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LIMITED PHASE II SITE INVESTIGATION

TRANS AMERICA GLASS
2611 PICKETT PLACE, UNIT #4
FAIRBANKS, ALASKA

PREPARED FOR
PEPPER HAMILTON LLP

ON BEHALF OF
PILKINGTON NORTH AMERICA, INC.

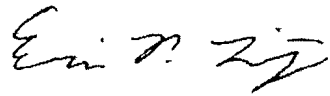
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ADEC - SPILL PREVENTION
AND RESPONSE
FAIRBANKS

SEPTEMBER 2005

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GAIA TECH PROJECT NO. A1511-420-0

TABLE OF CONTENTS

	PAGE
EXECUTIVE SUMMARY	i
1.0 INTRODUCTION.....	1
1.1 Site Background.....	1
1.2 Geology and Hydrogeology.....	2
2.0 SOIL SAMPLING	3
2.1 Methodology.....	3
2.2 Soil Regulatory Standards	4
2.3 Soil Sampling Results.....	4
3.0 GROUNDWATER SAMPLING	6
3.1 Methodology.....	6
3.2 Groundwater Regulatory Standards.....	6
3.3 Groundwater Sampling Results	6
3.4 Discussion.....	8
4.0 CONCLUSIONS AND RECOMMENDATIONS.....	9
5.0 LIMITATIONS.....	10

Tables

- Table 1 Soil Analytical Results
- Table 2 Groundwater Analytical Results

List of Figures

- Figure 1 Site Location Map
- Figure 2 Site Plan with Boring Locations

List of Appendices

- Appendix A Boring Logs
- Appendix B Visual Summary/Site Photographs
- Appendix C Laboratory Analytical Reports

EXECUTIVE SUMMARY

Pepper Hamilton LLP, on behalf of its client Pilkington North America, Inc., retained GaiaTech, Incorporated to conduct a Limited Phase II Investigation of the Trans America Glass facility located at 2611 Pickett Place Unit #4 in Fairbanks, Fairbanks North Star Borough, Alaska. The approximately 0.33-acre site is developed with a 2,400-square-foot warehouse building. Gravel-covered parking, shipping and loading areas surround the site building. Trans America Glass primarily conducts warehousing of vehicle windshields at the site.

The investigation was performed to address potential environmental concerns identified during a Phase I Environmental Site Assessment (ESA) conducted at the site by GaiaTech. The potential environmental concerns included:

- One approximately 21-year-old 300-gallon heating oil underground storage tank (UST),
- historical site use (truck and engine repair) and former discharges to the on-site septic system, and
- potential impacts from off-site sources.

GaiaTech's investigation was conducted in accordance with GaiaTech's proposal dated June 27, 2005. GaiaTech conducted field activities on August 9, 2005. Seven soil borings were advanced on the site. Four shallow soil samples and seven groundwater samples were collected and analyzed for volatile organic compounds (VOCs) or benzene, toluene, ethylbenzene and xylenes (BTEX), polynuclear aromatic hydrocarbons (PAHs) and total petroleum hydrocarbons analysis (TPH). TPH analysis included gasoline range organics (GRO), diesel range organics (DRO) and residual range organics (RRO).

The investigation indicated the following:

- No significant soil impacts were identified related to the UST, septic system or areas of staining at the site.
- Impacted groundwater was identified at the site with two contaminants (benzene and DRO) above State cleanup levels. Numerous VOCs, PAHs and GRO/DRO/RRO were also detected in some groundwater samples, however, these compounds were detected at concentrations below the State cleanup levels. The impacted groundwater appears to be limited to the septic field/UST area. However, based on the proximity of GP-7 to the southern property boundary, impacted groundwater may have migrated off-site.

Because several VOC and PAH compounds and GRO/DRO/RRO were detected in the site groundwater and because benzene and DRO were found to exceed State cleanup levels, the property owner or operator of the subject facility may be required to notify the State of the contamination under *18 Alaska Administrative Code 75.300*. Once the State is notified of the

impacts at the site, further investigation and/or remediation may be required to assess the sources of the impact and to better characterize the impact. While additional areas of impact may be identified during such sampling, the sampling conducted to date does not suggest a likelihood of gross site wide contamination requiring significant remediation would be identified. The party responsible for the groundwater impacts (the property owner and/or the former truck and engine repair tenant - the likely source of the groundwater impacts) would most likely be responsible for any additional investigation and/or remediation which may be required by the State.

Additionally, removal and closure (or replacement, if necessary) of the heating oil tank is recommended based on the age of the UST (approximately 20-years old). A licensed UST contractor should be used to remove the UST under a valid tank removal permit, and certain reporting requirements must be met. It is also possible that historically impacted soil may exist in the immediate area of the tank, which may require characterization and disposal.

1.0 INTRODUCTION

Pepper Hamilton LLP, on behalf of its client Pilkington North America, Inc., retained GaiaTech, Incorporated to conduct a Limited Phase II Investigation of the Trans America Glass facility located at 2611 Pickett Place Unit #4 in Fairbanks, Fairbanks North Star Borough, Alaska (Figure 1). The investigation was performed to address potential environmental concerns identified during a Phase I Environmental Site Assessment (ESA) conducted at the site by GaiaTech in June 2005. The scope of work has been completed in general agreement with GaiaTech's proposal dated June 27, 2005. A description of the purpose, methodology and results of this evaluation is provided in this report.

1.1 Site Background

The approximately 0.33-acre site is developed with a 2,400-square-foot warehouse building. A small office, customer service, and restroom area (approximately 500 square feet) is located in the western portion of the building. The remainder of the building consists of a warehouse that features storage racks for windshields. A 320-square-foot metal cargo container is attached to the southeast corner of the building to provide additional storage. One approximately 300-gallon heating oil underground storage tank (UST) is present at the southwest corner of the site building. Gravel-covered parking, shipping and loading areas surround the site building. Trans America Glass primarily conducts warehousing of vehicle windshields at the site.

The site consisted of vacant land prior to development in 1984. The site building has been owned by Donald Pruhs since construction and was originally occupied by a truck repair facility and later was occupied by a small engine repair shop prior to 1997. Trans America Glass has occupied the site since 1997. The cargo container was added to the building approximately three years ago to provide additional storage. Operations by Trans America Glass are unlikely to have impacted the site.

The surrounding properties consisted of undeveloped land or gravel quarries until the late 1970s and early 1980s when the surrounding commercial and light industrial facilities were developed. The buildings located along the south side of Pickett Place (Pruhs Industrial Park) were constructed in the early 1980s. Historical operations at surrounding properties included several automotive facilities which would have generated hazardous waste, and pose a general potential for impact to the site area.

A Phase I Environmental Site Assessment (ESA) was conducted at the site by GaiaTech in June 2005. The potential environmental concerns are identified as follows:

- **Underground Storage Tank (UST):** One approximately 300-gallon heating oil UST is present at the site. The UST was likely installed at the time of building

construction and has reportedly never had any tank tightness testing. Based on the likely age of the UST (21 years), there is a potential for a release to have occurred from this UST.

- **Historical Use of the Site:** The site was operated from 1984 through 1997 as a truck repair and/or small engine repair facility. In addition, two floor drains which discharged to the on-site septic system were formerly located in the former shop area of the building. Based on the potential usage of petroleum, paints, and solvents associated with former on-site operations, the former presence of floor drains, and the presence of the septic system, there is a potential for impact to the site.
- **Potential Off-Site Impact:** Two facilities were identified in a review of environmental databases which pose a potential concern to the site. The closest of these facilities, Kobuk Fuel, located within 1/8 mile northwest of the site, was identified as a leaking UST (LUST) facility. This facility had a release in 1994 which is currently open. The remaining facility, an Alaska Department of Transportation facility, located at 2301 Peger Road, approximately 1/4 mile northeast of the site, was identified on the UST/LUST, Resource Conservation and Recovery Act Small Quantity of Hazardous Waste Generator, and Alaska Department of Environmental Conservation (ADEC) Contaminated Sites database under several different names due to the release from the USTs and former operations at this facility. There is a potential for impact to the site from these facilities.

1.2 Geology and Hydrogeology

The unconsolidated subsurface materials typically encountered in the borings around the site consisted of approximately 2 feet of fill materials (sand and gravel), underlain by a fine sand to a depth of 10 feet bgs. The sand was saturated at approximately 5 to 6 feet bgs. A layer of saturated sand and gravel was encountered below the fine sand to a depth of 15 feet bgs, the maximum depth explored at the site. The complete soil boring logs/well construction diagrams are included as Appendix A. According to a representative of the Natural Resources Conservation Service (NRCS) for the Fairbanks North Star Borough, bedrock is typically encountered below several hundred feet of unconsolidated sediments (usually sand and gravel) in the Fairbanks area.

Groundwater was encountered between 5 and 6 feet bgs in the soil borings. Shallow groundwater flow typically mimics the surface topography and flows toward the nearest body of water. Based on available information, shallow groundwater in the area is expected to flow to the southwest towards the confluence of the Chena and Tanana Rivers, located approximately 2 miles southwest of the site.

2.0 SOIL SAMPLING

2.1 Methodology

Prior to field activities, GaiaTech completed a subsurface utility clearance through Locate Center of Alaska, Inc., as well as several local utilities which are not members of Locate Center of Alaska, Inc. Specific soil boring locations were then determined by GaiaTech based on the location of potential concerns at the site.

On August 9, 2005, GaiaTech installed and sampled seven borings. Each of the soil borings was completed using a Geoprobe® sampling unit. Continuous subsurface soil samples were collected using 5-foot stainless steel sampling tubes lined with acetate sample liners. Upon retrieval from the sampling tube, each soil sample was visually inspected for logging purposes and evidence of contamination. Each soil sample was then collected into separate sample bags to be used for field-screening (described further below) and classification prior to collecting soil samples for laboratory analysis. Soil characteristics such as soil type, color, moisture, consistency, grain size, odor, and plasticity were recorded on soil boring logs. Copies of these logs are provided in Appendix A.

Upon completion of the soil boring, each of the soil samples underwent field screening for ionizable volatile organics contamination using a Mini-Rae photo-ionization detector (PID) equipped with a 10.6eV lamp, calibrated to a 100 volumetric parts per million (Vppm) isobutylene standard. The field screening was used to provide an indication of the potential presence of VOCs to aid in the selection of samples for laboratory analysis. Specific PID field screening procedures were as follows:

- The soil sample was placed in a sample bag.
- The soil boring number and sample depth was written on the sample bag.
- The sample was allowed to warm up under ambient temperatures.
- The PID was utilized to draw the headspace from above the soil-air interface.
- The maximum PID reading was recorded on each respective soil boring log.

Typically, one soil sample from each boring in which field screening suggested the greatest potential impact was retained for possible laboratory analysis. If field screening did not suggest impact, the soil sample collected from the interval presumed just above the shallow water table was retained for potential analysis. The samples were then secured in a sample cooler and preserved with ice. Under strict sample chain-of-custody procedures, the samples were delivered to SGS Environmental Services, Inc. in Anchorage, Alaska, a National Environmental Laboratory Accreditation Program (NELAP) and Alaska Department of Environmental Conservation (DEC) accredited laboratory.

Upon completion of soil boring and sampling activities, and between uses to avoid cross contamination, all down-hole soil boring and non-dedicated sampling equipment was

decontaminated using an Alconox[®]/water wash and scrubbing, followed by a clean water rinse. Once the last soil sample and groundwater sample was retrieved from a boring location, the borehole was back-filled with the soil cuttings and bentonite, and the surface was restored (to the extent feasible) to its original condition. Photographs of the site activities are included in Appendix B.

2.2 Soil Regulatory Standards

The Alaska Department of Environmental Conservation (ADEC) utilizes soil cleanup levels based on 18 Alaska Administrative Code 75.341 Table A and B (18AAC75.341, May 2004) and additional cleanup values established in ADEC Technical Memorandum 01-001 (November 24, 2003). The cleanup levels include standards for ingestion and inhalation as well as soil standards protective of groundwater. The various standards for soil are presented in Table 1 along with the soil sample analytical results.

2.3 Soil Sampling Results

A total of seven soil borings were installed at the site, and four shallow soil samples were collected for volatile organic compounds (VOCs) or benzene, toluene, ethylbenzene and xylenes (BTEX), polynuclear aromatic hydrocarbons (PAH) and total petroleum hydrocarbons analysis (TPH). TPH analysis included gasoline range organics (GRO), diesel range organics (DRO) and residual range organics (RRO). The soil sampling results are summarized below, and are presented in Table 1. The approximate locations of the borings are shown on Figure 2. Complete laboratory analytical reports are included in Appendix C.

Borings GP-3 and GP-4 were advanced near the 300-gallon fuel oil UST. GP-1 was advanced at the northeast corner of the site in a presumed upgradient location to the site building and operations. Boring GP-2 was advanced at the northwest corner of the building where some minor surficial staining was noted. GP-5 through GP-7 were installed in the septic system area, GP-5 near the septic tank and UST, and GP-6 and GP-7 in the septic leach field area. Shallow soil samples were collected from GP-2, GP-3, GP-4 and GP-6 to assess any impacts to shallow soils from the surficial staining, the operation of the fuel oil UST and the septic system.

Soils from all of the borings installed at the site did not exhibit any suspect staining, odors or elevated PID readings. PID readings in these borings ranged from 0.0 to 0.4 Vppm, within the normal background range. The shallow soils in GP-6 exhibited some odors typically associated with a septic system, but did not exhibit any elevated PID readings or any petroleum odors. Soil sample GP-2 was collected from a depth of 0-1 feet bgs to investigate the surficial soil staining noted at the northwest corner of the building, while

samples from GP-3, GP-4 and GP-6 were collected from the interval presumed to be just above the shallow groundwater table in the UST and septic system areas.

Generally, no VOC/BTEX, PAH, or GRO/DRO/RRO compounds were detected in the soil samples collected from borings GP-2, GP-3, GP-4 and GP-6.

Only a trace concentration of RRO at 28.9 milligrams per kilogram (mg/kg) was found above detection limits in the soil sample collected from GP-4 (5-6') in the UST area. This concentration is well below the State soil cleanup level of 2,000 mg/kg. Also, an elevated detection limit for benzene was reported at 29.8 micrograms per kilogram (ug/kg). The detection limit itself is above the State soil cleanup level of 20 ug/kg, however, the elevated detection limit is likely related to the RRO detection in the same sample which may have interfered with the detection of benzene. Therefore, GaiaTech does not expect the actual concentration of benzene in GP-4, if any, to exceed the State soil cleanup level. The trace concentration of RRO and the elevated benzene detection limit may be related to the current UST and/or related piping, or surface spills during tank filling operations, or former discharges to the septic system.

3.0 GROUNDWATER SAMPLING

3.1 Methodology

As part of the subsurface sampling activities conducted on August 9, 2005, five temporary well points were installed through the centers of the borings to assess the groundwater at the site. The approximate locations of the borings/wells are shown on Figure 2. The complete soil boring logs/well construction diagrams are included as Appendix A.

The temporary well points were screened to intercept the shallow groundwater unit beneath the site. Development was accomplished by the use of a peristaltic pump with dedicated disposable plastic tubing. Each well point was developed by removing a minimum of three to five well volumes. Approximately one to two gallons of water were purged from each well. After development, groundwater samples were collected utilizing the peristaltic pump and transferred into appropriate laboratory supplied bottles. In addition, the on-site water well was also sampled. The well pump was allowed to run until a sufficient volume of water was removed from the well to purge the small water holding tank. Water samples were then collected from the tap nearest to the pump. The samples were then secured in a sample cooler and preserved with ice. Under strict sample chain-of-custody procedures, the samples were delivered to SGS Environmental Services, Inc. in Anchorage, Alaska.

3.2 Groundwater Regulatory Standards

The ADEC utilizes groundwater cleanup levels based on 18 Alaska Administrative Code 75.345 Table C (18AAC7345, May 2004), and additional groundwater cleanup values established in ADEC Technical Memorandum 01-001 (November 24, 2003). The standards for groundwater are presented in Table 2 along with the groundwater sample analytical results.

3.3 Groundwater Sampling Results

Five groundwater samples were collected for analysis. The samples were analyzed for VOCs or BTEX, PAHs and GRO and/or DRO/RRO. The groundwater sampling results are summarized below and are presented in Table 2. The laboratory analytical data sheets are included in Appendix C.

UST Area

Two temporary wells (GP-3 and GP-4) were installed and sampled around the fuel oil UST and the on-site water well, which is just north of the UST, was also sampled. The well screens were set at depths of 10 to 14 feet bgs with a 4-foot stainless steel well screen. No unusual odors or sheen were noted in the groundwater samples from these wells. The

groundwater samples were analyzed for BTEX or VOCs, PAHs, and DRO/RRO.

No BTEX or PAH compounds or DRO were detected in the groundwater samples collected from borings GP-3 and GP-4. Low levels of RRO were detected at concentrations of 0.669 and 0.573 milligrams per liter (mg/l) in these wells, below the State groundwater cleanup level of 1.1 mg/l.

Low levels of benzene, total xylenes, 1,3,5-trimethylbenzene and 1,2,4-trimethylbenzene were detected in the on-site well. Benzene (reported at a concentration of 12.5 micrograms per liter, or ug/l) was the only VOC compound detected above the State groundwater cleanup level (5 ug/l). A low level of RRO at 0.541 mg/l was also detected in the well, below the State groundwater cleanup level of 1.1 mg/l. No PAH compounds or DRO were detected in the well.

Septic Field Area

Two temporary wells (GP-6 and GP-7) were installed and sampled around the septic drainage field. The well screens were set at depths of 10 to 14 feet bgs with a 4-foot stainless steel well screen. No unusual odors or sheen were noted in the groundwater samples from these wells, although the water from GP-6 exhibited typical septic field odors. The groundwater samples were analyzed for BTEX or VOCs, PAHs, and DRO/RRO.

Low levels of 15 VOC and 3 PAH compounds were detected in the groundwater sample collected from boring GP-6. The VOC compounds included BTEX, tetrachloroethene (PCE), cis-1,2-dichloroethene, acetone and several others. The PAH compounds included 1-methylnaphthalene, 2-methylnaphthalene and naphthalene. Concentrations of the VOCs and PAHs ranged from 1.59 ug/l (cis-1,2-dichloroethene) to 291 ug/l (1,2,4-trimethylbenzene). All of the concentrations of VOC and PAH compounds in GP-6 were below the applicable State groundwater cleanup levels (four of the detected VOCs - n-propylbenzene, sec-butylbenzene, 4-isopropyltoluene, and n-butylbenzene - do not have established State groundwater cleanup levels). Low levels of GRO/DRO/RRO were also detected in GP-6. The concentrations of GRO (1.12 mg/l) and RRO (0.883 mg/l) are below the State groundwater cleanup levels of 1.3 mg/l and 1.1 mg/l, respectively. The concentration of DRO (1.89 mg/l) exceeds the State groundwater cleanup level of 1.5 mg/l.

Low levels of 2 VOC compounds, benzene (7.2 ug/l) and 1,2,4-trimethylbenzene (1.84 ug/l), were detected in the groundwater sample collected from boring GP-7. The concentration of benzene in GP-7 exceeds the State groundwater cleanup level of 5 ug/l. No PAHs were detected, and the sample was not analyzed for GRO/DRO/RRO.

Upgradient Area

One temporary well, GP-1, was installed and sampled at the northeast corner of the site which is at the presumed upgradient side of the site. A well screen was set at a depth of

4 to 8 feet bgs, and a second screen was set at a depth of 10 to 14 feet bgs, both with a 4-foot stainless steel well screen. The shallower well screen was set to intercept groundwater encountered above a 2.5-foot thick layer of permafrost encountered at 6.5 to 9 feet bgs (permafrost was only encountered at GP-1). No unusual odors or sheen were noted in the groundwater samples from these two depths. The shallow groundwater sample (GP-1S) was analyzed for VOCs, the deeper sample (GP-1D) was analyzed for VOCs, PAHs, and GRO/DRO/RRO.

Low levels of benzene (1 ug/l) and acetone (13.2 ug/l) were detected in GP-1S, at concentrations well below the applicable State groundwater cleanup levels.

A low level of benzene (1.88 ug/l) was detected in GP-1D, below the applicable State groundwater cleanup level, and a low level of RRO was detected at 0.926 mg/l, below the State groundwater cleanup level of 1.1 mg/l.

No other VOCs or PAHs or GRO/DRO were detected.

3.4 Discussion

The sources of the VOC, PAH and GRO/DRO/RRO detections are likely related to former discharges to the septic system or possibly off-site sources. Based on the results of the groundwater samples, the impacted groundwater with contaminants above State cleanup levels (benzene and DRO) appears to be limited to the septic field/UST area, and site wide impact exceeding State cleanup levels does not appear likely.

The low concentrations of RRO detected across the site (at levels below the State groundwater cleanup level) are most likely indicative background concentrations at the site, and may be a result of off-site or historical on-site activities. As these concentrations did not exceed the State groundwater cleanup level, they likely do not represent a concern at this time.

However, because several VOC and PAH compounds and GRO/DRO/RRO were detected in the site groundwater and because benzene and DRO were found to exceed State cleanup levels, the property owner or operator of the subject facility may be required to notify the State of the contamination under *18 Alaska Administrative Code 75.300*. Once reported to the ADEC, further investigation and/or remediation may be required.

4.0 CONCLUSIONS AND RECOMMENDATIONS

GaiaTech completed a Limited Phase II Investigation of the Trans America Glass facility located at 2611 Pickett Place Unit #4 in Fairbanks, Fairbanks North Star Borough, Alaska. Seven soil borings were advanced on the site. Four soil and seven groundwater samples were collected and analyzed for various combinations of BTEX or VOCs, PAHs, GRO, DRO and RRO to evaluate potential impacts related to the on-site fuel oil UST and historical on-site and off-site activities.

The investigation indicated the following:

- No significant soil impacts were identified related to the UST, septic system or areas of staining at the site.
- Impacted groundwater was identified at the site with two contaminants (benzene and DRO) above State cleanup levels. Numerous VOCs, PAHs and GRO/DRO/RRO were also detected in some groundwater samples, however, these compounds were detected at concentrations below the State cleanup levels. The impacted groundwater appears to be limited to the septic field/UST area. However, based on the proximity of GP-7 to the southern property boundary, impacted groundwater may have migrated off-site.

Because several VOC and PAH compounds and GRO/DRO/RRO were detected in the site groundwater and because benzene and DRO were found to exceed State cleanup levels, the property owner or operator of the subject facility may be required to notify the State of the contamination under *18 Alaska Administrative Code 75.300*. Once the State is notified of the impacts at the site, further investigation and/or remediation may be required to assess the sources of the impact and to better characterize the impact. While additional areas of impact may be identified during such sampling, the sampling conducted to date does not suggest a likelihood of gross site wide contamination requiring significant remediation would be identified. The party responsible for the groundwater impacts (the property owner and/or the former truck and engine repair tenant - the likely source of the groundwater impacts) would most likely be responsible for any additional investigation and/or remediation which may be required by the State.

Additionally, removal and closure (or replacement, if necessary) of the heating oil tank is recommended based on the age of the UST (approximately 20-years old). A licensed UST contractor should be used to remove the UST under a valid tank removal permit, and certain reporting requirements must be met. It is also possible that historically impacted soil may exist in the immediate area of the tank which may require characterization and disposal.

5.0 LIMITATIONS

This report is prepared for the sole benefit of Pepper Hamilton LLP, and may not be relied upon by any other person or entity. This report and the findings shall not, in whole or in part, be distributed or transmitted to any other party, nor used by any other party, without the prior written consent of GaiaTech.

GaiaTech has conducted these professional services in accordance with current scientific principles and industrial standards of practices in the fields of environmental science and engineering on the date the work was conducted and in the same geographical area of the subject site for similar studies. GaiaTech's findings and recommendations must be considered as professional opinions based upon the limited data collected during the course of the environmental site investigation, which is limited in time and scope. GaiaTech makes no warranty, express or implied.

Only a limited number of soil and groundwater samples were collected from widely spaced soil borings. The variations among these samples and results may not become evident until further investigation. In the event that more data are available, it may be necessary to re-assess the conditions of the subject site in order to revise the conclusions and recommendations contained in this report.

Independent laboratories have performed analytical laboratory analyses. GaiaTech has derived the findings and recommendations, in part, from the analytical reports. These findings are contingent upon the validity of the analytical reports.

Limited soil and groundwater samples were analyzed for specific parameters as detailed in the report. Other chemical compounds, which were not analyzed for, may exist at the site, although unlikely based upon available information.

Tables

- **Table 1** **Soil Analytical Results**
- **Table 2** **Groundwater Analytical Results**

TABLE 1
DRAFT Summary of Soil Analytical Results

Sample ID	Alaska Administrative Code 18 AAC 75.341 Table B1 Soil Cleanup Levels Over 40 Inch Precipitation Zone (Most Restrictive Levels)			GP-2	GP-3	GP-4	GP-6
Sample Depth (ft)				0-1'	4-5'	5-6'	3-4'
Date Sampled				08/09/05	08/09/05	08/09/05	08/09/05
Sample Location	Ingestion	Inhalation	Migration to Groundwater	Soil Staining Area	UST Area		Septic System Area
BTEX or VOCs - US EPA Method 8021B	ug/kg			ug/kg			
Benzene	120,000	6,400	20	<11.4	<9.55	<29.8	<19.3
PAHs - US EPA Method 8270C	ug/kg			ug/kg			
All Parameters	Various	Various	Various	BDL	BDL	BDL	BDL
Total Petroleum Hydrocarbons (TPH) - AK Methods 101 and 102	Category A TPH Cleanup Levels mg/kg			mg/kg			
GRO	50			<2.28	<1.91	<5.97	<3.71
DRO	100			<19.8	<20.1	<24.7	<19.8
RRO	2,000			<19.8	<20.1	28.9	<19.8

Notes:

Samples analyzed at SGS Environmental Services, Inc., Only detected compounds are listed.

VOCs - volatile organic compounds

BTEX - benzene, toluene, ethylbenzene and xylenes

PAHs - polynuclear aromatic hydrocarbons

GRO/DRO/RRO - gasoline range organics/diesel range organics/residual range organics

ug/kg is approximately equivalent to parts per billion (ppb).

NE - Not established; NA - not analyzed; BDL - Below detection limits.

Bold and Shaded - exceeds soil cleanup level

TABLE 2
DRAFT Summary of Groundwater Analytical Results

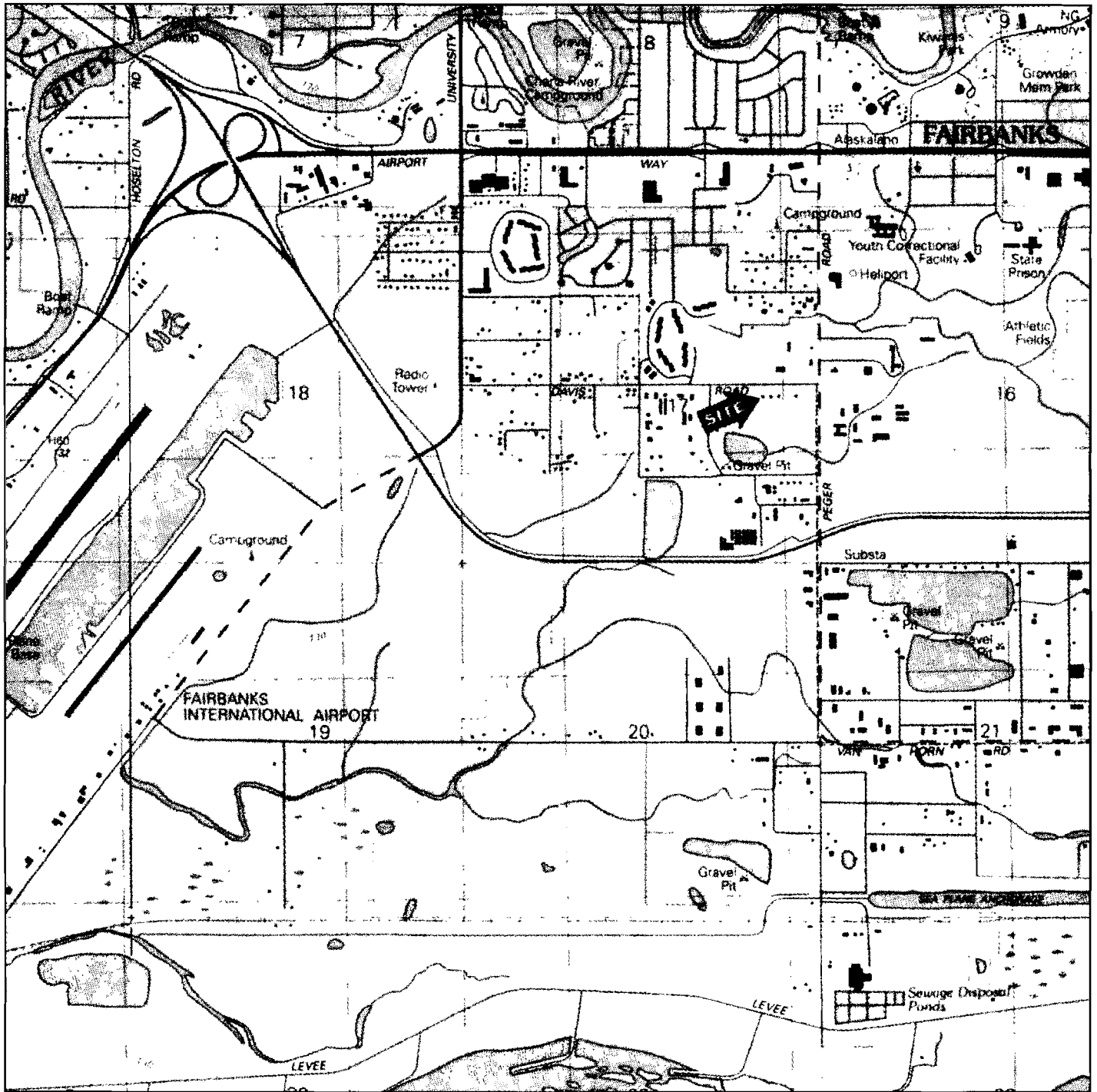
Sample ID	Alaska Administrative Code 18 AAC 75.341 Table B1	GP-1S	GP-1D	GP-3	GP-4	Well	GP-6	GP-7
Date Sampled	Groundwater Cleanup Levels Over 40 Inch Precipitation Zone (Most Restrictive Levels)	08/09/05	08/09/05	08/09/05	08/09/05	08/09/05	08/09/05	08/09/05
Sample Location		Northeast Corner of Site - Presumed Upgradient Area		UST Area West of UST South of UST North of UST			Septic Field Area	
VOCs - US EPA Method 8260	ug/l	ug/l						
Acetone	3,650	13.2	<10	NA	NA	<10	48.9	<10
Cis-1,2-dichloroethene	70	<1	<1	NA	NA	<1	1.59	<1
Benzene	5	1	1.88	<0.5	<0.5	12.5	2.32	7.2
Toluene	1,000	<1	<1	<2	<2	<1	56.8	<1
Tetrachloroethene	5	<1	<1	NA	NA	<1	2.19	<1
Ethylbenzene	700	<1	<1	<2	<2	<1	23.7	<1
Xylenes (totals)	10,000	<2	<2	<2	<2	2.33	288	<2
Isopropylbenzene (cumene)	3,650	<1	<1	NA	NA	<1	20.1	<1
n-Propylbenzene	NE	<1	<1	NA	NA	<1	27.3	<1
1,3,5-Trimethylbenzene	1,850	<1	<1	NA	NA	2.37	94	<1
1,2,4-Trimethylbenzene	1,850	<1	<1	NA	NA	7.55	291	1.84
sec-Butylbenzene	NE	<1	<1	NA	NA	<1	6.33	<1
4-Isopropyltoluene	NE	<1	<1	NA	NA	<1	18.3	<1
n-Butylbenzene	NE	<1	<1	NA	NA	<1	5.17	<1
Naphthalene	700	<2	<2	NA	NA	<2	70.2	<2
PAHs - US EPA Method 8270C	ug/l	ug/l						
2-Methylnaphthalene	780	NA	<0.05	<0.05	<0.0505	<0.051	6.25	<0.051
Naphthalene	700	NA	<0.1	<0.1	<0.101	<0.102	12.3	<0.102
1-Methylnaphthalene	1,500	NA	<0.05	<0.05	<0.0505	<0.051	3.7	<0.051
Total Petroleum Hydrocarbons - EPA	mg/l	mg/l						
GRO	1.3	NA	0.09	NA	NA	NA	1.12	NA
DRO	1.5	NA	<0.306	<0.300	<0.300	<0.309	1.89	NA
RRO	1.1	NA	0.926	0.669	0.573	0.541	0.883	NA

Notes:

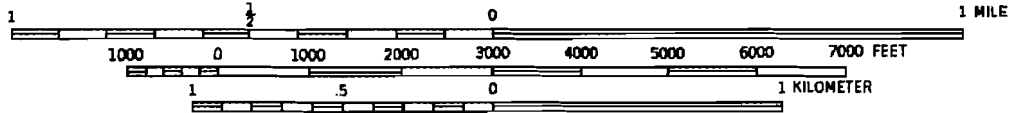
Samples analyzed at SGS Environmental Services, Inc., Only detected compounds are listed.
 VOCs - volatile organic compounds
 BTEX - benzene, toluene, ethylbenzene and xylenes
 PAHs - polynuclear aromatic hydrocarbons
 GRO/DRO/RRO - gasoline range organics/diesel range organics/residual range organics
 ug/L is approximately equivalent to parts per billion (ppb)
 NE - Not established, NA - not analyzed; BDL - Below detection limit
Bold and Shaded - exceeds groundwater cleanup level

Figures

- **Figure 1 Site Location Map**
- **Figure 2 Site Plan with Boring Locations**



Scale 1:25 000
Contour Interval 5 Meters



UNITED STATES GEOLOGICAL SURVEY
FAIRBANKS (D-2) SW QUADRANGLE
ALASKA - FAIRBANKS NORTH STAR BOROUGH
7.5 MINUTE SERIES (TOPOGRAPHIC)



Quadrangle Location

1992



GRAVEL
PIT

WAREHOUSE

VACANT



ALASKA DOT
BUILDING

PICKETT PLACE

VEHICLE
STORAGE
YARD

GRAVEL
PARKING

OFFICE
CUST. AREA

WAREHOUSE
AREA

MOTORLEAGUE
SLOT-CAR
RACING

SOIL STAINING
ALONG BUILDING

SHALLOW SITE
WATER WELL

SEPTIC TANK

LEGEND

- GP-2 SOIL BORING
- GP-3 SOIL BORING/
TEMPORARY WELL

GP-2

GP-3

GP-4

GP-5

GP-6

GP-7

GRAVEL

SEPTIC
FIELD

CARGO CONTAINER

SEPTIC LINE
CLEANOUTS

FENCE

COMMERCIAL
STORAGE
FACILITY

INDUSTRIAL
ELECTRIC

BUILDING
2

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BORING AND TEMPORARY MONITORING WELL
LOCATION MAP
TRANSAMERICA GLASS
FAIRBANKS, AK

DRAWN RJ CHECK EL DATE 9/20/05

SCALE NTS CADD FILE NO. A1511-420-0

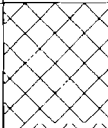

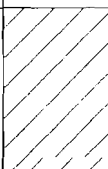
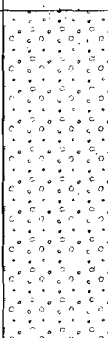
FIG. NO.

Appendix A

Boring Logs

09-20-2005 F:\Projects\A1511 - Blizzard - Fairbanks\A1511-420-0 - Blizzard - Fairbanks AK\Technical\GP-1.bor

Date/Time	8/9/05	Well Screen Type	SS
Total Depth of Boring	15 feet bgs	Well Screen Slot Size	
Total Depth of Well	14'	Length of Well Screen	4'
Logged By	EL	Well Riser Type	STEEL
Drilling Method	Geoprobe	Length of Riser	10
Hole Diameter	2"	Well Diameter	1"
Drilling Company		Well Completed as	TEMP
Sampling Method	. Geoprobe	Top of Casing Elev	
		Surface Elevation	
		GW Elevation Drilling	

DEPTH	Sample	PID	REC	USCS	GRAPHIC	DESCRIPTION	WELL. GP-1 ELEV:
0				FL		FILL: sand & gravel, stiff, moist at 1-2'	
1	0.3	50		OL		SILT/PEAT, dark brown to black, roots & sticks, decompressed	Riser
				ML		SILT, light grey, stiff, wet.	
5				SP		SAND, light brown, very fine grained, loose, saturated, some mica flakes	
2	0.4	50		CL		SILTY SANDY CLAY, light grey to brown, very stiff, some roots, permafrost	Shallow Screen
				SP		SAND, light brown, fine to medium grained, loose, saturated	Riser
10				GW		SAND & GRAVEL, light brown/grey, loose, saturated	Deep Screen
15						End of boring at 15 feet below ground surface.	

GaiaTech, Inc Environmental Planning	BLIZZARD FAIRBANKS, AK GaiaTech Project # A1511-420-0	LOG OF BORING GP-1 (page 1 of 1)
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09-20-2005 F:\Projects\A1511 - Blizzard - Fairbanks\A1511-420-0 - Blizzard - Fairbanks AK\Technical\GP-2 bor

Date/Time	8/9/2005
Total Depth of Boring	10 feet bgs
Logged By	EL
Drilling Method	Geoprobe
Hole Diameter	2"
Drilling Company	
Sampling Method	Geoprobe

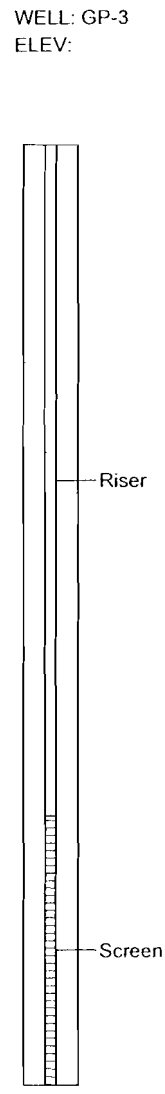
DEPTH	Sample	PID	REC	USCS	GRAPHIC	DESCRIPTION
0						FILL. hard light brown sand & gravel, moist
	1	02	40	FL		
						SAND, light brown very fine grained, loose, moist, small mica flakes, saturated @ 5.5', no frozen layer.
5				SP		
	2	01	48			
10	End of Boring at 10 feet bgs					

GaiaTech, Inc Environmental Planning	BLIZZARD FAIRBANKS, AK GaiaTech Project # A1511-420-0	LOG OF BORING GP-2 (page 1 of 1)
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09-20-2005 F:\Projects\A1511 - Blizzard - Fairbanks\A1511-420-0 - Blizzard - Fairbanks AK\Technical\GP-3.bor

Date/Time	8/9/05	Well Screen Type	SS
Total Depth of Boring	10 feet bgs	Well Screen Slot Size	
Total Depth of Well	14'	Length of Well Screen	4'
Logged By	EL	Well Riser Type	STEEL
Drilling Method	Geoprobe	Length of Riser	10
Hole Diameter	2"	Well Diameter	1"
Drilling Company		Well Completed as	TEMP
Sampling Method	Geoprobe	Top of Casing Elev.	
		Surface Elevation	
		GW Elevation Drilling	

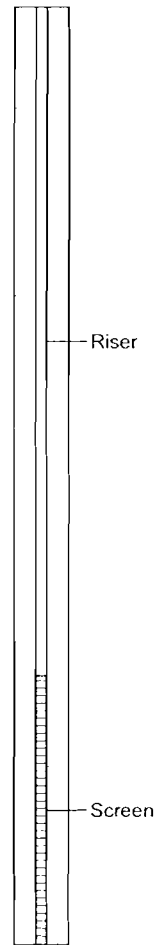
DEPTH	Sample	PID	REC	USCS	GRAPHIC	DESCRIPTION
0						FILL: light brown sand & gravel, loose, moist
1	1	0.2		FL		
2	2	0.2	48			
5	3	n/a		SP		SAND, light brown, very fine grained, loose, saturated @ 5', mica flakes, no frozen layers.
4	4	n/a	54			
10						End of boring at 10 feet below ground surface.



09-20-2006 F:\Projects\A1511 - Blizzard - Fairbanks\A1511-420-0 - Blizzard - Fairbanks AK\Technical\GP-4.bor

Date/Time	8/9/05	Well Screen Type	SS
Total Depth of Boring	10 feet bgs	Well Screen Slot Size	
Total Depth of Well	14'	Length of Well Screen	4'
Logged By	EL	Well Riser Type	STEEL
Drilling Method	Geoprobe	Length of Riser	10
Hole Diameter	2"	Well Diameter	1"
Drilling Company		Well Completed as	TEMP
Sampling Method	Geoprobe	Top of Casing Elev.	
		Surface Elevation	
		GW Elevation Drilling	

DEPTH	Sample	PID	REC	USCS	GRAPHIC	DESCRIPTION	WELL: GP-4 ELEV:
0						FILL. light brown sand & gravel, loose, moist	
1				FL			
2		36				SAND, light brown very fine grained, some silt, 2" dark silty organic layer at 2.5', moist, saturated @ 6'. silty 5-6'	
3				SP			
4		48					
10	End of boring at 10 feet below ground surface.						
15							



GaiaTech, Inc Environmental Planning	BLIZZARD FAIRBANKS, AK GaiaTech Project # A1511-420-0	LOG OF BORING GP-4 (page 1 of 1)
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Date/Time 8/9/05
 Total Depth of Boring 10 feet bgs
 Total Depth of Well
 Logged By EL
 Drilling Method Geoprobe
 Hole Diameter 2"
 Drilling Company
 Sampling Method Geoprobe

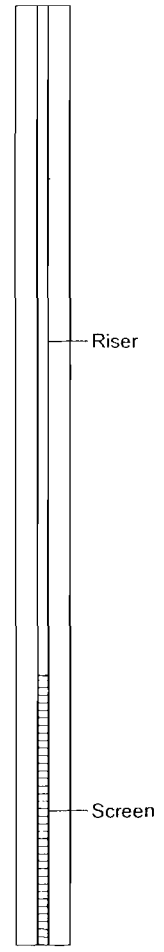
DEPTH	Sample	PID	REC	USCS	GRAPHIC	DESCRIPTION	WELL: ELEV:
0						FILL: light brown sand & gravel, loose, moist	
1				FL			
2			48			SAND, light brown very fine grained, some silt, 2" dark silty organic layer 2.5', moist, saturated @ 6', silty 5-6'	
3				SP			
4			48				
10	End of boring at 10 feet below ground surface.						
15							

09-20-2005 F:\Projects\A1511 - Blizzard - Fairbanks\A1511-420-0 - Blizzard - Fairbanks AK\Technical\GP-5.bor

Date/Time	8/9/05	Well Screen Type	SS
Total Depth of Boring	10 feet bgs	Well Screen Slot Size	
Total Depth of Well	14'	Length of Well Screen	4'
Logged By	EL	Well Riser Type	STEEL
Drilling Method	Geoprobe	Length of Riser	10
Hole Diameter	2"	Well Diameter	1"
Drilling Company		Well Completed as	TEMP
Sampling Method	Geoprobe	Top of Casing Elev.	
		Surface Elevation	
		GW Elevation Drilling	

DEPTH	Sample	PID	REC	USCS	GRAPHIC	DESCRIPTION
0						FILL: light brown sand & gravel, loose, moist
1				FL		
2			48			SAND, light brown very fine grained, some silt, 2" dark silty organic layer 2.5', moist, saturated @ 6', silty 5-6' Bottom 8" darker grey, some septic odor.
3				SP		
4			60			
10	End of boring at 10 feet below ground surface.					

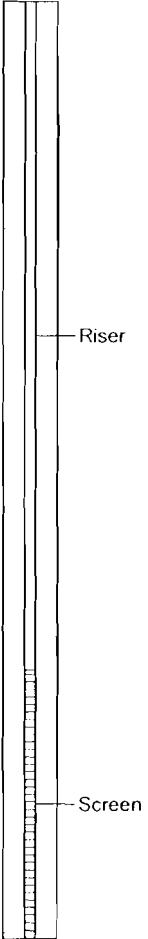
WELL: GP-6
ELEV:



09-20-2005 F:\Projects\A1511 - Blizzard - Fairbanks\A1511-420-0 - Blizzard - Fairbanks AK\Technical\GP-6.bor

Date/Time	8/9/05	Well Screen Type	SS
Total Depth of Boring	10 feet bgs	Well Screen Slot Size	
Total Depth of Well	14'	Length of Well Screen	4'
Logged By	EL	Well Riser Type	STEEL
Drilling Method	Geoprobe	Length of Riser	10
Hole Diameter	2"	Well Diameter	1"
Drilling Company		Well Completed as	TEMP
Sampling Method	Geoprobe	Top of Casing Elev	
		Surface Elevation	
		GW Elevation Drilling	

DEPTH	Sample	PID	REC	USCS	GRAPHIC	DESCRIPTION	WELL GP-7 ELEV
0						FILL: light brown sand & gravel, loose, moist	
1	1			FL			
2	2		48			SAND, light brown very fine grained, some silt, 2" dark silty organic layer 2.5', moist, saturated @ 6', silty 5-6' Bottom 8" darker grey, some septic odor.	
5	3			SP			
6	4		60	SP-ML		SILTY SAND, light brown, stiff.	
10				SP		SAND, light grey, some septic odor.	
						End of boring at 10 feet below ground surface.	



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GaiaTech, Inc
Environmental Planning

BLIZZARD
FAIRBANKS, AK
GaiaTech Project # A1511-420-0

LOG OF BORING GP-7

(page 1 of 1)