Energy Authority (AEA):							
Various alternative energy projects	Grant/Loan and technical assistance	States & political subdivisions of states; tribes, nonprofits, energy generators	Various requirements	Technical assistance, system upgrade, training	Contact staff	Different deadlines	Shauna Howell showell@aidea.org 907.771.3000 http://www.aidea.org/AEA/programs.html
Alaska Industrial Development and Export Authority (AIDEA):							
Revenue Bond Program	Loans	Business enterprises	Location of business enterprise	Financing for capital expenses	Contact staff	Ongoing	Chris Anderson canderson@aidea.org 907.771.3030 http://www.aidea.org/programscrb.html

Funding for Brownfield Redevelopment Projects

Alaska

Program Name	Grant/Loan	Who is Eligible	Site Eligibility	Eligible Costs	Typical Amount Per Site	Deadline	Contact
Alaska Department of Natural Resources:							
Alaska Trails Initiative	Grants	Nonprofit organizations and local, state, federal and tribal entities	Proposed trail	Planning, permitting, design, construction, reconstruction, equipment purchase, education and interpretation of trails and trail related facilities.	Average of $500,000	Applications usually due in March.	Bill Luck http://dnr.alaska.gov/shared/emailcontact.cfm?send=bill.luck 907.269.8699 http://www.dnr.alaska.gov/parks/grants/aktrailinit.htm
Recreational Trails Program - Recreational trails and Snowmobiles	Matching grants	For recreational trails - nonprofit organizations and public agencies. For snowmobile trails - all organizations, clubs, public agencies, or businesses	Proposed or existing trail	Reimbursable, matching funds to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses.	Subject to program requirements	Applications usually due in November.	Bill Luck http://dnr.alaska.gov/shared/emailcontact.cfm?send=bill.luck 907.269.8699 http://www.dnr.alaska.gov/parks/grants/aktrailinit.htm
Land and Water Conservation Fund Grant Program	Partial grants	State, regional or local governments with authority to provide outdoor recreation services	Public lands	Acquisition of outdoor recreation lands and/or development of outdoor recreation facilities	$100,000 - $500,000	Applications are due on April 30, 2010	Kristy Gray http://dnr.alaska.gov/shared/emailcontact.cfm?send=kristy.gray 907.269.8694 http://www.dnr.alaska.gov/parks/grants/lwcf.htm
National Coastal Wetlands Conservation Grant Program	Grants	Public agencies and land trusts	Coastal areas	Acquisition, restoration, management or enhancement of coastal wetlands	Contact staff, subject to availability of state matching funds	Contact Staff	Steve Neel http://dnr.alaska.gov/shared/emailcontact.cfm?send=steve.neel 907.269.8709 http://www.dnr.alaska.gov/parks/grants/ncwc.htm
Division of Forestry - Green Infrastructure Planning Grants	Grants	Local government	Publicly owned land	Green infrastructure planning	$20,000-$80,000	Applications are usually due in January	Patricia Joyner patricia.joyner@alaska.gov 907.269.8465 http://forestry.alaska.gov/community/grants.htm
Alaska Department of Commerce:							
Alaska CDBG	Grants	Municipalities	Publicly-owned sites	Community development, planning and Special Economic Development	Maximum of $850,000 per community	Applications are usually due in December	Jill Davis Jill.Davis@alaska.gov 907.451.2717 http://www.commerce.state.ak.us/dca/grt/blockgrants.htm

Funding for Brownfield Redevelopment Projects

Alaska

Program Name	Grant/Loan	Who is Eligible	Site Eligibility	Eligible Costs	Typical Amount Per Site	Deadline	Contact
Alaska Housing Finance Corporation (AHFC):							
Beneficiary and Special Needs Housing Grant Program (SNHG)	Grant	Nonprofit service providers and housing developers for construction of housing for the Alaskan special needs populations, primarily the beneficiaries of the Alaska Mental Health Trust	A housing site	Planning and construction activities for congregate, supportive and transitional housing types	Contact staff	Typically in January	Daniel Delfino ddelfino@ahfc.state.ak.us 907.330.8273 http://www.ahfc.state.ak.us/grants/beneficiary_snhg.cfm
Elder Housing Program (Denali Commission)	Grant	Housing Authorities, local governments, nonprofits	A housing site	Grants to plan, construct and rehabilitate housing in rural locations	Contact staff. Predevelopment funds only for 2011	Typically in January and February	Diana Faude dfaud@ahfc.state.ak.us 907.330.8277 http://www.ahfc.state.ak.us/grants/elder_housing.cfm
Matching Grants Program	Grant	Nonprofits providing supportive housing services	A housing site	Supportive Housing Program (SHP) activities	Contact staff	Contact Staff	Diana Faude dfaud@ahfc.state.ak.us 907.330.8277 http://www.ahfc.state.ak.us/grants/matching_grants.cfm
Elder Housing Program (Denali Commission)	Grant	Housing Authorities, local governments, nonprofits	A housing site	Plan, construct and rehabilitate housing in rural locations.	Contact Staff	Contact Staff	Diana Faude dfaud@ahfc.state.ak.us 907.330.8277 http://www.ahfc.state.ak.us/grants/elder_housing.cfm
Matching Grants Program	Grant	Nonprofits	A housing site	Funds to meet the federal and state match requirements for grants awarded to nonprofit organizations.	Contact Staff	Contact Staff	Diana Faude dfaud@ahfc.state.ak.us 907.330.8277 http://www.ahfc.state.ak.us/grants/matching_grants.cfm
Homeownership Development Program (HDP)	Grant	Participants in the USDA's 523 self-help homeownership program, Community Land Trusts and Habitat for Humanity organizations	A housing site	Real property acquisition and site improvements for new construction of permanent, single family housing.	Contact Staff	Contact Staff	Colette Slover cslover@ahfc.state.ak.us 907.330.8275 http://www.ahfc.state.ak.us/grants/hdp.cfm

Funding for Brownfield Redevelopment Projects

Alaska

Program Name	Grant/Loan	Who is Eligible	Site Eligibility	Eligible Costs	Typical Amount Per Site	Deadline	Contact
Teacher, Health Professional and Public Safety Housing Program (AHFC/Denali Commission)	Grant	School districts, local governments, housing authorities and nonprofit health organizations	A housing site	New construction, rehabilitation or acquisition of rental or lease/purchase housing to develop housing in rural Alaska for teachers, public safety officials and health professionals	Contact Staff	Contact Staff	James Wiedle jwiedle@ahfc.state.ak.us 907.330.8235 http://www.ahfc.state.ak.us/grants/teacher_health_safety_housing.cfm
Rasmuson Foundation:							
Pre-Development	Grants	Nonprofit organizations, municipal government and tribal communities	Contact staff	Contact staff	Contact staff	Ongoing	rasmusonfdn@rasmuson.org 907.297.2700 http://www.rasmuson.org/index.php?switch=viewpage&pageid=141 http://www.forakergroup.org/index.cfm?section=Shared-Services&page=Pre-Development
Program-related investments	Loans, equity investments, linked deposits or loan guarantees	Nonprofit organizations	Contact staff	Program-related investments for housing, economic development, historic preservation	Contact staff	Ongoing	Chris Perez cperez@rasmuson.org 907.334.0522 http://www.rasmuson.org/index.php?switch=viewpage&pageid=159
Capital projects - Tier 1	Grant	Nonprofit organizations	Contact staff	Capital projects i.e., community centers, playgrounds	Average $25,000	Ongoing	Aleesha Towns-Bain atowns-bain@rasmuson.org 907.297.2875 http://www.rasmuson.org/index.php?switch=viewpage&pageid=32
Strategic projects - Tier 2	Grant	Nonprofit organizations	Contact staff	Strategic projects and the expansion or start-up of innovative programs by established organizations.	Average $25,000	Ongoing	Same as above http://www.rasmuson.org/index.php?switch=viewpage&pageid=33
RurAL CAP:							
Self Help housing	Grant	Contact staff	Contact staff	Self Help housing	Contact staff	Contact Staff	Mitzi Barker 907.865.7370 http://www.ruralcap.com/index.php?option=com_content&view=article&id=174&Itemid=225

Funding for Brownfield Redevelopment Projects

Alaska

Program Name	Grant/Loan	Who is Eligible	Site Eligibility	Eligible Costs	Typical Amount Per Site	Deadline	Contact
Community planning	Grant	Contact staff	Contact staff	Community Planning Activities	Contact staff	Contact Staff	Mitzi Barker 907.865.7370 http://www.ruralcap.com/index.php?option=com_content&view=article&id=89&Itemid=87
Waste management	Grant	Contact staff	Contact staff	improving solid waste management, with an emphasis on protecting local water supplies from contamination	Contact staff	Contact Staff	Ellen Kazary 907.865.7358 http://www.rasmuson.org/index.php?switch=viewpage&pageid=32
Alaska Community Foundation:							
Pebble Fund and other grant programs	Grant	Nonprofit organizations, municipal government and tribal communities	Contact staff	Donor fund grant requirements including renewable resources/fish, energy, education and community and economic development	Contact staff	Contact Staff	Iris Matthews imatthews@alaskacf.org 907.274.6707 http://www.alaskacf.org/GrantOpportunities/TypesofGrants/tabid/177/Default.aspx
University of Alaska:							
Office of University Partnerships	Technical assistance / partnerships	Contact staff	Contact staff	Various - contact staff	Contact staff	Contact Staff	Andrew Parkerson-Gray fyosp@uaf.edu 907.474.6000
BP:							
Community Giving	Grant, technical assistance or in-kind services	Contact staff	Contact staff	Various - contact staff	Contact staff	Contact Staff	ancextaff@BP.com 907.564.5640 http://www.bp.com/sectiongenericarticle.do?categoryId=9030185&contentId=7055672
Conoco:							
Community Giving	Grant, technical assistance or in-kind services	Contact staff	Contact staff	Various - contact staff	Contact staff	Apply between June 1 - August 1	http://www.conocophillips.com/EN/susdev/communities/pages/contributions.aspx

APPENDIX K

COST ESTIMATE SPREADSHEETS

Cost Estimate for Old Power Plant FY 2011 Work - June 2010

1. Direct Labor	Clerical	Drafting	Environmental Scientist	Project Manager	Project Director	Total Hours	Total Cost	Comments / Backup
	$55.00	$90.00	$90.00	$100.00	$130.00	Hours	Cost	
Task 1 - Remedial Work Plan Preparation	6	16	32	8	4	66	$5,970.00	Work plan preparation
Task 2 - Debris Removal, Tank Decommissioning, Soil and Ground Water Investigation		8	124	16	4	152	$14,000.00	Assumes 16 hours for consultant to mobilize for field work and coordinate with certified tank removal subcontractor for decommissioning of 1 AST and day tank, and removal of tanks. Consultant will perform field screening to estimate contamination limits during tank decommissioning, building demolition, and waste removal. Assumes two days (12-hour days) for consultant and laborer's to be on site during tank decommissioning (the tank decommissioning subcontractor will be on site approximately three days) and tank removal, two 12-hour days for building demolition and staging, and aggregation of wastes, and two days for disposal (using excavator and dump truck) of non-hazardous debris on-site, two days for test pitting and sampling. This task includes 12 hours for round trip travel from Anchorage to Tuluksak.
Task 3A - Construction Landfarm area			24	8	2	34	$3,220.00	Will require one day on site for cell construction (12-hour day). This time is needed to prep the roughly 52'x52' square area for the landfarm. This task includes 12 hours for round trip travel from Anchorage to Tuluksak. It is assumed all scope items for Task 3A-3D will be performed in a single site visit.
Task 3B - Excavation of Contaminated Soils, Spreading Landfarm Soils			12	4	2	18	$1,740.00	Assumes a 10-yard capacity dump truck. Total 12-hour operating day of hauling and excavation. Excavation floor sampling/mapping will take place during excavation. Dump trucks will dump soils in an area next to the landfarm area and the loader will require one day to spread after initial spreading by trucks is complete.
Task 3C - Backfilling Excavations (100 cubic yards)			12	4	2	18	$1,740.00	Assume one day required to load and haul material to excavation site and compact site in 1-foot lifts. Assumes consultant not on site when backfill material mined from borrow source.
Task 3D - Tilling and Fertilizing landfarm			54	4	8	66	$6,300.00	Set up equipment and start tilling and fertilizing process, to be performed by local labor. This task also assumes time to purchase and ship the rototiller, fertilizer spreader, and fertilizer to Tuluksak. Project report for excavation and backfill, and landfarm construction.
Task 4 - Landfarm Maintenance 2011		4	32	4	2	42	$3,900.00	Assume one trip for sample collection (one 12 hour day and 12-hours travel time) and 8 hours for environmental scientist to prepare letter interim report. Assumes village labor to do two rounds of tilling and fertilizing.
Task 5 - Landfarm Maintenance 2012		4	32	4	2	42	$3,900.00	Assume one trip for sample collection (one 12 hour day and 12-hours travel time) and 8 hours for environmental scientist to prepare letter interim report. Assumes village labor to do two rounds of tilling and fertilizing.
Task 6 - Decommission landfarm 2013		4	36	8	4	52	$4,920.00	Will require up to one 12 hour day for cell confirmation sampling, one 12-hour day for creating landfill cover stockpile and 12 hours of travel.
Task 7 - Reporting	8	8	40	12	8	76	$7,000.00	Final report of landfarm sampling and decommissioning.
Total Hours	14	44	398	72	38	566		
Labor Cost	$770	$3,960	$35,820	$7,200	$4,940	**Labor Cost Total**	**$52,690**	

Task 1 - Remedial Work Plan Preparation	No. of Units	Unit	Cost Per Unit	Subtotal	Comments
Reproduction	1	estimate	$250	$250	

Subtotal Task 1 (ODC)	**$250**
Subtotal Task 1 (Labor)	**$5,970**
Task 1 - Total Costs	**$6,220**

Cost Estimate for Old Power Plant FY 2011 Work - June 2010

Task 2 - Debris Removal, Tank Decommissioning, Soil and Ground Water Investigation	No. of Units	Unit	Cost Per Unit	Subtotal	Comments
Consultant RT Airfare, Anchorage to Tuluksak	1	each	$784	$784	Alaska Airlines from Anchorage to Bethel, Hageland from Bethel to Tuluksak
ATV Rental	8	12-hr days	$75	$600	Estimated rate
ATV Fuel	32	gallons	$5	$160	Assumes 4 gallons per day of ATV use
Dump Truck	4	12-hr days	$800	$3,200	Estimated rate; There is no dump truck in Tuluksak; Assume the truck will be available from a contractor or VSW for this rate.
Hitachi Excavator	8	12-hr days	$800	$6,400	Based on prorated VSW weekly unlimited use equipment rate of approximately $4,000 in 2010.
Equipment Fuel	432	gallons	$5	$2,160	Assumes 3 gallons per hour of equipment use
Equipment Operator #1	96	Hour	$52	$5,005	Assume 2 days for tank decommissioning and disposal, 4 days for building demolition and disposal of non-hazardous debris, and 2 days for assisting with investigation. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Equipment Operator #2	48	Hour	$52	$2,503	Assume two days for tank decommissioning and disposal, and 2 days for building demolition and disposal of non-hazardous debris. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Laborer #1	72	Hour	$43	$3,128	Assume two days for tank decommissioning and disposal, and 4 days for building demolition and disposal of non-hazardous debris. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Laborer #2	72	Hour	$43	$3,128	Assume two days for tank decommissioning and disposal, and 4 days for building demolition and disposal of non-hazardous debris. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Debris disposal	16	truckload	$500	$8,000	Assumes all items with beneficial use will be reused and NOT disposed of. Assumes 5 truckloads for the ASTs, 10 truckloads for building debris, and 1 truckload for miscellaneous equipment and debris. It is assumed that waste oil will be used in a waste oil burner in Tuluksak. Estimated rate.
Bucket Sample Analysis - Method 1311 TCLP for SW-846 Method 8260 for Volatiles	10	samples	$265	$2,650	One sample per 10 buckets with one duplicate sample.
Bucket Sample Analysis - Method 1311 TCLP for SW-846 Method 8270 for Semi volatiles	10	sample	$305	$3,050	One sample per 10 buckets with one duplicate sample.
Bucket Sample Analysis - Method 1311 TCLP for SW-846 Method 6020 for Metals	10	sample	$245	$2,450	One sample per 10 buckets with one duplicate sample.
Soil Sample Analysis - BTEX EPA 8021B	22	samples	$85	$1,870	Delineate Contamination
Soil Sample Analysis - DRO/RRO AK101/AK102	22	samples	$85	$1,870	Delineate Contamination
Soil Sample Analysis - PAH SIM SW 8270	5	sample	$185	$925	Confirm of deny presence of contaminant onsite during targeted investigation.
Soil Sample Analysis - PCBs	5	samples	$85	$425	Confirm of deny presence of contaminant onsite during targeted investigation.
Soil Sample Analysis - RCRA Metals	5	samples	$155	$775	Confirm of deny presence of contaminant onsite during targeted investigation.
Soil Sample Analysis - Chlorinated Solvents	5	samples	$185	$925	Confirm of deny presence of contaminant onsite during targeted investigation.
Soil Sample Travel Blank - BTEX EPA 8021B	1	samples	$43	$43	Travel blank
Water Sample Analysis - BTEX EPA 8021B	6	samples	$85	$510	One sample per well plus one duplicate sample plus two surface water samples
Water Sample Analysis - PAH EPA 8270SIM	2	samples	$185	$370	One surface water sample plus duplicate
Water Sample Analysis - DRO/RRO AK101/AK102	4	samples	$85	$340	One sample per well plus one duplicate sample
Water Sample Trip Blank - BTEX EPA 8021B	1	samples	$43	$43	Travel blank
Field Tools	1	lump sum	$1,500	$1,500	Includes shipping to Tuluksak
Transportation of Consultant Equip/Materials to Tuluksak	1	estimate	$2,000	$2,000	
Lodging	8	man-day	$100	$800	
Meals	8	man-day	$65	$520	Estimated daily cost for food and meals.
PID Rental	8	days	$50	$400	
Tank Decommissioning Contractor	1	each	$25,000	$25,000	Includes prorated general estimate from Rockwell Engineering for decommissioning of 2 ASTS.
Digital Camera	8	days	$15	$120	
PPE	32	days	$20	$640	

Subtotal Task 2 (ODC)	**$82,293**
Subtotal Task 2 (Labor)	**$14,000**
Task 2 - Total Costs	**$96,293**

Cost Estimate for Old Power Plant FY 2011 Work - June 2010

Task 3A - Construction Landfarm area	No. of Units	Unit	Cost Per Unit	Subtotal	Comments
Consultant RT Airfare, Anchorage to Tuluksak	1	each	$784	$784	Alaska Airlines from Anchorage to Bethel, Hageland from Bethel to Tuluksak
ATV Rental	1	12-hr days	$75	$75	Estimated rate
ATV Fuel	4	gallons	$5	$20	Assumes 4 gallons per day of ATV use
Dump Truck	1	12-hr days	$800	$800	Estimated rate; There is no dump truck in Tuluksak; Assume the truck will be available from a contractor or VSW for this rate.
Hitachi Excavator	1	12 -hr days	$800	$800	Based on prorated VSW weekly unlimited use equipment rate of approximately $4,000 in 2010.
Loader	1	12-hr days	$800	$800	Estimated rate
Equipment Fuel	108	gallons	$5	$540	Assumes 3 gallons per hour of equipment use
Operator #1	12	Hour	$52	$626	Assume one day for preparation of landfarm area. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Operator #2	12	Hour	$52	$626	Assume one day for preparation of landfarm area. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Laborer #1	12	Hour	$43	$521	Assume one day for preparation of landfarm area. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Laborer #2	12	Hour	$43	$521	Assume one day for preparation of landfarm area. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Felt Liner	3364	sq ft	$0.10	$336	Assumes 52'x52' landfarm area with 4' on each side for the berm.
Lodging	1	man-day	$100	$100	
Meals	1	man-day	$65	$65	Estimated daily cost for food and meals.
Surveying equipment	1	weeks	$300	$300	Surveyor's Exchange: laser level that can be operated by one person.
Digital Camera	1	days	$15	$15	
PID Rental	1	days	$50	$50	
PPE / Consumables	5	days	$20	$100	Based upon costs of Level D PPE during the effort.

Subtotal Task 3A (ODC)	**$7,079**
Subtotal Task 3A (Labor)	**$3,220**
Task 3A - Total Costs	**$10,299**

Cost Estimate for Old Power Plant FY 2011 Work - June 2010

Task 3B - Excavation of Contaminated Soils, Spreading Landfarm Soils	No. of Units	Unit	Cost Per Unit	Subtotal	Comments
Dump Truck	1	12-hr days	$800	$800	Estimated rate; There is no dump truck in Tuluksak; Assume the truck will be available from a contractor or VSW for this rate.
Hitachi Excavator	1	12-hr days	$800	$800	Based on prorated VSW weekly unlimited use equipment rate of approximately $4,000 in 2010.
Loader	1	12-hr days	$400	$400	Estimated rate
Equipment Fuel	108	gallons	$5	$540	Assumes 3 gallons per hour of equipment use
ATV Rental	1	12-hr days	$75	$75	Estimated rate
ATV Fuel	5	gallons	$5	$25	Assumes 4 gallons per day of ATV use
Equipment Operator #1	12	Hour	$52	$626	Assume two days for excavation. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Equipment Operator #2	12	Hour	$52	$626	Assume two days for excavation. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Laborer #1	12	Hour	$43	$521	Assume two days for excavation. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Laborer #2	12	Hour	$43	$521	Assume two days for excavation. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Soil Sample Analysis (Floor Characterization) - BTEX EPA 8021B	5	samples	$85	$425	Needed to characterize excavation floor levels, assumes one excavation planned to be 675 square feet. This will require four samples (two for first 250 square feet and one additional for each 250 square foot interval). Total samples is 5 including 1 for QC. Thus, per 2010 Field Sampling Guidance, sample requirements will be 5 based on estimated excavation limits.
Soil Sample Analysis (Floor Characterization) - DRO/RRO AK101/AK102	5	sample	$85	$425	As above for excavation floor.
Soil Sample Analysis (Sidewall Characterization) - BTEX SW 8021B	6	samples	$85	$510	Sidewall characterization based on one sample per 20 linear feet with 10% QC duplicate frequency.
Soil Sample Analysis (Sidewall Characterization) - DRO/RRO AK101/AK102	6	sample	$85	$510	As above for excavation sidewall.
Soil Sample Analysis (Sidewall and Floor) - PAH SIM SW 8270	3	sample	$185	$555	PAH analysis on selected sidewall and floor samples exhibiting highest screening results.
Soil sample analysis (Sidewall and Floor) VOC 8260B	3	sample	$185	$555	VOC analysis on selected sidewall and floor samples exhibiting highest screening results or areas indicative of solvent or gasoline use.
Soil Sample Analysis (Sidewall Characterization) - BTEX Travel Blanks	1	trip blank	$43	$43	Trip blanks for GRO/BTEX analyses.
Soil sample analysis (Sidewall and Floor) VOC Travel Blanks	1	trip blank	$92	$92	Trip blanks for VOC analyses.
Soil Sample Analysis (Landfarm Characterization) - BTEX	4	samples	$85	$340	Four samples, includes one duplicate, for 100 cubic yards (ex situ volume) per Table 2A of 2010 Field Sampling Guidance.
Soil Sample Analysis (Landfarm Characterization) - DRO/RRO	4	sample	$95	$380	Four samples, includes one duplicate, for 100 cubic yards (ex situ volume) per Table 2A of 2010 Field Sampling Guidance.
Lodging	1	days	$100	$100	
Meals	1	days	$65	$65	
PPE	5	days	$20	$100	
Digital Camera	1	days	$10	$10	
PID Rental	1	days	$50	$50	

Subtotal Task 3B (ODC)	**$9,093**
Subtotal Task 3B (Labor)	**$1,740**
Task 3B - Total Costs	**$10,833**

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Task 3C - Backfilling Excavations (100 cubic yards)	No. of Units	Unit	Cost Per Unit	Subtotal	Comments
Hitachi Excavator	2	12-hr days	$800	$1,600	Estimated rate; There is no dump truck in Tuluksak; Assume the truck will be available from a contractor or VSW for this rate.
Dump Truck	2	12-hr days	$800	$1,600	Based on prorated VSW weekly unlimited use equipment rate of approximately $4,000 in 2010.
Loader	2	12-hr days	$400	$800	Estimated rate
Equipment Fuel	216	gallons	$5	$1,080	Assumes 3 gallons per hour of equipment use
ATV Rental	1	12-hr days	$75	$75	Estimated rate
ATV Fuel	4	gallons	$5	$20	Assumes 4 gallons per day of ATV use
Equipment Operator #1	24	Hour	$52	$1,251	Assume two days to mine backfill material and backfill and compact excavation areas. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Equipment Operator #2	24	Hour	$52	$1,251	Assume two days to mine backfill material and backfill and compact excavation areas. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Laborer #1	24	Hour	$43	$1,043	Assume two days to mine backfill material and backfill and compact excavation areas. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Laborer #2	12	Hour	$43	$521	Assume two days to backfill and compact excavation areas. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Purchase of small plate compactor and shipping with liner material	1	estimate	$2,250	$2,250	16" by 21" plate compactor is $1,995 at CMI in Fairbanks May 2009
Lodging	1	day	$100	$100	
Meals	1	day	$65	$65	
PPE	5	day	$20	$100	
Digital Camera	1	day	$10	$10	
Backfill Sand for Excavations	100	cubic yards	$1.50	$150	Estimate

Subtotal Task 3C (ODC)	**$11,917**
Subtotal Task 3C (Labor)	**$1,740**
Task 3C - Total Costs	**$13,657**

Task 3D - Tilling and Fertilizing landfarm	No. of Units	Unit	Cost Per Unit	Subtotal	Comments
Rototiller	1	estimate	$600	$600	
Laborer #1	24	hours	$43	$1,032	Assume one day to spread fertilizer and till soil using local labor. This will be performed twice annually.
Transportation of Equip/Materials to Tuluksak	1	estimate	$1,000	$1,000	Ship fertilizer and rototiller from Anchorage.
Fertilizer Spreader	1	estimate	$150	$150	Purchase of broadcast spreader.
Fertilizer	1	estimate	$200	$200	35 pounds of 8-32-16 fertilizer for approximate 10-12 pounds per 1,000 square feet. Two applications per summer season.
ATV Rental	4	vehicle-day	$75	$300	Vehicle rental for laborer to drive to and from landfill landfarm area.
ATV Fuel	16	gallons	$5	$80	Assumes 4 gallons per day of ATV use
Rototiller Fuel	15	gallons	$5	$75	
Meals	4	man-day	$65	$260	Based upon worker for four days in the field.
PPE	4	day	$20	$80	

Subtotal Task 3D (ODC)	**$3,777**
Subtotal Task 3D (Labor)	**$6,300**
Task 3D - Total Costs	**$10,077**

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Task 4 - Landfarm Maintenance 2011	No. of Units	Unit	Cost Per Unit	Subtotal	Comments
Consultant RT Airfare, Anchorage to Tuluksak	1	each	$784	$784	Alaska Airlines from Anchorage to Bethel, Hageland from Bethel to Tuluksak
Laborer #1	24	hours	$43	$1,032	Assume one day to spread fertilizer and till soil using local labor. This will be performed twice annually.
Transportation of Equip/Materials to Tuluksak	1	estimate	$200	$200	Ship fertilizer and rototiller from Anchorage
Fertilizer	1	estimate	$200	$200	35 pounds of 8-32-16 fertilizer for approximate 10-12 pounds per 1,000 square feet. Two applications per summer season.
ATV	2	vehicle-day	$75	$150	Vehicle rental for laborer to drive to and from landfill landfarm area.
ATV Fuel	8	gallons	$10	$80	Assumes 4 gallons per day of ATV use
Rototiller Fuel	15	gallons	$8	$120	Rototiller fuel
Lodging	1	man-day	$100	$100	
Soil Sample Analysis (Landfarm Characterization) - GRO/BTEX	4	samples	$85	$340	Four samples, includes one duplicate, for 100 cubic yards (ex situ volume) per Table 2A of 2010 Field Sampling Guidance.
Soil Sample Analysis (Landfarm Characterization) - DRO/RRO	4	sample	$95.00	$380	Four samples, includes one duplicate, for 100 cubic yards (ex situ volume) per Table 2A of 2010 Field Sampling Guidance.
Meals	3	man-day	$65	$195	Based upon worker for 5 days in the field.
PID	1	instr-day	$50	$50	
PPE	3	day	$20	$60	
Digital Camera	1	day	$15	$15	Based upon one Digital Camera.
Miscellaneous	1	estimate	$1,000	$1,000	

Subtotal Task 4 (ODC)	**$4,706**
Subtotal Task4 (Labor)	**$3,900**
Task 4 - Total Costs	**$8,606**

Task 5 - Landfarm Maintenance 2012	No. of Units	Unit	Cost Per Unit	Subtotal	Comments
Consultant RT Airfare, Anchorage to Tuluksak	1	each	$784	$784	Alaska Airlines from Anchorage to Bethel, Hageland from Bethel to Tuluksak
Laborer #1	24	hours	$43	$1,032	Assume one day to spread fertilizer and till soil using local labor. This will be performed twice annually.
Transportation of Equip/Materials to Tuluksak	1	estimate	$200	$200	Ship fertilizer and rototiller from Anchorage.
Fertilizer	1	estimate	$200	$200	35 pounds of 8-32-16 fertilizer for approximate 10-12 pounds per 1,000 square feet. Two applications per summer season.
ATV	2	vehicle-day	$75	$150	Vehicle rental for laborer to drive to and from landfill landfarm area.
ATV Fuel	8	gallons	$10	$80	Assumes 4 gallons per day of ATV use
Rototiller Fuel	15	gallons	$8	$120	Rototiller fuel
Lodging	1	man-day	$100	$100	
Soil Sample Analysis (Landfarm Characterization) - GRO/BTEX	4	samples	$85	$340	Four samples, includes one duplicate, for 100 cubic yards (ex situ volume) per Table 2A of 2010 Field Sampling Guidance.
Soil Sample Analysis (Landfarm Characterization) - DRO/RRO	4	sample	$95	$380	Four samples, includes one duplicate, for 100 cubic yards (ex situ volume) per Table 2A of 2010 Field Sampling Guidance.
Meals	3	man-day	$65	$195	Based upon worker for 5 days in the field.
PID	1	instr-day	$50	$50	
PPE	3	day	$20	$60	
Digital Camera	1	day	$15	$15	Based upon one Digital Camera.
Miscellaneous	1	estimate	$1,000	$1,000	

Subtotal Task 5 (ODC)	**$4,706**
Subtotal Task5 (Labor)	**$3,900**
Task 5 - Total Costs	**$8,606**

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Task 6 - Decommission landfarm 2013	No. of Units	Unit	Cost Per Unit	Subtotal	Comments
Consultant RT Airfare, Anchorage to Tuluksak	1	each	$784	$784	Alaska Airlines from Anchorage to Bethel, Hageland from Bethel to Tuluksak
Dump Truck	1	12-hr days	$800	$800	Estimated rate; There is no dump truck in Tuluksak; Assume the truck will be available from a contractor or VSW for this rate.
Loader	1	12-hr days	$800	$800	Based on prorated VSW weekly unlimited use equipment rate of approximately $4,000 in 2010.
Equipment Fuel	72	gallons	$10	$720	Assumes 3 gallons per hour of equipment use
ATV	1	12-hr days	$75	$75	Vehicle rental for laborer to drive to and from landfill landfarm area.
ATV Fuel	4	gallons	$10	$40	Assumes 4 gallons per day of ATV use
Operator #1	12	hour	$52	$626	Assume two days to decommission landfarm. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Operator #2	12	hour	$52	$626	Assume two days to decommission landfarm. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Laborer	12	hour	$43	$521	Assume two days to decommission landfarm. Davis Bacon wage rates for Group I Operator and Group I Laborer. Rate includes Fringe Costs.
Transportation of Equip/Materials to Tuluksak	1	estimate	$200	$200	
Lodging	1	man-day	$100	$100	
Meals	1	man-day	$65	$65	Based upon worker for two days in the field.
PID	1	instr-day	$50	$50	
Digital Camera	1	day	$15	$15	Based upon one Digital Camera.
Soil Sample Analysis (Landfarm Characterization) - GRO/BTEX	4	samples	$85	$340	Four samples, includes one duplicate, for 100 cubic yards (ex situ volume) per Table 2A of 2010 Field Sampling Guidance.
Soil Sample Analysis (Landfarm Characterization) - DRO/RRO	4	sample	$95	$380	Four samples, includes one duplicate, for 100 cubic yards (ex situ volume) per Table 2A of 2010 Field Sampling Guidance.
PPE	4	days	$20	$80	

Subtotal Task 6 (ODC)	**$6,222**
Subtotal Task 6 (Labor)	**$4,920**
Task 6 - Total Costs	**$11,142**

Task 7 - Reporting	No. of Units	Unit	Cost Per Unit	Subtotal	Comments
Phone/FAX	1	estimate	$50	$50	
Reproduction - B&W	1000	each	$0.10	$100	
Reproduction - Color	100	each	$1	$100	

Subtotal Task 7 (ODC)	**$250**
Subtotal Task 7 (Labor)	**$7,000**
Task 7 - Total Costs	**$7,250**

Total, Labor	**$52,690**
Total, Other Direct Costs	**$130,292**
TOTAL PROJECT COST (Tuluksak Remediation)	***$182,983***