Phase I Environmental Site Assessment Report

Chevak AVEC Power Plant

Chevak, Alaska

Prepared for:

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APPENDICES

ABBREVIATIONS

AAI	All Appropriate Inquiry
ADEC	Alaska Department of Environmental Conservation
APCS	APC Services, LLC
AVEC	Alaska Village Electric Cooperative
AST	Aboveground Storage Tank
BIA	Bureau of Indian Affairs
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
EP	Environmental Professional
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
LLP	Landowner Liability Protection
NPL	National Priorities List
REC	Recognized Environmental Condition
UST	Underground Storage Tank
USGS	United States Geological Survey
WELTS	Well Log Tracking System
YRITWC	Yukon River Inter-Tribal Watershed Council

1. SUMMARY

A Phase I environmental site assessment (ESA) was undertaken by APC Services, LLC on the property known as the former site of the Alaska Village Electric Cooperative (AVEC) power plant that was decommissioned in 2009 when a new power plant was opened. This ESA was undertaken on behalf of the Yukon River Inter-Tribal Watershed Council following the practices outlined in the ASTM E1527-13; - "Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process". The ESA was conducted by Dr. Keith Torrance, a Senior Environmental Geologist employed by APCS who meets the definition of an Environmental Professional as defined in ASTM E1527 – 13.

The property is located in Chevak, AK and is occupied by buildings and structures constructed after 1968 and used until 2009. There are currently a 18 large aboveground storage tanks (ASTs), 3 conex trailers and 1 former generator housing trailer on the property. The property is currently abandoned and has not been used for anything since 2009.

The Phase I ESA was completed in August 2014 and was conducted to examine the site for any possible contamination or recognized environmental conditions. No recognized environmental conditions were identified on the property except for the following:

- 18 abandoned AST fuel tanks that have the potential to deteriorate and facilitate a release of any residual fuel.
- The site of the 2 former diesel tanks that were removed by AVEC that had the potential for leaks and spills when being filled or during the move.
- The potential of contamination at the site of the former generator building due to the presence of the generators and other equipment that required fuel and oil to run.

2. INTRODUCTION

A Phase I ESA was undertaken by APC Services, LLC (APCS) on the property known as the Alaska Village Electric Cooperative (AVEC) Power Plant (the property), located in Chevak, Alaska on behalf of the Yukon River Inter-Tribal Watershed Council (YRITWC) following the practices outlined in ASTM E1527-13; - "Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process". The ESA was conducted by Dr. Keith Torrance, a Senior Environmental Geologist employed by APCS who meets the definition of an Environmental Professional as defined in ASTM E1527 – 13.

2.1. Detailed Scope of Work

The overall objective in this project was to identify and evaluate any recognized environmental conditions (RECs) of the AVEC property following the standards outlined in ASTM E1527-13. This consisted of the following components:

- A review of relevant historical site records (background documents, photos and maps) provided by the YRITWC Brownfield Tribal Response Program and other sources.
- A site reconnaissance visit to the property.
- Interviews with relevant stakeholders and written summary of the interviews (may include but is not limited to landowners, community members, government officials). Participation in a community and/or Tribal Council meeting if held during the site visit or as follow-up to the final Phase I Environmental Site Assessment (ESA).
- Participation in planning and follow-up sessions with various stakeholders via teleconference.

- Evaluation of all information and the compilation of a Final Phase I Environmental Site Assessment Report including standardized records (land title, environmental and historical records) and recommendations for additional investigation.
- Limitations and Exceptions of Assessments

2.2. Continued Viability of Environmental Site Assessments

Pursuant to Section 4.6 of ASTM E1527-13, Phase I ESAs are considered viable for 180 days.

2.3. Reliance

This report was prepared for the sole use of the client and is not intended for use by third parties. Unauthorized third parties shall indemnify and hold APCS harmless against any liability for any loss arising out of, or related to, reliance by any third party on the work performed hereunder, or the contents of this report.

3. SITE DESCRIPTION

3.1. Location

The property is located within the city limits of Chevak, AK and covers an area of approximately 3,000 square feet. Chevak is located on the Ninglikfak River, approximately 17 miles east of Hooper Bay on the Bering Sea, 138 miles northwest of Bethel and 518 miles west of Anchorage (Figure 1 in Appendix A).

3.2. Coordinates and Legal Description

- Lot 11, Block 4, as shown on the official plat of U.S. Survey 5023
- Coordinates: 61.84099(N); -165.58216(W) (WGS84).
- Legal description: Township: 15; Range 90; and Section: Seward Meridian.

The property is leased to the Alaska Village Electric Cooperative, Inc. from the City of Chevak.

3.3. Site and Vicinity Characteristics

Chevak is situated between the Yukon and Kuskokwim River deltas and is primarily composed of flat, coastal lowlands. The property is located within the city limits of Chevak (Figure 2 in Appendix A). The property is approximately 3,000 square feet in area and is located on a relatively flat lot bordered by the old BIA school, an empty lot and the decommissioned Chevak Corporation Tank Farm.

The area soil and geology consists of alluvial deposited loams, silts and fine sands which are covered by a thick layer of peat. Continuous permafrost is found beneath the tundra except near large water bodies. Buildings in and around the village are often placed on pilings above ground to keep them from sinking into the ground during the warmer months.

3.4. Description of Structures, Tanks and Other Improvements on the Site

The property was formerly used as the AVEC power plant until 2009 when a new AVEC power plant was built on Trinity Street. The property is enclosed by a 6 foot high chain link fence with two gates, neither of which is secured. In several places, the fence is in a poor state of repair.

Structures on the property consist of a tank farm containing 18 vertical aboveground storage tanks (ASTs), 3 conex trailers and 1 building which housed the generators. Two 5,000 gallon horizontal ASTs were removed from the property between 2009 and 2013 for use at the new AVEC Power Plant. The containment berms and liners for these tanks were not removed from the property and are still visible. The tank farm ASTs contained fuel used to power the generators that provided electricity for the village (Photograph 1).

The conex trailers and generator building are raised several feet above the ground surface on piles to reduce sinking into the ground during the warm months. The 18 ASTs are situated inside of a berm surrounded by sand bags and are supported by wooden platforms to the west of the buildings. These structures are shown on Figure 3 in Appendix A marked as S1 for the former generator building, S2 for the conex trailers, S3 for the tank farm and S4 and S5 for the former diesel tanks sites. Photographs of the property, adjoining properties and buildings can be found in Appendix B. A detailed description of each structure follows:

3.4.1. Former Generator Building (S1)

The former generator building is in a dilapidated state (Photograph 2). The outside is rusty and patched. There are two doors but neither were secured. There is a ramp up to the door into the building closest to the conex trailers and the second door facing the abandoned BIA school complex to the north has a porch built onto it but the stairs leading from the porch to the ground have been removed. Once the plant was decommissioned, AVEC drained all oil and fluids from the 2 generators and removed them from the building, placing them outside of the fenced in area next to the road for disposal in the village landfill. They can still be found next to the road. Several additional pieces of equipment and pipes are still in the building but have been disconnected and are lying unused in the building (Photograph 3). In addition, large pieces of drywall have been removed, exposing the insulation, which appears to be moldy in places (Photograph 4). The floor is rotting and in fact, has rotted through completely in several places against the north wall. While the power plant was built between 1968 and1969, it is unknown if this building was the original generator housing or if it had been added at a later date. The site former generator building has been labeled as S1 on Figure 3 in Appendix A.

3.4.2. Conex Trailers (S2)

There are three conex trailers located just south of the former generator building (Photograph 5). They are abandoned but appear to be in fair condition. The outsides are rusty and have peeling paint but the insides seem to be in fair condition. All three were found to be empty. Their former usage were not determined during the reconnaissance visit, but were likely to have been used for storage. The conex trailer closest to the former generator building has been wired for electricity but does not appear to currently be connected to the electrical. The site of the conex trailers has been labeled as S2 on Figure 3 in Appendix A.

3.4.3. Tank Farm (S3)

There are 18 vertical ASTs on the property (Photograph 1). The tanks are approximately 13’ tall, have a capacity of between 7,000 and 10,000 gallons of fuel and are supported by wooden platforms within a berm that has been reinforced by sandbags. The ground surrounding the tanks was obscured by water and mud due to recent rainfall, however, sheen was seen in several of the puddles around the ASTs. The tanks appear to be in good condition. No holes or similar damage were observed during the inspection and the hose connections were secured with metal plugs. It appears that all of the wiring and pipe work connecting the tanks to the generator housing building has been removed. The tanks were filled via a hose that ran from a barge up Mukluk Street to the tanks. Mr. Stamm and Mr. Jones have said that all of the tanks were emptied. The site of the tank farm has been labeled as S3 on Figure 3 in Appendix A.

3.4.4. Former Diesel Tanks (S4, S5)

Between 2009 and 2013, 2 5,000-gallon diesel tanks were removed by AVEC for use at the new power plant. The liners that had been under the tanks are still at the property (Photograph 6). A visual survey of the area around the liners show much of the grass has died but new grass is slowly starting to grow back. No signs of any soil stains were seen around the liners either. A piece of pvc pipe was found sticking up several feet out of the ground to a few feet to the south of the site located west of the tank farm. Mr.

Stamm of AVEC thought that it might be a monitoring well but was unsure. The sites of the removed diesel tanks have been labeled as S4 and S5 on Figure 3 in Appendix A.

3.5. Current Use of Adjoining Properties

The adjoining properties are a mixture of residential and commercial properties. The property just northwest is the abandoned BIA school complex. The property to the north is a small, unused privately owned lot and the property to the east is the Chevak Corporation building, former tank farm and former gas station. These structures are marked on Figure 3 in Appendix A as A1 for the BIA School Complex, A2 for the private lot, A3 for the Chevak Corporation Building, A4 for the former tank farm and A5 for the former gas station. Photographs of the adjoining properties and buildings can be found in Appendix B. A description of the current use of these properties is as follows:

3.5.1. BIA School Complex (A1)

The BIA school complex was constructed in the 1970's and included a school building, residential housing, a small tank farm and generator building (Photograph 7). This complex was abandoned in 2004 once the new school building was finished. The only building currently in use is the residential housing, which has been converted into the Public Safety Office. The BIA school complex has been labeled as A1 on Figure 3 in Appendix B.

3.5.2. Private Lot (A2)

To the north of the property and adjacent to the old BIA school complex, a privately owned lot is owned by an unknown person (Photograph 8). According to Mr. Jones, there was a small house there in the 60's but was eventually torn down at an unknown date when the family relocated to another part of the town in the 70's. The lot is currently unused and is fenced in. The private lot has been labeled as A2 on Figure 3 in Appendix B.

3.5.3. Chevak Corporation Bldg. (A3), Former Tank Farm (A4) and Former Gas Station (A5)

The Chevak Corporation building and former tank farm and gas station is located to the east of the property, just across Mukluk Road (Photograph 9). The building is still used by the Chevak Corporation as an office but the tank farm and gas station have been shut down. The tanks have been emptied and abandoned and the gas station is now located near the new AVEC power plant. The property is currently not being used for any commercial or industrial purposes. The Chevak Corporation building, former tank farm and former gas station have been labeled as A3, A4 and A5 respectively on Figure 3 in Appendix A.

4. USER PROVIDED INFORMATION

ASTM E1527-13 outlines the tasks to be completed by the "user" to fulfill the All Appropriate Inquiries (AAI) Final Rule (40 CFR Part 312) to satisfy Landowner Liability Protection (LLP) under CERCLA. Mr. Dan Goodman of YRITWC provided the following answers:

4.1. Environmental Liens and Activity/Use Limitations

There are no environmental liens or use limitations.

4.2. Specialized Knowledge or Experience

The user has no specialized knowledge.

4.3. Valuation Reduction for Environmental Issues

This Phase I assessment is being conducted for the grantee under the EPA's brownfield program and ownership of the property under investigation is not being transferred.

4.4. Commonly Known or Reasonably Ascertainable Information

Not applicable to the site.

4.5. Degree of Obviousness

Fuel has been stored on the property from approximately 1968 – 2009. No fuel or diesel releases were reported or recorded during this time.

5. RECORDS REVIEW

The purpose of the records review is to obtain and review any records or files that could identify the property's past use and any potential environmental conditions associated with the property.

5.1. Historical use information

The objective of consulting historical sources is to develop a history of the previous uses of the property and surrounding area, in order to help identify the likelihood of past uses having led to recognized environmental conditions in connection with the property.

5.1.1. Target Property

The power plant was constructed by AVEC in 1968-1969. Mr. Dennis Jones indicates that the lot was undeveloped before 1968.

5.1.2. Adjoining Properties

The 1979 and 1994 Chevak community maps (Figure 4 and Figure 5) indicate that the Chevak Corporation building was once a general store while the 2007 community map (Figure 6) has it marked as just a building. Ms. Cynthia Paniyak, Chevak Environmental Coordinator, indicated that the Chevak Corporation building ceased being the general store several years previously when a new grocery store had been built but couldn't recall the date.

Community maps from 1979 and 1994 (Figure 4 and Figure 5) indicate that there was a residential structure on the private lot next to the AVEC power plant but the 2007 map (Figure 6) shows the lot as being empty, implying that somewhere between 1994 and 2007, it was torn down. Photographs of the lot could not be located.

5.2. Historical Aerial Photographs

Alaska community profile maps compiled by the Alaska Department of Commerce and available at http://www.commerce.alaska.gov/dnn/dcra/PlanningLandManagement/CommunityProfileMaps.aspx contain embedded aerial photographs dated 1975, 1994 & 2007 (Figures 4, 5 and 6). These maps were examined to identify the presence of structures and buildings on the target property and to determine past property uses.

5.2.1. Chevak Community Map of 1979 with Black and White Aerial Photograph from 1975

The community map shows the site which has one building listed as the AVEC Power Plant with a "GEN" indicating a generator, and there are tanks shown and listed as Fuel storage for power plant. There are 22 tanks shown to the south/southeast of the AVEC power plant within the current property boundaries and 15 tanks shown to the west/southwest of the power plant. Most of the tanks on the west/southwest are not within the current property boundaries. However, the tanks appear to be closest to the power plant than any other building and possibly associated with the power plant. There is a fuel line drawn in from the Ninglikflak River that runs along Mukluk Street and is shown leading up one of the tanks on the site that is the furthest south and closest to the river. There are three transformers shown in the northern portion of the site. And there are also power lines shown from the power plant building and the

transformers out to other areas off site. There are tanks on other properties to the south east and southwest, listed as Fuel Storage and Fuel Storage for School, respectively. It appears the fuel storage to the southeast is associated with the Native Corporation Store. To the west is the BIA School Complex with a large school building and Teacher Housing. To the north is a residential area and to the east is the Native Corporation Store. Further to the southeast and adjacent to the river are two solid waste disposal sites. There are other buildings shown on the aerial photograph from 1975 that perhaps did not exist in 1979 when the community map was drawn over the photograph.

5.2.2. Chevak Community Map with Black and White Aerial Photograph, June 1994.

The site shows two buildings, the power plant building that was present in the 1975 photograph, and the location of the Generator Building is covered by the word GEN circled. There appear to be conexes in the current day conex location. There are 18 tanks shown in this map and aerial photograph and all of them are on the southern part of the property. None of the tanks west/southwest of the power plant building are visible. There remains a pipeline drawn in from the river to the site, but the pipeline is shown leading to a different tank since the tank it was shown going to in 1979 is no longer present. There appears to be a barge or landing craft moored at the location where the pipeline ends. Mukluk Street now has buildings and what appear to be boardwalks in its former route. The BIA School Complex is shown as much larger than in the 1979 community map and the tanks are still shown on site and there appears to be a berm around the tanks. The Native Corporation Story appears to be about the same size and there appear to be two conexes or more tanks that have been added to the tanks observed in 1979. There are still residences to the north of the site.

5.2.3. Chevak Community Map with a Color Aerial Photograph, July 2007.

Changes to the site are the additions of ASTs on the east and south portions of the property (based on our site reconnaissance and interviews) with berms around them. It appears that the generator building may have been expanded since the 1994 photograph. There remain the other 18 ASTs on site and the community map still shows a pipeline from the site to the river. Mukluk Street is shown on the map, however the route is shown running through a building. To the southeast, it appears that there are an additional two more tanks that have been added to the Native Corporation Store site. To the southwest of the site, remain the 16 tanks. There is a note on the community map between the 16 tanks and the BIA School complex building that states, “Ground Lease to AVEC 2004-000941-0 6/23/04”. The lot to the north that had a residence is vacant, but other properties to the north/northeast remain as residences.

5.3. Local Street Directories

No local street directories have been published for Chevak.

5.4. EDR Radius Maps

A data search package from EDR, Inc. was not ordered because of the remote location of Chevak and the limited information available.

5.5. Federal, State and Local Environmental Sources

5.5.1. ADEC Contaminated Site Database

The Alaska Department of Environmental Conservation (ADEC) contaminated site database was searched on 9/22/2014 and returned 2 records of contaminated sites in Chevak. These records are shown on Table 1.

Table 1. Entries from the ADEC contaminated sites database.

Site Name	Location	Status	File ID
AKARNG Federal	Unnamed Road , Chevak, AK	Cleanup complete	2409.38.002

Site Name	Location	Status	File ID
Scout Armory			
Chevak Company Corp – Tank Farm	Near Chevak School	Open	2409.38.001

5.5.2. ADEC UST Database

The ADEC underground storage tank (UST) database was searched on 8/19/2014 and returned no entries.

5.5.3. ADEC Spill Database

The ADEC spill database was searched on 8/19/2014 and returned multiple spill records as shown in Table 2.

Table 2. Local Entries in the ADEC Spills database

Date	Incident	Address	Qty. fuel spilled (gallons)
7/7/1995	**Chevak Gasoline Spill - kids**	**AVEC Tank Farm**	**2,000**
2/2/1996	Chevak Water Treatment Plant	no address	20
5/5/1997	**Chevak High School**	**no address**	**15**
5/12/1997	CHEVAK MONICA FRIDAY	no address	20
2/24/1998	CHEVAK PHS BUNKHOUSE	no address	300
5/20/1999	CHEVAK AIRPORT MOTOR OIL	no address	10
6/5/2000	Chevak Tank Farm	Peter Seaton's home (rented)	10
10/25/2000	CHEVAK FIRE STATION DRUM	no address	10
8/16/2001	CHEVAK Clinic building	Chevak main street, under building	50
9/26/2001	Chevak Fuel Transfer site	Peter Seaton's home (rented)	3
1/12/2002	Chevak new school diesel	no address	1,000
4/30/2002	Chevak QAP Bladder	no address	50
6/17/2002	Chevak Corporation AST	City of Chevak	5
6/24/2002	Chevak ANTHC	no address	2
1/7/2003	Chevak Osborne Construction Diesel	no address	1
2/10/2003	Chevak Osborne Construction Diesel	no address	1
3/8/2003	Osborne Chevak School Gasoline	no address	1
3/25/2003	Osborne Chevak School Glycol	no address	1
4/8/2003	Chevak ASHA Housing Diesel	Peter Seaton's home (rented)	55
6/19/2003	Chevak Church Diesel	no address	20
8/21/2005	Chevak Clinic	Chevak main street, under building	30
10/18/2005	Chevak City Tank Farm	City of Chevak	25
10/25/2005	AVCP housing Chevak	Peter Seaton's home (rented)	110
7/17/2006	Barge OB5 diesel spill to water Chevak	no address	1

Date	Incident	Address	Qty. fuel spilled (gallons)
8/22/2007	Chevak Store	no address	2
12/12/2007	Dion Imgalrea	no address	3.5

*Records in **bold** are on or close to the target property.

Several of the spills have occurred on the adjoining properties. Some of these spills represent a "*de minimis condition*"[1], which is not considered to be a REC under E1527-13.

5.5.4. YRITWC On-line Brownfield Sites Database

The YRITWC maintains an on-line brownfields information database naming contaminated properties within the Yukon River watershed. A search of the database found 9 contaminated sites located in Arctic Village, including the property.

5.5.5. EPA Hazardous Waste Sites Database

The US Environmental Protection Agency (EPA) maintains a database of hazardous waste sites known as the National Priorities List (NPL). This database was accessed on 8/28/2014 and indicated that there were no NPL sites within 1 mile of Chevak. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) database was accessed on 8/28/2014 and indicated no CERCLA sites within 5 miles of Chevak

5.5.6. Property Records

A title search was carried out on behalf of the client. This is included as Appendix E.

5.6. Physical Setting Sources

The following physical setting sources were consulted:

- USGS Topographical Map, Hooper Bay, B-2 published in 1953 (Figure 7).
- USGS Reconnaissance Geological Map of the Lower Yukon River Region, Alaska, published in 2006.
- Alaska Community Maps. Community maps published in 1997, 1994 and 2007 by the Alaska Department of Commerce were examined to determine past property uses. These maps incorporated underlying dated aerial photographs.
- US Army Corps of Engineers (2008) Erosion Information Paper - Chevak, Alaska.

5.7. Prior Reports

5.7.1. Site Property Reports

No prior Phase I ESAs or reports on the property could be located.

5.7.2. Adjoining Property Reports

A review of the Alaska Department of Environmental Conservation's (ADEC) contaminated sites data base indicates that in 2002 petroleum contaminated soil from past fuel and heating oil spills was found at the Chevak Company Corporation Tank Farm. A preliminary soil investigation report to ADEC by Shannon and Wilson in October 2002, *Chevak Company tank Farm, Chevak, Alaska,* indicated that they had found levels of BTEX, GRO and DRO at 5 sites located south of the tanks that exceeded cleanup levels. No groundwater samples were taken as part of this study. This report can be found in Appendix C.

[1] ASTM E1527- 13 defines a "*de minimis condition*" as a condition that generally does not present a treat to human 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.

A significant spill of 2,000 gallons of gasoline that occurred on July 7th 1995 from the adjacent Chevak Company Tank Farm is documented in an ADEC spill report, Ref #95-2501-188-01. As per ADEC personnel, the case was closed on 8/25/1995. A copy of this report was examined at ADEC on September 19th 2014 and can be found in Appendix C.

5.8. Interviews

5.8.1. Chevak Administrator – Mr. Dennis Jones

Mr. Jones is a city administrator for Chevak. He was interviewed on August 19 about the property. Mr. Jones indicated that the lot was undeveloped before AVEC built the original power plant in 1968 and closed down in 2009, which coincides with the opening of the new power plant. Just outside of the fence, 2 large pieces of equipment were observed. Mr. Jones said that AVEC had removed these pieces of equipment and assured the city that all the oil and fuel have been drained and they are safe to dispose of. Mr. Jones said that AVEC had asked the city to take them to their old dumpsite but since the old dump was nearly full, the city left them sitting on the property. Since that time, a new dump has been opened but neither AVEC nor the city has made any attempt to dispose of the equipment. Mr. Jones has no recollection of any spills on the property but talked briefly about a small diesel spill at the old BIA school from several years ago but that had nothing to do AVEC. Mr. Jones also spoke briefly about the empty lot just adjacent to the property, saying that it was privately owned and that the owners had once lived in a house on the lot in the 60's and 70's but moved to another part of Chevak. The house was eventually torn down and the lot has been unused since.

5.8.2. Chevak Corporation Manager – Mr. Roy Atchak

Mr. Atchak is the Chevak Corporation Manager. He was interviewed on August 19 about the property. Mr. Atchak indicated that he can't remember any previous uses of the property before AVEC but believes that it might've been undeveloped. Mr. Atchak remembered there being a spill sometime in the 1980's but could not remember any specifics. When asked about the old gas station, Mr. Atchak said that there no USTs on the property and that he wasn't sure what were in the 5 gallon drums found behind the old gas station or if they were empty. He also indicated that all of the equipment associated with the old gas station had been removed when it had been shut down. Mr. Atchak also mentioned that there was buried fuel pipeline that runs under Mukluk Street to the new school tank farm that is used to transport fuel from the barge to the new school tank farm.

5.8.3. AVEC Manager – Mr. William Stamm

Mr. Stamm is a PE and manager for AVEC. He was interviewed about the property on August 22 in AVEC's Anchorage office.

Mr. Stamm stated that use of the property ended in 2009, when the new power plant was opened. The 18 large fuel tanks hold between 7,000 and 10,000 gallons of fuel and should be empty. He has no knowledge of when the 5,000 gallon diesel tanks were moved to the new power plant. There are no USTs on the property. Most of the fuel lines were above ground so AVEC could keep track of any leaks, spills or breakages that might occur. Mr. Stamm does not know of any spills that might have occurred on the property. AVEC did not use any PCBs in their transformers and performed an Asbestos abatement on the several of the property buildings about 15 years ago. Mr. Stamm has no knowledge of property use prior to the power plant.

5.8.4. Prior Occupant/Occupant Interviews

No on-site AVEC employees could be located to be interviewed

6. PROPERTY RECONNAISSANCE

6.1. Methodology

Site reconnaissance was done on August 7 by Dr. Keith Torrance (EP) with a follow-up inspection on August 21 by Shawna Nieraeth. The perimeter of the property was walked, then the entire property was carefully examined, with emphasis on the conex trailers (Photograph 5), the old generator building (Photograph 2), around the tank farm (Photograph 1) and the sites of where the 2 diesel storage tanks once sat.

6.2. Limiting Conditions

Much of the property was covered in ankle to knee high grass, limiting any observations of staining that might have been seen otherwise. Much of the ground underneath the fuel tanks and the wooden platforms that they sit on was inundated with standing water from the several inches of precipitation that the city had recently received, limiting any observations to the ground and soil around and underneath the fuel tanks. Photographs of the property can be found in Appendix B.

6.3. Property Observations

6.3.1. Underground Storage Tanks

No indications of the presence of USTs (vent pipes, supply pipes, etc…) was found on the property.

6.3.2. Aboveground Storage Tanks

Numerous ASTs were found to still be on the property, including 18 large fuel tanks that made up the tank farm (Photograph 1).

6.3.3. Drums or Containers

No drums or containers were observed on the property.

6.3.4. Odors

Light hydrocarbon and diesel odors were detected at the sites of the removed diesel tanks and around the fuel tanks.

6.3.5. Pools of Liquid

Standing water with sheen was observed around and under the tank farm (Photograph 10).

6.3.6. PCB-Containing Equipment

No PCB-containing equipment was observed during the reconnaissance of the property.

6.3.7. Exterior/Interior Stains or Corrosion

The outside of the conex trailers had paint peeling in places and rusted. The interior of the conex trailers were in fair condition, with a few rust stains and some graffiti found in conex trailer 3. No stains were seen on the floors of any of the conex trailers. The old generator building was rusty and decrepit looking with metal patches covering where pipes had been connected from the trailer to the power plant. The interior of the old generator building had several pieces of drywall missing, exposing the insulation, which looked to have large patches of mold in places. The floor had been rotted through in a few places against the north wall, exposing daylight.

6.3.8. Pits, Ponds and Lagoons

No pits, ponds or lagoons were found on the property.

6.3.9. Stressed Vegetation

Dead vegetation could be seen around the sites of where the 2 diesel tanks had been before they were removed. However, it looked as if vegetation were beginning to grow around the lining (Photograph 11).

6.3.10. Solid Waste

Solid waste is present on the edge of the property. Just outside of the fence, two large pieces of equipment, most likely generators, were removed from the old generator building and left outside of the fence for disposal (Photograph 12). An examination of the equipment and the ground surrounding the equipment found no oil stains or stressed vegetation.

6.3.11. Stained Soil or Pavement

No significant oil stains were observed during the reconnaissance of the property. A small patch of what looked to be oil stained soil was observed (Photograph 13).

6.3.12. Wastewater

The property is not connected to the sewer system.

6.3.13. Wells

A search of the Well Log Tracking System (WELTS) database returned 3 records of groundwater wells located in Chevak, two for the city and one for the old school but none of which are located on or near the property, however, Mr. Stamm indicated that the pvc pipe sticking up out of the ground near the site of one of the removed diesel tanks could be a monitoring well (Photograph 14).

7. SCOPE LIMITATIONS/DEVIATIONS/SIGNIFICANT DATA GAPS

7.1. Scope Limitations

There may be additional environmental issues or conditions at the property that stakeholders may wish to assess that are outside of the scope of work for this Phase I report. ASTM 1527-13 does not include the following:

- Asbestos containing building materials
- Biological agents
- Cultural and historical resources
- Ecological resources
- Endangered species
- Health and safety
- Indoor air quality unrelated to releases of hazardous substances or petroleum products into the environment
- Industrial hygiene
- Lead-based paint
- Lead in drinking water
- Mold
- Radon
- Regulatory compliance
- Wetlands

7.2. Deviations

No deviations to the scope of work were documented.

7.3. Significant Data Gaps

The ASTM (2013) defines data failure as the failure to achieve the historical research objectives even after reviewing the standard historical sources that are reasonably ascertainable and likely to be useful. Data failure is a type of data gap. ASTM (2013) defines data gap as a lack, or the inability to obtain, information required by this practice despite good faith efforts by the environmental professional to gather such information.

Chevak is a remote Alaskan community accessible only by air or river and 518 miles from the nearest major population center, consequently, past uses of buildings and properties are poorly documented. Very few historical and aerial photographs of the town and the property exist prior to the 1979 community map, approximately 10 years after the AVAC power plant was built. The USGS topographic map shows only the town's location. No Sanborn fire insurance maps for the property were found. Property deeds prior to 1968, when AVAC developed the property were not found. This constitutes a data gap.

8. FINDINGS AND CONCLUSIONS

I have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice 1537-13 of the AVEC Power Plant, the property. Any exceptions to, or deletions from, this practice are described in Section 9 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the property except for the following:

- 18 abandoned AST fuel tanks that have the potential to deteriorate and facilitate a release of any residual fuel in the tanks and fuel lines.
- The site of the 2 former diesel tanks that were removed by AVEC that had the potential for leaks and spills when being filled or during their move to the new AVEC power plant site.
- The potential of contamination at the site of the former generator building due to the presence of the generators and other equipment that required fuel and oil to run.

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §321.10 of 40 CFR§312. I have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting of the subject property. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR§312.

Dr. Keith Torrance PG
Senior Environmental Geologist
APC Services, LLC Anchorage, AK

9. RECOMMENDATIONS

ASTM 1527 – 13 does not include a requirement to provide recommendations to address the RECs identified during the Phase I ESA. The following recommendations are provided as a service to the client.

- Equipment in the former generator building should have any residual oil and gas drained and the equipment removed and disposed of properly and the building demolished.
- A Phase II ESA should be conducted to determine if there is any contamination and if necessary, the extent and concentration of contamination around the fuel tanks, the former generator building and the sites of the removed diesel tanks.

10. REFERENCES

ASTM International 2013 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. E1527 – 13

Chevak Planning Committee (2009) Chevak Community Plan.

Alaska Department of Environmental Conservation (1995) Spill Summary Report Ref #95-2501-188-01. July 27th 1995.

Environmental Protection Agency (2005) 40 CFR Part 312. Standard Practice for All Appropriate Inquiries *Federal Register Vol. 70*. No 210.

Shannon & Wilson, Inc. (2002) "Preliminary Site Characterization, Chevak Company Fuel Tank Farm, Chevak, Alaska". October 15th 2002.

APPENDIX A

FIGURES

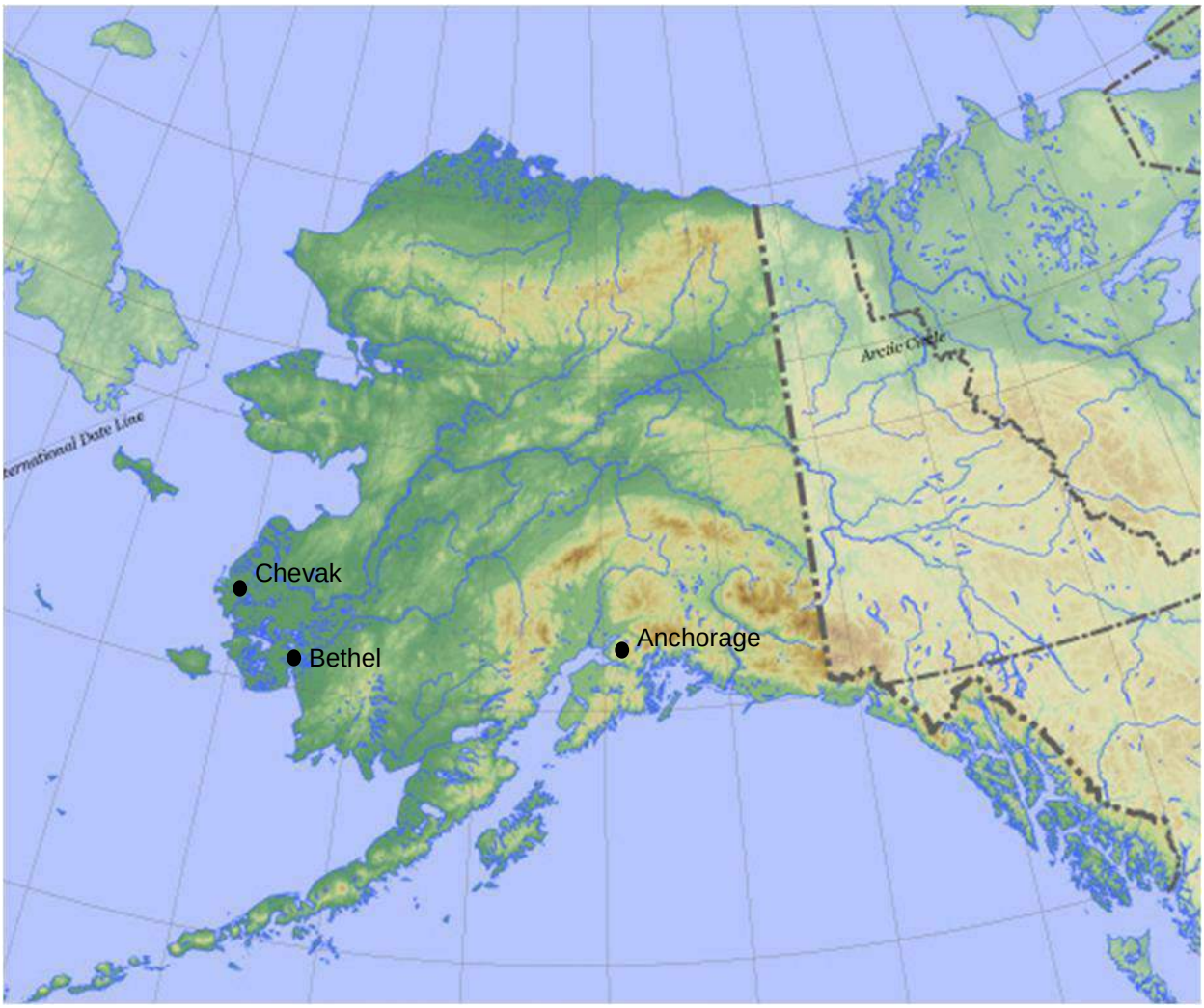

Figure 1 - Location of Chevak, AK in relation to Bethel and Anchorage. Source: www.siteatlas.com

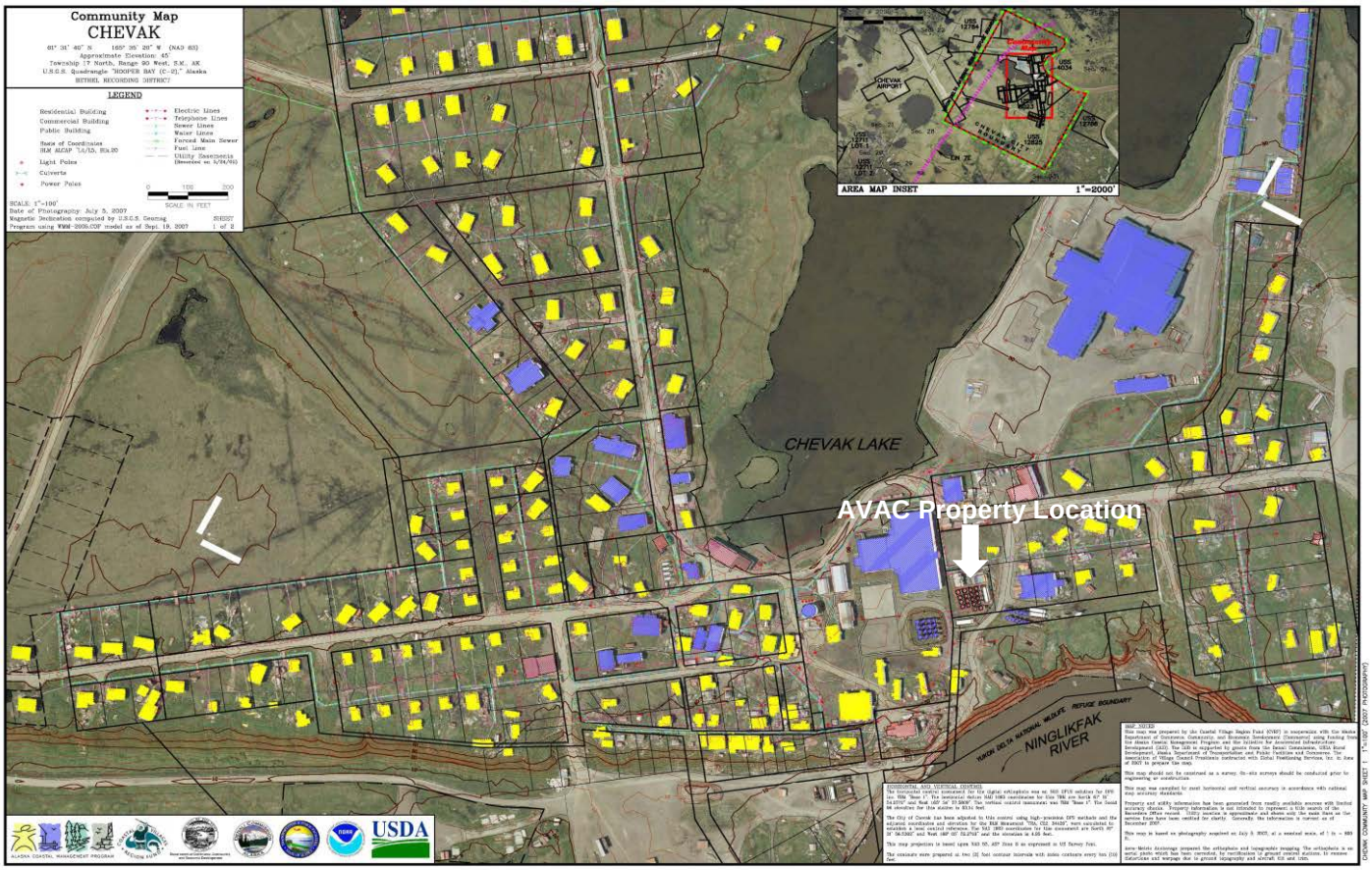

Figure 2 – 2007 Chevak community map showing the location of the AVAC property.

Figure 3 - Close-up view of the property and adjoining properties with structures marked.

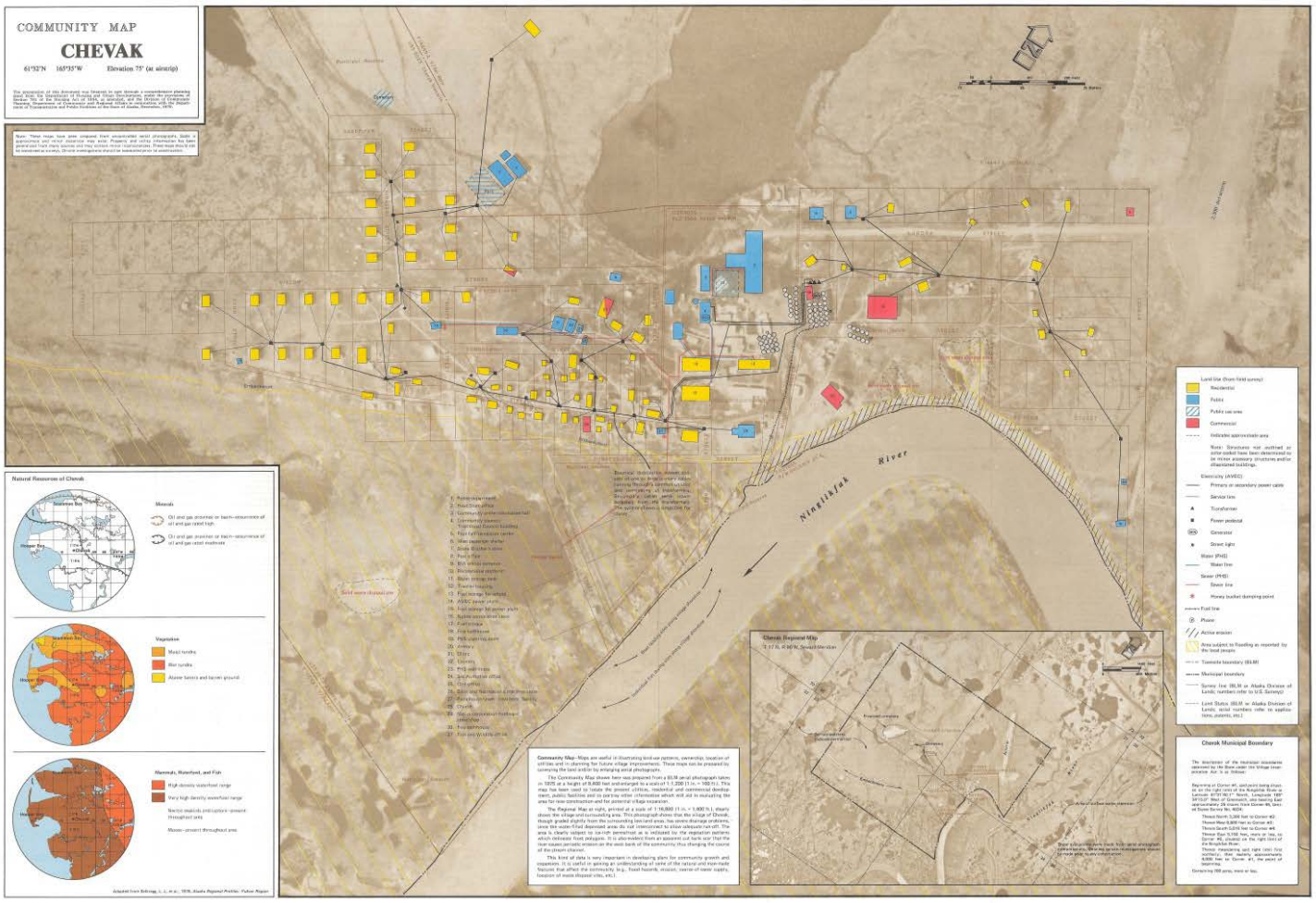

Figure 4 – 1979 Chevak Community Map.

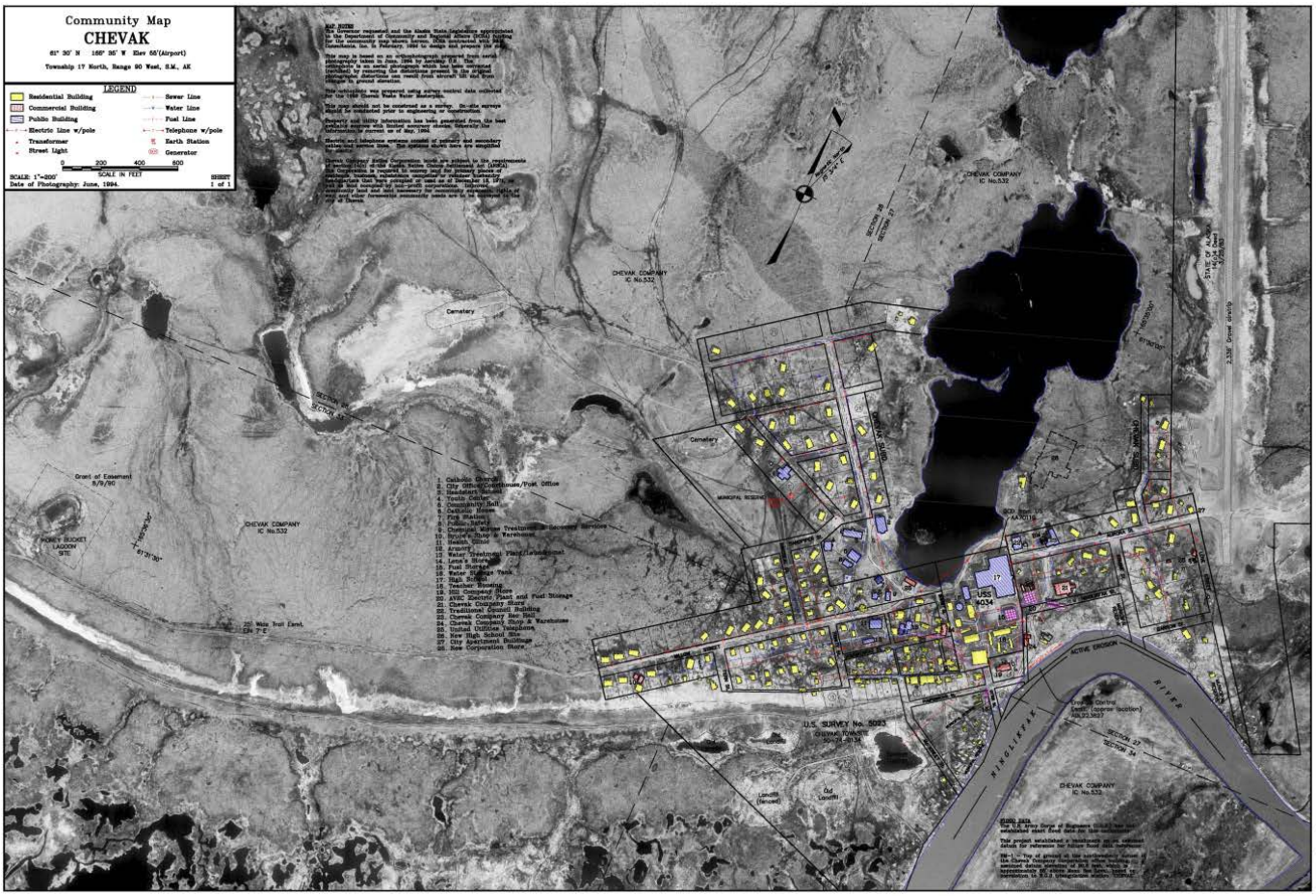

Figure 5 – 1994 Chevak Community Map.

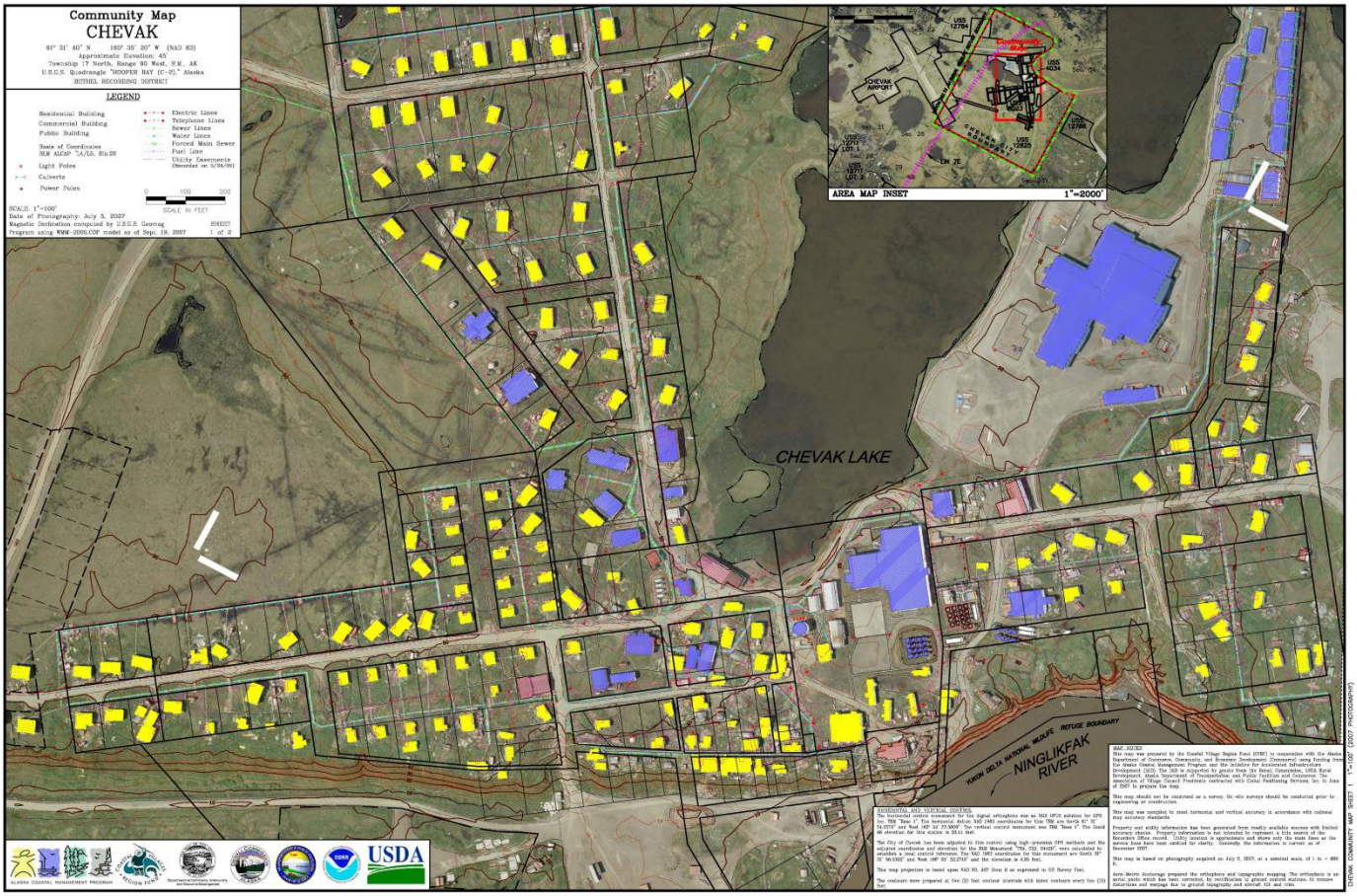

Figure 6 – 2007 Chevak Community Map.

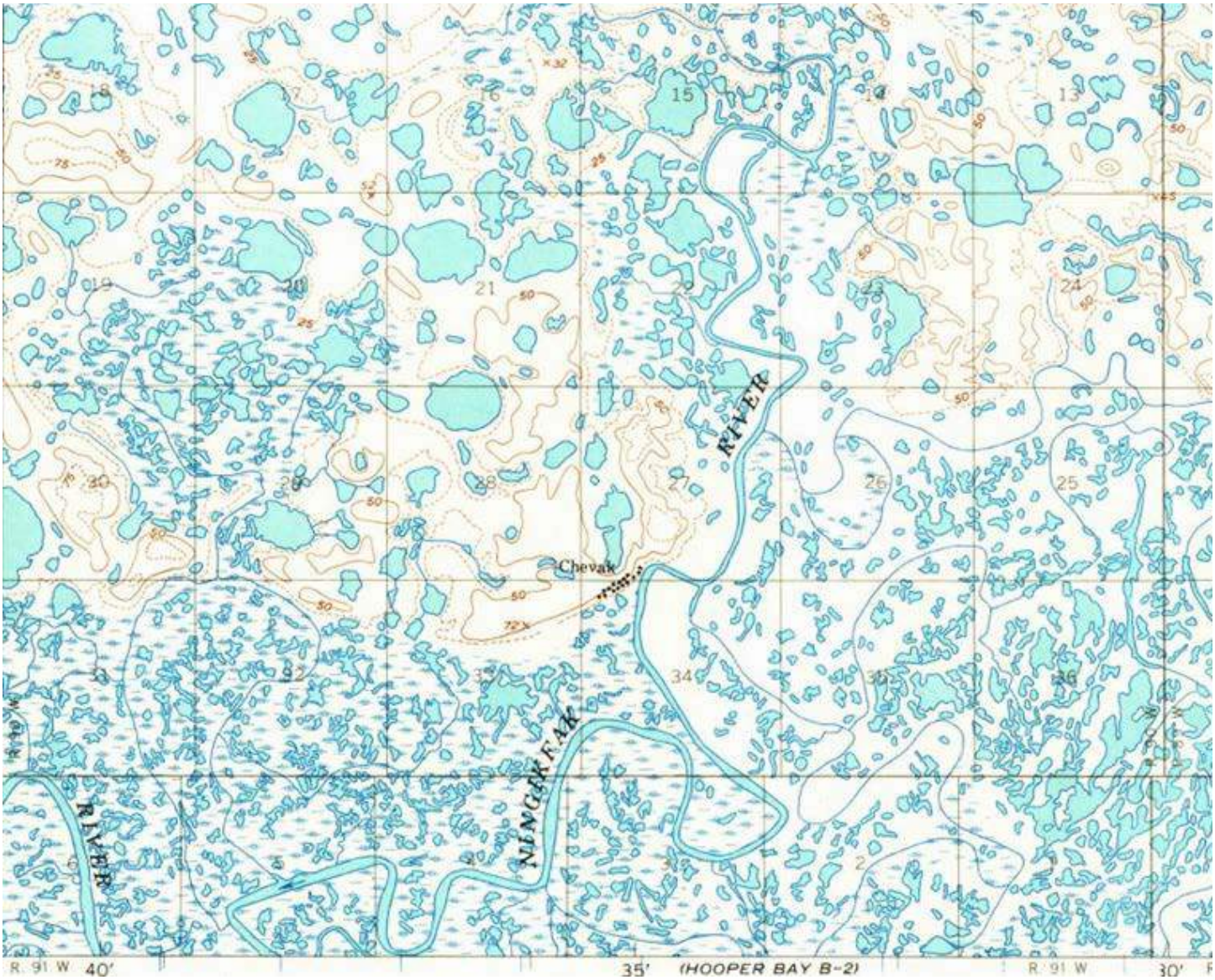

Figure 7 - Part of USGS topographical map, Hooper Bay C-2 quadrangle, showing the general location of Chevak, Alaska.

APPENDIX B

PHOTOGRAPHS


Photograph 1 – The tank farm ASTs located on the property.


Photograph 2 – Former generator building located on the property.

Photograph 3 – Inside the former generator building.

Photograph 4 – Exposed insulation in the former generator building.

Photograph 5 – Conex trailers located on the property.

Photograph 6 – One of the 5,000 gallon tank liners left on the property after it was moved to the new power plant.

Photograph 7 – Abandoned BIA school complex from the southeast corner of the property.

Photograph 8 – View of the empty, privately owned property from the southeast.

Photograph 9 – View of the Chevak Corporation's building and former tank farm and gas station from the west.

Photograph 10 – Standing water with a sheen found around and under the property's tank farm.

Photograph 11 – Distressed vegetation around the tank liner on the west side of the property closest to the BIA school complex.

Photograph 12 – Generators removed from the former generator building placed outside of the property's fence for disposal.

Photograph 13 – Small stain located on the property.

Photograph 14 – Site of a former 5,000 gallon diesel tank removed between 2007 and 2009. An interview with Mr. Stamm of AVAC indicated that he believed the pvc to be a monitoring well.

APPENDIX C

REPORTS

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

SEATTLE
RICHLAND
FAIRBANKS
ANCHORAGE
DENVER
SAINT LOUIS
BOSTON

October 15, 2002

Chevak Company Corporation
P.O. Box 179
Chevak, Alaska 99563

Attn: Mr. Newman Peter

Fax: (907) 858-7322
Phone: 858-7920

RE: PRELIMINARY SITE CHARACTERIZATION, CHEVAK COMPANY FUEL TANK FARM, CHEVAK, ALASKA

This document presents the results of our preliminary site characterization activities conducted at the Chevak Company Fuel Tank Farm in Chevak, Alaska. The primary purpose of the project was to evaluate the vertical and horizontal extent of contamination from a recent release, as well as the potential historical releases at the site.

Reportedly, a release of gasoline and/or fuel oil from aboveground piping was recently identified. A release of diesel fuel by Quality Asphalt Paving (QAP) has also occurred in the subject area. In addition, there may have been historical releases from the 8,000-gallon aboveground storage tanks (ASTs) at the site. This preliminary site characterization project entailed work plan preparation, soil sampling, laboratory coordination, and report preparation. A vicinity map showing the approximate location of the subject fuel tank farm is included as Figure 1. A view of the ASTs and the bermed area to the south of the fuel tank farm are shown in Photo 1 in Attachment A.

Field Activities

After the project work plan was approved by the Alaska Department of Environmental Conservation (ADEC), a Shannon & Wilson representative mobilized to the project site to implement the field efforts. Our field activities included collecting surface and near surface soil samples and preparing a site sketch, which was developed using a cloth tape and swing-tie measurements.

Soil sampling was performed to assess the nature and extent of near-surface soil contamination at various locations at the site. Surface soil samples were generally collected from within 6 inches of the ground surface using dedicated stainless-steel spoons. Near surface soil sampling extended to depths of about 3 feet, or the water saturated soil, at selected locations to

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evaluate the potential extent of near surface impact. A shovel was used to dig the relatively shallow test pits, and a hand auger was utilized to advance the hand borings. A total of 18 test pits and 9 hand borings were advanced during our soil sampling efforts. As a result, 35 surface and near surface soil samples were recovered for field screening and potential laboratory analysis. The surface soil samples were designated as Samples SS1 through Sample SS18, and Hand Boring designations were B1 through B9. 18+9=27 35-27=8?

Soil samples were field screened using an OVM Model 580B photoionization detector (PID) and sensory observations for indications of petroleum hydrocarbons. The PID was used, with a headspace sampling method, to quantify the total organic vapors released from the soil. The headspace screening method entailed placing a portion of the soil sample in a re-sealable "zip-lock" plastic bag, filling the bag to approximately one-half capacity, and measuring the concentration of organic vapors in the headspace of the bag using the PID. The headspace samples were placed in a building to warm the soil to a temperature of at least 40 degrees Fahrenheit. Instrument readings were taken within one hour of sample collection. To maximize the instrument response, the sample bags were agitated for about 15 seconds prior to screening. The PID display was observed and the maximum reading was recorded for each sample. The PID was calibrated at least daily during the field activities with 100 parts per million (ppm) isobutylene in air standard calibration gas. The soil sample designations and their field screening results are presented in Table 1. Approximate sample and hand boring locations are shown on Figure 2.

In accordance with the project work plan, six of the 35 samples were selected for analytical testing. Analytical sample selection was based on the PID headspace screening results, lithology, and field observations.

Sampling equipment that was used for more than one sample (shovel, hand auger, and spoons) were decontaminated before each sample collection. Decontamination procedures included scrubbing the sampling tools with a stiff brush in a solution of water and Alconox detergent, followed by tap water and deionized water rinses. Soil cuttings generated during sampling efforts were used to backfill the test pits and the hand borings. Water generated during the decontamination process was poured over the existing contaminated soil contained in 55-gallon drums. Reportedly, the soil contained in the 55-galllon drums was generated during cleanup efforts associated with a fuel release. The 55-gallon drums are depicted in Photo 2. ?

Laboratory Analysis

The selected six soil samples were submitted to CT&E Environmental Services of Anchorage using chain-of custody procedures. These samples were analyzed for diesel range organics (DRO) by Alaska Method 102 (AK 102), gasoline range organics (GRO) by AK 101 and benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B.

For quality control purposes, one trip blank sample accompanied the project samples and was analyzed for GRO and BTEX.

Subsurface Conditions

As detailed in Table 1, the near surface materials encountered during our field efforts consisted of brown to gray peat and silt. Generally, a brown peat layer that ranges in thickness from 6 inches to several feet is underlain by a brown to gray silt unit. Because the near surface soil at the project site has been disturbed, the transition from peat to silt is not uniform cross the site. The depth to the saturated soil, which may be interpreted as the groundwater interface, varied from 2 to 3 feet below the ground surface.

Discussion of Results

The analytical testing results of the soil and quality control samples are presented in the following sections. The reported contaminant concentrations in the soil samples are compared to the cleanup levels listed in the Oil and Hazardous Substances Pollution Control Regulations (18 AAC 75, Section 341). The soil criteria are based on the most stringent exposure pathway listed in Tables B1 and B2 for the "under 40-inch (precipitation) zone." The summary analytical results and applicable soil cleanup levels are listed in Table 2. A copy of the laboratory reports is included as Attachment B.

As summarized in Table 2, the six soil samples contained at least four of the target constituents at concentrations exceeding the laboratory reporting limits. GRO content in the six samples ranged from 4.37 milligram per kilogram (mg/Kg) in Sample B8S2 to 891 mg/Kg reported in Sample B5S2. Five of the six samples had detectable DRO concentrations, with levels varying from 41.5 mg/Kg in Sample B2S1 to 8,630 mg/Kg in Sample B5S2. Both GRO

and DRO concentrations in Sample B5S2 exceed the associated applicable cleanup levels. Sample B5S2 was collected from Boring B5, which is located within the bermed area to the south of the fuel tank farm.

At least two of the BTEX constituents were reported in the six soil samples. Benzene was detected in five of the six samples with concentrations ranging from 0.145 mg/Kg in Sample B2S1 to 10.6 mg/Kg in Sample B4S2. Benzene levels detected in the five samples exceed the applicable cleanup level. Note that the benzene reporting limit for Sample SS9 (0.0265 mg/Kg) is slightly higher than the associated cleanup level (0.02 mg/Kg). Toluene was reported in five of the six tested samples and ranged from 0.286 mg/Kg in Sample B9S2 to 25.5 mg/Kg in Sample B5S2. Ethylbenzene and Xylenes were also detected in five of the samples. Ethylbenzene concentrations varied from 0.150 mg/Kg in Sample SS9 to 23.3 mg/Kg in Sample B5S2 while xylenes ranged from 1.022 mg/Kg in Sample SS9 to 131.5 mg/Kg in Sample B5S2. Toluene concentrations reported in Sample B4S2 and toluene, ethylbenzene, and xylenes content of Sample B5S2 exceed the associated cleanup levels.

The trip blank, which accompanied the project samples to document potential cross-contamination, did not contain detectable levels of the target analytes, GRO or BTEX.

Upon our request, the project laboratory re-evaluated the sample chromatograms to help us identify the potential source(s) of the reported constituents. The following is a summary interpretation of the results.

Sample SS9: Weathered middle distillate.
Sample B2S1: DRO, biogenic (naturally occurring organics such as peat), possible gasoline.
Sample B4S2: DRO, biogenic, GRO indicates leading edge of a gasoline plume.
Sample B5S2: DRO pattern, light end GRO (high toluene, sharp BTEX peaks) indicates possible gasoline source.
Sample B8S2: Light middle distillate pattern, possible gasoline influence.
Sample B9S2: Biogenic, GRO indicates leading edge of a gasoline plume.

Based on the sample chromatograms review, it appears that the petroleum hydrocarbon constituents reported in the projects samples are associated with diesel and gasoline type products. The biogenic and unknown hydrocarbon peaks are likely associated with the high peat content of the site's soil.

Conclusions and Recommendations

This preliminary site characterization was conducted to assess the nature and extent of near-surface soil contamination at the site. Six of the 35 soil samples were submitted for analytical testing. Based on our field screening and analytical testing results, petroleum hydrocarbons were identified in the site's near surface soil. Elevated DRO, GRO, and BTEX constituents that exceeding the applicable cleanup levels were documented during this limited site characterization efforts. From the sample chromatograms, it appears that both diesel and gasoline type of products have been released at the site.

Additional borings and/or monitoring wells may need to be installed to further define the extent and magnitude of the soil and groundwater contamination. Based on the additional assessment results, a corrective action may be required to remediate the petroleum hydrocarbon impact at the site.

Closure/Limitations

This report was prepared for the exclusive use of our client and their representatives for evaluating the site as it relates to the environmental aspects discussed herein. The conclusions contained in this report are based on limited search and sampling and analysis that we conducted at this site and should be considered preliminary. Our interpretations should not be construed as definite conclusions regarding the site conditions or soil and groundwater quality. It is possible that our surface or subsurface tests may have missed higher levels of petroleum hydrocarbon constituents, although our intention was to sample areas likely to be impacted. As a result, the data and interpretations provided in this report reflect our professional judgment regarding the site's environmental characteristics, and in no way guarantee that an agency or its staff will reach the same conclusions as Shannon & Wilson, Inc. The data presented in this report should be considered representative of the time of our site assessment. Changes in site conditions can occur over time, due to natural processes or human activity. In addition, changes in government codes, regulations, or laws may occur. Because of such changes beyond our control, our observations and interpretations may need to be revised.

The analyses, conclusions, and recommendations contained in this report are based on site conditions as they presently exist and further assume that the explorations (excavations and

borings) are representative of the subsurface conditions throughout the corresponding site. If subsurface conditions different from those encountered in the explorations are observed or appear to be present within excavations during construction and/or cleanup activities, advise us at once so that we can review these conditions and reconsider our recommendations, as necessary.

Unanticipated conditions are commonly encountered and cannot be fully determine by merely taking soil samples or conducting explorations. Such unexpected conditions require that additional expenditures be made to achieve a properly constructed project. Some contingency fund is recommended to accommodate such potential extra costs.

Shannon & Wilson has prepared the attachments in Attachment C "Important Information About Your Geotechnical/Environmental Report" to assist you and others in understanding the use and limitations of our reports.

You are advised that various state and federal agencies (ADEC, EPA, etc.) may require the reporting of this information. Shannon & Wilson does not assume the responsibility for reporting these findings and therefore, has not, and will not, disclose the results of this study, except with your permission or as required by law.

We appreciate this opportunity to be of service. If you have questions or comments, or wish to revise the planned activities, please call Mr. Stafford Glashan or the undersigned at (907) 561-2120.

Sincerely,

SHANNON & WILSON, INC.

H. Turker

Haydar Turker
Senior Engineer

srb: sjg

Enc: Tables 1 and 2; Figures 1 and 2; Attachments A, B, and C

TABLE 1 - SAMPLE LOCATIONS AND DESCRIPTIONS

Sample No. ~	Date	Sample Location (See Table 2 and Figure 2)	Depth (ft.)	Headspace Result (ppm) ^	Sample Classification
SS1	8/29/2002	North of the Fuel Tank Farm, outside the berm	0.5	0.5	Brown SILT; moist
SS2	8/29/2002	North of the Fuel Tank Farm, outside the berm	0.5	0.3	Brown SILT; moist
SS3	8/29/2002	North of the Fuel Tank Farm, outside the berm	0.5	0.2	Brown SILT; moist
SS4	8/29/2002	North of the Fuel Tank Farm, outside the berm	0.5	0.2	Brown to gray SILT; moist
SS5	8/29/2002	North of the 8,000 gallon ASTs, within the bermed area	1.0	173	Brown PEAT
SS6	8/29/2002	North of the 8,000 gallon ASTs, within the bermed area	2.0	22	Brown SILT, trace of organics; moist
SS7	8/29/2002	North of the 8,000 gallon ASTs, within the bermed area	0.3	3.5	Brown SILT; moist
SS8	8/29/2002	Next to one of the 8,000 gallon ASTs, within the bermed area	0.5	205	Brown PEAT
SS9*	8/29/2002	Next to one of the 8,000 gallon ASTs, within the bermed area	3.0	138	Brown SILT, trace of peat; moist to wet
SS10	8/29/2002	Middle of the Fuel Tank Farm, within the bermed area	1.5	3.5	Brown SILT, trace of organics; moist
SS1I	8/29/2002	Next to one of the 8,000 gallon ASTs, west end of the Tank Farm	2.5	248	Brown PEAT
SS12	8/29/2002	West end of the 20,000-gallon gasoline AST	0.5	34	Brown SILT; moist
SS13	8/29/2002	North end of the 20,000-gallon gasoline AST	0.5	32	Brown SILT; moist
SS14	8/29/2002	South end of the 20,000-gallon gasoline AST	0.4	21	Brown SILT; moist
SS15	8/29/2002	East end of the new 20,000-gallon heating oil AST	0.2	255	Brown SILT; moist
SS16	8/29/2002	East end of the 10,000-gallon heating oil AST	0.5	264	Brown PEAT; moist
SS17	8/29/2002	South end of the 10,000-gallon heating oil AST	0.5	385	Brown PEAT; moist
SS18	8/29/2002	West end of the 10,000-gallon heating oil AST	2.0	98	Brown SILT, trace of peat; moist to wet
B1S1	8/29/2002	Boring No. B1, Sample No. 1	1.5-2.0	192	Brown PEAT
B1S2	8/29/2002	Boring No. B1, Sample No. 2	2.5-3.0	114	Brown PEAT; moist to wet
B2S1*	8/29/2002	Boring No. B2, Sample No. 1	1.5-2.0	110	Brown to gray SILT, trace of peat; moist
B2S2	8/29/2002	Boring No. B2, Sample No. 2	2.5-3.0	154	Brown PEAT; moist to wet
B3S1	8/29/2002	Boring No. B3, Sample No. 1	1.0-1.5	272	Brown PEAT; moist
B3S2	8/29/2002	Boring No. B3, Sample No. 2	2.5-3.0	55	Brown to gray SILT; moist to wet
B4S1	8/29/2002	Boring No. B4, Sample No. 1	1.5-2.0	265	Brown PEAT; moist
B4S2*	8/29/2002	Boring No. B4, Sample No. 2	2.5-3.0	395	Brown to gray SILT; moist to wet
B5SI	8/29/2002	Boring No. B5, Sample No. 1	1.0	340	Brown to gray SILT; moist
B5S2*	8/29/2002	Boring No. B5, Sample No. 2	1.5-2.0	344	Brown to gray SILT; moist to wet
B6S1	8/29/2002	Boring No. B6, Sample No. 1	1.0	274	Brown, silty PEAT; moist
B7S1	8/29/2002	Boring No. B7, Sample No. 1	1.0	347	Brown, peaty SILT; moist
B7S2	8/29/2002	Boring No. B7, Sample No. 2	2.0-2.5	245	Brown PEAT; moist to wet
B8S1	8/29/2002	Boring No. B8, Sample No. 1	0.4	75	Brown SILT, trace of peat; moist
B8S2*	8/29/2002	Boring No. B8, Sample No. 2	1.5-2.0	172	Brown to gray SILT; moist to wet
B9SI	8/29/2002	Boring No. B9, Sample No. 1	0.3	25	Brown SILT, trace of peat; moist
B9S2*	8/29/2002	Boring No. B9, Sample No. 2	1.5-2.0	38	Brown SILT; moist to wet
TBI*	8/29/2002	Trip Blank	-	-	Ottawa sand with methanol added in the laboratory

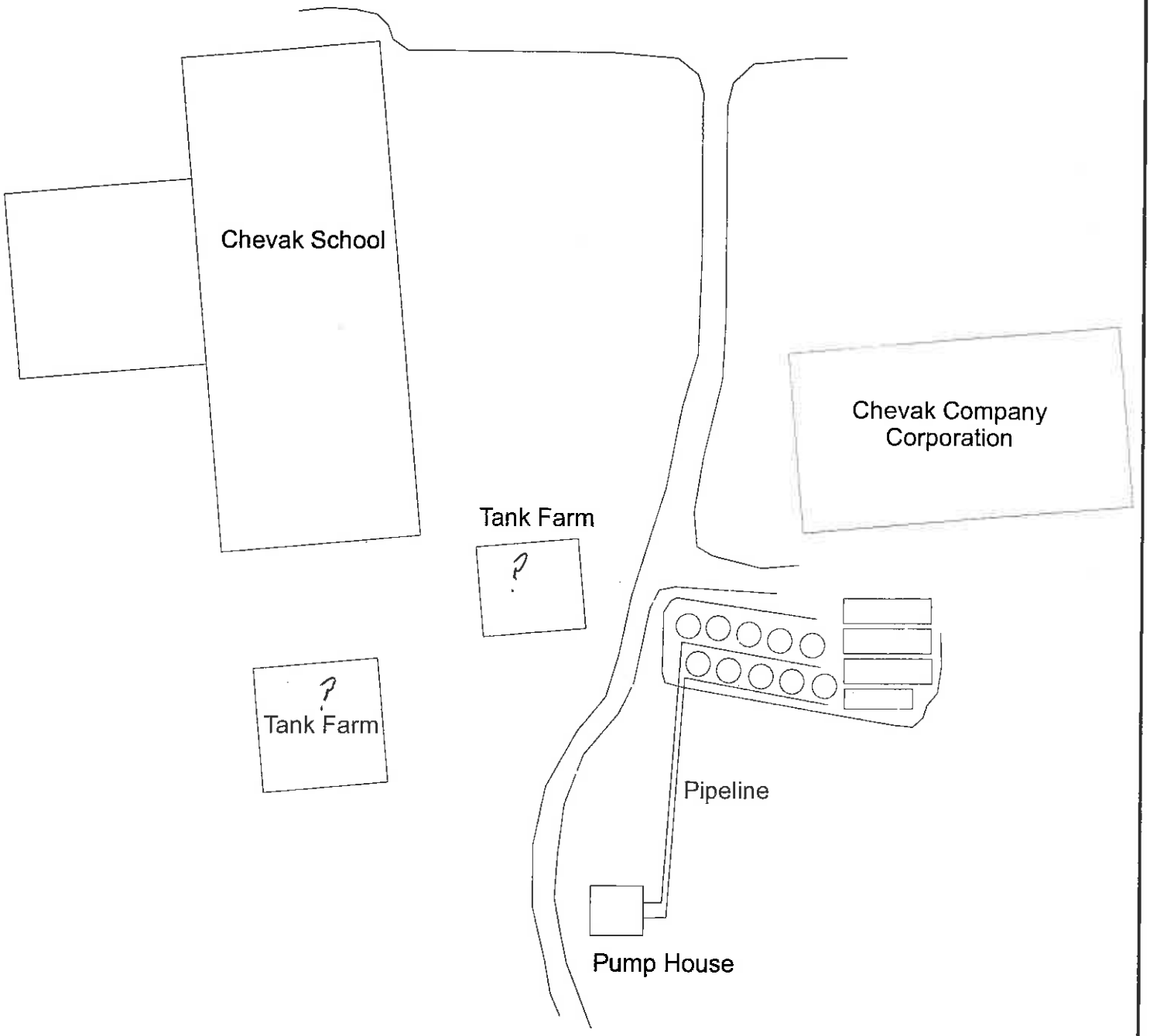
KEY	DESCRIPTION
-	Not applicable
*	Sample analyzed by the laboratory
^	Field screening instrument was an 580B OVM PID
~	Sample number preceded by 32-1-16616 on chain-of-custody forms

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS

SOIL SAMPLES

Parameter Tested	Method	Cleanup Level (mg/Kg)**	Sample Number* and Depth in Feet (See Table 1, Figure 2, & Appendix B)						
			SS9 3.0	B2S1 1.5-2.0	B4S2 2.5-3.0	B5S2 1.5-2.0	B8S2 1.5-2.0	B9S2 1.5-2.0	TB1 -
PID Headspace Reading - ppm	580B OVM	-	138	110	265	344	172	38	-
Gasoline Range Organics (GRO) - mg/Kg	AK 101/EPA 8021B	**300**	22.2	38.0	94.5	891	45.1	4.37	<2.63
Diesel Range Organics (DRO) - mg/Kg	AK 102	**250**	85.8	41.5	<38.7	8,630	77.7	56.9	-
Aromatic Volatile Organics (BTEX)									
Benzene - mg/Kg	AK 101/EPA 8021B	**0.02**	<0.0265	0.145	10.6	2.02	0.730	0.913	<0.0132
Toluene - mg/Kg	AK 101/EPA 8021B	**5.4**	<0.106	0.642	20.8	25.5	1.67	0.286	<0.0527
Ethylbenzene - mg/Kg	AK 101/EPA 8021B	**5.5**	0.150	0.459	1.22	23.3	0.711	<0.0828	<0.0527
Xylenes - mg/Kg	AK 101/EPA 8021B	**78**	1.022	8.0	6.17	131.5	2.412	<0.0828	<0.0527

KEY	DESCRIPTION
891	Sample exceeds cleanup level for this analyte
*	Sample preceded by 32-1-16616 on chain-of-custody forms
**	Soil Cleanup Level is the most stringent standard listed in Table B1 or B2, 18 AAC 75.341, for the "under 40 inches" precipitation zone
ppm	Parts per million
mg/Kg	Milligram per Kilogram
-	Sample not analyzed for this parameter or not applicable
<0.106	Analyte concentration is less than the laboratory reporting limit of 0.106 mg/Kg



0 60 120

APPROXIMATE SCALE IN FEET

N

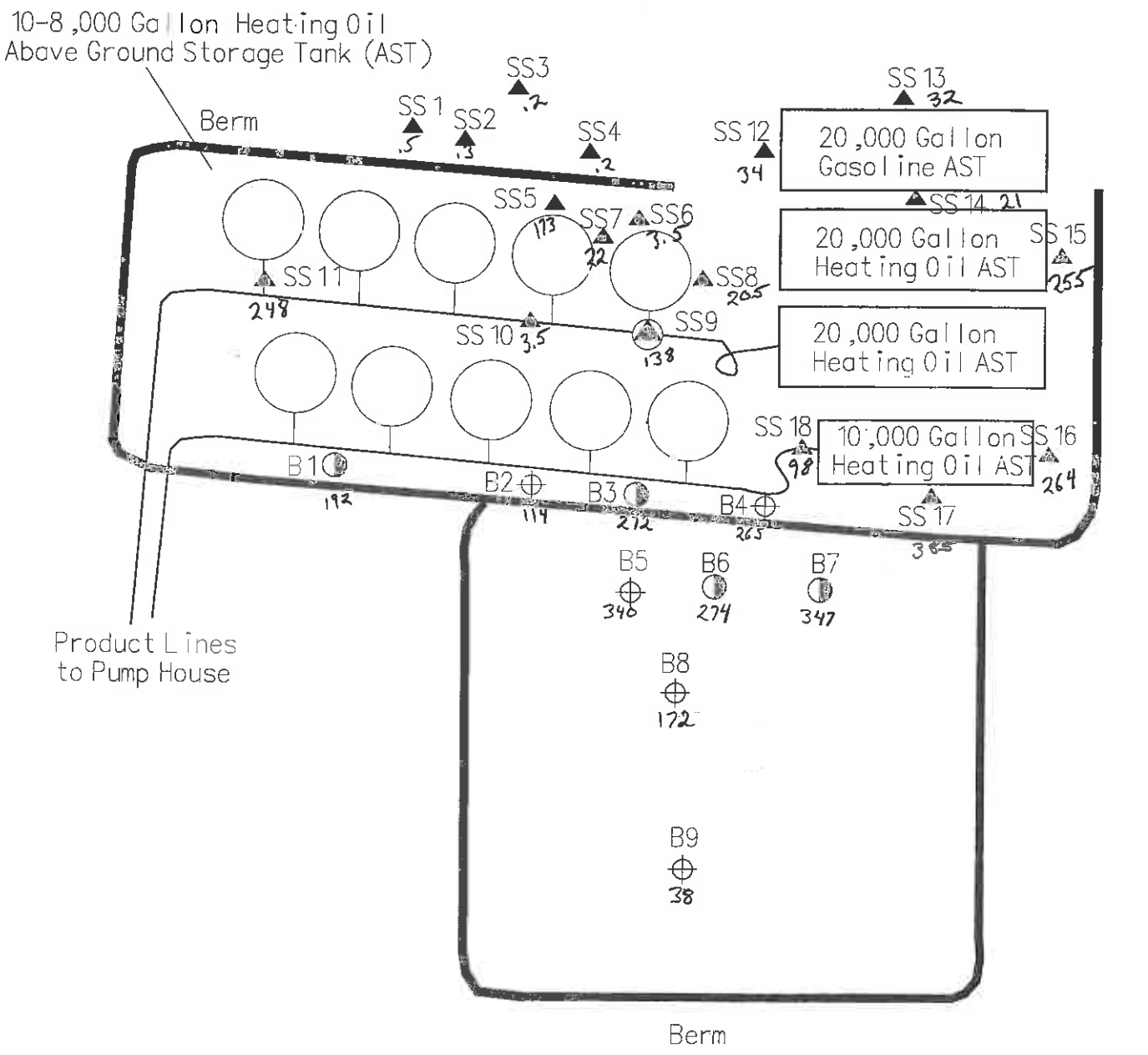
Tank Farm
Chevak, Alaska

VICINITY MAP

October 2002 32-1-16616

SHANNON & WILSON, INC.
Geotechnical & Environmental Consultants

Fig. 1



Legend

SS1 ▲ Approximate location of headspace screening Sample SS1

SS9 ◭ Approximate location of analytical Sample SS9

B1 ◑ Approximate location of Hand Boring B1

B2 ⊕ Approximate Location of Hand Boring B2 where an analytical sample was submitted

N

0 20 40
APPROXIMATE SCALE IN FEET

Tank Farm Chevak, Alaska	
SITE MAP	
October 2002	32-1-16616
SHANNON & WILSON, INC. Geotechnical & Environmental Consultants	Fig. 2

Attachment A

Photographs

Photo 1: A view of the project site; the above ground storage tanks to the left and the bermed area to the right; looking east. (August 2002)

Photo 2: Contamineted soil containing 55-gailon drums; looking east. (August 2002)

Chevak Company Tank Farm Chevak, Alaska
PHOTOGRAPHS 1 AND 2
October 2002 — 32-1-16616
SHANNON & WILSON, INC. Geotechnical & Environmental Consultants — Fig. A-1

Spill Summary Report 95279918801

Spill Number:	95279918801	**Spill Name:**	CHEVAK GASOLINE SPILL -KIDS
Spill Date/Time:	07/07/1995 00:00	**Primary Responsible Party:**	CHEVAK COMPANY CORPORATION
Case Closed Date:	08/25/1995	**Reporter:**	CHEVAK COMPANY CORPORATION
File Number:	95250118801	**Response Type:**	Field Visit/s
Ledger Code:		**Staff Name:**	Pearson, Leslie
Comment:	No Value - SPNOTE: KIDS OPENED VALVE TO GASOLINE TANK. PRODUCT RAN OUT ON THE GROUND INTO BERMED CONTAINMENT AREA. - MONOTE: DIKED CONTAINMENT		

Facility/Site Location

Facility/Site Name:	CHEVAK VILLAGE OWNED TANK FARM	**Area:**	Central Alaska
Address Line #1:	City of Chevak	**Sub-Area:**	Western Alaska
Address Line #2:	PO Box 136	**Region:**	Lower Yukon
City/State/ZIP Code:	Chevak, AK 99563	**Location:**	Chevak
FacilityType:	Crude Oil Terminal	**Facility Subtype:**	
Facility Note:			

Product Released

Substance Subtype Name	Qty Released	Qty Unit	Disposal Description	Disposal Note
Gasoline	2,000.000	Gallons	Data Problem in Conversion From RBase	

Substance Note: NO ENTRY - BUCKETS

Cause/Source

Contibuting Cause

Intentional Release, Human Factors (Primary)

Cause Note:	KIDS
Source Note:	VILLAGE OWNED

Spill Cleanup Actions

Action Description	Staff Name	Action Date	Action Due Date	Completed	Action Note
Final Report	Pearson, Leslie			Yes	
Case Closed, No Further Action	Pearson, Leslie	08/25/1995		Yes	

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

RECEIVED

OIL AND HAZARDOUS MATERIAL DISCHARGE OR RELEASE REPORTING FORM

JAN 12 1996

18 AAC 75.300 DISCHARGE NOTIFICATION REQUIRED
18 AAC 75.307 REPORTS REQUIRED

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

(For Leaking Underground Storage Tank reporting see 18 AAC 78.220 reporting requirements)

Within 15 days of completion of cleanup you are required to submit the following information:

Spill Number: (if previously reported) 95-2-5-01-188-01

Date and time of the discharge: July 7, 1995, 11:30 Am

Date and time discharge reported: July 7, 1995, 2:00 pm

Location of the discharge: ChevAK Company Corp Tank Farm

Name of the facility or vessel: ChevAK Company Corp Tank Farm.

Name(s), mailing address and telephone number of the person(s) causing, or responsible for the discharge:
Kids from ChevAK, Names unknown because w/held because of Ages.

Name, mailing address and telephone number of owner(s), and/or operator(s) of the facility or vessel:
Gregory E Slats, Manager
ChevAK Co. Corp
Box 179
ChevAK, AK 99563

Type and amount of each hazardous substance discharged:
gasoline 2,000 gallons

RECEIVED

NOV 27 1995

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

COPY

Cause of the Discharg: CCC had one of the BIA 7,900gal Tanks used for dispensing gasoline. Couple of the kids playing in the Tank Farm Inadvertently opened the 10,000 gal. Tank That Was laying down. Then The tank Standing up started to level out w/ The tank laying down and Started to Spill over board the tank.

Description of the cleanup actions taken: (Use additional pages if necessary)
Residents of CHUAK were notified of the Spill and, about 30 people Showed up to clean up the Spill. Residents used 5 & 6 gal. Containers to Pick up the gasoline. the Clean-up lasted for three hours. what could not be Picked up from the ground evaporated w/in the next day.

Estimate of the Discharge volume: 2000 gallons.

Estimate of the amount of Oil or hazardous substance recovered or cleaned up (%) 95%

Estimate of the volume of clean up materials used:- ~~100%~~ Ma 95%
Man power 5% Evaporation

How were the spill size and clean up volume estimated?
we took a dip in to the tank that had leveled out with the one laying down.

How were the spill clean up materials ultimately disposed; include the volume of contaminated materials, and the date and location of the disposal:
Everyone used old cans and other personal materials. what was put in to the their Cantainers was used when operating the Outboard engines or their Three Wheelers.

Description of action taken to prevent recurrence of the discharge:
Strict Rules and POSTing signs that Kids are not allowed in the Tank Farm gate values are locked up.

Description of any environmental damage to the water, rocks, beach, shoreline:
None

Date of spill notification (18 AAC 75.300):

Agents notified (USCG, ADEC etc.) USCG ___ ADEC ✓ NSRC ___
(National Spill Response Center Ph. 1-800-424-8802)

How the notification was accomplished and by whom:
Called Robert Carlson ADEC

Other information that the department may utilize to fuily access the cause and impact of the discharge.
Clean-up was done in 3 hrs. Alicia Porter from AVCP knows and has witnessed the Clean-up.

Report completed by: (print name) Greg E. Slats

(signature) [signature]

(date) 11/22/95

If you have any questions regarding the requirement, or this form; please do not hesitate to contact the Western District Office phone number (907) 349-7755.

Your cooperation in this matter is sincerely appreciated.

Please mail or fax this report to

Western District Office
Alaska Department of Environmental Conservation
800 E. Dimond Blvd. Suite 3-470
Anchorage, Ak 99515
FAX (907) 349-7755

STATE OF ALASKA

TONY KNOWLES, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION

FILE COPY

Bethel Public Service Office
P.O. Box 557
Bethel, AK 99559

Phone: 543-3215
Fax: 543-3216

Mr. Gregory E. Slats, Corporate Manager
Chevak Company Corporation
P.O. Box 179
Chevak, AK 99563

RE: Spill #95-2501-188-01
Chevak Company Corporation

Dear Mr. Slats:

Enclosed is a final spill report form for the July 7, 1995, two thousand gallon gasoline spill at the Chevak Company Corporation tank farm.

Thank you for your help in closing out our file on this spill. Please call me if you have any questions, or if I can be of assistance.

Sincerely,

Robert V. Carlson

Robert V. Carlson
Environmental Specialist III

RVC/ac

Enclosure: Final Cleanup Report Form

cc: Leslie Pearson, GPRP, Anchorage

COPY

MEMORANDUM STATE OF ALASKA

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPILL PREVENTION AND RESPONSE

TO: Robert Carlson
Bethel Office

THRU: Leslie Pearson
PERP

FROM: Jeff Ginalias
Environmental Specialist

DATE: July 27, 1995

FILE #:

PHONE #: (907) 269-7532

SUBJECT: Chevak Company Corporation
Gasoline Spill/PHS Hydraulic Spill

I visited Chevak on July 18-19, 1995 in response to the abandoned drums, spill # 95-251-011-01. While there I also investigated the July 7, 1995 2000 gallon gasoline spill of Chevak Company Corporation, plus the June 15, 1995 PHS hydraulic fluid spill. I am enclosing photos of the drum site, plus some of the gasoline spill area. I did not take any photos at the hydraulic spill site.

Gasoline Spill -- Spill # 95-2501-188-01

The Chevak Company Corporation tank farm has 10 vertical tanks (about 10,000 gallons capacity each) and two 10,000 gallon horizontal tanks. Some of the tanks were empty, and I did not find out about how much fuel is stored at any one time or how often deliveries occur.

The tank farm is about 150' x 50' surrounded by a sandbag dike, about two feet high, and is unlined. It is not fenced, access is easy, and while I was there, children and dogs entered and left the tank farm with ease. The soils are a fine, hard packed sand, with grass and weeds interspersed throughout the tank farm.

I did not smell any fuel and the soils looked clean. I'm told the fuel gathered in the southeast area of the dike, and the residents recovered all liquid product within an hour or two. The fuel was recovered with buckets, cans or most any kind of container and transferred to larger storage containers. As it happened so fast, there is no record of who was involved or how much fuel was recovered. I have no idea how much may have escaped into the soils. I did not gather any soil samples.

There is sparse vegetation in the spill area, but Gregory Slats, Corporate Manager, does not recall much grass there before the spill. There is some distressed vegetation in a band just outside the diked area, but I could not tell whether it was related to the spill. It may be trampled grass from a walkway. I was told that no free product escaped the diked area. Some may have rapidly passed through the sands. Mr. Slats stated that when the residents were done cleaning up, the soils did not look stained.

Throughout my stay in Chevak, I asked other residents about the spill and their concerns about the response. All the answers were the same; the cleanup went fast and nothing remained. I was a bit surprised at the fact that when I brought it up, it was almost like an afterthought to the people, and they had to think to recall the incident, even though it happened only a couple of weeks before. I thought a 2000 gallon gasoline spill in the village would remain a much bigger event.

The village drinking well is about 200 yards west, and a bit uphill of the spill site, and hits the water table at about 165 feet. A new well is being drilled another 50 yards west of the present well, and is expected to hit water at 190 feet. The school district has a well about 150 yards west of the spill area, depth unknown. I cannot say if there is any threat to groundwater from the spill. The village residents do not appear too concerned. I am sending the company a final report form, to be returned to you.

Based on my observations, I recommend no further action. Unless the Department requests sampling in compliance with the interim non-UST guidelines, I did not see nor smell any remaining product. I realize the uncertainty of the amount of fuel which may have escaped to the subsurface.

Hydraulic Fluid Spill -- Spill # 95-261-165-2

I also reviewed the 40 gallon hydraulic fluid spill near the Public Health Service/Washeteria. I reviewed the site with John Atchek, Chevak resident. He did not know about the spill when I first asked him, and it appears most residents of the village were unaware of it.

The spill occurred about 30 feet from where the rig is drilling the new community well, when a hydraulic hose on an air compressor burst. It was on tundra, with a peat layer 2-3 inches below the surface. Surface coverage was about 10 feet x 7 feet. The cleanup removed product, grass and top soil. Remaining contamination was a broken, patchy asphalt lens, about 4 feet x 4 feet. The recovered product and soils were in a couple of drums nearby.

The cleanup looks complete. The lens appears to form by remaining product in the soil/peat that moisture displaces and brings to the surface, where it hardens. It was easy to break up, has no real thickness, and grass is growing through the patches.

The drill operator was not on site that day, and I spoke with him only briefly, as I was boarding the plane to leave and he was getting off. He said the hard casing around the well was in place at the time of the spill, that no product could have followed the casing down, and the spill was away from the casing and drill site. The product spilled into a low spot that had gathered rain water, and most of the product was able to be skimmed off the top. When I was there, drilling had only proceeded about 30 feet, due to equipment problems.

In my mind, perhaps of grcater concern, is an above ground 2400 gallon home heating fuel tank for the National Guard building, about 20 feet from the well site, adjacent to the National Guard building. It appears to be a new tank, and I was informed it was airlifted in within the past couple of years. There is no containment beneath the tank, and I do not know if the tank has secondary containment built within. No one was present in the building to discuss this matter.

As it appears that there is no product other than spotty remaining surface stain, I would not recommend any further action. However, soil samples may be appropriate, in light of the non-UST guidelines. Based on my visual inspection, I recommend they be waived. Ultimate disposal of waste material should be tracked. I will send Brad Harris, the PHS engineer in Anchorage, a final report form, to be submitted to you.

cc: Bill Lamoreaux

CHEVAK COMPANY CORPORATION
BOX 179
CHEVAK, ALASKA 99563

July 7, 1995

Bob Carlson,
Department of Environmental Conservation
Bethel, Alaska 99559

Chevak Company Corporation accidentally spilled about 2,000 gallons of unleaded gasoline, when the 10,000 gallon tank laying down was opened up by one of the kids playing in the tank farm.
We were using the 7,900 gallon BIA tank to service the residents. The spill occurred when the 7,900 gallon tank was leveling out with the tank that the kids had opened up. The spill was contained in the tank farm by the burm that was built by Chevak Company Corporation.
The spilled gasoline was cleaned up by the residents of Chevak with small dippers and cans and pouring the gasoline in to 5 and 6 gallon containers. With some residents filling up their 30 and 55 gallon cantainers. The spill was cleaned up within two hours with the help of the residents.
We have secured all valves to the gas station and will keep a strict eye on anyone in the tank farm. Presently we are working with CALISTA Corporation under the newly formed cooperative, Nunat Uquutiit Cooperative, Incorporated to upgrade our tank farm.
Any questions regarding this letter, please feel free to give me a call at 858-7576 or 858-7920.

Sincerely,

Gregory E. Slats
Corporate Manager

Spill #95-251-011-01
Chevak Co. Corp.
9/27/95

cc:files

STATE OF ALASKA

TONY KNOWLES, ~~WALTER J. HICKEL~~, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION

7/26/95
Jeff Ginnalias called back to say that he visited Cheryl last week & he'll be copying this & sending via mail. Jeff provided the spill #.

FAX TRANSMITTAL SHEET

BETHEL FIELD OFFICE
P.O. BOX 557
BETHEL, AK 99559
TELEPHONE: 543-3215
FAX: 543-3216

Initiation: 7/26/95
7:20

SENT TO:

LOCATION: AWDO

FAX #: 269-7652

ATTENTION: Bill Wright

FROM: Bethel

REMARKS: Per our phone conversation, please find the letter from Cheryl CC manager / Elitis reporting a contained spill of ~2,000 gals of unleaded gasoline.
I have not seen a spill report to go with it. Please send a copy of your spill report when finished.
Quyana.

NUMBER OF PAGES INCLUDING TRANSMITTAL SHEET: Mailing

COPY

HAVE A NICE DAY!!!

-2-

APPENDIX D

ENVIRONMENTAL PROFESSIONAL QUALIFICATIONS

APC Services, LLC

Keith W. Torrance, Ph.D., CGeol FGS, CPG
Senior Environmental Geologist

Summary Qualifications

Dr. Keith Torrance is a certified professional geologist (CPG), chartered geologist (CGeol) and environmental professional at APC Services, LLC (APCS) with thirty years of experience managing diverse environmental engineering projects and business development. He has extensive experience of contaminated site evaluation, contaminant hydrology, environmental geochemistry and site remediation. He has a master's degree in Environmental Engineering and a PhD in Environmental Geochemistry from the University of Strathclyde in Glasgow, Scotland, in addition to an undergraduate honors degree in geology. His Ph.D. thesis investigated patterns of arsenic and associated potentially toxic metals at historical mining sites in Alaska, Scotland and Colombia impacted by mine and mine waste. His research interests include mine waste, arsenic geochemistry, coal combustion, acid mine drainage, mercury mobility and contaminated land evaluation. He has expertise in analytical methods, including ICP-MS, AFS, XRF, XRD, and GC-MS. Additionally, he has extensive business development experience.

Dr. Torrance was elected a Fellow of The Geological Society in 2009 and a Chartered Geologist in 2014. He meets the requirements of a qualified person (QP) in contaminated land in Alaska as defined by 18 AAC 78.995 and is a licensed Professional Geologist in the State of Alaska. He meets the requirements for an environmental professional set forth in 40 CRF §312.10(b) He was appointed an Honorary Research Fellow at the University of Strathclyde, Scotland in 2014 and also serves as an adjunct professor at UAA.

Experience

January 2013-Present
APC SERVICES, LLC, Anchorage, AK
Senior Environmental Geologist-Keith is conducting environmental baseline studies at the Pebble Project in southwest Alaska. Field studies include acid rock drainage assessment and surface water hydrology measurements at 19 stations on the Upper Talarik Creek, Newhalen River and road corridor areas. This work includes discharge measurements, field parameter measurements, and collection of surface water samples for laboratory analysis. Keith is also reviewing groundwater data on the former Port Heiden radio relay station site which has subsurface groundwater contamination by TCE and DRO and managing soil landfarming. He also has undertaken many Phase I and Phase I environmental site assessments in Alaska.

April 2012-January 2013
TERRASAT, INC., Anchorage, AK
Senior Environmental Scientist-Managed field investigations of urban contaminated sites in Alaska impacted by UST releases and oil spills. Coordinated with ADEC on behalf of clients to supervise collection of soil and surface water samples and interpret analytical data. Compiled GIS data and authored Phase II environmental assessment reports for ADEC.

August 2011-May 2012
UNIVERSITY OF ALASKA ANCHORAGE, Anchorage, AK
Adjunct Professor/Lab Coordinator-As an adjunct faculty member within the department of geosciences, Keith developed and taught GEOL 115L environmental geology laboratory for undergraduate students, with hands-on instruction on hydrology, stream discharge measurements, soil and water sampling. He set up the department's rock sample preparation facility.

September 2008-May 2012
UNIVERSITY OF STRATHCLYDE, Glasgow, Scotland
Research Fellow While pursuing his Ph.D., Keith undertook extensive fieldwork in Scotland, Alaska and Colombia at historical mining sites. In Alaska, he worked on projects at Lucky Shot, Golden Zone, Red Devil Mine and the Hi-Yu Mine. As a member of a contaminated land research group, he worked on two urban sites in Glasgow impacted by hexavalent chromium ore processing waste, coal tars and coal mining spoil.

January 1989-September 2008
STRUERS, INC., Westlake, OH
Business Manager/Engineer-Keith was responsible for business development for the North American subsidiary of a European manufacturer of laboratory testing and environmental characterization equipment used in the oil, mining and semiconductor industries.

Education

Ph.D., Environmental Geochemistry, University of Strathclyde, Glasgow, UK 2012
MRes., Environmental Engineering, University of Strathclyde, Glasgow, UK 2009
BSc (Hons)., Geology, University of Glasgow, UK 1982

Ground Gas Monitoring Course, 2009
Geology of Rare Earth Element Deposits, Alaska Miners Association, 2010
Geology of Iron Oxide-Copper-Gold Deposits, Alaska Miners Association, 2011
Copper Nickel Platinum Deposits Short Course, Alaska Miners Association, 2012
Alaska Mine Geology, Alaska Miners Association, 2013
Air Quality Seminar, PacificRim Institute, 2014
ASTM Training on Phase I and Phase II environmental site assessments, 2014

Certifications

Certified Professional Geologist (CPG-11647)
Professional Geologist State of Alaska-(PG - License # 696)
Chartered Geologist (CGeol)
European Geologist (EurGeol -1208)
38 Hour Army Corps of Engineer Wetland Delineation Training Program (Certificate 7261)
16 Hour Wetland Permitting Training
Alaska Certified Erosion & Sediment Control Lead (AK-CESCL) Certified (AGC-13-0502)
HAZWOPER 40-hour Certification; 8-hour refresher
AHERA Asbestos Contractor/Supervisor Initial 40 Hour Course
HAZWOPER Supervisor Training
Wildlife Awareness Training
CPR Certified. 2013

Publications

Torrance, K.; Keenan, H., Munk, L. and Hagedorn, B. (2012). 'Arsenic speciation and mobility in surface water at Lucky Shot Gold Mine, Alaska.' Environmental Geochemistry & Health. 34(6) 711-723.

Torrance, K. W. and Keenan, H. E. (2012) 'Screening for mercury at suspected contaminated land sites.' International Environmental Technology, 21(11) 1-2.

Torrance, K. and Keenan, H. (2012) 'The environmental cost of the semiconductor elements.' Compound Semiconductor 18(1) 47 – 51.

Torrance, K. W., Rein, G., Switzer, C., Carvel, R., Hadden, R. and Belcher, C. M. (2012) 'Chapter 20. Self-contained smoldering combustion of a coal waste heap in Central Scotland.' in Stracher, G. B.; Prakash, A. & Sokol, E. V., ed. (2012), Coal and Peat Fires. A Global Perspective. Volume 2 : Case Studies., Amsterdam : Elsevier. (Sept. 2012).

Torrance, K. W.; Keenan, H. E.; Hursthouse, A. S. & Stirling, D. (2010). Measurement of Arsenic and Gallium Content of Gallium Arsenide Semiconductor Waste Streams by ICP-MS. Journal of Environmental Science, Part A. 45(4) 1-5.

Torrance, K. W. & Keenan, H. E. (2009). 'Management of Arsenic-rich Waste Streams in III-V Foundries'. Semiconductor Today. 4(9) 62-64.

Memberships

Fellow of The Geological Society
Geological Society of America
American Institute of Professional Geologists
Association of Environmental and Engineering Geologists
Society for Environmental Geology and Health
Geochemical Society
International Association of Geochemistry
American Geophysical Union
Alaska Geological Society (President 2014/15)
Alaska Miners Association

APPENDIX E

TITLE SEARCH