



**FORMER GENERATOR BUILDING  
KOYUKUK, ALASKA  
PHASE I AND LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT**

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**Submitted to: Yukon River Inter-Tribal Watershed Council**

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## **1.0 SUMMARY**

Our Phase I and Limited Phase II ESA included a combination of research, interviews, and site reconnaissance in accordance with the scope of work in our proposal dated May 27, 2008. Based on the findings of these activities, it is our opinion that there are recognized environmental conditions with respect to the subject property, and these conditions likely originated from on-site and off-site sources. This report presents our findings. Photographs taken during our site reconnaissance are included in Appendix A; selected documentation associated with the regulatory record review is included in Appendix B; title search documentation is included in Appendix C, laboratory data are included in Appendix D, a laboratory data QC checklist is included in Appendix E, a conceptual site model is included in Appendix F, and our proposal is included in Appendix G.

## **2.0 INTRODUCTION**

### **2.1 Purpose**

BGES, Inc. (BGES) was retained by the Yukon River Inter-Tribal Watershed Council (YRITWC), to conduct a Phase I & Limited Phase II Environmental Site Assessment (ESA) of a former generator building (hereafter referred to as the subject property), located in Koyukuk, Alaska (Figure 1). The purpose of this assessment was to evaluate the potential for environmental impacts to the property from on-site or off-site sources and to assess related environmental conditions at the subject property.

### **2.2 Detailed Scope of Services**

This Phase I ESA was performed during late July of 2008, in accordance with the scope of work detailed in our proposal dated May 27, 2008. The Phase I ESA was also conducted in general accordance with U.S. Environmental Protection Agency (EPA) 40 CFR Part 12 Standards and Practices for all appropriate inquiries (AAI) and American Society for Testing Materials (ASTM) Standard practice for environmental site assessments E 1527-05; approved November 18, 2005. A detailed description of our scope of service can be found in our proposal, included in Appendix G.

### **2.3 Significant Assumptions**

This report presents facts, observations, and inferences based on conditions observed during the period of our project activities, and only those conditions that were evaluated as part of our scope of work.

Our conclusions and recommendations are based on our observations and the results of our research, and as such, rely on the accuracy of the databases that were reviewed and the information provided by the individuals that were interviewed. In addition, changes to site conditions may have occurred since we completed our initial project activities. These changes may be from the actions of man or nature. Changes in regulations may also impact the interpretation of site conditions.

## **2.4 Limitations and Exceptions**

This report was prepared for our client, the YRITWC. This Phase I ESA included a title search. Groundwater and surface water sampling was not part of the scope of work.

Exceptions to the ASTM-prescribed procedures include the following:

- The ASTM standard practice minimum search distance for the Federal Resource Conservation and Recovery Act (RCRA) generators list is just for the subject and adjoining properties. For this assessment, we utilized the U.S. Environmental Protection Agency (EPA) Enviromapper database and searched to ¼ mile from the subject property.
- The ASTM standard practice minimum search distance for the Federal Emergency Response Notification System (ERNS) list is just for the subject property. For this assessment, we utilized the U.S. National Response Center database, which has replaced the ERNS list, and our search included the subject property and adjoining properties.
- A brief review of the U.S. Fish and Wildlife Wetlands Inventory was performed to evaluate whether or not wetlands are located on the subject property, although the ASTM does not require this information.

BGES will not disclose our findings to any parties other than our client as listed above, except as directed by our client, or as required by law.

## **2.5 User Reliance**

This report was prepared for our client, YRITWC, which is authorized to use the information in accordance with the agreed-upon scope of work and subject to any contractual limitations. Likewise, affected stakeholders (The Environmental Protection Agency, the ADEC, local community groups and individuals involved in the project planning process) may also rely on the information provided in this report, but are subject to the same scope of work conditions and contractual limitations that apply to our client as identified above. Components of this report become outdated after one hundred and eighty (180) days of the date of this report and will need to be updated if the subject property has not been acquired within that time.

### **3.0 SITE DESCRIPTION**

The subject property is located in Koyukuk, Alaska. The subject property contains a generator building that was used as the City's primary power plant for nearly twenty years, from the early 1980's until the current generator building was constructed. The subject property is owned by the City of Koyukuk and currently contains the old generator building and a portion of the old pipeline that connected the generator building to the fuel terminal.

#### **3.1 Location and Legal Description**

The legal description of the subject property is Block 10, Koyukuk Townsite Subdivision. The subject property is located at 64 degrees 52' 46.84" North Latitude, 157 degrees 42' 21.55" West Latitude in the Northeast Quarter of the Southwest Quarter, Section 17, Township 7 South, Range 06 East, Seward Meridian, Alaska.

#### **3.2 Site and Vicinity General Characteristics**

According to the Geologic Map of the Nulato Quadrangle, prepared by the USGS in 2000, the surficial geology of the soil underlying the city of Koyukuk and the river basin in general is characterized as young flood plain deposits. The ecoregion in the vicinity of Koyukuk is described by the U.S. Fish and Wildlife Service as containing steep habitats with willow and alder thickets along gravel bars and stands of cottonwood and white spruce on higher ground. The land is interspersed with bogs, tundra, grass lakes (seasonally-flooded basins) and black spruce. Koyukuk is reported to receive approximately 13 inches of precipitation per year.

The City of Kotlik is subject to regular flooding. According to United States Army Corps of Engineers (USACE) Flood Hazard Data, included in Appendix B, the City of Koyukuk was submerged by approximately 16.7 feet of flood water in 1963, likely representing a 100-year flood. A flood is also listed as having occurred in 1989, though no water elevation was listed in association with this flood. National Wetlands Inventory maps are not available for the region around Koyukuk. The Innoko National Wildlife Refuge is located across the Yukon River, to the south of Koyukuk, and the Koyukuk National Wildlife refuge is located approximately 8 miles to the northwest of Koyukuk.

### **3.3 Current Use of the Subject Property**

The subject property is currently unused. Pedestrians occasionally traverse the property grounds en route to other locations.

### **3.4 Descriptions of Structures, Roads, Other Improvements on Site**

The subject property had an abandoned generator building that contained electrical generators as well as a day tank that appeared to be empty, and a coolant circulation system at the time of our site reconnaissance.

### **3.4 Current Uses of Adjoining Properties**

The property to the north of the subject property is developed and contains the City and Tribal Offices. The building across Vista Street, to the northwest of the subject property, contains the community washeteria; a school is located across Vista Street to the west of the subject property, and the old City tank farm is located to the south of the subject property.

## **4.0 USER-PROVIDED INFORMATION**

Interviews were conducted with individuals knowledgeable about current or historic site conditions. The following sections provide pertinent information gathered from the interviews.

### **4.1 Title Records**

A limited liability title search was performed on this property. This title search has identified that the ownership of the subject property was vested in the City of Koyukuk.

### **4.2 Environmental Liens or Activity and Use Limitations**

No environmental liens are known to exist in association with the subject property.

### **4.3 Specialized Knowledge**

The former generator building was initially identified by the YRITWC staff who conducted an inventory of all of the potential brownfields sites in Koyukuk in 2007. YRITWC provided detailed information and documentation collected during their inventory and communication with the Koyukuk

Tribal Council. Local residents provided some specialized knowledge about the environmental condition of the subject property. Residents indicated that there had been several overfill accidents at the generator building. Drums of used oil had been accumulated at the site. Some of these drums had been stored outdoors near the road during the winter time, but had overturned in the spring of 2008 as a result of the supporting snow melting. These drums were the sources of relatively new surface stains observed on the subject property. The area is known to flood seasonally: a meltwater pond forms in the spring during break up and the area is also known to flood in the fall if the Yukon River raises over its banks.

#### **4.4 Commonly Known or Reasonably Ascertainable Information**

Information regarding past usage of the subject property and surrounding properties was obtained primarily from local residents. Local residents indicated that they suspected that the subject property was contaminated, and that contamination may originate from historical overfill accidents.

#### **4.5 Valuation Reduction for Environmental Issues**

The value of the subject property has not been appraised and we are not aware of any reductions having been made for known environmental conditions of the subject property.

#### **4.6 Owner, Property Manager, and Occupant Information**

The property is currently vacant. It is believed to be owned by the City of Koyukuk, and is not managed or used for any specific activities.

#### **4.7 Reason for Performing Phase I Environmental Site Assessment**

This Phase I ESA was performed in accordance with our contract with the YRITWC Brownfields Tribal Response Program. The ultimate goal is to limit the impact to human and ecological health originating from this site and to redevelop the site in a manner that addresses community needs and provides for beneficial reuse of the property.

### **5.0 RECORDS REVIEW**

BGES conducted a review of numerous records and databases to research the potential for known contamination on or near the subject property.



## **5.1 Standard Environmental Record Sources**

Databases consulted for this report include the Environmental Protection Agency (EPA) National Priority List (NPL); The U.S. EPA Comprehensive Environmental Response, Compensation, and Liability System (CERCLIS) list; U.S. EPA Resource, Conservation, and Recovery Act (RCRA) Corrective Action Detail Report (CORRACTS) list; U.S. EPA RCRA non-CORRACTS Treatment, Storage and Disposal Facilities list; the ADEC Registered Underground Storage Tanks database; the ADEC Leaking Underground Storage Tank (LUST) database; the ADEC Contaminated Sites database; the ADEC Statewide Oil and Hazardous Substance Spills database; the National Response Center database; the U.S. EPA Envirofacts/Enviromapper database; the U.S. EPA Toxic Release Inventory (TRI) Sites database; and the Alaska State List of Landfills and Solid Waste Facilities.

### **5.1.1 U.S. Environmental Protection Agency (EPA) National Priority List (NPL)**

The EPA's NPL, updated as of May 9, 2008, was reviewed on August 7, 2008. Eight sites were listed in the state of Alaska. Three sites are listed on the NPL for the greater Anchorage area; four sites are listed in the Fairbanks North Star Borough; and one site is listed in the Aleutians West Census Area. Three sites have since been deleted from this list. All of these sites are greater than 1 mile from the subject property.

### **5.1.2 U.S. EPA Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) List**

The U.S. EPA CERCLIS list, based on data extracted on July 8, 2008, was reviewed on August 7, 2007. All of the CERCLIS sites are greater than 1 mile from the subject property.

### **5.1.3 U.S. EPA Resource, Conservation, and Recovery Act (RCRA) Corrective Action Detail Report (CORRACTS)**

The U.S. EPA RCRA CORRACTS for Alaska, updated as of May 6, 2008; was reviewed on August 7, 2008. No sites were listed within the search distance of 1 mile.

### **5.1.4 U.S. EPA RCRA Non-CORRACTS Treatment, Storage and Disposal (TSD) Facilities**

The U.S. EPA RCRA Non-CORRACTS TSD Facilities for Alaska, updated as of April 9, 2008, was

reviewed on August 7, 2008. No sites were listed within the search distance of ½ mile.

#### **5.1.5 ADEC Registered Underground Storage Tanks Database (UST)**

The ADEC Registered UST database, which we reviewed on August 7, 2008 is updated regularly and indicated that there are no registered USTs within the City of Koyukuk.

#### **5.1.6 ADEC Leaking Underground Storage Tanks (LUST) Database**

The ADEC Registered UST database, which we reviewed on August 7, 2008 is updated regularly and indicated that there are no LUST sites located in the City of Koyukuk.

#### **5.1.7 ADEC Contaminated Sites Database**

The ADEC Contaminated Sites Database, which was reviewed on August 7, 2008 and is updated regularly, indicated that there are three contaminated sites located within ½ mile of the subject property. All three of these sites are listed as being “Active” by the ADEC, indicating that further characterization and remediation may be required at these sites.

One of the sites listed in the ADEC database is the City of Koyukuk Generator Day Tank, which is the subject property of this assessment. ADEC records regarding this site were reviewed, and indicated that at least two release events had occurred at this property. Both release events occurred in 2002 and involved the failure of an overfill prevention sensor. The ADEC visited the site and excavated trenches to evaluate the extent of contamination. The evaluation was based on visual and olfactory evidence and no screening or analytical soil samples were collected, and the depth of impacted soils was not evaluated. It is our opinion that this historical release, in association with the fact that the site is an open Contaminated Site in the ADEC Contaminated Sites database, represents a recognized environmental condition with respect to the subject property.

A second ADEC contaminated site is the elementary school, located across Vista Road, to the west of the subject property. Diesel was released in surface soil in this area. The leak was discovered and impacted soil was excavated. Impacted soil was present around the casing of the well that provided the elementary school with its drinking water. This well was decommissioned, and the school’s water supply was configured to be obtained from the washeteria. Excavated soils were land-farmed on site. The ADEC database indicates that contamination greater than the ADEC cleanup levels was present in

soils beneath the land-farm. This land-farming activity occurred to the west of the school, greater than 200 feet to the west of the subject property. While only near-surface soils are suspected of being impacted, this site represents a recognized environmental condition with respect to the subject property, based on the potential for contamination to be spread during flooding. The potential for the subject property to be impacted by this site should be evaluated during future characterization or remedial work at the subject property.

A third contaminated site was located approximately ½ mile to the southwest of the subject property. This site was described as containing surface soil that was impacted by numerous small releases from equipment during equipment maintenance and storage. Due to the relatively shallow nature of the described releases, the fact the site is located almost ½ mile from the subject property, and that the fact that the probable groundwater flow direction is towards (and parallel to) the Yukon River and away from the subject property, it is our opinion that this site is not considered a recognized environmental condition with respect to the subject property.

Additional information concerning the contaminated sites is included in Table 1 and Appendix B, and their locations are shown on Figure 2.

#### **5.1.8 ADEC Statewide Oil and Hazardous Substance Spills Database**

The ADEC Statewide Oil and Hazardous Substance Spills Database contains records concerning spills of oils and other hazardous substances that have occurred throughout Alaska. Records of spills that have occurred since July of 1995 are included in this database. The database is updated regularly and was reviewed on August 7, 2008. Six individual spills were reported to have occurred at locations near the village of Koyukuk. Five of these spill sites have been issued a closed status by the ADEC, indicating that further characterization and cleanup of these sites is not required at this time. One of the spill sites listed is the City of Koyukuk Generator Building, the subject property of this assessment. The spill site report lists the same two overfill events that were described in the ADEC database. The Spill database indicates that this spill has been transferred to the contaminated sites program. Because this is an active spill site, as listed within the ADEC Contaminated Sites database, it is our opinion that this spill event is a recognized environmental condition with respect to the subject property.

Additional information concerning the spill sites is included in Table 1 and Appendix B, and their approximate locations are shown on Figure 2. The location of one of the spill sites, located at

Koyukuk City and Nulato City, was too ambiguous to be located on Figure 2.

### **5.1.9 National Response Center**

The National Response Center (NRC) database, which was last updated on August 11, 2008; was reviewed on August 11, 2008. The NRC database lists the subject property as the site of a release of approximately 50 gallons of No. 1 fuel oil on March 3, 2002. This is approximately the same date that the second overfill accident at the subject property occurred, but a smaller volume of fuel is described as being released. This release has already been cited as a recognized environmental condition with respect to the subject property, and since it is covered within the ADEC Contaminated Sites database, we did not add an additional record to Table 1. The designation of the site as a NRC site is shown on Figure 2.

### **5.1.10 U.S. EPA Envirofacts/Enviromapper**

In response to the Emergency Planning and Community Right to Know Act [42 U.S.C. 11001 et seq. (1986)], also known as Title III of Superfund Amendments and Reauthorization Act (SARA), EPA maintains a database of hazardous material transporters, storage facilities, solid waste, air, and water pollution generators. The database was reviewed on August 11, 2008 for any sites within ¼ mile of the subject property. The sites identified in the Enviromapper database are operated by transporters or generators of hazardous waste, used oil, etc.; and these listings do not indicate the presence or absence of contamination within the surface or subsurface at these sites. No Enviromapper Sites were listed as being located within ¼ mile of the subject property.

### **5.1.11 U.S. EPA Toxic Release Inventory (TRI) Sites Database**

The Toxics Release Inventory (TRI) is a publicly available EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain industry groups as well as federal facilities. This inventory was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and was expanded by the Pollution Prevention Act of 1990. The TRI sites database was reviewed on August 11, 2008 for any sites located within ¼ mile of the subject property. The database contains reports of toxic releases that occurred between 1988 and 2006, these years were searched and no sites were listed as being located within ¼ mile of the subject property.

### **5.1.12 Alaska State List of Landfills and Solid Waste Facilities**

The ADEC Division of Environmental Health, Solid Waste Management List of Sites as of August 11, 2008, for the interior region was reviewed. Two landfills are listed in association with Koyukuk. One of these is a closed landfill located to the east of the runway, approximately 2,200 feet to the southwest of the subject property. A second site is the active permitted landfill located off of Cemetery Road, approximately 2,900 feet, or just over ½ mile from the subject property. Because of the relatively large distances between these two landfill sites and the subject property, it is our opinion that these sites do not constitute recognized environmental conditions affecting the subject property. No other landfills or solid waste facilities are listed as being located within 0.5 mile of the subject property.

### **5.1.13 Sanborn Fire Maps**

Sanborn fire maps have not been prepared for Koyukuk.

## **5.2 Historical Use Information on the Subject Property and Surrounding Area**

Aerial photographs were reviewed to determine the historical use of the subject property and the surrounding area. Aerial photographs taken in 1971, 1975, 1984, 1993 and 2008 were reviewed. Photographs of the subject property taken in 1984, 1993, and 2008 are included as Figures 3, 4, and 5, respectively.

The June 7, 1971 aerial photograph showed the subject property as being completely undeveloped and covered with vegetation, which consisted primarily of low brush. The village was centered primarily on the river bank with few houses established on what were to become Spruce Street and Third Ridge Road. The school that was present at the time of our site reconnaissance had not been constructed at the time this aerial photograph was taken.

The July 15, 1975 aerial photograph showed the subject property as being completely undeveloped and covered with vegetation. The remainder of the village looked similar in appearance to the 1971 aerial photograph; except that the road that is located near the school was better established than it was in the previous photograph, though the school itself had not been constructed at the time this aerial photograph was taken.

The September 11, 1984 aerial photograph, included as Figure 3, showed the subject property as

containing the former generator building. The subject property was not paved and appeared to be mostly or completely devoid of vegetation. A tank farm was adjacent to and south of the subject property; and the school and washeteria buildings were across Vista Road to the west of the subject property. Another tank farm was visible to the west of the school. The pipeline that supplied fuel to both the former generator building and the school tank farm was evident extending east-west under Vista Road, and extending off of the subject property to the southeast in the direction of the river. The City office building had been constructed to the north of the subject property. Numerous structures are located along the Yukon River.

The August 26, 1993 aerial photograph, included as Figure 4, showed the subject property as being in similar condition to what was observed in the 1984 aerial photograph, except for an abundance of vegetation. What appeared to be several drums were located in the vicinity of the former generator building and a square, indiscernible, object was located to the north of the former generator building. A fence was present around the tank farm located adjacent to, and south of the subject property, and two new small structures were also visible in this area. A large quantity of lumber was stored near the City and Tribal office building, and a sewage lagoon had been constructed to the northwest of the school.

The June 28, 2008 aerial photograph, included as Figure 5, showed the subject property as being in similar condition to what was observed in the 1984 aerial photograph. Fewer drums appeared to be present in the vicinity of the generator building. The subject property appeared to contain denser vegetation than what was observed in the 1993 aerial photograph. Major features in the area surrounding the subject property, including the school, the City office building, and the washeteria, appear to be relatively unchanged, compared to the 1984 aerial photograph. A sewage lagoon that was present to the northwest of the school in the 1984 aerial photograph appeared to be dry in the 2008 aerial photograph. The new City tank farm can be observed to the west of the school in the 2008 aerial photograph. Additional structures are present to the east and northeast of the subject property. Many of the residential structures that were present on the waterfront in the 1984 aerial photograph are no longer present in the 2008 aerial photograph.

## **6.0 SITE RECONNAISSANCE**

Reconnaissance of the subject property was conducted on July 21, 2008. Weather conditions were

warm (about 50 degrees Fahrenheit), with partly cloudy skies and occasional light showers. One representative from BGES was on site to perform this reconnaissance. The following paragraphs discuss our findings and observations with respect to the site reconnaissance. YRITWC Brownfields Project Manager Sonta Hamilton, and Environmental Technician, Rose Hewitt, were also on site to work with the community of Koyukuk and facilitate discussions.

## **6.1 General Site Setting**

Koyukuk, Alaska, is located at the confluence of the Koyukuk and Yukon Rivers. The town is bound by water on both the east and southern sides. The Koyukuk River flows southwesterly along the eastern edge of the village, while the Yukon River flows westward along the southern portion of the village. The U.S. Fish and Wildlife Service describes the land surrounding Koyukuk as containing steep habitats with willow and alder thickets along gravel bars and stands of cottonwood and white spruce on higher ground. The area undergoes seasonal flooding. Koyukuk Mountain is located on the west shore of the Yukon River, to the northeast of the subject property.

## **6.2 Subject Property Site Setting**

The subject property is located in central Koyukuk, Alaska, and contains an abandoned generator building. The surrounding area was partially developed at the time of our site reconnaissance. The property adjacent to, and north of the subject property was occupied by the City and Tribal offices. The washeteria was located across Vista Street to the northwest and the local school was located across Vista Street to the west. The area to the east of the property was covered with heavy vegetation and was undeveloped. The property adjacent to, and south of the subject property was occupied by USTs and a pump building. The area around these USTs was controlled by a chain-link fence. The vicinity of the tanks was covered with vegetation and no staining or obvious signs of contamination were observed in our brief reconnaissance of this adjacent property.

### **6.2.1 Subject Property Exterior**

The subject property consisted of a lot covered with heavy vegetation that contained a structure formerly used as the City's primary power plant (Photograph 1 in Appendix A). The building was constructed of wooden materials, was elevated off of the ground on wooden pilings, and had wood exterior siding. Multiple drums were stored on the subject property. Five drums were located on a

porch on the west side of the building, and five more drums were located in a drainage ditch along Vista Street, to the west of the former generator building (Photograph 2 in Appendix A). Four of these drums appeared to be empty at the time of our site reconnaissance, but at least two had apparently discharged their contents onto the ground in the spring of 2008 (Photograph 3 in Appendix A). Soil stained by releases associated with these drums appeared to be impacted primarily by used engine oil, which was consistent with the reported drum contents. In general, the lot surrounding the building was covered with thick vegetation. An area with low vegetation, dominated by berry bushes and grasses, was located to the south of the former generator building (Photograph 4 in Appendix A). A pipeline that was used to supply fuel to both the former generator building and the school, located across Vista Street, was observed to the south of the building (Photograph 5 in Appendix A). This area was reportedly used historically for transporting fuel from tanks to a generator facility. A UST was located to the north of the former generator building, but this UST appeared to be abandoned and did not contain fuel. No staining was observed in association with this UST. Two pipes, reportedly belonging to a waste heat transfer system, emerged from the northern side of the generator building and made right turns, descending into the ground (Photograph 6 in Appendix A). Spools of insulated electrical wire were located to the north and to the east of the building.

Portions of the ground surface below the former generator building were observed to be impacted by hydrocarbon contamination. In particular the area beneath the engine mounts was saturated with what appeared to be used motor oil (Photograph 7 in Appendix A). This staining appeared to be relatively localized and little evidence of further staining or impacts to surface soil were observed beneath the northern, southern, and western portions of the generator building, with the exception of staining in the immediate vicinity of the former fuel supply pipeline that supplied the former generator building day tank. It is our opinion that the presence of staining and soils that appear to be contaminated with both used engine oil and diesel fuel are recognized environmental conditions with respect to the subject property.

### **6.2.2 Subject Property Interior**

The interior of the former generator building was accessed through a wood door located on the west wall of the building. The building was constructed of wood siding, and contained wallboard walls, a wallboard ceiling, plywood and concrete floors, and no windows. A second door located on the south end of the building had been rendered inaccessible with a piece of plywood. The building contained a



variety of equipment and supplies associated with the operation of a rural power plant. Buckets of used oil were located throughout the building's interior, as well as on the porch located on the east side of the building (Photographs 8 through 10 in Appendix A). Five drums were located on the porch (Photograph 1 in Appendix A). These drums appeared to be full and their contents were not clearly marked. Bags containing oily absorbent rags and other waste were also observed in this area. While hydrocarbon staining was observed both on the porch and on the concrete floor in the building's interior, the only area of surface soil that appeared to be impacted by these releases was located beneath the engine mounts in the eastern portion of the building as was previously discussed in section 6.2.1, above. Other items noted inside the generator building included batteries (Photograph 10 in Appendix A), fluorescent lighting, fluorescent tubes, hardware, containers of battery acid, cases of unused motor oil, empty motor oil containers, a space heater, a tool cabinet, belts, engine parts, used oil and fuel filters, unused oil and fuel filters, and debris (Photographs 11 through 13 in Appendix A).

The former generator building's day tank was located in the southern portion of the building, near the building's primary electrical breaker box (Photograph 14 in Appendix A). The day tank appeared to have a capacity of approximately 50 gallons and had a shallow containment basin located around the base. No evidence of leaks or releases was observed in association with this day tank. Overfilling of this day tank was reported to be the source of at least two historical releases. Observations of the building's interior were consistent with reports that fuel was not released from the tank inside the building, but rather was forced out the vent spout onto the roof due to the failure of a fuel monitor that allowed the day tank supply pump to continue pumping after the tank was full.

Three generators were mounted in the east-central portion of the building (Photograph 15 in Appendix A). The floor beneath the generators appeared to be saturated with diesel, and the ground beneath the generators appeared to be saturated with used oil, likely mixed with diesel. This saturated soil has previously been cited as a recognized environmental condition in section 6.2.1, above. The engine cooling system, heat exchanger, and waste heat piping system were located in the northern portion of the generator building (Photograph 16 in Appendix A).

A containment basin, full of what appeared to be a mixture of rainwater and diesel, was located on the south porch of the building (Photograph 17 in Appendix A).

## **7.0 INTERVIEWS**

Interviews were conducted with individuals knowledgeable about current and historic site conditions. The following sections provide pertinent information gathered from the interviews. Information regarding past usage of the subject property and surrounding properties was obtained primarily from local residents. Information was provided primarily by Shanda Kriska, the local environmental coordinator; Cindy Pilot, Tribal Administrator and City Mayor; Hazel Lolnitz, environmental assistant; and Marilyn Roberts, city administrator. The following sections provide pertinent information gathered from the interviews.

### **7.1 Interview with Site Manager**

The site is not currently managed or occupied by any particular person or entity. A title search was conducted and confirmed that the property was owned by the City of Koyukuk.

### **7.2 Interviews with Local Government Officials**

Interviews were performed at the City and Tribal offices, during the course of our site reconnaissance, and John Dayton, the Power Plant Operator at the time of one of the recorded overfill accidents denied our requests for an interview. Local residents indicate that they believed the generator building had been constructed in the early 1980s and had operated until the new City power plant was built several years ago (approximately 2002). Ms. Kriska indicated that the overfill accidents had been the primary release events at the subject property, but also stated that historically, used oil was stored in drums and was occasionally disposed of by burning the oil in an open-top drum. This resulted in some release events in which used oil would boil over the top of the drums, but she believed that some of these events may have been addressed by hand digging to remove contaminated soils, though she did not say where these soils may have been disposed of. She also stated that the meltwater pond that formed in the low-lying southern area of the subject property exhibited a sheen and hydrocarbon odor during the spring melt. Cindy Pilot and Shanda Kriska helped to arrange interviews with locals who might have specialized knowledge of site conditions.

### **7.3 Interviews with Others**

Several people were interviewed at the City office and on the street near the subject property during

our site reconnaissance. Local residents' descriptions of site activities generally agreed with the description given by Ms. Kriska. All of the local residents agreed that the site has been covered by a meltwater flood in the springtime and was subject to periodic flooding in the fall, though the descriptions and dates of flood events differed depending upon the person being interviewed. No one interviewed indicated that the area was actively used for any subsistence food gathering activities.

A special journey was made to the home of Harlod Yatlin, who was an alternate Power Plant Operator at the former power plant. He provided little information about the subject property, aside from confirming that the building was constructed in the early 1980s. He stated that he did not remember any overflow accidents.

## **8.0 ADDITIONAL SERVICES**

### **8.1 Description of Services**

A limited Phase II ESA was performed in conjunction with our Phase I ESA. The site contained a former generator building which contained a day tank which was connected to a fuel pipeline. Recorded releases have occurred in association with the day tank on at least two occasions. BGES took the following actions with the goal of detecting and, if present, delineating to the extent possible, the vertical and horizontal extent of any contamination that may be present on the subject property. Hand borings were advanced in the vicinity of the former generator building, in areas of surface staining located near drums of used oil, and in a low-lying area where fuel was reported to have pooled after release events.

### **8.2 Methodology**

Discreet soil screening samples were scheduled to be collected from each hand boring at 2-foot intervals. In the vicinity of the low-lying area to the south of the tank farm, permafrost was generally encountered at a depth of approximately 6 feet below grade (bg), and this material was too solid to allow further advancement. Permafrost was encountered at a much shallower depth of 2.5 bg to the north of the generator building. Samples were named based on date, city, and location and then given a depth suffix, for instance: **2008 Koyukuk Generator Building area, Location 3** at a depth of **2** feet would be named "08-KOY-GB3-2". Screening results for borings advanced on the subject property

are presented in Table 2. For simplicity, samples are referred to by their location and depths only in the text of this report, i.e. “08-KOY-GB3-2” would be referred to as “GB3-2”.

The soil screening samples were collected from the center of the hand auger with clean, stainless steel spoons, and placed in sealable plastic bags, which were marked with the sample number and the time of collection. Soil samples were screened using headspace methods in accordance with ADEC guidelines. After the soils were placed into clean sealable bags, they were gently agitated for approximately 15 seconds, and then warmed for more than 10 minutes, but less than 1 hour, to allow for volatilization. The samples were then agitated again for 15 seconds, and screened using a photoionization detector (PID). The probe was gently inserted into the bag, and the greatest observed reading was recorded. The PID was calibrated prior to use with 100 parts per million isobutylene calibration gas. Analytical samples were collected from selected hand borings at the depth at which the soil boring exhibited the greatest field screening result. The locations at which both field screening samples and analytical samples were collected are presented in Figure 6.

The hand auger was cleaned prior to each use by utilizing a stiff brush to remove loose soil and then by washing the hand auger in an Alconox (laboratory-grade) detergent solution, prior to a potable water rinse. Soils from the hand boring not included in the laboratory samples were placed back in the boreholes. The water from washing the sampling supplies was spread in a thin layer on the ground surface in a manner to minimize any erosion.

Soil samples were collected using a clean, stainless steel spoon by removing material from the center (away from the edges) of the auger. Soil was placed directly into laboratory-supplied jars. Samples scheduled for volatiles analysis were preserved with methanol as soon as practical after sampling.

The soil samples were placed in a chilled cooler and delivered under chain of custody protocol to TestAmerica Laboratories in Anchorage. The laboratory samples were analyzed for gasoline range organics (GRO) by Alaska Method (AK) 101; benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA method SW 8021B, modified by AK101; diesel range organics (DRO) by AK102; and residual range organics (RRO) by AK103. The soil sample associated with the screening sample that yielded the highest PID reading, or that contained unique constituents thought to be atypical of other contamination encountered at the subject property, was analyzed for volatile organic compounds (VOC's) by EPA Method SW 8260, polynuclear aromatic hydrocarbons (PAHs) by EPA Method SW

8270 SIM, and metals by EPA Method 6020.

As a quality control measure, one duplicate sample was collected and submitted “blindly” to the laboratory, and a trip blank sample accompanied all samples scheduled for volatile analyses.

### 8.3 Evaluation of Laboratory Data

Samples from selected hand borings were designated for laboratory analysis based on field screening measurements. In total, three unique samples and one duplicate sample were collected at the subject property. Samples were taken from two distinct areas. One area which exhibited stained surface soils associated with recently spilled drums was located to the west of the former generator building. A second distinct area of contamination was associated with fuel oil releases at the generator building. Samples were submitted to the laboratory for PAH, VOC, and metals analysis in addition to GRO, DRO, RRO and BTEX analyses, from both of these areas. Every sample submitted for laboratory analyses contained concentrations of at least one constituent that was greater than ADEC cleanup levels.

Based on the results of our characterization, DRO is the primary analyte of concern at this site. Two samples were collected to the south of the generator building. Sample GBS1-2 was collected from beneath the location where the pipeline entered the south side of the building and likely would have been in the vicinity of recorded day tank releases. Sample GBS1-2 was taken at a depth of 2 feet bg and contained benzene [2.14 milligrams per kilogram (mg/kg)] toluene (35.2 mg/kg); ethylbenzene (28.5mg/kg); total xylenes (208 mg/kg); RRO (13,100 mg/kg; DRO (60,900) mg/kg; GRO (823) mg/kg; 1,2,4 trimethylbenzene (49.700 mg/kg); and naphthalene (99.1.0 mg/kg), all of which are greater than the respective ADEC cleanup criteria for these analytes (0.025 mg/kg for benzene; 6.5 mg/kg for toluene; 6.9 mg/kg for ethylbenzene; 63 mg/kg for total xylenes; 10,000 mg/kg for RRO; 250 mg/kg for DRO; 300 mg/kg for GRO; 23 mg/kg for 1,2,4 trimethylbenzene; and 20 mg/kg for naphthalene). Concentrations of all other constituents were either non-detectable or less than the applicable ADEC cleanup criteria. Sample GBD-2 was a duplicate of sample GBS1-2. In addition to exhibiting similar concentrations of the analytes that exceeded the ADEC cleanup criteria for the project sample, the duplicate sample exhibited concentrations of 1,3,5-trimethylbenzene and n-propylbenzene that exceeded the ADEC cleanup criteria.

Sample, GBS3-2, was collected approximately 30 feet to the south of the former generator building, in

a low-lying area in which meltwater pools during the spring and in which fuel oil was reported to have pooled after overfill accidents. Soil in this area appeared to be uncontaminated for approximately the first two feet bg, but below that depth, exhibited staining and strong hydrocarbon odors. A soil sample taken from this location contained only one constituent greater than the applicable ADEC cleanup criterion, DRO, was detected at a concentration of 22,800 mg/kg.

Four additional borings were advanced in the vicinity of the former generator building in attempt to better delineate the horizontal extent of contamination encountered at the subject property. Analytical samples were not submitted to the laboratory in association with these sampling locations, but field screening results provide a relative indication of the presence or absence of contamination. One hand boring, GBS2, was located to the south of GBS1 and to the north of GBS3. This location exhibited its greatest PID reading of 679 parts per million (ppm) at a depth of 4 feet bg. This reading is consistent with concentrations of analytes of concern observed at GBS1 and GBS3, though it should be noted that GBS3 exhibited a greater screening value and lower analytical concentrations than GBS1.

Another hand boring, GBS4, was located to the southeast of the former generator building in the general vicinity of a welded pipeline joint, located where the pipeline extended eastward into the thick brush, off of the subject property. This location exhibited its greatest PID reading of 859 ppm at a depth of 4 feet bg. This reading is consistent with concentrations of analytes of concern observed at GBS1 and GBS3.

One hand boring, GBE1, was located to the east of the generator building, just off of the built-up pad beneath the generator building and approximately 2 feet to the east of the area that exhibited the greatest amount of hydrocarbon staining and odor beneath the generator building. This boring was advanced at this location because it was impossible to use the hand auger beneath the building and was meant to evaluate the vertical extent of this staining just outside the building's footprint. This location exhibited its greatest PID reading of 431 ppm at a depth of 2 feet bg. This reading is consistent with concentrations of analytes of concern observed at GBS1 and GBS3.

The last hand boring (GBN1) was advanced to the north of the generator building. This boring did not display any indications of being impacted by hydrocarbon contamination. The PID reading associated with this location was 0 ppm, and permafrost was encountered at the shallow depth of 2.5 feet bg, which is not particularly surprising when one considers that this is the north side of the building and is

often shaded.

The other area of interest identified during our site reconnaissance was an area in which drums of used oil had been removed from the generator building and had been subsequently spilled (Figure 6). It is not known how full the drums were prior to spilling, but five drums were observed in the area. One of these drums was full of used motor oil and was covered with plywood. The other four drums were empty and it appeared that at least two of the spilled drums had formerly contained used oil. Three borings were advanced in areas that exhibited surface staining to evaluate the extent of contamination resulting from these drum spills. Staining in the vicinity of DR1 and DR2 seemed to diminish to a negligible amount at depths between 2 and 3 feet bg, while staining in the vicinity of DR3 seemed to diminish to a negligible amount at a depth of between 1 and 2 feet bg. Screening samples from these locations could not be correlated with the degree of contamination due to the heavy nature of the compounds released and typically were either 0 ppm or 1 ppm. A laboratory sample was collected from the area exhibiting the heaviest staining and was analyzed for GRO,DRO, RRO, BTEX, PAHs, VOCs, and metals by the methods outlined in Section 8.2 of this report. This analytical sample (DR2-1.50) was collected from a depth of 1.5 feet bg and contained concentrations of RRO of 18,300 mg/kg and DRO of 3,490 mg/kg, both of which are greater than the respective ADEC cleanup values of 10,000 mg/kg and 250 mg/kg, respectively. Concentrations of all other constituents were either non-detectable or less than the appropriate ADEC cleanup criteria.

#### **8.4 Laboratory Data Quality Review**

Soil sample analyses were conducted by TestAmerica, an ADEC-approved laboratory. Samples were hand-delivered to TestAmerica by BGES personnel under chain of custody protocol. The laboratory work order for these samples is AQJ0073. The sample cooler arrived at the laboratory at 3 degrees Celsius, within the industry-specified temperature range of 4 degrees +/- 2 degrees Celsius.

The samples contained the proper preservatives for the requested analyses and no unusual sample conditions were noted by the laboratory. A trip blank was submitted along with samples designated for volatile analysis.

The method reporting limits for several analytes associated with the project samples exceeded the respective ADEC cleanup criteria. However, because all but one of the reported results for these analytes also exceeded the ADEC cleanup criterion, it is our opinion that these MRL exceedances do

not affect the acceptability of the data for their intended use. The one analyte that was not detected above the MRL (which exceeded the ADEC cleanup criterion) was for benzene in Sample 08-KOY-GB3-2 (at 0.166 mg/kg). As such, this sample may contain a concentration of benzene that exceeds the ADEC cleanup criterion for this analyte. Because this sample contains other contaminant constituents at concentrations that greatly exceed the ADEC cleanup criteria, it is our opinion that this lack of information pertaining to the concentration of benzene within the sample does not affect the acceptability of the data for their intended use. The concentration of benzene as reported in Table 2 has been flagged "UJ" indicating that the non-detectable concentration is an estimation.

The recoveries of surrogates in association with the DRO and RRO analyses of Sample 08-KOY-GB3-2 were outside of the laboratory acceptance criteria. This may indicate that the reported concentrations of DRO and RRO within the sample may be slightly biased high or low. However, because the reported result for DRO within this sample greatly exceed the ADEC cleanup criterion for this analyte, and because the concentration of RRO within this sample was not detected above the method reporting limit (which was well below the ADEC cleanup criterion for RRO); it is our opinion that this QC failure does not affect the acceptability of the data for their intended use.

A duplicate soil sample was submitted "blindly" to the laboratory to provide a measure of sampling precision. All of the relative percent differences (RPDs) calculated between detectable analytes were below the QC goal of 50 percent except for the following analytes: n-butylbenzene (67.8 percent), sec-butylbenzene (67.0 percent), isopropylbenzene (54.8 percent), p-isopropyltoluene (65.7 percent), naphthalene (60.8 percent), n-propylbenzene (58.5 percent), 1,2,4-trimethylbenzene (56.0 percent), and 1,3,5-trimethylbenzene (58.7 percent). The RPDs that exceed the goal of 50 percent may be due to heterogeneous soil conditions. For this reason, and because this sampling effort was conducted as part of initial site characterization activities, it is our opinion that these QC failures do not affect the acceptability of the data for their intended use.

## **9.0 CONCEPTUAL SITE MODEL**

BGES has developed a conceptual site model which is included in Appendix F. The vicinity of Koyukuk is characterized by interspersed bogs, tundra, grass lakes (seasonally-flooded basins) and black spruce. Koyukuk is reported to receive approximately 13 inches of precipitation per year, and is prone to seasonal flooding. Permafrost is present at least in some areas of the vicinity of the subject



property and may be continuous, having been encountered at depths between about 2.5 and 6 feet bg. The PID readings in the vicinity of the area of drum contamination were low, indicating the presence of a heavier end hydrocarbon. As such, the primary mechanisms of contaminant accessibility to humans and ecological receptors are through ingestion and contact, rather than inhalation. The contamination in the vicinity of the former generator building on the other hand, exhibits considerable volatile properties, and therefore, inhalation is a pathway of concern in this area. Please refer to the graphical conceptual site model in Appendix F for specific details of contaminant migration pathways across the site in general. Because of the presence of permafrost at the site, the migration to groundwater pathway may be mitigated; however, without more knowledge of whether the permafrost is continuous at this site, we have considered this pathway to be in place at this time.

## **10.0 FINDINGS, OPINIONS, AND CONCLUSIONS**

A Phase I and limited Phase II ESA were performed at the subject property. Recognized environmental conditions impacting the subject property have been identified on site, and conditions which could potentially impact the subject property have been identified off site. Local residents have expressed an interest in redeveloping the vicinity of the former generator building into a clinic funded potentially by the Denali Commission and ANTHC. Soil samples were collected at the subject property for laboratory analysis. As a result of these analytical samples, contamination exceeding ADEC cleanup standards was identified in soils on the subject property.

### **10.1 Subject Property**

A limited Phase II ESA was performed in conjunction with our Phase I site assessment. The subject property was comprised of a lot occupied by a former generator building. The majority of the lot was covered with vegetation. The subject property had previously operated as the city's primary power plant and at least two prior releases associated with the power plant day tank were recorded in ADEC records, thus, the site is listed as a Contaminated Site within the ADEC database. In addition, several overturned drums and associated surface staining were observed. This release was reported to be recent, having occurred sometime during the spring of 2008. Local residents reported that they believed there was a strong possibility that the subject property was contaminated. BGES took the following actions with the goal of detecting and, if possible, delineating the vertical and horizontal extent of any contamination that may have been present on the subject property: hand borings were

advanced in the vicinity of the former generator building, drum spill area, and in the low-lying area to the south of the former generator building. Soil screening samples were taken from all of these locations; in addition the route of the pipeline was walked and was briefly investigated. The screening samples collected from borings advanced to the south and east of the generator building all exhibited elevated PID readings, indicating that these areas are likely impacted by contamination greater than ADEC cleanup standards. An effort was made to search for visual and olfactory evidence of staining and contamination, but none was identified in association with the pipeline. Soil screening samples taken from the north of the building all exhibited PID readings of zero. Soil samples taken from areas stained by used motor oil typically yielded results of 0 ppm or 1 ppm.

Contamination exceeding ADEC cleanup levels were positively identified by analytical laboratory samples in soils to the south of the generator building and in near-surface soils associated with the drum releases. Contamination in the area to the south of the building appeared to extend nearly to the depth at which permafrost was encountered, approximately 6 feet below grade. Borings advanced to the south of the building indicate that contamination exceeding ADEC cleanup levels appears to extend a minimum of 30 feet to the south of the generator building and 25 feet to the east of the building, to depths of at least 6 feet bg. These rough dimensions of the contaminated area delineate an estimated volume of nearly 200 cubic yards of soil. Contamination identified in this area primarily included DRO at significant distances from the generator building, with soil below the southern portion of the building also containing RRO, GRO, BTEX, and naphthalene at concentrations greater than ADEC cleanup criteria. Soil impacted by used motor oil released from the spilled drums contained DRO and RRO at concentrations greater than ADEC cleanup criteria.

## **10.2 Surrounding Properties**

The City and Tribal office building was located to the north of the subject property, the City washeteria was located to the northeast of the subject property, the City school was located to the west of the subject property, and a former tank farm was located to the south of the subject property.

Adjacent to, and south of, the subject property is an old tank farm composed of two large USTs and a pump house. This tank farm did not appear on the ADEC database and access to the site was controlled by a chain-link fence. The tank farm was not accessed or evaluated as part of this ESA, but

was observed briefly from a distance. The site was covered with vegetation and no signs of stressed vegetation or significant releases were observed during our brief site reconnaissance.

The Koyukuk school tanks site, located across Vista Road to the west of the subject property, is a registered contaminated site. Contamination originated from a pipeline leak. Approximately 300 cubic yards of soil were excavated, stockpiled, and subsequently treated. Records indicate that contamination greater than ADEC cleanup criteria was present both at the site of the original excavation and at the location at which the soils were stockpiled. While we consider it unlikely that this site has impacted the subject property, it is close enough that it does pose a threat to the environmental health of the subject property during severe flooding such as that which has been experienced in the past, and therefore, it is our opinion that this site represents a recognized environmental condition with respect to the subject property. Based on the results of our ESA, it appears that the primary source of contamination at the subject property has originated from on-site releases. Potential impacts to the subject property from on-site and off-site sources described in the paragraph above, could be further evaluated prior to, or during remedial actions taken at the subject property.

In addition to the subject property and the Koyukuk school as described above, there is one other contaminated site located in Koyukuk. This site is located at the City airstrip, approximately ½ mile to the southwest of the subject property. This site was described as containing surface soils that were impacted by numerous small releases from equipment during equipment maintenance and storage. Due to the relatively shallow nature of the described releases, the fact the site is located almost ½ mile from the subject property, and because the assumed groundwater flow direction is towards (and parallel to) the Yukon River, and away from the subject property, it is our opinion that this site is not a recognized environmental condition with respect to the subject property.

Six spill sites are located within ½ mile of the subject property. Five of these spill sites are closed, indicating that they have been cleaned up to the satisfaction of the ADEC. One of these spill sites was the subject property, but it has been transferred to the ADEC Contaminated Sites program.

## **11.0 RECOMENDATIONS**

As described above, the former generator building was constructed in the early 1980's, just after the phasing out of asbestos-containing building materials (ACBM), which occurred during the late 1970s.

Even so, it is possible that some building materials such as pipe insulation, resilient floor coverings, linoleum and cove base molding mastic, suspended ceiling tiles, wallboard components, joint compound, roofing materials, insulation, and other items could contain asbestos. Inspections of the building for ACBM should be conducted by a certified Asbestos Hazard Emergency Response Act (AHERA) Building Inspector, prior to any demolition, renovation, or other activities that would disturb these materials. Such an inspection would identify ACBMs within the building and debris pile, and if ACBMs were encountered, the appropriate response actions could be taken to ensure workers' safety so that demolition or renovation-generated wastes could be properly disposed of. Materials identified to contain asbestos would be classified by the Certified Inspector as to whether or not they are friable (meaning that the samples can be pulverized or reduced to powder by hand pressure), and recommendations could be made as to future abatement and appropriate disposal methods which may be required.

Lead-based paint (LBP) is another hazard that can be found in or on buildings constructed prior to the 1980's. An inspection for LBP by an EPA-certified Lead-Based Paint Building Inspector should be performed of the building prior to any demolition or renovation activities that would disturb painted surfaces, so as to identify any LBP that may be present. If LBP was identified, appropriate measures could then be taken to ensure workers' safety from LBP dust that might be generated during demolition or renovation activities, and to properly characterize LBP wastes for proper disposal.

Other potentially hazardous materials that are found in some building components include polychlorinated biphenyls (PCBs) in some fluorescent light ballasts and mercury in some thermostats, fluorescent light tubes and lamps. Also, pilot light sensors, electric switches, and space heaters frequently use mercury switches. The presence of these materials should be established, and if these items are not identified to be free of the respective hazardous substances; then they should be tested, or assumed to contain the applicable hazardous materials, and be handled and disposed of properly.

The vicinity of the generator building contains several contaminants at concentrations greater than ADEC cleanup levels. These include DRO and RRO, as well as volatile constituents that include inhalation as an exposure pathway. In addition, contamination likely to exceed ADEC cleanup standards was identified in soils greater than 5 feet bg. While groundwater was not encountered during the advancement of hand borings in this area, there is the potential that contamination originating in this area may have impacted groundwater. Contamination in this area should either be removed via

excavation as deep as it exists or until permafrost prohibits advancement of excavation, or until groundwater is encountered, or remediated by in situ technologies. Based on the relative remoteness of the site, excavation is likely to be the most cost-efficient method of cleanup. After removal of the maximum practical volume of contaminated soils, the excavation area should be backfilled with clean soils to mitigate the inhalation exposure pathway. The inhalation pathway may already be mitigated by construction practices in the City of Koyukuk. Many buildings are constructed on pilings that leave a large amount of draft space between the ground and the structure, potentially mitigating the exposure of building inhabitants to volatile constituents. Future construction on the subject property should take this practice into account if contaminants are left in place after completion of excavation or other remedial actions.

Based on the estimated large volume (potentially greater than 200 cubic yards) of contaminated soils, a likely remedial alternative for these soils, would be placing the soils in a long-term biocell designed to store and treat the soils. Fertilizer could be added to the soils to promote biological degradation. Vent piping with a variety of potential ventilation systems could be placed within the pile to actively or passively promote both volatilization and biological degradation. Unfortunately, some soils at this location appear to be contaminated with significant quantities of RRO, which is unlikely to volatilize or break down rapidly, even under favorable conditions. Soils containing large quantities of RRO should be segregated from other soils. After attenuation has been tracked over several seasons, it may be possible to determine if soils contaminated with RRO will eventually meet ADEC cleanup levels, or if they should be subjected to another active remedial option, such as thermal treatment.

## **12.0 EXCLUSIONS, CONSIDERATIONS AND QUALIFICATIONS**

This Phase I and Limited Phase II ESA did not include sampling to identify the potential presence of lead-based paint, radon or other hazardous building materials at this property (except for the limited lead sampling in soils). This report was prepared for our client, the YRITWC. The scope of work and level of effort were based on our written proposal dated May 27, 2008. It is not intended for third parties to rely on the information provided in this report, except as described in Section 2.5 above. This report presents facts, observations, and inferences based on conditions observed during the period of our project activities, and only those conditions that were evaluated as part of our scope of work. Our conclusions and recommendations are based on our observations and the results of our research, and as such, rely on the accuracy of the databases that were reviewed and the information provided by

the individuals that were interviewed. These conclusions and recommendations are also based on our visual and olfactory observations along with the field screening and laboratory analyses that were performed on soil samples, but only for the constituents screened/analyzed, and only for the locations where samples were collected. In addition, changes to site conditions may have occurred since we completed our initial project activities. These changes may be from the actions of man or nature. Changes in regulations may also impact the interpretation of site conditions. BGES will not disclose our findings to any parties other than our client listed above, except as directed by our client, or as required by law.

This Phase I and limited Phase II ESA was completed by Nick Braman, Environmental Scientist II of BGES; and was reviewed by Robert N. Braunstein, C.P.G., Principal of BGES. Mr. Braman has more than three years of experience and has conducted dozens of Phase I and II ESAs in South-central Alaska and several in remote bush locations. Mr. Braunstein is a Certified Professional Geologist, has over 25 years of professional geologic and environmental experience, and has performed or managed thousands of ESAs in the lower 48-States and in Alaska. He has extensive knowledge and experience with contaminated sites and remediation.

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professionals as defined in Section 312.10 of 40 Code of Federal Regulations (CFR) Part 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared by:



Nick Braman  
Environmental Scientist II

Reviewed by:



Robert N. Braunstein, C.P.G.  
Principal

**Former Generator Building  
Koyukuk, Alaska  
ADEC Contaminated and Spill Sites**

Site No.	Contaminated Site Facility	Contaminated Site Location	ADEC Reckey No.	Contaminated Site Information	Contaminated Site Status
1	City of Koyukuk Generator Day Tank	30 miles West of Galena	2002310102601	An automatic shutoff switch failed and caused an overflow of the generator building day tank on at least two separate occasions. An excess of 500 gallons of heating oil may have been released.	Contaminated Site Status: <b>Active</b>
2	ADOT & PF SREB - Koyukuk	Koyukuk Airport	2005310123501	Shallow soil contamination originating from equipment leaks and maintenance operations.	Contaminated Site Status: <b>Active</b>
3	Koyukuk Elementary School	Koyukuk	1992310114601	Contaminated soil was excavated in association with a pipeline leak in the vicinity of the old school tank farm and generator building. Impacted soil was excavated and spread on site. The school water supply well casing was surrounded by impacted soil. The well was decommissioned. Impacted soil remains onsite.	Contaminated Site Status: <b>Active</b>
Site No.	Spills Site Facility	Spill Site Location	Spill Date	Quantity	Status
1	City Generator Building	Koyukuk City	2/15/2002 3/4/2002	>500 Gallons released during an overfill event >500 Gallons released during an overfill event	Transferred to CS
2	Koyukuk City DOT Building	Koyukuk City	5/30/2001	Approximately 20 gallons of engine lube oil were released onto surface soil.	Case Closed
4	Koyukuk Federal Scout Readiness Center	Koyukuk City	6/18/2003	15 Gallons diesel was released due to equipment failure.	Case Closed
5	Library	Koyukuk City	5/14/2002	Approximately 110 gallons of diesel were released due to valve failure on a UST. Approximately 80 gallons was recovered.	Case Closed
6	Koyukuk River	Koyukuk City	12/15/2000	54 gallons of diesel was released	Case Closed
7	Koyukuk City and Nulato	Koyukuk City	5/26/2001	55 Gallons released from a tank.	Case Closed

**TABLE 2**  
**FORMER GENERATOR BUILDING**  
**KOYUKUK, ALASKA**  
**SOIL SCREENING RESULTS**

**BGES, INC.**

Location	Depth (Feet)	PID (ppm)	Notes/Observations
DR1	1	1	Heavy Staining, HC Odor
DR1	1.5	1	Diminishing Staining
DR1	2	0	Soil Appears Clean
DR2	3	0	Diminishing Staining - Clean?
DR3	2	0	Diminishing Staining - Clean?
GBS	1	0	Soil Appears Clean
GBS	1.5	415	Strong HC Odor, Staining
GBS	4	154	Diminishing Staining
GBS	6	--	Permafrost - Refusal
GBS2	2	371	Strong HC Odor, Staining
GBS2	4	679	Strong HC Odor, Staining
GBS3	2	1000+	Strong HC Odor, Staining
GBS3	4	859	Strong HC Odor, Staining
GBS4	2	644	Strong HC Odor, Staining
GBS4	4	549	Strong HC Odor, Staining
GBE1	2	431	Strong HC Odor, Staining
GBE1	4	110	Strong HC Odor, Staining
GBN1	2	0	Soil Appears Clean, Permafrost

HC = Hydrocarbon

PID = Photoionization Detector

ppm = parts per million



**TABLE 2**  
**FORMER GENERATOR BUILDING**  
**KOYUKUK, ALASKA**  
**SOIL ANALYTICAL RESULTS**

BGES, INC.

Sample No.	Parameter	Results (mg/Kg)	MRL (mg/Kg)	ADEC Cleanup Criteria (mg/Kg) <sup>1,2</sup>	Analytical Method
<b>SOILS</b>					
<b>08-KOY-DR2-1.5</b>	Benzene	ND	0.0208	0.025	SW8021b
	PID = 1 ppm				
	Toluene	ND	0.0520	6.5	SW8021b
	Ethylbenzene	ND	0.0520	6.9	SW8021b
	Xylenes (Total)	ND	0.0779	63	SW8021b
	RRO	<b>18,300</b>	510	10,000	AK 103
	DRO	<b>3,490</b>	204	250	AK 102
	GRO	ND	5.20	300	AK 101
Metals	Arsenic	2.99	0.532	3.9	EPA 6020
	Barium	47.8	0.532	1,100	EPA 6020
	Cadmium	ND	0.532	5	EPA 6020
	Chromium	9.35	0.532	25	EPA 6020
	Lead	3.49	0.532	400	EPA 6020
	Selenium	ND	0.532	3.4	EPA 6020
	Silver	ND	0.532	11	EPA 6020
	Mercury	ND	0.101	1.4	EPA 7471A
	VOCs	All 8260 Analytes	ND	Varies	EPA 8260B
	SVOCs	Fluoranthene	0.147	0.142	EPA 8270m
		All Other 8270 Analytes	ND	Varies	EPA 8270m
<b>08-KOY-GBS1-2</b>	Benzene	<b>2.14</b>	<b>0.807</b>	0.025	SW8021b
	PID = 415 ppm				
	Toluene	<b>35.2</b>	2.02	6.5	SW8021b
	Ethylbenzene	<b>28.5</b>	2.02	6.9	SW8021b
	Xylenes (Total)	<b>208</b>	3.03	63	SW8021b
	RRO	<b>13,100</b>	6,800	10,000	AK 103
	DRO	<b>60,900</b>	<b>2,720</b>	250	AK 102
	GRO	<b>823</b>	202	300	AK 101
Metals	Lead	7.09	0.659	400	EPA 6020
VOCs	Benzene	<b>1.420</b>	<b>0.164</b>	0.025	EPA 8260B
	n-Butylbenzene	4.600	4.110	15	EPA 8260B
	sec-Butylbenzene	3.730	0.822	12	EPA 8260B
	Ethylbenzene	<b>15.800</b>	0.822	6.9	EPA 8260B
	Isopropylbenzene	6.840	1.640	51	EPA 8260B
	p-Isopropyltoluene	3.150	1.640	NE	EPA 8260B
	Naphthalene	<b>38.000</b>	1.640	20	EPA 8260B
	n-Propylbenzene	12.700	0.822	15	EPA 8260B
	Toluene	<b>21.500</b>	0.822	6.5	EPA 8260B
	1,2,4-Trimethylbenzene	<b>49.700</b>	0.822	23	EPA 8260B
	1,3,5-Trimethylbenzene	17.700	0.822	23	EPA 8260B
	Total Xylenes	<b>113.900</b>	1.640	63	EPA 8260B
	All Other 8260 Analytes	ND	Varies	Varies	EPA 8260B
SVOCs	Naphthalene	<b>99.100</b>	16.9	20	EPA 8270m
	Phenanthrene	1.220	0.169	3,000	EPA 8270m
	All Other 8270 Analytes	ND	Varies	Varies	EPA 8270m

<sup>1</sup> Soil cleanup criteria for DRO and GRO based on 18 AAC 75.341, Table B2; BTEX based on 18 AAC 75.341, Table B1 (adopted June 9, 2008)  
 Cleanup criteria for analytes in water based on 18 AAC 75.341, Table C (Adopted June 9, 2008)

RRO = residual range organics, DRO = diesel range organics, GRO = gasoline range organics

TAH = total aromatic hydrocarbons, TAqH = total aqueous hydrocarbons

mg/Kg = milligrams per kilogram

ND = non-detectable; below the PQL

PID = photoionization detector

ppm = parts per million

MRL = method reporting limit

**BOLD** = Exceeds Alaska Department of Environmental Conservation Cleanup Criteria.

**Yellow** = MRL is above the ADEC Cleanup Criterion

**TABLE 2**  
**FORMER GENERATOR BUILDING**  
**KOYUKUK, ALASKA**  
**SOIL ANALYTICAL RESULTS**

BGES, INC.

Sample No.	Parameter	Results (mg/Kg)	MRL (mg/Kg)	ADEC Cleanup Criteria (mg/Kg) <sup>1,2</sup>	Analytical Method
<b>08-KOY-GBD-2</b>	Benzene	<b>1.86</b>	<b>0.435</b>	0.025	SW8021b
	Duplicate of -GBS1-2	<b>29.9</b>	0.347	6.5	SW8021b
	Ethylbenzene	<b>23.9</b>	0.347	6.9	SW8021b
	Xylenes (Total)	<b>178</b>	0.521	63	SW8021b
	RRO	9,080	3,530	10,000	AK 103
	DRO	<b>57,400</b>	<b>8,830</b>	250	AK 102
	GRO	<b>688</b>	34.7	300	AK 101
VOCs	Lead	6.65	0.637	400	EPA 6020
	Benzene	<b>1.660</b>	<b>0.167</b>	0.025	EPA 8260B
	n-Butylbenzene	9.320	4.170	15	EPA 8260B
	sec-Butylbenzene	7.490	0.834	12	EPA 8260B
	Ethylbenzene	<b>25.400</b>	0.834	6.9	EPA 8260B
	Isopropylbenzene	12.000	0.167	51	EPA 8260B
	p-Isopropyltoluene	6.230	0.167	NE	EPA 8260B
	Naphthalene	<b>71.200</b>	0.167	20	EPA 8260B
	n-Propylbenzene	<b>23.200</b>	0.822	15	EPA 8260B
	Toluene	<b>30.500</b>	0.822	6.5	EPA 8260B
	1,2,4-Trimethylbenzene	<b>88.400</b>	0.822	23	EPA 8260B
	1,3,5-Trimethylbenzene	<b>32.400</b>	0.822	23	EPA 8260B
	Total Xylenes	<b>184.100</b>	1.640	63	EPA 8260B
SVOCs	All Other 8260 Analytes	ND	Varies	Varies	EPA 8260B
	Naphthalene	<b>67.200</b>	16.8	20	EPA 8270m
	Phenanthrene	0.870	0.168	3,000	EPA 8270m
	All Other 8270 Analytes	ND	Varies	Varies	EPA 8270m
<b>08-KOY-GB3-2</b> PID = 1000+ ppm	Benzene	UJ	<b>0.166</b>	0.025	SW8021b
	Toluene	ND	0.416	6.5	SW8021b
	Ethylbenzene	ND	0.416	6.9	SW8021b
	Xylenes (Total)	23.1	0.624	63	SW8021b
	RRO	ND	6,210	10,000	AK 103
	DRO	<b>22,800</b>	<b>2,490</b>	250	AK 102
	GRO	195	41.6	300	AK 101

<sup>1</sup> Soil cleanup criteria for DRO and GRO based on 18 AAC 75.341, Table B2; BTEX based on 18 AAC 75.341, Table B1 (adopted June 9, 2008)  
 Cleanup criteria for analytes in water based on 18 AAC 75.341, Table C (Adopted June 9, 2008)

RRO = residual range organics, DRO = diesel range organics, GRO = gasoline range organics

TAH = total aromatic hydrocarbons, TAqH = total aqueous hydrocarbons

mg/Kg = milligrams per kilogram

ND = non-detectable; below the PQL

PID = photoionization detector

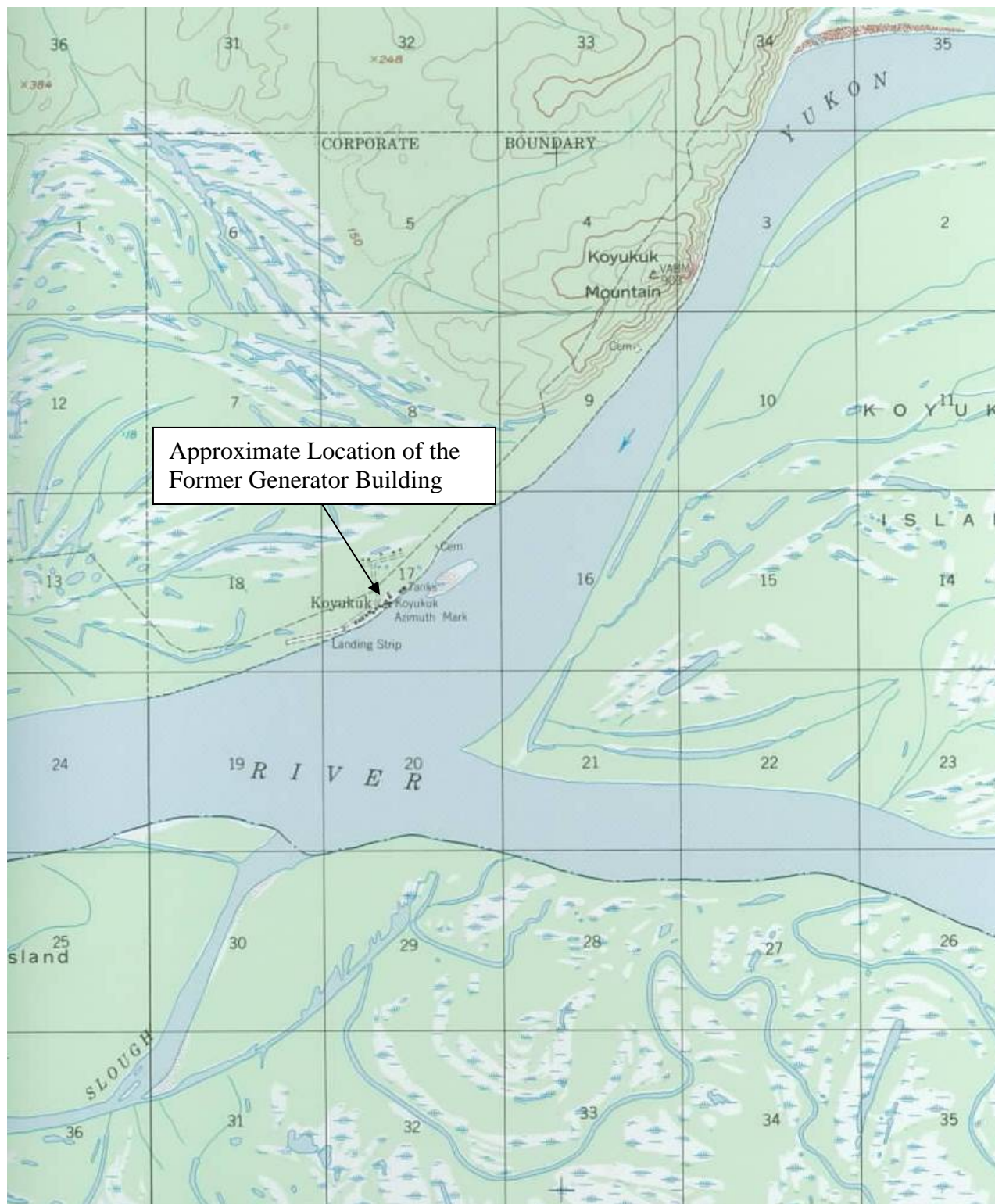
ppm = parts per million

MRL = method reporting limit

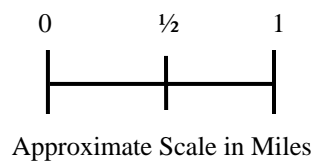
**BOLD** = Exceeds Alaska Department of Environmental Conservation Cleanup Criteria.

**Yellow** = MRL is above the ADEC Cleanup Criterion

UJ = The non-detectable result is considered an estimate



USGS Nulato Quadrangle, D-4



Former Generator Building  
Koyukuk, Alaska  
**Property Vicinity Map**

**BGES, INC.**

**August 2008**

**Figure 1**



0 400 800  
Approximate Scale in Feet

# **KEY**

- Subject Property
- ADEC Contaminated Site; number refers to listing in Table 2
- ADEC Spills Site; number refers to listing in Table 2
- NRC site; number refers to listing in Table 2
- “A”= Site is an open ADEC Contaminated Site
- “C”= Site is Conditionally Closed



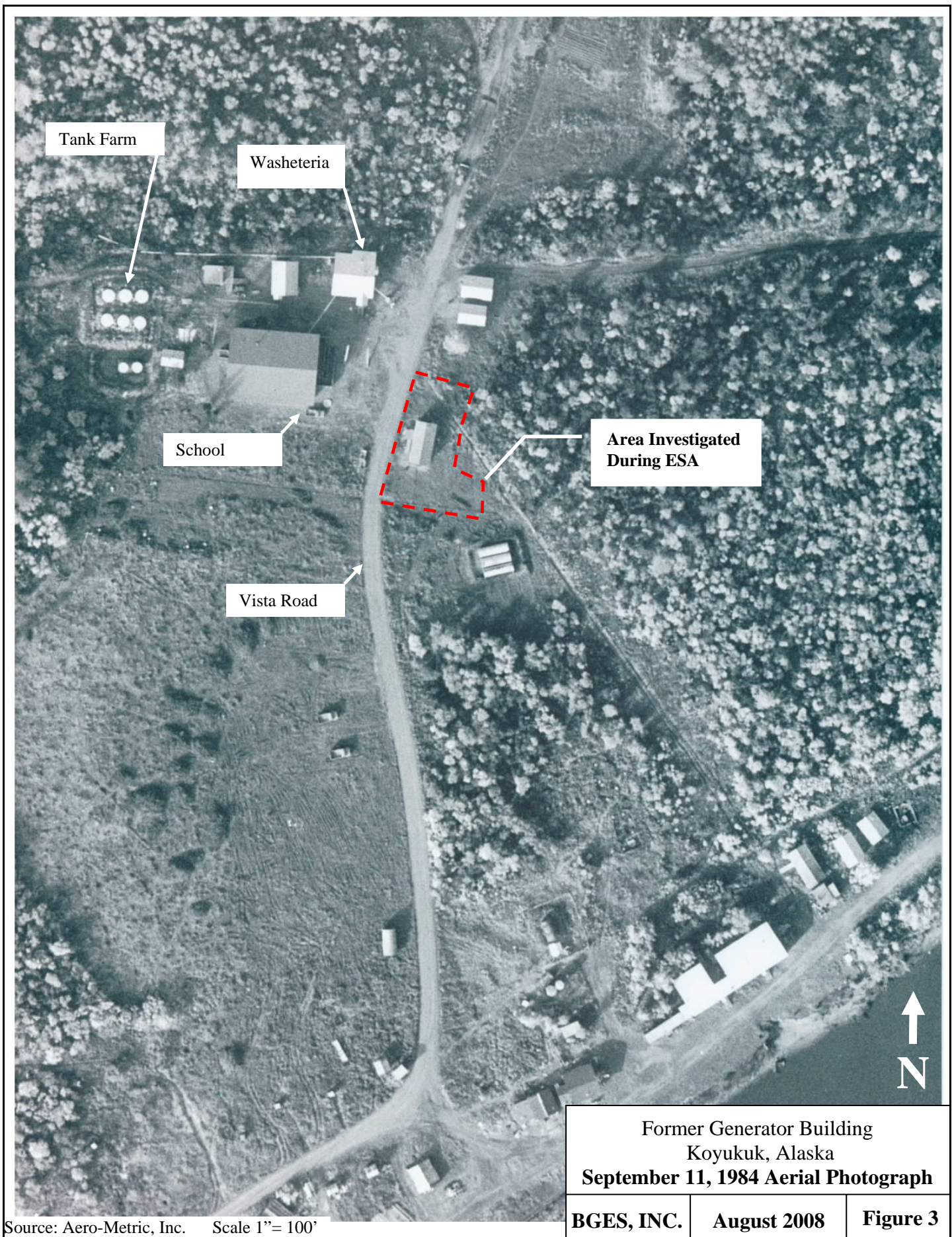
Former Generator Building  
Koyukuk, Alaska  
**ADEC Record Review  
Sites Location Map**

**BGES, INC.**

**August 2008**

**Figure 2**





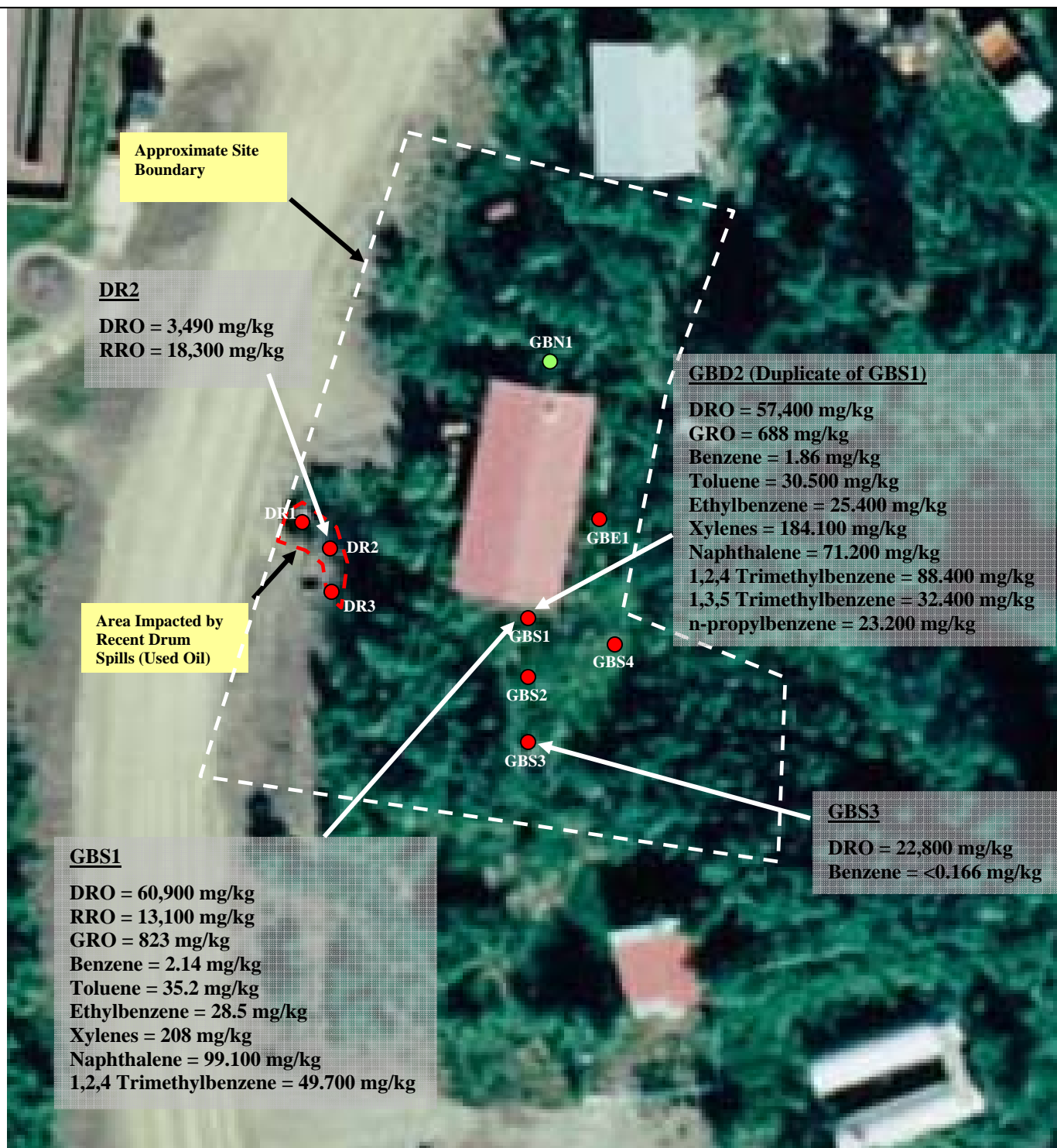












0 25 50  
Approximate Scale in Feet

### Legend

- Soil Sample, Results Exceeding ADEC Cleanup Criteria, See Tables 2 and 3 for Complete Results
- Hand Boring Location, Screening Samples Collected

Former Generator Building  
Koyukuk, Alaska  
**Site Plan & Soil Sampling Locations**

BGES, INC.

August 2008

Figure 6



**APPENDIX A**  
**SITE PHOTOGRAPHS**





**Photo 1. Former Generator Building**



**Photo 2. Drums, Looking North**



**Photo 3. Drums and Associated Staining**



**Photo 4. Low-Lying Area, Looking South**



**Photo 5. Former Fuel Pipeline**



**Photo 6. Waste Heat Pipes**

Former Generator Building  
Koyukuk, Alaska  
**Property Photographs**

**BGES INC.**

**August 2008**

**Figure A-1**





**Photo 7. Saturated Soil Beneath the Former Generator Building**



**Photo 8. Buckets of Used Oil**



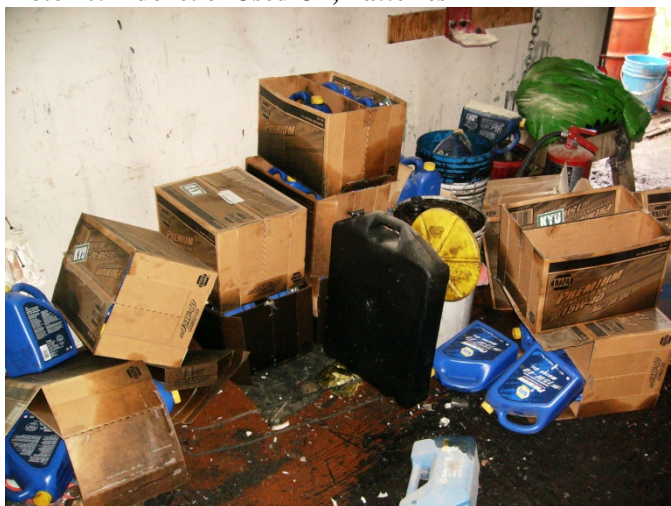
**Photo 9. Buckets of Used Oil**



**Photo 10. Bucket of Used Oil, Batteries**



**Photo 11. Hardware and Debris**



**Photo 12. Cases of Unused Oil, and Debris**

Former Generator Building  
Koyukuk, Alaska  
Property Photographs

BGES INC.

August 2008

Figure A-2





**Photo 13. Tool Cabinet, Space Heater, and Debris**



**Photo 14. Former Generator Building Day Tank**



**Photo 15. Electrical Generators**



**Photo 16. Heat Exchanger and Piping System**



**Photo 17. Containment Basin**

Former Generator Building  
Koyukuk, Alaska  
**Property Photographs**

**BGES INC.**

**August 2008**

**Figure A-3**

**APPENDIX B**  
**REGULATORY RECORDS DOCUMENTATION**

**Koyukuk** | City Office: (907) 927-2215 | Revised:

STATUS	2 <sup>nd</sup> class city	LAST FLOOD EVENT	1989
POPULATION	101	FLOOD CAUSE	
BUILDINGS		ELEVATION	
RIVER SYSTEM	Yukon River	FLOOD OF RECORD	1963
COASTAL AREA	none	FLOOD CAUSE	
		ELEVATION	16.7
NFIP STATUS	not participating	WORST FLOOD EVENT	
FLOODPLAIN REPORT	yes	FLOOD CAUSE	
FLOOD INSURANCE STUDY	no	FLOOD GAUGE	no

**Comments:**

The 100-year or Base Flood Elevation (BFE)	16.7 ft
Recommended building elevation	17.7 ft

The 1963 flood may represent the 100-year flood, BFE. Two flood gauges were placed in the community. One gauge is located on the corner of the washeteria, the other located on a utility pole at Dry Lake. High Water Elevation (HWE) signs were placed at three locations in the community with the sign's water symbol at the elevation of the 1963 flood. HWE #1 is on the NW corner of the Koyukuk city office building, approximately 8.5 ft above the ground. HWE #2 is on a utility pole near the SE corner of the new school, approximately 8.6 ft above the ground. HWE #3 is on the SW corner of the Post Office, approximately 8.3 ft above the ground.

Floodplain Manager (907) 753-2610

[New Database Search](#)

To download, open this report as ([MS Word file](#)) and save the document to your computer.

## Alaska Department of Environmental Conservation

### Contaminated Sites Database

#### Site Report for City of Koyukuk Generator Day Tank

<b>Reckey:</b>	2002310102601	<b>Staff:</b>	<a href="#">Sonja Benson</a> - 9074512156	
<b>File Number:</b>	830.38.002	<b>Status:</b>	Active	
<b>Site Name:</b>	City of Koyukuk Generator Day Tank			
<b>Address 1:</b>	30 Miles West of Galena	<b>Land Owner:</b>	City of Koyukuk	
<b>Address 2:</b>		<b>Legal Description:</b>		
<b>City:</b>	Koyukuk, AK 99754			
<b>Latitude:</b>	64.881852	<b>Longitude:</b>	-157.701224	<b>Meridian:</b> Kateel River
<b>Section:</b>	17	<b>Township:</b>	007	<b>Range:</b> 006
<b>Conditional Closure Information:</b>				

**Problem:** The day tank automatic shut-off switch failed and caused an overfill. The volume estimate was 500 gallons. Fuel came out of the vent onto the roof and ran down onto the ground next to the building. The ground under the building is saturated. The city operator (Frank Dayton Jr.) agreed that no unmanned fuel transfers would take place until a better system could be installed. A month later or so the same system was operated by the backup generator operator who believed that Mr. Dayton was out of town. He left the system running unattended and it overfilled again. The volume estimate for this event was also given as 500 gallons. In neither case does anyone know how long the overfilling occurred or the rate of product loss. ADEC PERP traveled to the site in May to conduct a site inspection. There was a large pond adjacent to the contaminated area. The pond had a slight sheen, and the mud smelled lightly of fuel. The City of Koyukuk had applied sorbents on the pond, but hadn't recovered any measurable fuel.

**Comments:** The City of Koyukuk has been unresponsive in providing additional information regarding these two events. PERP was unable to get the City of Koyukuk to excavate any contaminated soil. Parts of the building are reportedly saturated with fuel. The ground beneath the building would be difficult to excavate without undermining the pilings that hold up the building. The surrounding contamination would be easy to remove, but no excavation equipment is available in the village. A worker started digging with a shovel, but complained that it smelled too bad and made him ill so he quit. The village claims to have severely limited financial resources. The local tribal environmental tech was very concerned about getting the spill cleaned up. Her name is Leona Kriska. This site was transferred from PERP.

#### Glossary/Acronyms

Action Date	Action	Description	DEC Staff
12/10/2003	Site Transferred from PERP	This site was transferred from PERP staff Toivo Luick. Two separate spills in early 2002: Spill Number 02309902601; Spill Date approximately 1/26/2002; Substance = Diesel; Quantity = ~500 gallons. Generator day tank overfill. Spill Number 02309906001; Spill Date 3/1/2002; Substance = Diesel; Quantity unknown, ~55 gallons. Second generator day tank overfill. PERP File No. 830.02.002. (Action	Sonja Benson

		entered 11/1/07 to reflect the administrative file.)	
12/10/2003 10:39:33 AM	Site Added to Database	DRO contamination exists, extent of contamination unknown.	Deborah Williams
12/10/2003 11:49:34 AM	Site Ranked Using the AHRM	Preliminary ranking.	Deborah Williams
7/27/2007	Update	Site transferred from Oelkers to Frechione.	Shannon Oelkers
10/15/2007	Brownfield Inventory	Brownfield staff was approached by a resident of Koyukuk at the Alaska Tribal Conference on Environmental Management in Anchorage to ask about this site as a potential brownfield. Site also featured in the Brownfield DVD produced by the Yukon River Inter-Tribal Watershed Council. Community members would like to use for playground area. Site is close to school and drinking water well, and unresolved fuel contamination in soil.	Sonja Benson
11/1/2007 3:56:00 PM	Site Ranked With ETM	Initial ranking completed.	Sonja Benson
2/19/2008	Update	Site transferred from Frechione to S. Benson.	John Carnahan

Report generated: 7/9/2008

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[CSPWebmaster](#)
[SPAR Home](#)
[Glossary/Acronyms](#)
[Frequently Asked Questions](#)
[Photo Gallery](#)
[Site Map](#)
[Links](#)



Navigation

**Site Information:**

**Site:** City of Koyukuk Generator Day Tank

**Source:** Generator day tank

**Evaluation Date:** 11/1/2007 2:37:13 PM

**Initial Complete Date:** 11/1/2007 3:51:53 PM

**Updated Complete Date:**

**Initial/Updated:** Initial

**Results Summary:**

**Human Health Exposure Category:** High Potential Exposure

**Controlling Pathway(s):** Surface Soil, Subsurface Soil, Outdoor Inhalation

**Score:** 1

**Ecological Site Exposure Category:** High Potential Exposure

**Potentially-Contaminated Media:** Surface Soil, Groundwater, Subsurface Soil, Surface Water

**Other Site Concerns:** None

**Exposure Assessment:**

Pathway	Exposure Categories	
	Initial Ranking	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:	Low Potential Exposure	
Surface Water Ingestion:	Pathway Incomplete	
Wild or Farmed Foods Ingestion:	Pathway Incomplete	
Indoor Air Inhalation (Vapor Intrusion):	Pathway Incomplete	
Other Human Health:	Pathway Incomplete	
Ecological:	High Potential Exposure	

## CONTAMINATED SITES DATABASE NEW SITE FORM

**Spill Date or Reckey:** 26 Jan 2002 and 01 Mar 2002

**Real Name of Site:** City of Koyukuk Generator Building Day Tank Spill

**Type of Facility / Generic Site Name:** City of Koyukuk generator building day tank.

**Physical Address of Site:** The generator building in Koyukuk.

**City:** Koyukuk **Zipcode:** 99754 **Telephone Number at Site:** none

**Lot:** **Block:** **Subdivision:**

**Section:** **Township:** **Range:** **Meridian:** **Quadrangle:**

**Lat:** 64° 53' **Long:** 157° 42' **Measurement Method:** State web site **Accuracy:**

**Landowner Name:**

**Landowner Address:** **Landowner City:** **State:** **Zip Code:**

**Landowner Telephone:**

**Landowner Type:** (bold one) Federal **Local** Native Private State Undefined

**Responsible Party Program:** (bold one) Orphan Site, Lacks Responsible Party

Responsible Party Not Identified

**Responsible Party Unwilling or Unable to Perform Remedial Action**

Responsible Party Identified and is Willing and Able to Perform Remedial Action

**RP Name:** City of Koyukuk (Vera Lestenkoff, Tribal Administrator)

**RP Mailing Address:** P. O. Box 49 **Landowner City:** Koyukuk **State:** AK **Zip Code:** 99754

**RP Telephone:** 907-927-2215

**Responsible Party Type:** (bold one) Federal **Local** Native Private State Undefined

**Affiliate Type:** (bold one) Codefendant Person Filing Complaint RP Consultant Defendant

Lessor of the Facility Owner of the Property Operator of the Facility Owner of the Facility

Responsible Party Stakeholder Lessee of the Facility Witness of Violation Other Affiliation

**Affiliate Name:**

**Affiliate Mailing Address:** **Affiliate City:** **State:** **Zipcode:**

**Affiliate Contact Name:** **Affiliate Telephone:**

**Affiliate Type:** (bold one) Federal Local Native Private State Undefined

**Stakeholder Name:** Koyukuk Tribal Council

**Stakeholder Mailing Address:** P.O. Box 109 **Stakeholder City:** Koyukuk **Zipcode:** 99754

**Stakeholder Contact Name:** Leona Kriska, Tribal Env. Tech. **Telephone:** 927-2253

**Problem:** The day tank automatic shut-off switch failed and caused an overflow. The volume estimate was 500 gallons, but that is a wild guess. Fuel came out of the vent onto the roof and ran down onto the ground next to the building. The ground under the building is saturated. The city operator (Frank Dayton Jr) agreed that no unmanned fuel transfers would take place until a better system could be installed.

A month later or so the same system was operated by the backup generator operator who believed that Mr. Dayton was out of town. He left the system running unattended and it overflowed again. The volume estimate for this event was also given as 500 gallons, but that is also a wild guess. In neither case does anyone know how long the overflowing occurred or the rate of product loss.

I traveled through again in May and checked out the site. There was a large pond adjacent to the contaminated area that had covered it previously. The pond had a slight sheen, and the mud smelled lightly of fuel. The City of Koyukuk had applied sorbents on the pond, but hadn't recovered any measurable fuel.

**Comments:** The City of Koyukuk (i.e. Vera Lestenkov) has been extremely unresponsive regarding these two events. I have been unable to get even the least amount of soil excavated. The building (if it hasn't burned down by now) is utterly saturated with fuel. The ground beneath it would be difficult to excavate without undermining the pilings that hold up the building. The surrounding contamination would be easy to remove, but no excavation equipment is available in the village. A worker started digging with a shovel, but complained that it smelled too bad and made him ill so quit. The village claims to have severely limited financial resources.

The local tribal environmental tech was very keen to get the spill cleaned up. Her name is Leona Kriska and she is worth talking to.

**Staff Assigned:**

**Status:** (bold one) Active      Closed      Inactive      No Further Remedial Action Planned  
Site Intake      Unconfirmed      Unknown

**Program:** (bold one)      Federal Responsible Party Lead      Responsible Party Lead  
State Assumption      State Responsible Party Lead      Unknown

**DoD Rank:** (bold one)      High      Medium      Low      Unranked

**Election District:**      **Ledger Code:**      **File Number:**

**HAZARDOUS SITE RANKING FORM**

**Staff:**

**Date:**

1. **Toxicity Value =**      Contaminant type =
2. **Quantity Value =**
3. **Release Information Value=**

4. **Site Access Value =**
5. **Air Exposure Index Value =**
6. **Population Density Value =**
- 6b. **Population Proximity Value =**
7. **Ground Water Usage Value =**
8. **Ground Water Exposure Index Value =**
9. **Surface Water Use Value =**
10. **Surface Water Exposure Index Value =**
11. **Surface Water Environments Value =**
12. **Environmental/Recreation Area Value =**  
Name of Environmental/Rec area:
13. **Observed Environmental Impacts Value =**
14. **Sites with Multiple Sources or Contaminants Value =**

## **KOYUKUK SPILLS**

### **VILLAGE OF KOYUKUK GENERATOR BLDG**

**26 JAN 2002 and 01 MAR 2002**

The first spill occurred on January 26 when the power plant operator (Frank Dayton Jr) was filling the day tank in the generator building. The system has an automatic shutoff to prevent overfilling and the switch failed. A teacher from the school noticed fuel coming out the tank vent on the roof some unknown time later on. Fuel records are not well kept for the village tank farm so the spill volume (reported as 500 gallons) is a guess.

The spill was reported on 15 Feb 2002, and I flew out there shortly after. While I was there the village was nearly empty, and I received no assistance at all. I spent a day and a half delimiting the spill in the snow, and it didn't seem to cover all that big of an area. I asked the Village Administrator, Vera Lestenkoff, to remove the contaminated snow and be prepared to deal with melt water in the spring as well as contaminated soil as soon as it could be removed. I asked for some sort of melt water diversion so prevent spreading of fuel during break up. I also asked that no unmanned fueling operations take place with the current, defective system.

On 04 Mar 2002 Leona Kriska, the Tribal Environmental Tech, called to report another spill. It turned out that Cory Jones, assistant power plant operator, had turned the fueling system on and left it to run and the automatic shutoff had failed again. The power plant operator estimated 55 gallons was all that was spilled, other estimates varies greatly and I called it another 500 gallons in the SPILLS database. It may well have been a lot less.

The Village never removed the contaminated snow, and never made any sort of meltwater diversion. When spring arrived they put out some sorbent pads on the meltwater pond that formed. I traveled through Koyukuk again in May and found the pond and sorbents. The pond had a slight sheen, but didn't appear to have killed all the plant life and there were water bugs swimming all around in it. The mud near the most contaminated area smelled of fuel in a pattern similar to what I had delineated in February in the snow. I left more sorbents as well as reinforced visquene with the Village Administrator so that when it came time to remove the soil there would be some way to stockpile it.

At no time was I ever able to get any contaminated soil removal work done by the Village of Koyukuk except for one time when a fellow went out to start digging, but then immediately quit because it smelled bad. I can't imagine anything smelling worse than the fuel vapors inside the generator building, and there isn't any problem getting folks to work in there, but I was unable to get the Village to do any work.

The Village has been extremely unresponsive to phone calls. The current status is that the building walls, floor, and probably most of the insulation are saturated with diesel fuel. The ground under the building appears extremely heavily contaminated, but will be difficult to reach. The contaminated soil outside the building should be easy to remove, but there is no back hoe or other excavation equipment to dig with. There Village isn't willing to do the work, and doesn't appear financially well enough off to afford a contractor.

The spill is directly across the street from the school, and less than one hundred yards from the washeteria and the village well. I do not believe that migration towards the well is very likely, the road provides a barrier as it is heaped gravel at least a couple of feet above ground level. I don't know a thing about groundwater flow in the area. The river is the opposite direction from the well and some distance away.

Please contact Toivo Luick with any questions (451-2102).



## ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

## OIL &amp; HAZARDOUS SUBSTANCES SPILL NOTIFICATION

PERSON REPORTING <i>Leona Kriska</i>		PHONE NUMBER <i>907-2253</i>		REPORTED HOW? (e.g., phone) <i>phone</i>	
DATE/TIME OF SPILL <i>Friday March 1, 2002</i>		DATE/TIME DISCOVERED <i>March 1<sup>st</sup> 1900</i>		DATE/TIME REPORTED <i>1000 04<sup>th</sup> March 2002</i>	
LOCATION <i>Koyukuk generator building</i>			SUBSTANCE SPILLED <i>heating oil</i>		
QUANTITY SPILLED <i>55</i> <input checked="" type="checkbox"/> gallons <i>unknown</i> <input type="checkbox"/> pounds		QUANTITY CONTAINED <i>unknown</i> <input type="checkbox"/> gallons <i>unknown</i> <input type="checkbox"/> pounds		QUANTITY RECOVERED <i>unknown</i> <input type="checkbox"/> gallons <i>unknown</i> <input type="checkbox"/> pounds	
QUANTITY DISPOSED <input type="checkbox"/> gallons <input type="checkbox"/> pounds		POTENTIAL RESPONSIBLE PARTY C-Plan Holder? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> <i>City of Koyukuk</i>			
OTHER POTENTIAL RESPONSIBLE PARTIES, IF ANY					
SOURCE OF SPILL <i>Generator bldg day tank over filled. Automatic shut off failed</i> <i>Oscar Danton saw the spill and shut off the fuel.</i>					
CAUSE OF SPILL <i>Automatic day-tank shut off failed. Tank over filled.</i>					
CLEANUP ACTIONS <i>Some solvents on ground.</i>					
DISPOSAL METHODS AND LOCATION					
ENVIRONMENTAL DAMAGE (check one) YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		SURFACE AREA AFFECTED (square feet)		SURFACE TYPE (describe area affected)	
COMMENTS <i>Frank Dayton Jr notified the National Response Center in D.C.</i> <i>at 800-424-8802.</i> <i>Cory Jones put the pump on manual.</i> <i>Frank estimates the volume spilled at 55 gal.</i>					

## DEC USE ONLY

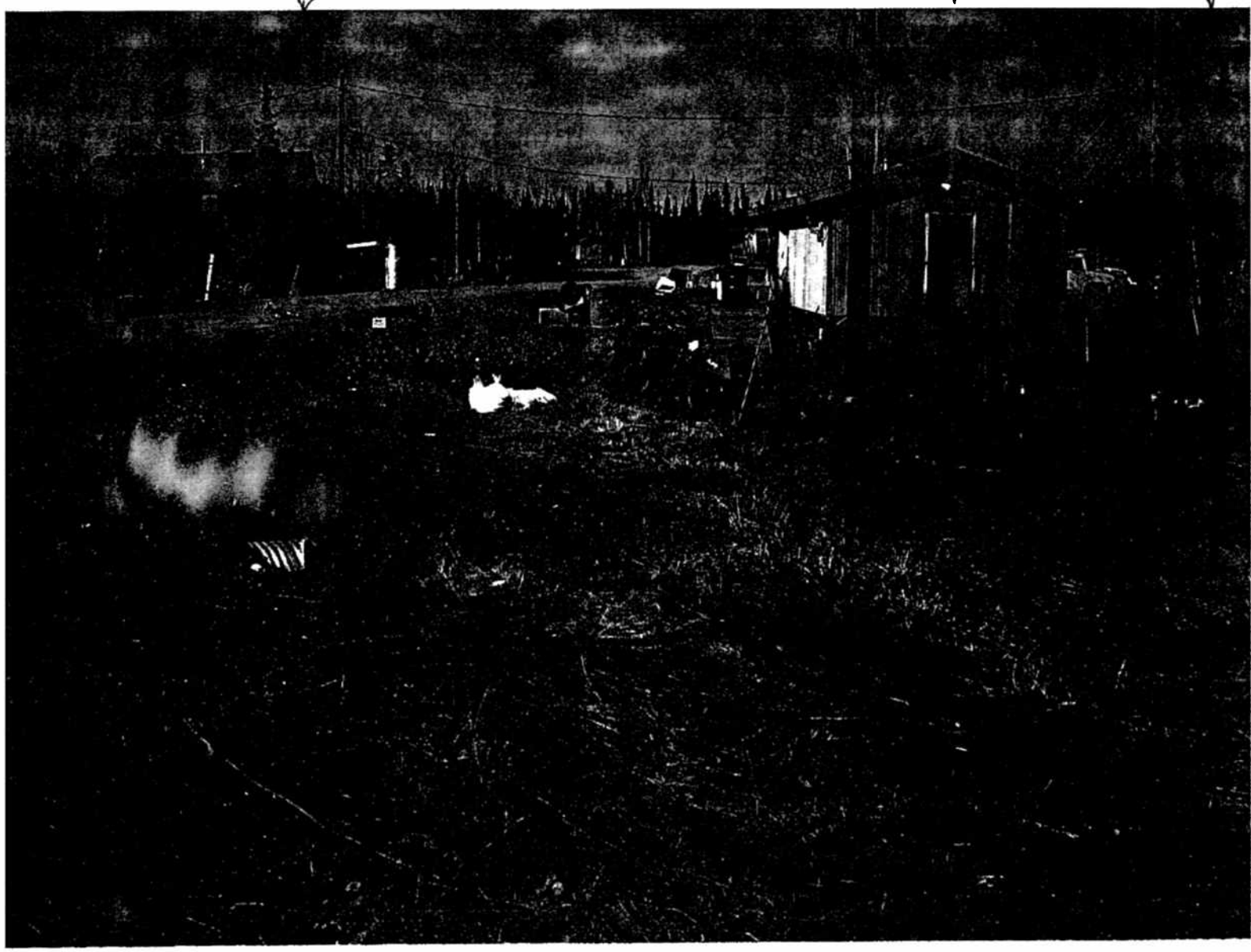
SPILL # <i>02309906001</i>		FILE # <i>830.02.002</i>		LC		C-PLAN MGR NOTIFIED YES <input type="checkbox"/> NO <input type="checkbox"/>	
SPILL NAME, IF ANY				NAMES OF DEC STAFF RESPONDING <i>Toivo Luick</i>			
DEC RESPONSE <input checked="" type="checkbox"/> Phone Follow-up <input type="checkbox"/> Field Visit <input type="checkbox"/> Took Report		CASELOAD CODE <input type="checkbox"/> First and Final <input checked="" type="checkbox"/> Open/No LC <input type="checkbox"/> LC assigned		CLEANUP CLOSURE ACTION <input type="checkbox"/> NFA <input type="checkbox"/> Monitoring <input type="checkbox"/> Transferred to CS or STP			
COMMENTS							
REPORT PREPARED BY <i>Toivo Luick</i>						DATE REPORT PREPARED <i>04 Mar 2002</i>	

School

Washeteria

generator  
bldg

Village  
office



Koyukuk generator bldg  
17 May 2002  
by Travis Luick



generator  
building  
↓

edge of  
farm  
tank  
↓



Koyukuk generator building

17 May 2002

by Toivo Luick

# ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION OIL & HAZARDOUS MATERIALS SPILL NOTIFICATION

SPILL #: <i>02309902601</i>		FILE #: <i>830.02.002</i>		LC: <i>14 969060</i>	
PERSON REPORTING <i>Leona Kriska</i> <i>Tribal Council → Environmental Tech office</i>			PHONE NUMBER <i>927-2228</i>		
POTENTIAL RESPONSIBLE PARTY <i>City of Koyukuk</i> <i>Vera Lestenkovskaya</i>			OTHER POTENTIAL RESPONSIBLE PARTY <i>927-2215 (2214)</i>		
DATE & TIME OF SPILL <i>unknown ~ 1/26/02</i>		DATE AND TIME REPORTED <i>1:00 PM 2/15/02</i>		REPORTED HOW? <i>(phone, fax, etc...)</i>	
LOCATION <i>Koyukuk - City of, Generator building Day tank</i>			PRODUCT SPILLED <i>Diesel #1</i>		
QUANTITY SPILLED <i>~ 500 gallons</i>	QUANTITY CONTAINED <i>-</i>	QUANTITY RECOVERED <i>-</i>	QUANTITY DISPOSED <i>-</i>		
SOURCE OF SPILL (BE SPECIFIC) <i>Day tank <del>over fill</del></i>					
CAUSE OF SPILL (BE SPECIFIC) <i>over fill</i>					
CLEANUP ACTIONS (DESCRIBE IN DETAIL) <i>none to date</i>					
DISPOSAL METHODS AND LOCATION (DESCRIBE IN DETAIL)					
ENVIRONMENTAL DAMAGE  YES      NO		SURFACE AREA AFFECTED (IN SQUARE FEET)		SURFACE TYPE (DESCRIBE AREA AFFECTED)	
TYPE OF DEC RESPONSE (phone, <u>field visit</u> , took report)		NAME OF DEC STAFF RESPONDING <i>Toivo Luoma</i>		CASE STATUS ( <u>open</u> , closed, trans. to cont. sites)	
COMMENTS					
REPORT PREPARED BY <i>Toivo De Ruyter</i>				DATE REPORT PREPARED <i>2/15/02</i>	

Vera Lestrakoff - Koyukuk 907 927 2215 15 Feb 2002  
Administrator (city of) 2214

Joe Marley (School - found the spill) 927 2212

Frank Dayton Jr. will be back Tues (home) 927 2216  
(generator operator)

I called Joe Marley at 2:20 15 Feb 2002

Superbowl Sunday a staff member - left school 12:30 and  
saw fuel coming at air intake pipe of the day tank.

Day tank is on automatic pump system - got stuck on  
while filling. Joe shut it off asap.

Staff member saw it at 1200.

flow was >10 gallons per minute into 3 ft of snow.  
flow was for at least 30 minutes

300 gallons is a MINIMUM.

Air intake pipe is on back / river side of building at  
the S.E. corner.

	Flights to Koyukuk
Frontier 474-0014	M-F 8:00 AM dep 10:30 arr
\$338.00	SS 1:15 dep 3:00 arr

Larry's 474-9169	M-F 2 flts per day
\$282.00	Weekends possible

Tamarac 474-6751 - Nope -

Arctic Circle 474 012 (busy)

Tatenduk 474-4697 M-F 8:00  
\$254.00

Mayor Cecilia Jones

Leona A. Kriska  
Environment Tec.  
P.O. Box 109  
Koyukuk, AK  
99754

~~927~~ 927-2253  
or  
927-2228

---

Frank Dayton Jr  
927-2216

14 Feb 2002

Sandy Doyle 479-0360

cell 322-6302

1500000  
Koyukuk

LC # 14964060 ~~02601~~ <sup>72</sup>

spill # ~~023899~~ 023099 02601  
830.02.002

Larry's Flying Service (Marley) 479 9169

dyg. Sat. Noon  
Tel. Sun.

Marla Lorry's agent 927 2267 2247

Corey Jones 927 no phone

Joe Marley hm 927-2263

Second house from airport

Cecilia home 927-2249

- ① VISABONE, reinforced, 20 mil
- ② sleeping bag
- ③ calling card
- ④ MREs, TRs
- ⑤ flashlight

Vera Leckertoff 927-2215

~~hm 927~~ doesn't have phone

Frank 927-2216

Leona Kriska 927-2253 or 2218

Arrived at office and began packing and organizing 0700  
field equipment.

Breakfast break 0800-0900

Shopping for supplies, finished packing 0900

Check in at Larry's Flying Service 1100

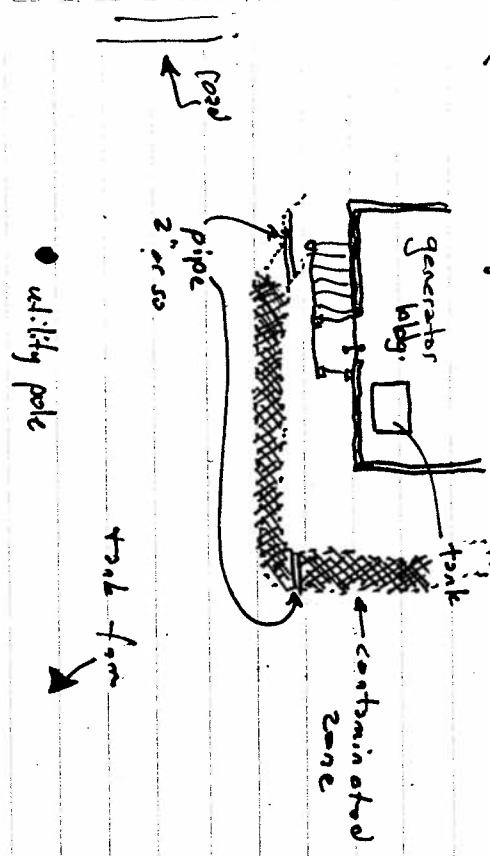
Depart Fairbanks 1230

Arrive in Koyukuk 1330

I dug a trench about 10 feet from the side of the building around the corner

where the fuel leaked. The ground is heavily contaminated at the trench bottom for

quite 2 ways down each side.



Finished for the day at 1800 (10 hours)

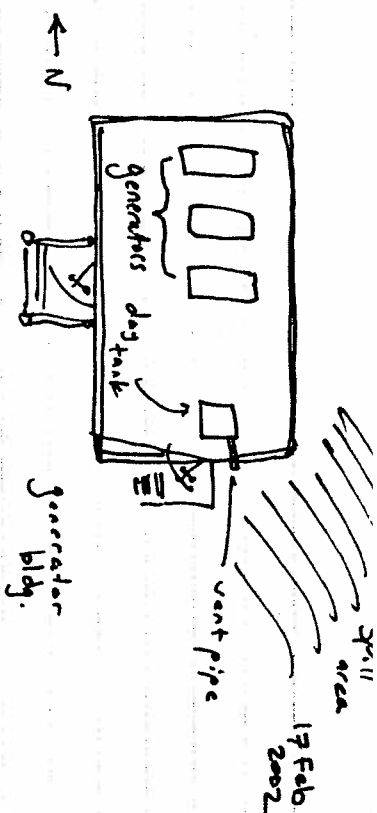
17 Feb 2002

Digital photos from 16 Feb 2002

- 001 generator bldg from w. standing on road way (back to school)
- 002 gen. bldg. from road facing NE.
- 003 tank farm S. of gen. bldg.
- 004 gen. bldg. & edge of tank farm from road facing NNE.
- 005 tank farm from road facing E.
- 006 gen. bldg. from road facing N.
- 007 gen. bldg. SE corner. shows vert. air vent pipe that oil flowed out of onto roof.
- 008 Same as above
- 009 inside gen. bldg. facing SE. See tall, grey, rectangular tank.
- 010 inside gen. bldg. along S. wall facing E. Air vent pipe visible.
- 011 Same as 010, better shot
- 012 similar to 010 above.

~~belt blank~~

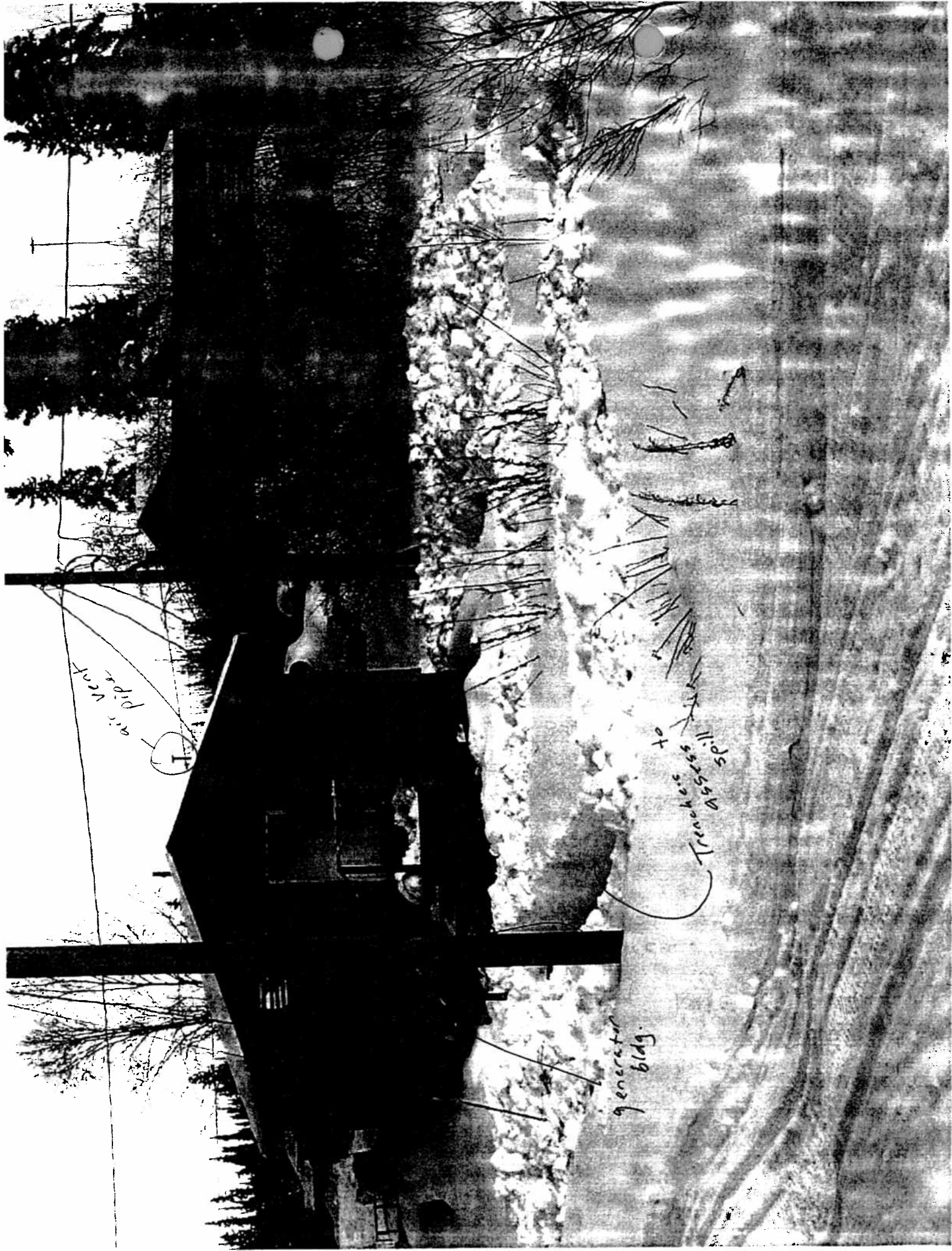
17 Feb 2002



Fuel overfilled the day tank. The automatic shut-off failed. Fuel came out the air vent pipe onto the roof as well as out of another hole (fill hole?) on the tank and spilled inside the bldg. The roof is pitched so that contamination started at the S.E. corner where the fuel ran off of the roof.

The ground beneath the bldg. is very contaminated. It appears that a great deal of the fuel (large majority?) went under the building. No where was the soil completely soggy with oil except for right near the corner (S.E.).





generator  
bldg.

Trenches to  
be filled

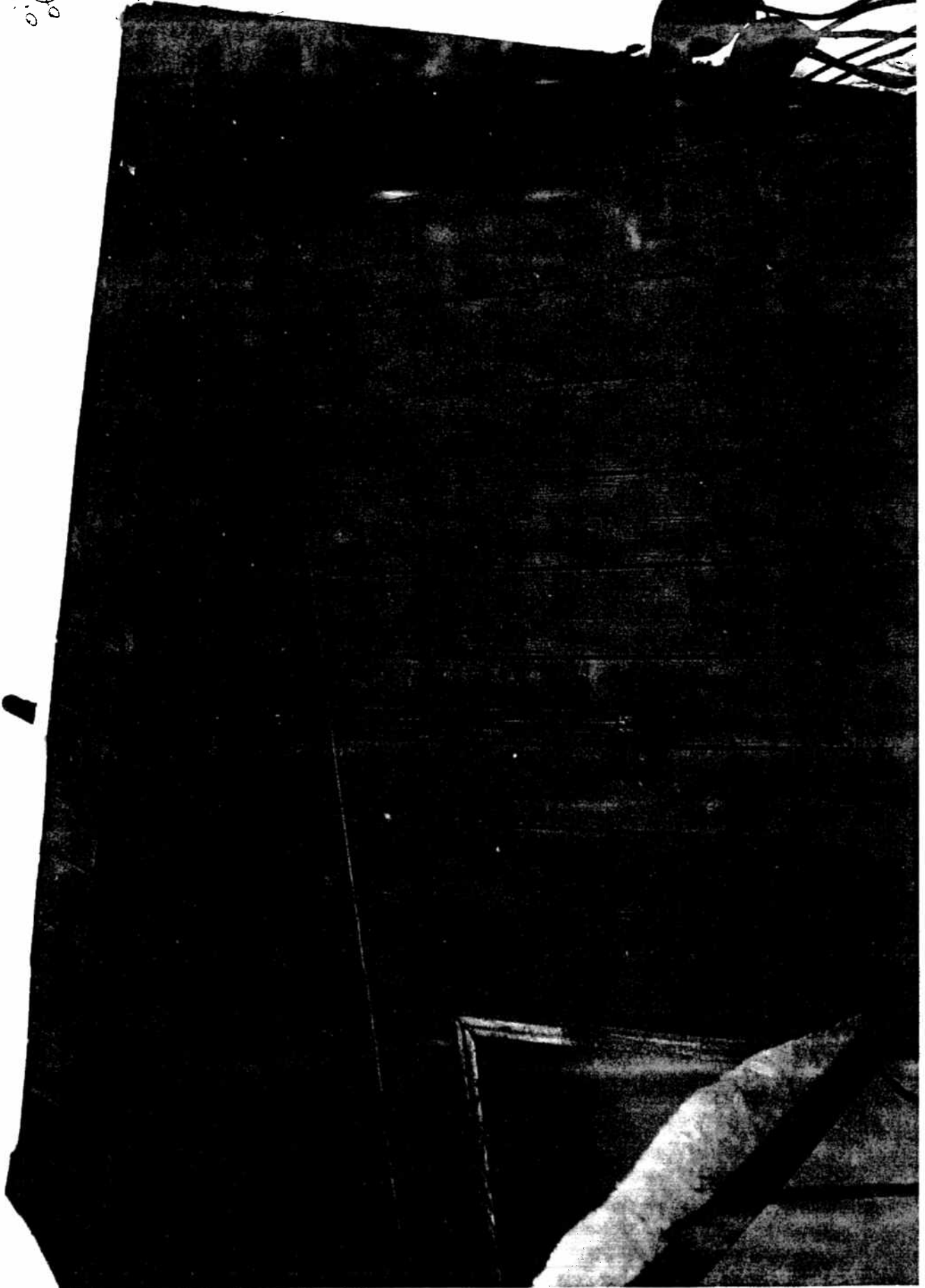
air vent

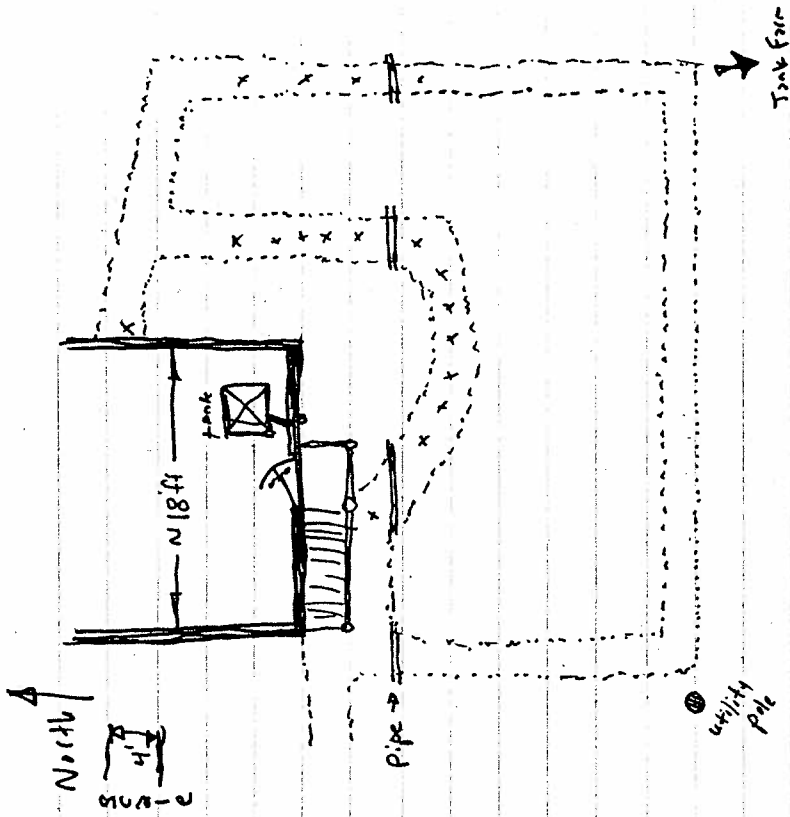




come  
off of here  
of pipe

1/2 inch pipe





0800 I started jotting down notes and digging a new outer perimeter trench. There was a little contamination (designated with "x") as shown in diagram on eastern side but nothing anywhere else.

1200 Trenches completed. Made arrangements to fly out. Leona Krisko wants to be kept in the loop so she can make sure that the site gets cleaned up.

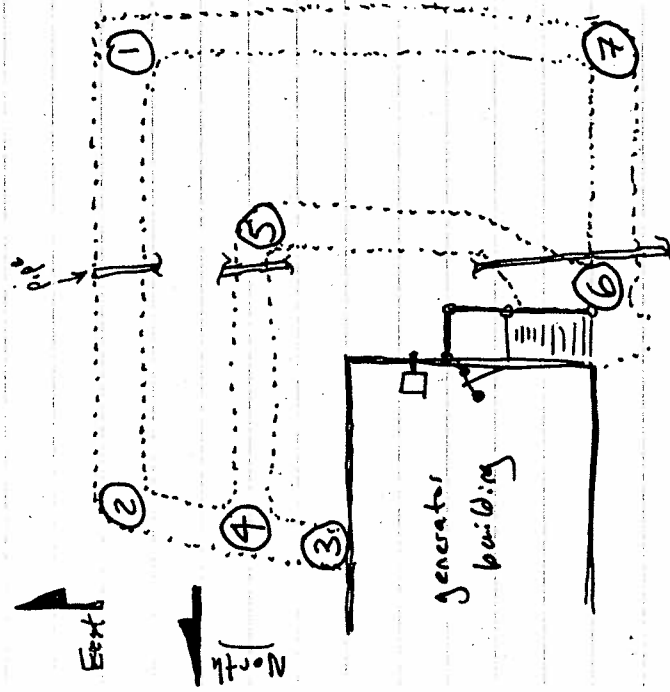
Alfred Dayton 927-2230

acting agent for Larry's Flying Service.

▲ The plane should be arriving around 1500 this afternoon.

Arrived in Fairbanks 1730

Arrived at home 1900



map of photograph locations  
(not to scale)

20 Feb 2002 photographs from 17 Sept 2002

DSCFO13 Taken from ① facing west

-014 Taken from ① facing north.

-015 Taken from ② facing west

-016 Taken from ③ facing east.

-017 Same as -016 above but facing a little more up towards the horizon.

-018 Taken from ④ facing south.

-019 Taken from ⑤ facing north.

-020 Taken from ⑤ facing west.

-021 Taken from ⑥ facing south

-022 Taken from ⑦ facing north.

-023 Taken from ⑦ facing east.

-024 Taken from road facing SSE.

-025 Taken from road facing ESE.

-026 Taken from road facing E.

-027 Taken from road facing NE.

-028 Taken from road facing NNE.

-029 Same as 028 above - slightly diff perspective.

for ④ locations see map on previous page.

 20 Feb 2002

Called Vera Lestenkoff re: follow-up to site visit. 20 Feb  
927-2215 2002

Date \_\_\_\_\_

**Spills Database Online Query**

Spill Details: Koyukuk City DayTank Spill - 1/26/2002						
Facility Name		Street		City		Zip Code
City Generator Building		no address		Koyukuk		no zip
Facility Type						
Power Generation						
Responsible Company		Contact			Address	
KOYUKUK CITY		NO ENTRY, NO ENTRY			no address	
Area		Sub Area		Region		Location
Northern Alaska		Interior Alaska		Interior Yukon		KOYUKUK CITY
Substance				Released	Contained	Recovered
Diesel				500	-	-
						Unit
						Gallons
Causes						
Valve Failure						
Sources						
Tank, Other						
Reporter's Name		Reporter's Phone		Date Reported		
Leona Kriska		907-927-2228		2/15/2002 2:00:00 PM		
Action					Action Date	
Complaint/Report Received					2/15/2002	
Case Closed, Transferred To CS					12/5/2003	
Field Visit					2/16/2002	
Disposal Code				Description		
61				UNKNOWN		
Comment						
There was never any clean-up on this. The RP was totally unresponsive.						

**Spills Database Online Query****Spill Details: Koyukuk City Generator Building Spill - 3/1/2002 7:00:00 PM**

Facility Name	Street	City	Zip Code
City Generator Building	no address	Koyukuk	no zip
Facility Type			
Power Generation			
Responsible Company	Contact	Address	
KOYUKUK CITY	NO ENTRY, NO ENTRY	no address	

Area	Sub Area	Region	Location
Northern Alaska	Interior Alaska	Interior Yukon	KOYUKUK CITY

Substance	Released	Contained	Recovered	Unit
Diesel	500	-	-	Gallons

Causes
Overfill

Sources
Tank, Other

Reporter's Name	Reporter's Phone	Date Reported
Leona Kriska	927-2253	3/4/2002 10:00:00 AM
Action	Action Date	
Case Closed, Transferred To CS	12/5/2003	
Complaint/Report Received	3/4/2002	
Disposal Code	Description	
61	UNKNOWN	

**Comment**

There was never any clean up. The RP was unresponsive.

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## Alaska Department of Environmental Conservation

### Contaminated Sites Database

#### Site Report for ADOT&PF SREB - Koyukuk

---

Reckey:	2005310123501	Staff:	<a href="#">Grant Lidren</a> - 9072698685
File Number:	830.38.004	Status:	Active
Site Name:	ADOT&PF SREB - Koyukuk		
Address 1:	Koyukuk Airport	Land Owner:	ADOT&PF - Fairbanks
Address 2:		Legal Description:	
City:	Koyukuk, AK 99754		
Latitude:	64.87718	Longitude:	-157.71332
Section:	17	Meridian:	Kateel River
Conditional Closure Information:		Township:	007
		Range:	006

---

**Problem:** A 10/20/05 Site Characterization and Cleanup Operation Report described petroleum-contaminated soils located inside the former Snow Removal Equipment Building (SREB) from various small releases during routine operations.

**Comments:**

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#### Glossary/Acronyms

Action Date	Action	Description	DEC Staff
2/7/2007 11:44:35 AM	Site Added to Database	Site added to the database.	Mitzi Read
2/8/2007	Site Ranked With ETM	Baseline ranking completed.	Mitzi Read

Report generated: 7/9/2008

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**Spills Database Online Query**

Spill Details: - 5/29/2001					
Facility Name		Street	City	Zip Code	
KOYUKUK CITY, DOT BLDG		no address	Koyukuk	no zip	
Facility Type					
Other					
Responsible Company		Contact		Address	
DEPT OF TRANSPORTATION		NO ENTRY, NO ENTRY		no address	
Area	Sub Area	Region	Location		
Northern Alaska	Interior Alaska	Interior Yukon	KOYUKUK CITY		
Substance		Released	Contained	Recovered	Unit
Engine Lube Oil		20	-	-	Gallons
Causes					
External Factors					
Sources					
Drum(s)					
Reporter's Name		Reporter's Phone		Date Reported	
DARREN MULKEY		451-5291		5/30/2001 2:55:00 PM	
Action				Action Date	
Case Closed, No Further Action				6/18/2001	
Data Problem				no date	
Disposal Code		Description			
63		NONE REQUIRED			
Comment					
No Value - SPNOTE: No value - MONOTE: No Value - WATER TIPPED OVER CONTAINERS IN GARAGE; ONLY RESIDUAL LEFT					



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## Alaska Department of Environmental Conservation

### Contaminated Sites Database

#### Site Report for Koyukuk Elementary School

<b>Reckey:</b>	1992310114601	<b>Staff:</b>	<a href="#">Ann Farris</a> - 9074512104
<b>File Number:</b>	830.38.001	<b>Status:</b>	Active
<b>Site Name:</b>	Koyukuk Elementary School		
<b>Address 1:</b>	Koyukuk	<b>Land Owner:</b>	Yukon-Koyukuk School District - Fbx
<b>Address 2:</b>		<b>Legal Description:</b>	
<b>City:</b>	Koyukuk, AK 99754		
<b>Latitude:</b>	64.88027	<b>Longitude:</b>	-157.7008
<b>Section:</b>		<b>Township:</b>	
<b>Conditional Closure Information:</b>		<b>Meridian:</b>	Kateel River Range:

**Problem:** During 1992 school addition project contractors detected strong hydrocarbon odors. Estimated release of 3,000 gallons of diesel fuel over time. Source was thought to be a historical spill from a broken line and a leak at fittings along the fuel line connecting the barge off-loading facility to the school's above ground fuel storage tanks and the generator building. Analytical samples from the limits of excavation (7.5 feet bgs) showed DRO present from 4,000 to 10,000 mg/kg. 300 cubic yards of soil was excavated and stockpiled. Long term storage was in a 50 x100 ft cell west of the school's tank farm. In 1997 stockpile was treated with thermal desorption. After treatment 165 cubic yards met the cleanup levels established for this site. 118 cubic yards remained at above cleanup levels, but below 650 mg/kg. ADEC approved these soils for use as daily cover at the Koyukuk landfill. The village well was sealed with bentonite and is monitored annually for VOC's as a protective measure.

**Comments:** Vertical and horizontal extent of contamination not delineated. Possible groundwater impacts were not characterized. Benzene and other PAH's were not characterized. Native soils at original stockpile location (on school grounds) are contaminated with DRO up to 3,970 mg/kg. Permafrost is present from 7 to 14 feet bgs, and extends to approximately 28 feet bgs. Groundwater is 35 to 50 feet bgs and below the permafrost layer.

#### Glossary/Acronyms

Action Date	Action	Description	DEC Staff
5/27/1992	Update	(Old R:Base Action Code = SA1 - Phase I Site Assessment (General)). Shannon and Wilson, Inc.	Dan Basketfield
6/5/1992	Update	(Old R:Base Action Code = SA2 - Phase II Site Assessment (General)). Sampling undertaken concurrent with excavation of contaminated soil.	Dan Basketfield
7/30/1992	Site Added to Database	Heating oil.	
7/30/1992	Update	(Old R:Base Action Code = SA1R - Phase I SA Review (CS/LUST)). Staff reviewed contaminated site excavation and	Dan

		subsequent site assessment.	Basketfield
9/8/1992	Update	(Old R:Base Action Code = RPL2 - Site Information Request Letter). ADEC sent PRP-CS Database Notification Letter to RP requesting update and more environmental information concerning the contaminated site. As of this "complete date", no response received.	Jeff Peterson
12/11/1992	Meeting	Met with Jack Sherman (Yukon-Koyukuk School District), Christopher J. Heaphey, Atty. (Blanstone and McCollum, Anch), Diane Stevens (Department of Community and Regional Affairs), and Lauries Lohritz (City of Koyukuk) concerning soil contamination at site of Koyukuk School. Scoping meeting. Indicated that contamination needs to be characterized.	Dan Basketfield
10/6/1993	ADEC Assuming Cleanup Action	(Old R:Base Action Code = SLC - Site Lead Cleanup). ADEC staff requested, received and reviewed proposal by Shannon and Wilson to develop work plan and estimate for investigation and cleanup recommendations. Monies were appropriated for cleanup by special legislative grant for FY94. Work plan will be developed this winter by S&W under term contract.	Cindy Thomas
12/20/1993	Update	(Old R:Base Action Code = SA2 - Phase II Site Assessment (General)). ADEC staff received report from Shannon and Wilson: Site Assessment, regarding summary of findings from field investigation last winter. Soil contamination noted along location of old fuel line. Water well not impacted but soil around well casing is contaminated. Tank farm does not appear to be leaking. Recommendations include capping surface area of old fuel line, installing a bentonite seal around VSW well casing, and treating soil stockpiles off-site out of the village.	Cindy Thomas
3/7/1994	Site Ranked Using the AHRM	Initial ranking.	
4/1/1994	Site Characterization Report Approved	(Old R:Base Action Code = SA2R - Phase II SA Review (CS)). ADEC staff reviewed report from Shannon and Wilson: Site Assessment, and agreed with recommendations. Suggested using land spreading as an option. Requested S&W to develop proposal for corrective action. Expect work to take place this summer. ADEC will issue 2nd NTP upon approval of CAP.	Cindy Thomas
6/25/1994	Cleanup Plan Approved	(Old R:Base Action Code = CAPR - Corrective Action Plan Review (LUST)). ADEC staff reviewed and approved a CAP which included: Sealing the village well casing, sampling and re-covering the existing stockpile, placing cover material over old spill location, and final sampling and closure of stockpile. Tasks will be spread out between 1994 and 1996, because of weather and equipment limitations.	Cindy Thomas
1/17/1995	Update	SITE SUMMARY: Spill site will be capped in spring 1995 after winter gravel haul operation complete. Only other outstanding issue is the fate of soil stockpile (still hot). Funds will be available to manage as long term storage. Pile should be sampled annually until levels decrease. Soil may go to new or old landfill. Shannon and Wilson has term contract. Check with Brad Hahn on funding status.	Cindy Thomas
7/11/1995 3:58:40 PM	Update	ADEC received a Status Report from Shannon and Wilson. Completed soil capping activities and results of a water sample.	Shah Alam
1/3/1997	Institutional Control Established	Annual monitoring of drinking water for VOC's established. Added in 2007 to reflect administrative file.	Shannon Oelkers
		School well decommissioned and permanently closed due to proximity of contamination. School and city now served by	

1/3/1997	Update	Koyukuk Safewater Facility. Well for the Koyukuk Safewater Facility is within 100 feet of the site. Added in 2007 to reflect administrative file.	Shannon Oelkers
6/29/1998 4:01:37 PM	Update	Shannon and Wilson (David McDowell) telephoned Shah Alam today to inform that the soil remediation project will not be completed by the end of the fiscal year (June 30, 1998).	Shah Alam
1/8/1999 4:07:15 PM	Cleanup Level Approved	ADEC issued an ACL letter and cleanup decision letter to the school district. Based on the ACL, thermally remediated soils met cleanup level.	Shah Alam
1/20/1999 4:08:10 PM	Update	ADEC sent a letter to YKSD explaining the reuse of the soils as daily cover material not as final cover material.	Shah Alam
6/3/1999 4:09:54 PM	Update	ADEC and Shannon and Wilson agreed to pay 75% of the cost of soil remediation that did not meet cleanup level.	Shah Alam
10/15/1999 4:10:46 PM	Update	Soils underlying the former stockpile location was identified as being contaminated with DRO above the established cleanup levels. The School District should address this matter and coordinate any assessment (and corrective action) activity with ADEC.	Shah Alam
1/12/2007	Update	Updated problem statement to reflect administrative file. Changed staff assigned from Pikul to Oelkers.	Shannon Oelkers
2/12/2007	Site Ranked With ETM		Shannon Oelkers
7/27/2007	Update	Site transferred from Oelkers to Farris.	Shannon Oelkers

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**Spills Database Online Query**

Spill Details: - 6/10/2003					
Facility Name		Street	City	Zip Code	
Koyukuk Federal Scout Readiness Center		no address	Koyukuk	no zip	
Facility Type					
Non-Crude Terminal					
Responsible Company		Contact		Address	
ALASKA ARMY NATIONAL GUARD		NO ENTRY, NO ENTRY		no address	
Area	Sub Area	Region	Location		
Northern Alaska	Interior Alaska	Interior Yukon	KOYUKUK CITY		
Substance		Released	Contained	Recovered	Unit
Diesel		15	-	15	Gallons
Causes					
Equipment Failure					
Sources					
Tank, Other					
Reporter's Name		Reporter's Phone		Date Reported	
Gretchen Grekowicz		no phone		6/18/2003 10:17:00 AM	
Action				Action Date	
Complaint/Report Received				6/18/2003	
Technical Assistance				6/18/2003	
Case Closed, No Further Action				6/18/2003	
Disposal Code		Description			
67		HAZ WASTE TREATMENT FACILITY			
Comment					
<<there are no comments for this spill>>					

**Spills Database Online Query**

Spill Details: - 5/13/2002					
Facility Name	Street	City	Zip Code		
Library	no address	Koyukuk	no zip		
Facility Type					
Other					
Responsible Company		Contact		Address	
KOYUKUK CITY		NO ENTRY, NO ENTRY		no address	
Area	Sub Area	Region	Location		
Northern Alaska	Interior Alaska	Interior Yukon	KOYUKUK CITY		
Substance		Released	Contained	Recovered	Unit
Diesel		110	-	80	Gallons
Causes					
Valve Failure					
Sources					
Tank, Other					
Reporter's Name		Reporter's Phone		Date Reported	
Tracy Kimoktoak		no phone		5/14/2002 1:09:00 PM	
Action				Action Date	
Complaint/Report Received				5/14/2002	
Case Closed, No Further Action				5/14/2002	
Disposal Code		Description			
59		PADSPREAD			
Comment					
<< there are no comments for this spill >>					

**Spills Database Online Query****Spill Details: - 12/14/2000 2:15:00 PM**

Facility Name	Street	City	Zip Code
KOYUKUK RIVER WITHIN SEC. 29, T3N, R12E, KATEEL RI	no address	Koyukuk	no zip
Facility Type			
Vehicle			
Responsible Company	Contact	Address	
OSBORNE CONSTRUCTION CO/ADOT	NO ENTRY, NO ENTRY	no address	

Area	Sub Area	Region	Location
Northern Alaska	Interior Alaska	Interior Yukon	KOYUKUK CITY

Substance	Released	Contained	Recovered	Unit
Diesel	54	-	-	Gallons

Causes
Sinking

Sources
Heavy Equipment

Reporter's Name	Reporter's Phone	Date Reported
TYRONE FILOTEI	451-0079	12/15/2000 9:20:00 AM
Action	Action Date	
Case Closed, No Further Action	8/14/2002	
Complaint/Report Received	12/15/2000	
Case Closed, Monitoring Req'd	12/16/2000	
Disposal Code	Description	
63	NONE REQUIRED	

**Comment**

No Value - SPNOTE: No value - MONOTE: No Value - WILL TRY TO RECOVER IN THE SPRING/TOO DANGEROUS NOW - MONITORING



**Spills Database Online Query**

Spill Details: Koyukuk River - 9/2/2005 11:24:00 AM						
Facility Name		Street	City	Zip Code		
Middle Fork of Koyukuk River		gravel bar	Koyukuk	no zip		
Facility Type						
Vessel						
Responsible Company		Contact	Address			
ALYESKA PIPELINE SERVICE CO		NO ENTRY, NO ENTRY	1835 S BRAGAW			
Area	Sub Area	Region	Location			
Northern Alaska	Interior Alaska	Interior Yukon	KOYUKUK CITY			
Substance		Released	Contained	Recovered	Unit	
Gasoline		0.75	-	0.75	Gallons	
Causes						
Equipment Failure						
Sources						
Other						
Reporter's Name		Reporter's Phone	Date Reported			
Meredith Bechman		no phone	9/2/2005 12:55:00 PM			
Action			Action Date			
Complaint/Report Received			9/2/2005			
Final Report			9/2/2005			
Case Closed, No Further Action			9/2/2005			
Disposal Code		Description				
51		INCINERATED				
Comment						
due to spill occurring below the normal high-water mark of Koyukuk River, pursuant to standard operating procedures, it was reported as if spilled to water even though spill was to land						

**Spills Database Online Query**

Spill Details: YUKON RIVER 01 FLOOD - 5/29/2001					
Facility Name		Street	City	Zip Code	
KOYUKUK CITY & NULATO CITY		no address	Koyukuk	no zip	
Facility Type					
Non-Crude Terminal					
Responsible Company		Contact		Address	
KOYUKUK CITY		NO ENTRY, NO ENTRY		no address	
Area	Sub Area	Region	Location		
Northern Alaska	Interior Alaska	Interior Yukon	KOYUKUK CITY		
Substance		Released	Contained	Recovered	Unit
Diesel		55	-	-	Gallons
Causes					
External Factors					
Sources					
Tank, Other					
Reporter's Name		Reporter's Phone		Date Reported	
ALAN WEIN		376-5038		5/29/2001	
Action				Action Date	
Complaint/Report Received				5/29/2001	
Case Closed, No Further Action				6/18/2001	
Disposal Code		Description			
63		NONE REQUIRED			
Comment					
No Value - SPNOTE: No value - MONOTE: No Value					

NATIONAL RESPONSE CENTER 1-800-424-8802

\*\*\* For Public Use \*\*\*

Information released to a third party shall comply with any applicable federal and/or state Freedom of Information and Privacy Laws

Incident Report # 595523

#### INCIDENT DESCRIPTION

\*Report taken at 18:03 on 03-MAR-02

Incident Type: STORAGE TANK

Incident Cause: EQUIPMENT FAILURE

Affected Area:

The incident was discovered on 02-MAR-02 at 19:00 local time.

Affected Medium: LAND FROZEN GROUND AND SNOW

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#### SUSPECTED RESPONSIBLE PARTY

XX

Type of Organization: UNKNOWN

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#### INCIDENT LOCATION

OFF OF 1ST STREET County: UNKNOWN

City: KOYUKUK State: AK

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#### RELEASED MATERIAL(S)

CHRIS Code: OON Official Material Name: OIL, FUEL: NO. 1 (KEROSENE)

Also Known As:

Qty Released: 50 GALLON(S)

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#### DESCRIPTION OF INCIDENT

DAY TANK WAS OVERFILLED DUE TO FAILURE OF AN AUTOMATIC PUMP.

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#### INCIDENT DETAILS

Description of Tank: DAY TANK

Tank Above/Below Ground: ABOVE

Transportable Container: NO

Tank Regulated: UNKNOWN

Tank Regulated By:

Tank ID:

Capacity of Tank:

Actual Amount:

---

#### DAMAGES

Fire Involved: NO Fire Extinguished: UNKNOWN

INJURIES: NO Hospitalized: Empl/Crew: Passenger:

FATALITIES: NO Empl/Crew: Passenger: Occupant:

EVACUATIONS: NO Who Evacuated: Radius/Area:

Damages: NO

<u>Closure Type</u>	<u>Description of Closure</u>	<u>Length of Closure</u>	<u>Direction of Closure</u>
Air:	N		
Road:	N		Major Artery: N
Waterway:	N		
Track:	N		
Passengers Transferred: UNKNOWN			

Environmental Impact: UNKNOWN  
Media Interest: NONE Community Impact due to Material: NO

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REMEDIAL ACTIONS

NONE AS A YET. REPORTING PARTY IS SEEKING ASSISTANCE IN THE CLEAN UP.  
Release Secured: YES  
Release Rate:  
Estimated Release Duration:

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WEATHER

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ADDITIONAL AGENCIES NOTIFIED

Federal:  
State/Local:  
State/Local On Scene:  
State Agency Number:

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NOTIFICATIONS BY NRC

U.S. EPA X ANCHORAGE (PRIMARY)  
03-MAR-02 18:20  
U.S. EPA X SEATTLE (PRIMARY)  
03-MAR-02 18:19  
NOAA 1ST CLASS BB RPTS FOR AK (PRIMARY)  
03-MAR-02 18:13

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ADDITIONAL INFORMATION

CALLER HAD NO ADDITIONAL INFORMATION

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\*\*\* END INCIDENT REPORT # 595523 \*\*\*



## Division of Environmental Health

## Solid Waste Program


[State of Alaska](#) > [DEC](#) > [EH](#) > Solid Waste

Solid Waste Sites:  
Interior Region

Aug 11 2008 5:00PM

## Site

## Category/Type Location

A.C.E. Demo Debris Landfill Permit: 9131-BA011 Status: Retired	Non-municipal Monofill	1818 Old Steese Highway Fairbanks, AK 99712 1818 Old Steese Highway, Fairbanks, AK 99712-1015 in Sect. 1, T. 1N., R. 1W. FM Sect. 1, T. 1N., R. 1W. FM
Adler Mine - Heap Leach Permit: 8731-BA010 Status: Retired	Non-municipal Monofill	Ester Dome Road Fairbanks, AK 99708 on Ester Dome Road on east side of Ester Dome. Sections 20 & 29, T.1N., R.2W., FM
Alaska Boulder Creek Ltd Partners Permit: 9740-BA003-04 Status: Retired	Non-muni Type Z Monofill	Tofty Road 17 miles west of Tofty in State Mining Claim ADL #313234 Sec. 30 & 31, T. 4N. R. 18W, FM
Alaska Gold Co. (Fairbanks Exploration Co. Contami Permit: 9231-BA009 Status: Retired	Non-municipal Monofill	Murphy Dome Road Fairbanks, AK 99709 Off Murphy Dome Road NW 1/4 Sec. 20, T. 1N., R. 2W. FM
Alaska Railroad Corp. Plan Rev.for chipped RR ties Unpermitted Status: Active	Non-municipal Other	Phillips Field Rd Fairbanks, AK 99701 Fairbanks Railroad Yard, Fairbanks Terminal Reserve Se 1/4 of Sec. 4 and NE 1/4 of Sec. 9, T.1S., R.1W., Fairbanks Meridian
Alaska Railroad Fairbanks Railyard Coal Ash LF Permit: SWG0304001 Status: Active	Non-municipal Landfill	Phillips Field road Fairbanks, AK 99701 In Alaska Railroad Yard off Phillips Field road. SE 1/4 Sec 4 and NE 1/4 Sec 9, T1S, R1W, FM
Allakaket Landfill (City of) Permit: 9931-BA008 Status: Active	Class 3 (village) Landfill	Allakaket, AK 99720 2.7 Mile south of Allakaket Sec. 27, T. 20 N., R. 24W., FM
Alyeska Chandalar Pipeline Camp Permit: 8436-BA013 Status: Retired	Non-municipal Landfill	Dalton Highway Chandalar Pipeline camp, Dalton Highway T. 16S. R. 11 E, Sec 3, 9 & 10, UM
Alyeska Pump Station #6 (DS 77-3) Permit: 7731-BA022 Status: Retired	Class 3 (camp) Landfill	Elliot Highway Alyeska Pump Station#6 in DS 77-3 SW 1/4 Sec. 19, T. 12N. R. 10W., FM
Alyeska Pump Station #7 (DS 67-5) Permit: 8931-BA011 Status: Retired	Class 3 (camp) Landfill	Pump Station #7, Disposal site 67.5 Section 36, T. 6N., R. 4W., FM
Alyeska Pump Station #8 (DS 54-1.1) Permit: 7931-BA017 Status: Retired	Class 3 (camp) Landfill	Johnson Road Disposal in DS 54-1.1, Near Alyeska Pump Station #8 off Johnson Road W. 1/2, SW 1/4, Sec. 20, T. 4S., R. 5E., FM
Alyeska Pump Station #9 (Const. Camp & DS44-5) Permit: 7731-BA015 Status: Retired	Class 3 (camp) Landfill	Richardson Highway Near Alyeska Pump Station #9 in DS 44-5 off the Richardson Highway NE 1/4, SE 1/4, NW 1/4 Sec. 34, T. 11S., R. 10E., FM
Anderson Landfill Permit: 8031-BA004 Status: Retired	Class 3 (village) Landfill	Anderson, AK 99744 About 1 mile outside city, on Clear/Anderson Road SE1/4 NE1/4 Sect. 5, T.7S., R.8W., FM
Anderson Sewage Sludge Monofill Permit: 0431-BA003 Status: Active	Non-muni Type Z Monofill	Anderson, AK 99744 1600 Ft from Clear/Anderson Road, 2.5 miles south of Anderson Sections 10 & 15, T.7S., R. 8W. FM
Anglo Alaskan Construction Permit: 8333-BA003 Status: Retired	Class 3 (camp) Landfill	20 Miles east of Northway, Alaska Highway 20 Miles east of Northway on the Alaska Highway in the old Gardner Creek Maintenance Property U.S.S. 2719 Section 3 R. 12N., R.21E., CRM
Anvik Landfill Permit: 8621-BA013 Status: Active	Class 3 (village) Landfill	Anvik, AK 99558
Arctic Surplus Property (McPeak's) Permit: 8331-BA003 Status: Retired	Non-municipal Landfill	1/2 Mile Badger Road Fairbanks, AK 99701 1/2 Mile Badger Road, Fairbanks, on old Arctic Surplus property NW1/4, SW1/4, Sec. 21, T.1S., R.1E., FM
Arctic Village Landfill Unpermitted Status: Active	Class 3 (village) Landfill	Arctic Village, AK 99722 < 1 mile southwest of airstrip

B & P Waste Management Systems Unpermitted Status: Active	Non-municipal Treatment	151 Alta Way Fairbanks, AK 99701 151 Alta Way, Fairbanks ARRC Milepost 466, Sec. 1, T1S, R2W, Fairbanks Meridian
Bear Creek LRRS C&D Landfill (USAF) Permit: 9631-BA005 Status: Active	Non-muni Type Z Monofill	Bear Creek, AK 99777 9 Miles NE of Tanana Sections 17 & 20, T. 5N., R. 21W., FM
Bear Creek Mine Unpermitted Status: Inactive	Class 3 (camp) Landfill	McGrath, AK 99627 near McGrath T21S R14E Sec. 34, 27, 22, 35, 26.
Bear Creek RRS Landfill Permit: 8431-BA006 Status: Retired	Class 3 (camp) Landfill	Tanana, AK 99777 9 Mile NE of Tanana SW1/4 Sec.17, NW 1/4 Sec.20 T5N., R21W KRM
Beaver Tribal Council Landfill Permit: 0231-BA008 Status: Active	Class 3 (village) Landfill	Beaver, AK 99724 Near Beaver, AK SW corner, Section 13, T.18N, R. 1E. and SW corner Sec. 19, T. 18N, R.2E., FM
Bettles Airport (ADOT/PF property) Dumpsite Unpermitted Status: Closed	Class 3 (village) Landfill	Bettles Field, AK 99726 1000 Ft NW of Bettles Airport Center line
Birch Creek Unpermitted Status: Active	Class 3 (village) Landfill	Birch Creek, AK 99740
Black Raven Enterprises Unpermitted Status: Active	Non-municipal Storage	1901 Pomm Road Fairbanks, AK 99701 1901 Pomm Road, Fairbanks
Blair Lakes Army Landfill Permit: 8631-BA013 Status: Retired	Non-municipal Landfill	100 Ft west of north half Blair Lakes landing strip NE1/4 of SW1/4 Sect. 28, T.6S., R.2E. FM
Blair Lakes AF Range Landfill Unpermitted Status: Retired	Non-municipal Monofill	40 Mi. SE of Fairbanks, Blair Lakes AF Range T. 6S, R. 1W., FM
BMX Bike Track (Far North Bicycle Assn.) Permit: 8731-BA008 Status: Retired	Non-municipal Landfill	Kiana Park, 18th Ave & Kiana St., Fairbanks Fairbanks, AK 99701 Kiana Park, 18th Ave & Kiana St., Fairbanks Section 17, T. 1S., R. 1W., FM
Burgess/FMUS Sludge Disposal Unpermitted Status: Retired	Non-municipal Landfill	28 Mile Steese Highway, South of Chatanika River, West of Ruby Creek in Mineral Survey #1663 Sec. 9, T. 3N., R. 1E., FM
Cabin Inn, Inc. Landfill Unpermitted Status: Retired	Non-municipal Landfill	1838 Rozak Road North Pole, AK 99705 1838 Rozak Road, North Pole, AK 99705
Campion AFS Asbestos Landfill Permit: 9931-BA006 Status: Active	Non-muni Type Z Monofill	Campion AFS, outside of Galena Section 20, T.9 S., R 11E., KRM
Campion AFS Landfill Permit: 8831-BA014 Status: Closed	Non-municipal Landfill	Galena, AK 99741 Campion AFS, Section 20, T.9 S., R 11E., KRM
Cantwell ADOT/PF Inert Waste Landfill Permit: 8831-BA007 Status: Retired	Non-municipal Landfill	Cantwell, AK 99729 Near ADOT/PF Cantwell Operations Building, Lot 10, U.S. Survey#3229, 1mile east of Cantwell, AK
Cantwell Landfill (Dump) Permit: 8831-BA005 Status: Retired	Class 3 (village) Landfill	Cantwell, AK 99729 MP 131-131, Denali Highway, 1 1/4 mi.east of Parks Highway Junction, in SE 1/4 of SE/1/4, Sec. 3, T. SE1/4 of SE 1/4, Sec. 3, T. 18 S., R. 7 W. FM
Canyon Creek RRS Landfill Permit: 8731-BA005 Status: Retired	Non-muni Type Z Landfill	Canyon Creek LRRS site, Sec. 15, T.7S., R.6E., FM
Central Dump Unpermitted Status: Active	Class 3 (village) Landfill	mile 124.6 Steese Highway Central, AK 99730 Near mile 124.6 Steese Highway
Chalkyitsik Unpermitted Status: Active	Class 3 (village) Landfill	Chalkyitsik, AK 99788 Map in file. North of Chalkyitsik on Corporation land. Section 7, T 21 N, R 19 E, Fairbanks Meridian
Chena Hot Springs Resort Permit: 0231-BA003 Status: Active	Class 3 (camp) Landfill	
Chena Lakes COE C&D Landfill Closure Unpermitted Status: Retired	Non-municipal Landfill	Chena Lakes North Pole, AK 99705  Sec. 7, T2S, R3E, FM
Circle City Dump Unpermitted Status: Retired	Class 3 (village) Landfill	Milepost 159, Steese Highway Circle, AK 99733 Approx. Milepost 159, Steese Highway (alt. field report to be verified are 65.802717, 144.08815)



Circle Landfill Permit: 0031-BA003 Status: Active	Class 3 (village) Landfill	T. 12 N., R 18 E, Sec. 31, FM Mile 156.5 Steese Highway Circle, AK, AK 99773 approximately milepost 156.5 Steese Highway T. 11 N., R. 17 E., Section 14, F.M.
Clear AFS Inert Waste Monofill Permit: SWZA014-13 Status: Active	Non-muni Type Z Monofill	PO Box 40013 Clear AFS, AK 99704 64 degrees 16' 38" N and 149 Degrees 12'03"W
Clear AFS Landfill Permit: 9931-BA009 Status: Closed	Class 2 Landfill	Mile 283.5 Parks Highway Clear AFS, AK 99704 Mile 283.5, Parks Highway, Clear/Anderson Turn-off T.7S., R.8W., Section 30 FM
Clear Creek Airstrip Landfill Permit: 8831-BA009 Status: Retired	Non-municipal Other	Sec. 28, T5S, R1E, FM
ConocoPhillips (ARCO), Big Lake Test #1 Permit: 9122-BA004 Status: Retired	Non-municipal Monofill	Tax Parcel B002, NW1/4 Section 22, T17N, R3W S.M. NW1/4 Section 22, T17N, R3W S.M.
Crabb's Landfill - Central, AK Permit: 8531-BA007 Status: Retired	Class 3 (village) Landfill	Central, AK 99730 On Circle Hot Springs Road, MS 670.077-2 Sec. 12, T. 8N., R. 14E., FM
Delta "C" Inc One-Time C&D GP Permit: SWG0303005 Status: Closed	Non-municipal Monofill	Mile 264.5 Richardson Hwy Delta Junction, AK, AK 99737 Lots 11 & 12, Block 4, West Addition, Delta Junction Townsite
Delta Industrial Services Vehicle Landfill Permit: 9940-BA003-06 Status: Closed	Non-municipal Monofill	Delta Junction, AK 99737 between West 4th St. and West 6th St., and Granite and Jarvis Ave. in Delta Junction Lot 4, sec. 23, T.10S., R.10E., F.M.
Delta Junction Landfill (City of ) Permit: 0033-BA002 Status: Closed	Class 3 (village) Landfill	1.5 Mi. Tanana Loop Extension Delta Junction, AK 99737 1.5 Mi. Tanana Loop Extension SE1/4 of N 1/4, Section 31, T. 10S., R. 11E., FM
Delta Junction Landfill (New) Permit: 0333-BA003 Status: Active	Class 2 Landfill	
Denali Borough Landfill Permit: SW2A007-12 Status: Active	Class 2 Landfill	east side of Parks Highway, on Healy, AK 99743 east side of Parks Highway, on Sec. 26 & 27 T. 7S., R. 8W., FM
Denali Wilderness Lodge Permit: 9940-BA002-04 Status: Active	Class 3 (camp) Landfill	On the Wood River, 30 miles east of Denali National Park entrance. U.S. Survey 4499, T. 13 S, R. 2W. FM
Dickman's Donald Ave Coal Ash Permit: SWG0304002 Status: Active	Non-municipal Monofill	2176 Donald Ave Fairbanks, AK 99709 Lot 13 Blk 5 Metro Industrial Air Park subdivision Sec 21, T1S R1W FM
Dietrich Camp Permit: 8436-BA015 Status: Retired	Non-municipal Landfill	Sec.14, T. 33N, R. 10W., FM
Dihthaad Gerstle River Asbestos GP Permit: SWG0301001 Status: Closed	Non-municipal Monofill	Mile 1392.2 Alaska Highway Delta Junction, AK, AK 99737 Gerstle River Test Site, 3.6 miles from turn-off on Alaska Hiway. NE 1/4, Sec 16, T13S R14E, Fairbanks M.
Dihthaad Gerstle River One-Time C&D Permit: SWG0303009 Status: Closed	Non-municipal Monofill	Mile 1392.5 Alaska Highway Delta Junction, AK, AK 99737 Gerstle River Test Site, 3.6 miles from turn-off on Alaska Hiway NE 1/4, Sec. 16, T13S R14E, Fairbanks M.
DNR Squaw Gulch Landfill Permit: 9940-BA00305 Status: Retired	Non-municipal Landfill	Eagle, AK 99738 Squaw Gulch, Taylor Highway near road to Eagle T27N, R21E, Sec 12, NE1/4 of NE1/4 Copper River Meridian
Dot Lake Landfill Permit: 8733-BA001 Status: Active	Class 3 (village) Landfill	Dot Lake, AK 99737 Near Dot Lake Village Section 26, T. 22N., R. 7E, CRM
Dry Creek Community Landfill Permit: 0333-BA004 Status: Active	Class 3 (village) Landfill	Dry Creek, AK 99737 Mile 1379, Alaska Highway SE1/4, SE1/4, Section 22, T. 14S., R. 16E., FM
Eagle Asbestos Landfill (ADNR- Statewide General P Permit: 9740-BA001-01 Status: Retired	Non-municipal Landfill	Eagle Village, AK 99738 .3Mi South of Eagle Village E 1/2, NE 1/4, Section 4, T. 2S., R. 33 E., FM
Eagle Village Landfill Permit: 0233-BA006 Status: Active	Class 3 (village) Landfill	3 Mile New Road Eagle Village, AK 99738 At 3 Mile New Road. Sec. 3, T. 2 S., R. 33 E., FM
Eagle, City of Unpermitted Status: Closed	Class 3 (village) Landfill	Eagle, AK 99738
Earth Movers Aurora Drive Landfill Permit: 9531-BA016 Status: Retired	Non-municipal Monofill	925 Aurora Drive 925 Aurora Drive, Fairbanks; Block 43, Third Addition to Revision "A" Aurora Subd Section 4, Township 1S, Range 1W , Fairbanks Meridian

Earth Movers Gravel Pit - Hanson Road Permit: 9231-BA006 Status: Retired	Non-municipal Landfill	925 Aurora Drive Fairbanks, AK 99709 Earthmovers pit near Hanson Road, Borough Tax lot 537, Gov. Lots 7&8, in Sec. 5, T. 1S., R. 1W., FM Gov. Lots 7&8, in Sec. 5, T. 1
Eielson AFB Asbestos/Coal Ash Landfill Permit: SWZA019-12 Status: Active	Non-muni Type Z Monofill	Eielson Air Force Base, AK 99702 At Eielson AFB Sec. 13, T. 3S., R. 3E., FM
Eielson AFB Biosolids Land Application Permit: 0431-BA001 Status: Active	Non-municipal Land Application	Eielson Air Force Base, AK 99702 Adjacent to Central and Flightline Avenues at Eielson AFB Sec. 34, T. 2S., R. 3E., FM Sec. 34, T. 2S., R. 3E., FM & Sec. 2, 3, 11, 14, & 23 of T. 3S., R. 3E., FM
Eielson AFB Coal Ash/Rifle Range Permit: 9631-BA002 Status: Retired	Non-municipal Landfill	Eielson Air Force Base, AK 99702 Eielson AFB Rifle Range Sec. 17 & 18, T. 3S., R. 4E., FM
Eielson AFB Flight Line Pond Permit: 9731-BA003 Status: Retired	Non-municipal Monofill	Flight Line Road Eielson Air Force Base, AK 99702 Flight Line Road Fairbanks Meridian, T. 2S., R. 3E., Section 2 and 3
Eielson AFB Flightline Marsh C&D Permit: 9831-BA015 Status: Retired	Non-municipal Landfill	Flightline Road Eielson AFB, AK 99702 wetland areas next to Eielson AFB runway near main entrance to base FM R. 3E., T. 3S. Sec. 2 & 3
Eielson AFB Lagoon Sludge Unpermitted Status: Retired	Non-municipal Land Application	Eielson Air Force Base, AK 99702 Eielson AFB, on fields surrounding the runway
Eielson AFB Landfill (Closed) Permit: 8631-BA014 Status: Retired	Class 2 Landfill	Eielson Air Force Base, AK 99702 At Eielson AFB Sec. 13, T. 3S., R. 3E., FM
Eielson AFB Munitions Road Coal Ash Project Permit: 9731-BA016 Status: Closed	Non-muni Type Z Monofill	Eielson Air Force Base, AK 99702 Sections 7, 17, & 18, T. 3S., R. 4E., FM
Eielson AFB Quarry Hill Inert Permit: SWFBK00119992010CIA Status: Active	Non-muni Type Z Monofill	
Eielson AFB Runway Ponds 4 & 5 Permit: 9631-BA010 Status: Retired	Non-municipal Monofill	Eielson Air Force Base, AK 99702 Gravel pit ponds along highway edge of runway. Being filled to control Bird/Aircraft hazards. Section 14, T. 3S., R. 3E., FM
Eielson AFB Runway Ponds 6 & 7 Permit: 9431-BA011 Status: Retired	Non-municipal Monofill	Eielson Air Force Base, AK 99702 Runway ponds 6 & 7 from old gravel pits, south of runway, adjacent to Richardson Highway. Sec. 23, T. 3S., R. 3E., FM
Environmental Services, Inc. Unpermitted Status: Retired	Non-municipal Other	1438 Richardson Hwy North Pole, AK 99705 1438 Richardson Highway, Groff Subdivision NE 1/4, NW 1/4 of NW 1/4, Sec. 28, T. 1S., R. 1 E., FM
Eureka Landfill Unpermitted Status: Retired	Class 3 (village) Landfill	Mile 126.5, Glenn Highway Section 11, T21N, R12E, Seward Meridian
Evansville Landfill Permit: SWYKC001199520103MA Status: Active	Class 3 (village) Landfill	1.2 mile Willow Road Evansville, AK 99726 One mile south of Koyukuk River and Evansville (off floatplane pond access road) Plat 95-10, FRD within Sec. 17, T. 24 N., R. 18 W, FM
Evansville Septage Lagoon Landfill Permit: 8731-BA012 Status: Closed	Non-muni Type Z Landfill	Evansville, AK 99726 Sec. 18, T. 24N., R. 18W. FM
Fairbanks (City of) Biosolids Treat. Fac. (N-viro) Permit: 9731-BA007 Status: Retired	Non-municipal Treatment	4727 Peger Road Fairbanks, AK 99709 FMUS Wastewater Treatment Plant, 4727 Peger Road, Fairbanks, AK 99709 Section 28, R. 1W., T. 1S.,
Fairbanks (City of) FMUS WWTP Coal Ash LF Permit: 9631-BA004 Status: Retired	Non-municipal Monofill	4747 Peger Road Fairbanks, AK 99701 near Golden Heart Utilities wastewater treatment plant at end of Peger Road Sec. 28, T. 1S., R. 1W., FM
Fairbanks (City of) Snow Dump Unpermitted Status: Retired	Non-municipal Storage	1204 -1st Avenue Fairbanks, AK 99701 In the Chena River, at 1204 -1st Avenue, Fairbanks, AK 99701 Sec. 9, T. 1S., R. 9 W., FM
Fairbanks Biosolids: Blockcolsky, Malone, Narwahl Permit: 8831-BA008 Status: Retired	Non-municipal Land Application	Eielson Ag. Project Moose Creek, AK 99705 Some sites in Eielson Ag proj.. Some off Chena Pump Rd (Koponen and Narwahl). Dornath off Farmers Lp Sec. 4 & 6, T. 3S., R. 3E., FM (Blockolsky) Sec. 31, T. 3S., R. 3E. FM Malone, Sec. 8 & 27, T. 3S Petty
Fairbanks Biosolids: Dornath, Worthen, Koponen Permit: 8531-BA004 Status: Retired	Non-municipal Land Application	Steel Creek, Badger Roads Fairbanks/North Pole, AK 99701 Durham 1/4 Sec. 11T. 2S., R. 2E, FM; Murphy Sec. 29, T. 1S., R. 1E, FM; McGuire Sec. 20, T. 15N, R. 1E FM E. 1/2, NE 1/4 Sec. 34, T. 1N., R. 4E, FM Richards; SE 1/4 Sec. 12, R. 1S., R. 1E, FM Svboda;
Fairbanks Biosolids: Holcomb Property - Sludge Permit: 9031-BA005 Status: Retired	Non-municipal Land Application	Mile 1392, Alaska Hwy Delta Junction, AK 99737 Mile 1392 Alaska Highway Tract 7 of Delta II sale within Sec. 21, 26, 27 & 28, T. 10S. R. 14 E., FM

Fairbanks Biosolids: Hollembaek Property - Sludge Permit: 9033-BA001 Status: Retired	Non-municipal Land Application	Mile 1403.5 Alaska Highway Delta Junction, AK 99737 Mile 1403.5 Alaska Hwy Tract O, ASLS #78-93 & Tracts 2,3,4,5,& 6 of Block 2 ASLS #78-93.
Fairbanks Biosolids: Petty, Malone, Blockolsky Permit: 8931-BA006 Status: Retired	Non-municipal Land Application	Moose Creek North Pole, AK 99705 Eielson Ag project road about 1.5 miles past Moose Creek turn off. Sec 31 T. 3S. R.3E., FM (Malone)Sec.8 & 27 T. 3S., R. 3E., (Pettys)Sec. 6, T. 3S., R. 3E., FM (Block
Fairbanks Biosolids: Racca Property - Sludge Permit: 9031-BA006 Status: Retired	Non-municipal Land Application	Delta Junction, AK 99737 4148 Tanana Loop Extension, Delta Junction, AK99737 Tract D, Sec. 19 T. 9S., R. 11E., FM
Fairbanks Biosolids: Worthen,Murphy, McGuire, etc. Permit: 7831-BA017 Status: Retired	Non-municipal Land Application	Fairbanks, AK 99701 Worthen, Lots 5&6, SW1/4 Sec. 7, Sec. 8 T.3S., R. 3E., FM; See file for other farm locations. J.Petty, Bl.16, Lot 1, Tr.E., Sec. 27,T. 3S, R. 3 E, FM; L.Petty, SE1/4 Sec. 8, T. 3S., R. 3E., FM
Fairbanks International Airport Complaint Unpermitted Status: Retired	Non-municipal Other	Fairbanks, AK 99709 Gravel pit adjacent to airport runway.
Fairbanks North Star Borough S. Cushman Landfill Permit: SW1A002-11 Status: Active	Class 1 Landfill	455 Sanduri Rd Fairbanks, AK 99701 455 Sanduri Road E. 1/2, NW1/4, and NE 1/4, SW 1/4, Section 26 T. 1S., R. 1W., FM
Fairbanks North Star Borough S. Cushman LF Expan Permit: 0131-BA004 Status: Active	Class 1 Landfill	455 Sanduri Road Fairbanks, AK 99701 455 Sanduri Road, adjacent to current landfill. Tax Lots 2600 and 2502, at end of Leisure Street. Sec. 26, T. 1S, R. 1W., and Lot 2502, Sec. 25, T. 1S., R. 1W., FM
Farewell, FAA Inert Debris Landfill Permit: SWG0303007 Status: Active	GP Type C Monofill	approx. 1.25 mi s of the Farewell FAA Station strip M: Seward R: R25W T: T28N S: Section 27, SW1/4, NE1/4
Fort Knox Mine Inert Waste Landfills Permit: 9931-BA001 Status: Active	Non-muni Type Z Monofill	Steeze Highway 25 Mi. NE of Fairbanks in upper headwaters of Fish Creek Valley Section 14, 15 and 16, T. 2N, R. 2E, FM
Fort Knox Mine Tailing Disposal Permit: 0031-BA008 Status: Active	Non-municipal Monofill	25 Mi. NE Fairbanks off Steeze Hwy & Fish Creek Rd 25 Mi. NE of Fairbanks in upper headwaters of Fish Creek Valley in Section 14, T. 2N., R. 2E, FM Section 14, T. 2N., R. 2E, FM
Fort Yukon CBM Project Unpermitted Status: Retired	Non-municipal Storage	
Fort Yukon Dump Unpermitted Status: Active	Class 3 (village) Landfill	Fort Yukon, AK 99740 approx. 500 ft. from the airport
Fort Yukon LRRS C&D/Clean Swp. Landfill Permit: 0031-BA012 Status: Closed	Non-muni Type Z Landfill	Fort Yukon LRRS Fort Yukon, AK 99740 across road from camp landfill FM R.12E, T. 20N., Sec. 17
Fort Yukon LRRS Landfill Permit: SWG0307001 Status: Active	GP Type D Landfill	Fort Yukon, AK 99740 Ft. Yukon LRRS site, 1.5 miles east of Ft. Yukon Section 16, T. 20N., R.12 E., FM
Fort Yukon White Alice RRS Permit: 8631-BA006 Status: Retired	Non-muni Type Z Landfill	Fort Yukon, AK 99740 Fort Yukon White Alice Station NE1/4 Sec. 17, W. 1/2 Sec. 16, T. 20N., R. 12E., FM
Fountainhead Development, Inc. Permit: 9331-BA007 Status: Retired	Non-municipal Monofill	Moose Creek, AK Taxlots 2703-2704 Sec. 27, T. 2S., R.3E FM,
Ft. Greely Delta Creek Airstrip Landfill Permit: 8331-BA006 Status: Closed	Class 3 (camp) Landfill	Located near the Delta Creek Air strip on the Fort Greely reservation. Sec. 28, T. 9S., R. 7 E., FM
Ft. Greely Landfill (Lateral Expansion) Permit: 0233-BA005 Status: Active	Class 2 Landfill	Fort Greely Sec. 24, T. 11S., R. 10E., FM
Ft. Greely Landfill (Closed) Permit: 9333-BA002 Status: Retired	Class 2 Landfill	Fort Greely Section 23, T. 11S., R. 10E., FM
Ft. Wainwright Landfill Permit: SW1A003-11 Status: Active	Class 1 Landfill	River Road Fort Wainwright, AK 99703 River Road, at the base of Birch Hill. Section 6, T. 1S., R. 1E., FM
Gabe's Donald Ave Coal Ash Permit: SWG0304003 Status: Active	Non-municipal Monofill	Donald Ave Fairbanks, AK, AK 99709 Lot 12, Blk 5, Metro Industrial Air Park subdivision Sec 21, T1S R1W FM
Galena #1- ARCO Unpermitted Status: Retired	Non-municipal Monofill	Galena, AK 99741
Galena ADOT/USAF Dumpsite (closure)	Class 3 (village)	ADOT/PF Airport Lease

Unpermitted Status: Closed	Landfill	Galena, AK 99741 1/2 mile from end of Galena Runway, on ADOT/PF Airport Lease property. Sec. 1, T. 9S., R. 9E., and Sec. 35 & 36 of T. 8S., R.9E., FM
Galena Landfill Permit: SW3A057-11 Status: Active	Class 3 (village) Landfill	Campion AFS Road Galena, AK 99741 Near old Campion AFS Lot 7 US Survey 7401, in sections 17 & 18 of T. 9S., R11E., KRM
Galena One-time GP for C&D and Non-RACM - BNCI Permit: 9940-BA003-02 Status: Closed	Non-municipal Monofill	Campion Road, 6 miles from Galena Galena, AK, AK 99741 Within boundaries of City of Galena Landfill near Campion. Lot 7 of US survey 7401, Sec. 17 & 18, T. 9S., R. 11E., KRM
Gardiner Creek Camp Permit: 8333-BA003 Status: Retired	Class 3 (camp) Landfill	Northway, AK 99764 20 Miles east of Northway, USS 2719 Sec. 3, T. 12N., R. 21 E., CRM
Gold King RRS Landfill Permit: 8731-BA006 Status: Retired	Non-muni Type Z Monofill	Near Gold King site Sec. 22, T. 8S., R.2W., FM
Golden Heart Util. (form. FMUS) Biosolids Tretmnt Permit: SWYA025-12 Status: Active	Non-municipal Treatment	4727 Peger Road Fairbanks, AK 99709 former FMUS Wastewater Treatment Plant, 4727 Peger Road, Fairbanks, AK 99709 Section 28, T. 1S. R. 1 W., FM
Goodman Farmers Loop Coal Ash GP Permit: 9640-BA001-01 Status: Retired	Non-municipal Landfill	Farmers Loop Fairbanks, AK 99710 1/4 mile Farmer's Loop extension, across from Cold Spot Feed Drive Lot 6 Block 3 N. Fairbanks Heights, parcel # 0143413
Grant Mine/Tri-con Mining Alaska, Inc. - Tailings Permit: 8531-BA022 Status: Retired	Non-municipal Monofill	499 St Patricks Road Fairbanks, AK 99701 St. Patrick's Road, off of Ester Dome Road. SW 1/4 Sec. 28, T. 1N., R. 2W., FM
Grayling Landfill Permit: 0124-BA000 Status: Active	Class 3 (village) Landfill	Grayling, AK 99590
Great Northwest and Metro Co. Coal Ash Permit: 9940-BA004-04 Status: Retired	Non-municipal Landfill	West Van Horn Road Fairbanks, AK 99709 West of intersection of Van Horn and Peger Roads S. 1/2 T. 1S., R. 1W., FM
Healy Landfill ( Tri-Valley Volunteer Fire Dept.) Permit: 8731-BA004 Status: Retired	Class 3 (village) Landfill	Suntrana Road Healy, AK 99743 Suntrana Road, near Healy, AK Sec. 24, T. 12S., R. 7 W., FM
Hindenburg Mine Permit: 8831-BA003 Status: Retired	Non-municipal Monofill	Steese Highway Steese Highway
Holy Cross, Landfill Unpermitted Status: Active	Class 3 (village) Landfill	Holy Cross, AK 99602
Hughes City Landfill Permit: 0431-BA002 Status: Inactive	Class 3 (village) Landfill	Approx. 2 miles northeast of Hughes village
Hughes Dump Permit: 0431-BA002 Status: Active	Class 3 (village) Landfill	Hughes, AK 99745 Aproximately 1/8 mi southeast of south end of airstrip Sec. 5, T. 7N. R. 22E., KRM
Huslia City Landfill Permit: 0431-BA001 Status: Active	Class 3 (village) Landfill	New landfill site Huslia, Alaska, AK 99746 approx. 5,100 feet from the new airport. T 3N, R12E, KRM
Huslia Dump Unpermitted Status: Closed	Class 3 (village) Landfill	Huslia, AK 99746 About 1 Mi. SE of airport.
Ice Alaska Coal Ash GP Permit: 9940-BA004-07 Status: Closed	Non-municipal Monofill	1925 Chena Landing Loop Fairbanks, AK, AK 99701 Tract 3, Phillips Field Road, in NW1/4, Sec. 9, T 1S, R1W, Fairbanks Meridian
Illinois Creek Mine Project Permit: 0031-BA009 Status: Active	Non-municipal Monofill	Illinois Creek Mine between Galena and Koyukuk on the Illinois Creek Sections 4,5,&9, T. 17S., R. 5E., KRM
Indian Mountain AFS/LRRS Landfill Permit: SWG0307006 Status: Active	GP Type D Landfill	USAF Indian Mountain Long Range Radar Site, 40 miles SE of Hughes Sec. 24, T. 7N., R.24E, KRM
Interior Services/Alaska Solid Waste/ Bartlett RDF Permit: 9131-BA004 Status: Retired	Non-municipal Treatment	400 Sanduri Road Fairbanks, AK 99701 400 Sanduri Road in Tract B, Block 3, Industrial Park Subdivision, 2nd addition, Fairbanks Tract B, Block 3 Industrial Park Sub. 2nd addition. In Section 22, T.1S. R. 1 W. FM
Kalakaket Creek RRS Landfill Unpermitted Status: Retired	Non-municipal Monofill	located 22 miles south of Galena across the Yukon River.
Kaltag Unpermitted Status: Active	Class 3 (village) Landfill	next to airport Kaltag, AK 99748 within USS No 9623, Lot 2. Map-derived location approximately at 64.3224 N 158.7358 W. Section 31, T. 13 S., R. 1 W. KRM

Kaltag Landfill (new) Permit: SWYKC003200020103MA Status: Active	Class 3 (village) Landfill	1.3 Mile BIA Road Kaltag, AK 99748 Consultant provides location as 64.297944N, 158.73385 W. Entirely w/in Section 6, south of Kaltag. A subdivision & ROW w/in Lot 2, USS 9623 & a portion of Lot 1, Sec. 6, T14S, R1E, KRM
Killion Van Horn Way Coal Ash Monofill Permit: 9640-BA001-03 Status: Retired	Non-municipal Landfill	1285 Van Horn Rd Fairbanks, AK 99707 1285 Van Horn Rd, Tax Lot 2229 Sect. 22, T. 1S., R. 1 W., FM
Kimberlin Peger Road Coal Ash Landfill Permit: 9640-BA001-06 Status: Retired	Non-municipal Monofill	Peger Road and Van Horn Road Fairbanks, AK 99701 Southeast corner of Peger Road and Van Horn Road Lot 1 and 2, Block 1, Metro Industrial Airpark Subd.
King-Holt Road Gravel Pit complaint Unpermitted Status: Closed	Non-municipal Other	Holt Road Fairbanks, AK 99701 Gravel pit on end of Holt Road, off Van Horn Road.
Koyukuk Landfill Permit: 9931-BA010 Status: Active	Class 3 (village) Landfill	Cemetery Road Koyukuk, AK 99754 Cemetery Road, near village of Koyukuk Sec. 8 & 17, T. 7S., R. 6E., KRM
Koyukuk Landfill ( Old site) Permit: 8931-BA008 Status: Closed	Class 3 (village) Landfill	Koyukuk, AK 99754 immediately east of airport runway Section 17, T. 7S., R. 6E., KRM
Lake Minchumina Landfill Permit: 0331-BA002 Status: Active	Class 3 (village) Landfill	1/2 mile Landfill Road Lake Minchumina, AK 99757 1/2 mile Landfill Road, Lake Minchumina Sec. 5, T. 12S., 24W. FM
Lake Minchumina, FAA Demolition LF Permit: 9940-BA003-04 Status: Closed	Non-municipal Monofill	R.24W., T.12S.,Section 8, FM
Layman Sewage Solids/Septage Landfill Permit: SWZA052-12 Status: Active	Non-municipal Monofill	Off the Eagle Access Road Eagle, AK 99738 Lot7, Native Allotment F14529, Parcel A, U.S. Army Survey 8655, Lot 3, 4.5 miles northeast of Eagle Sec. 2, T.2S., R.33E., Fairbanks Meridian
Livengood Landfill Permit: 8531-BA020 Status: Retired	Class 3 (village) Landfill	Milepost 73 Milepost 73, Elliot Highway MS 68-028-2, in SW1/4 and W1/2, SE1/4, Sec. 30, T8N., R. 5W FM
Mabel Creek Pit Dump Unpermitted Status: Retired	Class 3 (village) Landfill	Mile 76.5 Glenn-Tok Cutoff NW1/4,W1/2, Sec.35, T.13N., R.9E. CRM
Manley Hot Springs Permit: 0131-BA001 Status: Active	Class 3 (village) Landfill	Mile 158 Elliot Highway Manley Hot Springs, AK 99756 Mile 158 Elliot Highway W 1/2, SW 1/4, SE 1/4 Sec. 10, T2N, R15 W, and W 1/2, NW 1/4 Sec. 5, T2N, R15W, FM
McGrath, Landfill Permit: 0221-BA001 Status: Active	Class 3 (village) Landfill	McGrath, AK 99627 Upper kuskokwim River at the c Sec. 16, 17, 20 & 21, T33N, R33W, SM
McKinley Park Transfer System Permit: 8031-BA014 Status: Retired	Non-municipal Storage	Denali Park Temporary storage facility. No site location information available.
Melvin Wood Mine Permit: 9531-BA002 Status: Retired	Non-municipal Monofill	Old Nenana Hwy Ester, AK 99725 Old Lookout Mine Sect. 13, T. 1S., R. 3W., FM
Mentasta Lake Unpermitted Status: Inactive	Class 3 (village) Landfill	Mentasta Lake, AK 99780 1/4 mile past Mentasta Village, left side of the road, heading to the lake.
Metro Co. Donald Ave. Coal Ash Landfill Permit: 9640-BA001-08 Status: Active	Non-municipal Monofill	Donald Ave. Fairbanks, AK 99701 between Donald Ave. and Taxiway Ave., between Schacht St. and Bonita St. Lot 5, 6, 7, and 12, Metro Industrial Air Park, 1st Addn. In Sec. 21, T. 1S., R. 1W. FM
Metro Co. South Lathrop Coal Ash Monofill Permit: 9640-BA001-05 Status: Active	Non-municipal Landfill	3872 S. Lathrop St. Fairbanks, AK 99707 3872 S. Lathrop St., Fairbanks, AK, corner of S. Lathrop and Taxiway E 1/2, SE 1/4, Se/4 Sec. 21, T.1S, R.1W, FM
Metro Pomm Rd. Coal Ash Landfill Permit: 9940-BA004-01 Status: Active	Non-municipal Monofill	2000 & 2100 Pomm Road Fairbanks, AK 99709 North of Metro Airfield NW 1/4, Sec. 28, T.1S., R.1W., FM
Metro Van Horn & S Cushman Coal Ash Landfill Permit: 9940-BA004-02 Status: Inactive	Non-municipal Monofill	Van Horn Road and South Cushman Fairbanks, AK 99701 Northwest corner of Van Horn Road and South Cushman Street Section 22, R. 1S., R. 1W., FM
Minto Unpermitted Status: Active	Class 3 (village) Landfill	Cemetery Road Minto, AK 99758 Off old cemetery Road Tract A, Section 27, T. 4N., R. 9W., FM
Mt. McKinley Gold Camp Unpermitted Status: Inactive	Class 3 (camp) Landfill	Kantishna, AK

Murphy Dome AFS Landfill Permit: 8631-BA015 Status: Retired	Non-muni Type Z Monofill	Murphy Dome road Murphy Dome AFS site, 10 miles from City of Fairbanks. SE 1/4, SE 1/4, Sec. 33, T. 2N., R.4 W., FM
Nenana / ARCC Landfill (City of) Permit: 9231-BA011 Status: Retired	Class 1 Landfill	Nenana, AK 99760 10 Mi. Due west of Nenana, Road to site to be built. Sec. 18, T. 4S., R. 9W. FM
Nenana Landfill (City of) Permit: 9631-BA018 Status: Retired	Class 3 (village) Landfill	Mile Post 307, Parks Highway Nenana, AK 99760 MP 307 Parks Highway Tract A-2F, Section 11, T. 4S., R.8W., FM
New Horizons Landfill Permit: 9133-BA002 Status: Retired	Non-municipal Monofill	Milepost 1364.5, Alaska Highway Milepost 1364.5, Alaska Highway, half way between Tok and Delta Junction. Close to the Johnson Riv. Sec. 19, T. 22N., R. 7E., CRM
Nike Site Jig Cleanup Permit: 8531-BA018 Status: Retired	Non-municipal Monofill	Richardson Hwy Off the Richardson Hwy, on a bluff near Johnson Road trun-off on the Eielson AFB reservation Sections 28, 29, 32, &33, T. 4S., R. 4E., FM
Nike Site Love Cleanup Permit: 8531-BA019 Status: Retired	Non-municipal Monofill	Old Murphy Dome Road, 3 Mi. E of M. Dome Old Murphy Dome road, approx 3 miles east of Murphy Dome Sec. 25 & 26, T. 2N., R. 2W., FM
Nikolai Unpermitted Status: Active	Class 3 (village) Landfill	Pit near runway 1/2 mile from town T29S, R23E, Kateel River Meridian N1/4, Section 1
Nixon Fork Mine Permit: SWG0302003 Status: Active	GP Type D Landfill	30 miles NE of McGrath, approx. 8 miles north of Medfra Kateel, T26S, R21E, Sec 24
North Pole Biosolids: Petty Farm Land Appl. Permit: 8731-BA002 Status: Retired	Non-municipal Land Application	Eielson Agricultural Project North Pole, AK 99705 In Eielson Agricultural Project,near Eielson AFB, but not on the Base itself SE 1/4 Sec. 8 T. 3S., R. 3E., FM
Northway Landfill Permit: 8233-BA001 Status: Active	Class 3 (village) Landfill	0.7 Mile Dump Road Northway, AK 99764 0.7 Mile Dump Road in Northway
Nulato Unpermitted Status: Active	Class 3 (village) Landfill	Nulato, AK 99765 No site location description in the file. Photos of the site in the file. May be located near Sec. 33, T. 8S., R. 10E., KRM
Ocean Energy Drill Site BLT #1 Unpermitted Status: Retired	Non-municipal Other	
OIT, Inc. Solid Waste Treatment Facility Permit: SWFBK00320062011HSA Status: Active	Non-municipal Treatment	Old Richardson Hwy Moose Creek, AK 99705 Moose Creek in Parcel B-2, Alice Ann Subdivision S.1/2, NE.1/4, Sec. 28 T. 2S, R. 3E. FM
Owen 40-Mile Mining Claim C&D Disposal Permit: SWG0303001 Status: Active	GP Type C Monofill	MP 112.6 Taylor Highway, then 18 miles downstream Smith Creek Bench Claim #1, BLM #62596, 18 miles downstream from MP 112.6, Taylor Hwy, 40 Mile River T7S, R34E, Sec 31, Fairbanks Meridian
Petroleum Sales Clean Soils Fill Permit: 9231-BA010 Status: Retired	Non-municipal Landfill	2.5 mile Steese Highway 2.5 mile Steese Expy..300 yards behind Farmer's Lp market Texaco at 245 Farmers Loop Rd. Block 5 , Fairhill Subdivision, 1st addition in Section 36, T. 1N., R.1W., FM
Pogo Mine Solid Waste Permit: 0131-BA002 Status: Active	Non-municipal Monofill	
POW, Aloha Tolstoi Bay - Rock Pit GP Permit: SWG0305000 Status: Active	Other Landfill	
Rainbow Lake Landfill Permit: 8431-BA001 Status: Retired	Class 3 (village) Landfill	Rainbow Lake, Near Delta Junction
Rampart Landfill Permit: 8531-BA021 Status: Active	Class 3 (village) Landfill	West of Rampart Airstrip Rampart, AK 99767 Permitted site located west of Rampart Airstrip. Pre-1986 site 600 ft SE of Rampart Airstrip Section 24, T. 8N., R. 13W., FM
Reeves C&D Monofill Permit: SWFBK00220052010CIA Status: Active	Non-muni Type Z Monofill	Sections 1 and 12, Township 1 North, Range 1 West, Fairbanks Meridian
Riddle Eielson Farm Biosolids Landspreading Permit: SWZA047-12 Status: Active	Non-municipal Land Application	Portions of Sections 4, 5, 6, and 8, T3S, R3E, Fairbanks Meridian (near North Pole, AK)
Riddle Eielson Farm Biosolids Landspreading Permit: SWZA047-13 Status: Pending	Non-municipal Land Application	Portions of Sections 4, 5, 6 and 8, T3S, R3E, Fairbanks Meridian (near North Pole, AK)
Royal Contractors Van Horn Coal Ash Monofill Permit: SWG0304004 Status: Active	GP Type A Monofill	Van Horn and Peger Road Fairbanks, AK 99709 Tax Lot 2044, at corner of Van Horn and Peger Road, Fairbanks, Alaska, USGS Quad. Fairbanks (D-2) Sec. 20, T.1S., R.1W., Fairbanks Meridian
Ruby Landfill (City of)	Class 3 (village)	Poorman Road



Permit: 0031-BA007 Status: Active	Landfill	Ruby, AK 99768 Site located near old agricultural development site off Ruby-Poorman Road. Sec. 8 T. 9S., R. 17E., FM
Ryan Lode Mine Biosolids Application Permit: 9831-BA012 Status: Retired	Non-municipal Land Application	301 Henderson Road 301 Henderson Road Sections 4 & 5, T. 1S., R. 2W., and Sections 32 & 33 of T. 1N., R. 2W., FM
Ryan Lode Mine Heap Leach Permit: 9531-BA014 Status: Inactive	Non-municipal Monofill	Henderson Rd Ester, AK 99725 Ryan Lode mine off Henderson Road Sections 4 & 5, T. 1S., R. 2W., RM and Sections 32 & 33, T.1N, R. 2W, FM
Seuffert One-Time Disposal Permit: SWSEF00320052008FIA Status: Inactive	Non-municipal Monofill	Mile 66.5 Taylor Hwy. MS 2096 Yellow Jacket Sec. 32, T27N, R18E CRM
Shageluk, Landfill Unpermitted Status: Active	Class 3 (village) Landfill	Shageluk, AK 99665
Slate Creek Asbestos Landfill (Doyon Ltd.) Permit: 9433-BA002 Status: Retired	Non-municipal Landfill	Charter fly-in only. No roads Near Slate Creek, a tributary of the Fortymile River Sections 15 and 16, T.4S., R.26E., FM
Slate Creek Landfill (Alaska Asbestos Project) Permit: 8233-BA002 Status: Retired	Class 3 (camp) Landfill	North Fork of Fortymile River, near Slate Creek T. 4S., R. 26E., SE1/4 Sec. 21, FM
Stevens Village Unpermitted Status: Active	Class 3 (village) Landfill	Dump Road Stevens Village, AK 99774 adjacent to unpermitted dumpsite and airstrip SE1/4, Sec. 29, T. 14N., R. 7W., FM
Stevens Village School (Old) Demolition Landfill Permit: 9940-BA003-03 Status: Retired	Non-municipal Monofill	Dump Road Stevens Village, AK 99774 adjacent to unpermitted dumpsite next to airstrip and river T14N, R7W, Section 29, SE1/4, FM
Stolberg Fifth Wheel Street Coal Ash Permit: 9940-BA004-08 Status: Inactive	Non-municipal Monofill	3331 Fifth Wheel Street Fairbanks, AK, AK 99709 3331 Fifth Wheel Street Sec. 20, T1S, R1W, Fairbanks Meridian, Emerald Industrial, Lot 8
Stout's Landfill (Northway) Permit: 8133-BA002 Status: Retired	Non-municipal Landfill	Mile 1264 Alaska Highway Northway, AK 99764 Mile 1264 Alaska Highway, Lot 2 US Survey 3793
Takotna Permit: 9021-BA003 Status: Active	Class 3 (village) Landfill	One mile southwest of the Village of Takotna. SE 1/4 of the NE 1/4, of Section 3, T33N, R36W, Seward Meridian
Tanacross Landfill (new) Permit: SWSEF001200620113MA Status: Pending	Class 3 (village) Landfill	
Tanacross Solid Waste Unpermitted Status: Pending	Class 3 (village) Landfill	1.25 Mile Tanacross Rd Tanacross, AK 99776 MP 1325 Alaska Hwy, 1.25 Mile Tanacross Rd. Just NE of community.
Tanana Landfill Permit: SW3A063-12 Status: Active	Class 3 (village) Landfill	Tanana, AK 99777 approx. 2 miles west of the airport Sec. 11 & 14, T.4N., R. 23W., FM
Tanana Valley State Fair Association Coal Ash GP Permit: 9940-BA004-09 Status: Closed	Non-municipal Monofill	1800 College Road Fairbanks, AK 99709 Tract B-1, Section 33, T1N, R1W, Fairbanks Meridian
Taylor Highway (48-Mile) Dump Unpermitted Status: Active	Class 3 (village) Landfill	48 Mile Taylor Highway Tok, AK 99780 Parcel TA# F79560 T. 24N. R. 16E. Sec. 12
Taylor Highway (77 Mile) Trespass Dump Unpermitted Status: Retired	Class 3 (village) Landfill	Mile 77 Taylor Highway Tok, AK 99780 MS 785-030-2/BLM F-21207
Taylor Highway (Mile 114) O'Brien Creek Trespass Unpermitted Status: Inactive	Class 3 (village) Landfill	Mile 114 Taylor Highway Tok, AK 99780 Mile 114, Taylor Highway
Telida Permit: 8721-BA016 Status: Active	Class 3 (village) Landfill	1 mile west of Telida Village. N1/2, NW1/4, SE1/4, NE1/4 of Sec. 29, T24S, R29E, Kateel River Meridan
Tetlin Dump Permit: 8531-BA002 Status: Active	Class 3 (village) Landfill	Tetlin, AK 99779 Adjacent to school
Tetlin Landfill Permit: 0233-BA003 Status: Active	Class 3 (village) Landfill	About 500 feet NE of Tetlin on newly built road. Section 26, T. 16 N., R. 15 E., Copper River Meridian, Alaska.
Tok Fuel Terminal C&D/Asbestos Landfill Permit: 0233-BA001 Status: Closed	Non-muni Type Z Monofill	MP 1321 Alaska Highway Milepost 1,321 Alaska Highway, 6.7 miles NW of Tok Sec. 12, T18N R11E, Copper River M. and Sec. 7, T18N, R12E, Copper River M.

Tok Landfill, J.D. Refuse Service Permit: SW3A050-12 Status: Active	Class 3 (village) Landfill	Mile 120.5 Glenn Highway Tok, AK 99780 4.0 Mi. south on Tok Cut-off SW1/4, of SW 1/4 Section 1, T. 17N., R. 12 E., Copper River Meridian
Tower Bluffs Landfill Permit: 8733-BA004 Status: Retired	Class 3 (village) Landfill	Mile Post 1351.5, Alaska Hwy In subdivision near Milepost 1351.5, Alaska Highway, 10 miles from Dot Lake. Tract A Sec. 4, T. 20N., R. 8 E., CRM
Trimms Camp Landfill Unpermitted Status: Retired	Class 3 (camp) Landfill	Richardson Highway Richardson Highway E1/2,E 1/2, NW1/4, SW 1/4, NW 1/4 & W 1/2, W1/2, NE1/4, SW1/4, NW1/4Section 25, T. 17S., R. 10E. FM
U.S. Border Station Landfill Unpermitted Status: Closed	Class 3 (camp) Landfill	Alaska Highway, Mile 1221.8 Tok, AK 99780 Mile 1221.8 Alaska Highway Section 25 T.10N., R.23E., Copper River Meridian
UAF Cantwell C&D Unpermitted Status: Closed	Non-municipal Monofill	Lots 6, 7, 8, 9, 10 of Block 6, Cantwell Heights Subdivision in Cantwell. SE 1/4 SE 1/4, Sec 31, T18S, R7W, Fairbanks Meridian.
UAF Coal Ash disposal area Unpermitted Status: Retired	Non-municipal Monofill	Tanana Loop Road UAF, AK 99775 Tanana Loop Rd. UAF campus, across from the Patty Rec. Center Sec. 1, T. 1S R. 2W., FM
Universal Recycling, Inc. Permit: 9331-BA003 Status: Retired	Non-municipal Landfill	43 Mile Elliot Highway 43 Mile Elliot Highway in Lot 1, USS 6885 and Lots 2 & 3 of USS 4401 Sections 24 & 25, T. 6N., R
USAF-Tatalina LRRS Permit: SWG0307003 Status: Active	GP Type D Landfill	18 miles North of McGrath 18 miles North of McGrath Seward Meridian, NW 1/4 Sec 31, T33N, R35W, Quadrangle, McGrath (D-6)
Usibelli Coal Mine (Poker Flat Landfill) Permit: 0531-BA001 Status: Active	Non-muni Type Z Monofill	Usibelli Mine Usibelli Mine near Healy SW1/4, & SE 1/4, Section5 and SW 1/4, Section 3, T. 12S., R. 7W., FM
Valdez Creek Mine, Cambior Permit: 9322-BA002 Status: Retired	Non-muni Type Z Monofill	Sec. 13, Township 20 South, Range 1 East, Fairbanks Meridian
Venetie Unpermitted Status: Active	Class 3 (village) Landfill	Venetie, AK 99781 End of Airport Runway
Whitestone Farms Landfill Permit: 0333-BA001 Status: Active	Class 3 (village) Landfill	
Whitestone Farms Septage Landspreading Permit: SWZA048-12 Status: Active	Non-municipal Land Application	Delta Junction, AK 99737 southwest lot of Whitestone Farms SW 1/4, Sec. 12, R.9E., T.9S., FM
Wise Ent. Alta Way Coal Ash Landfill Permit: 9640-BA001-07 Status: Active	Non-municipal Landfill	Alta Way & Braddock Rd Fairbanks, AK 99701 Alta Way & Braddock Rd, South of Van Horn Rd. Lots 18, 21 and 22 Wise Industrial Park, 2nd Addn; Lot 20A Block 2 Wise Ind.Park 3rd Addn.

Solid Waste Management  
Department of Environmental Conservation  
410 Willoughby Avenue, Ste. 303  
Juneau, AK 99801  
Telephone: (907) 465-5350  
Fax Number: (907) 465-5164  
Email Address: [Solid\\_Waste@dec.state.ak.us](mailto:Solid_Waste@dec.state.ak.us)

[State of Alaska](#) [myAlaska](#) [DEC Staff Directory](#) [Webmaster](#) [DEC Home](#) [EH Home](#) [Division Info](#) [EH](#)

[Contacts](#)

**APPENDIX C**  
**TITLE SEARCH DOCUMENTATION**

# GUARANTEE



*First American Title Insurance Company*

C

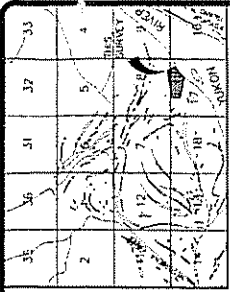
GUARANTEE



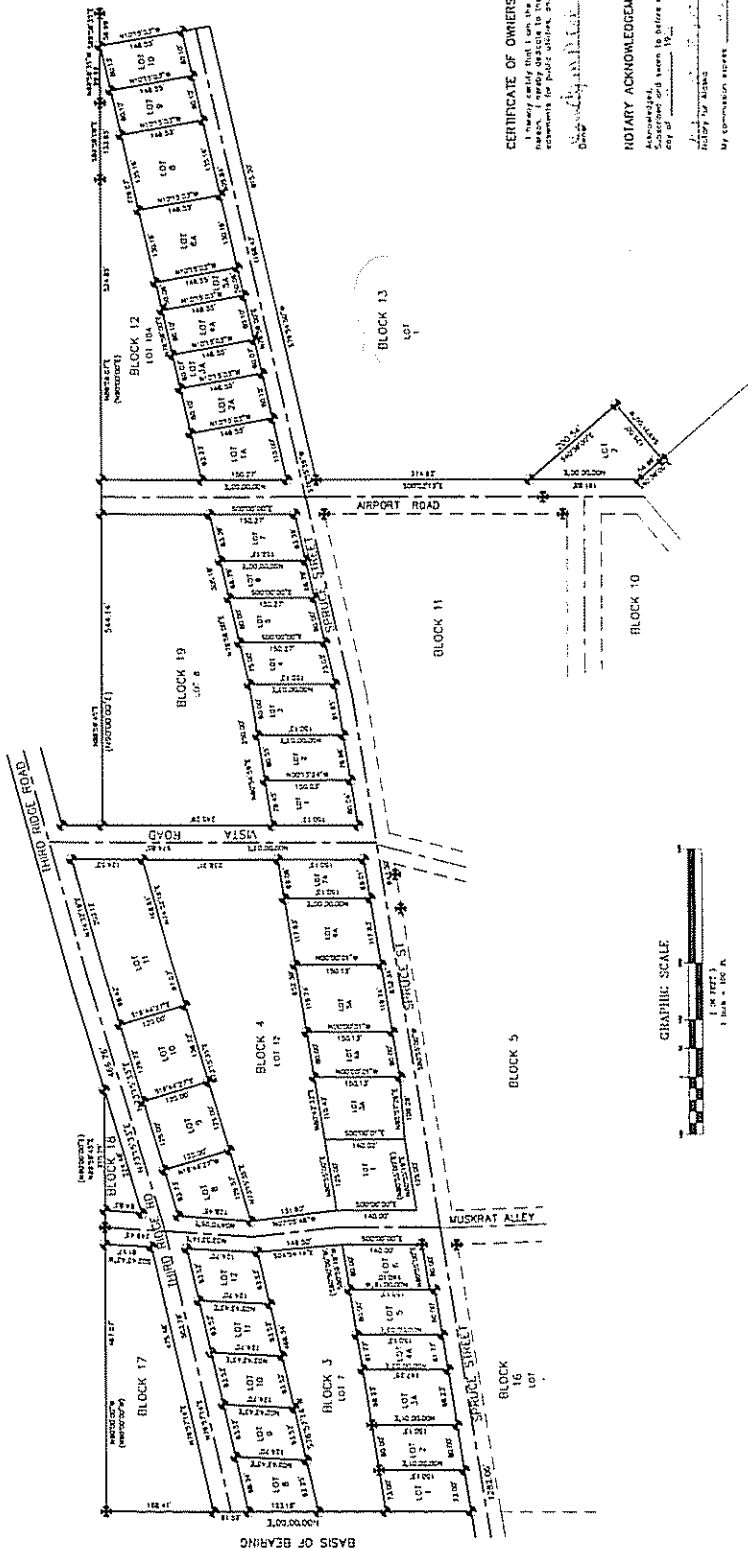
*First American Title Insurance Company*

Y





USGS QUAD MAP (D-4) ALASKA 1952, REVISION 1953  
SCALE 1"=2500'



BASIS OF BEARING

GRAPHIC SCALE

1" = 100'

### CERTIFICATE OF OWNERSHIP AND DEDICATION

I, the undersigned, being the owner of the above described land, do hereby certify that the same is being dedicated to the City of Kotukuk, Alaska, for public use, and that the same is being dedicated to the City of Kotukuk, Alaska, for public use, and that the same is being dedicated to the City of Kotukuk, Alaska, for public use.

### NOTARY ACKNOWLEDGEMENT

Subscribed and sworn to before me this 1st day of June, 1954, by the undersigned, being the owner of the above described land, and being duly qualified to administer oaths.

### NOTES

1. All bearings are old bearings. Coordinates are Alaska State Plane Zone 6.



### SURVEYOR'S CERTIFICATE

I, the undersigned, being a duly qualified Surveyor for the State of Alaska, do hereby certify that the above described land is being dedicated to the City of Kotukuk, Alaska, for public use, and that the same is being dedicated to the City of Kotukuk, Alaska, for public use.

### LEGEND

- 1. Set 5/8" iron, 1/2" long with a 1" diameter cap.
- 2. Red iron monument or pipe.
- 3. Beyond State U.S. Survey 4405.

### CORRECTION / REVIEWS

DATE	REVISION

### PREPARED FOR

CITY OF KOTUKUK  
P.O. BOX 49  
KOTUKUK, ALASKA

## ASCG

INCORPORATED  
ENGINEERS • ARCHITECTS • SURVEYORS

220 NORTH 10TH AVE., SUITE 200 • ANCHORAGE, ALASKA 99501-2020

### DATE: 1954

DATE: JANUARY 11, 1954  
DRAWN BY: H.A.  
CHECKED BY: H.A.  
FILE NAME: 2104  
JOB NUMBER: 2104

### KOTUKUK TOWNSITE SUBDIVISION

A REVISION OF U.S. SURVEY 4405, BLOCKS 3, 4, 5, 10, 11, 12, AND 13

WYNN

SECTION 8, & 17, T. 1 S., R. 8 E., 4TH MERIDIAN, A-554

ALASKA 96-2

DATE: 1954

2

OF 2

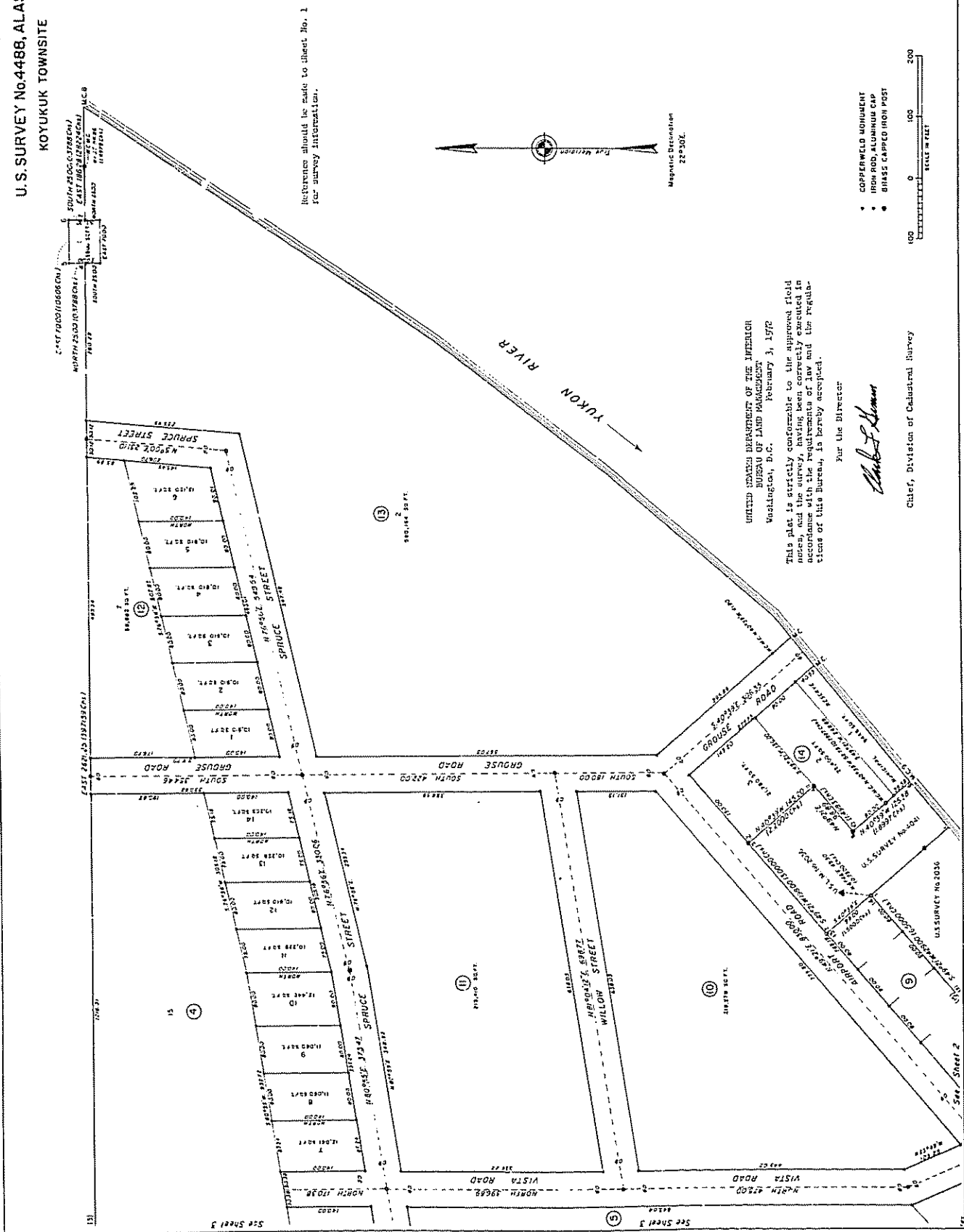


ORIGINAL

Sheet 4 of 4 501710

U.S. SURVEY No. 4488, ALASKA  
KORYUK TOWNSITE

2° 41' 00.00" (10606 CH)  
NORTH 25° 30' 00.00" (10788 CH)  
SOUTH 25° 30' 00.00" (10788 CH)  
EAST 10° 00' 00.00" (10788 CH)  
WEST 10° 00' 00.00" (10788 CH)



Reference should be made to Sheet No. 1  
for survey information.



Magnetic Declination  
22° 30' E

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
Washington, D.C.

February 3, 1972

This plat is strictly conformable to the approved field  
notes, and the survey, having been correctly executed in  
accordance with the requirements of law and the regula-  
tions of this Bureau, is hereby accepted.

For the Director

*Hubert H. Hume*

Chief, Division of Cadastral Survey

- COPPERWELD MONUMENT
- IRON ROD ALUMINUM CAP
- BRASS CAPPED IRON POST



all/10 US 4488

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

BOOK 7 PAGE 143  
Nulato Recording District

TRUSTEE DEED

THIS INDENTURE, made this 29 day of January, in the year of our Lord one thousand nine hundred and eighty-two, by and between George E.M. Gustafson as trustee for the townsite of Koyukuk, U. S. Survey Number 4488, in the State of Alaska, party of the first part, and City of Koyukuk of General Delivery, Koyukuk, AK 99574, Alaska, part y of the second part,

WITNESSETH, That said party of the first part, as such trustee, by virtue of the power vested in and conferred upon him by the terms of section 11 of the Act of Congress approved March 3, 1891 (26 Stat. 1095), and the regulations thereunder and the patent issued to him thereon, and in consideration of the sum of xxxxxxxxxxxxxxxxxxxxxxxxxxxx dollars, the amount of the assessments upon the premises hereinafter described, the receipt of which is hereby acknowledged, by these presents does grant, convey, and confirm unto the said part y of the second part and its successors all the following lot xxxx, piece xxx, and parcel xxx of land situate in the townsite of Koyukuk, State of Alaska, described as follows, to-wit:

All, Block Ten (10), as shown on the official plat of U.S. Survey 4488, Koyukuk Townsite as accepted by the Chief, Division of Cadastral Survey, for the Director on February 3, 1972

82-130  
RECORDED - FILED 800  
NULATO REC. DIST.  
2-11 1982  
11:49 A  
USA/BLM  
701 C ST., BOX 13  
ANCHORAGE, AK. 99513  
GEORGE E. M. GUSTAFSON

Returned to:  
CITY OF KOYUKUK  
GENERAL DELIVERY  
KOYUKUK, AK. 99574

According to the official plat of survey of said townsite, subject to rights and reservations in said patent expressed. To have and to hold the same, together with all and singular the tenements, hereditaments, and appurtenances thereunto belonging or in anywise appertaining, its successors forever.

IN WITNESS WHEREOF said party of the first part, as trustee, has hereunto set his hand and seal on the day and year first above written.

In the presence of:

[Signature]  
[Signature]

(SEAL)  
George E.M. Gustafson  
Trustee for the townsite of Koyukuk, State of Alaska

STATE OF ALASKA:

BE IT REMEMBERED, That on this 29th day of January, A.D. 19 82, before me, a Notary Public, came George E.M. Gustafson, to me personally known to be the trustee of said townsite of Koyukuk, Alaska, and the identical person described in, and whose name is affixed to the foregoing conveyance as grantor, and he acknowledged the execution of the same to be his voluntary act and deed as such trustee, for the uses and purposes therein mentioned.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my official seal on the day and year first above written.



Margaret J. McDaniel  
Notary Public for Alaska, residing at Anchorage, Alaska

My Commission expires February 23, 1985

USS #4488

Form 100-3  
Jan 1949

Fairbanks 033251

BOOK 6 PAGE 471  
Mining Recording District

# The United States of America,

To all to whom these presents shall come, Greeting:

WHEREAS

George E. M. Gustafson, Trustee

is entitled to a Land Patent pursuant to Section 2387 of the Revised Statutes and Section 11 of the Act of March 3, 1891 (26 Stat. 1093), as amended, and Section 3 of the Act of May 23, 1926 (44 Stat. 629), and the Act of February 26, 1948 (62 Stat. 35), for the land embraced in:

T.S. Survey No. 4488, Alaska, Koyukuk Townsite, located on the right bank of the Yukon River.

Containing 26.59 acres.

NOW KNOW YE, that there is, therefore, granted by the UNITED STATES, unto the said George E. M. Gustafson, Trustee, the tracts of land above described; TO HAVE AND TO HOLD said tract, with all the rights, privileges, immunities, and appurtenances of whatsoever nature, thereunto belonging, unto the said George E. M. Gustafson, Trustee, in trust for the several use and benefit of the occupants of the Townsite of Koyukuk, Alaska, according to their respective interests, and to his successors in trust;

EXCEPTING AND RESERVING TO THE UNITED STATES:

1. A right-of-way thereon for ditches and canals constructed by the authority of the United States. Act of August 30, 1890, 26 Stat. 391; 43 U.S.C. 945; and
2. A right-of-way thereon for the construction of railroads, telegraph, and telephone lines, as prescribed and directed by the Act of March 12, 1914, 38 Stat. 365.

81-226

ADULTO

6-18

11:00

A

IN TESTIMONY WHEREOF, the undersigned authorized officer of the Bureau of Land Management, in accordance with the provisions of the Act of June 17, 1948 (62 Stat. 476), has, in the name of the United States, caused these letters to be made Patent, and the Seal of the Bureau to be hereunto affixed.

GIVEN under my hand, in ANCHORAGE, ALASKA the FIRST day of MAY in the year of our Lord one thousand nine hundred and EIGHTY-ONE and of the Independence of the United States the two hundred and FIFTH.

By

Robert E. Sorenson  
Chief, Branch of Lands  
and Minerals Operations

Patent Number 50-81-0095

**APPENDIX D**  
**LABORATORY DATA**

August 22, 2008

Nick Braman  
BGES, INC.  
750 W. 2nd Ave, Ste 104  
Anchorage, AK 99501

RE: YRITWC

Enclosed are the results of analyses for samples received by the laboratory on 07/25/08 17:25.  
The following list is a summary of the Work Orders contained in this report, generated on 08/22/08 15:53.

If you have any questions concerning this report, please feel free to contact me.

<u>Work Order</u>	<u>Project</u>	<u>ProjectNumber</u>
ARG0078	YRITWC	[none]



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

## ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
08-KOY-DR2-1.5	ARG0078-01	Soil	07/21/08 14:21	07/25/08 17:25
08-KOY-GB51-2	ARG0078-02	Soil	07/21/08 15:58	07/25/08 17:25
08-KOY-GBD-2	ARG0078-03	Soil	07/21/08 16:05	07/25/08 17:25
08-KOY-GB3-2	ARG0078-04	Soil	07/21/08 18:17	07/25/08 17:25
08-HUG-GB2-2	ARG0078-05	Soil	07/23/08 20:40	07/25/08 17:25
08-HUG-GB1-3-4	ARG0078-06	Soil	07/23/08 14:45	07/25/08 17:25
08-HUG-TFSE1-6	ARG0078-07	Soil	07/23/08 17:30	07/25/08 17:25
08-HUG-NT1	ARG0078-08	Water	07/23/08 18:55	07/25/08 17:25
08-HUG-NT2	ARG0078-09	Water	07/23/08 19:08	07/25/08 17:25
08-HUG-TF	ARG0078-10	Water	07/23/08 19:20	07/25/08 17:25
Trip Blank	ARG0078-11	Soil	07/21/08 00:00	07/25/08 17:25
Trip Blank	ARG0078-12	Water	07/23/08 00:00	07/25/08 17:25

TestAmerica Anchorage



Troy J. Engstrom, Lab Director

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

## Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-01 (08-KOY-DR2-1.5)</b>											
<b>Soil</b>											
<b>Sampled: 07/21/08 14:21</b>											
<b>Diesel Range Organics</b>	AK102/103	<b>3490</b>	----	204	mg/kg dry	10x	8070094	07/28/08 13:10	07/29/08 08:56	JN	<b>RL7</b>
<b>Residual Range Organics</b>	"	<b>18300</b>	----	510	"	"	"	"	"	JN	<b>RL7</b>
<i>Surrogate(s): 1-Chlorooctadecane</i>			108%		50 - 150 %	"				"	
<i>Triacontane</i>			87.4%		50 - 150 %	"				"	
<b>ARG0078-02 (08-KOY-GB51-2)</b>											
<b>Soil</b>											
<b>Sampled: 07/21/08 15:58</b>											
<b>Diesel Range Organics</b>	AK102/103	<b>60900</b>	----	2720	mg/kg dry	100x	8070094	07/28/08 13:10	07/29/08 11:04	JN	<b>RL7</b>
<b>Residual Range Organics</b>	"	<b>13100</b>	----	6800	"	"	"	"	"	JN	<b>RL7</b>
<i>Surrogate(s): 1-Chlorooctadecane</i>			135%		50 - 150 %	"				"	<b>Z3</b>
<i>Triacontane</i>			142%		50 - 150 %	"				"	<b>Z3</b>
<b>ARG0078-03 (08-KOY-GBD-2)</b>											
<b>Soil</b>											
<b>Sampled: 07/21/08 16:05</b>											
<b>Diesel Range Organics</b>	AK102/103	<b>57400</b>	----	3530	mg/kg dry	100x	8070094	07/28/08 13:10	07/29/08 11:04	JN	<b>RL7</b>
<b>Residual Range Organics</b>	"	<b>9080</b>	----	8830	"	"	"	"	"	JN	<b>RL7</b>
<i>Surrogate(s): 1-Chlorooctadecane</i>			120%		50 - 150 %	"				"	<b>Z3</b>
<i>Triacontane</i>			104%		50 - 150 %	"				"	<b>Z3</b>
<b>ARG0078-04 (08-KOY-GB3-2)</b>											
<b>Soil</b>											
<b>Sampled: 07/21/08 18:17</b>											
<b>Diesel Range Organics</b>	AK102/103	<b>22800</b>	----	2490	mg/kg dry	100x	8070094	07/28/08 13:10	07/29/08 11:36	JN	<b>RL7</b>
<b>Residual Range Organics</b>	"	<b>ND</b>	----	6210	"	"	"	"	"	JN	<b>RL7</b>
<i>Surrogate(s): 1-Chlorooctadecane</i>			NR		50 - 150 %	"				"	<b>Z3, Z6</b>
<i>Triacontane</i>			166%		50 - 150 %	"				"	<b>Z3, Z1</b>
<b>ARG0078-05 (08-HUG-GB2-2)</b>											
<b>Soil</b>											
<b>Sampled: 07/23/08 20:40</b>											
<b>Diesel Range Organics</b>	AK102/103	<b>37700</b>	----	2480	mg/kg dry	100x	8070094	07/28/08 13:10	07/29/08 11:36	JN	<b>RL7</b>
<b>Residual Range Organics</b>	"	<b>33300</b>	----	6210	"	"	"	"	"	JN	<b>RL7</b>
<i>Surrogate(s): 1-Chlorooctadecane</i>			NR		50 - 150 %	"				"	<b>Z3, Z6</b>
<i>Triacontane</i>			NR		50 - 150 %	"				"	<b>Z3, Z6</b>
<b>ARG0078-06 (08-HUG-GB1-3-4)</b>											
<b>Soil</b>											
<b>Sampled: 07/23/08 14:45</b>											
<b>Diesel Range Organics</b>	AK102/103	<b>2050</b>	----	20.8	mg/kg dry	1x	8070094	07/28/08 13:10	07/29/08 10:32	JN	
<b>Residual Range Organics</b>	"	<b>1140</b>	----	52.0	"	"	"	"	"	JN	
<i>Surrogate(s): 1-Chlorooctadecane</i>			103%		50 - 150 %	"				"	

TestAmerica Anchorage

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Troy Engstrom*

Troy J. Engstrom, Lab Director





**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO**  
 TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-06 (08-HUG-GB1-3-4)</b>		<b>Soil</b>					<b>Sampled: 07/23/08 14:45</b>				
<i>Triacontane</i>			105%		50 - 150 %	1x			07/29/08 10:32		
<b>ARG0078-07 (08-HUG-TFSE1-6)</b>		<b>Soil</b>					<b>Sampled: 07/23/08 17:30</b>				
<b>Diesel Range Organics</b>	AK102/103	<b>18900</b>	----	223	mg/kg dry	10x	8070094	07/28/08 13:10	07/29/08 12:09	JN	<b>RL7</b>
<b>Residual Range Organics</b>	"	<b>744</b>	----	557	"	"	"	"	"	JN	<b>RL7</b>
<i>Surrogate(s): 1-Chlorooctadecane</i>			115%		50 - 150 %	"				"	
<i>Triacontane</i>			114%		50 - 150 %	"				"	

TestAmerica Anchorage

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Troy Engstrom*

Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Selected Volatile Organic Compounds per EPA Method 8260B**  
 TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-01 (08-KOY-DR2-1.5)</b>											
		<b>Soil</b>		<b>Sampled: 07/21/08 14:21</b>							
Benzene	EPA 8260B	ND	----	0.0208	mg/kg dry	3x	8070107	07/31/08 10:16	08/01/08 04:18	DS	
Toluene	"	ND	----	0.0520	"	"	"	"	"	DS	
Ethylbenzene	"	ND	----	0.0520	"	"	"	"	"	DS	
Xylenes (total)	"	ND	----	0.0779	"	"	"	"	"	DS	
Gasoline Range Organics	"	ND	----	5.20	"	"	"	"	"	DS	
Surrogate(s): 4-BFB			98.8%		80 - 120 %	"				"	
Dibromofluoromethane			93.6%		80 - 120 %	"				"	
a,a,a-TFT			116%		50 - 150 %	"				"	
Toluene-d8			102%		80 - 120 %	"				"	
<b>ARG0078-02 (08-KOY-GB51-2)</b>											<b>RL7</b>
		<b>Soil</b>		<b>Sampled: 07/21/08 15:58</b>							
Benzene	EPA 8260B	2.14	----	0.807	mg/kg dry	60.1x	8070107	07/31/08 10:16	08/01/08 17:23	DS	
Toluene	"	35.2	----	2.02	"	"	"	"	"	DS	
Ethylbenzene	"	28.5	----	2.02	"	"	"	"	"	DS	
Xylenes (total)	"	208	----	3.03	"	"	"	"	"	DS	
Gasoline Range Organics	"	823	----	202	"	"	"	"	"	DS	
Surrogate(s): 4-BFB			98.1%		80 - 120 %	"				"	
Dibromofluoromethane			93.4%		80 - 120 %	"				"	
a,a,a-TFT			126%		50 - 150 %	"				"	
Toluene-d8			104%		80 - 120 %	"				"	
<b>ARG0078-03 (08-KOY-GBD-2)</b>											<b>RL7</b>
		<b>Soil</b>		<b>Sampled: 07/21/08 16:05</b>							
Benzene	EPA 8260B	1.86	----	0.435	mg/kg dry	30x	8070107	07/31/08 10:16	08/01/08 05:29	DS	
Toluene	"	29.8	----	1.09	"	"	"	"	"	DS	
Ethylbenzene	"	23.9	----	1.09	"	"	"	"	"	DS	
Xylenes (total)	"	178	----	1.63	"	"	"	"	"	DS	
Gasoline Range Organics	"	688	----	109	"	"	"	"	"	DS	
Surrogate(s): 4-BFB			98.4%		80 - 120 %	"				"	
Dibromofluoromethane			90.0%		80 - 120 %	"				"	
a,a,a-TFT			60.8%		50 - 150 %	"				"	
Toluene-d8			104%		80 - 120 %	"				"	

TestAmerica Anchorage



Troy J. Engstrom, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



**Selected Volatile Organic Compounds per EPA Method 8260B**  
TestAmerica Anchorage

ARG0078-04	(08-KOY-GB3-2)	Soil	Sampled: 07/21/08 18:17	RL
------------	----------------	------	-------------------------	----

ARG0078-05	(08-HUG-GB2-2)	Soil	Sampled: 07/23/08 20:40	RL
------------	----------------	------	-------------------------	----

ARG0078-06      (08-HUG-GB1-3-4)      Soil      Sampled: 07/23/08 14:45

TestAmerica Anchorage

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Troy Engstrom

Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Selected Volatile Organic Compounds per EPA Method 8260B**  
 TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes	
ARG0078-06RE1 (08-HUG-GB1-3-4)		Soil			Sampled: 07/23/08 14:45							RL7
Gasoline Range Organics	EPA 8260B	262	----	36.8	mg/kg dry	30x	8080003	08/01/08 11:12	08/02/08 00:45	DS		
Surrogate(s):	4-BFB	95.6%			80 - 120 %		"				"	
	Dibromofluoromethane	92.6%			80 - 120 %		"				"	
	a,a,a-TFT	123%			50 - 150 %		"				"	
	Toluene-d8	105%			80 - 120 %		"				"	
ARG0078-07 (08-HUG-TFSE1-6)		Soil			Sampled: 07/23/08 17:30							
Benzene	EPA 8260B	ND	----	0.0334	mg/kg dry	1.95	8070107	07/31/08 10:16	08/01/08 07:43	DS		
Toluene	"	ND	----	0.0834	"	"	"	"	"	DS		
Ethylbenzene	"	ND	----	0.0834	"	"	"	"	"	DS		
Xylenes (total)	"	ND	----	0.125	"	"	"	"	"	DS		
Surrogate(s):	4-BFB	82.3%			80 - 120 %		"				"	
	Dibromofluoromethane	91.5%			80 - 120 %		"				"	
	a,a,a-TFT	107%			50 - 150 %		"				"	
	Toluene-d8	102%			80 - 120 %		"				"	
ARG0078-07RE1 (08-HUG-TFSE1-6)		Soil			Sampled: 07/23/08 17:30							RL7
Gasoline Range Organics	EPA 8260B	485	----	71.0	mg/kg dry	30x	8080003	08/01/08 11:12	08/02/08 00:11	DS		
Surrogate(s):	4-BFB	96.0%			80 - 120 %		"				"	
	Dibromofluoromethane	93.8%			80 - 120 %		"				"	
	a,a,a-TFT	137%			50 - 150 %		"				"	
	Toluene-d8	105%			80 - 120 %		"				"	

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Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Physical Parameters by APHA/ASTM/EPA Methods**  
 TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-01 (08-KOY-DR2-1.5)</b>		<b>Soil</b>					<b>Sampled: 07/21/08 14:21</b>				
Dry Weight	TA-SOP	95.3	----	1.00	%	1x	8070097	07/28/08 14:10	07/29/08 08:40	JN	
<b>ARG0078-02 (08-KOY-GB51-2)</b>		<b>Soil</b>					<b>Sampled: 07/21/08 15:58</b>				
Dry Weight	TA-SOP	73.2	----	1.00	%	1x	8070097	07/28/08 14:10	07/29/08 08:40	JN	
<b>ARG0078-03 (08-KOY-GBD-2)</b>		<b>Soil</b>					<b>Sampled: 07/21/08 16:05</b>				
Dry Weight	TA-SOP	71.7	----	1.00	%	1x	8070097	07/28/08 14:10	07/29/08 08:40	JN	
<b>ARG0078-04 (08-KOY-GB3-2)</b>		<b>Soil</b>					<b>Sampled: 07/21/08 18:17</b>				
Dry Weight	TA-SOP	76.8	----	1.00	%	1x	8070097	07/28/08 14:10	07/29/08 08:40	JN	
<b>ARG0078-05 (08-HUG-GB2-2)</b>		<b>Soil</b>					<b>Sampled: 07/23/08 20:40</b>				
Dry Weight	TA-SOP	80.5	----	1.00	%	1x	8070097	07/28/08 14:10	07/29/08 08:40	JN	
<b>ARG0078-06 (08-HUG-GB1-3-4)</b>		<b>Soil</b>					<b>Sampled: 07/23/08 14:45</b>				
Dry Weight	TA-SOP	94.1	----	1.00	%	1x	8070097	07/28/08 14:10	07/29/08 08:40	JN	
<b>ARG0078-07 (08-HUG-TFSE1-6)</b>		<b>Soil</b>					<b>Sampled: 07/23/08 17:30</b>				
Dry Weight	TA-SOP	88.0	----	1.00	%	1x	8070097	07/28/08 14:10	07/29/08 08:40	JN	

TestAmerica Anchorage



Troy J. Engstrom, Lab Director

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Report Created:  
08/22/08 15:53

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ARG0078-11 (Trip Blank)			Soil				Sampled: 07/21/08 00:00				
Gasoline Range Organics	AK101 GRO	ND	----	4.00	mg/kg wet	1x	8071023	07/29/08 14:00	07/30/08 15:22	MJE	
Surrogate(s): a,a,a-TFT (FID)			95.7%		50 - 150 %		"		"		

**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Total Metals per EPA 6000/7000 Series Methods**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-01 (08-KOY-DR2-1.5)</b>		<b>Soil</b>		<b>Sampled: 07/21/08 14:21</b>							
Arsenic	EPA 6020	2.99	----	0.532	mg/kg dry	1x	8071121	07/31/08 07:42	07/31/08 22:50	JAG	
Barium	"	47.8	----	0.532	"	"	"	"	"	JAG	
Cadmium	"	ND	----	0.532	"	"	"	"	"	JAG	
Chromium	"	9.35	----	0.532	"	"	"	"	"	JAG	
Lead	"	3.49	----	0.532	"	"	"	"	"	JAG	
Selenium	"	ND	----	0.532	"	"	"	"	"	JAG	
Silver	"	ND	----	0.532	"	"	"	"	"	JAG	
<b>ARG0078-02 (08-KOY-GB51-2)</b>		<b>Soil</b>		<b>Sampled: 07/21/08 15:58</b>							
Lead	EPA 6020	7.09	----	0.659	mg/kg dry	1x	8071121	07/31/08 07:42	07/31/08 22:57	JAG	
<b>ARG0078-03 (08-KOY-GBD-2)</b>		<b>Soil</b>		<b>Sampled: 07/21/08 16:05</b>							
Lead	EPA 6020	6.65	----	0.637	mg/kg dry	1x	8071121	07/31/08 07:42	07/31/08 23:04	JAG	
<b>ARG0078-07 (08-HUG-TFSE1-6)</b>		<b>Soil</b>		<b>Sampled: 07/23/08 17:30</b>							
Lead	EPA 6020	9.24	----	0.561	mg/kg dry	1x	8071121	07/31/08 07:42	07/31/08 23:12	JAG	

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Project Name:	<b>YRITWC</b>
Project Number:	[none]
Project Manager:	Nick Braman

Report Created:  
08/22/08 15:53

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ARG0078-01	(08-KOY-DR2-1.5)	Soil			Sampled: 07/21/08 14:21						
Mercury	EPA 7471A	ND	----	0.101	mg/kg drv	1x	8071050	07/29/08 15:46	07/30/08 10:47	jm	

<b>BGES, INC.</b>	Project Name:	<b>YRITWC</b>	
750 W. 2nd Ave, Ste 104	Project Number:	[none]	Report Created:
Anchorage, AK 99501	Project Manager:	Nick Braman	08/22/08 15:53

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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ARG0078-01	(08-KOY-DR2-1.5)		Soil		Sampled: 07/21/08 14:21						
Acetone	EPA 8260B	ND	----	1040	ug/kg dry	1x	8071076	07/30/08 08:10	07/31/08 18:09	TDB	
Benzene	"	ND	----	8.31	"	"	"	"	"	TDB	
Bromobenzene	"	ND	----	41.5	"	"	"	"	"	TDB	
Bromochloromethane	"	ND	----	41.5	"	"	"	"	"	TDB	
Bromodichloromethane	"	ND	----	41.5	"	"	"	"	"	TDB	
Bromoform	"	ND	----	41.5	"	"	"	"	"	TDB	
Bromomethane	"	ND	----	208	"	"	"	"	"	TDB	
2-Butanone (MEK)	"	ND	----	415	"	"	"	"	"	TDB	
n-Butylbenzene	"	ND	----	208	"	"	"	"	"	TDB	
sec-Butylbenzene	"	ND	----	41.5	"	"	"	"	"	TDB	
tert-Butylbenzene	"	ND	----	41.5	"	"	"	"	"	TDB	
Carbon disulfide	"	ND	----	415	"	"	"	"	"	TDB	
Carbon tetrachloride	"	ND	----	41.5	"	"	"	"	"	TDB	
Chlorobenzene	"	ND	----	41.5	"	"	"	"	"	TDB	
Chloroethane	"	ND	----	41.5	"	"	"	"	"	TDB	
Chloroform	"	ND	----	41.5	"	"	"	"	"	TDB	
Chloromethane	"	ND	----	208	"	"	"	"	"	TDB	
2-Chlorotoluene	"	ND	----	41.5	"	"	"	"	"	TDB	
4-Chlorotoluene	"	ND	----	41.5	"	"	"	"	"	TDB	
1,2-Dibromo-3-chloropropane	"	ND	----	208	"	"	"	"	"	TDB	
Dibromochloromethane	"	ND	----	41.5	"	"	"	"	"	TDB	
1,2-Dibromoethane	"	ND	----	41.5	"	"	"	"	"	TDB	
Dibromomethane	"	ND	----	41.5	"	"	"	"	"	TDB	
1,2-Dichlorobenzene	"	ND	----	41.5	"	"	"	"	"	TDB	
1,3-Dichlorobenzene	"	ND	----	41.5	"	"	"	"	"	TDB	
1,4-Dichlorobenzene	"	ND	----	41.5	"	"	"	"	"	TDB	
Dichlorodifluoromethane	"	ND	----	208	"	"	"	"	"	TDB	
1,1-Dichloroethane	"	ND	----	41.5	"	"	"	"	"	TDB	
1,2-Dichloroethane	"	ND	----	41.5	"	"	"	"	"	TDB	
1,1-Dichloroethene	"	ND	----	41.5	"	"	"	"	"	TDB	
cis-1,2-Dichloroethene	"	ND	----	41.5	"	"	"	"	"	TDB	
trans-1,2-Dichloroethene	"	ND	----	41.5	"	"	"	"	"	TDB	
1,2-Dichloropropane	"	ND	----	41.5	"	"	"	"	"	TDB	
1,3-Dichloropropane	"	ND	----	41.5	"	"	"	"	"	TDB	
2,2-Dichloropropane	"	ND	----	41.5	"	"	"	"	"	TDB	
1,1-Dichloropropene	"	ND	----	41.5	"	"	"	"	"	TDB	

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Troy J. Engstrom, Lab Director

## BGES, INC.

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

## Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-01 (08-KOY-DR2-1.5)</b>		<b>Soil</b>		<b>Sampled: 07/21/08 14:21</b>							
cis-1,3-Dichloropropene	EPA 8260B	ND	----	41.5	ug/kg dry	1x	8071076	07/30/08 08:10	07/31/08 18:09	TDB	
trans-1,3-Dichloropropene	"	ND	----	41.5	"	"	"	"	"	TDB	
Ethylbenzene	"	ND	----	41.5	"	"	"	"	"	TDB	
Hexachlorobutadiene	"	ND	----	166	"	"	"	"	"	TDB	
2-Hexanone	"	ND	----	415	"	"	"	"	"	TDB	
Isopropylbenzene	"	ND	----	83.1	"	"	"	"	"	TDB	
p-Isopropyltoluene	"	ND	----	83.1	"	"	"	"	"	TDB	
4-Methyl-2-pentanone	"	ND	----	208	"	"	"	"	"	TDB	
Methyl tert-butyl ether	"	ND	----	41.5	"	"	"	"	"	TDB	
Methylene chloride	"	ND	----	208	"	"	"	"	"	TDB	
Naphthalene	"	ND	----	83.1	"	"	"	"	"	TDB	
n-Propylbenzene	"	ND	----	41.5	"	"	"	"	"	TDB	
Styrene	"	ND	----	41.5	"	"	"	"	"	TDB	
1,1,1,2-Tetrachloroethane	"	ND	----	41.5	"	"	"	"	"	TDB	
1,1,2,2-Tetrachloroethane	"	ND	----	41.5	"	"	"	"	"	TDB	
Tetrachloroethene	"	ND	----	41.5	"	"	"	"	"	TDB	
Toluene	"	ND	----	41.5	"	"	"	"	"	TDB	
1,2,3-Trichlorobenzene	"	ND	----	41.5	"	"	"	"	"	TDB	
1,2,4-Trichlorobenzene	"	ND	----	41.5	"	"	"	"	"	TDB	
1,1,1-Trichloroethane	"	ND	----	41.5	"	"	"	"	"	TDB	
1,1,2-Trichloroethane	"	ND	----	41.5	"	"	"	"	"	TDB	
Trichloroethene	"	ND	----	41.5	"	"	"	"	"	TDB	
Trichlorofluoromethane	"	ND	----	41.5	"	"	"	"	"	TDB	
1,2,3-Trichloropropane	"	ND	----	41.5	"	"	"	"	"	TDB	
1,2,4-Trimethylbenzene	"	ND	----	41.5	"	"	"	"	"	TDB	
1,3,5-Trimethylbenzene	"	ND	----	41.5	"	"	"	"	"	TDB	
Vinyl chloride	"	ND	----	41.5	"	"	"	"	"	TDB	
o-Xylene	"	ND	----	41.5	"	"	"	"	"	TDB	
m,p-Xylene	"	ND	----	83.1	"	"	"	"	"	TDB	
Surrogate(s): 4-BFB		94.9%		75 - 125 %		0.01x		"			
1,2-DCA-d4		103%		75 - 125 %		"		"			
Dibromofluoromethane		98.2%		75 - 125 %		"		"			
Toluene-d8		102%		75 - 125 %		"		"			

TestAmerica Anchorage

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*Troy Engstrom*

Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Volatile Organic Compounds per EPA Method 8260B**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-02RE1 (08-KOY-GB51-2)</b>		<b>Soil</b>		<b>Sampled: 07/21/08 15:58</b>							<b>RL7</b>
Acetone	EPA 8260B	ND	----	20500	ug/kg dry	10x	8071076	07/30/08 08:10	08/01/08 18:01	TDB	
<b>Benzene</b>	"	<b>1420</b>	----	164	"	"	"	"	"	TDB	
Bromobenzene	"	ND	----	822	"	"	"	"	"	TDB	
Bromochloromethane	"	ND	----	822	"	"	"	"	"	TDB	
Bromodichloromethane	"	ND	----	822	"	"	"	"	"	TDB	
Bromoform	"	ND	----	822	"	"	"	"	"	TDB	
Bromomethane	"	ND	----	4110	"	"	"	"	"	TDB	
2-Butanone (MEK)	"	ND	----	8220	"	"	"	"	"	TDB	
<b>n-Butylbenzene</b>	"	<b>4600</b>	----	4110	"	"	"	"	"	TDB	
<b>sec-Butylbenzene</b>	"	<b>3730</b>	----	822	"	"	"	"	"	TDB	
tert-Butylbenzene	"	ND	----	822	"	"	"	"	"	TDB	
Carbon disulfide	"	ND	----	8220	"	"	"	"	"	TDB	
Carbon tetrachloride	"	ND	----	822	"	"	"	"	"	TDB	
Chlorobenzene	"	ND	----	822	"	"	"	"	"	TDB	
Chloroethane	"	ND	----	822	"	"	"	"	"	TDB	
Chloroform	"	ND	----	822	"	"	"	"	"	TDB	
Chloromethane	"	ND	----	4110	"	"	"	"	"	TDB	
2-Chlorotoluene	"	ND	----	822	"	"	"	"	"	TDB	
4-Chlorotoluene	"	ND	----	822	"	"	"	"	"	TDB	
1,2-Dibromo-3-chloropropane	"	ND	----	4110	"	"	"	"	"	TDB	
Dibromochloromethane	"	ND	----	822	"	"	"	"	"	TDB	
1,2-Dibromoethane	"	ND	----	822	"	"	"	"	"	TDB	
Dibromomethane	"	ND	----	822	"	"	"	"	"	TDB	
1,2-Dichlorobenzene	"	ND	----	822	"	"	"	"	"	TDB	
1,3-Dichlorobenzene	"	ND	----	822	"	"	"	"	"	TDB	
1,4-Dichlorobenzene	"	ND	----	822	"	"	"	"	"	TDB	
Dichlorodifluoromethane	"	ND	----	4110	"	"	"	"	"	TDB	
1,1-Dichloroethane	"	ND	----	822	"	"	"	"	"	TDB	
1,2-Dichloroethane	"	ND	----	822	"	"	"	"	"	TDB	
1,1-Dichloroethene	"	ND	----	822	"	"	"	"	"	TDB	
cis-1,2-Dichloroethene	"	ND	----	822	"	"	"	"	"	TDB	
trans-1,2-Dichloroethene	"	ND	----	822	"	"	"	"	"	TDB	
1,2-Dichloropropane	"	ND	----	822	"	"	"	"	"	TDB	
1,3-Dichloropropane	"	ND	----	822	"	"	"	"	"	TDB	
2,2-Dichloropropane	"	ND	----	822	"	"	"	"	"	TDB	
1,1-Dichloropropene	"	ND	----	822	"	"	"	"	"	TDB	
cis-1,3-Dichloropropene	"	ND	----	822	"	"	"	"	"	TDB	

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Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Volatile Organic Compounds per EPA Method 8260B**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-02RE1 (08-KOY-GB51-2)</b>		<b>Soil</b>		<b>Sampled: 07/21/08 15:58</b>							<b>RL7</b>
trans-1,3-Dichloropropene	"	ND	----	822	"	"	"	"	"	TDB	
<b>Ethylbenzene</b>	"	<b>15800</b>	----	822	"	"	"	"	"	TDB	
Hexachlorobutadiene	"	ND	----	3290	"	"	"	"	"	TDB	
2-Hexanone	"	ND	----	8220	"	"	"	"	"	TDB	
<b>Isopropylbenzene</b>	"	<b>6840</b>	----	1640	"	"	"	"	"	TDB	
<b>p-Isopropyltoluene</b>	"	<b>3150</b>	----	1640	"	"	"	"	"	TDB	
4-Methyl-2-pentanone	"	ND	----	4110	"	"	"	"	"	TDB	
Methyl tert-butyl ether	"	ND	----	822	"	"	"	"	"	TDB	
Methylene chloride	"	ND	----	4110	"	"	"	"	"	TDB	
<b>Naphthalene</b>	"	<b>38000</b>	----	1640	"	"	"	"	"	TDB	
<b>n-Propylbenzene</b>	"	<b>12700</b>	----	822	"	"	"	"	"	TDB	
Styrene	"	ND	----	822	"	"	"	"	"	TDB	
1,1,1,2-Tetrachloroethane	"	ND	----	822	"	"	"	"	"	TDB	
1,1,2,2-Tetrachloroethane	"	ND	----	822	"	"	"	"	"	TDB	
Tetrachloroethene	"	ND	----	822	"	"	"	"	"	TDB	
<b>Toluene</b>	"	<b>21500</b>	----	822	"	"	"	"	"	TDB	
1,2,3-Trichlorobenzene	"	ND	----	822	"	"	"	"	"	TDB	
1,2,4-Trichlorobenzene	"	ND	----	822	"	"	"	"	"	TDB	
1,1,1-Trichloroethane	"	ND	----	822	"	"	"	"	"	TDB	
1,1,2-Trichloroethane	"	ND	----	822	"	"	"	"	"	TDB	
Trichloroethene	"	ND	----	822	"	"	"	"	"	TDB	
Trichlorofluoromethane	"	ND	----	822	"	"	"	"	"	TDB	
1,2,3-Trichloropropane	"	ND	----	822	"	"	"	"	"	TDB	
<b>1,2,4-Trimethylbenzene</b>	"	<b>49700</b>	----	822	"	"	"	"	"	TDB	
<b>1,3,5-Trimethylbenzene</b>	"	<b>17700</b>	----	822	"	"	"	"	"	TDB	
Vinyl chloride	"	ND	----	822	"	"	"	"	"	TDB	
<b>o-Xylene</b>	"	<b>39700</b>	----	822	"	"	"	"	"	TDB	
<b>m,p-Xylene</b>	"	<b>74200</b>	----	1640	"	"	"	"	"	TDB	
<i>Surrogate(s): 4-BFB</i>			<i>104%</i>		<i>75 - 125 %</i>		<i>0.01x</i>			"	
<i>1,2-DCA-d4</i>			<i>95.6%</i>		<i>75 - 125 %</i>		<i>"</i>			"	
<i>Dibromofluoromethane</i>			<i>94.6%</i>		<i>75 - 125 %</i>		<i>"</i>			"	
<i>Toluene-d8</i>			<i>103%</i>		<i>75 - 125 %</i>		<i>"</i>			"	

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Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Volatile Organic Compounds per EPA Method 8260B**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-03RE1 (08-KOY-GBD-2)</b>		<b>Soil</b>		<b>Sampled: 07/21/08 16:05</b>				<b>RL7</b>			
Acetone	EPA 8260B	ND	----	20800	ug/kg dry	10x	8071076	07/30/08 08:10	08/01/08 18:28	TDB	
<b>Benzene</b>	"	<b>1660</b>	----	167	"	"	"	"	"	TDB	
Bromobenzene	"	ND	----	834	"	"	"	"	"	TDB	
Bromochloromethane	"	ND	----	834	"	"	"	"	"	TDB	
Bromodichloromethane	"	ND	----	834	"	"	"	"	"	TDB	
Bromoform	"	ND	----	834	"	"	"	"	"	TDB	
Bromomethane	"	ND	----	4170	"	"	"	"	"	TDB	
2-Butanone (MEK)	"	ND	----	8340	"	"	"	"	"	TDB	
<b>n-Butylbenzene</b>	"	<b>9320</b>	----	4170	"	"	"	"	"	TDB	
<b>sec-Butylbenzene</b>	"	<b>7490</b>	----	834	"	"	"	"	"	TDB	
tert-Butylbenzene	"	ND	----	834	"	"	"	"	"	TDB	
Carbon disulfide	"	ND	----	8340	"	"	"	"	"	TDB	
Carbon tetrachloride	"	ND	----	834	"	"	"	"	"	TDB	
Chlorobenzene	"	ND	----	834	"	"	"	"	"	TDB	
Chloroethane	"	ND	----	834	"	"	"	"	"	TDB	
Chloroform	"	ND	----	834	"	"	"	"	"	TDB	
Chloromethane	"	ND	----	4170	"	"	"	"	"	TDB	
2-Chlorotoluene	"	ND	----	834	"	"	"	"	"	TDB	
4-Chlorotoluene	"	ND	----	834	"	"	"	"	"	TDB	
1,2-Dibromo-3-chloropropane	"	ND	----	4170	"	"	"	"	"	TDB	
Dibromochloromethane	"	ND	----	834	"	"	"	"	"	TDB	
1,2-Dibromoethane	"	ND	----	834	"	"	"	"	"	TDB	
Dibromomethane	"	ND	----	834	"	"	"	"	"	TDB	
1,2-Dichlorobenzene	"	ND	----	834	"	"	"	"	"	TDB	
1,3-Dichlorobenzene	"	ND	----	834	"	"	"	"	"	TDB	
1,4-Dichlorobenzene	"	ND	----	834	"	"	"	"	"	TDB	
Dichlorodifluoromethane	"	ND	----	4170	"	"	"	"	"	TDB	
1,1-Dichloroethane	"	ND	----	834	"	"	"	"	"	TDB	
1,2-Dichloroethane	"	ND	----	834	"	"	"	"	"	TDB	
1,1-Dichloroethene	"	ND	----	834	"	"	"	"	"	TDB	
cis-1,2-Dichloroethene	"	ND	----	834	"	"	"	"	"	TDB	
trans-1,2-Dichloroethene	"	ND	----	834	"	"	"	"	"	TDB	
1,2-Dichloropropane	"	ND	----	834	"	"	"	"	"	TDB	
1,3-Dichloropropane	"	ND	----	834	"	"	"	"	"	TDB	
2,2-Dichloropropane	"	ND	----	834	"	"	"	"	"	TDB	
1,1-Dichloropropene	"	ND	----	834	"	"	"	"	"	TDB	
cis-1,3-Dichloropropene	"	ND	----	834	"	"	"	"	"	TDB	

TestAmerica Anchorage

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Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Volatile Organic Compounds per EPA Method 8260B**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-03RE1 (08-KOY-GBD-2)</b>		<b>Soil</b>		<b>Sampled: 07/21/08 16:05</b>						<b>RL7</b>	
trans-1,3-Dichloropropene	"	ND	----	834	"	"	"	"	"	TDB	
<b>Ethylbenzene</b>	"	<b>25400</b>	----	834	"	"	"	"	"	TDB	
Hexachlorobutadiene	"	ND	----	3330	"	"	"	"	"	TDB	
2-Hexanone	"	ND	----	8340	"	"	"	"	"	TDB	
<b>Isopropylbenzene</b>	"	<b>12000</b>	----	1670	"	"	"	"	"	TDB	
<b>p-Isopropyltoluene</b>	"	<b>6230</b>	----	1670	"	"	"	"	"	TDB	
4-Methyl-2-pentanone	"	ND	----	4170	"	"	"	"	"	TDB	
Methyl tert-butyl ether	"	ND	----	834	"	"	"	"	"	TDB	
Methylene chloride	"	ND	----	4170	"	"	"	"	"	TDB	
<b>Naphthalene</b>	"	<b>71200</b>	----	1670	"	"	"	"	"	TDB	
<b>n-Propylbenzene</b>	"	<b>23200</b>	----	834	"	"	"	"	"	TDB	
Styrene	"	ND	----	834	"	"	"	"	"	TDB	
1,1,1,2-Tetrachloroethane	"	ND	----	834	"	"	"	"	"	TDB	
1,1,2,2-Tetrachloroethane	"	ND	----	834	"	"	"	"	"	TDB	
Tetrachloroethene	"	ND	----	834	"	"	"	"	"	TDB	
<b>Toluene</b>	"	<b>30500</b>	----	834	"	"	"	"	"	TDB	
1,2,3-Trichlorobenzene	"	ND	----	834	"	"	"	"	"	TDB	
1,2,4-Trichlorobenzene	"	ND	----	834	"	"	"	"	"	TDB	
1,1,1-Trichloroethane	"	ND	----	834	"	"	"	"	"	TDB	
1,1,2-Trichloroethane	"	ND	----	834	"	"	"	"	"	TDB	
Trichloroethene	"	ND	----	834	"	"	"	"	"	TDB	
Trichlorofluoromethane	"	ND	----	834	"	"	"	"	"	TDB	
1,2,3-Trichloropropane	"	ND	----	834	"	"	"	"	"	TDB	
<b>1,2,4-Trimethylbenzene</b>	"	<b>88400</b>	----	834	"	"	"	"	"	TDB	
<b>1,3,5-Trimethylbenzene</b>	"	<b>32400</b>	----	834	"	"	"	"	"	TDB	
Vinyl chloride	"	ND	----	834	"	"	"	"	"	TDB	
<b>o-Xylene</b>	"	<b>64100</b>	----	834	"	"	"	"	"	TDB	
<b>m,p-Xylene</b>	"	<b>120000</b>	----	1670	"	"	"	"	"	TDB	
<i>Surrogate(s): 4-BFB</i>				<i>108%</i>		<i>75 - 125 %</i>	<i>0.01x</i>			"	
<i>1,2-DCA-d4</i>				<i>101%</i>		<i>75 - 125 %</i>	<i>"</i>			"	
<i>Dibromofluoromethane</i>				<i>98.0%</i>		<i>75 - 125 %</i>	<i>"</i>			"	
<i>Toluene-d8</i>				<i>105%</i>		<i>75 - 125 %</i>	<i>"</i>			"	

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*Troy Engstrom*

Troy J. Engstrom, Lab Director





**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Volatile Organic Compounds per EPA Method 8260B**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-07RE1 (08-HUG-TFSE1-6)</b>		<b>Soil</b>		<b>Sampled: 07/23/08 17:30</b>							
Acetone	EPA 8260B	ND	----	1960	ug/kg dry	1x	8071076	07/30/08 08:10	08/01/08 16:38	TDB	
Benzene	"	ND	----	15.7	"	"	"	"	"	TDB	
Bromobenzene	"	ND	----	78.5	"	"	"	"	"	TDB	
Bromochloromethane	"	ND	----	78.5	"	"	"	"	"	TDB	
Bromodichloromethane	"	ND	----	78.5	"	"	"	"	"	TDB	
Bromoform	"	ND	----	78.5	"	"	"	"	"	TDB	
Bromomethane	"	ND	----	392	"	"	"	"	"	TDB	
2-Butanone (MEK)	"	ND	----	785	"	"	"	"	"	TDB	
n-Butylbenzene	"	ND	----	392	"	"	"	"	"	TDB	
sec-Butylbenzene	"	ND	----	78.5	"	"	"	"	"	TDB	
<b>tert-Butylbenzene</b>	"	<b>770</b>	----	78.5	"	"	"	"	"	TDB	
Carbon disulfide	"	ND	----	785	"	"	"	"	"	TDB	
Carbon tetrachloride	"	ND	----	78.5	"	"	"	"	"	TDB	
Chlorobenzene	"	ND	----	78.5	"	"	"	"	"	TDB	
Chloroethane	"	ND	----	78.5	"	"	"	"	"	TDB	
Chloroform	"	ND	----	78.5	"	"	"	"	"	TDB	
Chloromethane	"	ND	----	392	"	"	"	"	"	TDB	
2-Chlorotoluene	"	ND	----	78.5	"	"	"	"	"	TDB	
4-Chlorotoluene	"	ND	----	78.5	"	"	"	"	"	TDB	
1,2-Dibromo-3-chloropropane	"	ND	----	392	"	"	"	"	"	TDB	
Dibromochloromethane	"	ND	----	78.5	"	"	"	"	"	TDB	
1,2-Dibromoethane	"	ND	----	78.5	"	"	"	"	"	TDB	
Dibromomethane	"	ND	----	78.5	"	"	"	"	"	TDB	
1,2-Dichlorobenzene	"	ND	----	78.5	"	"	"	"	"	TDB	
1,3-Dichlorobenzene	"	ND	----	78.5	"	"	"	"	"	TDB	
1,4-Dichlorobenzene	"	ND	----	78.5	"	"	"	"	"	TDB	
Dichlorodifluoromethane	"	ND	----	392	"	"	"	"	"	TDB	
1,1-Dichloroethane	"	ND	----	78.5	"	"	"	"	"	TDB	
1,2-Dichloroethane	"	ND	----	78.5	"	"	"	"	"	TDB	
1,1-Dichloroethene	"	ND	----	78.5	"	"	"	"	"	TDB	
cis-1,2-Dichloroethene	"	ND	----	78.5	"	"	"	"	"	TDB	
trans-1,2-Dichloroethene	"	ND	----	78.5	"	"	"	"	"	TDB	
1,2-Dichloropropane	"	ND	----	78.5	"	"	"	"	"	TDB	
1,3-Dichloropropane	"	ND	----	78.5	"	"	"	"	"	TDB	
2,2-Dichloropropane	"	ND	----	78.5	"	"	"	"	"	TDB	
1,1-Dichloropropene	"	ND	----	78.5	"	"	"	"	"	TDB	

TestAmerica Anchorage

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Troy J. Engstrom, Lab Director



## BGES, INC.

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

## Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-07RE1 (08-HUG-TFSE1-6)</b>		<b>Soil</b>		<b>Sampled: 07/23/08 17:30</b>							
cis-1,3-Dichloropropene	EPA 8260B	ND	----	78.5	ug/kg dry	1x	8071076	07/30/08 08:10	08/01/08 16:38	TDB	
trans-1,3-Dichloropropene	"	ND	----	78.5	"	"	"	"	"	TDB	
Ethylbenzene	"	ND	----	78.5	"	"	"	"	"	TDB	
Hexachlorobutadiene	"	ND	----	314	"	"	"	"	"	TDB	
2-Hexanone	"	ND	----	785	"	"	"	"	"	TDB	
Isopropylbenzene	"	ND	----	157	"	"	"	"	"	TDB	
p-Isopropyltoluene	"	ND	----	157	"	"	"	"	"	TDB	
4-Methyl-2-pentanone	"	ND	----	392	"	"	"	"	"	TDB	
Methyl tert-butyl ether	"	ND	----	78.5	"	"	"	"	"	TDB	
Methylene chloride	"	ND	----	392	"	"	"	"	"	TDB	
Naphthalene	"	ND	----	157	"	"	"	"	"	TDB	
n-Propylbenzene	"	ND	----	78.5	"	"	"	"	"	TDB	
Styrene	"	ND	----	78.5	"	"	"	"	"	TDB	
1,1,1,2-Tetrachloroethane	"	ND	----	78.5	"	"	"	"	"	TDB	
1,1,2,2-Tetrachloroethane	"	ND	----	78.5	"	"	"	"	"	TDB	
Tetrachloroethene	"	ND	----	78.5	"	"	"	"	"	TDB	
Toluene	"	ND	----	78.5	"	"	"	"	"	TDB	
1,2,3-Trichlorobenzene	"	ND	----	78.5	"	"	"	"	"	TDB	
1,2,4-Trichlorobenzene	"	ND	----	78.5	"	"	"	"	"	TDB	
1,1,1-Trichloroethane	"	ND	----	78.5	"	"	"	"	"	TDB	
1,1,2-Trichloroethane	"	ND	----	78.5	"	"	"	"	"	TDB	
Trichloroethene	"	ND	----	78.5	"	"	"	"	"	TDB	
Trichlorofluoromethane	"	ND	----	78.5	"	"	"	"	"	TDB	
1,2,3-Trichloropropane	"	ND	----	78.5	"	"	"	"	"	TDB	
1,2,4-Trimethylbenzene	"	ND	----	78.5	"	"	"	"	"	TDB	
<b>1,3,5-Trimethylbenzene</b>	"	<b>7950</b>	----	78.5	"	"	"	"	"	TDB	
Vinyl chloride	"	ND	----	78.5	"	"	"	"	"	TDB	
o-Xylene	"	ND	----	78.5	"	"	"	"	"	TDB	
m,p-Xylene	"	ND	----	157	"	"	"	"	"	TDB	
<i>Surrogate(s): 4-BFB</i>				121%		75 - 125 %	0.01x			"	
<i>1,2-DCA-d4</i>				97.0%		75 - 125 %	"			"	
<i>Dibromofluoromethane</i>				94.4%		75 - 125 %	"			"	
<i>Toluene-d8</i>				98.6%		75 - 125 %	"			"	

TestAmerica Anchorage

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*Troy Engstrom*

Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Volatile Organic Compounds per EPA Method 8260B**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-11 (Trip Blank)</b>		<b>Soil</b>		<b>Sampled: 07/21/08 00:00</b>							
Acetone	EPA 8260B	ND	----	2500	ug/kg wet	1x	8071076	07/30/08 08:10	07/31/08 15:13	TDB	
Benzene	"	ND	----	20.0	"	"	"	"	"	TDB	
Bromobenzene	"	ND	----	100	"	"	"	"	"	TDB	
Bromochloromethane	"	ND	----	100	"	"	"	"	"	TDB	
Bromodichloromethane	"	ND	----	100	"	"	"	"	"	TDB	
Bromoform	"	ND	----	100	"	"	"	"	"	TDB	
Bromomethane	"	ND	----	500	"	"	"	"	"	TDB	
2-Butanone (MEK)	"	ND	----	1000	"	"	"	"	"	TDB	
n-Butylbenzene	"	ND	----	500	"	"	"	"	"	TDB	
sec-Butylbenzene	"	ND	----	100	"	"	"	"	"	TDB	
tert-Butylbenzene	"	ND	----	100	"	"	"	"	"	TDB	
Carbon disulfide	"	ND	----	1000	"	"	"	"	"	TDB	
Carbon tetrachloride	"	ND	----	100	"	"	"	"	"	TDB	
Chlorobenzene	"	ND	----	100	"	"	"	"	"	TDB	
Chloroethane	"	ND	----	100	"	"	"	"	"	TDB	
Chloroform	"	ND	----	100	"	"	"	"	"	TDB	
Chloromethane	"	ND	----	500	"	"	"	"	"	TDB	
2-Chlorotoluene	"	ND	----	100	"	"	"	"	"	TDB	
4-Chlorotoluene	"	ND	----	100	"	"	"	"	"	TDB	
1,2-Dibromo-3-chloropropane	"	ND	----	500	"	"	"	"	"	TDB	
Dibromochloromethane	"	ND	----	100	"	"	"	"	"	TDB	
1,2-Dibromoethane	"	ND	----	100	"	"	"	"	"	TDB	
Dibromomethane	"	ND	----	100	"	"	"	"	"	TDB	
1,2-Dichlorobenzene	"	ND	----	100	"	"	"	"	"	TDB	
1,3-Dichlorobenzene	"	ND	----	100	"	"	"	"	"	TDB	
1,4-Dichlorobenzene	"	ND	----	100	"	"	"	"	"	TDB	
Dichlorodifluoromethane	"	ND	----	500	"	"	"	"	"	TDB	
1,1-Dichloroethane	"	ND	----	100	"	"	"	"	"	TDB	
1,2-Dichloroethane	"	ND	----	100	"	"	"	"	"	TDB	
1,1-Dichloroethene	"	ND	----	100	"	"	"	"	"	TDB	
cis-1,2-Dichloroethene	"	ND	----	100	"	"	"	"	"	TDB	
trans-1,2-Dichloroethene	"	ND	----	100	"	"	"	"	"	TDB	
1,2-Dichloropropane	"	ND	----	100	"	"	"	"	"	TDB	
1,3-Dichloropropane	"	ND	----	100	"	"	"	"	"	TDB	
2,2-Dichloropropane	"	ND	----	100	"	"	"	"	"	TDB	
1,1-Dichloropropene	"	ND	----	100	"	"	"	"	"	TDB	

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Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Volatile Organic Compounds per EPA Method 8260B**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-11 (Trip Blank)</b>		<b>Soil</b>		<b>Sampled: 07/21/08 00:00</b>							
cis-1,3-Dichloropropene	EPA 8260B	ND	----	100	ug/kg wet	1x	8071076	07/30/08 08:10	07/31/08 15:13	TDB	
trans-1,3-Dichloropropene	"	ND	----	100	"	"	"	"	"	TDB	
Ethylbenzene	"	ND	----	100	"	"	"	"	"	TDB	
Hexachlorobutadiene	"	ND	----	400	"	"	"	"	"	TDB	
2-Hexanone	"	ND	----	1000	"	"	"	"	"	TDB	
Isopropylbenzene	"	ND	----	200	"	"	"	"	"	TDB	
p-Isopropyltoluene	"	ND	----	200	"	"	"	"	"	TDB	
4-Methyl-2-pentanone	"	ND	----	500	"	"	"	"	"	TDB	
Methyl tert-butyl ether	"	ND	----	100	"	"	"	"	"	TDB	
Methylene chloride	"	ND	----	500	"	"	"	"	"	TDB	
Naphthalene	"	ND	----	200	"	"	"	"	"	TDB	
n-Propylbenzene	"	ND	----	100	"	"	"	"	"	TDB	
Styrene	"	ND	----	100	"	"	"	"	"	TDB	
1,1,1,2-Tetrachloroethane	"	ND	----	100	"	"	"	"	"	TDB	
1,1,2,2-Tetrachloroethane	"	ND	----	100	"	"	"	"	"	TDB	
Tetrachloroethene	"	ND	----	100	"	"	"	"	"	TDB	
Toluene	"	ND	----	100	"	"	"	"	"	TDB	
1,2,3-Trichlorobenzene	"	ND	----	100	"	"	"	"	"	TDB	
1,2,4-Trichlorobenzene	"	ND	----	100	"	"	"	"	"	TDB	
1,1,1-Trichloroethane	"	ND	----	100	"	"	"	"	"	TDB	
1,1,2-Trichloroethane	"	ND	----	100	"	"	"	"	"	TDB	
Trichloroethene	"	ND	----	100	"	"	"	"	"	TDB	
Trichlorofluoromethane	"	ND	----	100	"	"	"	"	"	TDB	
1,2,3-Trichloropropane	"	ND	----	100	"	"	"	"	"	TDB	
1,2,4-Trimethylbenzene	"	ND	----	100	"	"	"	"	"	TDB	
1,3,5-Trimethylbenzene	"	ND	----	100	"	"	"	"	"	TDB	
Vinyl chloride	"	ND	----	100	"	"	"	"	"	TDB	
o-Xylene	"	ND	----	100	"	"	"	"	"	TDB	
m,p-Xylene	"	ND	----	200	"	"	"	"	"	TDB	
Surrogate(s): 4-BFB			97.5%		75 - 125 %	0.01x				"	
1,2-DCA-d4			101%		75 - 125 %	"				"	
Dibromofluoromethane			99.2%		75 - 125 %	"				"	
Toluene-d8			101%		75 - 125 %	"				"	

TestAmerica Anchorage

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Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Polynuclear Aromatic Compounds per EPA 8270M-SIM**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-01 (08-KOY-DR2-1.5)</b>			<b>Soil</b>				<b>Sampled: 07/21/08 14:21</b>				<b>RL3</b>
Acenaphthene	EPA 8270m	ND	----	142	ug/kg dry	10x	8071137	07/31/08 14:25	08/06/08 15:06	NAF	
Acenaphthylene	"	ND	----	142	"	"	"	"	"	NAF	
Anthracene	"	ND	----	142	"	"	"	"	"	NAF	
Benzo (a) anthracene	"	ND	----	1420	"	100x	"	"	08/06/08 16:28	NAF	<b>RL1</b>
Benzo (a) pyrene	"	ND	----	1420	"	"	"	"	"	NAF	<b>RL1</b>
Benzo (b) fluoranthene	"	ND	----	1420	"	"	"	"	"	NAF	<b>RL1</b>
Benzo (ghi) perylene	"	ND	----	1420	"	"	"	"	"	NAF	<b>RL1</b>
Benzo (k) fluoranthene	"	ND	----	1420	"	"	"	"	"	NAF	<b>RL1</b>
Chrysene	"	ND	----	1420	"	"	"	"	"	NAF	<b>RL1</b>
Dibenzo (a,h) anthracene	"	ND	----	1420	"	"	"	"	"	NAF	<b>RL1</b>
<b>Fluoranthene</b>		<b>147</b>	----	142	"	10x	"	"	08/06/08 15:06	NAF	
Fluorene	"	ND	----	142	"	"	"	"	"	NAF	
Indeno (1,2,3-cd) pyrene	"	ND	----	1420	"	100x	"	"	08/06/08 16:28	NAF	<b>RL1</b>
Naphthalene	"	ND	----	142	"	10x	"	"	08/06/08 15:06	NAF	
Phenanthrene	"	ND	----	142	"	"	"	"	"	NAF	
Pyrene	"	ND	----	1420	"	100x	"	"	08/06/08 16:28	NAF	<b>RL1</b>
<i>Surrogate(s): Fluorene-d10</i>				80.8%		24 - 125 %	10x		08/06/08 15:06		
<i>Pyrene-d10</i>				NR		41 - 141 %	100x		08/06/08 16:28		<b>Z3, RL1</b>
<i>Benzo (a) pyrene-d12</i>				NR		38 - 143 %	"		"		<b>Z3, RL1</b>

**ARG0078-02 (08-KOY-GB51-2)**

			<b>Soil</b>				<b>Sampled: 07/21/08 15:58</b>				
Acenaphthene	EPA 8270m	ND	----	16900	ug/kg dry	1000	8071137	07/31/08 14:25	08/06/08 18:39	NAF	<b>RL1</b>
Acenaphthylene	"	ND	----	16900	"	"	"	"	"	NAF	<b>RL1</b>
Anthracene	"	ND	----	169	"	10x	"	"	08/06/08 17:00	NAF	<b>RL1</b>
Benzo (a) anthracene	"	ND	----	16.9	"	1x	"	"	08/06/08 15:39	NAF	
Benzo (a) pyrene	"	ND	----	16.9	"	"	"	"	"	NAF	
Benzo (b) fluoranthene	"	ND	----	16.9	"	"	"	"	"	NAF	
Benzo (ghi) perylene	"	ND	----	16.9	"	"	"	"	"	NAF	
Benzo (k) fluoranthene	"	ND	----	16.9	"	"	"	"	"	NAF	
Chrysene	"	ND	----	16.9	"	"	"	"	"	NAF	
Dibenzo (a,h) anthracene	"	ND	----	16.9	"	"	"	"	"	NAF	
Fluoranthene	"	ND	----	169	"	10x	"	"	08/06/08 17:00	NAF	<b>RL1</b>
Fluorene	"	ND	----	16900	"	1000	"	"	08/06/08 18:39	NAF	<b>RL1</b>
Indeno (1,2,3-cd) pyrene	"	ND	----	16.9	"	1x	"	"	08/06/08 15:39	NAF	
<b>Naphthalene</b>	"	<b>99100</b>	----	16900	"	1000	"	"	08/06/08 18:39	NAF	

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*Troy Engstrom*

Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Polynuclear Aromatic Compounds per EPA 8270M-SIM**  
 TestAmerica Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes	
ARG0078-02 (08-KOY-GB51-2)			Soil			Sampled: 07/21/08 15:58							
Phenanthrene		EPA 8270m	1220	----	169	ug/kg dry	10x	8071137	07/31/08 14:25	08/06/08 17:00	NAF		
Pyrene		"	ND	----	16.9	"	1x	"	"	08/06/08 15:39	NAF		
Surrogate(s): Fluorene-d10					NR		24 - 125 %	1000x		08/06/08 18:39	Z3, RL1		
Pyrene-d10					57.8%		41 - 141 %	1x		08/06/08 15:39			
Benzo (a) pyrene-d12					86.7%		38 - 143 %	"		"			
ARG0078-03 (08-KOY-GBD-2)			Soil			Sampled: 07/21/08 16:05							RL3
Acenaphthene		EPA 8270m	ND	----	16800	ug/kg dry	1000	8071137	07/31/08 14:25	08/06/08 19:12	NAF	RL1	
Acenaphthylene		"	ND	----	16800	"	"	"	"	"	NAF	RL1	
Anthracene		"	ND	----	168	"	10x	"	"	08/06/08 17:33	NAF		
Benzo (a) anthracene		"	ND	----	168	"	"	"	"	"	NAF		
Benzo (a) pyrene		"	ND	----	168	"	"	"	"	"	NAF		
Benzo (b) fluoranthene		"	ND	----	168	"	"	"	"	"	NAF		
Benzo (ghi) perylene		"	ND	----	168	"	"	"	"	"	NAF		
Benzo (k) fluoranthene		"	ND	----	168	"	"	"	"	"	NAF		
Chrysene		"	ND	----	168	"	"	"	"	"	NAF		
Dibenzo (a,h) anthracene		"	ND	----	168	"	"	"	"	"	NAF		
Fluoranthene		"	ND	----	168	"	"	"	"	"	NAF		
Fluorene		"	ND	----	16800	"	1000	"	"	08/06/08 19:12	NAF	RL1	
Indeno (1,2,3-cd) pyrene		"	ND	----	168	"	10x	"	"	08/06/08 17:33	NAF		
Naphthalene		"	67200	----	16800	"	1000 x	"	"	08/06/08 19:12	NAF		
Phenanthrene		"	870	----	168	"	10x	"	"	08/06/08 17:33	NAF		
Pyrene		"	ND	----	168	"	"	"	"	"	NAF		
Surrogate(s): Fluorene-d10					NR		24 - 125 %	1000x		08/06/08 19:12	Z3		
Pyrene-d10					79.6%		41 - 141 %	10x		08/06/08 17:33			
Benzo (a) pyrene-d12					105%		38 - 143 %	"		"			
ARG0078-07 (08-HUG-TFSE1-6)			Soil			Sampled: 07/23/08 17:30							RL3
Acenaphthene		EPA 8270m	ND	----	150	ug/kg dry	10x	8071137	07/31/08 14:25	08/06/08 18:06	NAF		
Acenaphthylene		"	ND	----	150	"	"	"	"	"	NAF		
Anthracene		"	ND	----	150	"	"	"	"	"	NAF		
Benzo (a) anthracene		"	ND	----	150	"	"	"	"	"	NAF		
Benzo (a) pyrene		"	ND	----	150	"	"	"	"	"	NAF		
Benzo (b) fluoranthene		"	ND	----	150	"	"	"	"	"	NAF		
Benzo (ghi) perylene		"	ND	----	150	"	"	"	"	"	NAF		

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Report Created:  
08/22/08 15:53

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ARG0078-07 (08-HUG-TFSE1-6)		Soil			Sampled: 07/23/08 17:30						RL3
Benzo (k) fluoranthene	EPA 8270m	ND	----	150	ug/kg dry	10x	8071137	07/31/08 14:25	08/06/08 18:06	NAF	
Chrysene	"	ND	----	150	"	"	"	"	"	NAF	
Dibenzo (a,h) anthracene	"	ND	----	150	"	"	"	"	"	NAF	
Fluoranthene	"	ND	----	150	"	"	"	"	"	NAF	
Fluorene	"	ND	----	150	"	"	"	"	"	NAF	
Indeno (1,2,3-cd) pyrene	"	ND	----	150	"	"	"	"	"	NAF	
Naphthalene	"	ND	----	505	"	"	"	"	"	NAF	RL1
Phenanthrene	"	ND	----	150	"	"	"	"	"	NAF	
Pyrene	"	ND	----	150	"	"	"	"	"	NAF	
Surrogate(s):	Fluorene-d10		62.3%		24 - 125 %	"				"	
	Pyrene-d10		64.0%		41 - 141 %	"				"	
	Benzo (a) pyrene-d12		76.3%		38 - 143 %	"				"	

**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Percent Dry Weight (Solids) per Standard Methods**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-01</b>	<b>(08-KOY-DR2-1.5)</b>	<b>Soil</b>		<b>Sampled: 07/21/08 14:21</b>							
% Solids	NCA SOP	94.0	----	0.0100	% by Weight	1x	8080051	08/04/08 09:28	08/04/08 09:28	MJP	
<b>ARG0078-02</b>	<b>(08-KOY-GB51-2)</b>	<b>Soil</b>		<b>Sampled: 07/21/08 15:58</b>							
% Solids	NCA SOP	78.2	----	0.0100	% by Weight	1x	8080051	08/04/08 09:28	08/04/08 09:28	MJP	
<b>ARG0078-03</b>	<b>(08-KOY-GBD-2)</b>	<b>Soil</b>		<b>Sampled: 07/21/08 16:05</b>							
% Solids	NCA SOP	79.3	----	0.0100	% by Weight	1x	8080051	08/04/08 09:28	08/04/08 09:28	MJP	
<b>ARG0078-07</b>	<b>(08-HUG-TFSE1-6)</b>	<b>Soil</b>		<b>Sampled: 07/23/08 17:30</b>							
% Solids	NCA SOP	89.1	----	0.0100	% by Weight	1x	8080051	08/04/08 09:28	08/04/08 09:28	MJP	

TestAmerica Anchorage



Troy J. Engstrom, Lab Director

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750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**PAH**  
 TestAmerica Tacoma

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-08 (08-HUG-NT1)</b>		<b>Water</b>		<b>Sampled: 07/23/08 18:55</b>							
Naphthalene	625	ND	----	2.0	ug/L	1x	34644	07/30/08 14:41	08/13/08 19:36	LZ	
2-Methylnaphthalene	"	ND	----	0.98	"	"	"	"	"	LZ	
1-Methylnaphthalene	"	ND	----	0.29	"	"	"	"	"	LZ	
Acenaphthylene	"	ND	----	0.39	"	"	"	"	"	LZ	
Acenaphthene	"	ND	----	0.49	"	"	"	"	"	LZ	
Fluorene	"	ND	----	0.29	"	"	"	"	"	LZ	
Phenanthrene	"	ND	----	0.39	"	"	"	"	"	LZ	
Anthracene	"	ND	----	0.20	"	"	"	"	"	LZ	
Fluoranthene	"	ND	----	0.24	"	"	"	"	"	LZ	
Pyrene	"	ND	----	0.29	"	"	"	"	"	LZ	
Benzo[a]anthracene	"	ND	----	0.29	"	"	"	"	"	LZ	
Chrysene	"	ND	----	0.20	"	"	"	"	"	LZ	
Benzofluoranthene	"	ND	----	0.39	"	"	"	"	"	LZ	
Benzo[a]pyrene	"	ND	----	0.20	"	"	"	"	"	LZ	
Indeno[1,2,3-cd]pyrene	"	ND	----	0.29	"	"	"	"	"	LZ	
Dibenz(a,h)anthracene	"	ND	----	0.29	"	"	"	"	"	LZ	
Benzo[g,h,i]perylene	"	ND	----	0.29	"	"	"	"	"	LZ	
<i>Surrogate(s): Nitrobenzene-d5</i>				74%		71 - 128 %	"			"	
<i>2-Fluorobiphenyl</i>				76%		67 - 125 %	"			"	
<i>Terphenyl-d14</i>				87%		70 - 135 %	"			"	

<b>ARG0078-09 (08-HUG-NT2)</b>		<b>Water</b>		<b>Sampled: 07/23/08 19:08</b>							
Naphthalene	625	ND	----	2.7	ug/L	1x	34644	07/30/08 14:41	08/13/08 19:57	LZ	
2-Methylnaphthalene	"	ND	----	1.3	"	"	"	"	"	LZ	
1-Methylnaphthalene	"	ND	----	0.40	"	"	"	"	"	LZ	
Acenaphthylene	"	ND	----	0.53	"	"	"	"	"	LZ	
Acenaphthene	"	ND	----	0.67	"	"	"	"	"	LZ	
Fluorene	"	ND	----	0.40	"	"	"	"	"	LZ	
Phenanthrene	"	ND	----	0.53	"	"	"	"	"	LZ	
Anthracene	"	ND	----	0.27	"	"	"	"	"	LZ	
Fluoranthene	"	ND	----	0.33	"	"	"	"	"	LZ	
Pyrene	"	ND	----	0.40	"	"	"	"	"	LZ	
Benzo[a]anthracene	"	ND	----	0.40	"	"	"	"	"	LZ	
Chrysene	"	ND	----	0.27	"	"	"	"	"	LZ	
Benzofluoranthene	"	ND	----	0.53	"	"	"	"	"	LZ	
Benzo[a]pyrene	"	ND	----	0.27	"	"	"	"	"	LZ	
Indeno[1,2,3-cd]pyrene	"	ND	----	0.40	"	"	"	"	"	LZ	

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*Troy Engstrom*

Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**PAH**  
 TestAmerica Tacoma

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-09 (08-HUG-NT2)</b>		<b>Water</b>		<b>Sampled: 07/23/08 19:08</b>							
Dibenz(a,h)anthracene	625	ND	----	0.40	ug/L	1x	34644	07/30/08 14:41	08/13/08 19:57	LZ	
Benzo[g,h,i]perylene	"	ND	----	0.40	"	"	"	"	"	LZ	
<i>Surrogate(s): Nitrobenzene-d5</i>				75%		71 - 128 %	"			"	
<i>2-Fluorobiphenyl</i>				76%		67 - 125 %	"			"	
<i>Terphenyl-d14</i>				88%		70 - 135 %	"			"	
<b>ARG0078-10 (08-HUG-TF)</b>		<b>Water</b>		<b>Sampled: 07/23/08 19:20</b>							
Naphthalene	625	ND	----	2.0	ug/L	1x	34644	07/30/08 14:41	08/13/08 20:39	LZ	
<b>2-Methylnaphthalene</b>	"	<b>4.1</b>	----	1.0	"	"	"	"	"	LZ	
<b>1-Methylnaphthalene</b>	"	<b>3.1</b>	----	0.30	"	"	"	"	"	LZ	
Acenaphthylene	"	ND	----	0.41	"	"	"	"	"	LZ	
Acenaphthene	"	ND	----	0.51	"	"	"	"	"	LZ	
Fluorene	"	ND	----	0.30	"	"	"	"	"	LZ	
Phenanthrene	"	ND	----	0.41	"	"	"	"	"	LZ	
Anthracene	"	ND	----	0.20	"	"	"	"	"	LZ	
<b>Fluoranthene</b>	"	<b>40</b>	----	0.25	"	"	"	"	"	LZ	
<b>Pyrene</b>	"	<b>25</b>	----	0.30	"	"	"	"	"	LZ	
<b>Benzo[a]anthracene</b>	"	<b>1.2</b>	----	0.30	"	"	"	"	"	LZ	
<b>Chrysene</b>	"	<b>5.1</b>	----	0.20	"	"	"	"	"	LZ	
<b>Benzo[fluoranthene]</b>	"	<b>4.2</b>	----	0.41	"	"	"	"	"	LZ	
Benzo[a]pyrene	"	ND	----	0.20	"	"	"	"	"	LZ	
Indeno[1,2,3-cd]pyrene	"	ND	----	0.30	"	"	"	"	"	LZ	
Dibenz(a,h)anthracene	"	ND	----	0.30	"	"	"	"	"	LZ	
Benzo[g,h,i]perylene	"	ND	----	0.30	"	"	"	"	"	LZ	
<i>Surrogate(s): Nitrobenzene-d5</i>				83%		71 - 128 %	"			"	
<i>2-Fluorobiphenyl</i>				60%		67 - 125 %	"			"	X
<i>Terphenyl-d14</i>				120%		70 - 135 %	"			"	

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*Troy Engstrom*

Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Purgeable Organic Compounds by GC/MS**  
 TestAmerica Tacoma

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-08 (08-HUG-NT1)</b>											
<b>Water</b>				<b>Sampled: 07/23/08 18:55</b>							
Benzene	624	ND	----	1.0	ug/L	1x	34638	07/30/08 15:07	07/30/08 15:07	SK	
Toluene	"	ND	----	1.0	"	"	"	"	"	SK	*
Ethylbenzene	"	ND	----	1.0	"	"	"	"	"	SK	
m-Xylene & p-Xylene	"	ND	----	2.0	"	"	"	"	"	SK	
o-Xylene	"	ND	----	1.0	"	"	"	"	"	SK	
Chlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	
1,3-Dichlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	
1,4-Dichlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	
1,2-Dichlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	*
Xylenes, Total	"	ND	----	2.0	"	"	"	"	"	SK	
<hr/>											
<i>Surrogate(s): Fluorobenzene (Surr)</i>				110%		77 - 121 %	"			"	
<i>Trifluorotoluene (Surr)</i>				105%		74 - 123 %	"			"	
<i>Toluene-d8 (Surr)</i>				100%		79 - 122 %	"			"	
<i>Ethylbenzene-d10</i>				94%		78 - 117 %	"			"	
<i>4-Bromofluorobenzene (Surr)</i>				99%		78 - 119 %	"			"	

<b>ARG0078-09 (08-HUG-NT2)</b>											
<b>Water</b>				<b>Sampled: 07/23/08 19:08</b>							
Benzene	624	ND	----	1.0	ug/L	1x	34638	07/30/08 15:29	07/30/08 15:29	SK	
Toluene	"	ND	----	1.0	"	"	"	"	"	SK	*
Ethylbenzene	"	ND	----	1.0	"	"	"	"	"	SK	
m-Xylene & p-Xylene	"	ND	----	2.0	"	"	"	"	"	SK	
o-Xylene	"	ND	----	1.0	"	"	"	"	"	SK	
Chlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	
1,3-Dichlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	
1,4-Dichlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	
1,2-Dichlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	*
Xylenes, Total	"	ND	----	2.0	"	"	"	"	"	SK	
<hr/>											
<i>Surrogate(s): Fluorobenzene (Surr)</i>				110%		77 - 121 %	"			"	
<i>Trifluorotoluene (Surr)</i>				107%		74 - 123 %	"			"	
<i>Toluene-d8 (Surr)</i>				97%		79 - 122 %	"			"	
<i>Ethylbenzene-d10</i>				89%		78 - 117 %	"			"	
<i>4-Bromofluorobenzene (Surr)</i>				98%		78 - 119 %	"			"	

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Troy J. Engstrom, Lab Director



## BGES, INC.

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

## Purgeable Organic Compounds by GC/MS

TestAmerica Tacoma

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
<b>ARG0078-10 (08-HUG-TF)</b>		<b>Water</b>		<b>Sampled: 07/23/08 19:20</b>							
Benzene	624	ND	----	1.0	ug/L	1x	34638	07/30/08 15:51	07/30/08 15:51	SK	
Toluene	"	ND	----	1.0	"	"	"	"	"	SK	*
Ethylbenzene	"	ND	----	1.0	"	"	"	"	"	SK	
m-Xylene & p-Xylene	"	ND	----	2.0	"	"	"	"	"	SK	
<b>o-Xylene</b>	"	<b>1.2</b>	----	1.0	"	"	"	"	"	SK	
Chlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	
1,3-Dichlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	
1,4-Dichlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	
1,2-Dichlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	*
Xylenes, Total	"	ND	----	2.0	"	"	"	"	"	SK	
<i>Surrogate(s): Fluorobenzene (Surr)</i>		<i>109%</i>		<i>77 - 121 %</i>		<i>"</i>		<i>"</i>		<i>"</i>	
<i>Trifluorotoluene (Surr)</i>		<i>103%</i>		<i>74 - 123 %</i>		<i>"</i>		<i>"</i>		<i>"</i>	
<i>Toluene-d8 (Surr)</i>		<i>101%</i>		<i>79 - 122 %</i>		<i>"</i>		<i>"</i>		<i>"</i>	
<i>Ethylbenzene-d10</i>		<i>96%</i>		<i>78 - 117 %</i>		<i>"</i>		<i>"</i>		<i>"</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>102%</i>		<i>78 - 119 %</i>		<i>"</i>		<i>"</i>		<i>"</i>	

<b>ARG0078-12 (Trip Blank)</b>		<b>Water</b>		<b>Sampled: 07/23/08 00:00</b>							
Benzene	624	ND	----	1.0	ug/L	1x	34638	07/30/08 12:54	07/30/08 12:54	SK	
Toluene	"	ND	----	1.0	"	"	"	"	"	SK	*
Ethylbenzene	"	ND	----	1.0	"	"	"	"	"	SK	
m-Xylene & p-Xylene	"	ND	----	2.0	"	"	"	"	"	SK	
o-Xylene	"	ND	----	1.0	"	"	"	"	"	SK	
Chlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	
1,3-Dichlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	
1,4-Dichlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	
1,2-Dichlorobenzene	"	ND	----	1.0	"	"	"	"	"	SK	*
Xylenes, Total	"	ND	----	2.0	"	"	"	"	"	SK	
<i>Surrogate(s): Fluorobenzene (Surr)</i>		<i>109%</i>		<i>77 - 121 %</i>		<i>"</i>		<i>"</i>		<i>"</i>	
<i>Trifluorotoluene (Surr)</i>		<i>108%</i>		<i>74 - 123 %</i>		<i>"</i>		<i>"</i>		<i>"</i>	
<i>Toluene-d8 (Surr)</i>		<i>97%</i>		<i>79 - 122 %</i>		<i>"</i>		<i>"</i>		<i>"</i>	
<i>Ethylbenzene-d10</i>		<i>85%</i>		<i>78 - 117 %</i>		<i>"</i>		<i>"</i>		<i>"</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>100%</i>		<i>78 - 119 %</i>		<i>"</i>		<i>"</i>		<i>"</i>	

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*Troy Engstrom*

Troy J. Engstrom, Lab Director



## BGES, INC.

750 W. 2nd Ave, Ste 104  
Anchorage, AK 99501

Project Name: **YRITWC**  
Project Number: [none]  
Project Manager: Nick Braman

Report Created:  
08/22/08 15:53

## Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO - Laboratory Quality Control Results

TestAmerica Anchorage

QC Batch: 8070094

Soil Preparation Method: EPA 3545

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8070094-BLK1)								Extracted: 07/28/08 08:39						
Diesel Range Organics	AK102/103	ND	---	20.0	mg/kg wet	1x	--	--	--	--	--	--	07/28/08 12:25	
Residual Range Organics	"	ND	---	50.0	"	"	--	--	--	--	--	--	"	
Surrogate(s): 1-Chlorooctadecane		Recovery:	85.1%	Limits: 50-150%		"							07/28/08 12:25	
Triacontane			78.5%	50-150%		"							"	
LCS (8070094-BS1)								Extracted: 07/28/08 08:39						
Diesel Range Organics	AK102/103	137	---	20.0	mg/kg wet	1x	--	130	105%	(75-125)	--	--	07/28/08 12:56	
Residual Range Organics	"	119	---	50.0	"	"	--	128	93.6%	(60-120)	--	--	"	
Surrogate(s): 1-Chlorooctadecane		Recovery:	90.3%	Limits: 60-120%		"							07/28/08 12:56	
Triacontane			78.2%	60-120%		"							"	
LCS Dup (8070094-BSD1)								Extracted: 07/28/08 08:39						
Diesel Range Organics	AK102/103	132	---	20.0	mg/kg wet	1x	--	130	102%	(75-125)	3.26%	(20)	07/28/08 13:27	
Residual Range Organics	"	113	---	50.0	"	"	--	128	88.8%	(60-120)	5.26%	"	"	
Surrogate(s): 1-Chlorooctadecane		Recovery:	86.9%	Limits: 60-120%		"							07/28/08 13:27	
Triacontane			75.1%	60-120%		"							"	
Duplicate (8070094-DUP1)				QC Source: ARG0073-02				Extracted: 07/28/08 08:39						
Diesel Range Organics	AK102/103	ND	---	204	mg/kg dry	10x	ND	--	--	--	11.1%	(20)	07/28/08 12:25	Q6, RL1
Residual Range Organics	"	1030	---	509	"	"	1330	--	--	--	25.0%	"	"	R2, RL1
Surrogate(s): 1-Chlorooctadecane		Recovery:	107%	Limits: 50-150%		"							07/28/08 12:25	
Triacontane			115%	50-150%		"							"	
Matrix Spike (8070094-MS1)				QC Source: ARG0073-02				Extracted: 07/28/08 08:39						
Diesel Range Organics	AK102/103	334	---	210	mg/kg dry	10x	148	136	136%	(75-125)	--	--	07/28/08 13:27	M7, RL1
Residual Range Organics	"	1390	---	525	"	"	1330	134	45.2%	(60-150)	--	--	"	MHA, RL1
Surrogate(s): 1-Chlorooctadecane		Recovery:	121%	Limits: 50-150%		"							07/28/08 13:27	
Triacontane			128%	50-150%		"							"	
Matrix Spike Dup (8070094-MSD1)				QC Source: ARG0073-02				Extracted: 07/28/08 08:39						
Diesel Range Organics	AK102/103	327	---	208	mg/kg dry	10x	148	135	132%	(75-125)	2.35%	(25)	07/28/08 13:59	M7, RL1
Residual Range Organics	"	1420	---	520	"	"	1330	133	73.7%	(60-150)	2.64%	"	"	MHA, RL1
Surrogate(s): 1-Chlorooctadecane		Recovery:	112%	Limits: 50-150%		"							07/28/08 13:59	
Triacontane			115%	50-150%		"							"	

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Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Selected Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results**

TestAmerica Anchorage

**QC Batch: 8070107**

**Soil Preparation Method: EPA 5035**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
---------	--------	--------	------	-----	-------	-----	---------------	-----------	-------	----------	-------	----------	----------	-------

**Blank (8070107-BLK1)**

Extracted: 07/31/08 10:16

Benzene	EPA 8260B	ND	---	0.0133	mg/kg wet	1x	--	--	--	--	--	--	07/31/08 17:37	
Toluene	"	ND	---	0.0333	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.0333	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	0.0500	"	"	--	--	--	--	--	--	"	
Gasoline Range Organics	"	ND	---	3.33	"	"	--	--	--	--	--	--	"	
<i>Surrogate(s): 4-BFB Recovery: 97.8% Limits: 80-120% "</i>														
<i>Dibromofluoromethane 93.6% 80-120% "</i>														
<i>a,a,a-TFT 107% 50-150% "</i>														
<i>Toluene-d8 100% 80-120% "</i>														

**LCS (8070107-BS1)**

Extracted: 07/31/08 10:16

Benzene	EPA 8260B	0.272	---	0.0133	mg/kg wet	1x	--	0.264	103%	(80-120)	--	--	07/31/08 16:29	
Toluene	"	1.89	---	0.0333	"	"	--	1.94	97.8%	"	--	--	"	
Ethylbenzene	"	0.381	---	0.0333	"	"	--	0.404	94.4%	"	--	--	"	
Xylenes (total)	"	2.19	---	0.0500	"	"	--	2.32	94.4%	"	--	--	"	
Gasoline Range Organics	"	21.0	---	3.33	"	"	--	22.0	95.2%	(60-120)	--	--	"	
<i>Surrogate(s): 4-BFB Recovery: 99.2% Limits: 80-120% "</i>														
<i>Dibromofluoromethane 97.7% 80-120% "</i>														
<i>Toluene-d8 102% 80-120% "</i>														
<i>a,a,a-TFT 109% 50-150% "</i>														

**LCS Dup (8070107-BS1)**

Extracted: 07/31/08 10:16

Benzene	EPA 8260B	0.266	---	0.0133	mg/kg wet	1x	--	0.264	101%	(80-120)	2.35% (25)		07/31/08 17:02	
Toluene	"	1.82	---	0.0333	"	"	--	1.94	94.1%	"	3.85%	"	"	
Ethylbenzene	"	0.368	---	0.0333	"	"	--	0.404	91.2%	"	3.47%	"	"	
Xylenes (total)	"	2.13	---	0.0500	"	"	--	2.32	91.8%	"	2.69%	"	"	
Gasoline Range Organics	"	20.8	---	3.33	"	"	--	22.0	94.4%	(60-120)	0.937% (20)		"	
<i>Surrogate(s): 4-BFB Recovery: 99.6% Limits: 80-120% "</i>														
<i>Dibromofluoromethane 97.8% 80-120% "</i>														
<i>a,a,a-TFT 105% 50-150% "</i>														
<i>Toluene-d8 101% 80-120% "</i>														

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*Troy Engstrom*

Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Selected Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results**

TestAmerica Anchorage

**QC Batch: 8070107**

**Soil Preparation Method: EPA 5035**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
---------	--------	--------	------	-----	-------	-----	---------------	-----------	-------	----------	-------	----------	----------	-------

**Duplicate (8070107-DUP1)**

QC Source: ARG0066-05

Extracted: 07/31/08 10:16

Gasoline Range Organics	EPA 8260B	34.1	---	2.16	mg/kg dry	1x	37.0	--	--	--	8.25%	(20)	07/31/08 18:41	
Surrogate(s): 4-BFB		Recovery: 96.4%		Limits: 80-120%	"								07/31/08 18:41	
Dibromofluoromethane		96.2%		80-120%	"								"	
Toluene-d8		102%		80-120%	"								"	
a,a,a-TFT		110%		50-150%	"								"	

**Matrix Spike (8070107-MS1)**

QC Source: ARG0066-05

Extracted: 07/31/08 10:16

Benzene	EPA 8260B	0.379	---	0.00866	mg/kg dry	1x	0.00563	0.409	91.3%	(69.3-190)	--	--	07/31/08 19:16	
Toluene	"	0.388	---	0.0216	"	"	0.0303	0.391	91.3%	(79.9-196)	--	--	"	
Ethylbenzene	"	0.371	---	0.0216	"	"	0.00757	0.393	92.5%	(79.1-192)	--	--	"	
Xylenes (total)	"	1.22	---	0.0325	"	"	0.100	1.18	94.2%	(80-204)	--	--	"	
Surrogate(s): 4-BFB		Recovery: 97.7%		Limits: 80-120%	"								07/31/08 19:16	
Dibromofluoromethane		97.3%		80-120%	"								"	
Toluene-d8		102%		80-120%	"								"	
a,a,a-TFT		110%		50-150%	"								"	

**Matrix Spike Dup (8070107-MSD1)**

QC Source: ARG0066-05

Extracted: 07/31/08 10:16

M8, R2

Benzene	EPA 8260B	0.264	---	0.00866	mg/kg dry	1x	0.00563	0.409	63.0%	(69.3-190)	36.0%	(25)	07/31/08 19:50	
Toluene	"	0.279	---	0.0216	"	"	0.0303	0.391	63.6%	(79.9-196)	32.6%	"	"	
Ethylbenzene	"	0.259	---	0.0216	"	"	0.00757	0.393	63.9%	(79.1-192)	35.6%	"	"	
Xylenes (total)	"	0.868	---	0.0325	"	"	0.100	1.18	64.8%	(80-204)	33.4%	"	"	
Surrogate(s): 4-BFB		Recovery: 96.0%		Limits: 80-120%	"								07/31/08 19:50	
Dibromofluoromethane		96.2%		80-120%	"								"	
a,a,a-TFT		107%		50-150%	"								"	
Toluene-d8		103%		80-120%	"								"	

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Troy J. Engstrom, Lab Director



## BGES, INC.

750 W. 2nd Ave, Ste 104  
Anchorage, AK 99501

Project Name: **YRITWC**  
Project Number: [none]  
Project Manager: Nick Braman

Report Created:  
08/22/08 15:53

## Selected Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Anchorage

QC Batch: 8080003

Soil Preparation Method: EPA 5035

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
---------	--------	--------	------	-----	-------	-----	---------------	-----------	-------	----------	-------	----------	----------	-------

### Blank (8080003-BLK1)

Extracted: 08/01/08 11:12

Benzene	EPA 8260B	ND	---	0.0133	mg/kg wet	1x	--	--	--	--	--	--	08/01/08 19:06	
Toluene	"	ND	---	0.0333	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.0333	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	0.0500	"	"	--	--	--	--	--	--	"	
Gasoline Range Organics	"	ND	---	3.33	"	"	--	--	--	--	--	--	"	
<i>Surrogate(s): 4-BFB Recovery: 97.6% Limits: 80-120% "</i>														
<i>Dibromofluoromethane 95.6% 80-120% "</i>														
<i>Toluene-d8 100% 80-120% "</i>														
<i>a,a,a-TFT 113% 50-150% "</i>														

### LCS (8080003-BS1)

Extracted: 08/01/08 11:12

Benzene	EPA 8260B	0.266	---	0.0133	mg/kg wet	1x	--	0.264	101%	(80-120)	--	--	08/01/08 17:57	
Toluene	"	1.84	---	0.0333	"	"	--	1.94	94.8%	"	--	--	"	
Ethylbenzene	"	0.370	---	0.0333	"	"	--	0.404	91.7%	"	--	--	"	
Xylenes (total)	"	2.14	---	0.0500	"	"	--	2.32	92.5%	"	--	--	"	
Gasoline Range Organics	"	20.9	---	3.33	"	"	--	22.0	95.2%	(60-120)	--	--	"	
<i>Surrogate(s): 4-BFB Recovery: 98.0% Limits: 80-120% "</i>														
<i>Dibromofluoromethane 97.6% 80-120% "</i>														
<i>a,a,a-TFT 106% 50-150% "</i>														
<i>Toluene-d8 100% 80-120% "</i>														

### LCS Dup (8080003-BS1)

Extracted: 08/01/08 11:12

Benzene	EPA 8260B	0.262	---	0.0133	mg/kg wet	1x	--	0.264	99.3%	(80-120)	1.51% (25)		08/01/08 18:32	
Toluene	"	1.79	---	0.0333	"	"	--	1.94	92.5%	"	2.50% "		"	
Ethylbenzene	"	0.361	---	0.0333	"	"	--	0.404	89.4%	"	2.46% "		"	
Xylenes (total)	"	2.07	---	0.0500	"	"	--	2.32	89.6%	"	3.24% "		"	
Gasoline Range Organics	"	22.2	---	3.33	"	"	--	22.0	101%	(60-120)	5.93% (20)		"	
<i>Surrogate(s): 4-BFB Recovery: 98.6% Limits: 80-120% "</i>														
<i>Dibromofluoromethane 97.5% 80-120% "</i>														
<i>Toluene-d8 99.5% 80-120% "</i>														
<i>a,a,a-TFT 103% 50-150% "</i>														

TestAmerica Anchorage

*Troy Engstrom*

Troy J. Engstrom, Lab Director

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**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Selected Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results**

TestAmerica Anchorage

**QC Batch: 8080003**

**Soil Preparation Method: EPA 5035**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
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**Duplicate (8080003-DUP1)**

QC Source: ARG0079-03

Extracted: 08/01/08 11:12

Gasoline Range Organics	EPA 8260B	ND	---	2.98	mg/kg dry	1x	ND	--	--	--	NR	(20)	08/01/08 21:56	
Surrogate(s): 4-BFB		Recovery: 98.8%		Limits: 80-120%	"								08/01/08 21:56	
Dibromofluoromethane		96.8%		80-120%	"								"	
Toluene-d8		100%		80-120%	"								"	
a,a,a-TFT		110%		50-150%	"								"	

**Matrix Spike (8080003-MS1)**

QC Source: ARG0079-03

Extracted: 08/01/08 11:12

Benzene	EPA 8260B	0.741	---	0.0119	mg/kg dry	1x	ND	0.542	137%	(69.3-190)	--	--	08/02/08 17:00	
Toluene	"	0.726	---	0.0298	"	"	0.0224	0.518	136%	(79.9-196)	--	--	"	
Ethylbenzene	"	0.715	---	0.0298	"	"	0.00686	0.521	136%	(79.1-192)	--	--	"	
Xylenes (total)	"	2.27	---	0.0447	"	"	0.0465	1.57	142%	(80-204)	--	--	"	
Surrogate(s): 4-BFB		Recovery: 98.6%		Limits: 80-120%	"								08/02/08 17:00	
Dibromofluoromethane		96.8%		80-120%	"								"	
a,a,a-TFT		108%		50-150%	"								"	
Toluene-d8		101%		80-120%	"								"	

**Matrix Spike Dup (8080003-MSD1)**

QC Source: ARG0079-03

Extracted: 08/01/08 11:12

R2

Benzene	EPA 8260B	1.00	---	0.0119	mg/kg dry	1x	ND	0.542	185%	(69.3-190)	30.1%	(25)	08/02/08 17:33	
Toluene	"	0.955	---	0.0298	"	"	0.0224	0.518	180%	(79.9-196)	27.3%	"	"	
Ethylbenzene	"	0.964	---	0.0298	"	"	0.00686	0.521	184%	(79.1-192)	29.6%	"	"	
Xylenes (total)	"	3.01	---	0.0447	"	"	0.0465	1.57	189%	(80-204)	28.0%	"	"	
Surrogate(s): 4-BFB		Recovery: 99.3%		Limits: 80-120%	"								08/02/08 17:33	
Dibromofluoromethane		95.8%		80-120%	"								"	
a,a,a-TFT		112%		50-150%	"								"	
Toluene-d8		99.6%		80-120%	"								"	

TestAmerica Anchorage

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Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Physical Parameters by APHA/ASTM/EPA Methods - Laboratory Quality Control Results**

TestAmerica Anchorage

QC Batch: 8070097

Soil Preparation Method: \*\*\* DEFAULT PREP

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Duplicate (8070097-DUP1)</b>			QC Source: ARG0078-07					Extracted: 07/28/08 14:10						
Dry Weight	TA-SOP	87.9	---	1.00	%	1x	88.0	--	--	--	0.0484% (25)		07/29/08 08:40	

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750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Gasoline Range Organics (C6-C10) per AK101 - Laboratory Quality Control Results**

TestAmerica Portland

**QC Batch: 8071023**

**Soil Preparation Method: EPA 5035 Modified**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes	
Blank (8071023-BLK1)							Extracted: 07/29/08 14:00								
Gasoline Range Organics	AK101 GRO	ND	---	3.93	mg/kg wet	1x	--	--	--	--	--	--	07/30/08 14:55		
Surrogate(s): a,a,a-TFT (FID)		Recovery:	99.9%	Limits: 50-150%		"		07/30/08 14:55							
LCS (8071023-BS2)							Extracted: 07/29/08 14:00								
Gasoline Range Organics	AK101 GRO	24.1	---	3.98	mg/kg wet	1x	--	24.9	97.0%	(60-120)	--	--	07/30/08 13:59		
Surrogate(s): a,a,a-TFT (FID)		Recovery:	103%	Limits: 60-120%		"		07/30/08 13:59							
LCS Dup (8071023-BSD2)							Extracted: 07/29/08 14:00								
Gasoline Range Organics	AK101 GRO	24.2	---	3.98	mg/kg wet	1x	--	24.9	97.2%	(60-120)	0.199% (20)		07/30/08 14:27		
Surrogate(s): a,a,a-TFT (FID)		Recovery:	102%	Limits: 60-120%		"		07/30/08 14:27							
Duplicate (8071023-DUP1)				QC Source: PRG0846-01				Extracted: 07/29/08 14:00							
Gasoline Range Organics	AK101 GRO	ND	---	4.43	mg/kg dry	1x	ND	--	--	--	NR (50)		07/29/08 22:20		
Surrogate(s): a,a,a-TFT (FID)		Recovery:	82.8%	Limits: 50-150%		"		07/29/08 22:20							
Duplicate (8071023-DUP2)				QC Source: PRG0846-02				Extracted: 07/29/08 14:00							
Gasoline Range Organics	AK101 GRO	27.2	---	4.40	mg/kg dry	1x	27.9	--	--	--	2.33% (50)		07/29/08 23:15		
Surrogate(s): a,a,a-TFT (FID)		Recovery:	85.8%	Limits: 50-150%		"		07/29/08 23:15							
Matrix Spike (8071023-MS2)				QC Source: PRG0849-05				Extracted: 07/29/08 14:00							
Gasoline Range Organics	AK101 GRO	28.1	---	5.30	mg/kg dry	1x	ND	17.2	163%	(50-150)	--	--	07/31/08 00:21	S14	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	79.4%	Limits: 50-150%		"		07/31/08 00:21							ZX
Matrix Spike Dup (8071023-MSD2)				QC Source: PRG0849-05				Extracted: 07/29/08 14:00							
Gasoline Range Organics	AK101 GRO	29.5	---	5.30	mg/kg dry	1x	ND	17.2	171%	(50-150)	4.71% (20)		07/31/08 00:49	S14	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	74.7%	Limits: 50-150%		"		07/31/08 00:49							

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**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Total Metals per EPA 6000/7000 Series Methods - Laboratory Quality Control Results**

TestAmerica Portland

QC Batch: 8071121

Soil Preparation Method: EPA 3050

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (8071121-BLK1)</b>							Extracted: 07/31/08 07:42							
Arsenic	EPA 6020	ND	---	0.510	mg/kg wet	1x	--	--	--	--	--	--	07/31/08 19:56	
Barium	"	ND	---	0.510	"	"	--	--	--	--	--	--	"	
Cadmium	"	ND	---	0.510	"	"	--	--	--	--	--	--	"	
Chromium	"	ND	---	0.510	"	"	--	--	--	--	--	--	"	
Lead	"	ND	---	0.510	"	"	--	--	--	--	--	--	"	
Selenium	"	ND	---	0.510	"	"	--	--	--	--	--	--	"	
Silver	"	ND	---	0.510	"	"	--	--	--	--	--	--	"	
<b>LCS (8071121-BS1)</b>							Extracted: 07/31/08 07:42							
Arsenic	EPA 6020	10.3	---	0.515	mg/kg wet	1x	--	10.3	99.6%	(80-120)	--	--	07/31/08 20:03	
Barium	"	9.90	---	0.515	"	"	--	"	96.0%	"	--	--	"	
Cadmium	"	9.94	---	0.515	"	"	--	"	96.4%	"	--	--	"	
Chromium	"	10.6	---	0.515	"	"	--	"	102%	"	--	--	"	
Lead	"	10.5	---	0.515	"	"	--	"	102%	"	--	--	"	
Selenium	"	10.1	---	0.515	"	"	--	"	97.6%	"	--	--	"	
Silver	"	4.90	---	0.515	"	"	--	5.15	95.1%	"	--	--	"	
<b>Duplicate (8071121-DUP1)</b>							QC Source: PRG0898-19		Extracted: 07/31/08 07:42					
Arsenic	EPA 6020	ND	---	0.943	mg/kg wet	1x	ND	--	--	--	11.5%	(40)	07/31/08 20:18	
Barium	"	10.8	---	0.943	"	"	11.1	--	--	--	2.88%	"	"	
Cadmium	"	ND	---	0.943	"	"	ND	--	--	--	NR	"	"	
Chromium	"	2.35	---	0.943	"	"	2.56	--	--	--	8.70%	"	"	
Lead	"	0.977	---	0.943	"	"	1.03	--	--	--	5.57%	"	"	
Selenium	"	ND	---	0.943	"	"	ND	--	--	--	28.6%	"	"	
Silver	"	ND	---	0.943	"	"	ND	--	--	--	NR	"	"	
<b>Matrix Spike (8071121-MS1)</b>							QC Source: PRG0898-19		Extracted: 07/31/08 07:42					
Arsenic	EPA 6020	20.7	---	0.962	mg/kg wet	1x	0.692	19.2	104%	(75-125)	--	--	07/31/08 20:32	
Barium	"	31.2	---	0.962	"	"	11.1	"	105%	"	--	--	"	
Cadmium	"	19.1	---	0.962	"	"	ND	"	99.2%	"	--	--	"	
Chromium	"	22.0	---	0.962	"	"	2.56	"	101%	"	--	--	"	
Lead	"	20.5	---	0.962	"	"	1.03	"	101%	"	--	--	"	
Selenium	"	22.8	---	0.962	"	"	0.151	"	118%	"	--	--	"	
Silver	"	9.23	---	0.962	"	"	ND	9.62	96.0%	"	--	--	"	

TestAmerica Anchorage

*Troy Engstrom*

Troy J. Engstrom, Lab Director

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**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Total Metals per EPA 6000/7000 Series Methods - Laboratory Quality Control Results**

TestAmerica Portland

QC Batch: 8071121

Soil Preparation Method: EPA 3050

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Matrix Spike (8071121-MS2)</b>			QC Source: PRG0898-29					Extracted: 07/31/08 07:42						
Arsenic	EPA 6020	20.9	---	1.02	mg/kg wet	1x	0.470	20.4	100%	(75-125)	--	--	07/31/08 22:14	
Barium	"	39.6	---	1.02	"	"	21.0	"	91.0%	"	--	--	"	
Cadmium	"	19.8	---	1.02	"	"	ND	"	96.9%	"	--	--	"	
Chromium	"	22.1	---	1.02	"	"	1.72	"	99.9%	"	--	--	"	
Lead	"	20.7	---	1.02	"	"	0.610	"	98.6%	"	--	--	"	
Selenium	"	22.7	---	1.02	"	"	0.107	"	111%	"	--	--	"	
Silver	"	9.53	---	1.02	"	"	ND	10.2	93.4%	"	--	--	"	

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Troy J. Engstrom, Lab Director

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**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Total Mercury per EPA Method 7471A - Laboratory Quality Control Results**

TestAmerica Portland

**QC Batch: 8071050**

**Soil Preparation Method: EPA 7471A**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (8071050-BLK1)								Extracted: 07/29/08 15:46						
Mercury	EPA 7471A	ND	---	0.100	mg/kg wet	1x	--	--	--	--	--	--	07/30/08 10:27	
LCS (8071050-BS1)								Extracted: 07/29/08 15:46						
Mercury	EPA 7471A	1.04	---	0.100	mg/kg wet	1x	--	1.00	104%	(80-120)	--	--	07/30/08 10:29	
LCS Dup (8071050-BSD1)								Extracted: 07/29/08 15:46						
Mercury	EPA 7471A	1.07	---	0.100	mg/kg wet	1x	--	1.00	107%	(80-120)	2.83%	(20)	07/30/08 10:33	
Duplicate (8071050-DUP1)				QC Source: ARG0078-01				Extracted: 07/29/08 15:46						
Mercury	EPA 7471A	ND	---	0.0960	mg/kg dry	1x	ND	--	--	--	NR	(40)	07/30/08 10:37	
Matrix Spike (8071050-MS1)				QC Source: ARG0078-01				Extracted: 07/29/08 15:46						
Mercury	EPA 7471A	1.03	---	0.0992	mg/kg dry	1x	ND	0.992	104%	(75-125)	--	--	07/30/08 10:39	
Matrix Spike Dup (8071050-MSD1)				QC Source: ARG0078-01				Extracted: 07/29/08 15:46						
Mercury	EPA 7471A	1.00	---	0.0920	mg/kg dry	1x	ND	0.920	109%	(75-125)	2.64%	(40)	07/30/08 10:44	

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Troy J. Engstrom, Lab Director

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**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results**

TestAmerica Portland

**QC Batch: 8071076**

**Soil Preparation Method: EPA 5035A**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (8071076-BLK1)</b>							Extracted: 07/30/08 08:10							
Acetone	EPA 8260B	ND	---	2490	ug/kg wet	1x	--	--	--	--	--	--	07/31/08 13:47	
Benzene	"	ND	---	19.9	"	"	--	--	--	--	--	--	"	
Bromobenzene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Bromochloromethane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Bromodichloromethane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Bromoform	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Bromomethane	"	ND	---	497	"	"	--	--	--	--	--	--	"	
2-Butanone (MEK)	"	ND	---	994	"	"	--	--	--	--	--	--	"	
n-Butylbenzene	"	ND	---	497	"	"	--	--	--	--	--	--	"	
sec-Butylbenzene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
tert-Butylbenzene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Carbon disulfide	"	ND	---	994	"	"	--	--	--	--	--	--	"	
Carbon tetrachloride	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Chlorobenzene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Chloroethane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Chloroform	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Chloromethane	"	ND	---	497	"	"	--	--	--	--	--	--	"	
2-Chlorotoluene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
4-Chlorotoluene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,2-Dibromo-3-chloropropane	"	ND	---	497	"	"	--	--	--	--	--	--	"	
Dibromochloromethane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,2-Dibromoethane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Dibromomethane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,2-Dichlorobenzene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,3-Dichlorobenzene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,4-Dichlorobenzene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Dichlorodifluoromethane	"	ND	---	497	"	"	--	--	--	--	--	--	"	
1,1-Dichloroethane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,2-Dichloroethane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,1-Dichloroethene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
cis-1,2-Dichloroethene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
trans-1,2-Dichloroethene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,2-Dichloropropane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,3-Dichloropropane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
2,2-Dichloropropane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,1-Dichloropropene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
cis-1,3-Dichloropropene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
trans-1,3-Dichloropropene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	

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Troy J. Engstrom, Lab Director



## BGES, INC.

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

## Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 8071076

Soil Preparation Method: EPA 5035A

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (8071076-BLK1)</b>										Extracted: 07/30/08 08:10				
Hexachlorobutadiene	EPA 8260B	ND	---	398	ug/kg wet	1x	--	--	--	--	--	--	07/31/08 13:47	
2-Hexanone	"	ND	---	994	"	"	--	--	--	--	--	--	"	
Isopropylbenzene	"	ND	---	199	"	"	--	--	--	--	--	--	"	
p-Isopropyltoluene	"	ND	---	199	"	"	--	--	--	--	--	--	"	
4-Methyl-2-pentanone	"	ND	---	497	"	"	--	--	--	--	--	--	"	
Methyl tert-butyl ether	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Methylene chloride	"	ND	---	497	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	---	199	"	"	--	--	--	--	--	--	"	
n-Propylbenzene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Styrene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,1,1,2-Tetrachloroethane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,1,2,2-Tetrachloroethane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Tetrachloroethene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Toluene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,2,3-Trichlorobenzene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,2,4-Trichlorobenzene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,1,1-Trichloroethane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,1,2-Trichloroethane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Trichloroethene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Trichlorofluoromethane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,2,3-Trichloropropane	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,2,4-Trimethylbenzene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
1,3,5-Trimethylbenzene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
Vinyl chloride	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
o-Xylene	"	ND	---	99.4	"	"	--	--	--	--	--	--	"	
m,p-Xylene	"	ND	---	199	"	"	--	--	--	--	--	--	"	

Surrogate(s):	4-BFB	Recovery:	99.7%	Limits:	75-125%	0.01x	07/31/08 13:47
	1,2-DCA-d4		102%		75-125%	"	"
	Dibromofluoromethane		100%		75-125%	"	"
	Toluene-d8		100%		75-125%	"	"

TestAmerica Anchorage



Troy J. Engstrom, Lab Director

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## BGES, INC.

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

## Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 8071076

Soil Preparation Method: EPA 5035A

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
---------	--------	--------	------	-----	-------	-----	---------------	-----------	-------	----------	-------	----------	----------	-------

### LCS (8071076-BS1)

Extracted: 07/30/08 08:10

Benzene	EPA 8260B	1840	---	19.8	ug/kg wet	1x	--	1980	93.1%	(81.9-125)	--	--	07/31/08 11:56	
Chlorobenzene	"	1820	---	98.9	"	"	--	"	91.9%	(79.2-125)	--	--	"	
1,1-Dichloroethene	"	1780	---	98.9	"	"	--	"	89.9%	(66.1-125)	--	--	"	
Toluene	"	1840	---	98.9	"	"	--	"	93.2%	(80-125)	--	--	"	
Trichloroethene	"	1810	---	98.9	"	"	--	"	91.5%	(76-125)	--	--	"	
<i>Surrogate(s): 4-BFB Recovery: 103% Limits: 75-125% 0.01x 07/31/08 11:56</i>														
<i>1,2-DCA-d4 97.4% 75-125% " "</i>														
<i>Dibromofluoromethane 101% 75-125% " "</i>														
<i>Toluene-d8 100% 75-125% " "</i>														

### Matrix Spike (8071076-MS1)

QC Source: PRG0860-09

Extracted: 07/30/08 08:10

Benzene	EPA 8260B	1350	---	13.1	ug/kg wet	1x	9.15	1310	102%	(68.5-150)	--	--	07/31/08 12:24	
Chlorobenzene	"	1320	---	65.4	"	"	ND	"	101%	(65.9-150)	--	--	"	
1,1-Dichloroethene	"	1300	---	65.4	"	"	ND	"	99.5%	(55.8-150)	--	--	"	
Toluene	"	1420	---	65.4	"	"	77.1	"	102%	(70.3-150)	--	--	"	
Trichloroethene	"	1320	---	65.4	"	"	ND	"	101%	(65.5-150)	--	--	"	
<i>Surrogate(s): 4-BFB Recovery: 108% Limits: 75-125% 0.01x 07/31/08 12:24</i>														
<i>1,2-DCA-d4 102% 75-125% " "</i>														
<i>Dibromofluoromethane 106% 75-125% " "</i>														
<i>Toluene-d8 106% 75-125% " "</i>														

### Matrix Spike Dup (8071076-MSD1)

QC Source: PRG0860-09

Extracted: 07/30/08 08:10

Benzene	EPA 8260B	1200	---	13.1	ug/kg wet	1x	9.15	1310	91.5%	(68.5-150)	11.1% (25)		07/31/08 12:52	
Chlorobenzene	"	1220	---	65.4	"	"	ND	"	92.9%	(65.9-150)	8.50%	"	"	
1,1-Dichloroethene	"	1150	---	65.4	"	"	ND	"	88.2%	(55.8-150)	12.0%	"	"	
Toluene	"	1310	---	65.4	"	"	77.1	"	94.4%	(70.3-150)	7.81%	"	"	
Trichloroethene	"	1190	---	65.4	"	"	ND	"	90.7%	(65.5-150)	10.7%	"	"	
<i>Surrogate(s): 4-BFB Recovery: 103% Limits: 75-125% 0.01x 07/31/08 12:52</i>														
<i>1,2-DCA-d4 98.6% 75-125% " "</i>														
<i>Dibromofluoromethane 100% 75-125% " "</i>														
<i>Toluene-d8 101% 75-125% " "</i>														

TestAmerica Anchorage

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*Troy Engstrom*

Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results**

TestAmerica Portland

**QC Batch: 8071137**

**Soil Preparation Method: EPA 3550**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (8071137-BLK1)</b>										Extracted: 07/31/08 14:25				
Acenaphthene	EPA 8270m	ND	---	13.3	ug/kg wet	1x	--	--	--	--	--	--	08/05/08 20:48	
Acenaphthylene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Anthracene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Benzo (a) anthracene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Benzo (a) pyrene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Benzo (b) fluoranthene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Benzo (ghi) perylene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Benzo (k) fluoranthene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Chrysene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Dibenzo (a,h) anthracene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Fluoranthene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Fluorene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Indeno (1,2,3-cd) pyrene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Phenanthrene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
Pyrene	"	ND	---	13.3	"	"	--	--	--	--	--	--	"	
<hr/>														
Surrogate(s): Fluorene-d10		Recovery:	51.0%	Limits:	24-125%	"							08/05/08 20:48	
Pyrene-d10			77.0%		41-141%	"							"	
Benzo (a) pyrene-d12			100%		38-143%	"							"	

**LCS (8071137-BS1)**

Extracted: 07/31/08 14:25

MNR

Acenaphthene	EPA 8270m	170	---	13.3	ug/kg wet	1x	--	166	102%	(33-139)	--	--	08/05/08 21:20	
Benzo (a) pyrene	"	185	---	13.3	"	"	--	"	112%	(45-149)	--	--	"	
Pyrene	"	144	---	13.3	"	"	--	"	86.6%	(39-138)	--	--	"	
<hr/>														
Surrogate(s): Fluorene-d10		Recovery:	55.0%	Limits:	24-125%	"							08/05/08 21:20	
Pyrene-d10			71.3%		41-141%	"							"	
Benzo (a) pyrene-d12			96.8%		38-143%	"							"	

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Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Percent Dry Weight (Solids) per Standard Methods - Laboratory Quality Control Results**

TestAmerica Portland

**QC Batch: 8080051**

**Other dry Preparation Method: Dry Weight**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Duplicate (8080051-DUP1)</b>			<b>QC Source: PRG0759-42</b>					<b>Extracted: 08/04/08 09:28</b>						
% Solids	NCA SOP	73.5	---	0.0100	% by Weight	1x	76.8	--	--	--	4.39% (20)		08/04/08 09:28	

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Troy J. Engstrom, Lab Director

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750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

## PAH - Laboratory Quality Control Results

TestAmerica Tacoma

QC Batch: 34644

Water Preparation Method: CWA\_Prep

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (580-35255-1)</b>			QC Source:				Extracted: 07/30/08 14:41							
Naphthalene	625	ND	---	2.0	ug/L	1x	--	--	--	--	--	--	08/13/08 18:55	
2-Methylnaphthalene	"	ND	---	1.0	"	"	--	--	--	--	--	--	"	
1-Methylnaphthalene	"	ND	---	0.30	"	"	--	--	--	--	--	--	"	
Acenaphthylene	"	ND	---	0.40	"	"	--	--	--	--	--	--	"	
Acenaphthene	"	ND	---	0.50	"	"	--	--	--	--	--	--	"	
Fluorene	"	ND	---	0.30	"	"	--	--	--	--	--	--	"	
Phenanthrene	"	ND	---	0.40	"	"	--	--	--	--	--	--	"	
Anthracene	"	ND	---	0.20	"	"	--	--	--	--	--	--	"	
Fluoranthene	"	ND	---	0.25	"	"	--	--	--	--	--	--	"	
Pyrene	"	ND	---	0.30	"	"	--	--	--	--	--	--	"	
Benzo[a]anthracene	"	ND	---	0.30	"	"	--	--	--	--	--	--	"	
Chrysene	"	ND	---	0.20	"	"	--	--	--	--	--	--	"	
Benzo[fluoranthene	"	ND	---	0.40	"	"	--	--	--	--	--	--	"	
Benzo[a]pyrene	"	ND	---	0.20	"	"	--	--	--	--	--	--	"	
Indeno[1,2,3-cd]pyrene	"	ND	---	0.30	"	"	--	--	--	--	--	--	"	
Dibenz[a,h]anthracene	"	ND	---	0.30	"	"	--	--	--	--	--	--	"	
Benzo[g,h,i]perylene	"	ND	---	0.30	"	"	--	--	--	--	--	--	"	
Surrogate(s): Nitrobenzene-d5		Recovery:	72%	Limits:	71-128%	"								08/13/08 18:55
2-Fluorobiphenyl			74%		67-125%	"								"
Terphenyl-d14			84%		70-135%	"								"

## LCS (580-35255-2)

			QC Source:				Extracted: 07/30/08 14:41							
Naphthalene	625	7.07	---	2.0	ug/L	1x	--	10.0	71%	(21-133)	--	--	08/13/08 19:15	
1-Methylnaphthalene	"	7.22	---	0.30	"	"	--	"	72%	(20-150)	--	--	"	
Acenaphthylene	"	7.20	---	0.40	"	"	--	"	72%	(33-145)	--	--	"	
Acenaphthene	"	7.17	---	0.50	"	"	--	"	72%	(47-145)	--	--	"	
Fluorene	"	7.45	---	0.30	"	"	--	"	74%	(59-121)	--	--	"	
Phenanthrene	"	7.18	---	0.40	"	"	--	"	72%	(54-120)	--	--	"	
Anthracene	"	7.27	---	0.20	"	"	--	"	73%	(27-133)	--	--	"	
Fluoranthene	"	7.83	---	0.25	"	"	--	"	78%	(26-137)	--	--	"	
Pyrene	"	8.16	---	0.30	"	"	--	"	82%	(52-115)	--	--	"	
Benzo[a]anthracene	"	6.89	---	0.30	"	"	--	"	69%	(33-143)	--	--	"	
Chrysene	"	7.22	---	0.20	"	"	--	"	72%	(17-168)	--	--	"	
Benzo[fluoranthene	"	13.6	---	0.40	"	"	--	20.0	68%	(46-153)	--	--	"	
Benzo[a]pyrene	"	6.94	---	0.20	"	"	--	10.0	69%	(17-163)	--	--	"	
Indeno[1,2,3-cd]pyrene	"	7.47	---	0.30	"	"	--	"	75%	(1-171)	--	--	"	
Dibenz[a,h]anthracene	"	7.14	---	0.30	"	"	--	"	71%	(1-227)	--	--	"	
Benzo[g,h,i]perylene	"	7.35	---	0.30	"	"	--	"	73%	(1-219)	--	--	"	
Surrogate(s): Nitrobenzene-d5		Recovery:	75%	Limits:	71-128%	"								08/13/08 19:15

TestAmerica Anchorage

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*Troy Engstrom*

Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**PAH - Laboratory Quality Control Results**

TestAmerica Tacoma

**QC Batch: 34644**

**Water Preparation Method: CWA\_Prep**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>LCS (580-35255-2)</b>			<b>QC Source:</b>					<b>Extracted: 07/30/08 14:41</b>						
Surrogate(s):	2-Fluorobiphenyl	Recovery:	76%	Limits:	67-125%	1x							08/13/08 19:15	
	Terphenyl-d14		87%		70-135%	"							"	

TestAmerica Anchorage



Troy J. Engstrom, Lab Director

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**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Purgeable Organic Compounds by GC/MS - Laboratory Quality Control Results**

TestAmerica Tacoma

**QC Batch: 34638**

**Water Preparation Method: NA**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (580-34638-1)</b>			QC Source:					Extracted: 07/30/08 11:05						
Benzene	624	ND	---	1.0	ug/L	1x	--	--	--	--	--	--	07/30/08 11:05	
Toluene	"	ND	---	1.0	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	1.0	"	"	--	--	--	--	--	--	"	
m-Xylene & p-Xylene	"	ND	---	2.0	"	"	--	--	--	--	--	--	"	
o-Xylene	"	ND	---	1.0	"	"	--	--	--	--	--	--	"	
Chlorobenzene	"	ND	---	1.0	"	"	--	--	--	--	--	--	"	
1,3-Dichlorobenzene	"	ND	---	1.0	"	"	--	--	--	--	--	--	"	
1,4-Dichlorobenzene	"	ND	---	1.0	"	"	--	--	--	--	--	--	"	
1,2-Dichlorobenzene	"	ND	---	1.0	"	"	--	--	--	--	--	--	"	
Xylenes, Total	"	ND	---	2.0	"	"	--	--	--	--	--	--	"	
Surrogate(s): Fluorobenzene (Surr) Recovery: 112% Limits: 77-121% "														
Trifluorotoluene (Surr) 108% 74-123% "														
Toluene-d8 (Surr) 98% 79-122% "														
Ethylbenzene-d10 84% 78-117% "														
4-Bromofluorobenzene (Surr) 100% 78-119% "														

**LCS (580-34638-12)**

			QC Source:					Extracted: 07/30/08 18:46						
Benzene	624	5.59	---	1.0	ug/L	1x	--	5.00	112%	(76-114)	--	--	07/30/08 18:46	
Toluene	"	5.94	---	1.0	"	"	--	"	119%	(79-110)	--	--	"	*
Ethylbenzene	"	5.39	---	1.0	"	"	--	"	108%	(86-109)	--	--	"	
m-Xylene & p-Xylene	"	10.3	---	2.0	"	"	--	9.96	103%	(78-114)	--	--	"	
o-Xylene	"	4.54	---	1.0	"	"	--	4.95	92%	(77-116)	--	--	"	
Chlorobenzene	"	5.61	---	1.0	"	"	--	5.00	112%	(83-115)	--	--	"	
1,3-Dichlorobenzene	"	5.43	---	1.0	"	"	--	"	109%	(79-110)	--	--	"	
1,4-Dichlorobenzene	"	5.23	---	1.0	"	"	--	"	105%	(82-111)	--	--	"	
1,2-Dichlorobenzene	"	5.40	---	1.0	"	"	--	4.99	108%	"	--	--	"	
Surrogate(s): Fluorobenzene (Surr) Recovery: 108% Limits: 77-121% "														
Trifluorotoluene (Surr) 107% 74-123% "														
Toluene-d8 (Surr) 119% 79-122% "														
Ethylbenzene-d10 114% 78-117% "														
4-Bromofluorobenzene (Surr) 124% 78-119% "														

X

TestAmerica Anchorage

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*Troy Engstrom*

Troy J. Engstrom, Lab Director



**BGES, INC.**

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

**Purgeable Organic Compounds by GC/MS - Laboratory Quality Control Results**

TestAmerica Tacoma

**QC Batch: 34638**

**Water Preparation Method: NA**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>LCS Dup (580-34638-13)</b>			<b>QC Source:</b>				<b>Extracted: 07/30/08 19:08</b>							
Benzene	624	5.64	---	1.0	ug/L	1x	--	5.00	113%	(76-114)	1%	(30)	07/30/08 19:08	
Toluene	"	6.04	---	1.0	"	"	--	"	121%	(79-110)	2%	"	"	*
Ethylbenzene	"	5.33	---	1.0	"	"	--	"	107%	(86-109)	1%	"	"	
m-Xylene & p-Xylene	"	10.3	---	2.0	"	"	--	9.96	104%	(78-114)	1%	"	"	
o-Xylene	"	4.56	---	1.0	"	"	--	4.95	92%	(77-116)	0%	"	"	
Chlorobenzene	"	5.54	---	1.0	"	"	--	5.00	111%	(83-115)	1%	"	"	
1,3-Dichlorobenzene	"	5.47	---	1.0	"	"	--	"	109%	(79-110)	1%	"	"	
1,4-Dichlorobenzene	"	5.30	---	1.0	"	"	--	"	106%	(82-111)	1%	"	"	
1,2-Dichlorobenzene	"	5.67	---	1.0	"	"	--	4.99	114%	"	5%	"	"	*
<hr/>														
Surrogate(s):	Fluorobenzene (Surr)	Recovery:	109%	Limits:	77-121%	"	07/30/08 19:08							
	Trifluorotoluene (Surr)		109%		74-123%	"	"							
	Toluene-d8 (Surr)		119%		79-122%	"	"							
	Ethylbenzene-d10		112%		78-117%	"	"							
	4-Bromofluorobenzene (Surr)		119%		78-119%	"	"							

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Troy J. Engstrom, Lab Director

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## BGES, INC.

750 W. 2nd Ave, Ste 104  
 Anchorage, AK 99501

Project Name: **YRITWC**  
 Project Number: [none]  
 Project Manager: Nick Braman

Report Created:  
 08/22/08 15:53

## Notes and Definitions

### Report Specific Notes:

- \* - LCS or LCSD exceeds the control limits
- M7 - The MS and/or MSD were above the acceptance limits. See Blank Spike (LCS).
- M8 - The MS and/or MSD were below the acceptance limits. See Blank Spike (LCS).
- MHA - Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
- MNR - No results were reported for the MS/MSD. The sample used for the MS/MSD required dilution due to the sample matrix. Because of this, the spike compounds were diluted below the detection limit.
- Q6 - Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
- R2 - The RPD exceeded the acceptance limit.
- RL1 - Reporting limit raised due to sample matrix effects.
- RL3 - Reporting limit raised due to high concentrations of non-target analytes.
- RL7 - Sample required dilution due to high concentrations of target analyte.
- S14 - The weight of the sample relative to the volume of methanol exceeds the method maximum 1:1 ratio.
- X - Surrogate exceeds the control limits
- Z1 - Surrogate recovery was above acceptance limits.
- Z3 - The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.
- Z6 - Surrogate recovery was below acceptance limits.
- ZX - Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.

### Laboratory Reporting Conventions:

- DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
- ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
- NR/NA - Not Reported / Not Available
- dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
- wet - Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
- RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
- MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
- MDL\* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. \*MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
- Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
- Reporting Limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

TestAmerica Anchorage

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Troy J. Engstrom, Lab Director





**BGES, INC.**

750 W. 2nd Ave, Ste 104  
Anchorage, AK 99501

Project Name: **YRITWC**  
Project Number: [none]  
Project Manager: Nick Braman

Report Created:  
08/22/08 15:53

Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*.  
Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory.  
Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Anchorage



Troy J. Engstrom, Lab Director

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# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

#1

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244  
11922 E. First Ave, Spokane, WA 99206-5302  
9405 SW Nimbus Ave, Beaverton, OR 97008-7145  
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

425-420-9200 FAX 420-9210  
509-924-9200 FAX 924-9290  
503-906-9200 FAX 906-9210  
907-563-9200 FAX 563-9210

## CHAIN OF CUSTODY REPORT

Work Order #: **ARG0078**

CLIENT: <b>BGES</b>		INVOICE TO: <b>BGES</b>		TURNAROUND REQUEST	
REPORT TO: <b>BGES</b>		ADDRESS:		in Business Days *	
PHONE: <b>644-2900</b>		FAX: <b>144-2901</b>		Organic & Inorganic Analyses	
PROJECT NAME: <b>UPRIVEC</b>		PROJECT NUMBER:		Petroleum Hydrocarbon Analyses	
SAMPLED BY: <b>ARG</b>		REQUESTED ANALYSES		STD.	
CLIENT SAMPLE IDENTIFICATION		SAMPLING DATE/TIME		OTHER Specify:	
1 08-K04-082-15		7/21/08 14:21		10 7 5 4 3 2 1 <1	
2 08-K04-087-2		15:58		5 4 3 2 1 <1	
3 08-K04-080-2		16:05		STD.	
4 08-K04-083-2		18:17		Specify:	
5 08-K04-084-15		19:20		MATRIX # OF LOCATION/ TA	
6 08-H06-062-2		7/23/08 20:40		(W, S, O) CONT. COMMENTS WO ID	
7 08-H06-061-3-4		14:45		S 4 4 4 4 4 4 4 4 4	
8 08-H06-TFSE1-6		17:30		S 4 4 4 4 4 4 4 4 4	
9 08-H06-NT1		18:55		S 4 4 4 4 4 4 4 4 4	
10 08-H06-NT2		19:08		S 4 4 4 4 4 4 4 4 4	
RECEIVED BY: <b>M. G. W. L. R. C. E. R.</b>		DATE: <b>7/25/08</b>		DATE: <b>7/25/08</b>	
PRINT NAME: <b>M. G. W. L. R. C. E. R.</b>		TIME: <b>17:25</b>		FIRM: <b>Anchorage</b>	
RECEIVED BY:		DATE:		DATE:	
PRINT NAME:		TIME:		FIRM:	
ADDITIONAL REMARKS:		TEMP: <b>3.3</b>		PAGE <b>1</b> OF <b>2</b>	

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2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

425-420-9200 FAX 420-9210  
509-924-9200 FAX 924-9290  
503-906-9200 FAX 906-9210  
907-563-9200 FAX 563-9210

## CHAIN OF CUSTODY REPORT

Work Order #: **ARG0078**

CLIENT: <b>BGES</b>		INVOICE TO: <b>BGES</b>		TURNAROUND REQUEST	
REPORT TO: <b>BGES</b>		ADDRESS:		in Business Days *	
PHONE: <b>644-2500</b>		FAX: <b>644-2901</b>		Organic & Inorganic Analyses	
PROJECT NAME: <b>VERTUG</b>		P.O. NUMBER:		Preservative	
PROJECT NUMBER:		REQUESTED ANALYSES		Petroleum Hydrocarbon Analyses	
SAMPLED BY: <b>MB</b>		DATE: <b>7/23/08</b>		OTHER Specify:	
CLIENT SAMPLE IDENTIFICATION		SAMPLING DATE/TIME		MATRIX (W, S, O)	
1 OB-HUG-TF		7/23/08 14:20		W	
2 OB-HUG-NT1		18:55		W	
3 OB-HUG-WT2		19:08		W	
4					
5					
6					
7					
8					
9					
10					
RELEASED BY: <b>MOANA LEIPER</b>		DATE: <b>7/25/08</b>		RECEIVED BY: <b>Emily Bush</b>	
PRINT NAME: <b>MOANA LEIPER</b>		TIME: <b>17:25</b>		PRINT NAME: <b>Emily Bush</b>	
RELEASED BY:		DATE:		RECEIVED BY:	
PRINT NAME:		TIME:		PRINT NAME:	
ADDITIONAL REMARKS:		FIRM: <b>BGES</b>		FIRM: <b>Andersson</b>	
		FIRM:		FIRM:	
		TEMP: <b>1.1</b>		PAGE <b>22</b> OF <b>22</b>	

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

#1 Col Revision #1  
07/28/08

2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119  
9405 SW Nimbus Ave, Beaverton, OR 97008-7145  
11922 E First Ave, Spokane, WA 99206-2302  
425-426-9200 FAX 426-9210  
509-974-9200 FAX 924-9290  
503-906-9200 FAX 906-9210  
907-563-9200 FAX 563-9210

## CHAIN OF CUSTODY REPORT

Work Order #: **ARG0078**

CLIENT: <b>BGES</b>		INVOICE TO: <b>BGES</b>		TURNAROUND REQUEST	
REPORT TO: <b>BGES</b>		PROJECT NAME: <b>YRITWC</b>		<input type="checkbox"/> 10 <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 <input type="checkbox"/> STD	
ADDRESS:		PROJECT NUMBER:		Organic & Inorganic Analyses Petroleum Hydrocarbon Analyses OTHER: <input type="checkbox"/> Specify:	
PHONE: <b>644-2900</b> FAX: <b>644-2901</b>		PRESERVATIVE		* Turnaround Request less than standard may incur Rush Charges.	
PROJECT NAME: <b>YRITWC</b>		PROJECT NUMBER:		MATRIX (W, S, O) LOCATION/ COMMENTS TA WOTD	
SAMPLED BY: <b>(Signature)</b>		REQUESTED ANALYSES			
CLIENT SAMPLE IDENTIFICATION		SAMPLING DATE/TIME			
08-K04-002-1-5	7/21/08 16:21	X	X	X	5 4 one tank 2 million mg/l e.o.
08-K04-007-2	15:58	X	X	X	5 4
08-K04-000-2	16:05	X	X	X	5 4 2 tanks to draw 401
08-K04-003-2	16:17	X	X	X	5 2 2 tanks to draw 401
08-K04-004-15	17:24	X	X	X	5 2 2 tanks to draw 401
08-K04-005-2	17:45	X	X	X	5 2 2 tanks to draw 401
08-K04-006-2	17:30	X	X	X	5 2 2 tanks to draw 401
08-K04-007-2	18:55	X	X	X	5 2 2 tanks to draw 401
08-K04-008-2	19:08	X	X	X	5 2 2 tanks to draw 401

RELEASED BY: <b>(Signature)</b>	DATE: <b>7/25/08</b>	TIME: <b>17:25</b>	PRINT NAME: <b>Emily Bush</b>	RECEIVED BY: <b>(Signature)</b>	DATE: <b>7/25/08</b>	TIME: <b>17:25</b>	PRINT NAME: <b>Emily Bush</b>
RELEASED BY: <b>(Signature)</b> DATE: <b>7/25/08</b> TIME: <b>17:25</b> PRINT NAME: <b>BGES</b>				RECEIVED BY: <b>(Signature)</b> DATE: <b>7/25/08</b> TIME: <b>17:25</b> PRINT NAME: <b>BGES</b>			

ADDITIONAL REMARKS:	TEMP:	PAGE:	OF:
Charges by <b>(Signature)</b>	3.3	1	2

8018/28/08  
John  
11730 N. 40th Creek Hwy N Suite 400, N  
11972 E First Ave, Suite  
9403 SW Nimbus Ave/Bu

					425-435-9200	FAX 420-9210
					569-924-9200	FAX 924-9290
					563-906-9200	FAX 906-9210
					907-563-9200	FAX 563-9210

11739 Shook Creek Hwy N Suite 400, Bothell, WA 98011-8244  
1192 E. First Ave., Spokane, WA 99206-5302  
9405 SW Nimbus Ave., Beaverton, OR 97008-7145  
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

# TestAmerica

## THE LEADER IN ENVIRONMENTAL TESTING

# CHAIN OF CUSTODY REPORT

Work Order #: **ARG0078**

[illegible]

SEPTEMBER 1971

#1  
**Test America Anchorage Cooler Receipt Form**  
(Army Corps. Compliant)

WORK ORDER # ARG0078 CLIENT: BGES PROJECT: YRI TWC  
Date /Time Cooler Arrived 7/25/08 17:25 Cooler signed for by: Emily Bush  
(Print name)

**Preliminary Examination Phase:**

Date cooler opened: ☒ same as date received or 7/25/08

Cooler opened by (print) Emily Bush (sign) Emily H Bush

1. Delivered by ☐ ALASKA AIRLINES ☐ Fed-Ex ☐ UPS ☐ NAC ☐ LYNDEN ☒ CLIENT ☐ Other: \_\_\_\_\_

Shipment Tracking # if applicable \_\_\_\_\_ (include copy of shipping papers in file)

2. Number of Custody Seals 2 Signed by \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

Were custody seals unbroken and intact on arrival? ☐ Yes ☐ No

3. Were custody papers sealed in a plastic bag? ☐ Yes ☒ No

4. Were custody papers filled out properly (ink, signed, etc.)? ☒ Yes ☐ No

5. Did you sign the custody papers in the appropriate place? ☒ Yes ☐ No

6. Was ice used? ☒ Yes ☐ No Type of ice: ☐ blue ice ☒ gel ice ☐ real ice ☐ dry ice Condition of Ice: good

Temperature by Digi-Thermo Probe 3.3 °C Thermometer # 4

Acceptance Criteria: 0 - 6°C

7. Packing in Cooler ☒ bubble wrap ☒ styrofoam ☒ cardboard ☐ Other: \_\_\_\_\_

8. Did samples arrive in plastic bags? ☐ Yes ☒ No

9. Did all bottles arrive unbroken, and with labels in good condition? ☒ Yes ☐ No

10. Are all bottle labels complete (ID, date, time, etc.) ☒ Yes ☐ No

11. Do bottle labels and Chain of Custody agree? ☒ Yes ☐ No

12. Are the containers and preservatives correct for the tests indicated? ☒ Yes ☐ No

13. Conoco Phillips, Alyeska, BP H2O samples only: pH < 2? ☐ Yes ☐ No ☒ N/A

14. Is there adequate volume for the tests requested? ☒ Yes ☐ No

15. Were VOA vials free of bubbles? ☒ N/A ☐ Yes ☐ No

If "NO" which containers contained "head space" or bubbles? \_\_\_\_\_

**Log-in Phase:**

Date of sample log-in 7/28/08

Samples logged in by (print) Emily Bush (sign) Emily H Bush

1. Was project identifiable from custody papers? ☒ Yes ☐ No

2. Do Turn Around Times and Due Dates agree? ☒ Yes ☐ No

3. Was the Project Manager notified of status? ☒ Yes ☐ No

4. Was the Lab notified of status? ☒ Yes ☐ No

5. Was the COC scanned and copied? ☒ Yes ☐ No

#2

# Test America Anchorage Cooler Receipt Form

(Army Corps. Compliant)

WORK ORDER # ARG0078 CLIENT: BGES PROJECT: YRITWC  
Date /Time Cooler Arrived 7/25/08 17:25 Cooler signed for by: Emily Bush  
(Print name)

## Preliminary Examination Phase:

Date cooler opened: ☒ same as date received or 7/25/08

Cooler opened by (print) Emily Bush

(sign) Emily H Bush

1. Delivered by ☐ ALASKA AIRLINES ☐ Fed-Ex ☐ UPS ☐ NAC ☐ LYNDEN ☒ CLIENT ☐ Other: \_\_\_\_\_

Shipment Tracking # if applicable \_\_\_\_\_

(include copy of shipping papers in file)

2. Number of Custody Seals 0 Signed by \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

Were custody seals unbroken and intact on arrival?

☐ Yes

☐ No

3. Were custody papers sealed in a plastic bag?

☐ Yes

☒ No

4. Were custody papers filled out properly (ink, signed, etc.)?

☒ Yes

☐ No

5. Did you sign the custody papers in the appropriate place?

☒ Yes

☐ No

6. Was ice used? ☒ Yes ☐ No Type of ice: ☐ blue ice ☒ gel ice ☐ real ice ☐ dry ice Condition of Ice: good

Temperature by Digi-Thermo Probe 1.1 °C

Thermometer # 3

Acceptance Criteria: 0 - 6°C

7. Packing in Cooler: ☒ bubble wrap ☐ styrofoam ☐ cardboard ☐ Other: \_\_\_\_\_

8. Did samples arrive in plastic bags?

☒ Yes

☐ No

9. Did all bottles arrive unbroken, and with labels in good condition?

☒ Yes

☐ No

10. Are all bottle labels complete (ID, date, time, etc.)

☐ Yes

☒ No

11. Do bottle labels and Chain of Custody agree?

☒ Yes

☐ No

12. Are the containers and preservatives correct for the tests indicated?

☒ Yes

☐ No

13. Conoco Phillips, Alyeska, BP H<sub>2</sub>O samples only: pH < 2?

☐ Yes

☐ No

14. Is there adequate volume for the tests requested?

☒ Yes

☐ No

15. Were VOA vials free of bubbles?

ER  
☒ N/A

☒ Yes

☐ No

If "NO" which containers contained "head space" or bubbles? \_\_\_\_\_

- There was no label  
on ARG0078-09  
1L jars. Tops labeled  
w/ NTD. Client  
Confirmed Sample  
N/A ID as  
GB-HUG-NT2.  
(sample 09) ER 7/28/08

## Log-in Phase:

Date of sample log-in 7/28/08

Samples logged in by (print) Emily Bush

(sign) Emily H Bush

1. Was project identifiable from custody papers?

☒ Yes

☐ No

2. Do Turn Around Times and Due Dates agree?

☒ Yes

☐ No

3. Was the Project Manager notified of status?

☒ Yes

☐ No

4. Was the Lab notified of status?

☒ Yes

☐ No

5. Was the COC scanned and copied?

☒ Yes

☐ No

**APPENDIX E**  
**LABORATORY DATA QC CHECKLIST**



## Laboratory Data Review Checklist

Completed by:

Title:

Date:

CS Report Name:

Report Date:

Consultant Firm:

Laboratory Name:

Laboratory Report Number:

ADEC File Number:

ADEC RecKey Number:

### 1. Laboratory

- a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

☒ Yes

☐ No

Comments:

- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

☒ Yes

☐ No

Comments:

### 2. Chain of Custody (COC)

- a. COC information completed, signed, and dated (including released/received by)?

☒ Yes

☐ No

Comments:

b. Correct analyses requested?

☒ Yes ☐ No

Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt ( $4^{\circ} \pm 2^{\circ} \text{C}$ )?

☒ Yes ☐ No

Comments:

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

☒ Yes ☐ No

Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

☐ Yes ☐ No

Comments:

No irregularities or abnormalities with respect to sample submission or containers were reported.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☐ Yes ☒ No

Comments:

N/A

e. Data quality or usability affected? Explain.

Comments:

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No

Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☐ Yes ☒ No

Comments:

c. Were all corrective actions documented?

☒ Yes ☐ No

Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

## 5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☒ Yes ☐ No

Comments:

b. All applicable holding times met?

☒ Yes ☐ No

Comments:

c. All soils reported on a dry weight basis?

☒ Yes ☐ No

Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

☐ Yes ☒ No

Comments:

The method reporting limits for several analytes associated with the project samples exceeded the respective ADEC cleanup criteria. However, because all but one of the reported results for these analytes also exceeded the ADEC cleanup criterion, it is our opinion that these MRL exceedances do not affect the acceptability of the data for their intended use. The one analyte that was not detected above the MRL (which exceeded the ADEC cleanup criterion) was for benzene in Sample 08-KOY-GB3-2 (at 0.166 mg/kg). As such, this sample may contain a concentration of benzene that exceeds the ADEC cleanup criterion for this analyte. Because this sample contains other contaminant constituents at concentrations that greatly exceed the ADEC cleanup criteria, it is our opinion that this lack of information pertaining to the concentration of benzene within the sample does not affect the acceptability of the data for their intended use. The concentration of benzene as reported in Table 2 has been flagged "UJ" indicating that the non-detectable concentration is an estimation.

e. Data quality or usability affected? Explain.

Comments:

No. See Above.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☒ Yes

☐ No

Comments:

ii. All method blank results less than PQL?

☒ Yes

☐ No

Comments:

iii. If above PQL, what samples are affected?

Comments:

N/A

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes

☒ No

Comments:

N/A

v. Data quality or usability affected? Explain.

Comments:

Data usability is not affected.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples?

☒ Yes

☐ No

Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☒ Yes

☐ No

Comments:

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☒ Yes ☐ No

Comments:

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☒ Yes ☐ No

Comments:

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

N/A

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☒ Yes ☐ No

Comments:

N/A

- vii. Data quality or usability affected? Explain.

Comments:

c. Surrogates – Organics Only

- i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☒ Yes ☐ No

Comments:

- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☐ Yes ☒ No

Comments:

The recoveries of surrogates in association with the DRO and RRO analyses of Sample 08-KOY-GB3-2 were outside of the laboratory acceptance criteria. This may indicate that the reported concentrations of DRO and RRO within the sample may be slightly biased high or low. However, because the reported result for DRO within this sample greatly exceed the ADEC cleanup criterion for this analyte, and because the concentration of RRO within this sample was not detected above the method reporting limit (which was well below the ADEC cleanup criterion for RRO); it is our opinion that this QC failure does not affect the acceptability of the data for their intended use.

- iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☐ Yes ☒ No

Comments:

Data was not flagged by BGES, as it is our opinion that the data are acceptable for their intended use.

- iv. Data quality or usability affected? Explain.

Comments:

- d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

- i. One trip blank reported per matrix, analysis and cooler?

☒ Yes ☐ No

Comments:

- ii. All results less than PQL?

☒ Yes ☐ No

Comments:

- iii. If above PQL, what samples are affected?

Comments:

N/A

- iv. Data quality or usability affected? Explain.

Comments:

N/A

e. Field Duplicate

- i. One field duplicate submitted per matrix, analysis and 10 project samples?

☒ Yes

☐ No

Comments:

- ii. Submitted blind to lab?

☒ Yes

☐ No

Comments:

- iii. Precision – All relative percent differences (RPD) less than specified DQOs?  
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where  $R_1$  = Sample Concentration

$R_2$  = Field Duplicate Concentration

☐ Yes

☒ No

Comments:

A duplicate soil sample was submitted “blindly” to the laboratory to provide a measure of sampling precision. All of the relative percent differences (RPDs) calculated between detectable analytes were below the QC goal of 50 percent except for the following analytes: n-butylbenzene (67.8 percent), sec-butylbenzene (67.0 percent), isopropylbenzene (54.8 percent), p-isopropyltoluene (65.7 percent), naphthalene (60.8 percent), n-propylbenzene (58.5 percent), 1,2,4-trimethylbenzene (56.0 percent), and 1,3,5-trimethylbenzene (58.7 percent). The RPDs that exceed the goal of 50 percent may be due to heterogeneous soil conditions.

- iv. Data quality or usability affected? Explain.

Comments:

The RPDs that exceed the goal of 50 percent may be due to heterogeneous soil conditions. For this reason, and because this sampling effort was conducted as part of initial site characterization activities, it is our opinion that these QC failures do not affect the acceptability of the data for their intended use.

f. Decontamination or Equipment Blank (if applicable)

☐ Yes

☐ No

☒ Not Applicable

- i. All results less than PQL?

N/A

☒ Yes   ☐ No

Comments:

ii. If above PQL, what samples are affected?

Comments:

N/A

iii. Data quality or usability affected? Explain.

Comments:

N/A

7. Other Data Flags/Qualifiers (ACOE, AFC EE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes   ☐ No

Comments:



**APPENDIX F**  
**CONCEPTUAL SITE MODEL**

# HUMAN HEALTH CONCEPTUAL SITE MODEL

Site: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Completed By: \_\_\_\_\_

Date Completed: \_\_\_\_\_

**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	
<input type="checkbox"/> Surface Soil (0-2 ft bgs)	<input type="checkbox"/> Direct release to surface soil <i>check soil</i>	<input type="checkbox"/> soil	<input type="checkbox"/> Incidental Soil Ingestion								
	<input type="checkbox"/> Migration or leaching to subsurface <i>check soil</i>		<input type="checkbox"/> Dermal Absorption of Contaminants from Soil								
	<input type="checkbox"/> Migration or leaching to groundwater <i>check groundwater</i>										
	<input type="checkbox"/> Volatilization <i>check air</i>										
	<input type="checkbox"/> Runoff or erosion <i>check surface water</i>										
	<input type="checkbox"/> Uptake by plants or animals <i>check biota</i>										
<input type="checkbox"/> Subsurface Soil (2-15 ft bgs)	<input type="checkbox"/> Direct release to subsurface soil <i>check soil</i>	<input type="checkbox"/> groundwater	<input type="checkbox"/> Ingestion of Groundwater								
	<input type="checkbox"/> Migration to groundwater <i>check groundwater</i>		<input type="checkbox"/> Dermal Absorption of Contaminants in Groundwater								
	<input type="checkbox"/> Volatilization <i>check air</i>		<input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water								
<input type="checkbox"/> Ground-water	<input type="checkbox"/> Direct release to groundwater <i>check groundwater</i>	<input type="checkbox"/> air	<input type="checkbox"/> Inhalation of Outdoor Air								
	<input type="checkbox"/> Volatilization <i>check air</i>		<input type="checkbox"/> Inhalation of Indoor Air								
	<input type="checkbox"/> Flow to surface water body <i>check surface water</i>		<input type="checkbox"/> Inhalation of Fugitive Dust								
	<input type="checkbox"/> Flow to sediment <i>check sediment</i>										
	<input type="checkbox"/> Uptake by plants or animals <i>check biota</i>										
	<input type="checkbox"/> Other (list): _____										
<input type="checkbox"/> Surface Water	<input type="checkbox"/> Direct release to surface water <i>check surface water</i>	<input type="checkbox"/> surface water	<input type="checkbox"/> Ingestion of Surface Water								
	<input type="checkbox"/> Volatilization <i>check air</i>		<input type="checkbox"/> Dermal Absorption of Contaminants in Surface Water								
	<input type="checkbox"/> Sedimentation <i>check sediment</i>		<input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water								
	<input type="checkbox"/> Uptake by plants or animals <i>check biota</i>										
	<input type="checkbox"/> Other (list): _____										
<input type="checkbox"/> Sediment	<input type="checkbox"/> Direct release to sediment <i>check sediment</i>	<input type="checkbox"/> sediment	<input type="checkbox"/> Direct Contact with Sediment								
	<input type="checkbox"/> Resuspension, runoff, or erosion <i>check surface water</i>										
	<input type="checkbox"/> Uptake by plants or animals <i>check biota</i>										
	<input type="checkbox"/> Other (list): _____										
<input type="checkbox"/> Biota	<input type="checkbox"/> Direct release to biota <i>check biota</i>	<input type="checkbox"/> biota	<input type="checkbox"/> Ingestion of Wild Foods								
	<input type="checkbox"/> Other (list): _____										

**APPENDIX G**  
**BGES PROPOSAL DATED MAY 27, 2008**



**PROPOSAL FOR PHASE I ENVIRONMENTAL SITE ASSESSMENTS  
AND LIMITED SAMPLING**

**KOTLIK, KOYUKUK, AND HUGHES BROWNFIELD SITES  
YUKON RIVER WATERSHED**

**MAY 27, 2008**

**Submitted to:** Sonta Hamilton – Brownfields Program Manager  
Yukon River Inter-Tribal Watershed Council

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## **6.1 Phase I ESA Scope of Work**

Our scope of work for conducting the Phase I ESAs includes research, site visits, and preparation of reports summarizing our findings, in accordance with ASTM guidelines. During the research phase of our assessment, we will contact numerous entities that may have knowledge of former and current site conditions. This information is typically obtained from a subset of the following sources: The Alaska Department of Natural Resources Recorder's office; the tax assessor's office; the ADEC's Contaminated Sites, LUST, and Registered UST databases; the USEPA NPL; the USEPA Enviromapper database; the CERCLIS database; the USEPA CORRACTS; the USEPA Region 10 TSDf list; Sanborn fire maps; the National Response Center; Polk City Directories; planning and zoning maps; water well surveys; the local electric company and other local utility companies; government officials; current and former property owners, community members, tribal officials, or other local sources of information (fire department, emergency personnel, etc.); neighboring property owners or occupants; and other persons potentially knowledgeable about the property. It should be noted that some of the sources listed above may not be available for the subject properties. Furthermore, BGES conducts all of our own research directly in the databases cited above. We have found from previous experience that the commercially available search firm reports contain numerous errors, including in one instance, the location of the Red Dog mine in Anchorage!

In addition, we will obtain and review relevant information concerning the three sites made available by the YRITWC Brownfields Tribal Response Program, which may include pertinent background documents, photographs, and maps. We will procure a title search for each property from a professional title company. If practical, we will schedule a community and/or Tribal Council meeting during our site reconnaissance. We find this type of venue to be extremely beneficial in gathering historical knowledge about a property.

We will obtain between one and four historical aerial photographs for each site, depicting property conditions that may show any pertinent property details. Typically, aerial photographs depicting property details before, during, and after development (if applicable), are reviewed. The photographs will be described in a narrative format in the report texts, and will be included as figures in the reports. After this preliminary research is completed, we will conduct a reconnaissance of each site and observe the property grounds. During the site reconnaissance, our field personnel will look for evidence of USTs, aboveground storage tanks, drums and other containers, stained soils, stressed vegetation, site drainage patterns, and any other evidence of potential contamination. If accessible and safe to enter,

the old generator buildings in Koyukuk and Hughes will be observed by walking through the buildings and documenting the building construction materials, and any environmentally sensitive items, such as the presence of stored chemicals, potential asbestos and lead-based paint in building materials, etc.; we will also look for evidence of fuel storage tanks, such as vent and fill pipes, copper distribution piping, etc. Photographs will be taken to document the property conditions observed at the time of our site visits, and will be included in each draft and final report for each of the sites.

Upon completion of the above-described activities, we will prepare a written report of our findings for each site. Two copies of the draft Phase I ESA reports for each site will be submitted to the YRITWC Brownfields Program Manager, Sonta Hamilton; each report will be comprised of the sections discussed below. Recommendations for additional assessment and/or remedial actions will be provided under separate cover as requested. After review of the draft reports, we will incorporate any comments, and will then submit four hard and electronic copies of the final Phase I ESA reports for each site. The reports will include the land title search for each site and the results of the limited soil sampling (for the sites in Koyukuk and Hughes) as discussed below in Section 6.2. Recommendations for additional investigation will be issued under separate cover.

BGES' reports are very comprehensive and well written. Our typical Phase I ESA reports include the following sections:

- Introduction – includes a description of the property, a summary of our procedures, and a summary of our conclusions.
- Site Description – includes the legal description of the property, the vicinity description, the geological and surface descriptions, past and current usage of the property, and a review of aerial photographs.
- Records Review – includes a discussion of the databases and any other information reviewed;
- Site Reconnaissance and Interviews – includes a comprehensive narrative of the interior (if applicable) of the buildings and exterior grounds of the property, along with pertinent interviews of relevant stakeholders, landowners, neighbors or community members, and government officials.
- Findings and Conclusions – includes a summation of our findings (for this project, recommendations for additional work will be provided under separate cover, as requested), which will include an opinion of the potential for contamination on the property (recognized environmental conditions will be identified), both from potential on-site and off-site sources.
- Exclusions, Considerations, and Qualifications – includes a description of what was not part of the Phase I ESA scope of work (often sampling of potentially hazardous materials; radon, lead, asbestos, etc.). This section also includes any special considerations (who may rely on the report, special circumstances, etc.). The qualifications of our personnel who worked on the assessment are also provided.

- Figure 1 – includes a topographic map showing the vicinity of the property.
- Figures 2 through 4 or 5 – include historical aerial photographs of the property with the property boundaries shown on an overlay.
- Figure 5 or 6 – includes a map of the vicinity of the subject property and the locations of registered UST sites, contaminated sites, LUST sites, Enviromapper sites, spill sites, National Response Center sites, etc.
- Table 1 – includes Polk City Directory (or equivalent) information as to historical occupancy of properties in the vicinity of the subject property (where available), dating back to the earliest available records.
- Table 2 – includes detailed information concerning the researched sites shown on Figure 5 or 6.
- Appendix A – includes multiple pages of photographs depicting current site conditions from the reconnaissance.
- Appendix B – includes database printouts of information concerning the sites shown on Figure 5 or 6, and detailed in Table 2.
- Appendix C – includes correspondence concerning the subject property (any faxed responses from utility companies concerning connection dates for the property, title search documents, environmental reports, etc.)
- Appendix D – includes a copy of our proposal, in accordance with ASTM guidelines.

We would be pleased to provide a sample copy of our typical Phase I ESA report upon request.

## **6.2 Limited Sampling Scope of Work**

It is our understanding that the Koyukuk and Hughes sites have had histories of fuel spills due to past flooding. The Koyukuk site is occupied by an old generator building, and the Hughes site is described as having an old generator and fuel tanks storage area. ADEC regulations, as stated in 18 AAC 75.335, will be strictly adhered to during site characterization activities. All of the work on this project will be conducted by BGES personnel who are Qualified Persons as defined by the ADEC.

Prior to the reconnaissance and limited soil sampling at the applicable sites, a Quality Assurance Project Plan (QAPP) for each site will be prepared and submitted for YRITWC and EPA review and approval. Two copies of the final QAPP will be issued as requested. The QAPP will be specific to each site and will detail the sampling methodology and procedures involved, and will be scaled to be specific and appropriate to each project location to limit both development cost and review time. Soil and/or water sampling at these sites will most likely be for petroleum hydrocarbon constituents; however, if we determine during the Phase I ESA research or during the site reconnaissance of each site that other contaminants have been stored at these sites, we will coordinate with Sonta Hamilton to determine if other analytical constituents should be analyzed. We will be prepared to collect samples for a variety of typical contaminants during our site reconnaissance, such that a second mobilization

will not be necessary. Because of the detailed nature of our proposal, the QAPPs will require minimal modification of this document into a suitable format and with a minor amount of additional specific details. It will also be important to prepare the QAPPs with sufficient flexibility for modification, depending upon information gathered during performance of the Phase I ESAs.

During the site reconnaissance, our field personnel will look for evidence of USTs, aboveground storage tanks, drums and other containers, stained soils, stressed vegetation, site drainage patterns, and any other evidence of potential contamination. In these types of areas, it is anticipated that soil screening samples will be collected at various depths using a hand auger to potentially characterize vertical and lateral extents of petroleum hydrocarbon contamination. The hand auger will be cleaned prior to each use by utilizing a stiff brush to remove loose soil and then by washing the hand auger in an Alconox (laboratory-grade) detergent solution, prior to a potable water rinse. Soils from the hand boring not included in the screening or laboratory samples will be placed back in the boreholes. The water from washing the sampling supplies will be spread in a thin layer on the ground surface in a manner to minimize any erosion.

The soil screening samples will be collected from the center of the hand auger with clean, stainless steel spoons, and placed in sealable plastic bags, which will be marked with the sample number and the time of collection. In accordance with ADEC requirements, soil samples will be screened using headspace analysis. After the soils are placed into clean sealable bags, they will be gently agitated for approximately 15 seconds, then warmed for more than 10 minutes but less than 1 hour, to allow for volatilization. The samples will then be agitated again for 15 seconds, and screened using a photoionization detector (PID). The probe of the PID will be gently inserted into the bag, and the greatest observed reading will be recorded. The PID will be calibrated prior to use with 100 parts per million isobutylene calibration gas. Analytical samples will be collected from selected hand borings at the depth at which the soil boring exhibits the greatest PID reading.

While not applicable in all circumstances, if these two sites are particularly large, or if individual apparently impacted areas are large, we will investigate the potential for conducting multi-incremental soil sampling, whereby a subset of approximately 36 samples will be collected and combined into one sample for analysis. This method has been approved by the ADEC for sampling, and could result in significant laboratory analytical cost savings. Furthermore, as far as we know, BGES was the first consulting firm in Alaska to utilize this soil sampling technique after the ADEC approved the method. In addition, based on a recent statement from the ADEC that they have received about a dozen reports



describing utilization of the multi-incremental soil sampling method, and the fact that BGES has submitted approximately six reports with this method, it is likely that we have performed more multi-incremental soil sampling than any other consulting firm in Alaska.

If surface water at the site appears to have a sheen, or if shallow groundwater is observed to be in contact with contaminated soils, water samples may be collected. Surface water samples destined for volatile analyses will be collected by using unpreserved laboratory-supplied 1-liter jars as “dippers”, and then gently filling laboratory-supplied vials containing the preservative hydrochloric acid (HCL), exercising care to not spill any of the HCL preservative. Samples not requiring a preservative will be collected by filling laboratory-supplied jars directly from standing surface water.

The soil and water samples (if applicable) will be placed in a chilled cooler and delivered under chain of custody protocol to either Test America Laboratories or SGS Environmental Services; located in Anchorage; both of these laboratories are approved by the ADEC. The laboratory samples will most likely be analyzed for gasoline range organics (GRO) by Alaska Method (AK) 101; benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method SW 8021B; diesel range organics (DRO) by AK102; and residual range organics (RRO) by AK103. The soil sample associated with the screening sample that yielded the greatest PID reading from each site may also be analyzed for volatile organic compounds (VOCs) by EPA Method SW 8260, polynuclear aromatic hydrocarbons (PAHs) by EPA Method SW 8270 SIM, and Resource Conservation and Recovery Act metals by EPA Method 6000/7000 series, depending upon the contaminants potentially present as defined during our research and reconnaissance portions of the Phase I ESA. Surface water samples, if collected, will be analyzed for total aromatic hydrocarbons (TAH) by EPA Method 624, and total aqueous hydrocarbons (TAqH) by EPA Method 625. As a quality control measure, one duplicate sample per 10 project samples for each media will be collected and submitted “blindly” to the laboratory, and a trip blank will accompany all samples scheduled for volatile analyses throughout the entire sampling and handling process.

After the analytical sample results are received, we will evaluate the data and conduct a laboratory data quality review. We will then prepare a concise summary report of our findings, which will be included within the Phase I ESA report. If preferred, we could issue a separate report discussing the sampling effort. The soil sampling report will include a narrative description of our sampling procedures; a site plan showing the locations of the hand borings/soil and/or water sampling locations; tabulated field screening and analytical results; a discussion of the analytical results; and conclusions and

recommendations concerning our findings. Photographs of pertinent site features and activities will also be presented in our report. The report will include completion of a data quality checklist and a conceptual site model, as required by the ADEC.

Two copies of the draft report for each site will be submitted to the YRITWC for review, and four hard and electronic copies of the final report will be produced. These findings will be submitted with the Phase I ESA reports. Recommendations for additional investigation and/or remedial actions (if applicable) at these sites will be provided under separate cover.

## **7.0 EXCLUSIONS**

The scope of these Phase I ESAs and limited sampling does not include testing for radon, asbestos, or lead. If structures are present at the site during the site's reconnaissance, we may indicate that a material "appears" to contain asbestos, and will indicate if the structure is painted. If the structure appears to contain hazardous materials, limited sampling of these materials can be conducted concurrently or as follow-up activities to the Phase I ESA and limited sampling, as requested. If a comprehensive asbestos and/or lead-based paint inspection is desired, BGES maintains certified individuals who can accomplish these tasks as well. If these services are requested in advance, we would have one of these individuals conduct all of the site work to reduce costs, and we would be pleased to provide an additional cost estimate for this service. It is our understanding that airfare, lodging, and meals will be paid for by the YRITWC, and therefore, provisions for these services are not included in this proposal.

## **8.0 PRELIMINARY SCHEDULE**

We have developed the following preliminary project schedule to show our planned progress for project activities. We will attempt to coordinate the site work in conjunction with work that we anticipate to be conducted in Bethel to reduce the costs of the airfare, in which case, our labor hours associated with transportation and our shipping costs will be lower than what are shown in our proposal. Furthermore, upon award of this contract, we will contact the ADEC Brownfields Coordinator to see if there are any projects in or near any of these villages scheduled for this summer, in which case, transportation and shipping costs could be further reduced. We will provide verbal results to you prior to completion of our reports, as soon as any issues of concern become known. Significant findings will be relayed to the YRITWC from the field as soon as they are observed. It should be noted that by visiting Kotlik first, where we do not anticipate collecting any laboratory

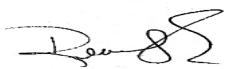
samples, we will be able to reduce the time of handling of the samples until delivery to the laboratory.

Submission of Proposal	May 27, 2008
Receive Notice to Proceed	June 6, 2008
Conduct Database Research	June 9-11, 2008
Conduct Teleconferences for each Site	June 9-11, 2008
Conduct Title Search	June 11-30, 2008
Review Site-Specific Documents Provided by YRITWC, Stakeholders	June 11-13, 2008
Order Aerial Photographs	June 13, 2008
Submit Draft QAPPs to YRITWC and the EPA	June 16, 2008
Receive Comments to Draft QAPPs from YRITWC and the EPA	June 19, 2008
Issue Final QAPPs	June 20, 2008
Conduct Site Reconnaissance, Interviews (Kotlik)	June 23, 2008
Conduct Site Reconnaissance, Interviews, and Sampling (Hughes)	June 24-25, 2008
Conduct Site Reconnaissance, Interviews, and Sampling (Koyukuk)	June 26-27, 2008
Conduct Additional Interviews	July 1-2, 2008
Receive Laboratory Reports	July 14, 2008
Submit Draft Reports	July 21, 2008
Receive Comments to Draft Reports from YRITWC	August 8, 2008
Implement Comments and Submit Final Reports	August 13, 2008
Follow-up Teleconferences as Desired	August 13-15, 2008

## 9.0 COSTS

We have prepared a cost estimate (included in Attachment B) which shows our estimated costs for completing the work described within this proposal. As discussed in Section 8.0 above, we will attempt to coordinate this work with our other anticipated project(s) in the region, resulting in additional cost savings. We appreciate this opportunity to provide this proposal to YRITWC and we look forward to providing professional environmental consulting services to you.

Prepared by:



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Senior Environmental Scientist

Reviewed by:



Robert N. Braunstein, C.P.G.  
President