November 9, 2012

Ms. Christina Schafer
Columbia Bank
1301 A Street, MS 6110
Tacoma, Washington 98402

RE: Phase II Subsurface Investigation
Clear Lake Industrial Park
12785 State Route 9 and 12827 South Front Street
Clear Lake, Washington
RGI Project No. 2012-265A
Columbia Bank No. E2012-0202

Dear Ms. Schafer:

The Riley Group, Inc. (RGI) is pleased to present our Phase II Subsurface Investigation (Phase II) for the Clear Lake Industrial Park property located at 12785 State Route 9 and 12827 South Front Street, Clear Lake, Skagit County, Washington (hereafter referred to as the Property, Figure 1 and 2).

PROJECT BACKGROUND

On behalf of Columbia Bank, RGI completed a Phase I Environmental Site Assessment (ESA) on August 3, 2012 (RGI project number 2012-265). Based on our Phase I ESA findings, the following recognized environmental conditions (RECs) were identified:

- Historical Property use included various industrial uses dating back to as early as 1903 (primarily commercial purposes related to forestry). Georgia Pacific occupied the Property in the 1980s to 2000. Georgia Pacific's operating practices included mixing and storage of chlordane pesticide in the storage building and application to tree seedlings in the greenhouse located on the Property. Previous investigations indicated that chlordane mixing and use on the Property resulted in overspray and rinse water entering the drainage system (including dry wells). Other former improvements included various aboveground storage tanks (ASTs) and underground storage tanks (1,000- to 10,000-gallon USTs), possible buried automobiles, and a former fuel storage building (referred to as Building 2) were identified.
- In 1995 and subsequent years, a cleanup action was undertaken and at least 300 cubic yards (total volume unknown) of chlordane-contaminated soil was excavated from two former drywell/steam cleaning and associated drain line areas. Remedial excavations reached depths of up to 10 feet. Approximate remedial excavation locations are illustrated on the attached Figures 2 and 4.
- Previous reports indicated that the *in-situ* soil, following the remedial excavation efforts, had chlordane concentrations below the MTCA Method B soil cleanup level of 2.86 mg/kg (in effect at that time).

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- In 2001, Georgia Pacific and their consultant reported that their cleanup and investigation of the Property was completed and had been fully remediated.
- Since 1995, several groundwater monitoring wells (MW1 to MW7) were installed on and off the Property and sampled on a periodic basis, see Figure 2. Groundwater samples collected from two monitoring wells (MW1 and MW3) regularly had chlordane concentrations ranging between 1.2 µg/L to 36 µg/L, above the MTCA Method B groundwater cleanup level of 0.25 µg/L in effect at that time. Monitoring well MW3 was located off the Property and upgradient of a former dry well and remedial excavation.
- Shallow groundwater beneath the Property was reported at depths ranging between approximately 6 feet and 12 feet below ground surface (bgs) with a groundwater flow direction to the northwest (away for Clear Lake). Based on the groundwater flow direction, it was concluded that the Property was located downgradient of Clear Lake, and, therefore, the Property was not a threat to the nearby surface water body.
- The results of an aquifer test performed on the groundwater monitoring wells indicated that the shallow groundwater was considered a potential drinking water source. Therefore, the groundwater cleanup levels selected needed to be protective of drinking water. The selected groundwater cleanup level for chlordane was the Method B groundwater cleanup level of 0.25 µg/L (which is the current Method B cleanup level for groundwater).
- Based on long-term groundwater monitoring results from 1995 through 2004, Georgia Pacific and their consultant concluded that the elevated chlordane concentrations in groundwater was limited to monitoring wells MW1 (located on the Property) and MW3 (located off the Property), immobile, naturally degrading, and would continue to degrade until concentrations were either non-detect, or reduced to concentrations below the Method B groundwater cleanup levels.
- Ecology concurred, at the time, with their interpretation of the soil and groundwater data, and issued a No Further Action letter in July 2004 (including a restrictive covenant and requirement for continued groundwater monitoring for five years).
- In 2011, Ecology performed a five-year review of the completed cleanup and the reported findings of the subsequent groundwater compliance monitoring events. Based on Ecology's review of groundwater monitoring data from 2004 to 2010, Ecology concluded the following:

    1. Only a moderate decline in chlordane concentrations in monitoring wells MW1 and MW3 was observed. Chlordane concentrations in groundwater still exceeded the MTCA Method B groundwater cleanup levels at monitoring wells MW1 (on the Property) and MW3 (located off the Property). During this time period, Chlordane concentrations in groundwater at MW1 and MW2 ranged from 1.5 µg/L to 2.7 µg/L and 1.0 µg/L to 4.9 µg/L, respectively. The decline in chlordane concentrations in groundwater did not occur as speculated in 2004.
    2. The 2004 Restrictive Covenant, part of the NFA obligation, placed on the Clear Lake Yard property only pertained to the Clear Lake yard Property. The Restrictive Covenant did not apply to any of the adjoining or other properties. Since elevated chlordane concentrations in groundwater still remained at the monitoring well MW3 (located off the Property), the existing Restrictive Covenant was no longer considered protective of human health.
    3. In April 2012, based on Ecology's five-year review, Ecology rescinded that 2004 No Further Action letter and placed the Property back on the Confirmed and Suspected Contaminated Sites database.

- In 2012, as part of their five year review, Ecology also requested additional down-gradient and point of compliance groundwater monitoring wells to better define the nature and extent of chlordane contaminated groundwater.

At Columbia Bank's request, RGI completed this Phase II to further define the nature and extent of contamination at the Property.

SCOPE OF WORK

The scope of work for this project was performed in accordance with our Phase II Subsurface Investigation Proposal, dated August 13, 2012. Authorization for this project was provided by Mr. Bruce Farnham of Columbia Bank on August 24, 2012.

SUBSURFACE INVESTIGATION AND SAMPLING

Project Set-up: Private and Public Utility Locate

At least 48 hours prior to commencing our subsurface investigation, RGI contacted One-Call to locate known public underground utilities near, or on, the Property. Public underground utilities located included electric, natural gas, telecommunications, water, sewer, and cable.

RGI retained Underground Detection Services (UDS), a private utility locator, to locate private water, natural gas, electric, and other metallic underground utility conduits potentially in the proposed sampling areas. No potential underground utility conflicts were located.

Geophysical Survey

On September 4, 2012, UDS provided geophysical services in an attempt to identify and locate any suspect abandoned USTs, buried automobiles, or other large buried metallic objects on the Property.

The geophysical survey entailed using ground penetrating radar (GPR) and magnetic locator. Some areas within the existing building were not accessible for the geophysical survey.

The geophysical survey did not identify any abandoned USTs or large buried metallic objects. However the survey did identify apparent backfilled areas indicative of possible former UST, or remedial excavation areas. These areas were marked in the field using spray paint.

A copy of the geophysical survey is included in Appendix A.

Subsurface Investigation

On September 7, 2012, 11 test probes (B1 and B11) were advanced on the Property to depths ranging from approximately 8 to 16 feet below ground surface (bgs). Test probes were advanced using a truck-mounted, direct-push, test probe rig owned and operated by Pacific Northwest Probe & Drilling, Inc. of Milton, Washington, under subcontract to RGI. Four of the test probe locations were completed with a groundwater monitoring well (MW8 to MW11). Test probe and groundwater monitoring well locations are shown on Figure 2 and described below.

Test probes B1, B2, and B3 were located in the vicinity of the reported former location of the diesel and gasoline ASTs and a former dry well. The geophysical survey identified a subsurface area of disturbed soil. Probe B1 was placed in the center of the subsurface anomaly as it appears to have been the most likely location of a former dry well.

Test probes B4 and B5 were located in an area north of the main shop Building 1 where there was reportedly past excavation (date unknown) of petroleum hydrocarbon impacted soil.

Test probe B6 was located along the northern boundary of the Property, in the general vicinity of the reported septic drain field area.

Test probe B7 was located in an area where excavation of petroleum hydrocarbon soil was reportedly performed in 1995. The geophysical survey also identified the area as disturbed fill soil.

Test probes B8 and B11 were located in areas with past storage or use of petroleum hydrocarbons. No geophysical anomalies were identified in these locations.

Test probe B9 was located in the southeast corner of the Property to primarily check for chlordane in the soil near monitoring well MW1, which has historically exhibited elevated chlordane in groundwater concentrations.

Test probe B10 was located inside the Building 5 greenhouse area to check for chlordane in the soil associated with historical pesticide use.

Monitoring wells MW8, MW9, MW10, and MW11 were located on the Property to better define the nature and extent of chlordane and heavy metal groundwater contamination associated with the former Georgia Pacific nursery.

All samples were collected in accordance with RGI's standard operating and decontamination procedures. Samples were placed in preconditioned, sterilized containers provided by an Ecology-accredited analytical laboratory. The samples were placed in a chilled cooler throughout the field program, with all subsequent transportation and transfer accomplished in accordance with RGI's chain-of-custody procedures.

Subsurface Conditions

Soil conditions encountered were described using the Unified Soil Classification System (USCS). Shallow subsurface soils encountered during drilling generally consisted of brown, generally medium dense, moist to wet, sandy silt near the surface grading to a silty sand starting at approximately 5 to 6 feet bgs to the final probe depth of 16 feet bgs. Groundwater was encountered during test probing at depths ranging from 5 to 11 feet bgs. Test probes were advanced beyond the groundwater table to allow for collection of groundwater grab samples. Test probe logs are included in Appendix B.

Soil Sampling

Continuous soil cores were collected at approximately 4-foot intervals from each probe location, except in cases where there was too little recovery or the soil core contained slough and was not representative of *in situ* soil.

The soil cores were inspected and field screened for the presence of volatile organic compounds (VOCs) using a portable gas photoionization detector (PID) and for total petroleum hydrocarbons (TPH) using a water sheen test. Soil samples were collected from the cores at regular intervals or where field screening results indicated that contamination may be present.

A total of 52 discrete soil samples were collected for this project. No elevated PID readings were noted at any of the sampling locations. In addition, no odors, sheens, discolorations, or other evidence of soil contamination were observed.

Soil samples tested for petroleum hydrocarbons were typically selected from the portion of the core immediately above the water saturated section as observed in the field (where migrating petroleum hydrocarbons tend to accumulate).

All test probe holes that were not converted into monitoring wells were abandoned using hydrated bentonite chips and patched to match existing grade (concrete or asphalt patch, where applicable).

Groundwater Grab Sampling

Groundwater grab samples were collected from all test probe locations. Prior to collecting groundwater samples, groundwater was purged from each test probe hole to remove turbid water to the maximum extent possible. Each test probe hole was purged until a maximum of 3 gallons of water had been removed or until the purge water was visually clear, whichever came first. The groundwater samples were collected through a 1-inch-diameter temporary well screen down the hole using a peristaltic pump and disposable plastic tubing under low-flow conditions.

Groundwater grab samples may not be representative of groundwater conditions or quality (due to the increased sample turbidity associated with the sampling method). To obtain samples that are definitively representative of groundwater would require the installation, development, and sampling of groundwater monitoring wells, which is not the objective of this study. The objective of this study was to determine whether, and in relative terms, groundwater has been adversely affected by the potential contaminants of concern. Groundwater grab sampling will satisfy this project objective as well as provide useful information regarding potential groundwater monitoring well locations, should they be required.

Groundwater Monitoring Well Sampling

On September 11, 2012, RGI collected groundwater samples from all seven groundwater monitoring wells located on the Property (MW1, MW2, MW4, and MW9 to MW11) to be tested for chlordane.

On October 4, 2012, RGI collected groundwater samples from three groundwater monitoring wells (MW1, MW2, and MW8) located on the Property in known pesticide use, or release areas, for total and dissolved heavy metal analysis (arsenic, cadmium, chromium, lead, and mercury).

During both groundwater monitoring well sampling events, groundwater was purged using low flow through Horiba water meter, recording pH, temperature, conductivity, dissolved oxygen, turbidity, and salinity readings. Groundwater samples were collected when the measured parameters stabilized to within 10 percent during two consecutive readings.

Groundwater Elevation Determination

RGI measured top of casing elevations using the optical differential measuring technique. The Ecology standard elevation (Nav 88) protocol was used to establish the reference elevation. The top of casing elevations were measured and recorded based on the Nav 88 reference elevation of 46 feet above mean sea level (AMSL) between the southeast corner of Building 4 and the southwest corner of Building 5. Depth to static water in each groundwater monitoring well was then measured using an electronic water meter.

Depth to groundwater ranged from approximately 6 feet to 11 feet bgs with a groundwater flow direction to the northwest. The average elevation of the groundwater was approximately 35.38 AMSL. Based on our measurements, the direction of groundwater flow was confirmed to be away from Clear Lake, primarily to the north-northwest. The approximate gradient was 0.0004 feet per foot. The northwest groundwater flow direction, away from Clear Lake, is consistent with previously reported groundwater flow directions.

REGULATORY FRAMEWORK

Washington's chemical release cleanup law, the Model Toxics Control Act (MTCA, RCW 70.105D) mandates that site cleanups protect human health and the environment. The MTCA Cleanup Regulation (WAC173-340) defines the approach for establishing cleanup requirements for individual sites, including the establishment of cleanup standards and selection of cleanup actions.

MTCA regulation provides three options for establishing generic and site-specific cleanup levels for soil and groundwater. MTCA Method A cleanup levels have been adopted for specific purposes and are intended to provide conservative cleanup levels for sites undergoing routine site characterization or cleanup actions for those sites with relatively few hazardous substances. MTCA Method B and C cleanup levels are set using a site risk assessment, which focus on the use of "reasonable maximum exposure" assumptions based on site-specific characteristics and toxicity of the contaminants of concern.

For purposes of general comparison, analytical laboratory data for petroleum hydrocarbons and metals were compared to the routine MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses and MTCA Method A Cleanup Levels for Ground Water. However, chlordane was determined to be the only contaminant of concern for the Property and there are no published MTCA Method A cleanup levels for chlordane. RGIs selection of the appropriate chlordane groundwater and soil cleanup level is discussed below.

Groundwater Cleanup Level for Chlordane

WAC 173-340-700(5)(a) indicates that it is acceptable to use Applicable or Relevant and Appropriate Requirements (ARARs) in conjunction with MTCA Method A cleanup levels when MTCA Method A cleanup levels have not been established for the indicated compounds, and the ARAR is sufficiently protective of human health and the environment. The ARARs selected for the Property are the State Primary Maximum Contaminant Levels (MCLs) as established under the Environmental Protection Agency (EPA) National Primary Drinking Water Regulations (NPDWRs). Therefore, the applicable groundwater cleanup level for chlordane is the State Primary MCL of 2 µg/L. This cleanup level was evaluated by RGI and does not exceed an excess cancer risk of one in one thousand (1X10E-5) and is, therefore, in compliance with WAC 173-340-705(5).

Soil Cleanup Level for Chlordane

WAC 173-340-720 requires that the soil cleanup level be protective of groundwater and its use as a source of potable drinking water. Using the Ecology Worksheet for Calculating Soil Cleanup Levels for Unrestricted Land Use, RGI calculated a Method B Soil Cleanup Level for chlordane, considered protective of groundwater and direct contact. The worksheet and details pertaining to this calculation are presented in Appendix C.

Summary of Soil and Groundwater Cleanup Levels for Chlordane

It should be noted that the soil and groundwater cleanup levels selected above for chlordane are different than the 2004 cleanup levels, as selected in previous investigations. The 2004 and current and applicable chlordane cleanup levels are summarized below.

Year	Soil Cleanup Level	Groundwater Cleanup Level
2004	2.86 mg/kg – Method B (based on direct soil contact)	0.25 µg/L – based on Method B cleanup level
2012	2.05 mg/kg (most stringent soil cleanup level based on soil direct contact and groundwater protection)	2 µg/L – ARAR*

*, The ARAR is considered sufficiently protective of human health and the environment and, therefore, can be used in lieu of the MTCA Method B value.

ANALYTICAL LABORATORY ANALYSIS

A total of 53 soil samples and 15 groundwater samples were submitted to Friedman & Bruya, Inc., and Fremont Analytical, both Ecology-accredited, third-party analytical laboratories, for potential laboratory analysis or for archive.

Of the samples submitted, 17 of the soil samples and 15 of the groundwater samples were selected for laboratory analysis for one or more of the following contaminants of concern:

- Hydrocarbon identification using Ecology Test Method NWTPH-HCID.
- VOCs using EPA Test Method 8260B.
- Chlordane (an organochlorine pesticide) using EPA Method 8081.
- MTCA 5 Metals (arsenic, lead, cadmium, chromium and mercury) using EPA Test Methods 200.8 and 1631E. In regards to groundwater, groundwater samples collected during this project were analyzed for both *dissolved* and *total* metals. Laboratory testing for dissolved metals includes the laboratory passing the groundwater sample through a 40 micron filter, to remove suspended silt from the sample, prior to analysis. Laboratory testing for total metals does not include any sample filtration to remove any suspended silt or solids from the groundwater sample prior to analysis. In practice, the presence of any suspended silt and other solids in a water sample will typically increase the metal concentrations reported. Hence, the practice of utilizing filtration and dissolved metals analysis for comparison.

Analytical test certificates, including quality control, data, and chain-of-custody documentation for all samples submitted to the analytical testing laboratory by RGI as part of this Phase II are included in Appendix D.

ANALYTICAL RESULTS

Analytical results and the respective MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses, MTCA Method A Cleanup Levels for Ground Water, MTCA Method B cleanup levels and State Primary MCLs (ARARs) are summarized in the attached Tables 1 and 2, and discussed below.

All soil and groundwater samples selected for laboratory analysis had non-detectable concentrations of TPH (as gasoline, diesel and oil) and VOCs. In addition, heavy metals (arsenic, cadmium, chromium, lead, and mercury) in soil were either non-detect, or had trace concentrations considered background, or naturally occurring.

Chlordane was not detected in either of the two soil samples collected from shallow soil from areas of suspected pesticide impacts.

Chlordane was detected in groundwater in monitoring wells MW1 (6.79 µg/L), MW4 (1.75 µg/L), MW8 (7.7 µg/L), MW9 (2.06 µg/L), and MW11 (5.19 µg/L). These concentrations exceed the State Primary MCL for chlordane in groundwater of 2.0 µg/L. The highest chlordane concentrations in groundwater were detected at monitoring wells MW1 and MW8. Monitoring wells MW3, MW6, and MW7 (located off the Property) were not sampled during this project.

Groundwater samples collected from monitoring wells MW1, MW2, and MW8 had non-detectable concentrations of dissolved metals (arsenic, cadmium, chromium, lead, and mercury). The total metal concentrations from monitoring well MW2 and MW8 exceeded the MTCA Method A Cleanup Levels for Ground Water. However, the total metal results are considered attributed to suspended silt (turbidity) and not necessary representative of groundwater quality.

CONCLUSIONS AND RECOMMENDATIONS

The geophysical survey did not identify any abandoned USTs or large buried metallic objects. However the survey did identify apparent backfilled areas indicative of possible former UST, dry well, and/or remedial excavation locations. Based on the geophysical findings, these apparent backfilled areas were also investigated as part of this Phase II.

RGI reevaluated and selected appropriate chlordane soil and groundwater cleanup levels for the Property, protective of human health and the environment. The current chlordane soil and groundwater cleanup levels are 2.05 mg/kg and 2 µg/L, respectively. For reference, the 2004 chlordane soil and groundwater cleanup levels were 2.85 mg/kg and 0.25 µg/L, respectively

All soil and groundwater samples selected for laboratory analysis had non-detectable concentrations of TPH (as gasoline, diesel, and oil) and VOCs. In addition, heavy metals (arsenic, cadmium, chromium, lead, and mercury) in soil were either non-detect, or had trace concentrations considered background, or naturally occurring. Chlordane was not detected in either of the two soil samples collected from shallow soil from areas of suspected pesticide impacts.

Four of the seven monitoring wells located on the Property intercepted groundwater with chlordane concentrations ranging from 2 µg/L to 7.7 µg/L, above the ARAR cleanup level of 2.0 µg/L. The highest chlordane concentrations in groundwater were detected at monitoring wells MW1 and MW8. Monitoring well MW8 is located just northwest of Building 5, and downgradient of a 1994 remedial excavation area. Monitoring well MW1 is located in the southeast portion of the Property. These findings support Ecology's opinion that the elevated chlordane concentrations in groundwater are not undergoing natural attenuation and/or degradation. Enhanced degradation of chlordane may be achieved by the injection of chemicals or nutrients that facilitate and accelerate degradation of this otherwise persistent pesticide. If groundwater remediation is required to meet the substantive requirements of MTCA, an in-situ chemical oxidation (ISCO) technology may be applicable.

During this project, three groundwater monitoring wells MW3, MW6, and MW7 (MW5 was decommissioned) were located off the Property and not accessible, therefore, not sampled and tested. However, based on the 2008 and 2010 groundwater sampling data by others, the chlordane concentrations in these wells, though above the Method B groundwater cleanup level of 0.25 µg/L, are below the currently proposed ARAR/MCL groundwater cleanup level of 2 µg/L.

RGI recommends the following:

- Submit a copy of this report to Ecology in response to Ecology's 2011/2012 five-year review and request for additional subsurface investigation.
- Prepare and submit an amended work plan to Ecology, for their review and comment, that outlines a proposed future action in an effort to obtain reinstate the No Further Action determination rescinded in 2011. An amended work plan could include, but is not necessarily limited to, (1) proposing additional points of groundwater compliance, (2) requesting Ecology's approval of the chlordane groundwater cleanup level as currently proposed, and (3) sampling and testing the existing groundwater monitoring wells located off the Property.
- If chlordane-contaminated groundwater remediation is required to meet the substantive requirements of MTCA, an ISCO technology may be appropriate and applicable. ISCO and the enhanced degradation of chlordane may be achieved by the injection of chemicals or nutrients that facilitate and accelerate degradation of this otherwise persistent organochlorine pesticide.

PROJECT LIMITATIONS

This report is the property of RGI, Columbia Bank, and their authorized representatives or affiliates and was prepared in a manner consistent with the level of skill and care ordinarily exercised by members of the profession currently practicing in the same locality and under similar conditions. This report is intended for specific application to the property located at 12785 State Route 9 and 12827 South Front Street, Clear Lake, Skagit County, Washington. No other warranty, expressed or implied, is made.

The analyses and recommendations presented in this report are based upon data obtained from our review of available information at the time of preparing this report, our test pits excavated or test borings drilled on the Property, or other noted data sources. Conditional changes may occur through time by natural or human-made process on this or adjacent properties. Additional changes may occur in legislative standards, which may or may not be applicable to this report. These changes, beyond RGI's control, may render this report invalid, partially or wholly. If variations appear evident, RGI should be requested to reevaluate the recommendations in this report.

Please contact the undersigned at (425) 415-0551 if you have any questions or need additional information.

Sincerely,

THE RILEY GROUP, INC.

Richard N. Simpson, LG, LHG
Senior Geologist

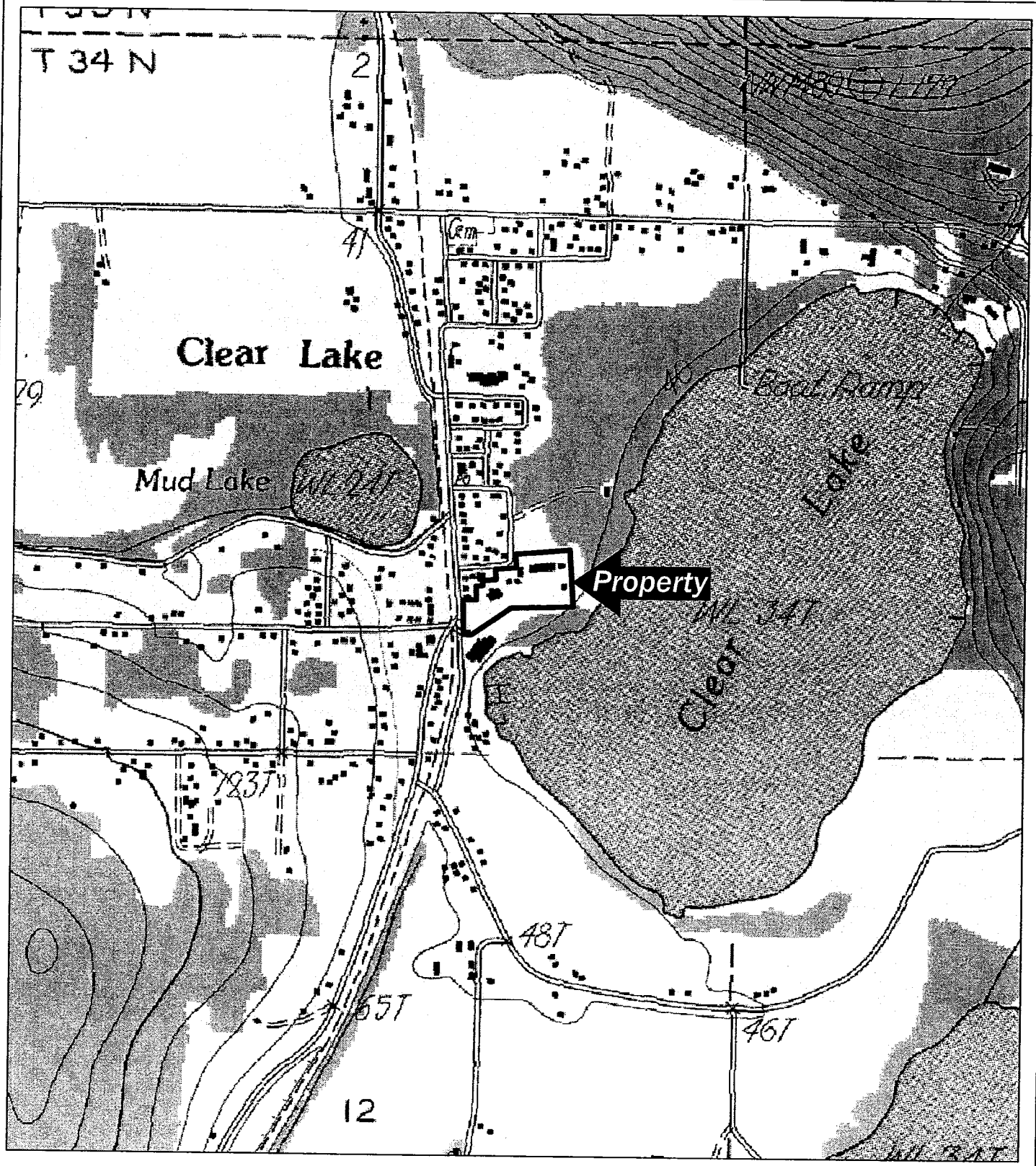
Jerry Sawetz
Senior Environmental Scientist

Paul D. Riley, LG, LHG
Principal

Paul D. Riley

Attachments:
Figure 1, Property and Surrounding Area
Figure 2, Property Plan with Groundwater Elevation Contours
Figure 3, Property Plan with Groundwater Elevation Contours
Figure 4, Previous Sample Location Map
Table 1, Summary of Soil Sample Analytical Laboratory Results
Table 2, Summary of Groundwater Analytical Laboratory Results
Appendix A, Geophysical Survey Report
Appendix B, Test Probe and Groundwater Monitoring Well Logs
Appendix C, Ecology Worksheet for Calculating Chlordane Soil Cleanup Levels
Appendix D, Analytical Laboratory Reports and Sample Chain of Custody Forms

Report Distribution: *Ms. Christina Schafer (one bound copy and PDF)*



USGS, 1985, Sedro Woolley South, Washington
7.5-Minute Quadrangle

Approximate Scale: 1"=1000'

0 500 1000 2000

N

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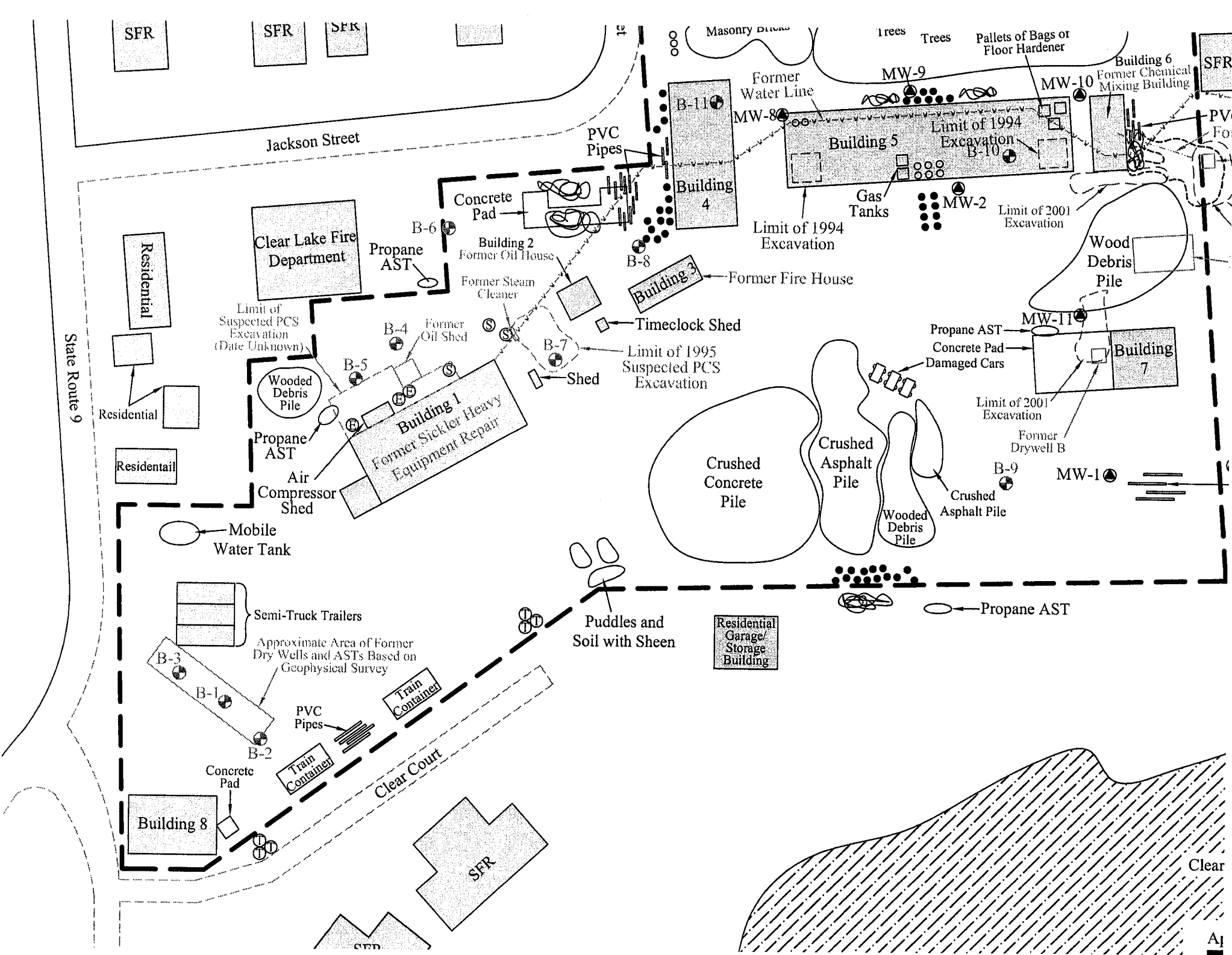
Clear Lake Industrial Park		Figure 1
RGI Project Number 2012-265A	Property Vicinity Map	Date Drawn: 11/2012
Address: 12785 State Route 9 and 12827 South Front Street, Clear Lake Washington 98253		


SFR
SFR
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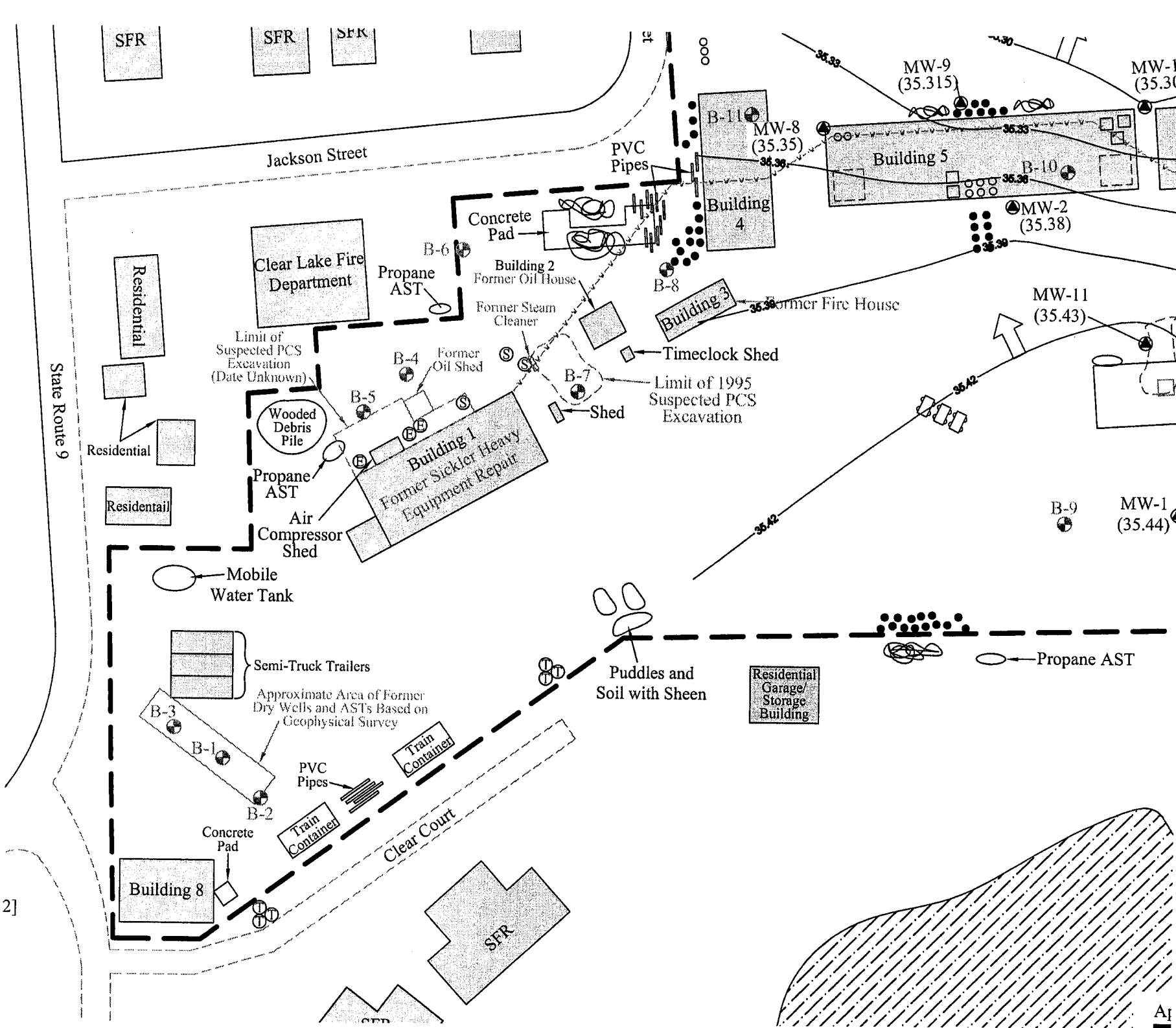
Masonry Bricks
Trees
Trees
Pallets of Bags or Floor Hardener
Building 6
Former Chemical Mixing Building
SFR
Jackson Street
B-11
Former Water Line
MW-9
MW-10
MW-8
Limit of 1994 Excavation
Building 5
B-10
PVC Pipes
Building 4
Gas Tanks
MW-2
Limit of 2001 Excavation
Limit of 1994 Excavation
Concrete Pad
B-6
Clear Lake Fire Department
Propane AST
Building 2
Former Oil House
B-8
Building 3
Former Fire House
Wood Debris Pile
Residential
Former Steam Cleaner
Timeclock Shed
Limit of Suspected PCS Excavation (Date Unknown)
B-4
Former Oil Shed
B-7
Limit of 1995 Suspected PCS Excavation
MW-11
Propane AST
Concrete Pad
Damaged Cars
Building 7
B-5
Shed
Wooded Debris Pile
Building 1
Former Sickler Heavy Equipment Repair
Limit of 2001 Excavation
Former Drywell B
Residential
Residentail
Propane AST
Air Compressor Shed
Crushed Concrete Pile
Crushed Asphalt Pile
B-9
MW-1
Crushed Asphalt Pile
Wooded Debris Pile
State Route 9
Mobile Water Tank
Semi-Truck Trailers
Approximate Area of Former Dry Wells and ASTs Based on Geophysical Survey
Puddles and Soil with Sheen
Residential Garage/ Storage Building
Propane AST
B-3
B-1
B-2
PVC Pipes
Train Container
Train Container
Concrete Pad
Clear Court
Building 8
SFR
SFR
Clear



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4, 2012 water level

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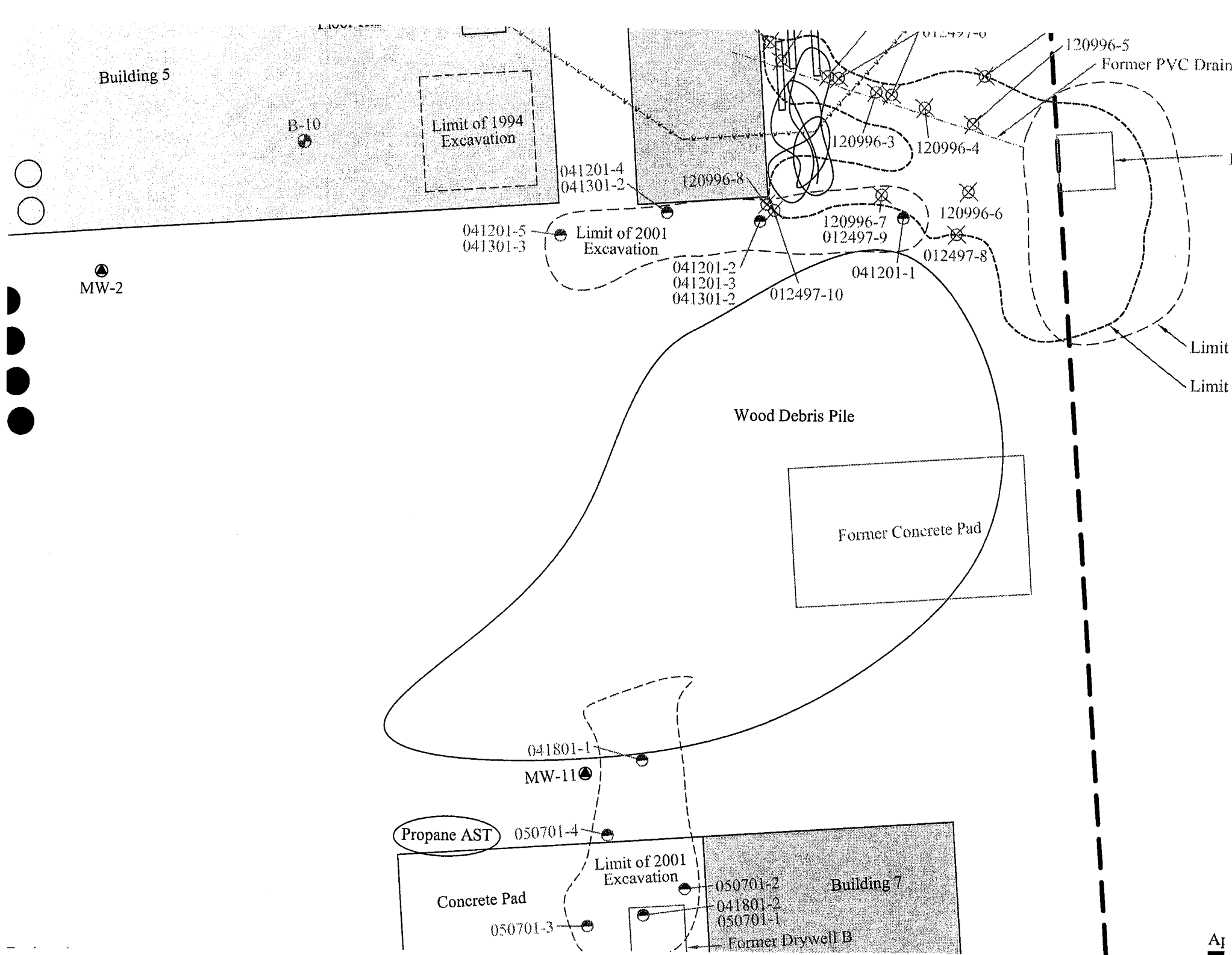
Building 5
B-10
Limit of 1994 Excavation
041201-4
041301-2
120996-8
120996-3
120996-4
120996-5
Former PVC Drain
120996-7
012497-9
120996-6
012497-8
041201-5
041301-3
Limit of 2001 Excavation
041201-2
041201-3
041301-2
012497-10
041201-1
MW-2
Limit
Limit
Wood Debris Pile
Former Concrete Pad
041801-1
MW-11
Propane AST
050701-4
Limit of 2001 Excavation
Concrete Pad
050701-2
Building 7
041801-2
050701-1
050701-3
Former Drywell B

Table 1. Summary of Soil Sample Analytical Laboratory Results
Clear Lake Industrial Park
12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington
The Riley Group, Inc. Project No. 2012-265A

Sample Number	Sample Depth	Sample Date	PID	HCID			Metals			Chlordane		
				Gasoline	Diesel	Heavy Oil	As	Pb	Hg	Total	Gamma	Alpha
B-1-3	3	09/07/12	0.0	ND<20	ND<50	ND<250	4.50	3.38	----	----	----	----
B-1-6	6	09/07/12	0.0	----	----	----	----	----	----	----	----	----
B-1-11	11	09/07/12	0.0	ND<20	ND<50	ND<250	----	----	----	----	----	----
B-1-12.5	12.5	09/07/12	0.1	----	----	----	----	----	----	----	----	----
B-2-3	3	09/07/12	0.0	ND<20	ND<50	ND<250	----	----	----	----	----	----
B-2-7	7	09/07/12	0.0	----	----	----	----	----	----	----	----	----
B-2-10	10	09/07/12	0.0	ND<20	ND<50	ND<250	----	----	----	----	----	----
B-2-12.5	12.5	09/07/12	0.0	----	----	----	----	----	----	----	----	----
B-3-4	4	09/07/12	0.0	ND<20	ND<50	ND<250	----	----	----	----	----	----
B-3-7	7	09/07/12	0.1	----	----	----	----	----	----	----	----	----
B-3-10	10	09/07/12	0.0	ND<20	ND<50	ND<250	----	----	----	----	----	----
B-3-12	12	09/07/12	0.0	----	----	----	----	----	----	----	----	----
B-4-3	3	09/07/12	0.0	ND<20	ND<50	ND<250	3.21	2.28	----	----	----	----
B-4-8	8	09/07/12	0.0	----	----	----	----	----	----	----	----	----
B-4-10	10	09/07/12	0.0	ND<20	ND<50	ND<250	----	----	----	----	----	----
B-4-16	16	09/07/12	0.0	----	----	----	----	----	----	----	----	----
B-5-4	4	09/07/12	0.2	----	----	----	----	----	----	----	----	----
B-5-7	7	09/07/12	0.1	----	----	----	----	----	----	----	----	----
B-5-11	11	09/07/12	0.0	ND<20	ND<50	ND<250	----	----	----	----	----	----
B-5-16	16	09/07/12	0.0	----	----	----	----	----	----	----	----	----
B-6-4	4	09/07/12	0.2	ND<20	ND<50	ND<250	----	----	----	----	----	----
B-6-6	6	09/07/12	0.1	----	----	----	----	----	----	----	----	----
B-6-10	10	09/07/12	0.2	----	----	----	----	----	----	----	----	----
B-6-16	16	09/07/12	0.1	----	----	----	----	----	----	----	----	----
B-7-4	4	09/07/12	0.2	----	----	----	----	----	----	----	----	----
B-7-7	7	09/07/12	0.1	----	----	----	----	----	----	----	----	----
B-7-8.5	8.5	09/07/12	0.2	ND<20	ND<50	ND<250	----	----	----	----	----	----
B-8-4	4	09/07/12	0.0	ND<20	ND<50	ND<250	----	----	----	----	----	----
B-8-7	7	09/07/12	0.2	----	----	----	----	----	----	----	----	----
B-8-11	11	09/07/12	0.2	ND<20	ND<50	ND<250	----	----	----	----	----	----
B-8-16	16	09/07/12	0.0	----	----	----	----	----	----	----	----	----
B-9-3	3	09/07/12	0.3	----	----	----	----	----	----	ND<0.0134	ND<0.0134	ND<0.0134
B-9-5	5	09/07/12	0.2	ND<20	ND<50	ND<250	----	----	----	----	----	----
B-9-8	8	09/07/12	0.2	----	----	----	----	----	----	----	----	----
B-10-3	3	09/07/12	0.0	----	----	----	7.36	3.70	ND<0.1	ND<0.0110	ND<0.0110	ND<0.0110
B-10-6	6	09/07/12	0.3	----	----	----	----	----	----	----	----	----
MTCA Soil Cleanup Levels				**100/30[1]**	**2,000**		**20**	**250**	**2**	**2.05[2]**	**2.05[2]**	**2.05[2]**

Table 1 Continued. Summary of Soil Sample Analytical Laboratory Results
Clear Lake Industrial Park
12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington
The Riley Group, Inc. Project No. 2012-265A

Sample Number	Sample Depth	Sample Date	PID	HCID			Metals			Chlordane		
				Gasoline	Diesel	Heavy Oil	As	Pb	Hg	Total	Gamma	Alpha
B-10-10	10	09/07/12	0.2	----	----	----	----	----	----	----	----	----
B-10-12	12	09/07/12	0.1	----	----	----	----	----	----	----	----	----
B-11-4	4	09/07/12	0.3	----	----	----	----	----	----	----	----	----
B-11-7	7	09/07/12	0.4	ND<20	ND<50	ND<250	----	----	----	----	----	----
B-11-9	9	09/07/12	0.2	----	----	----	----	----	----	----	----	----
B-11-12	12	09/07/12	0.1	----	----	----	----	----	----	----	----	----
MW-8-3	3	09/10/12	0.2	----	----	----	----	----	----	----	----	----
MW-8-9.5	9.5	09/10/12	0.1	----	----	----	----	----	----	----	----	----
MW-9-4	4	09/10/12	0.1	----	----	----	----	----	----	----	----	----
MW-9-7	7	09/10/12	0.2	----	----	----	----	----	----	----	----	----
MW-9-9	9	09/10/12	0.1	----	----	----	----	----	----	----	----	----
MW-10-3	3	09/10/12	0.1	----	----	----	----	----	----	----	----	----
MW-10-6	6	09/10/12	0.3	----	----	----	----	----	----	----	----	----
MW-10-10	10	09/10/12	0.1	----	----	----	----	----	----	----	----	----
MW-11-3	3	09/10/12	0.2	----	----	----	----	----	----	----	----	----
MW-11-8	8	09/10/12	0.2	----	----	----	----	----	----	----	----	----
MW-11-16	16	09/10/12	0.1	----	----	----	----	----	----	----	----	----
MTCA Soil Cleanup Levels				**100/30[1]**	**2,000**		**20**	**250**	**2**	**2.05[2]**	**2.05[2]**	**2.05[2]**

All results and detection limits are given in milligrams per kilogram (mg/kg); equivalent to parts per million (ppm).

Sample Depth = Soil sample depth interval in feet below ground surface (bgs).

PID = photoionization detector.

Gasoline, Diesel, and Oil HCID (petroleum hydrocarbon identification) determined using Ecology Test Method NWTPH-HCID.

Metals (As = arsenic, Pb = lead, Hg = mercury) determined using EPA Method 200.8 and 1631E.

Chlordane (an organochlorine pesticide) determined using EPA Test Method 8081.

ND = Not detected at noted analytical detection limit.

---- = Not analyzed or not applicable.

[1] The higher cleanup level is allowed if no benzene is detected in the sample and the total of toluene, ethylbenzene and xylenes is less than 1% of the gasoline mixture.

[2] Method A Cleanup Level was not available. Therefore, a site specific soil cleanup level, protective of groundwater quality, was calculated (see report text and Appendix C for further discussion).

Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A and B Soil Cleanup Levels (WAC 173-340-900, Table 740-1 and CLARC database).

Bold and yellow highlighted results indicate concentrations (if any) that exceed MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses.

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Top of Casing (TOC)	Depth to Water (below	Groundwater Elevation	BTEX				HCID			Other VOCs	Total MTCA 5 Metals					Dissolved MTCA 5 Meta			
			B	T	E	X	Gasoline	Diesel	Heavy Oil		As	Cd	Cr	Pb	Hg	As	Cd	Cr	Pb
pling																			
----	13	----	ND<0.35	ND<1	ND<1	ND<2	ND<200	ND<500	ND<500	ND	----	----	----	----	----	----	----	----	----
----	13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
----	13	----	ND<0.35	ND<1	ND<1	ND<2	----	----	----	ND	----	----	----	----	----	----	----	----	----
----	11	----	ND<0.35	ND<1	ND<1	ND<2	----	----	----	ND	----	----	----	----	----	----	----	----	----
----	11.5	----	ND<0.35	ND<1	ND<1	ND<2	ND<200	ND<500	ND<500	ND	----	----	----	----	----	----	----	----	----
----	11	----	ND<0.35	ND<1	ND<1	ND<2	ND<200	ND<500	ND<500	ND	----	----	----	----	----	----	----	----	----
----	11	----	ND<0.35	ND<1	ND<1	ND<2	----	----	----	ND	----	----	----	----	----	----	----	----	----
----	5	----	ND<0.35	ND<1	ND<1	ND<2	----	----	----	ND	----	----	----	----	----	----	----	----	----
----	10.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
----	10.5	----	ND<0.35	ND<1	ND<1	ND<2	ND<200	ND<500	ND<500	ND	----	----	----	----	----	----	----	----	----
lonitoring Well Sampling																			
7 to 17 feet bgs/Total Depth 17 feet bgs																			
41.83	6.39	35.44	----	----	----	----	----	----	----	----	ND<1	ND<1	1.69	ND<1	ND<0.1	ND<1	ND<1	ND<1	ND<1
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10 to 20 feet bgs/Total Depth 20 feet bgs																			
47.37	11.99	35.38	----	----	----	----	----	----	----	----	5.97	ND<1	2.9	ND<1	ND<0.1	ND<1	ND<1	ND<1	ND<1
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Cleanup Levels for Ground Water			**5**	**1,000**	**700**	**1,000**	**800/1,000[1]**	**500**	**500**	**Analyte Specific**	**5**	**5**	**50**	**15**	**2**	**5**	**5**	**50**	**15**
AR - State/Federal Primary MCL			5	1,000	700	10,000	----	----	----	Analyte Specific	10	5	100	15	2	10	10	100	15

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Top of Casing (TOC)	Depth to Water (below	Groundwater Elevation	BTEX				HCID			Other VOCs	Total MTCA 5 Metals					Dissolved MTCA 5 Meta			
			B	T	E	X	Gasoline	Diesel	Heavy Oil		As	Cd	Cr	Pb	Hg	As	Cd	Cr	Pb
10 to 20 feet bgs/Total Depth 20 feet bgs																			
44.49	9.21	35.28	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
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5.5 to 11.5 feet bgs/Total Depth 12 feet bgs																			
45.70	10.35	35.35	----	----	----	----	----	----	----	----	87.0	11.9	782	860	1.3	ND<1	ND<1	ND<1	ND<1
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7 to 12 feet bgs/Total Depth 12 feet bgs																			
44.775	9.46	35.315	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
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al 7 to 12 feet bgs/Total Depth 12 feet bgs																			
43.15	7.85	35.30	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
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al 11 to 15 feet bgs/Total Depth 15 feet bgs																			
46.42	10.99	35.43	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
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lonitoring Well Sampling																			
/Total Depth Unknown																			
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Cleanup Levels for Ground Water			5	1,000	700	1,000	800/1,000[1]	500	500	Analyte Specific	5	5	50	15	2	5	5	50	15
AR - State/Federal Primary MCL			[illegible]	1,000	700	10,000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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Top of Casing (TOC)	Depth to Water (below	Groundwater Elevation	BTEX				HCID			Other VOCs	Total MTCA 5 Metals					Dissolved MTCA 5 Meta			
			B	T	E	X	Gasoline	Diesel	Heavy Oil		As	Cd	Cr	Pb	Hg	As	Cd	Cr	Pb
/Total Depth Unknown (Well Decommissioned in 2002)																			
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/Total Depth Unknown																			
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Cleanup Levels for Ground Water			5	1,000	700	1,000	800/1,000[1]	500	500	Analyte Specific	5	5	50	15	2	5	5	50	15
AR - State/Federal Primary MCL			5	1,000	700	10,000	----	----	----	Analyte Specific	10	5	100	15	2	10	10	100	15

MW7 installed by others. Monitoring wells MW8 to MW11 installed by RGI.
field staff using a peristaltic pump under low-flow conditions.
l analytical results are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
ethyl benzene, and xylenes) and VOCs (volatile organic compounds) determined using EPA Test Method 8260C.
HCID (Hydrocarbon Identification) determined using Ecology Test Method NWTPH-HCID.
enic, Cd = cadmium, Cr = chromium, Pb = lead, Hg = mercury) determined using EPA Method 200.8 and 1631E. Total metals represent unfiltered samples. Dissolved metals represent samples filtered by the laboratory prio
rine pesticide) determined using EPA Test Method 8081.
d analytical detection limit.
applicable.
is applicable if no benzene is detected in groundwater.
nent of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A Cleanup Levels for Ground Water (WAC 173-340-900, Table 720-1).
elevant and Appropriate Requirement. ARARs for the Property are State Primary Maximum Contaminant Levels (MCLs) as established under the Environmental Protection Agency (EPA) National Primary Drinking Water R

Underground Detection Services, Inc.

6809 North 56th Ave.
Glendale, AZ 85301

623/939-4690, tel
602/955-3146, fax
888/822-4999, toll-free

August 5, 2012

Richard Simpson
The Riley Group
17522 Bothell Way NE Suite A
Bothell, WA 98011

Dear Richard:

This is a report on the equipment, procedures, and results of the geophysical survey performed at Clear Lake Heavy Equipment 12785 State Route 9, Clear Lake, WA. The purpose of the survey was to identify possible UST's at the site.

The site was a Weyerhaeuser Co. facility. The site is currently occupied by a trucking firm. Information on the UST's and size was limited.

The equipment that was used for the survey included, but was not limited to a GSSI GEM-300 Electromagnetic (EM) multi-frequency profiler, GSSI Sir 3000 System ground penetrating radar (GPR) with 270 MHz antenna, Schonstedt GA-52 magnetic locator and a MetroTech 810 pipe and cable locator.

The EM produces a sinusoidal signal that is transmitted into the subsurface. This transmitted signal induces a flow of electrical current into the soil. These currents in turn induce a secondary electromagnetic field. The presence or absence of metallic objects and voids affects this secondary field. The secondary electromagnetic field is measured, collected, interpreted and stored for later processing.

The GPR utilizes high frequency radio waves to probe the subsurface. A radio wave is emitted from the antenna and travels through the soil, if there is an anomaly below the antenna; the radio wave is reflected back. The data that is collected is displayed in real time, through a color display.

The data that is produced is a cross section of the geology directly below the antenna. The top of the data represents the ground surface while the bottom of the page is a reading depth of the equipment. The data is collected and displayed from left to right, with left being the beginning and right being the end of the particular survey line. Anomalies typically appear white on a color screen.

The depth of the signal penetration is dependent upon geological factors beyond the control of the surveyor. Conductive soils, clays, and saturated soils, do not allow the GPR signal to penetrate as deeply as less resistive sandy soil.

The magnetic locator measures the magnetic field simultaneously from two separate elevations within the same piece of equipment. A high pitch sound is emitted from the equipment when in the proximity of ferrous material. The equipment is carried over the survey area and swung back and forth to cover as much area as possible in a reasonable time frame.

The pipe and cable locator uses a defined radio frequency induced on the line from a transmitter attached to the line at the surface. The frequency travels the length of the line and acts as an antenna below the surface. A receiver tuned to that frequency is carried above the surface and locates the line with that frequency.

The EM survey was setup on the west side of the property. The size of the survey area was 180' X 115'. There were numerous pieces of equipment within the survey area including semi-trailer, bulldozer, and sweeper. The soil below these pieces of equipment could not be surveyed. The survey area was setup with grid lines 10' apart. The EM was carried over the survey area walking a snake line grid 5' apart.

The EM data did not show any unknown anomalies.

Due to the large amount of equipment, material, buildings, and debris in the other 2 survey areas, the EM was only used on the west side of the site.

The GPR survey was setup around the other 2 areas indicated for the geophysical survey. The GPR antenna was pushed along the surface and data was collected continually. Due to the large amount of equipment, material, buildings, and debris the GPR survey could not be conducted over the entire areas requested.

The GPR data showed an anomaly in the west survey area. Line # 3 appears to be a possible excavation. The map shows that there were 2 former dry wells in the area. The anomaly could be one of the former dry wells.

The MAG was not used on this site due to the lack of metallic objects found in the EM and GPR surveys.

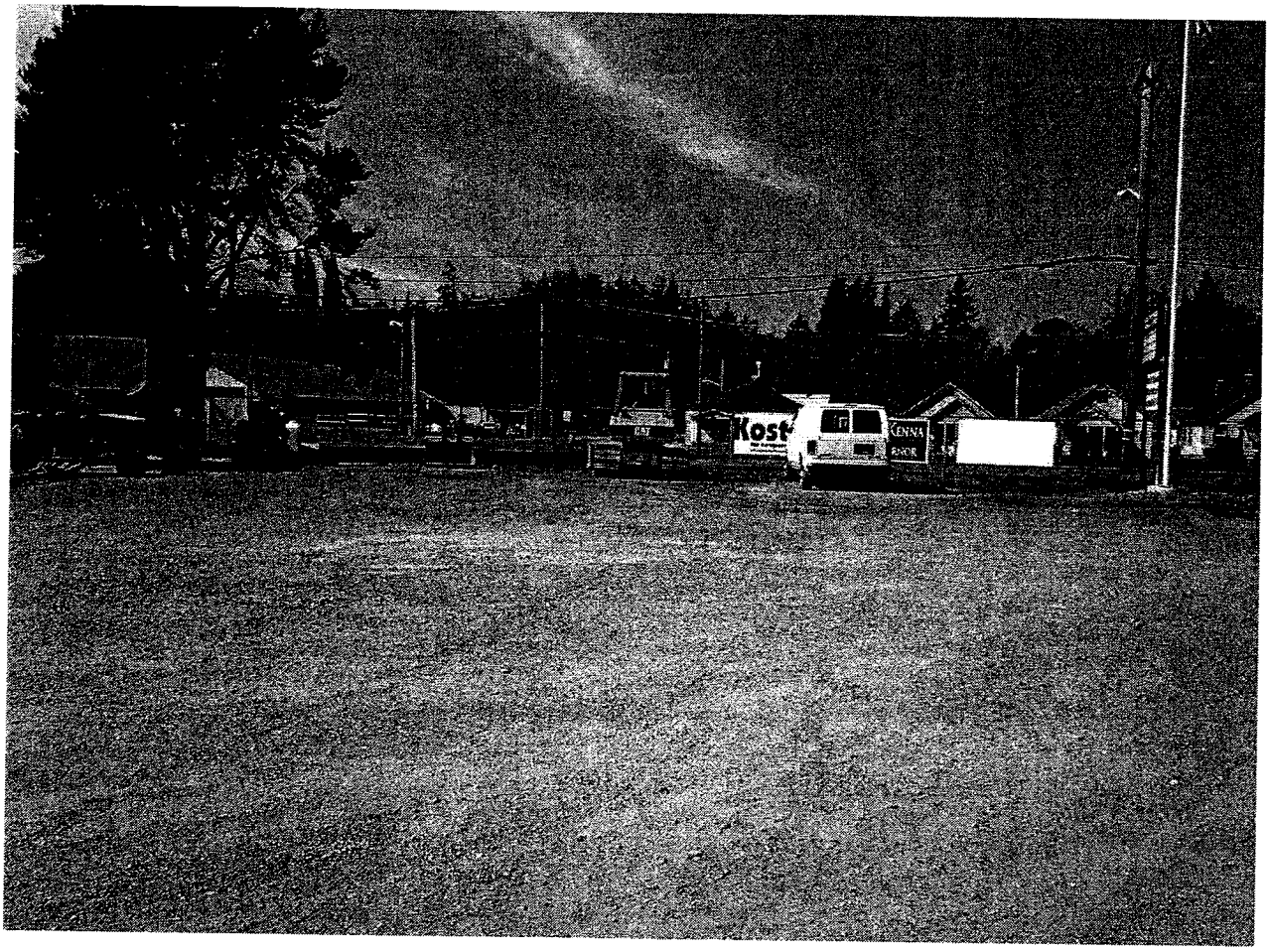
The pipe and cable locator was used to locate metallic lines in the areas of the proposed soil borings. There appears to be several water and gas lines that are non-metallic. The lines do not have tracer wires attached to the risers and were not located. Please use extreme caution when drilling; hand auguring should be used when possible. Less than all lines may have been located at this site.

The EM survey area and GPR lines are marked on the CAD drawing provided. The start of the GPR survey line corresponds to the number marked on the line.

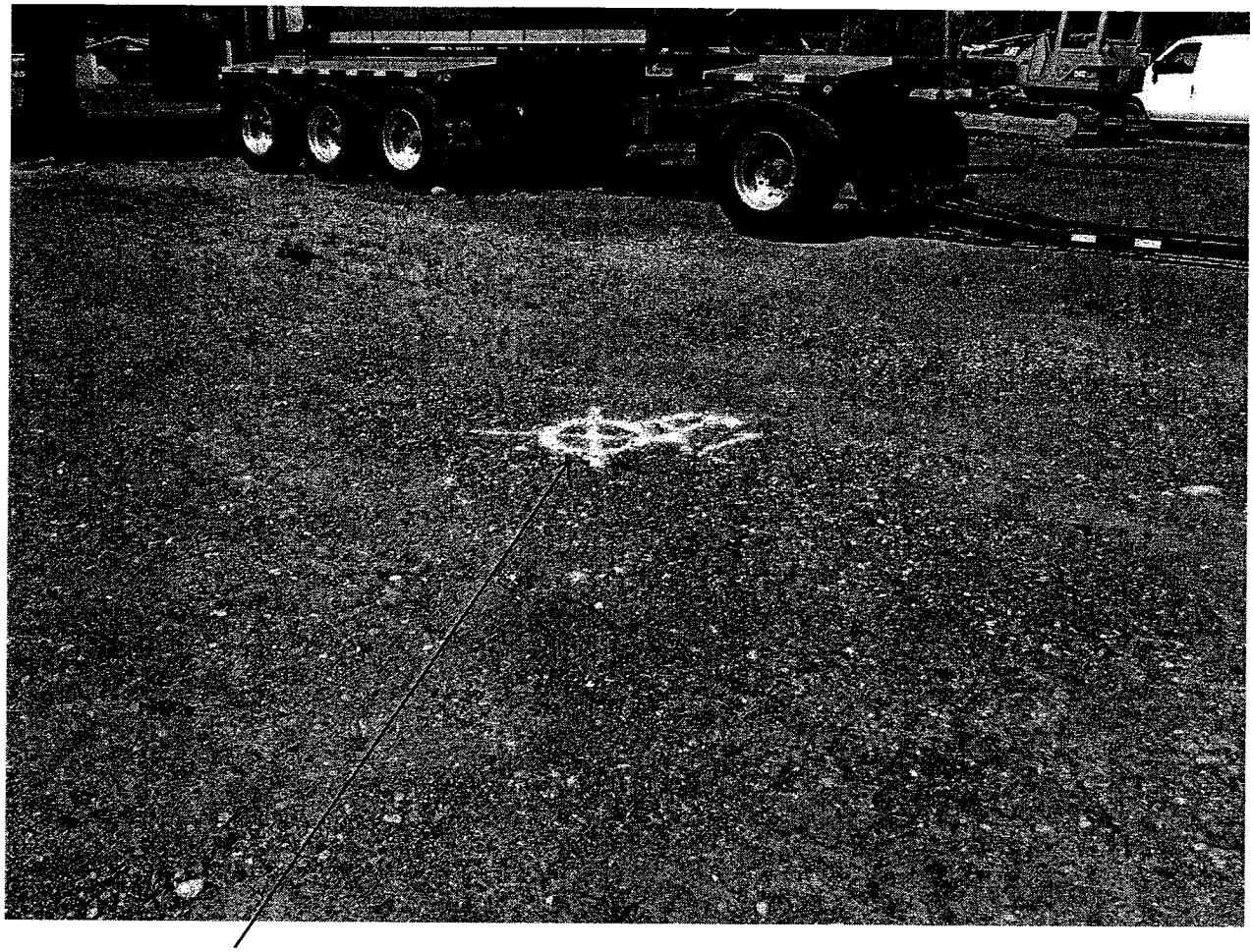
UST's on the site may not have been located due to tank material, depth of tank, the tank collapsed and filled with native soil, and tanks that were not within the geophysical survey area.

Respectfully,

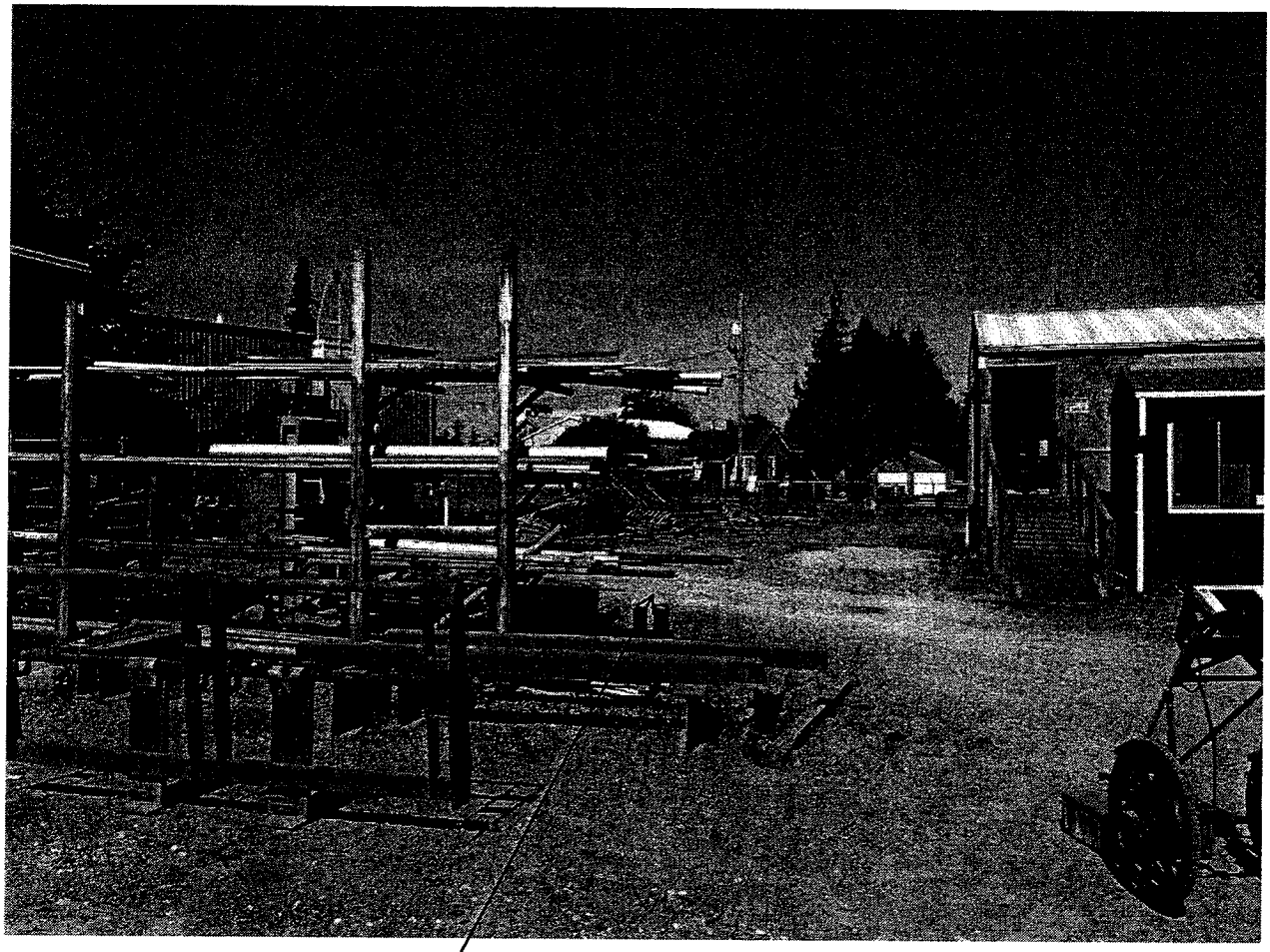
Richard A. Lund



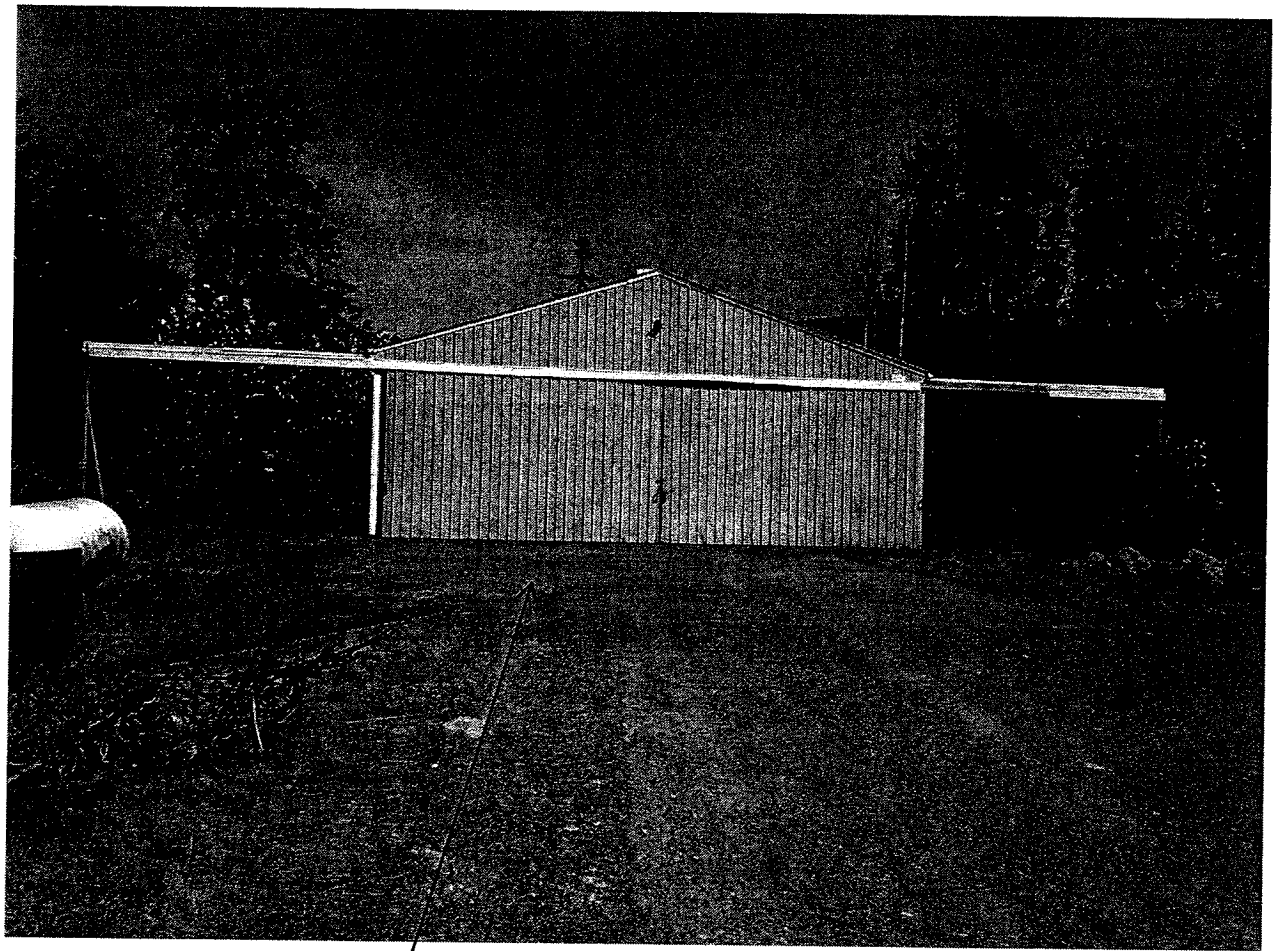
West geophysical survey area



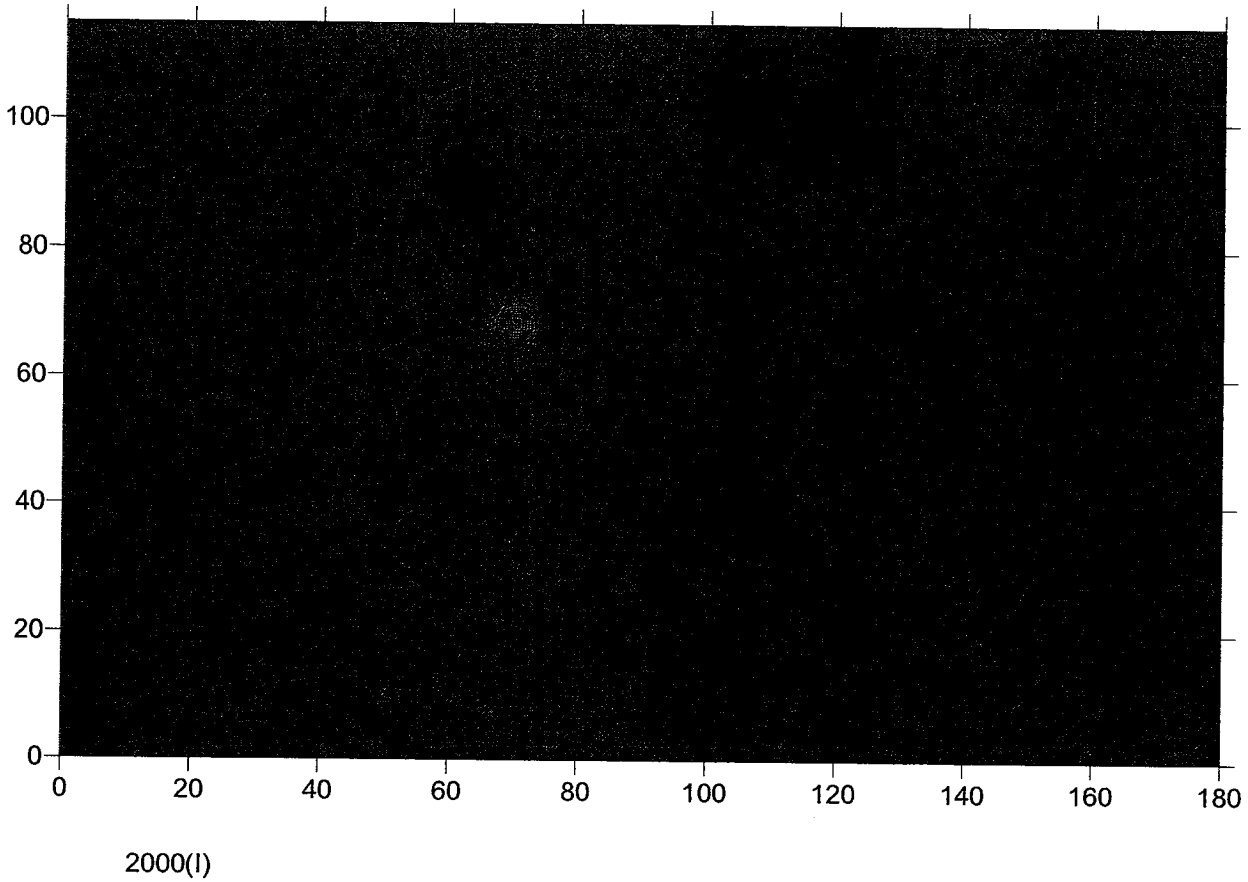
Unknown anomaly A1, possible former dry well, GPR data line # 3



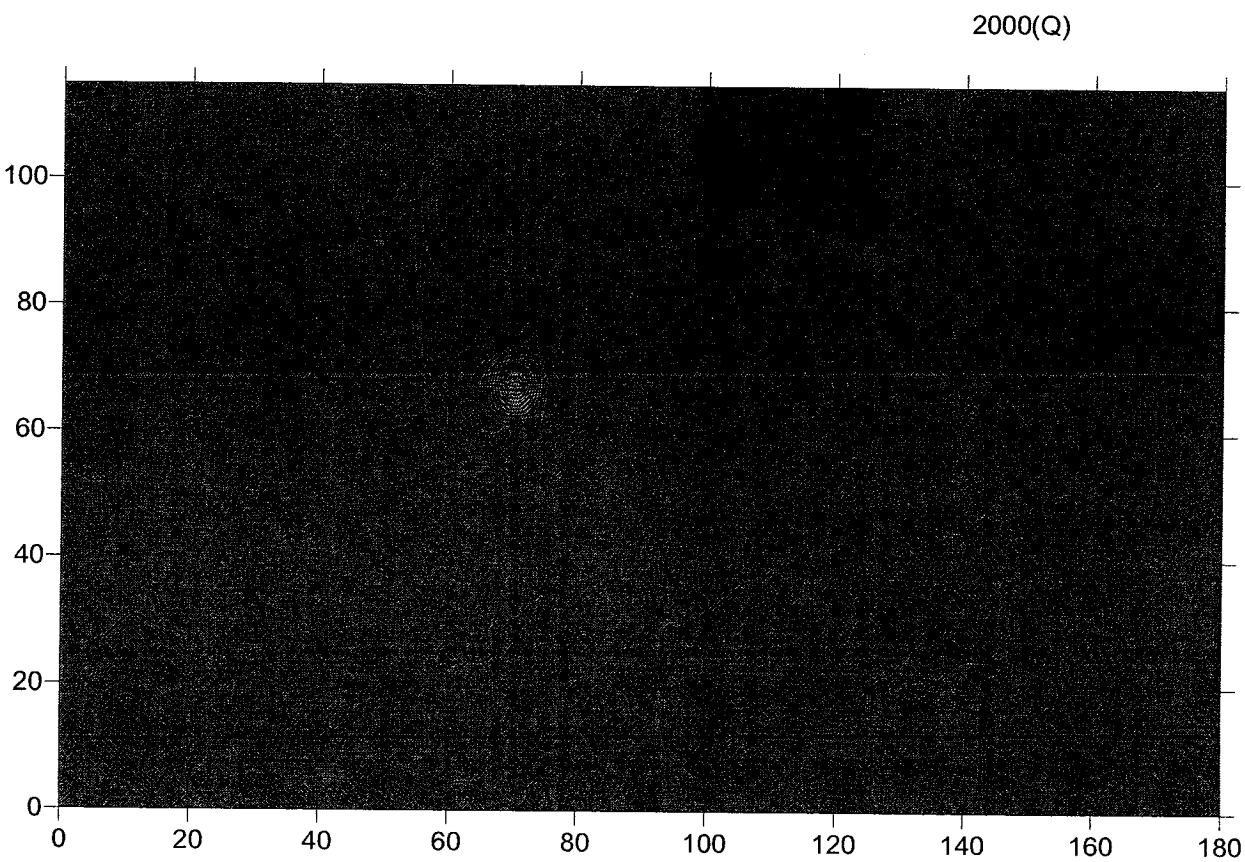
North geophysical survey area, excavation, GPR data line # 19

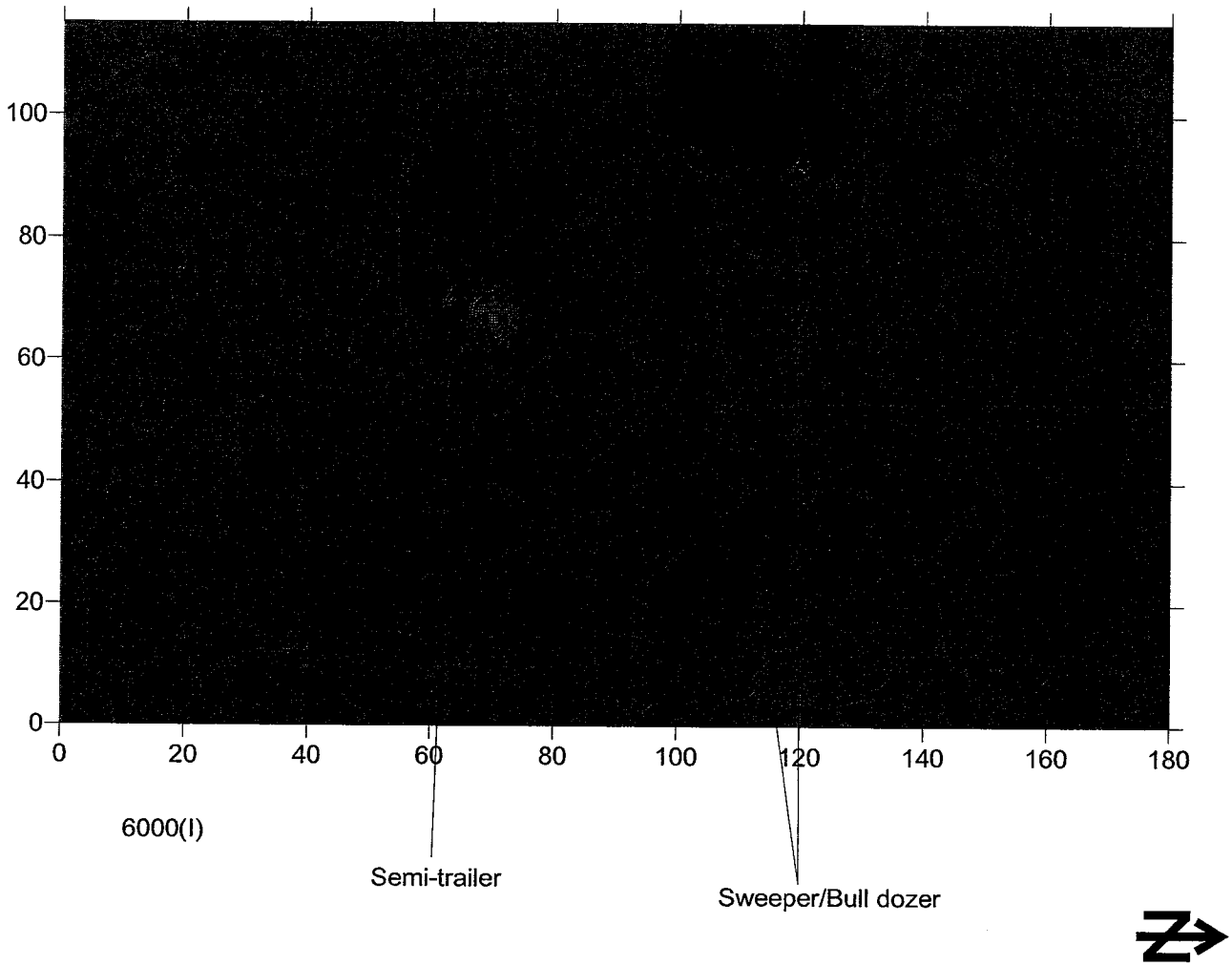


East geophysical survey area, excavation, GPR data line # 32

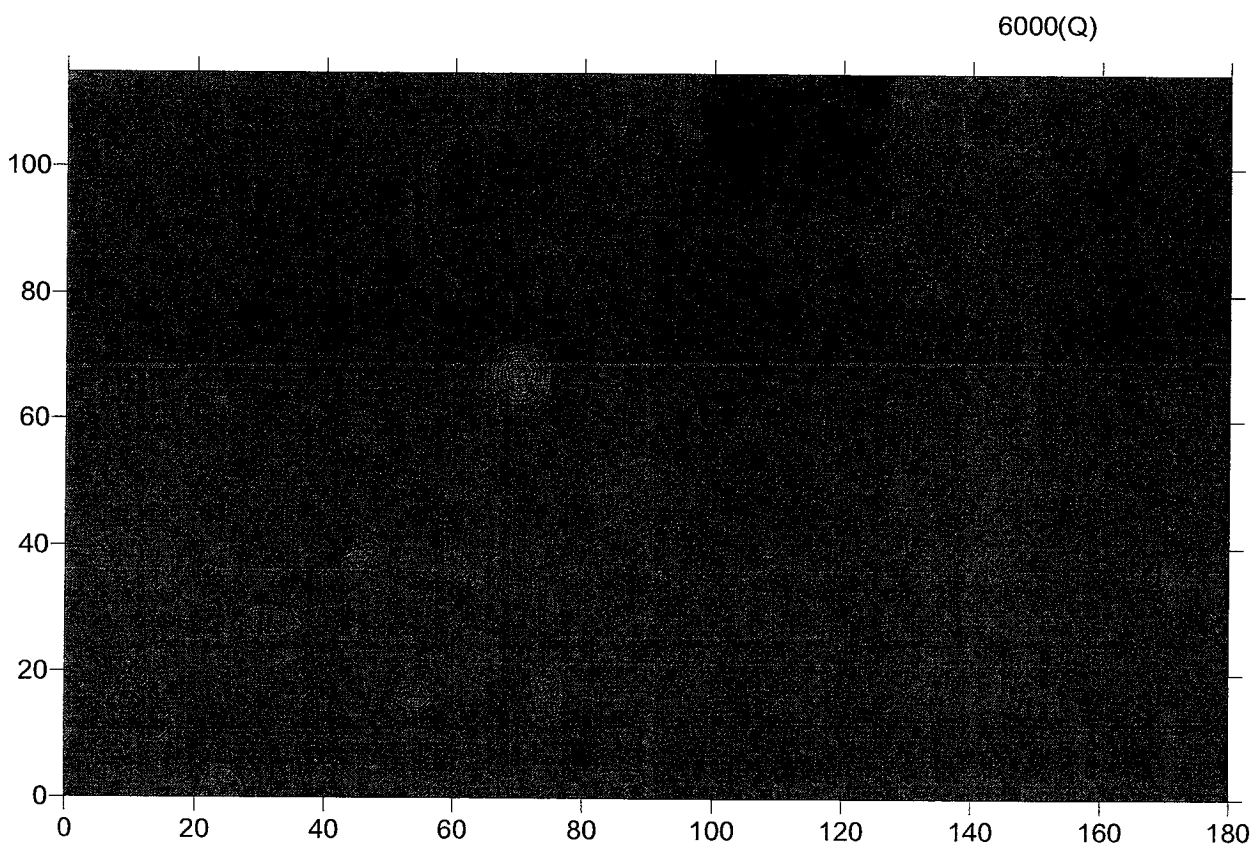


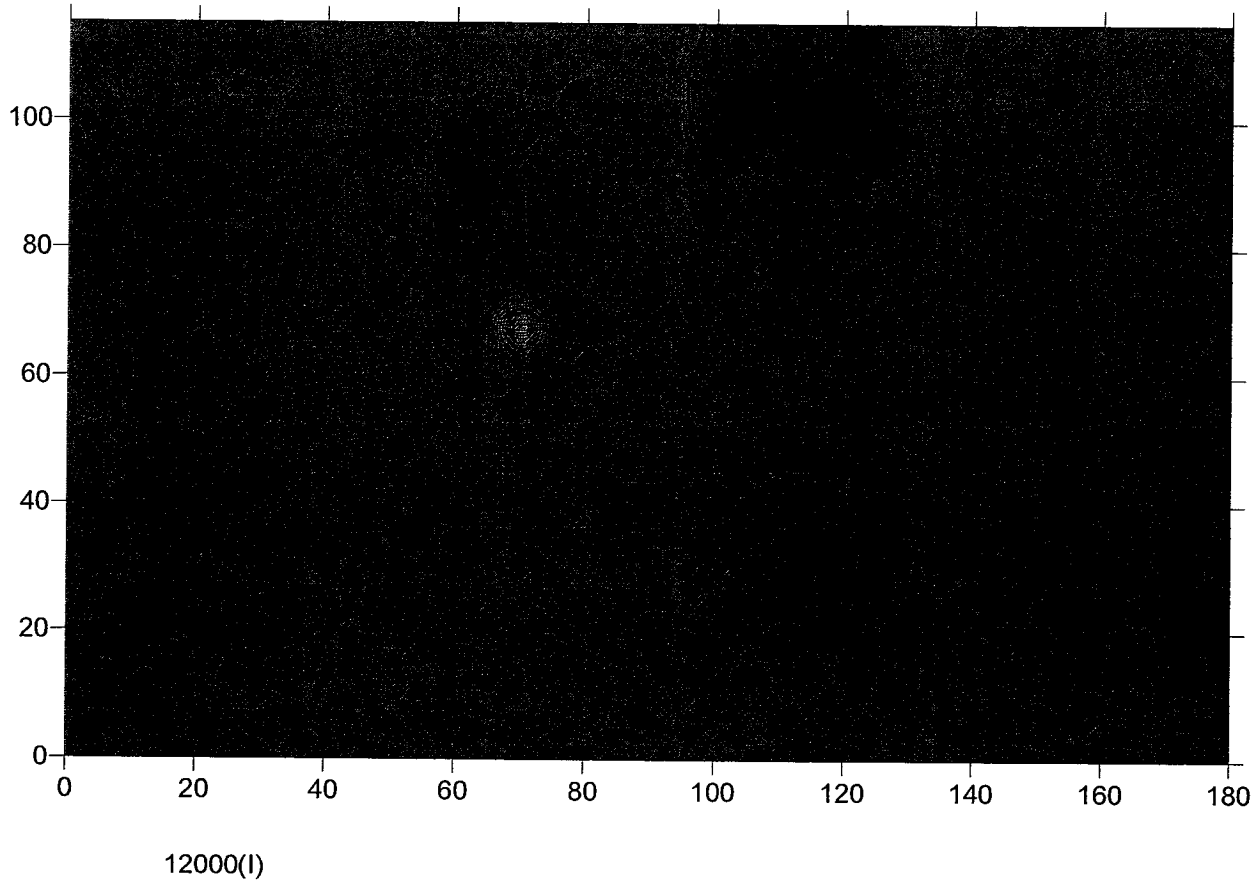
West Parking Area



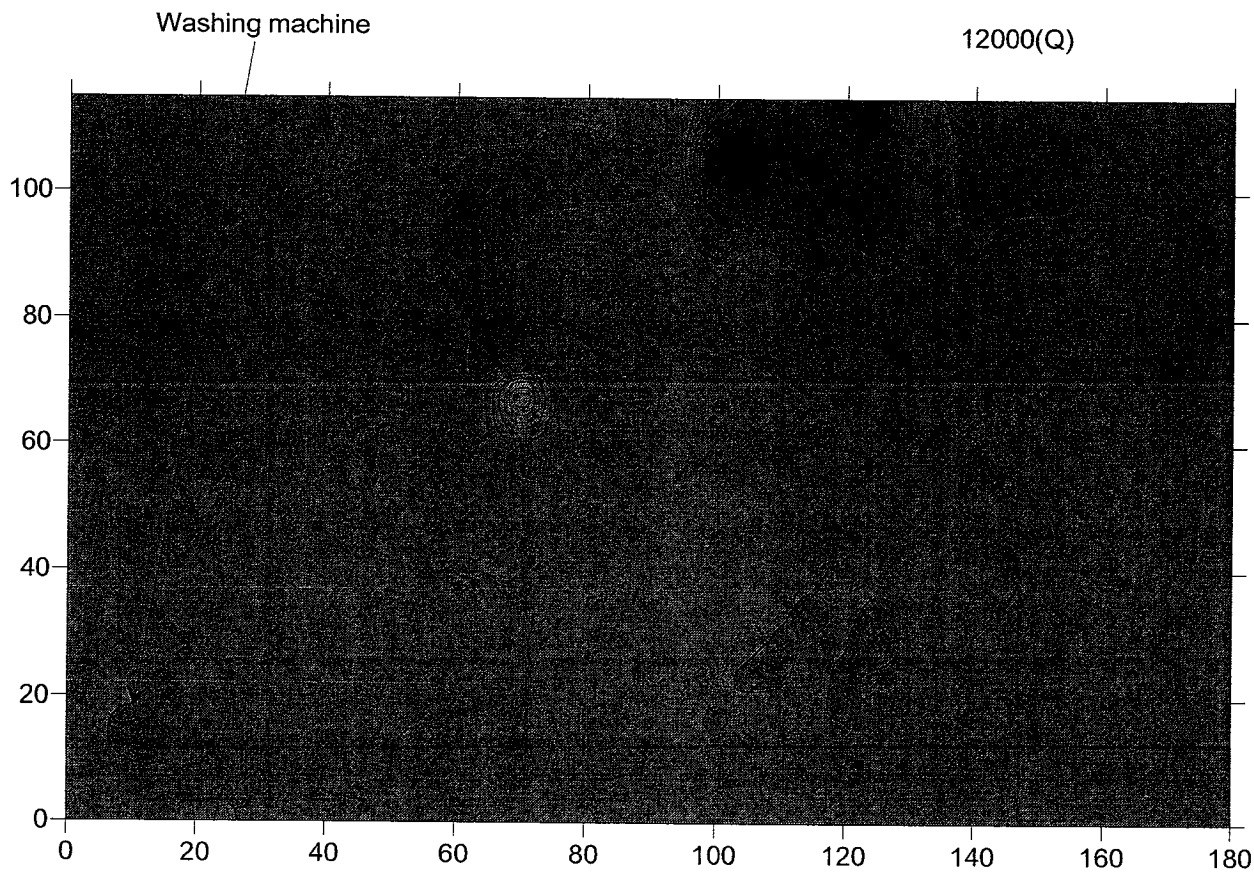


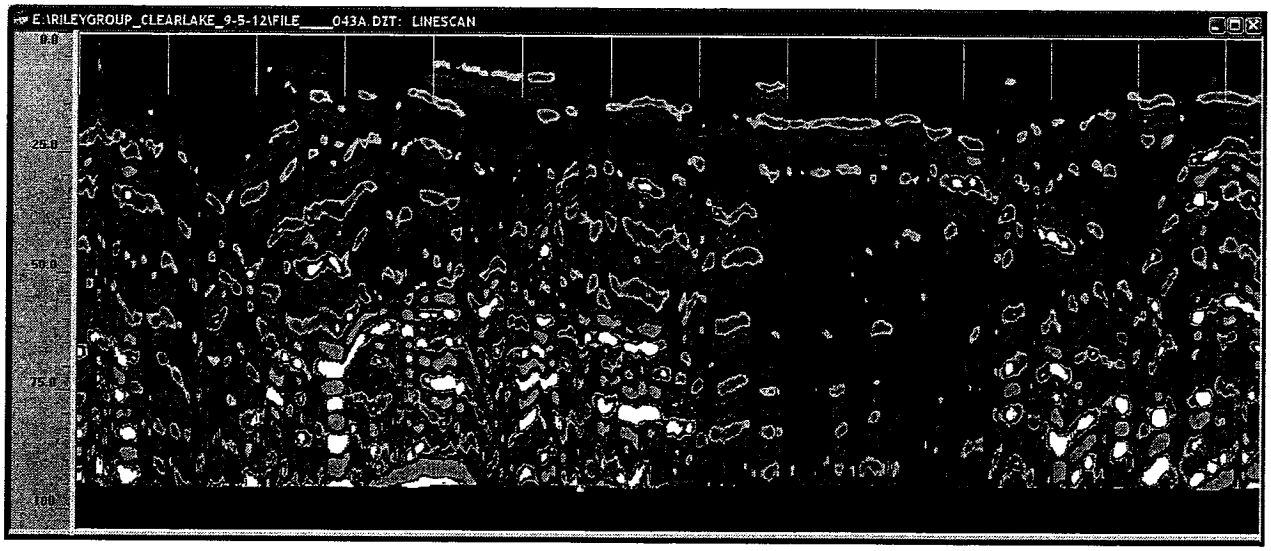
West Parking Area



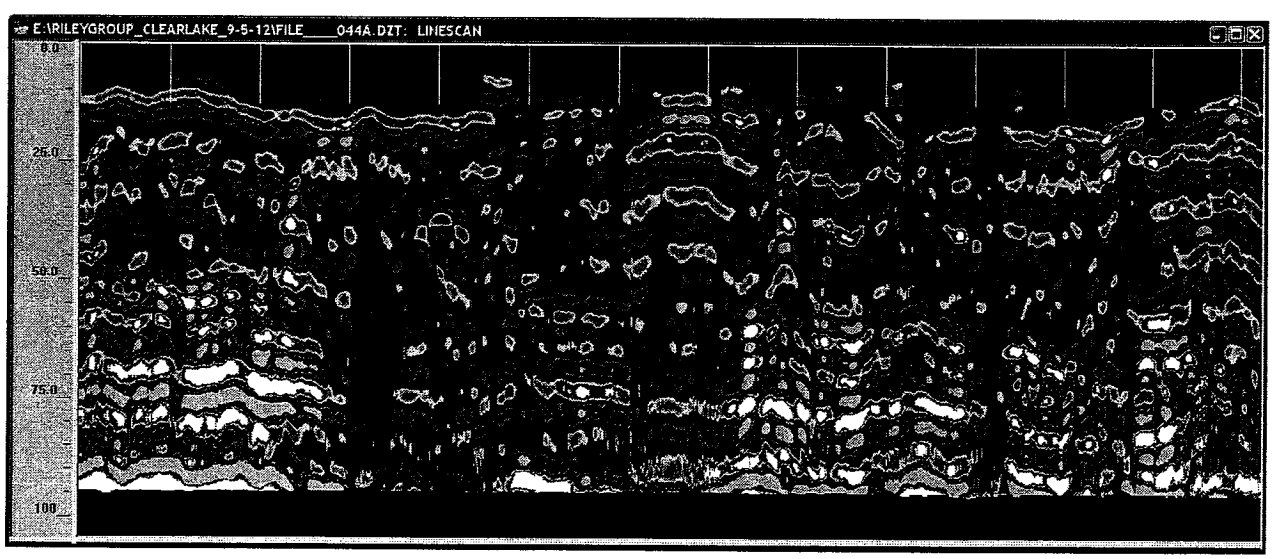


West Parking Area

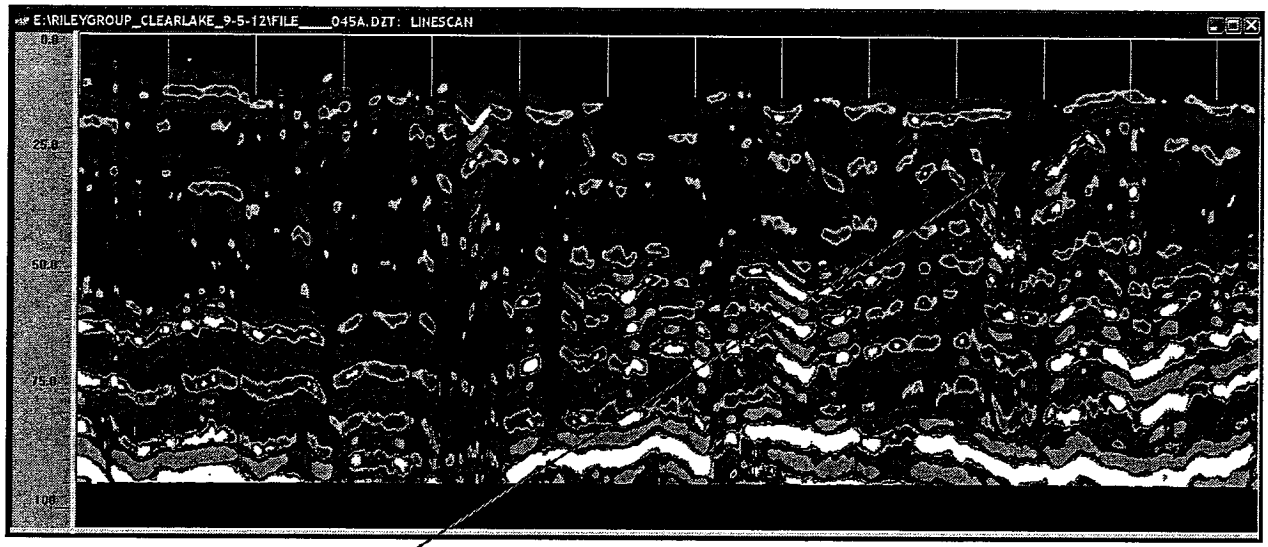




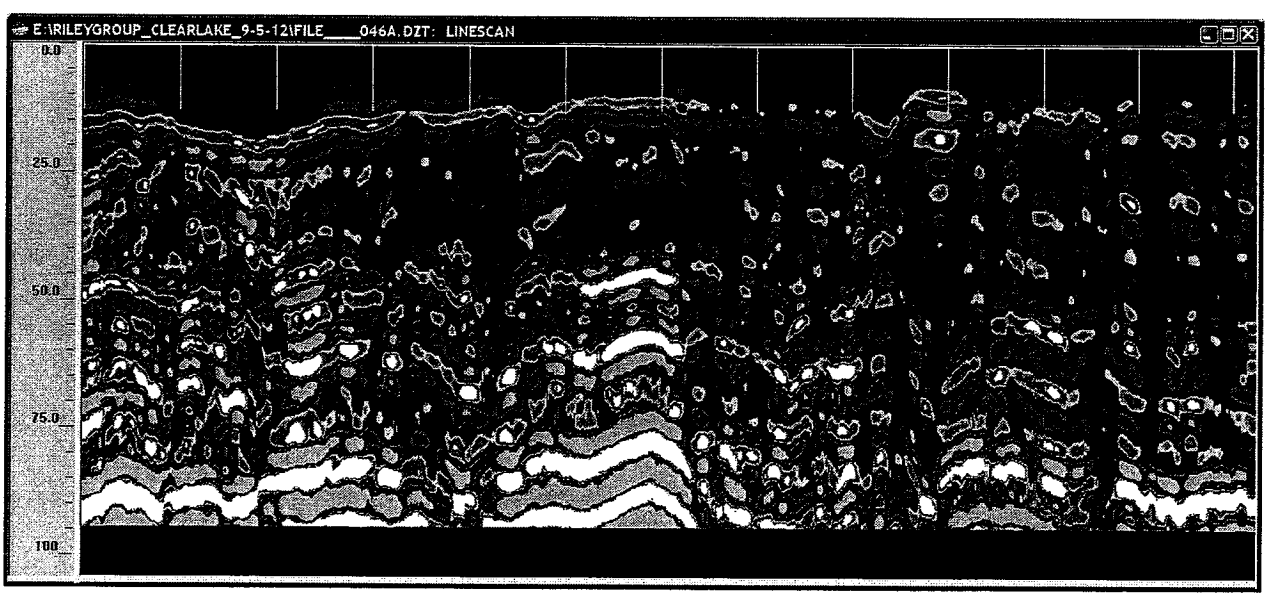
GPR Data; Line # 1



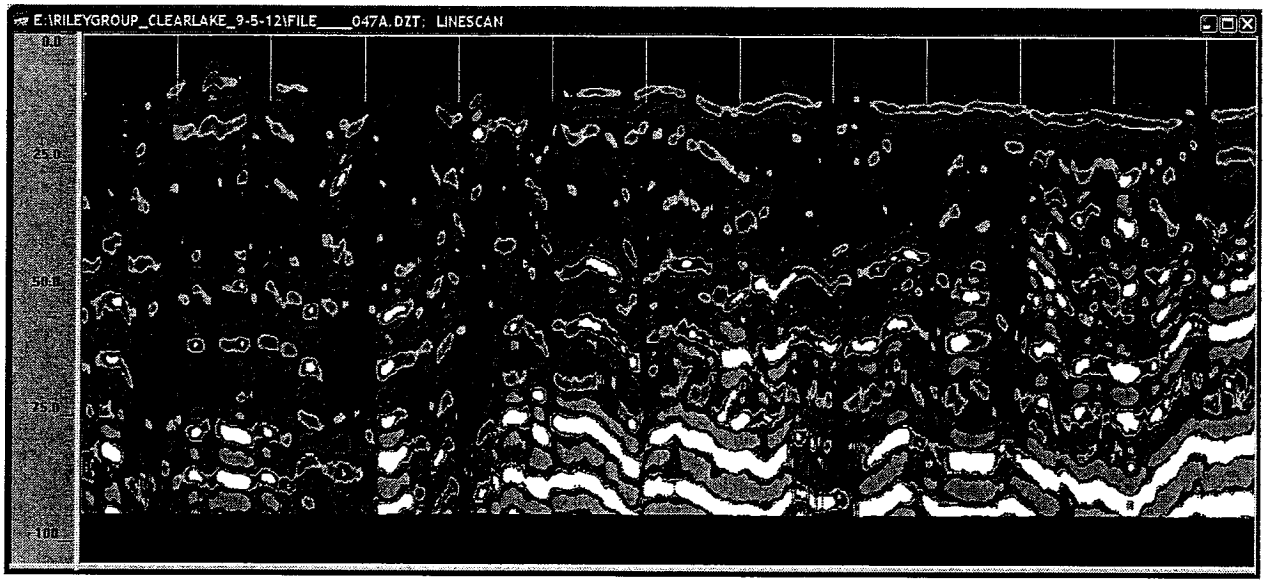
GPR Data; Line # 2



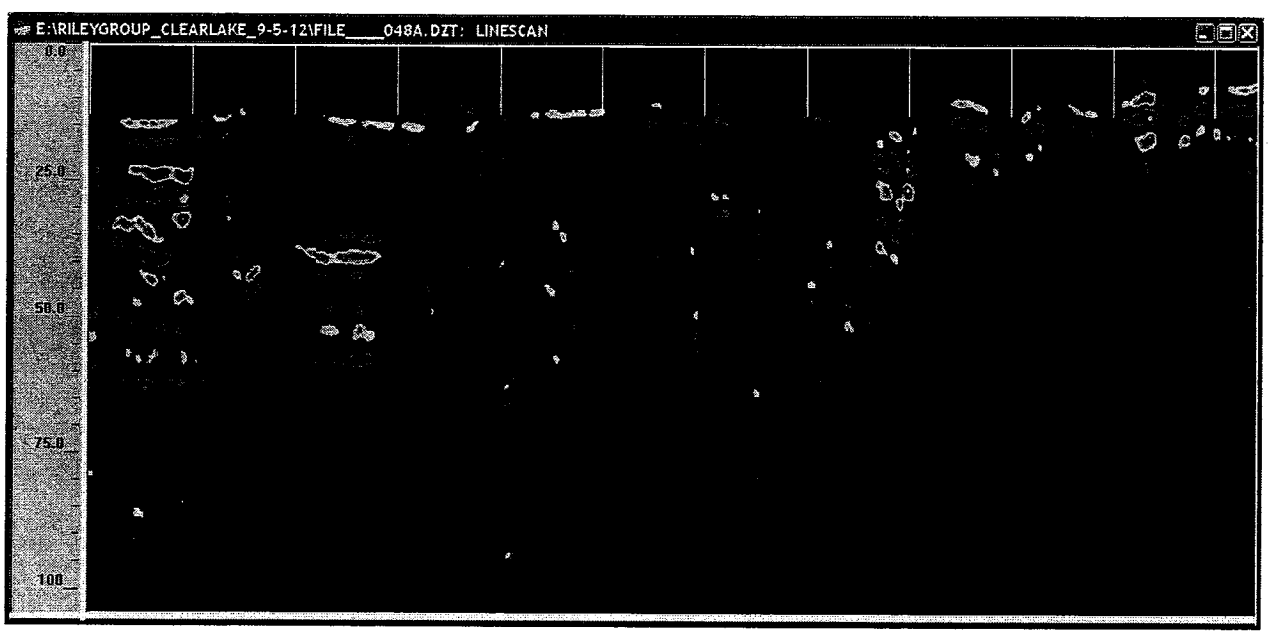
GPR Data; Line # 3, possible excavation



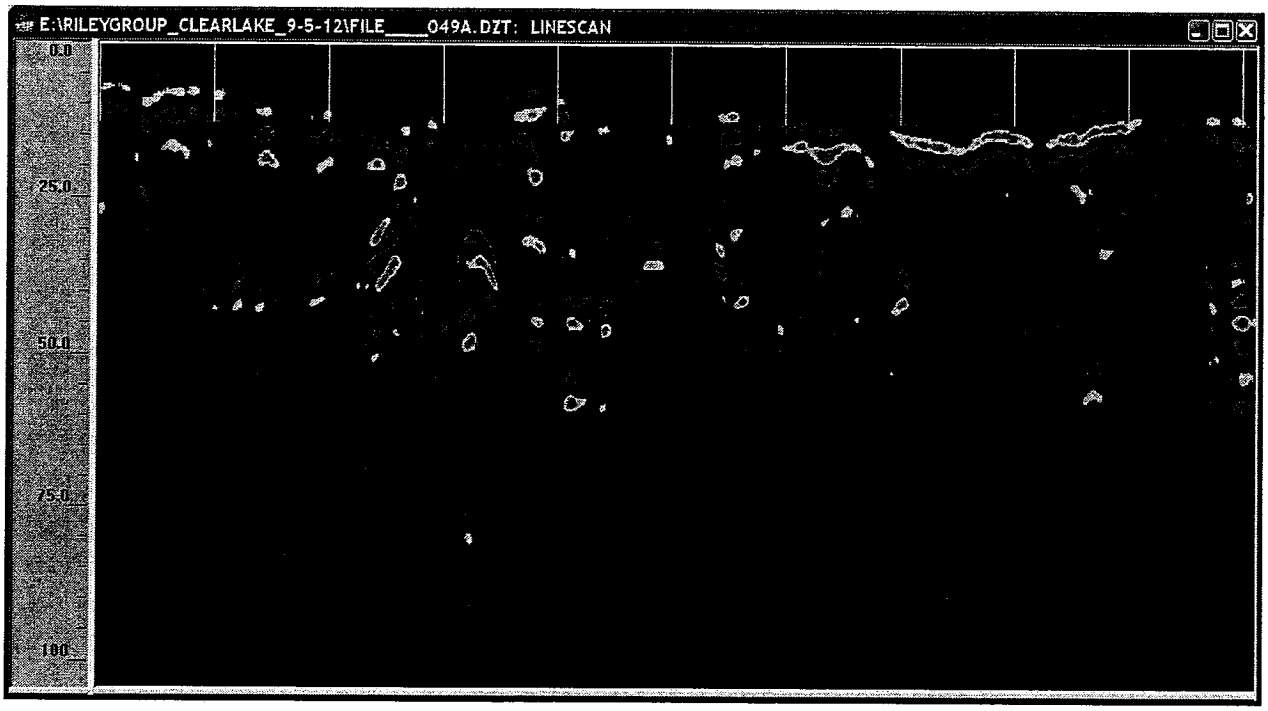
GPR Data; Line # 4



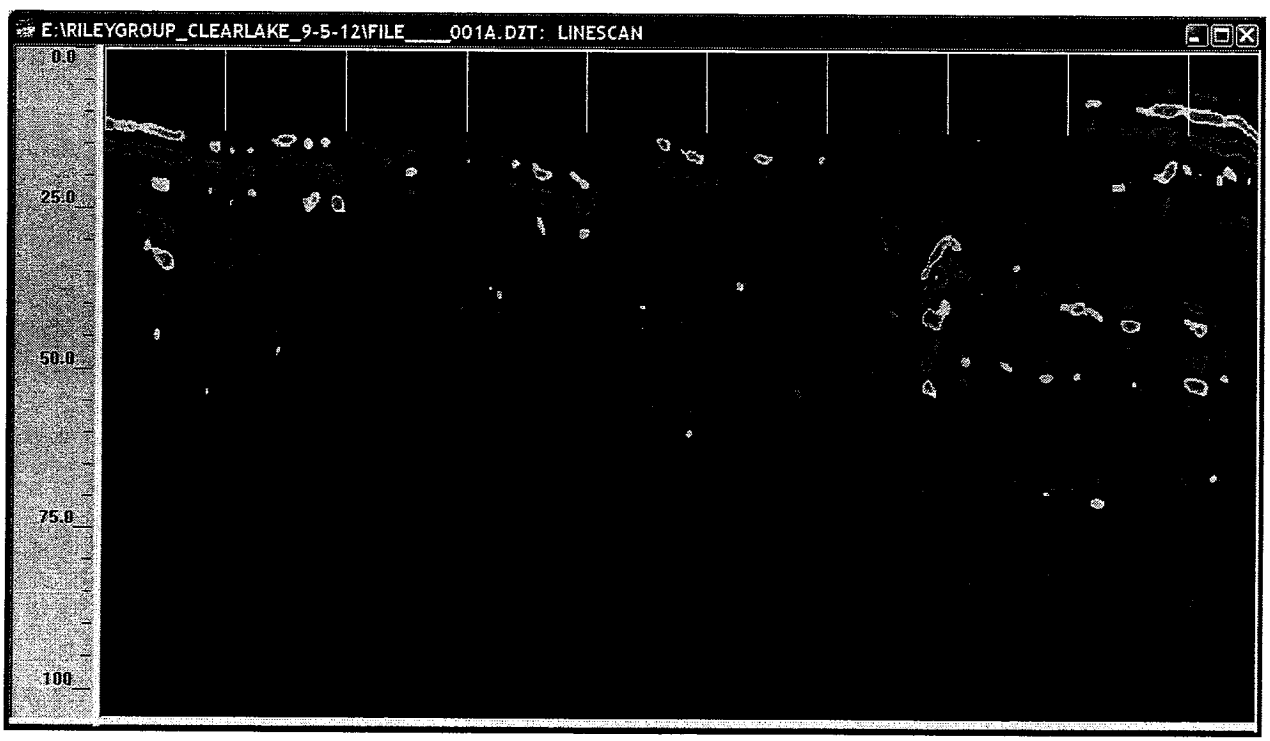
GPR Data; Line # 5



GPR Data; Line # 6



GPR Data; Line # 7



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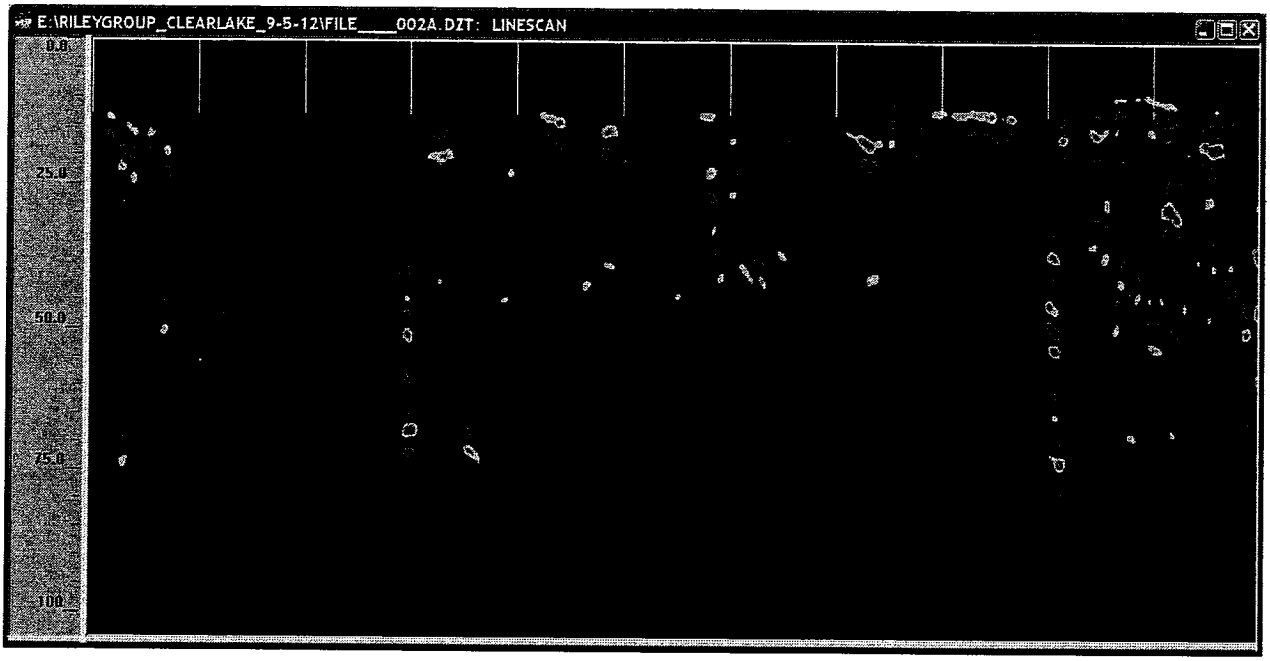
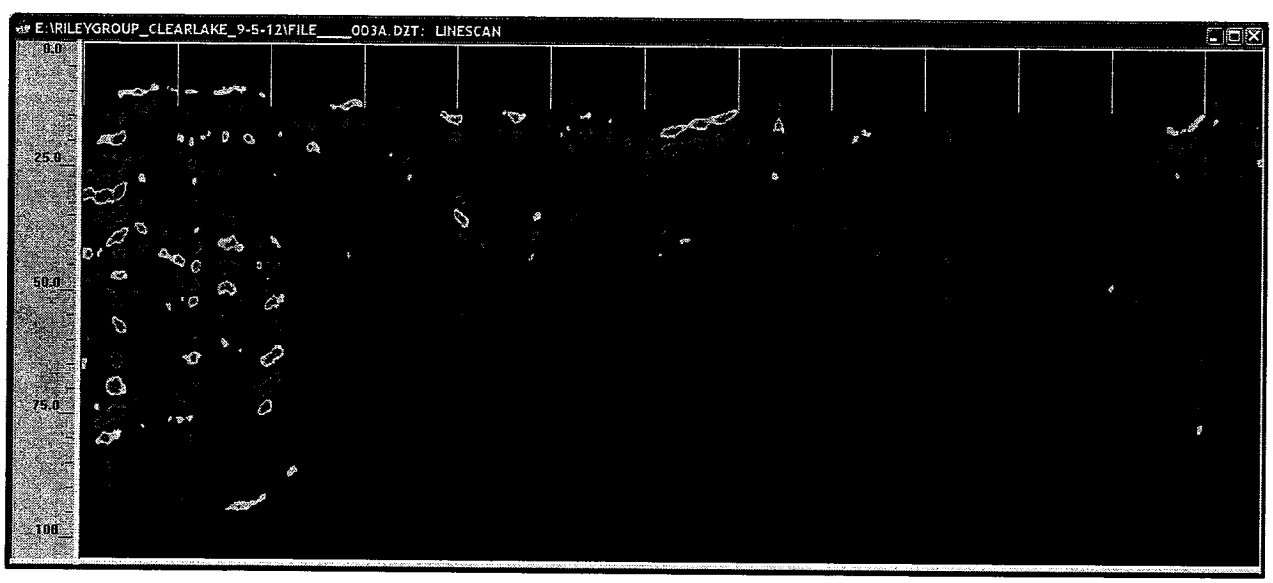
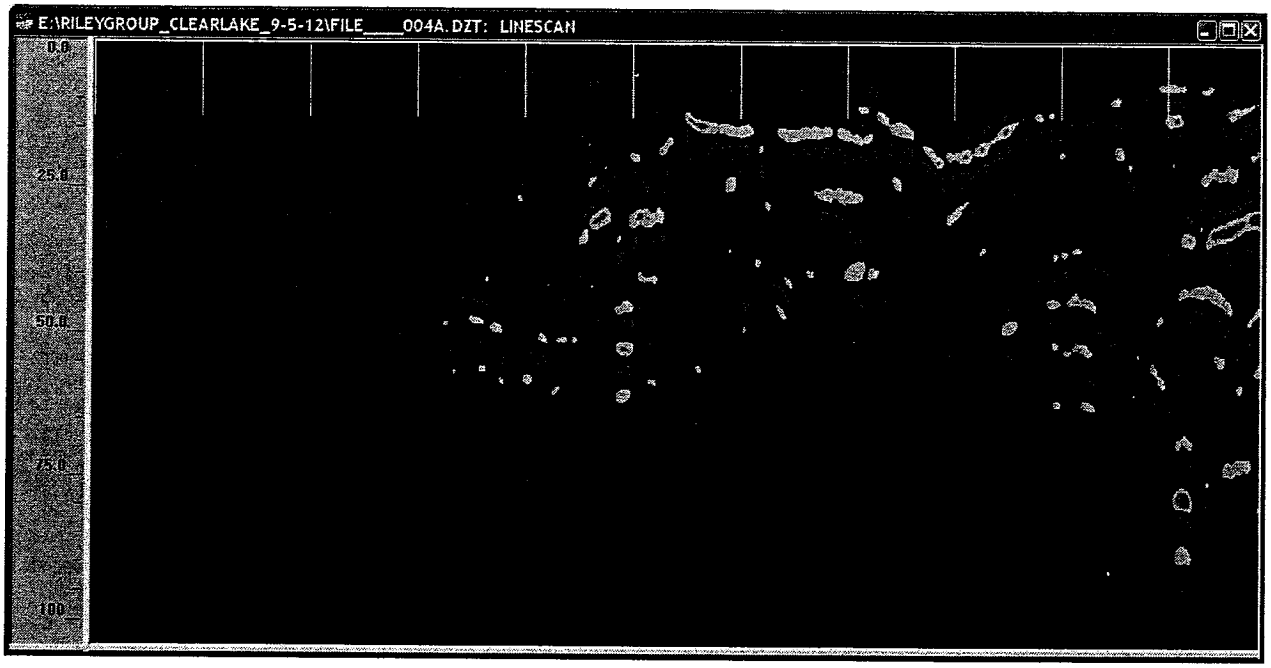


GPR Data; Line # 9



GPR Data; Line # 10



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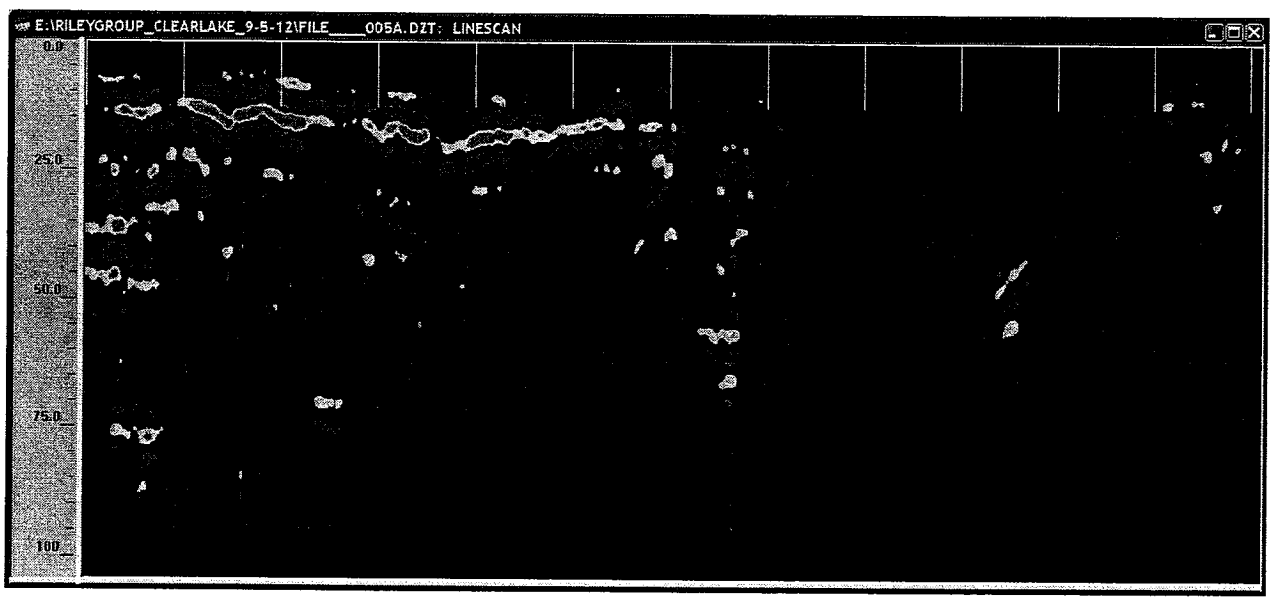
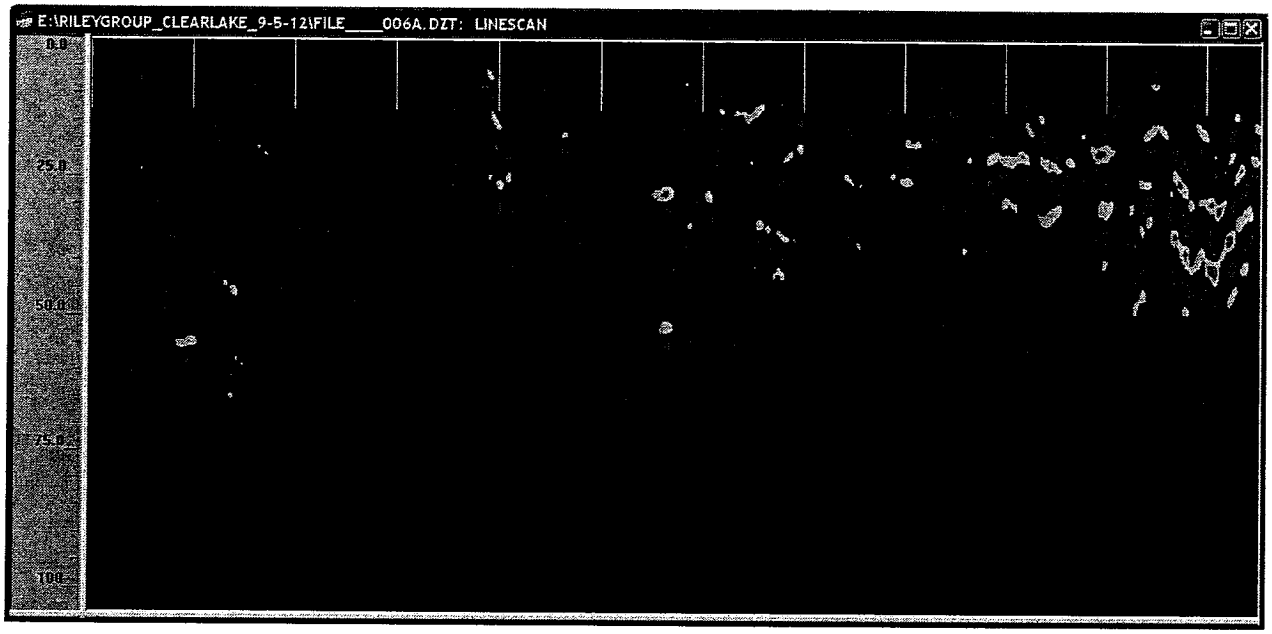
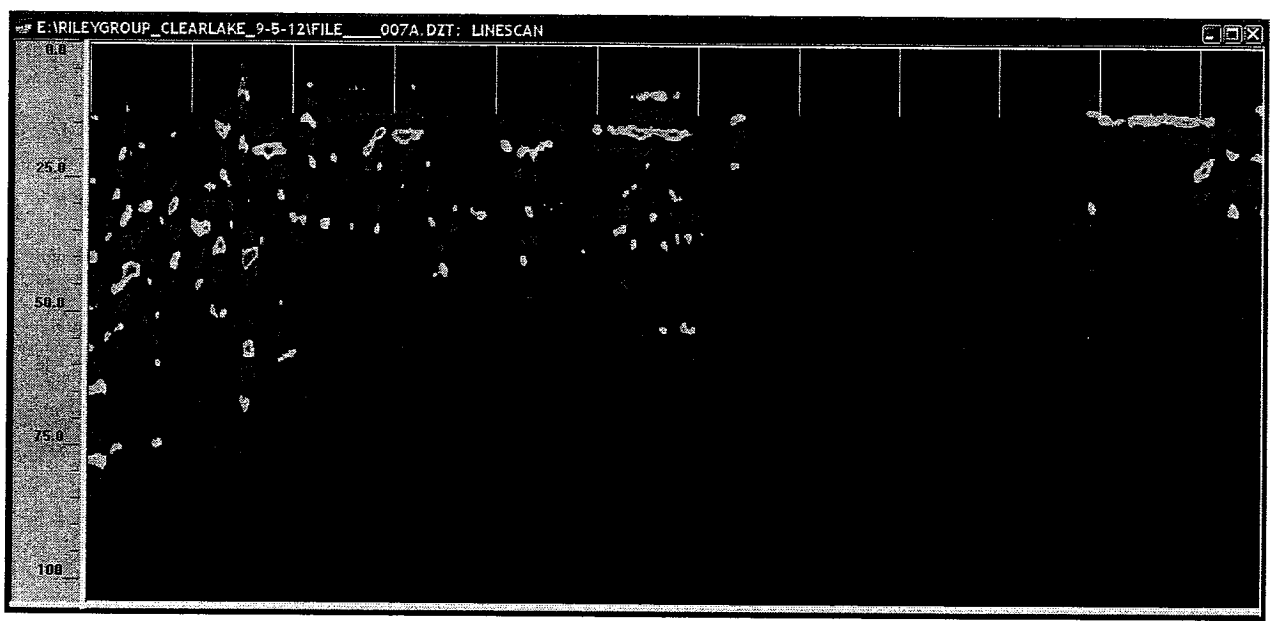


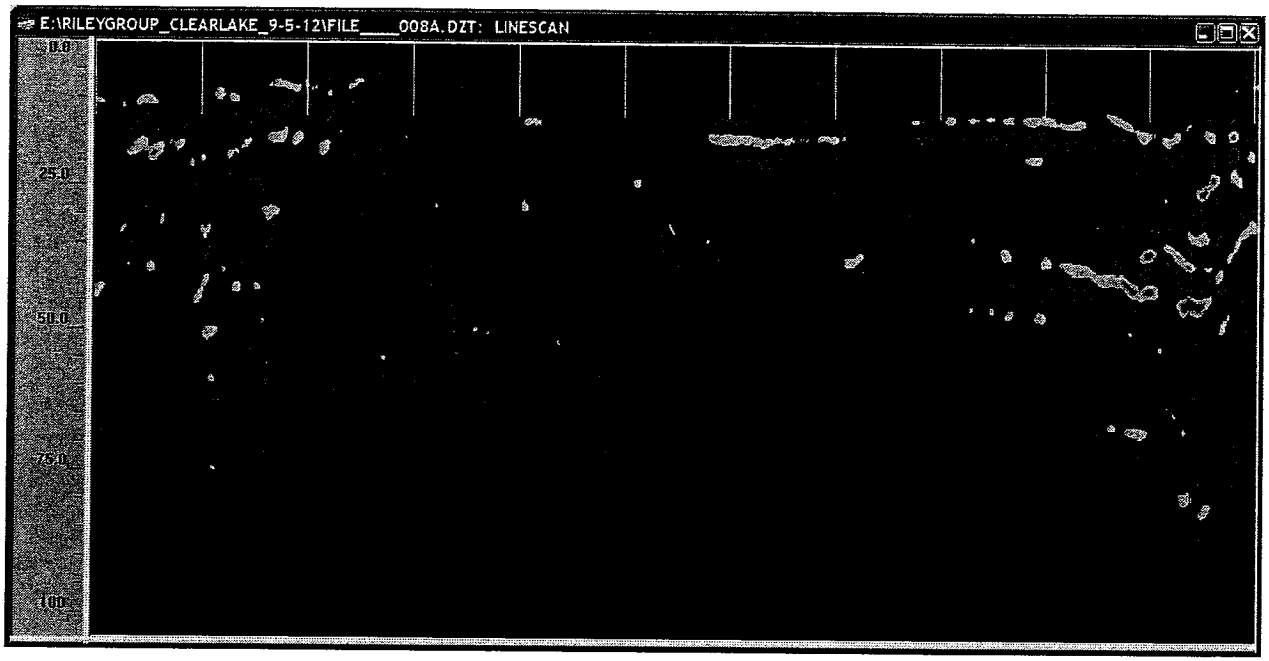
GPR Data; Line # 12



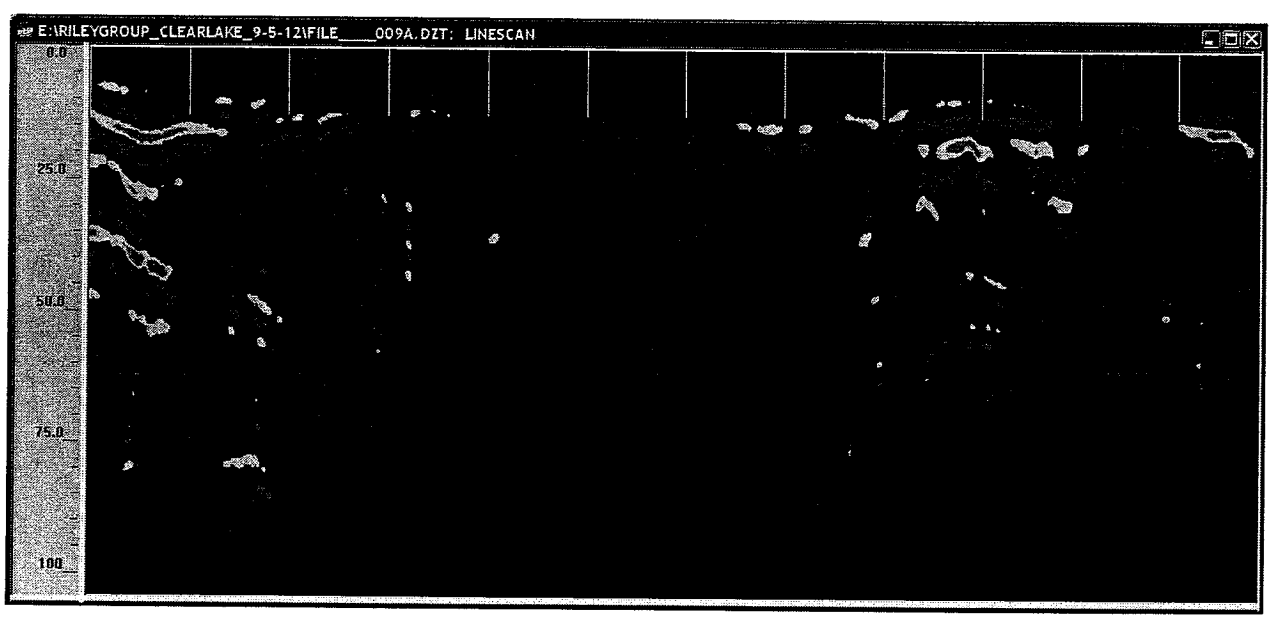
GPR Data; Line # 13



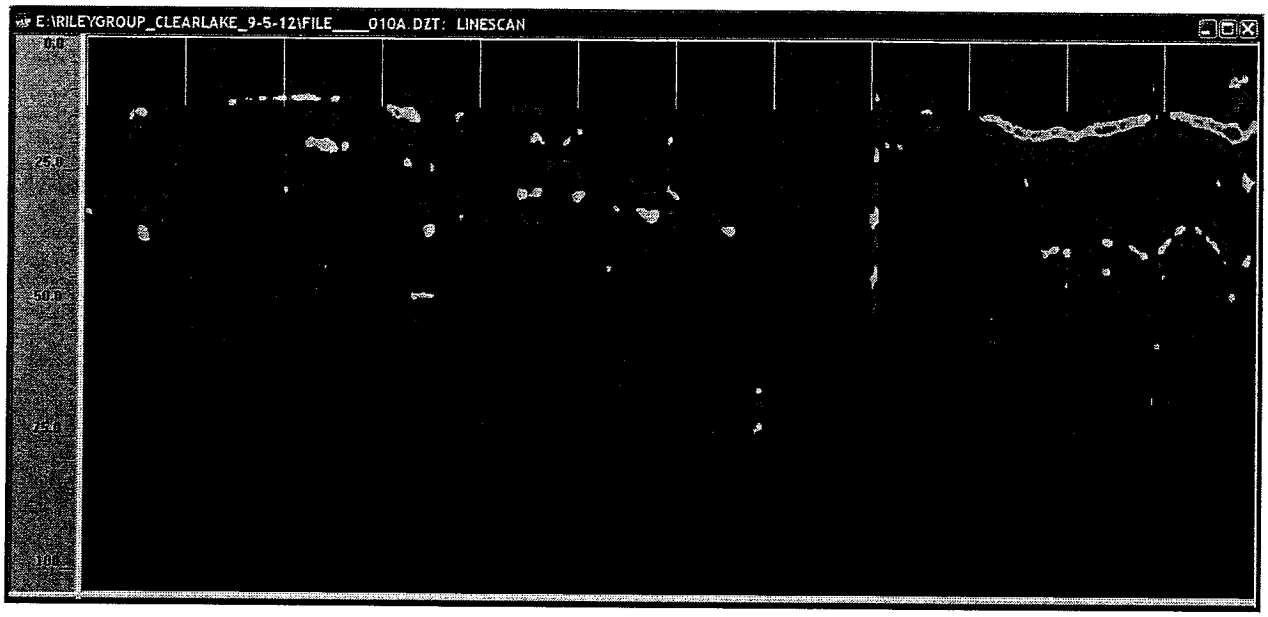
GPR Data; Line # 14



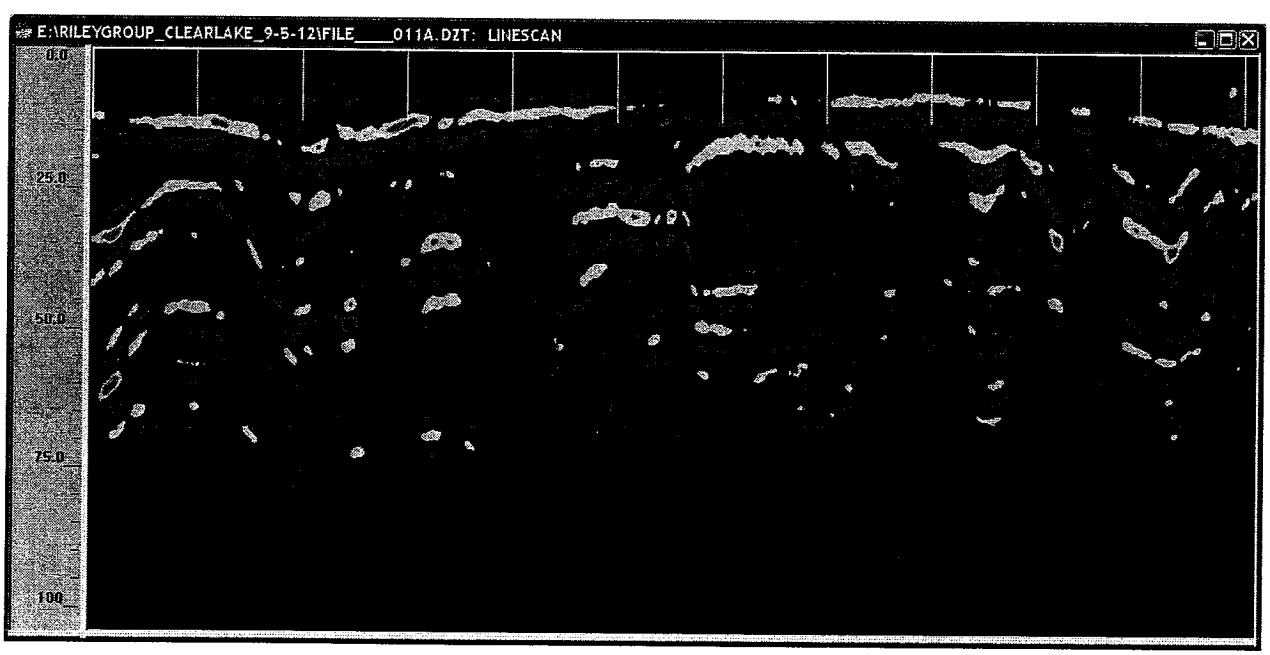
GPR Data; Line # 15



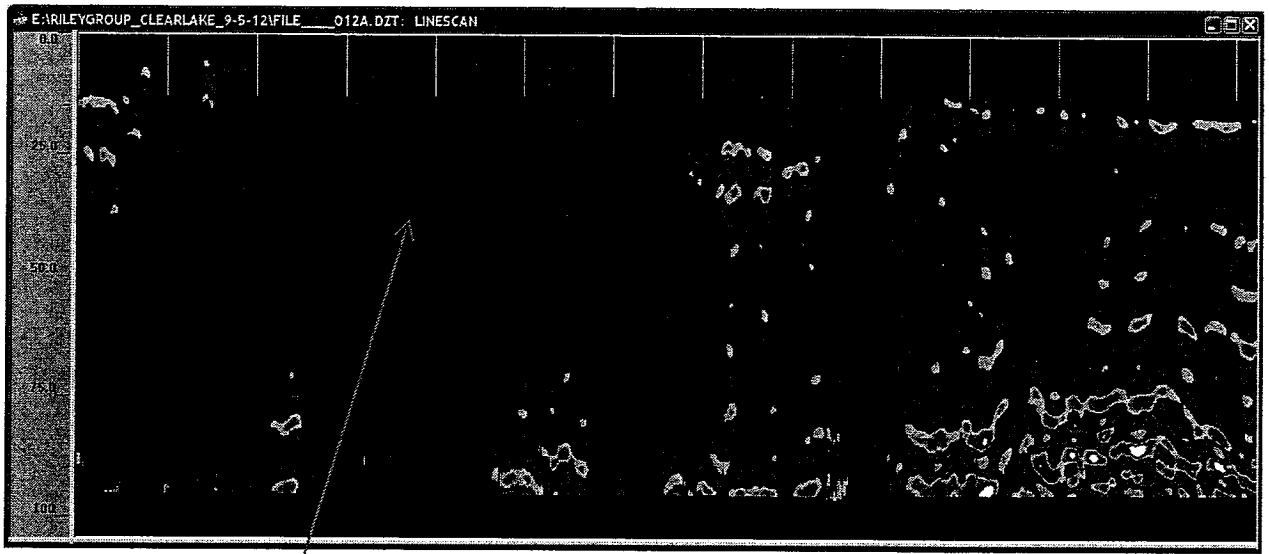
GPR Data; Line # 16



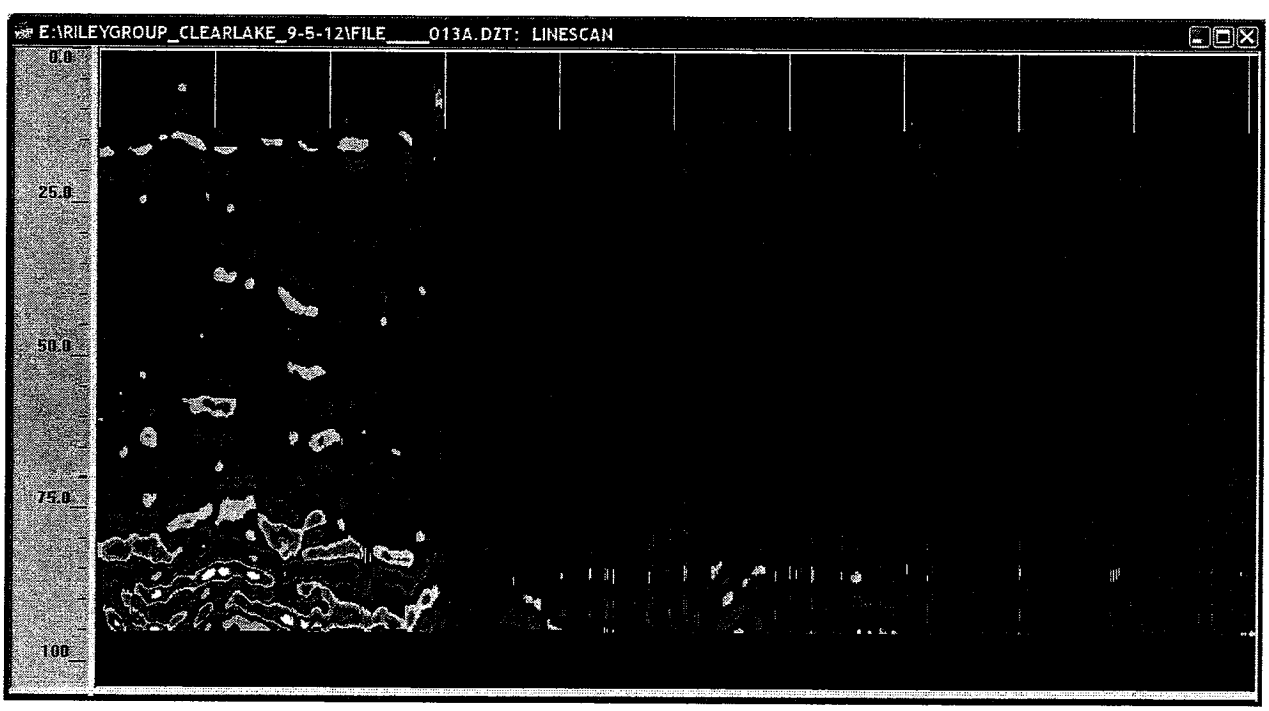
GPR Data; Line # 17



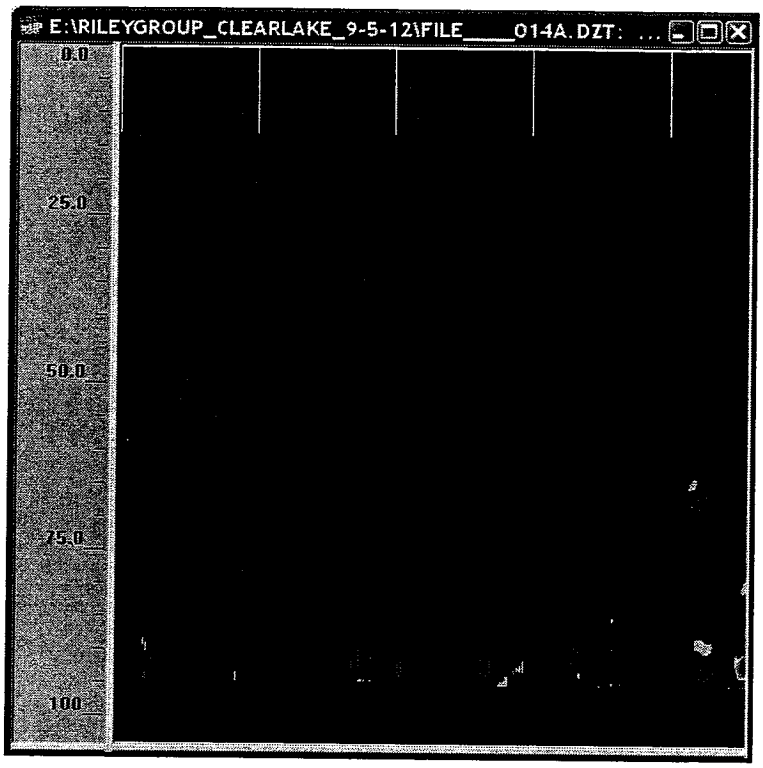
GPR Data; Line # 18



GPR Data; Line # 19, excavation



GPR Data; Line # 20



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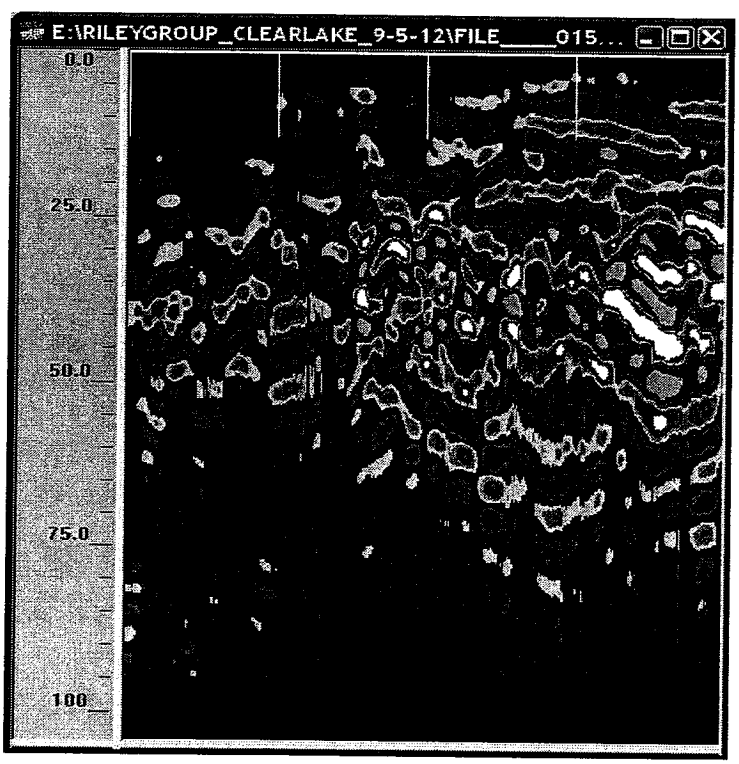
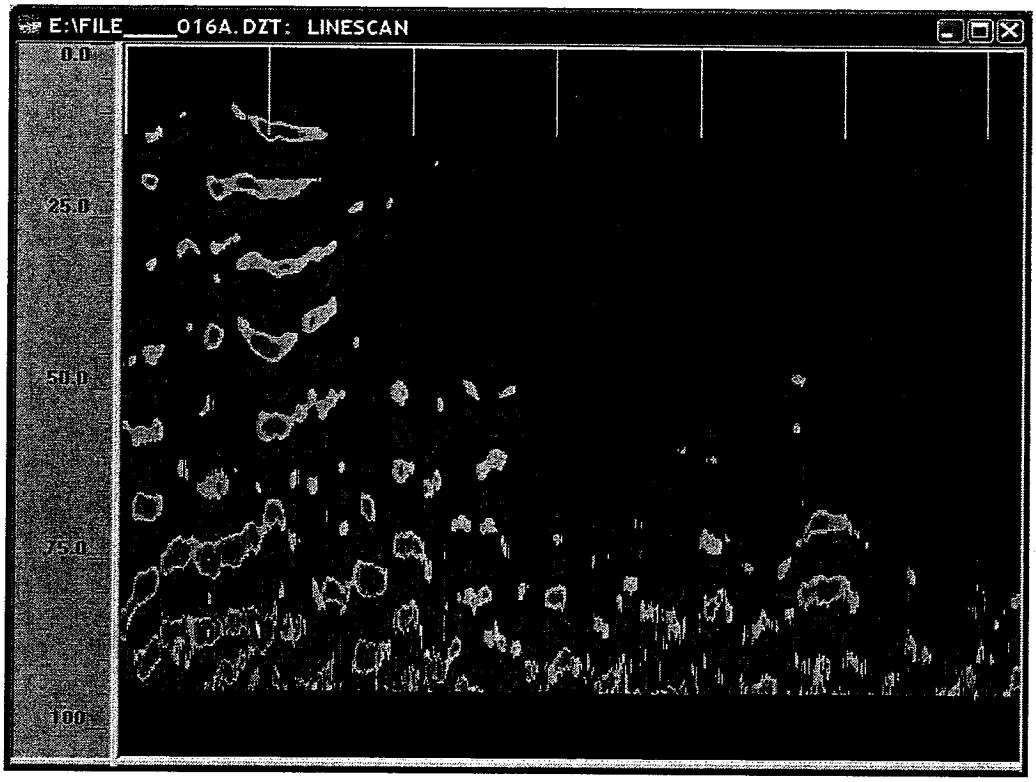
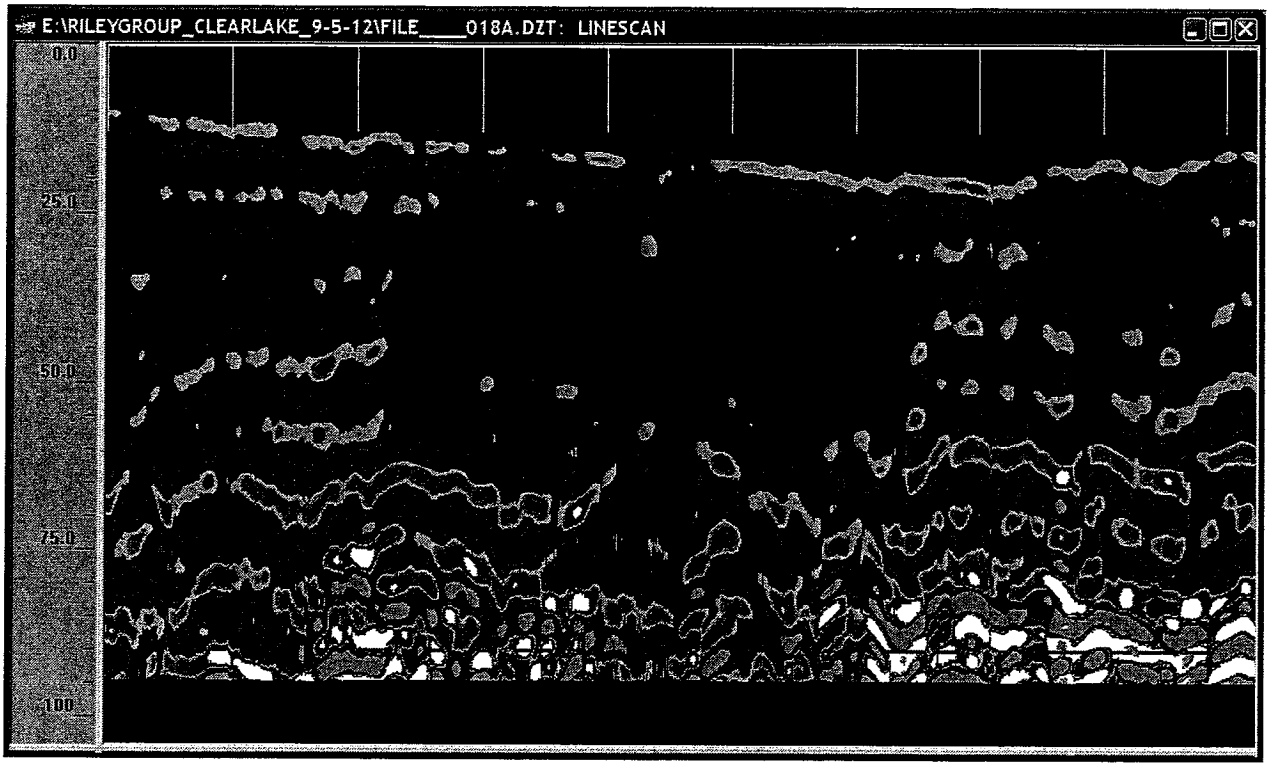


GPR Data; Line # 22

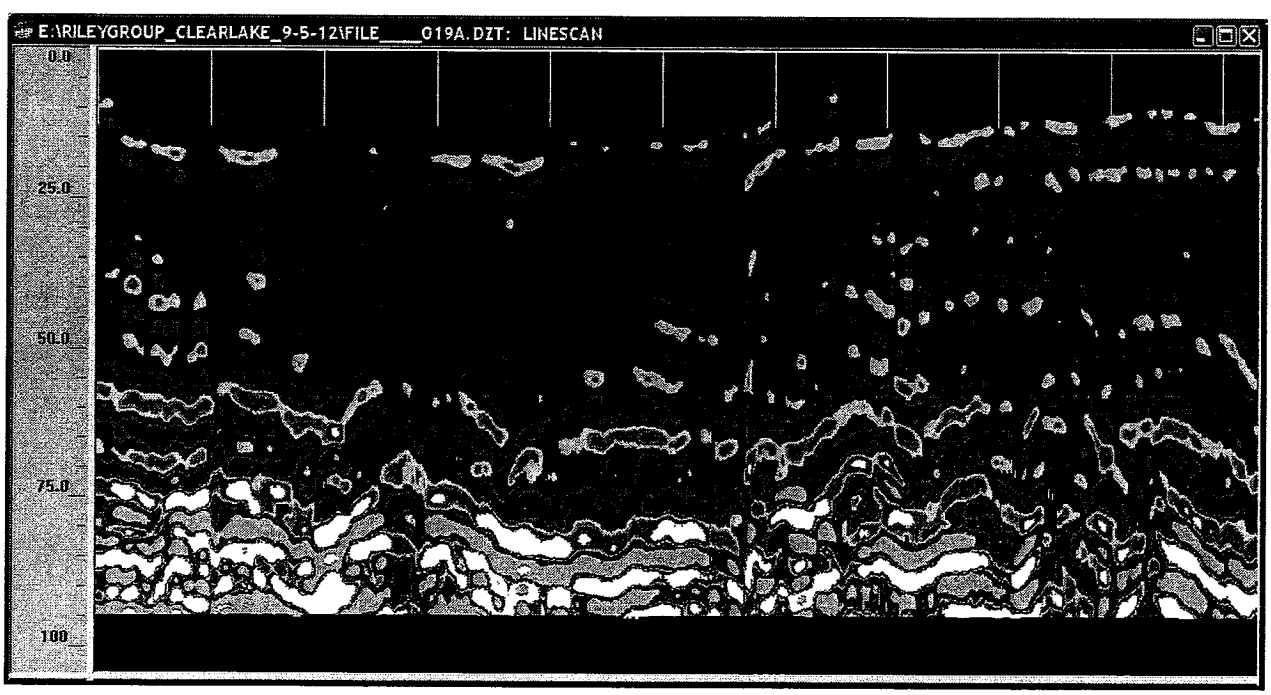


GPR Data; Line # 23

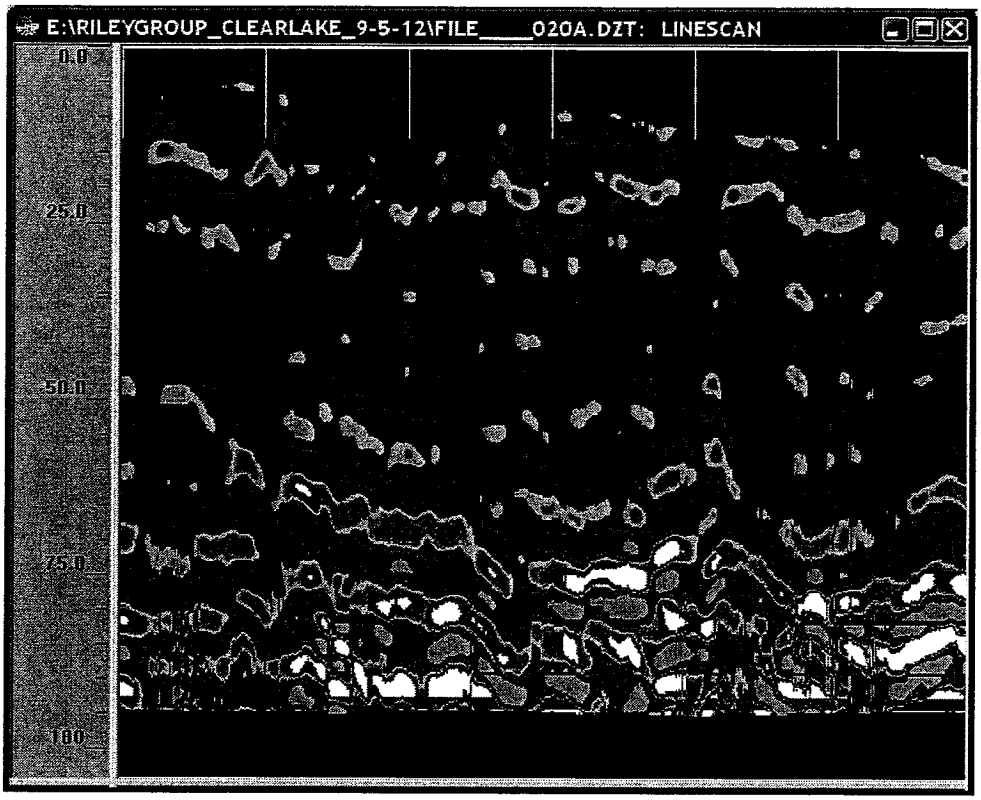
GPR Data; Line # 24



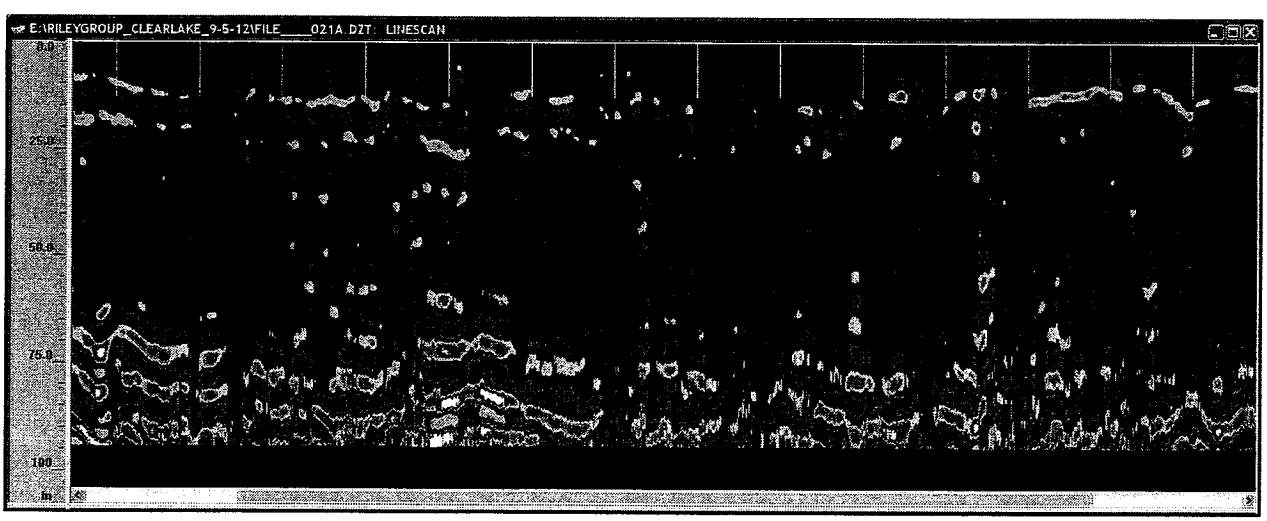
GPR Data; Line # 25



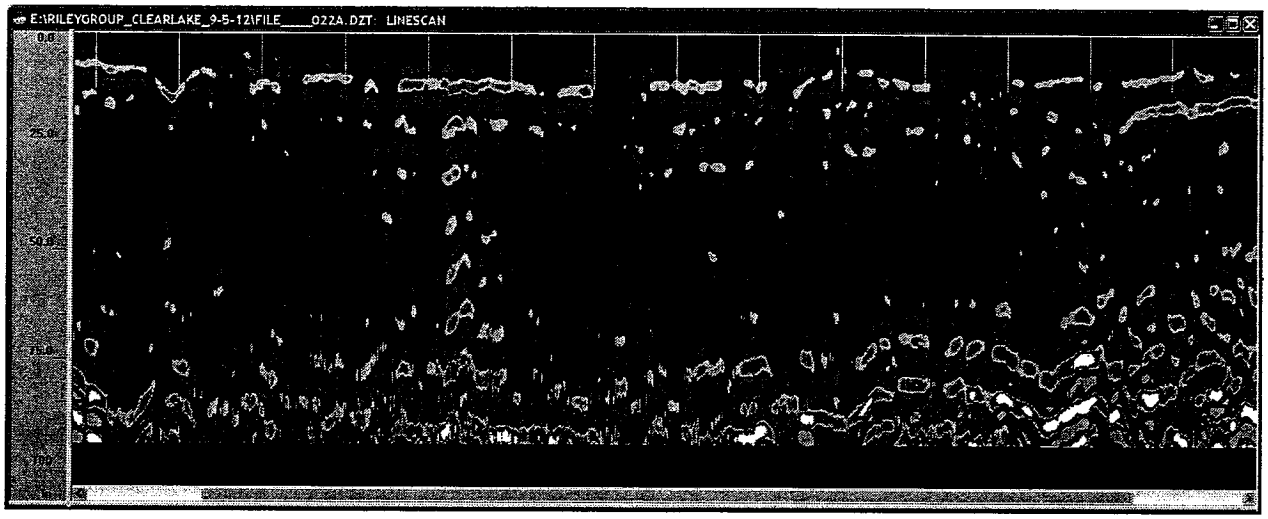
GPR Data; Line # 26



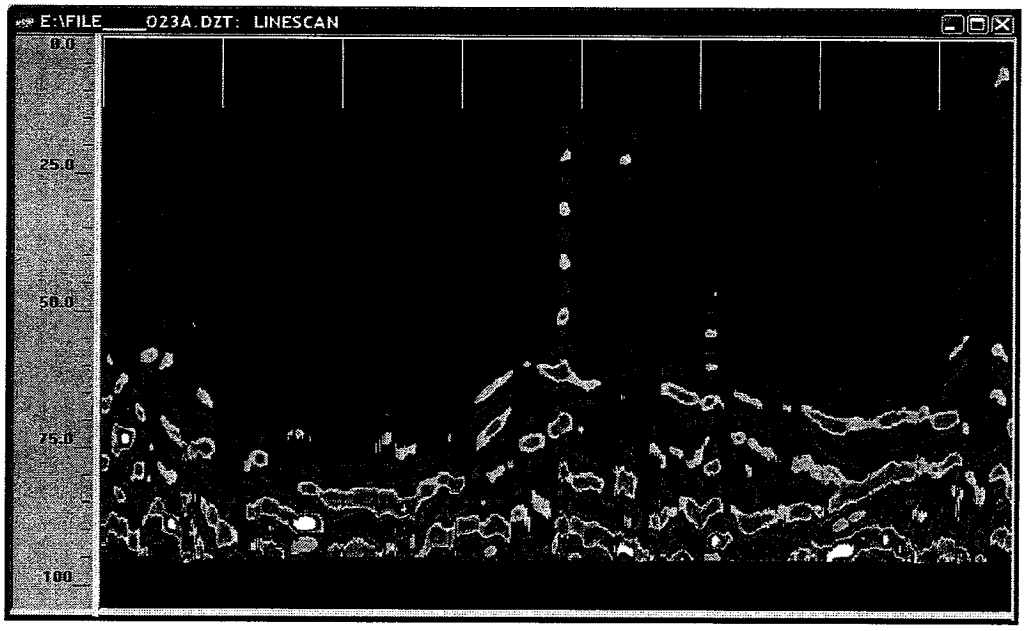
GPR Data; Line # 27



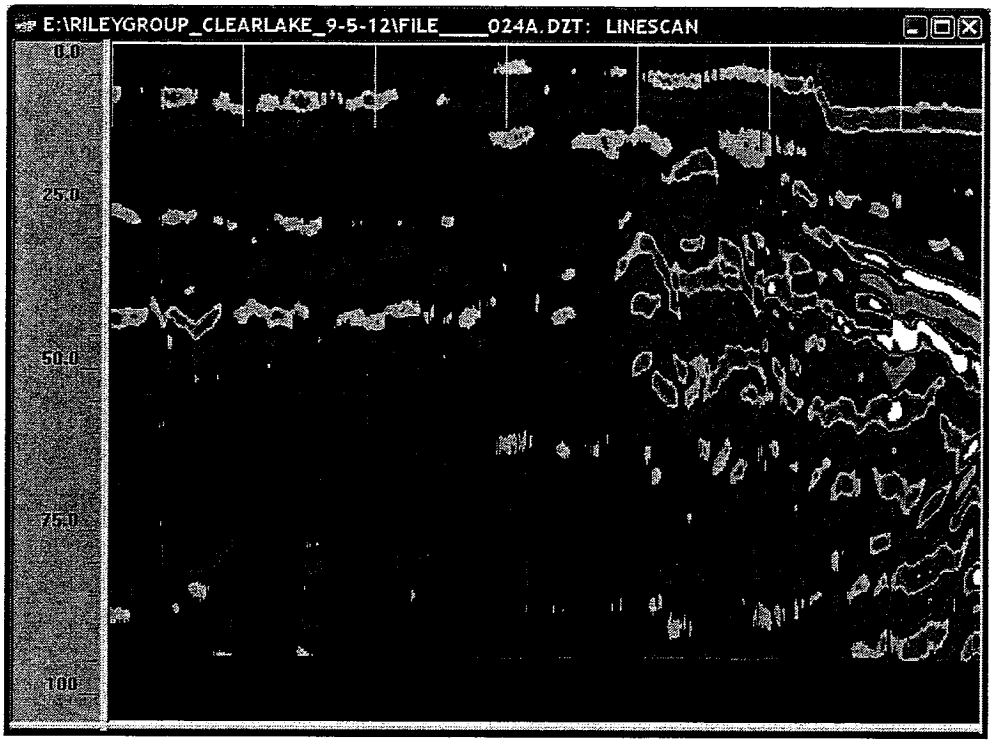
GPR Data; Line # 28



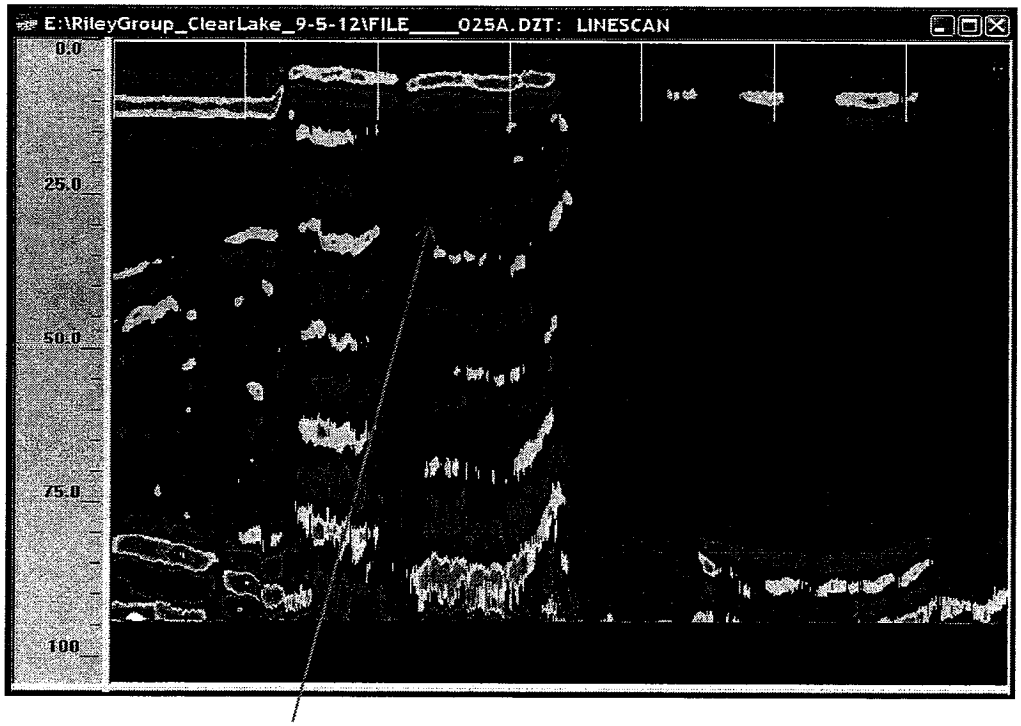
GPR Data; Line # 29



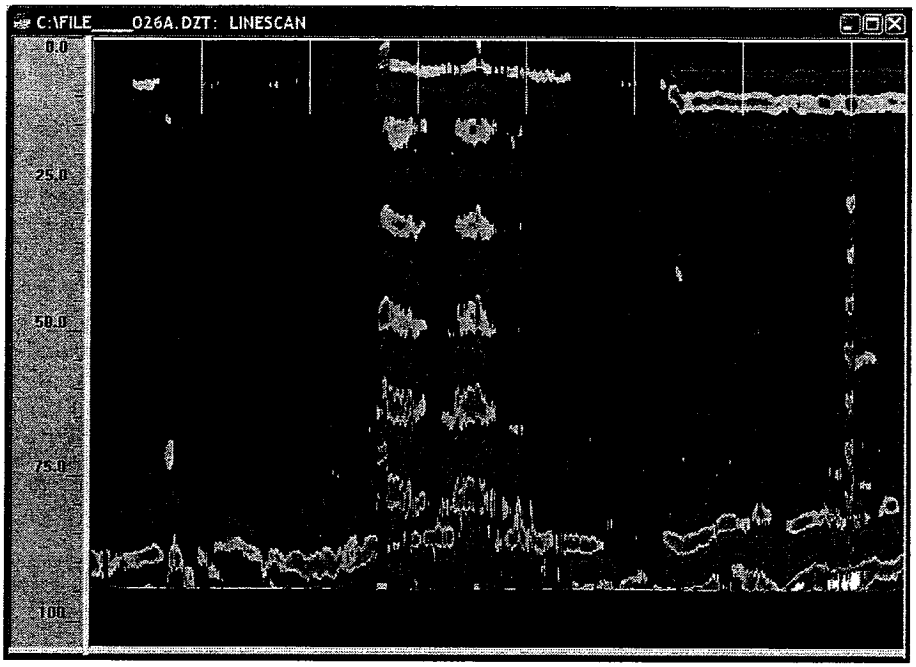
GPR Data; Line # 30



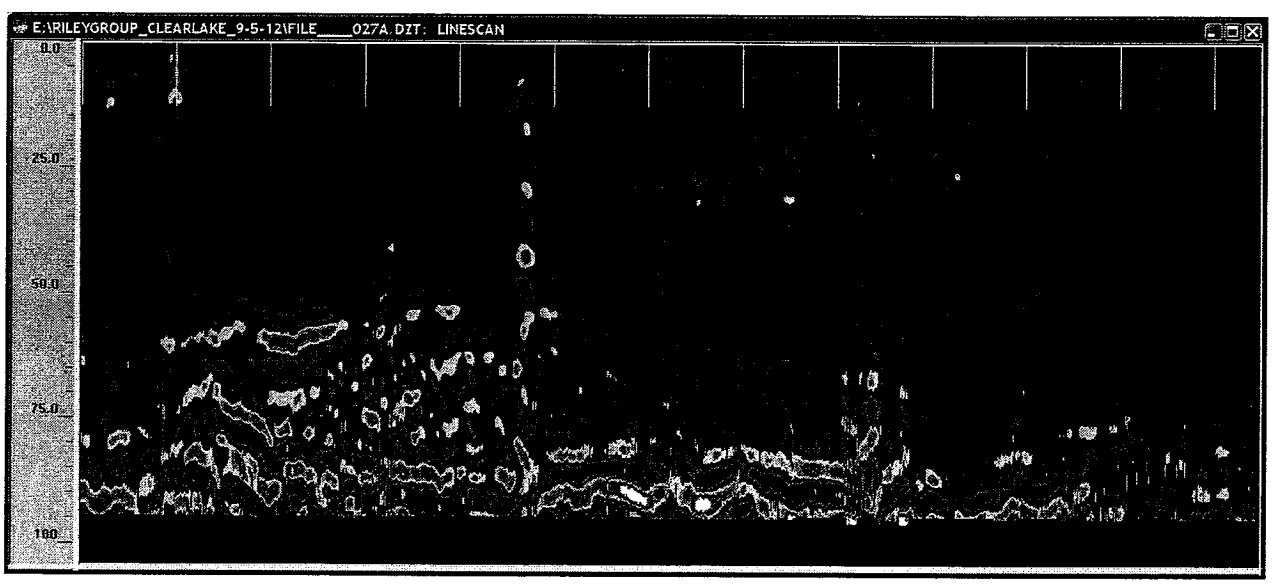
GPR Data; Line # 31



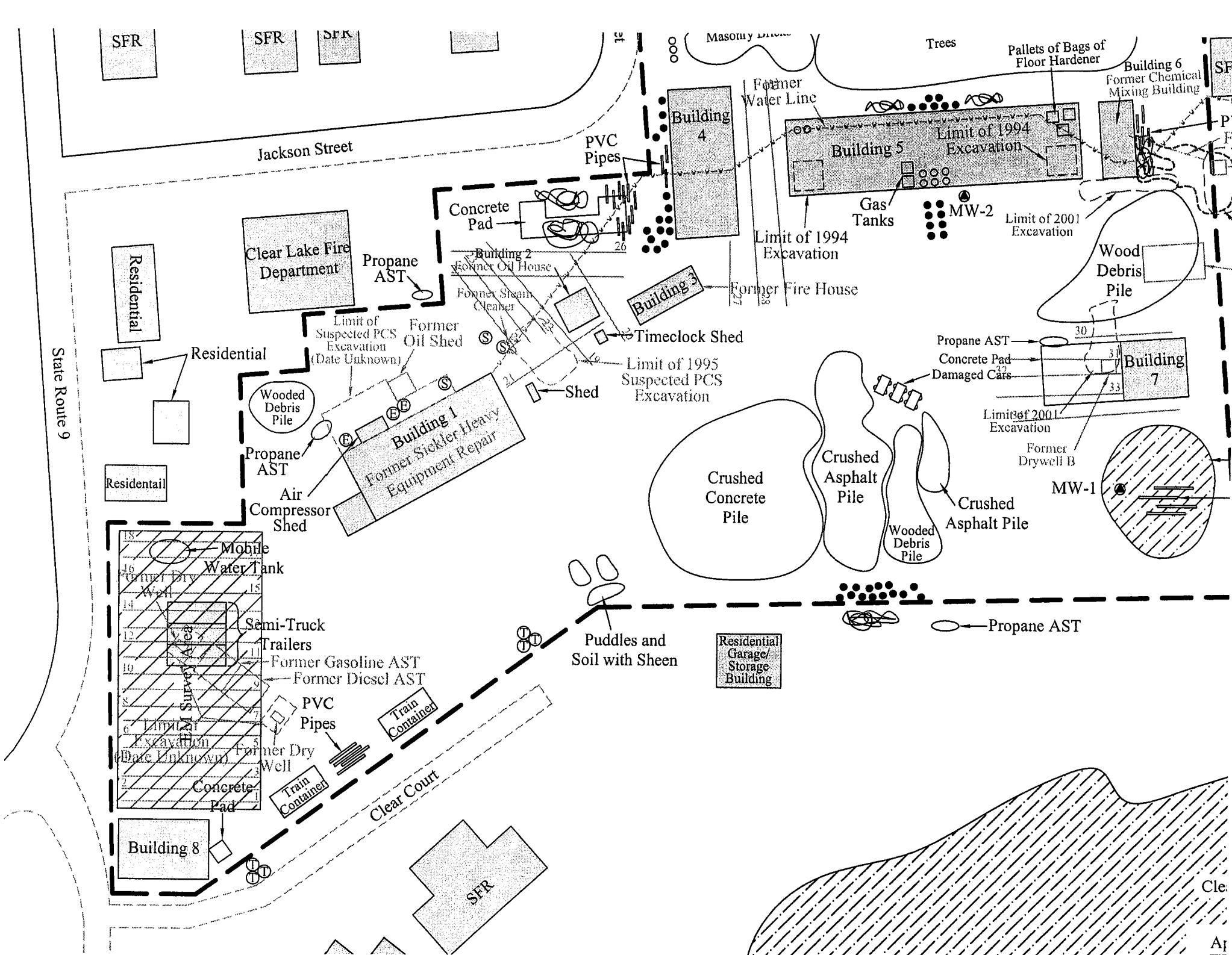
GPR Data; Line # 32, excavation



GPR Data; Line # 33



GPR Data; Line # 34


SFR
SFR
SFR
Masonry Brick
Trees
Pallets of Bags of Floor Hardener
Building 6
Former Chemical Mixing Building
Former Water Line
Building 4
Building 5
Limit of 1994 Excavation
PVC Pipes
Jackson Street
Concrete Pad
Gas Tanks
MW-2
Limit of 2001 Excavation
Limit of 1994 Excavation
Wood Debris Pile
Residential
Clear Lake Fire Department
Propane AST
Building 2
Former Oil House
Former Steam Cleaner
Building 3
Former Fire House
Timeclock Shed
Limit of Suspected PCS Excavation (Date Unknown)
Former Oil Shed
Limit of 1995 Suspected PCS Excavation
Shed
Residential
Residentail
Wooded Debris Pile
Propane AST
Air Compressor Shed
Building 1
Former Sickler Heavy Equipment Repair
Propane AST
Concrete Pad
Damaged Cars
Building 7
Limit of 2001 Excavation
Former Drywell B
MW-1
Crushed Concrete Pile
Crushed Asphalt Pile
Crushed Asphalt Pile
Wooded Debris Pile
State Route 9
Mobile Water Tank
Former Dry Well
Semi-Truck Trailers
Former Gasoline AST
Former Diesel AST
PVC Pipes
Train Container
Limit of Excavation (Date Unknown)
Former Dry Well
Train Container
Concrete Pad
Clear Court
Building 8
Puddles and Soil with Sheen
Residential Garage/ Storage Building
Propane AST
SFR

Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Test Probe No.: B-1

Sheet 1 of 1

Date(s) Drilled: **09/07/12**	Logged By: **SL**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **16 feet bgs**
Drill Rig Type: **Truck Mounted**	Drilling Contractor: **Pacific NW Probe**	Approximate Surface Elevation: **n/a**
Groundwater Level and Date Measured: **13' bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite Chips**	Location: **12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington**	

PID Reading, ppm	Sample ID	Sample Type	Sampling Resistance, blows/ft	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	GRAVEL	
0.1						Light brown, sandy SILT, dense, moist, no odor, no sheen	
0.0	B-1-3						
					5		
0.0	B-1-6					Light brown, SILTY SAND, dense, moist, no odor, no sheen	
0.1							
0.0							
					10		
0.0	B-1-11						
0.1	B-1-12.5			▽		Wet	
					15		
						Terminated at 16 feet bgs	
					20		

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011
1838 South Washington Street, Kennewick, WA 99337

Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Test Probe No.: B-2
Sheet 1 of 1

Date(s) Drilled: **09/07/12**	Logged By: **SL**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **16 feet bgs**
Drill Rig Type: **Truck Mounted**	Drilling Contractor: **Pacific NW Probe**	Approximate Surface Elevation: **n/a**
Groundwater Level and Date Measured: **13' bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite Chips**	Location: **12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington**	

PID Reading, ppm	Sample ID	Sample Type	Sampling Resistance, blows/ft	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	GRAVEL	
0.0						Light brown, sandy SILT, dense, moist, no odor, no sheen	
0.0	B-2-3						
					5		
						Light brown, SILTY SAND, dense, moist, no odor, no sheen	
0.0	B-2-7						
0.0							
0.0	B-2-10				10		
0.0	B-2-12.5			▽		Wet	
					15		
						Terminated at 16 feet bgs	
					20		

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011
1838 South Washington Street, Kennewick, WA 99337

Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Test Probe No.: B-3

Sheet 1 of 1

Date(s) Drilled: **09/07/12**	Logged By: **SL**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **16 feet bgs**
Drill Rig Type: **Truck Mounted**	Drilling Contractor: **Pacific NW Probe**	Approximate Surface Elevation: **n/a**
Groundwater Level and Date Measured: **13' bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite Chips**	Location: **12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington**	

PID Reading, ppm	Sample ID	Sample Type	Sampling Resistance, blows/ft	GW Depth	Depth (feet)	MATERIAL DESCRIPTION
					0	GRAVEL
0.0						Light brown, sandy SILT, dense, moist, no odor, no sheen
0.0	B-3-4				5	
0.1	B-3-7					Light brown, SILTY SAND, dense, moist, no odor, no sheen
0.0						
0.0	B-3-10				10	
0.0	B-3-12					
				▽		Wet
					15	
0.0						Terminated at 16 feet bgs
					20	

Graphic Log

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011
1838 South Washington Street, Kennewick, WA 99337

Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Test Probe No.: B-4

Sheet 1 of 1

Date(s) Drilled: **09/07/12**	Logged By: **SL**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **16 feet bgs**
Drill Rig Type: **Truck Mounted**	Drilling Contractor: **Pacific NW Probe**	Approximate Surface Elevation: **n/a**
Groundwater Level and Date Measured: **11' bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite Chips**	Location: **12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington**	

PID Reading, ppm	Sample ID	Sample Type	Sampling Resistance, blows/ft	GW Depth	Depth (feet)	MATERIAL DESCRIPTION
					0	GRAVEL
0.0						Light brown, sandy SILT, dense, moist, no odor, no sheen
0.0	B-4-3					
0.0					5	
0.0	B-4-8					Light brown, SILTY SAND, dense, moist, no odor, no sheen
0.0	B-4-10				10	
				▽		Wet
					15	
0.0	B-4-16					Terminated at 16 feet bgs
					20	

Graphic Log

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1838 South Washington Street, Kennewick, WA 99337

Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Test Probe No.: B-5
Sheet 1 of 1

Date(s) Drilled: **09/07/12**	Logged By: **SL**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **16 feet bgs**
Drill Rig Type: **Truck Mounted**	Drilling Contractor: **Pacific NW Probe**	Approximate Surface Elevation: **n/a**
Groundwater Level and Date Measured: **11.5' bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite Chips**	Location: **12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington**	

PID Reading, ppm	Sample ID	Depth (feet)	MATERIAL DESCRIPTION
		0	GRAVEL
			Light brown, sandy SILT, dense, moist, no odor, no sheen
0.2	B-5-4	5	
0.1	B-5-7		Light brown, SILTY SAND, dense, moist, no odor, no sheen
0.0	B-5-11	10	
			Wet
		15	
0.0	B-5-16		Terminated at 16 feet bgs
		20	

Sample Type
Sampling Resistance, blows/ft
GW Depth
Graphic Log

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Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Test Probe No.: B-6
Sheet 1 of 1

Date(s) Drilled: **09/07/12**	Logged By: **SL**	Surface Conditions: **Grass**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **16 feet bgs**
Drill Rig Type: **Truck Mounted**	Drilling Contractor: **Pacific NW Probe**	Approximate Surface Elevation: **n/a**
Groundwater Level and Date Measured: **11' bgs**	Sampling Method(s): **0.2, Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite Chips**	Location: **12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington**	

PID Reading, ppm	Sample ID	Sample Type	Sampling Resistance, blows/ft	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Light brown, sandy SILT, dense, moist, no odor, no sheen	
0.2	B-6-4						
					5		
0.1	B-6-6					Light brown, SILTY SAND, dense, moist, no odor, no sheen	
0.2	B-6-10.5			▽	10	Wet	
					15		
0.1	B-6-16					Terminated at 16 feet bgs	
					20		

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Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Test Probe No.: B-7

Sheet 1 of 1

Date(s) Drilled: **09/07/12**	Logged By: **SL**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **8.5 feet bgs**
Drill Rig Type: **Truck Mounted**	Drilling Contractor: **Pacific NW Probe**	Approximate Surface Elevation: **n/a**
Groundwater Level and Date Measured: **Not Encountered**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite Chips**	Location: **12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington**	

PID Reading, ppm	Sample ID	Sample Type	Sampling Resistance, blows/ft	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	GRAVEL	
						Light brown, SILTY GRAVEL, angular, 1.5" diameter, very dense, moist, no odor, no sheen	
0.2	B-7-4				5		
0.1	B-7-7						
0.2	B-7-8.5					Refusal at 8.5 feet bgs	
					10		
					15		
					20		

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Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Test Probe No.: B-8

Sheet 1 of 1

Date(s) Drilled: **09/07/12**	Logged By: **SL**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **16 feet bgs**
Drill Rig Type: **Truck Mounted**	Drilling Contractor: **Pacific NW Probe**	Approximate Surface Elevation: **n/a**
Groundwater Level and Date Measured: **11' bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite Chips**	Location: **12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington**	

PID Reading, ppm	Sample ID	Sample Type	Sampling Resistance, blows/ft	GW Depth	Depth (feet)	MATERIAL DESCRIPTION
					0	GRAVEL
						Light brown, sandy SILT, dense, moist, no odor, no sheen
0.0	B-8-4				5	
0.2	B-8-7					Light brown, SILTY SAND, dense, moist, no odor, no sheen
0.2	B-8-11			▽	10	Wet
0.0	B-8-16				15	
						Terminated at 16 feet bgs
					20	

Graphic Log

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Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Test Probe No.: B-9
Sheet 1 of 1

Date(s) Drilled: **09/07/12**	Logged By: **SL**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **8 feet bgs**
Drill Rig Type: **Truck Mounted**	Drilling Contractor: **Pacific NW Probe**	Approximate Surface Elevation: **n/a**
Groundwater Level and Date Measured: **5' bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite Chips**	Location: **12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington**	

PID Reading, ppm	Sample ID	Sample Type	Sampling Resistance, blows/ft	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	GRAVEL Light brown GRAVEL, dense, dry, no odor, no sheen	
0.3	B-9-3					Black, organic-rich SILT, dense, moist, no odor, no sheen	
0.2	B-9-5			▽	5	Light brown, SILTY SAND, dense, wet, no odor, no sheen	
0.2	B-9-8					Terminated at 8 feet bgs	
					10		
					15		
					20		

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Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Test Probe No.: B-10
Sheet 1 of 1

Date(s) Drilled: **09/07/12**	Logged By: **SL**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **12 feet bgs**
Drill Rig Type: **Truck Mounted**	Drilling Contractor: **Pacific NW Probe**	Approximate Surface Elevation: **n/a**
Groundwater Level and Date Measured: **10.5' bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite Chips**	Location: **12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington**	

PID Reading, ppm	Sample ID	Sample Type	Sampling Resistance, blows/ft	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	GRAVEL	
						Light brown, sandy SILT, dense, moist, no odor, no sheen	
0.0	B-10-3						
					5		
0.3	B-10-6						
						Light brown, SILTY SAND, dense, moist, no odor, no sheen	
0.2	B-10-10			▽	10	Wet	
0.1	B-10-12					Terminated at 12 feet bgs	
					15		
					20		

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Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Test Probe No.: B-11
Sheet 1 of 1

Date(s) Drilled: **09/07/12**	Logged By: **SL**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **12 feet bgs**
Drill Rig Type: **Truck Mounted**	Drilling Contractor: **Pacific NW Probe**	Approximate Surface Elevation: **n/a**
Groundwater Level and Date Measured: **10.5' bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite Chips**	Location: **12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington**	

PID Reading, ppm	Sample ID	Sample Type	Sampling Resistance, blows/ft	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	GRAVEL	
						Dark brown, sandy SILT, dense, moist, no odor, no sheen	
0.3	B-11-4				5		
0.4	B-11-7					Dark brown, SILTY SAND, dense, moist, no odor, no sheen	
0.2	B-11-9				10	Wet	
0.1	B-11-12					Terminated at 12 feet bgs	
					15		
					20		

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Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Boring Log Key
Sheet 1 of 1

PID Reading, ppm	Sample ID	Sample Type	Sampling Resistance, blows/ft	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
1	2	3	4	5	6	7	8

COLUMN DESCRIPTIONS

1. PID Reading, ppm: The reading from a photo-ionization detector, in parts per million.
2. Sample ID: Sample identification number.
3. Sample Type: Type of soil sample collected at the depth interval shown.
4. Sampling Resistance, blows/ft: Number of blows to advance driven sampler one foot (or distance shown) beyond seating interval using the hammer identified on the boring log.
5. GW Depth: Groundwater depth in feet below the ground surface.
6. Depth (feet): Depth in feet below the ground surface.
7. MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
8. Graphic Log: Graphic depiction of the subsurface material encountered.

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

MATERIAL GRAPHIC SYMBOLS

Silty GRAVEL (GM)
Poorly graded GRAVEL (GP)
SILT, SILT w/SAND, SANDY SILT (ML)
Silty SAND (SM)

TYPICAL SAMPLER GRAPHIC SYMBOLS

Shelby Tube (Thin-walled, fixed head)
Auger sampler
Bulk Sample
3-inch-OD California w/ brass rings
CME Sampler
Continuous Core Sampler
Grab Sample
2.5-inch-OD Modified California w/ brass liners
Pitcher Sample
2-inch-OD unlined split spoon (SPT)
Shelby Tube (Thin-walled, fixed head)

OTHER GRAPHIC SYMBOLS

Water level (at time of drilling, ATD)
Water level (after waiting)
Minor change in material properties within a stratum
Inferred/gradational contact between strata
Queried contact between strata

GENERAL NOTES

1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

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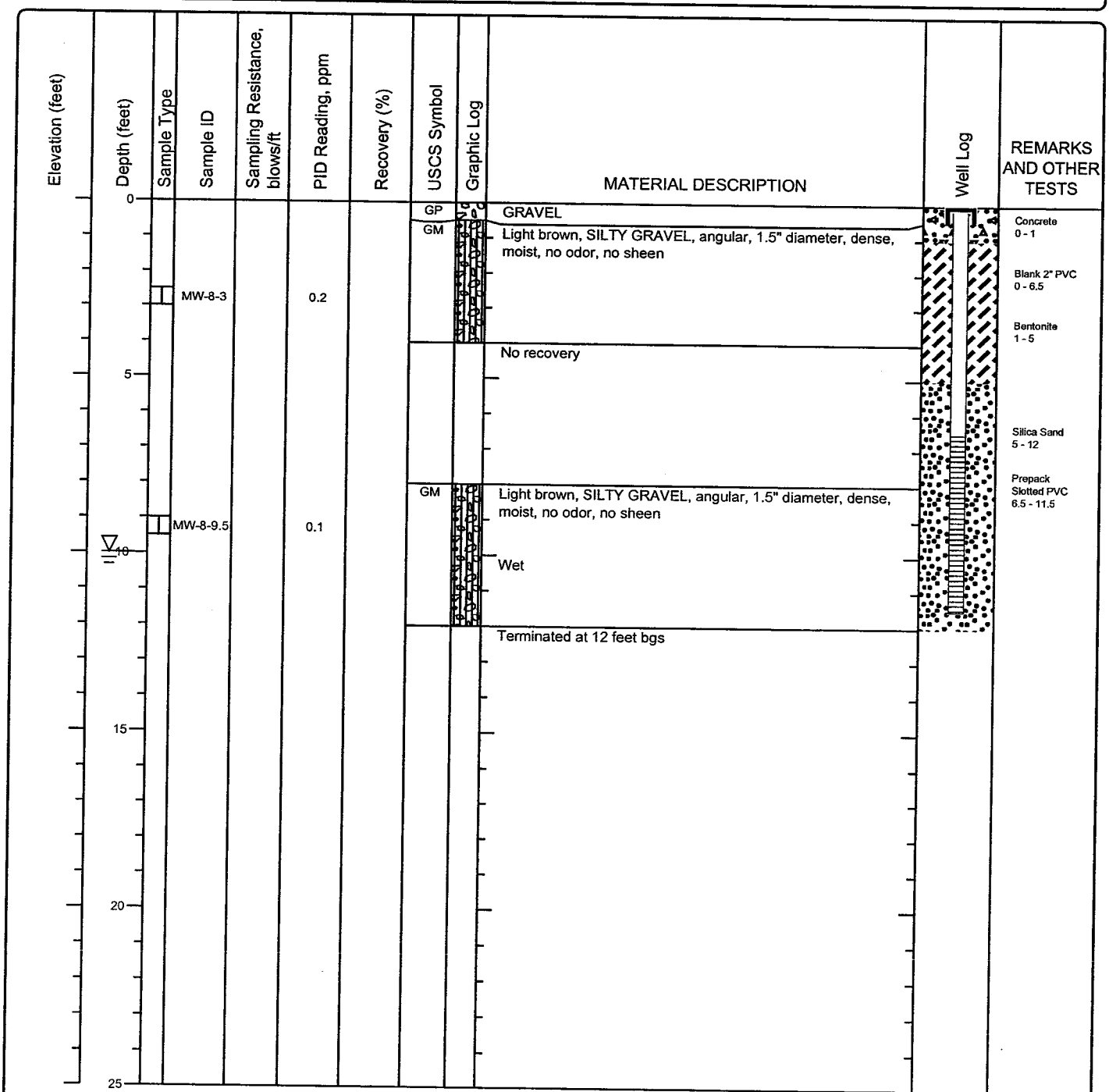
Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Boring/Well No.: MW-8
Sheet 1 of 1

Date(s) Drilled: **09/10/12**	Logged By: **SL**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **12 feet bgs**
Drill Rig Type: **Truck Mounted**	Drilling Contractor: **Pacific NW Probe**	Approximate Surface Elevation: **n/a**
Groundwater Level and Date Measured: **10' bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Monitoring Well**	Location: **12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington**	



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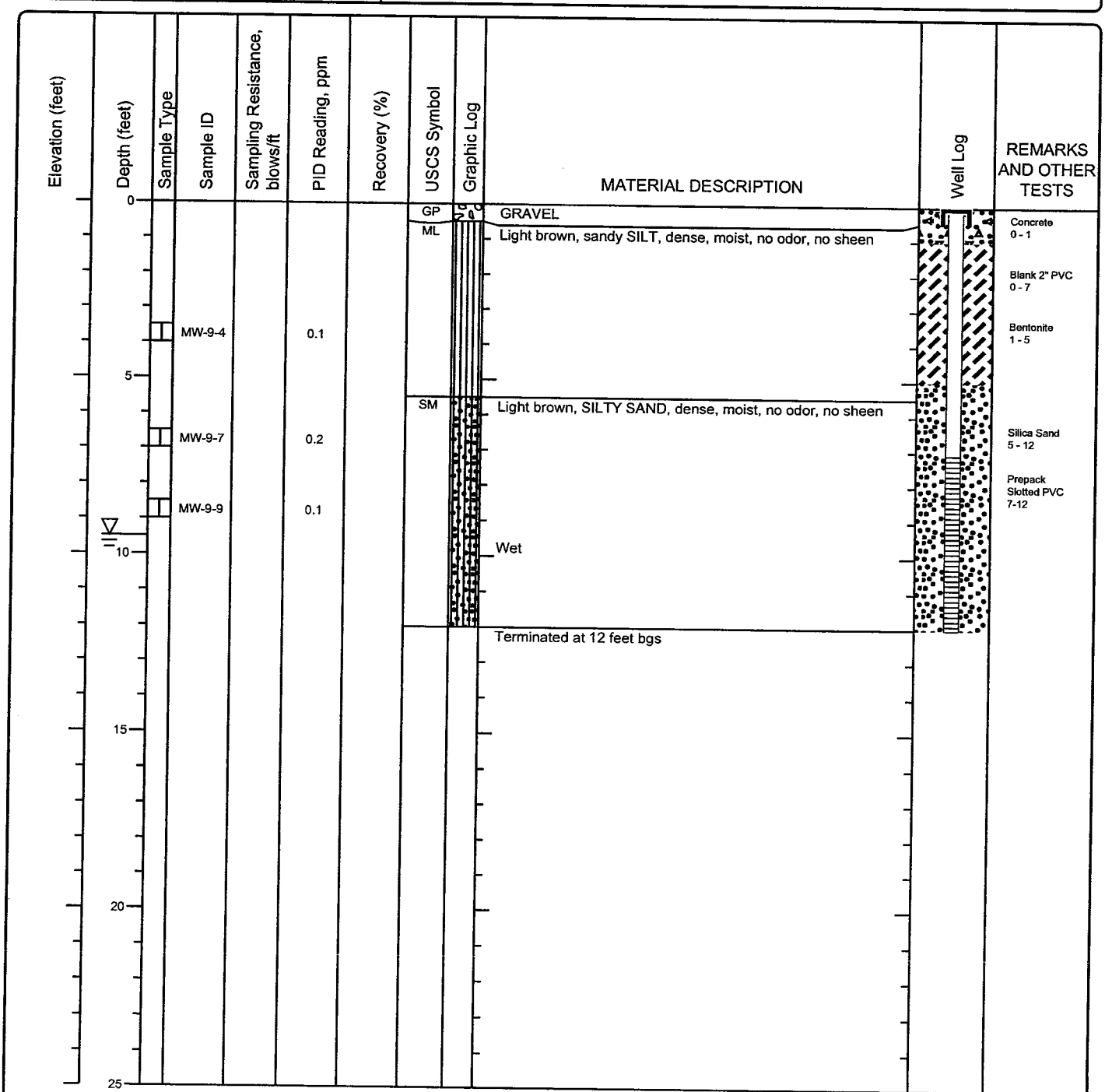
Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Boring/Well No.: MW-9
Sheet 1 of 1

Date(s) Drilled: **09/10/12**	Logged By: **SL**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **12 feet bgs**
Drill Rig Type: **Truck Mounted**	Drilling Contractor: **Pacific NW Probe**	Approximate Surface Elevation: **n/a**
Groundwater Level and Date Measured: **9.5' bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Monitoring Well**	Location: **12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington**	



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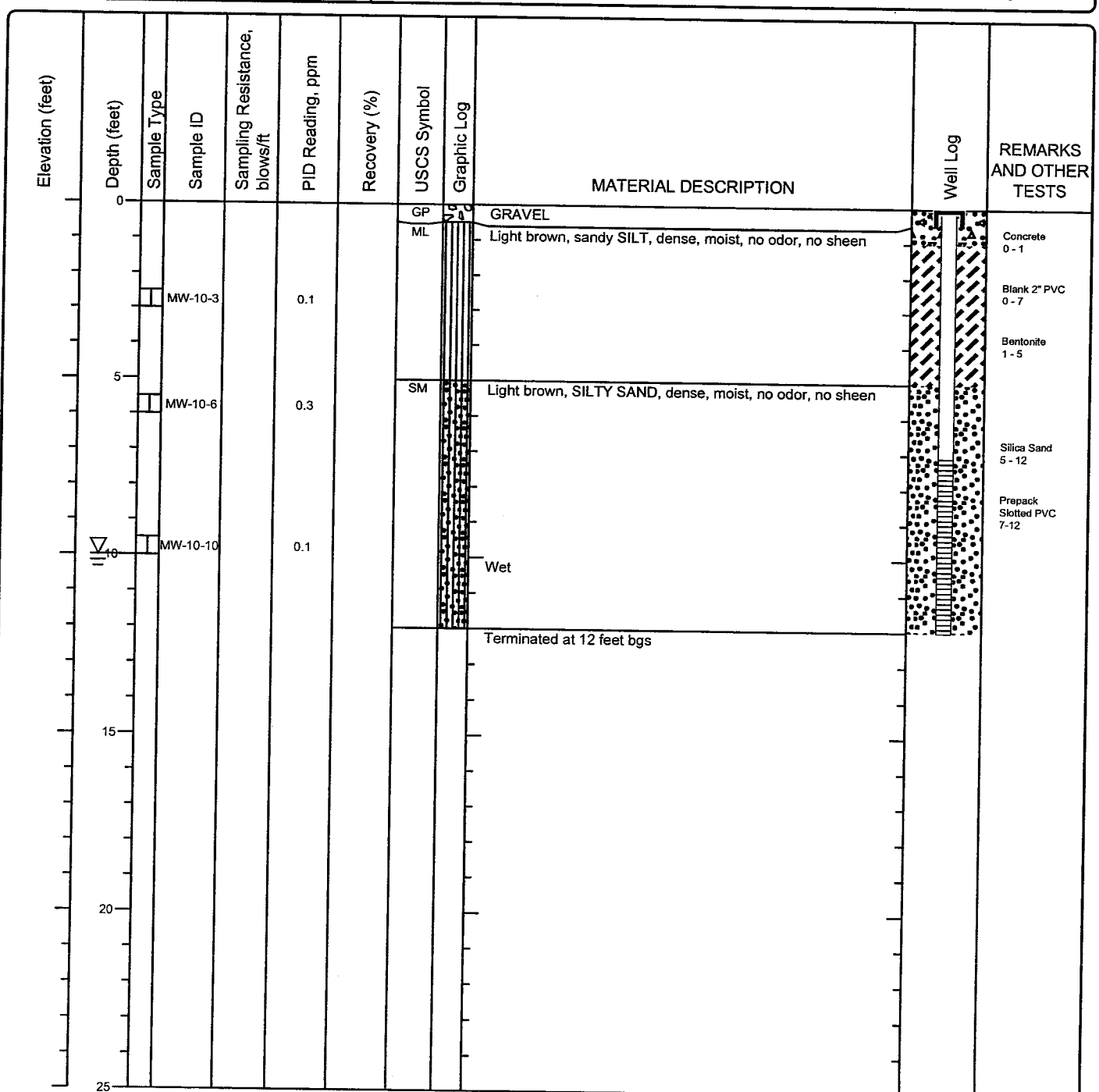
Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Boring/Well No.: MW-10
Sheet 1 of 1

Date(s) Drilled: **09/10/12**	Logged By: **SL**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **12 feet bgs**
Drill Rig Type: **Truck Mounted**	Drilling Contractor: **Pacific NW Probe**	Approximate Surface Elevation: **n/a**
Groundwater Level and Date Measured: **10' bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Monitoring Well**	Location: **12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington**	



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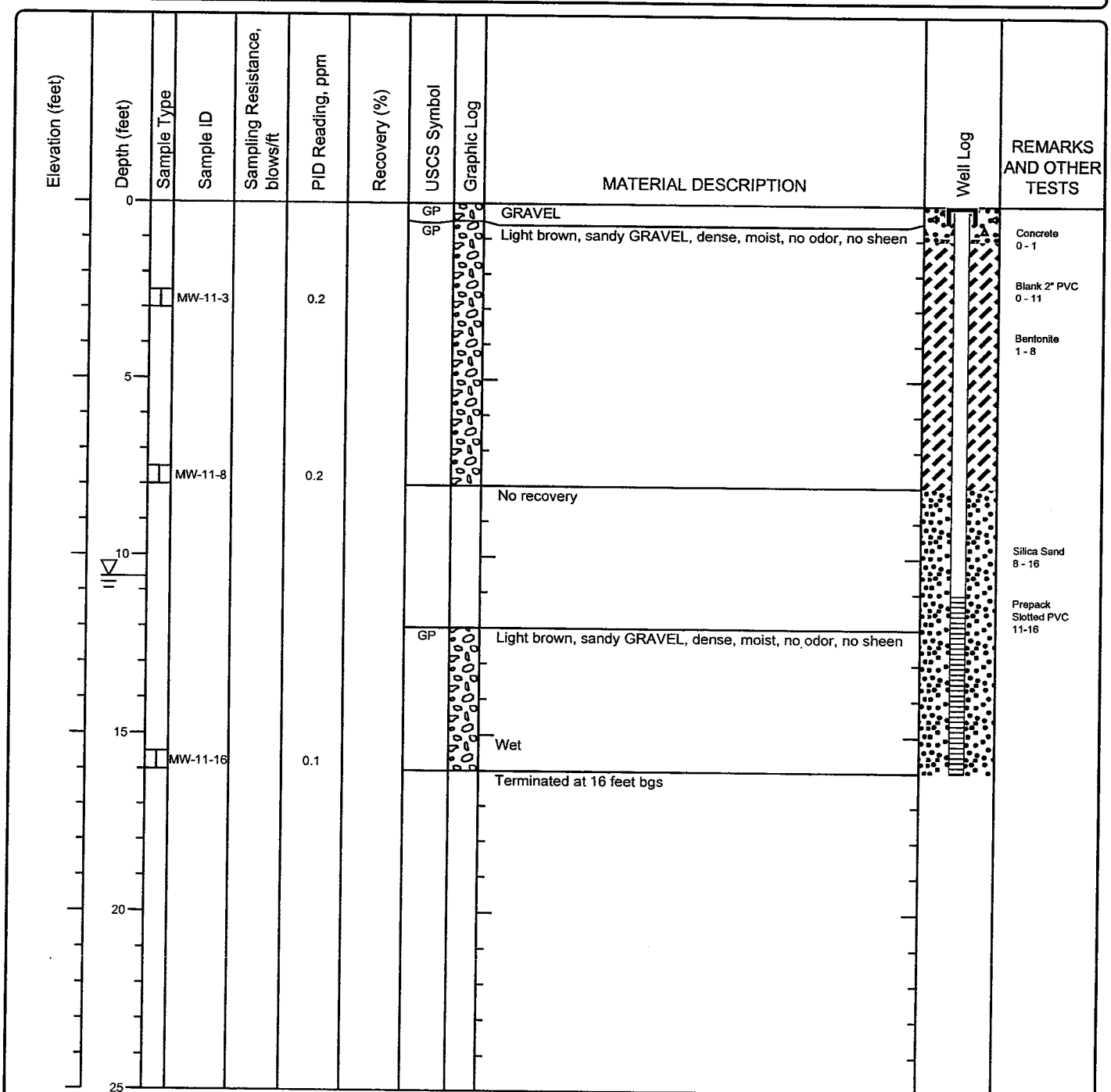
Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Boring/Well No.: MW-11
Sheet 1 of 1

Date(s) Drilled: **09/10/12**	Logged By: **SL**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **16 feet bgs**
Drill Rig Type: **Truck Mounted**	Drilling Contractor: **Pacific NW Probe**	Approximate Surface Elevation: **n/a**
Groundwater Level and Date Measured: **10.62 bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Monitoring Well**	Location: **12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington**	



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Project Name: **Clear Lake Industrial Park**
Project Number: **2012-265A**
Client: **Columbia Bank**

Boring Log Key
Sheet 1 of 1

1 Elevation (feet)	2 Depth (feet)	3 Sample Type	4 Sample ID	5 Sampling Resistance, blows/ft	6 PID Reading, ppm	7 Recovery (%)	8 USCS Symbol	9 Graphic Log	10 MATERIAL DESCRIPTION	11 Well Log	12 REMARKS AND OTHER TESTS

COLUMN DESCRIPTIONS

1. Elevation (feet): Elevation (MSL, feet).
2. Depth (feet): Depth in feet below the ground surface.
3. Sample Type: Type of soil sample collected at the depth interval shown.
4. Sample ID: Sample identification number.
5. Sampling Resistance, blows/ft: Number of blows to advance driven sampler one foot (or distance shown) beyond seating interval using the hammer identified on the boring log.
6. PID Reading, ppm: The reading from a photo-ionization detector, in parts per million.
7. Recovery (%): Core Recovery Percentage is determined based on a ratio of the length of core sample recovered compared to the cored interval length.
8. USCS Symbol: USCS symbol of the subsurface material.
9. Graphic Log: Graphic depiction of the subsurface material encountered.
10. MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
11. Well Log: Graphical representation of well installed upon completion of drilling and sampling.
12. REMARKS AND OTHER TESTS: Comments and observations regarding drilling or sampling made by driller or field personnel.

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

MATERIAL GRAPHIC SYMBOLS


Bentonite chips


Portland Cement Concrete


Silty GRAVEL (GM)


Poorly graded GRAVEL (GP)


SILT, SILT w/SAND, SANDY SILT (ML)


Silty SAND (SM)


Poorly graded SAND (SP)

TYPICAL SAMPLER GRAPHIC SYMBOLS


Shelby Tube (Thin-walled, fixed head)


Auger sampler


Bulk Sample


3-inch-OD California w/ brass rings


CME Sampler


Continuous Core Sampler


Grab Sample


2.5-inch-OD Modified California w/ brass liners


Pitcher Sample


2-inch-OD unlined split spoon (SPT)


Shelby Tube (Thin-walled, fixed head)

OTHER GRAPHIC SYMBOLS


Water level (at time of drilling, ATD)


Water level (after waiting)


Minor change in material properties within a stratum

Inferred/gradational contact between strata

Queried contact between strata

GENERAL NOTES

1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
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The Riley Group, Inc.
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Worksheet for Calculating Soil Cleanup Levels for Unrestricted & Industrial Land Use

Date: 11/7/2012
Site Name: Clear Lake Industrial Park
Evaluator: Jerry Sawetz

Refer to WAC 173-340-720, 740, 745, 747 and 750 for details.

[1]Soil ingestion only; [2]Soil dermal contact; [3]Soil to Ground Water; [4]Ground Water ingestion; [5]Vapor exposure pathway

A. INPUT PARAMETERS FOR SOIL CLEANUP LEVEL CALCULATIONS

Note: If no data is available for any of the following inputs, then leave the input box blank

Item	Symbol	Value	Units
1. General information			
1.1 Name of Chemical:		Chlordane	
1.2 Measured Soil Concentration, if any:	C_s		mg/kg
1.3 Natural Background Concentration for Soil, if any:	NB_s		mg/kg
1.4 Practical Quantitation Limit for Soil, if any:	PQL_s	0.01	mg/kg
* To evaluate the ingestion and dermal pathways concurrently, check here and input values for *AF, ABS_d, GI*:		☑	
2. Toxicological Properties of the Chemical: Chemical-Specific			
2.1 Oral Reference Dose[1,3]	RfD_o	0.0005	mg/kg-day
2.2 Oral Carcinogenic Potency Factor[1,3]	CPF_o	0.35	kg-day/mg
2.3 Inhalation Reference Dose[5]	RfD_i	0.0002	mg/kg-day
2.4 Inhalation Carcinogenic Potency Factor[5]	CPF_i	0.35	kg-day/mg
3. Exposure Parameters			
3.1 Inhalation Correction Factor (default = "2" for volatiles; "1" for all others)[4]	*INH*	1	unitless
3.2 Inhalation Absorption Fraction (default = "1")[5]	ABS_i	1	unitless
3.3 Gastrointestinal Absorption Fraction (default = "1")[1,2]	*ABI*	1	unitless
3.4 Adherence Factor (default = "0.2")[2]	*AF*	0.2	mg/cm^2-day
3.5 Dermal Absorption Fraction (chemical-specific or defaults)[2]	ABS_d	0.1	unitless
3.6 Gastrointestinal Absorption Conversion Factor (chemical-specific or defaults)[2]	*GI*	0.5	unitless
4. Physical and Chemical Properties of the Chemical: Chemical-Specific			
Soil Organic Carbon-Water Partitioning Coefficient: for metals, enter K_d value here and enter "1" for f_{oc} value	K_{oc}	5.100E+04	l/kg
Henry's Law Constant: for the evaluation of ground water and vapor exposure pathway	H_{cc}	2.000E-03	unitless
**If the value for Henry's Law Constant is given in the unit of "atm.m^3/mol", enter value here:*	*H*		atm.m^3/mol
**Converted unitless form of H_{cc} @13 °C: (Enter this converted value into "H_{cc} input Box" above for a calculation)*	H_{cc}	*0.000E+00*	unitless

Solubility of the Chemical in Water: for the calculation of soil saturation limit	S	5.600E-02	mg/l
5. Target Ground Water Cleanup Level			
Target Ground Water Cleanup Level applicable for a soil cleanup level calculation: **Results from the Ground Water Cleanup Level Worksheet are not automatically transferred into this worksheet.*	C_w	**2.00E+00**	ug/l
6. Site-Specific Hydrogeological Characteristics			
Total Soil Porosity (default = "0.43"):	n	0.43	unitless
Volumetric Water Content (default = "0.30"):	Θ_w	0.3	unitless
Volumetric Air Content (default = "0.13"):	Θ_a	0.13	unitless
Dry Soil Bulk Density (default = "1.50"):	ρ_b	1.5	kg/l
Fraction Soil Organic Carbon (default = "0.001"): for metals, enter "1" for f_{oc} value here	f_{oc}	0.001	unitless
Dilution Factor (default = "20" for unsaturated zone soil; "1" for saturated zone soil; or site-specific)	DF	20	unitless
7. Vapor Attenuation Factor due to Advection (building structure) & Diffusion (soil layer) Mechanisms			
** Vapor Attenuation Factor is the ratio of air concentration at the exposure point (e.g., within the building) to the vapor-phase contaminant concentration within the soil at the source*			
Enter Vapor Attenuation Factor: for the evaluation of vapor exposure pathway	VAF	0.01	unitless

B. SUMMARY OF SOIL CLEANUP LEVEL CALCULATIONS

Chemical of Concern: Chlordane

1. Summary of Results

To calculate a soil cleanup level based on Industrial Land Use (Method C) for Direct Soil Contact, check here: ☑

To calculate a soil concentration based on Method C vapor pathway, check here: ☑

Basis for Soil Concentration	Conc	Units
Most stringent soil concentration based on Soil Direct Contact & Ground Water Protection:	2.048E+00	mg/kg
Natural Background concentration for Soil:	N/A	mg/kg
Practical Quantitation Limit for Soil:	0.01	mg/kg
Soil Cleanup Level (not considering vapor pathway):	2.048E+00	mg/kg
Warning! Soil Cleanup Level above may not be protective of vapor exposure pathway - evaluate vapor pathway further.		
Soil concentration based on Vapor Pathway (informational purposes only):	1.792E-04	mg/kg
Soil Saturation Limit, C_{sat}:	2.867E+00	mg/kg

C_{sat} corresponds to the total soil chemical concentration saturated in soil.

R is the ratio of the ground water flow velocity to the contaminant migration velocity in saturated zone

Retardation Factor, *R*:	178.9	unitless	contaminant migration velocity in saturated zone.

2. Summary of Calculation for each Exposure Pathway

Summary by Exposure Pathway

			Method B Unrestricted Land Use @ HQ=1.0; RISK =1.0E-6		*Method C* Industrial Land Use @ HQ=1.0; RISK =1.0E-5	
Soil Direct Contact			Ingestion only	Ingestion & Dermal	Ingestion only	Ingestion & Dermal
	Under the Current Condition	HQ? @ Exposure Point	N/A	N/A	N/A	N/A
		RISK? @ Exposure Point	N/A	N/A	N/A	N/A
	Target Soil CUL? mg/kg	@HQ=1.0	4.000E+01	2.778E+01	1.750E+03	3.333E+02
		@RISK =1.0E-6 or 1.0E-5	2.857E+00	1.984E+00	3.750E+02	7.143E+01

			Method B @ HQ=1.0; RISK =1.0E-6	*Method C* @ HQ=1.0; RISK =1.0E-5
Protection of Potable Ground Water	Under the Current Condition	Predicted Ground Water Conc? ug/l	N/A	
		HQ? @ Exposure Point	N/A	N/A
		RISK? @ Exposure Point	N/A	N/A
	Target Ground Water CUL? ug/l		2.000E+00	
	Target Soil CUL? mg/kg		2.048E+00	

			Method B @ HQ=1.0; RISK =1.0E-6	*Method C* @ HQ=1.0; RISK =1.0E-5
Protection of Air Quality *(for informational purpose only)*	Under the Current Condition	Predicted Air Conc? ug/m^3 @Exposure Point	N/A	
		HQ? @ Exposure Point	N/A	N/A
		RISK? @ Exposure Point	N/A	N/A
	Target Air CUL? ug/m^3	@ HQ=1.0	3.200E-01	7.000E-01
		@ RISK=1.0E-6 or 1.0E-5	2.500E-02	2.500E-01
	Target Soil CUL? mg/kg	@ HQ=1.0	8.192E-01	1.792E-04
		@ RISK=1.0E-6 or 1.0E-5	6.400E-02	6.400E-01

NOTES: "CUL" = Cleanup Level; "Conc" = concentration; "HQ" = hazard quotient; "RISK" = carcinogenic risk.

CAUTION: The requirements and procedures for establishing soil cleanup levels that are protective of human health and the environment are specified in the MTCA Cleanup Regulation (see WAC 173-340-740, 173-340-745, 173-340-747 and 173-340-7490 through 173-340-7494). The use of this Workbook is not sufficient to establish soil cleanup levels under the regulation. Specifically, the soil cleanup levels derived using this Workbook do not account for the following:

- Concentrations based on applicable state and federal laws (see WAC 173-340-740(3)(b)(i) and 173-340-745(5)(b)(i));
- Soil residual saturation (see WAC 173-340-747(10));
- Ecological impacts (see WAC 173-340-7490 through 7494); and
- Total site risk (see WAC 173-340-740(5)(a) and 173-340-745(6)(a)).

Other exposure pathways may also need to be evaluated on a site-specific basis to establish soil cleanup levels.

CAUTION: The requirements and procedures for establishing air cleanup levels that are protective of human health and the environment are specified in the MTCA Cleanup Regulation (see WAC 173-340-750). The use of this Workbook may not be sufficient to establish air cleanup levels under the regulation. Specifically, the air cleanup levels derived using this Workbook do not account for the following:

- Concentrations based on applicable state and federal laws (see WAC 173-340-750(3)(b)(i) and (4)(b)(i));
- Concentrations based on natural background and the practical quantitation limit (see WAC 173-340-750(5)(c));
- Total site risk (see WAC 173-340-750(5)(a)).

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
e-mail: fbi@isomedia.com

October 10, 2012

Richard Simpson, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr. Simpson:

Included are the results from the testing of material submitted on October 5, 2012 from the Clear Lake 2012-265A, F&BI 210094 project. There are 16 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
TRG1010R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on October 5, 2012 by Friedman & Bruya, Inc. from the The Riley Group Clear Lake 2012-265A, F&BI 210094 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
210094-01	MW2
210094-02	MW1
210094-03	MW8

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW2	Client:	The Riley Group
Date Received:	10/05/12	Project:	Clear Lake 2012-265A, F&BI 210094
Date Extracted:	10/09/12	Lab ID:	210094-01
Date Analyzed:	10/09/12	Data File:	210094-01.022
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	111	60	125
Indium	97	60	125
Holmium	95	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	2.90
Arsenic	5.97
Cadmium	<1
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW1	Client:	The Riley Group
Date Received:	10/05/12	Project:	Clear Lake 2012-265A, F&BI 210094
Date Extracted:	10/09/12	Lab ID:	210094-02
Date Analyzed:	10/09/12	Data File:	210094-02.023
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	96	60	125
Indium	91	60	125
Holmium	94	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	1.69
Arsenic	<1
Cadmium	<1
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW8	Client:	The Riley Group
Date Received:	10/05/12	Project:	Clear Lake 2012-265A, F&BI 210094
Date Extracted:	10/09/12	Lab ID:	210094-03 x10
Date Analyzed:	10/09/12	Data File:	210094-03 x10.025
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	121	60	125
Indium	94	60	125
Holmium	95	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	782
Arsenic	87.0
Cadmium	11.9
Lead	860

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	The Riley Group
Date Received:	Not Applicable	Project:	Clear Lake 2012-265A, F&BI 210094
Date Extracted:	10/09/12	Lab ID:	I2-694 mb
Date Analyzed:	10/09/12	Data File:	I2-694 mb.015
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	96	60	125
Indium	102	60	125
Holmium	100	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	<1
Arsenic	<1
Cadmium	<1
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW2	Client:	The Riley Group
Date Received:	10/05/12	Project:	Clear Lake 2012-265A, F&BI 210094
Date Extracted:	10/09/12	Lab ID:	210094-01
Date Analyzed:	10/09/12	Data File:	210094-01.010
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	98	60	125
Indium	99	60	125
Holmium	96	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	<1
Arsenic	<1
Cadmium	<1
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW1	Client:	The Riley Group
Date Received:	10/05/12	Project:	Clear Lake 2012-265A, F&BI 210094
Date Extracted:	10/09/12	Lab ID:	210094-02
Date Analyzed:	10/09/12	Data File:	210094-02.013
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	99	60	125
Indium	99	60	125
Holmium	100	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	<1
Arsenic	<1
Cadmium	<1
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW8	Client:	The Riley Group
Date Received:	10/05/12	Project:	Clear Lake 2012-265A, F&BI 210094
Date Extracted:	10/09/12	Lab ID:	210094-03
Date Analyzed:	10/09/12	Data File:	210094-03.014
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	96	60	125
Indium	97	60	125
Holmium	95	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	<1
Arsenic	<1
Cadmium	<1
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	The Riley Group
Date Received:	Not Applicable	Project:	Clear Lake 2012-265A, F&BI 210094
Date Extracted:	10/09/12	Lab ID:	I2-693 mb
Date Analyzed:	10/09/12	Data File:	I2-693 mb.008
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	103	60	125
Indium	105	60	125
Holmium	104	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	<1
Arsenic	<1
Cadmium	<1
Lead	<1

Date of Report: 10/10/12
Date Received: 10/05/12
Project: Clear Lake 2012-265A, F&BI 210094
Date Extracted: 10/08/12
Date Analyzed: 10/09/12

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES FOR DISSOLVED MERCURY USING EPA METHOD 1631E

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Dissolved Mercury
MW2 210094-01	<0.1
MW1 210094-02	<0.1
MW8 210094-03	<0.1
Method Blank	<0.1

Date of Report: 10/10/12
Date Received: 10/05/12
Project: Clear Lake 2012-265A, F&BI 210094
Date Extracted: 10/08/12
Date Analyzed: 10/09/12

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Total Mercury
MW2 210094-01	<0.1
MW1 210094-02	<0.1
MW8 210094-03	1.3
Method Blank	<0.1

Date of Report: 10/10/12
Date Received: 10/05/12
Project: Clear Lake 2012-265A, F&BI 210094

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 210093-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Chromium	ug/L (ppb)	20	<1	95	93	71-130	2
Arsenic	ug/L (ppb)	10	1.21	93	92	51-167	1
Cadmium	ug/L (ppb)	5	<1	93	93	86-115	0
Lead	ug/L (ppb)	10	<1	94	92	85-115	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chromium	ug/L (ppb)	20	94	80-119
Arsenic	ug/L (ppb)	10	91	81-118
Cadmium	ug/L (ppb)	5	95	86-118
Lead	ug/L (ppb)	10	99	84-120

Date of Report: 10/10/12
Date Received: 10/05/12
Project: Clear Lake 2012-265A, F&BI 210094

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 200.8

Laboratory Code: 210094-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Chromium	ug/L (ppb)	20	<1	99	98	71-130	1
Arsenic	ug/L (ppb)	10	<1	99	95	51-167	4
Cadmium	ug/L (ppb)	5	<1	97	94	86-115	3
Lead	ug/L (ppb)	10	<1	98	96	85-115	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chromium	ug/L (ppb)	20	93	80-119
Arsenic	ug/L (ppb)	10	91	81-118
Cadmium	ug/L (ppb)	5	93	86-118
Lead	ug/L (ppb)	10	94	84-120

Date of Report: 10/10/12
Date Received: 10/05/12
Project: Clear Lake 2012-265A, F&BI 210094

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED MERCURY USING EPA METHOD 1631E

Laboratory Code: 210094-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.5	<0.1	92	89	78-124	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.5	84	78-123

Date of Report: 10/10/12
Date Received: 10/05/12
Project: Clear Lake 2012-265A, F&BI 210094

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 210094-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.5	<0.1	87	91	78-124	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.5	91	78-123

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

210094

SAMPLE CHAIN OF CUSTODY

ME 10/5/12 AIS

Send Report To Richard Simpson
Company RGI
Address
City, State, ZIP Bothell
Phone # Fax #

SAMPLERS (signature)
PROJECT NAME/NO. Clear Lake 2012-265A PO#
REMARKS Filter Dissolved

Page # of
TURNAROUND TIME
☐ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by
SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	MTCA5						Notes
MW2	01A	10.4.12	1300	W	2							X						
MW1	02	↓	1500	W	2							X						
MW8	03	10.4.12	1700	W	2							X						
																		Samples received at 6 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Richard Simpson	RGI	10.5.12	
Received by:		PX	11	1320
Relinquished by:				
Received by:	HONG NGUYEN	FPI	10/5/12	15:30

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

1311 N. 35th St.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, Washington 98119

RE: 209155
Lab ID: 1209059

September 20, 2012

Attention Michael Erdahl:

Fremont Analytical, Inc. received 7 sample(s) on 9/13/2012 for the analyses presented in the following report.

Organochlorine Pesticides by EPA Method 8081

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

Fremont Analytical

Date: *09/20/2012*

CLIENT: Friedman & Bruya
Project: 209155
Lab Order: 1209059

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1209059-001	MW-1	09/11/2012 2:15 PM	09/13/2012 2:00 PM
1209059-002	MW-2	09/11/2012 1:30 PM	09/13/2012 2:00 PM
1209059-003	MW-4	09/11/2012 12:30 PM	09/13/2012 2:00 PM
1209059-004	MW-8	09/11/2012 11:30 AM	09/13/2012 2:00 PM
1209059-005	MW-9	09/11/2012 11:40 AM	09/13/2012 2:00 PM
1209059-006	MW-10	09/11/2012 12:00 PM	09/13/2012 2:00 PM
1209059-007	MW-11	09/11/2012 2:10 PM	09/13/2012 2:00 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Fremont Analytical

Case Narrative

WO#: **1209059**
Date: **9/20/2012**

CLIENT: Friedman & Bruya
Project: 209155

I. SAMPLE RECEIPT:
All samples were received intact.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Insufficient sample was provided to perform Sample Duplicate or MS/MSD analysis.

Analytical Report

WO#: **1209059**
Date Reported: **9/20/2012**

CLIENT: Friedman & Bruya
Project: 209155

Lab ID: 1209059-001
Client Sample ID: **MW-1**
Collection Date: 9/11/2012 2:15:00 PM
Matrix: Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 3236		Analyst: PH
Chlordane, total	6.79	1.00		µg/L	1	9/19/2012 8:53:00 AM
gamma-Chlordane	0.206	0.100		µg/L	1	9/19/2012 8:53:00 AM
alpha-Chlordane	0.310	0.100		µg/L	1	9/19/2012 8:53:00 AM
Surr: Decachlorobiphenyl	130	64.3-142		%REC	1	9/19/2012 8:53:00 AM
Surr: Tetrachloro-m-xylene	57.9	39.7-136		%REC	1	9/19/2012 8:53:00 AM

Lab ID: 1209059-002
Client Sample ID: **MW-2**
Collection Date: 9/11/2012 1:30:00 PM
Matrix: Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 3236		Analyst: PH
Chlordane, total	ND	1.00		µg/L	1	9/19/2012 9:16:00 AM
gamma-Chlordane	ND	0.100		µg/L	1	9/19/2012 9:16:00 AM
alpha-Chlordane	ND	0.100		µg/L	1	9/19/2012 9:16:00 AM
Surr: Decachlorobiphenyl	110	64.3-142		%REC	1	9/19/2012 9:16:00 AM
Surr: Tetrachloro-m-xylene	48.5	39.7-136		%REC	1	9/19/2012 9:16:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Fremont Analytical

Analytical Report

WO#: **1209059**
Date Reported: **9/20/2012**

CLIENT: Friedman & Bruya
Project: 209155

Lab ID: 1209059-003
Client Sample ID: **MW-4**
Collection Date: 9/11/2012 12:30:00 PM
Matrix: Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 3236		Analyst: PH
Chlordane, total	1.75	1.00		µg/L	1	9/19/2012 10:29:00 AM
gamma-Chlordane	ND	0.100		µg/L	1	9/19/2012 10:29:00 AM
alpha-Chlordane	ND	0.100		µg/L	1	9/19/2012 10:29:00 AM
Surr: Decachlorobiphenyl	133	64.3-142		%REC	1	9/19/2012 10:29:00 AM
Surr: Tetrachloro-m-xylene	54.7	39.7-136		%REC	1	9/19/2012 10:29:00 AM

Lab ID: 1209059-004
Client Sample ID: **MW-8**
Collection Date: 9/11/2012 11:30:00 AM
Matrix: Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 3236		Analyst: PH
Chlordane, total	7.70	1.00		µg/L	1	9/19/2012 10:52:00 AM
gamma-Chlordane	1.27	0.100		µg/L	1	9/19/2012 10:52:00 AM
alpha-Chlordane	0.964	0.100		µg/L	1	9/19/2012 10:52:00 AM
Surr: Decachlorobiphenyl	96.5	64.3-142		%REC	1	9/19/2012 10:52:00 AM
Surr: Tetrachloro-m-xylene	99.9	39.7-136		%REC	1	9/19/2012 10:52:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

CLIENT: Friedman & Bruya
Project: 209155

Lab ID: 1209059-005
Client Sample ID: **MW-9**
Collection Date: 9/11/2012 11:40:00 AM
Matrix: Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 3236		Analyst: PH
Chlordane, total	2.06	1.00		µg/L	1	9/19/2012 11:16:00 AM
gamma-Chlordane	0.144	0.100		µg/L	1	9/19/2012 11:16:00 AM
alpha-Chlordane	0.118	0.100		µg/L	1	9/19/2012 11:16:00 AM
Surr: Decachlorobiphenyl	106	64.3-142		%REC	1	9/19/2012 11:16:00 AM
Surr: Tetrachloro-m-xylene	57.2	39.7-136		%REC	1	9/19/2012 11:16:00 AM

Lab ID: 1209059-006
Client Sample ID: **MW-10**
Collection Date: 9/11/2012 12:00:00 PM
Matrix: Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 3236		Analyst: PH
Chlordane, total	ND	1.00		µg/L	1	9/19/2012 11:39:00 AM
gamma-Chlordane	ND	0.100		µg/L	1	9/19/2012 11:39:00 AM
alpha-Chlordane	ND	0.100		µg/L	1	9/19/2012 11:39:00 AM
Surr: Decachlorobiphenyl	111	64.3-142		%REC	1	9/19/2012 11:39:00 AM
Surr: Tetrachloro-m-xylene	50.4	39.7-136		%REC	1	9/19/2012 11:39:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Fremont Analytical

Analytical Report

WO#: **1209059**
Date Reported: **9/20/2012**

CLIENT: Friedman & Bruya
Project: 209155

Lab ID: 1209059-007
Client Sample ID: **MW-11**

Collection Date: 9/11/2012 2:10:00 PM
Matrix: Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 3236		Analyst: PH
Chlordane, total	5.19	1.00		µg/L	1	9/19/2012 12:02:00 PM
gamma-Chlordane	0.313	0.100		µg/L	1	9/19/2012 12:02:00 PM
alpha-Chlordane	0.390	0.100		µg/L	1	9/19/2012 12:02:00 PM
Surr: Decachlorobiphenyl	128	64.3-142		%REC	1	9/19/2012 12:02:00 PM
Surr: Tetrachloro-m-xylene	62.3	39.7-136		%REC	1	9/19/2012 12:02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Fremont Analytical

Date: *9/20/2012*

Work Order: 1209059
CLIENT: Friedman & Bruya
Project: 209155

QC SUMMARY REPORT

Organochlorine Pesticides by EPA Method 8081

Sample ID: **MB-3236**	SampType: **MBLK**			Units: **µg/L**		Prep Date: **9/14/2012**		RunNo: **5788**		
Client ID: **MBLKW**	Batch ID: **3236**					Analysis Date: **9/19/2012**		SeqNo: **113952**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlordane, total	ND	1.00									
gamma-Chlordane	ND	0.100									
alpha-Chlordane	ND	0.100									
Surr: Decachlorobiphenyl	0.161		0.2000		80.3	64.3	142				
Surr: Tetrachloro-m-xylene	0.112		0.2000		56.0	39.7	136				

Sample ID: **LCS-3236**	SampType: **LCS**			Units: **µg/L**		Prep Date: **9/14/2012**		RunNo: **5788**		
Client ID: **LCSW**	Batch ID: **3236**					Analysis Date: **9/19/2012**		SeqNo: **113953**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
gamma-Chlordane	2.17	0.100	2.000	0	109	65	135				
alpha-Chlordane	2.21	0.100	2.000	0	111	65	135				
Surr: Decachlorobiphenyl	0.231		0.2000		116	64.3	142				
Surr: Tetrachloro-m-xylene	0.101		0.2000		50.5	39.7	136				

Sample ID: **LCSD-3236**	SampType: **LCSD**			Units: **µg/L**		Prep Date: **9/14/2012**		RunNo: **5788**		
Client ID: **LCSW02**	Batch ID: **3236**					Analysis Date: **9/19/2012**		SeqNo: **113954**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
gamma-Chlordane	2.49	0.100	2.000	0	125	65	135	2.172	13.8		
alpha-Chlordane	2.60	0.100	2.000	0	130	65	135	2.213	16.0		
Surr: Decachlorobiphenyl	0.250		0.2000		125	64.3	142		0		
Surr: Tetrachloro-m-xylene	0.114		0.2000		57.0	39.7	136		0		

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Fremont Analytical

Date: *9/20/2012*

Work Order: 1209059
CLIENT: Friedman & Bruya
Project: 209155

QC SUMMARY REPORT

Organochlorine Pesticides by EPA Method 8081

Sample ID: **LCS_TECH. CHLORDA** SampType: **LCS** Units: **µg/L** Prep Date: **9/14/2012** RunNo: **5788**
Client ID: **LCSW** Batch ID: **3236** Analysis Date: **9/18/2012** SeqNo: **113963**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlordane, total	1,180	1.00	1,000	0	118	65	135				
Surr: Decachlorobiphenyl	48.4		50.00		96.8	64.3	142				
Surr: Tetrachloro-m-xylene	49.9		50.00		99.9	39.7	136				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

SUBCONTRACT SAMPLE CHAIN OF CUSTODY 1209059

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO. 209155

PO # B948

REMARKS

Please Email Results

TURNAROUND TIME

☒ Standard (2 Weeks)

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins and Furans by 8290	EPH	VPH	Nitrate	Sulfate	Alkalinity	Chloride				Notes
MW-1		9/11/12	2:15	W	1							X				
MW-2			1:30		1											
MW-4			12:50		1											
MW-8			11:50		1											
MW-9			11:40		1											
MW-10			10:00		1											
MW-11			2:10		1											

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	9/12/12	17:37
Received by:		Clare Griggs	FAI	9/13/12	2:00PM
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
e-mail: fbi@isomedia.com

October 2, 2012

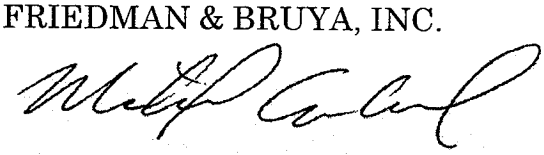
Richard Simpson, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr. Simpson:

Included are the additional results from the testing of material submitted on September 10, 2012 from the 2012-265A, F&BI 209111 project. There are 10 pages included in this report. We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
TRG1002R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 10, 2012 by Friedman & Bruya, Inc. from the The Riley Group 2012-265A, F&BI 209111 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
209111-01	B-1-3
209111-02	B-1-6
209111-03	B-1-11
209111-04	B-1-12.5
209111-05	B-1
209111-06	B-2-3
209111-07	B-2-7
209111-08	B-2-10
209111-09	B-2-12.5
209111-10	B-2
209111-11	B-3-4
209111-12	B-3-7
209111-13	B-3-10
209111-14	B-3-12
209111-15	B-3
209111-16	B-4-3
209111-17	B-4-8
209111-18	B-4-10
209111-19	B-4-16
209111-20	B-4
209111-21	B-5-4
209111-22	B-5-7
209111-23	B-5-11
209111-24	B-5-16
209111-25	B-5
209111-26	B-6-4
209111-27	B-6-6
209111-28	B-6-10.5
209111-29	B-6-16
209111-30	B-6
209111-31	B-7-4
209111-32	B-7-7
209111-33	B-7-8.5
209111-34	B-8-4
209111-35	B-8-7
209111-36	B-8-11

CASE NARRATIVE (continued)

Laboratory ID	The Riley Group
209111-37	B-8-16
209111-38	B-8
209111-39	B-9-3
209111-40	B-9-5
209111-41	B-9-8
209111-42	B-9
209111-43	B-10-3
209111-44	B-10-6
209111-45	B-10-10
209111-46	B-10-12
209111-47	B-10
209111-48	B-11-4
209111-49	B-11-7
209111-50	B-11-9
209111-51	B-11-12
209111-52	B-11

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	B-1-3	Client:	The Riley Group
Date Received:	09/10/12	Project:	2012-265A, F&BI 209111
Date Extracted:	09/27/12	Lab ID:	209111-01
Date Analyzed:	09/28/12	Data File:	209111-01.014
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	111	60	125
Holmium	110	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.50
Lead	3.38

Analysis For Total Metals By EPA Method 200.8

Client ID:	B-4-3	Client:	The Riley Group
Date Received:	09/10/12	Project:	2012-265A, F&BI 209111
Date Extracted:	09/27/12	Lab ID:	209111-16
Date Analyzed:	09/28/12	Data File:	209111-16.015
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	114	60	125
Holmium	114	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.21
Lead	2.28

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	B-10-3	Client:	The Riley Group
Date Received:	09/10/12	Project:	2012-265A, F&BI 209111
Date Extracted:	09/27/12	Lab ID:	209111-43
Date Analyzed:	09/28/12	Data File:	209111-43 rr.034
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	100	60	125
Holmium	102	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	7.36
Lead	3.70

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	The Riley Group
Date Received:	Not Applicable	Project:	2012-265A, F&BI 209111
Date Extracted:	09/27/12	Lab ID:	I2-662 mb
Date Analyzed:	09/28/12	Data File:	I2-662 mb.008
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	114	60	125
Holmium	113	60	125

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Date of Report: 10/02/12
Date Received: 09/10/12
Project: 2012-265A, F&BI 209111
Date Extracted: 09/27/12
Date Analyzed: 09/28/12

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Total Mercury
B-10-3 209111-43	<0.1
Method Blank	<0.1

Date of Report: 10/02/12
Date Received: 09/10/12
Project: 2012-265A, F&BI 209111

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 209111-43 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	7.36	102 b	101 b	56-125	1 b
Lead	mg/kg (ppm)	50	3.70	98	95	64-139	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	92	79-112
Lead	mg/kg (ppm)	50	86	83-118

Date of Report: 10/02/12
Date Received: 09/10/12
Project: 2012-265A, F&BI 209111

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 209111-43 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	mg/kg (ppm)	0.125	<0.1	109	106	54-156	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	mg/kg (ppm)	0.125	99	73-131

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

209111

SAMPLE CHAIN OF CUSTODY ME 09-10-12 A04/V14/CVS3

Page # 1 of 2

Send Report To Richard Simpson
Company The Riley Group
Address 17522 Bothell Way NE
City, State, ZIP Bothell WA 98011
Phone # (425) 415-0551 Fax #

SAMPLERS (signature) SK

PROJECT NAME/NO. 2012-265A

PO#

REMARKS

TURNAROUND TIME
☐ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	HCID	Pb+As						Notes
B-1-3	01	9-7	9:25	Soil	1							X	✓						(+9-prRS 9/14/12
B-1-6	02	"	9:25	"	1														✓-prRS
B-1-11	03	"	9:30	"	1							X							9/25/12
B-1-12.5	04 A-E	"	9:35	"	5														mg
B-1	05 A-E	"	9:40	H2O	5			X				X							
B-2-3	06	"	9:55	Soil	1							X							
B-2-7	07	"	10:00	"	1														
B-2-10	08	"	10:05	"	1							X							
B-2-12.5	09 A-E	"	10:10	"	5														
B-2	10 A-E	"	10:15	H2O	5														

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Richard Simpson	Riley	9.10.12	1335
Received by:	Tracy Dawson	FBI	9-10-12	1335
Relinquished by:				
Received by: DO	DO VO	F+BT	11	14.30

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

209111

SAMPLE CHAIN OF CUSTODY ME 09-10-12

A04/V4/V83

Page # 1 of 6

Send Report To Richard Simpson

Company The Riley Group

Address

City, State, ZIP

Phone # Fax #

SAMPLERS (signature)

PROJECT NAME/NO. 2012-265 A

PO#

REMARKS

TURNAROUND TIME
☐ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	HCID	Pb+As					Notes
B-3-4	11	9-7	10:30	soil	1							X						
B-3-7	12		10:25		1													
B-3-10	13		10:30		1							X						
B-3-12	14 A-E		10:35		5													
B-3	15 A-E		10:40	H2O	5				X									
B-4-3	16		10:45	soil	1							X	✓					
B-4-8	17		10:50		1													
B-4-10	18 A-E		10:55		5							X						
B-4-16	19		11:00		1													
B-4	20 A-E		10:05	H2O	5				X									

Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Richard Simpson	RG	9.10.12	1335
Received by:		Tammy Jackson	FedEx	9-10-12	1335
Relinquished by:					
Received by:		D Duo	FedEx	9-10-12	14:31

209111

SAMPLE CHAIN OF CUSTODY

ME 09-10-12 A04/3V4 /VB3

Send Report To Richard Simpson

Company The Riley Group.

Address

City, State, ZIP

Phone # Fax #

SAMPLERS (*signature*) [illegible]

PROJECT NAME/NO. 2012-265A

PO#

REMARKS

Page # 3 of 8

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	HCID						Notes
B-5-4	21	9-7	11:10	soil	1													
B-5-7	22	↓	11:15	↓	1													
B-5-11	23 A-E		11:20		5							X						
B-5-16	24		11:25	↓	1													
B-5	25 A-F		11:30	H2O	5				X			X						
B-6-4	26		11:40	soil	1							X						
B-6-6	27		11:45	↓	1													
B-6-10.5	28 A-E		11:50		5													
B-6-16	29		11:55	↓	1													Samples received at 4 °C
B-6	30 A-F	↓	12:00	H2O	5				X			X						

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [illegible]	Richard Simpson	RGI	9.10.12	1335
Received by: [illegible]	Larry [illegible]	Postal X	9.10.12	1335
Relinquished by:				
Received by: [illegible]	Do VO	F&BI	9-10-12	14:31

FORMS\COC\COC.DOC

209111

SAMPLE CHAIN OF CUSTODY ME 09-10-12

AOU/4V4/0883

Page # 1 of 6

Send Report To Richard Simpson

Company The Riley Group

Address

City, State, ZIP

Phone # Fax #

SAMPLERS (signature)

PROJECT NAME/NO. 2012-265A

PO#

REMARKS

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	HCID	Chlordane					Notes
B-7-4	31	9-7	12:15	Soil	1													
B-7-7	32		12:20		1													
B-7-8.5	33 A-E		12:25		5							X						
B-8-4	34		12:30	Soil	1							X						
B-8-7	35		12:35		1													
B-8-11	36 A-E		12:40		5							X						
B-8-16	37		12:45		1													
B-8	38 A-E		12:50	H20	5				X									
B-9-3	39 A-B		~~1:05~~ 1:01	Soil	1								X					Samples received at 4°C Received more 402
B-9-5	40 A-E		1:10		5							X						Received more 402

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Richard Simpson	RGI	9/10/12	1335
Received by:	Lacey Stockton	Partial K	9.10.12	1335
Relinquished by:				
Received by:	D VC2	F+BI	9.10-12	14-30

Friedman & Bruya, Inc
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMSVCOCVCOC.DOC

209111

SAMPLE CHAIN OF CUSTODY ME 09-10-12

Send Report To Richard Simpson
Company: Riley Group,
Address: 17522 Bothell Way NE, Ste A
City, State, ZIP Bothell, WA 98011
Phone # 425 415-0551 Fax # 425 415-0311

SAMPLERS (signature)

PROJECT NAME/NO. 2012-265 A | PO #

REMARKS
Attention:
Dave Bair dbair@riley-group.com

Page # 5 of 6

TURNAROUND TIME
Standard (2 Weeks)
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Chlordane	417D	Pb, As, Hg	Notes
B-9-8	41 A-B	9-7	1:15	Soil	1										Received more 40z
B-9	42 A-E		1:20	H2O	5				X						
B-10-3	43 A-B		1:35	Soil	2							X		/	
B-10-6	44 A-B		1:40		2										
B-10-10	45 A-F		1:45		6										
B-10-12	46 A-B		1:50		2										
B-10	47 A-E		1:55	H2O	5										
B-11-4	48		2:05	Soil	1										
B-11-7	49		2:10		1								X		
B-11-9	50 A-E		2:15		5										

Samples received at 4 °C

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Richard Simpson	R61	9.10.12	1335
Received by:	Kathy Davidson	Friedman & Bruya	9.10.12	1335
Relinquished by:				
Received by:	DAVID	FB	9-10-12	14:38

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044
FORMS\COC\COC.DOC

209111

SAMPLE CHAIN OF CUSTODY

ME 09-10-12

AO4/V4/VB3

Send Report To Richard Simpson

Company: Riley Group,

Address: 17522 Bothell Way NE, Ste A

City, State, ZIP Bothell, WA 98011

Phone # 425 415-0551 Fax # 425 415-0311

SAMPLERS *(signature)*

PROJECT NAME/NO. 2012-265A

PO #

REMARKS

Attention:
Dave Bair dbair@riley-group.com

TURNAROUND TIME
Standard (2 Weeks)
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	HFS	Notes
B-11-12	51	9-7	2:20	Soil	1								
B-11	52 A-E	↓	2:25	H2O	5				X			X	

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Richard Johnson	RGI	9.10.12	1335
Received by:	Simpson	Parker	9.10.12	1335
Relinquished by:				
Received by:		F&B	9.10.12	14:30

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
e-mail: fbi@isomedia.com

September 20, 2012

Richard Simpson, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

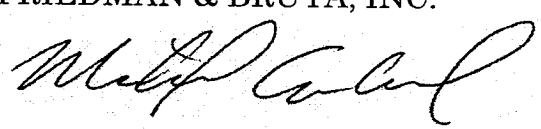
Dear Mr. Simpson:

Included are the results from the testing of material submitted on September 10, 2012 from the 2012-265A, F&BI 209111 project. There are 20 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
TRG0920R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 10, 2012 by Friedman & Bruya, Inc. from the The Riley Group 2012-265A, F&BI 209111 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
209111-01	B-1-3
209111-02	B-1-6
209111-03	B-1-11
209111-04	B-1-12.5
209111-05	B-1
209111-06	B-2-3
209111-07	B-2-7
209111-08	B-2-10
209111-09	B-2-12.5
209111-10	B-2
209111-11	B-3-4
209111-12	B-3-7
209111-13	B-3-10
209111-14	B-3-12
209111-15	B-3
209111-16	B-4-3
209111-17	B-4-8
209111-18	B-4-10
209111-19	B-4-16
209111-20	B-4
209111-21	B-5-4
209111-22	B-5-7
209111-23	B-5-11
209111-24	B-5-16
209111-25	B-5
209111-26	B-6-4
209111-27	B-6-6
209111-28	B-6-10.5
209111-29	B-6-16
209111-30	B-6
209111-31	B-7-4
209111-32	B-7-7
209111-33	B-7-8.5
209111-34	B-8-4
209111-35	B-8-7
209111-36	B-8-11

CASE NARRATIVE (continued)

Laboratory ID	The Riley Group
209111-37	B-8-16
209111-38	B-8
209111-39	B-9-3
209111-40	B-9-5
209111-41	B-9-8
209111-42	B-9
209111-43	B-10-3
209111-44	B-10-6
209111-45	B-10-10
209111-46	B-10-12
209111-47	B-10
209111-48	B-11-4
209111-49	B-11-7
209111-50	B-11-9
209111-51	B-11-12
209111-52	B-11

Samples B-9-3 and B-10-3 were sent to Fremont for was sent to for chlordane analysis. Review of the enclosed report indicates that all quality assurance were acceptable.

The 8260C calibration standard failed the acceptance criteria for bromoform for B-9. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 09/20/12
Date Received: 09/10/12
Project: 2012-265A, F&BI 209111
Date Extracted: 09/13/12
Date Analyzed: 09/13/12

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 50-150)
B-1 209111-05	ND	ND	ND	105
B-5 209111-25	ND	ND	ND	113
B-6 209111-30	ND	ND	ND	109
B-11 209111-52	ND	ND	ND	107
Method Blank 02-1657 MB	ND	ND	ND	116

ND - Material not detected at or above 0.2 mg/L gas, 0.5 mg/L diesel and 0.5 mg/L heavy oil.

Date of Report: 09/20/12
Date Received: 09/10/12
Project: 2012-265A, F&BI 209111
Date Extracted: 09/11/12
Date Analyzed: 09/11/12 and 09/12/12

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 50-150)
B-1-3 209111-01	ND	ND	ND	106
B-1-11 209111-03	ND	ND	ND	108
B-2-3 209111-06	ND	ND	ND	119
B-2-10 209111-08	ND	ND	ND	111
B-3-4 209111-11	ND	ND	ND	120
B-3-10 209111-13	ND	ND	ND	109
B-4-3 209111-16	ND	ND	ND	123
B-4-10 209111-18	ND	ND	ND	108
B-5-11 209111-23	ND	ND	ND	107
B-6-4 209111-26	ND	ND	ND	150
B-7-8.5 209111-33	ND	ND	ND	109
B-8-4 209111-34	ND	ND	ND	109

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 09/20/12
Date Received: 09/10/12
Project: 2012-265A, F&BI 209111
Date Extracted: 09/11/12
Date Analyzed: 09/11/12 and 09/12/12

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 50-150)
B-8-11 209111-36	ND	ND	ND	107
B-9-5 209111-40	ND	ND	ND	106
B-11-7 209111-49	ND	ND	ND	107
Method Blank 02-1635 MB	ND	ND	ND	107

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-1	Client:	The Riley Group
Date Received:	09/10/12	Project:	2012-265A, F&BI 209111
Date Extracted:	09/11/12	Lab ID:	209111-05
Date Analyzed:	09/11/12	Data File:	091120.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-3	Client:	The Riley Group
Date Received:	09/10/12	Project:	2012-265A, F&BI 209111
Date Extracted:	09/11/12	Lab ID:	209111-15
Date Analyzed:	09/11/12	Data File:	091121.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-4	Client:	The Riley Group
Date Received:	09/10/12	Project:	2012-265A, F&BI 209111
Date Extracted:	09/11/12	Lab ID:	209111-20
Date Analyzed:	09/11/12	Data File:	091122.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-5	Client:	The Riley Group
Date Received:	09/10/12	Project:	2012-265A, F&BI 209111
Date Extracted:	09/11/12	Lab ID:	209111-25
Date Analyzed:	09/11/12	Data File:	091123.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-6	Client:	The Riley Group
Date Received:	09/10/12	Project:	2012-265A, F&BI 209111
Date Extracted:	09/11/12	Lab ID:	209111-30
Date Analyzed:	09/11/12	Data File:	091124.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-8	Client:	The Riley Group
Date Received:	09/10/12	Project:	2012-265A, F&BI 209111
Date Extracted:	09/11/12	Lab ID:	209111-38
Date Analyzed:	09/11/12	Data File:	091125.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-9	Client:	The Riley Group
Date Received:	09/10/12	Project:	2012-265A, F&BI 209111
Date Extracted:	09/14/12	Lab ID:	209111-42
Date Analyzed:	09/14/12	Data File:	091417.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1 ca
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-11	Client:	The Riley Group
Date Received:	09/10/12	Project:	2012-265A, F&BI 209111
Date Extracted:	09/11/12	Lab ID:	209111-52
Date Analyzed:	09/11/12	Data File:	091126.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichlorom ethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlor obutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	NA	Project:	2012-265A, F&BI 209111
Date Extracted:	09/11/12	Lab ID:	02-1615 mb
Date Analyzed:	09/11/12	Data File:	091116.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	NA	Project:	2012-265A, F&BI 209111
Date Extracted:	09/14/12	Lab ID:	02-1622 mb2
Date Analyzed:	09/14/12	Data File:	091415.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1 ca
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Date of Report: 09/20/12
Date Received: 09/10/12
Project: 2012-265A, F&BI 209111

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 209111-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<10	144 vo	62-131
Chloromethane	ug/L (ppb)	50	<10	127	68-127
Vinyl chloride	ug/L (ppb)	50	<0.2	142 vo	76-124
Bromomethane	ug/L (ppb)	50	<1	118	67-127
Chloroethane	ug/L (ppb)	50	<1	126 vo	69-123
Trichlorofluoromethane	ug/L (ppb)	50	<1	129 vo	75-121
Acetone	ug/L (ppb)	250	<10	105	68-137
1,1-Dichloroethene	ug/L (ppb)	50	<1	115	75-118
Methylene chloride	ug/L (ppb)	50	<5	108	64-120
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	118	74-120
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	112	75-119
1,1-Dichloroethane	ug/L (ppb)	50	<1	107	82-109
2,2-Dichloropropane	ug/L (ppb)	50	<1	106	62-124
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	102	83-109
Chloroform	ug/L (ppb)	50	<1	101	81-110
2-Butanone (MEK)	ug/L (ppb)	250	<10	94	75-122
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	99	76-114
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	107	77-116
1,1-Dichloropropene	ug/L (ppb)	50	<1	103	81-110
Carbon tetrachloride	ug/L (ppb)	50	<1	106	74-119
Benzene	ug/L (ppb)	50	<0.35	102	79-108
Trichloroethene	ug/L (ppb)	50	<1	99	79-105
1,2-Dichloropropane	ug/L (ppb)	50	<1	105	83-110
Bromodichloromethane	ug/L (ppb)	50	<1	107	77-118
Dibromomethane	ug/L (ppb)	50	<1	99	82-109
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	101	78-123
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	116	76-120
Toluene	ug/L (ppb)	50	<1	99	82-108
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	112	77-118
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	101	83-110
2-Hexanone	ug/L (ppb)	250	<10	95	75-128
1,3-Dichloropropane	ug/L (ppb)	50	<1	101	84-109
Tetrachloroethene	ug/L (ppb)	50	<1	106	69-114
Dibromochloromethane	ug/L (ppb)	50	<1	106	66-133
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	104	85-110
Chlorobenzene	ug/L (ppb)	50	<1	99	82-107
Ethylbenzene	ug/L (ppb)	50	<1	99	79-112
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	103	78-118
m,p-Xylene	ug/L (ppb)	100	<2	98	81-111
o-Xylene	ug/L (ppb)	50	<1	99	82-110
Styrene	ug/L (ppb)	50	<1	96	73-116
Isopropylbenzene	ug/L (ppb)	50	<1	104	80-112
Bromoform	ug/L (ppb)	50	<1	107	45-151
n-Propylbenzene	ug/L (ppb)	50	<1	93	77-116
Bromobenzene	ug/L (ppb)	50	<1	98	84-110
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	92	78-114
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	101	82-117
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	93	77-116
2-Chlorotoluene	ug/L (ppb)	50	<1	92	79-112
4-Chlorotoluene	ug/L (ppb)	50	<1	92	80-112
tert-Butylbenzene	ug/L (ppb)	50	<1	95	81-114
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	91	76-115
sec-Butylbenzene	ug/L (ppb)	50	<1	94	80-115
p-Isopropyltoluene	ug/L (ppb)	50	<1	95	78-116
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	97	81-110
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	95	79-109
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	95	81-110
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	102	67-128
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	94	77-113
Hexachlorobutadiene	ug/L (ppb)	50	<1	106	66-122
Naphthalene	ug/L (ppb)	50	<1	108	79-120
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	102	78-115

Date of Report: 09/20/12
Date Received: 09/10/12
Project: 2012-265A, F&BI 209111

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	150 vo	135	56-138	11
Chloromethane	ug/L (ppb)	50	132 vo	123	66-131	7
Vinyl chloride	ug/L (ppb)	50	145 vo	133 vo	73-126	9
Bromomethane	ug/L (ppb)	50	123	113	65-131	8
Chloroethane	ug/L (ppb)	50	128 vo	119	69-125	7
Trichlorofluoromethane	ug/L (ppb)	50	129 vo	118	75-124	9
Acetone	ug/L (ppb)	250	105	93	64-136	12
1,1-Dichloroethene	ug/L (ppb)	50	116	105	72-122	10
Methylene chloride	ug/L (ppb)	50	110	99	56-128	11
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	114	110	76-120	4
trans-1,2-Dichloroethene	ug/L (ppb)	50	110	105	74-122	5
1,1-Dichloroethane	ug/L (ppb)	50	108 vo	103	85-107	5
2,2-Dichloropropane	ug/L (ppb)	50	105	101	83-119	4
cis-1,2-Dichloroethene	ug/L (ppb)	50	100	96	85-105	4
Chloroform	ug/L (ppb)	50	101	100	83-107	1
2-Butanone (MEK)	ug/L (ppb)	250	90	85	75-118	6
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	96	97	85-107	1
1,1,1-Trichloroethane	ug/L (ppb)	50	103	102	81-114	1
1,1-Dichloropropene	ug/L (ppb)	50	99	100	85-107	1
Carbon tetrachloride	ug/L (ppb)	50	102	101	77-118	1
Benzene	ug/L (ppb)	50	100	100	81-107	0
Trichloroethene	ug/L (ppb)	50	105 vo	97	80-104	8
1,2-Dichloropropane	ug/L (ppb)	50	107 vo	97	86-106	10
Bromodichloromethane	ug/L (ppb)	50	99	93	76-117	6
Dibromomethane	ug/L (ppb)	50	102	94	86-106	8
4-Methyl-2-pentanone	ug/L (ppb)	250	100	91	85-113	9
cis-1,3-Dichloropropene	ug/L (ppb)	50	119	106	78-120	12
Toluene	ug/L (ppb)	50	100	97	86-105	3
trans-1,3-Dichloropropene	ug/L (ppb)	50	108	109	82-116	1
1,1,2-Trichloroethane	ug/L (ppb)	50	99	98	87-106	1
2-Hexanone	ug/L (ppb)	250	95	92	84-117	3
1,3-Dichloropropane	ug/L (ppb)	50	106	99	86-107	7
Tetrachloroethene	ug/L (ppb)	50	108 vo	104	81-106	4
Dibromochloromethane	ug/L (ppb)	50	96	88	57-138	9
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	106	101	89-107	5
Chlorobenzene	ug/L (ppb)	50	96	95	86-104	1
Ethylbenzene	ug/L (ppb)	50	96	96	87-107	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	101	97	79-117	4
m,p-Xylene	ug/L (ppb)	100	97	97	87-107	0
o-Xylene	ug/L (ppb)	50	95	98	86-107	3
Styrene	ug/L (ppb)	50	100	104	87-110	4
Isopropylbenzene	ug/L (ppb)	50	96	98	87-108	2
Bromoform	ug/L (ppb)	50	83	83	27-167	0
n-Propylbenzene	ug/L (ppb)	50	94	90	87-109	4
Bromobenzene	ug/L (ppb)	50	99	96	86-108	3
1,3,5-Trimethylbenzene	ug/L (ppb)	50	98	93	88-108	5
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	98	96	82-116	2
1,2,3-Trichloropropane	ug/L (ppb)	50	94	91	75-117	3
2-Chlorotoluene	ug/L (ppb)	50	94	91	85-109	3
4-Chlorotoluene	ug/L (ppb)	50	94	90	87-107	4
tert-Butylbenzene	ug/L (ppb)	50	96	93	86-110	3
1,2,4-Trimethylbenzene	ug/L (ppb)	50	97	92	87-109	5
sec-Butylbenzene	ug/L (ppb)	50	94	91	88-110	3
p-Isopropyltoluene	ug/L (ppb)	50	96	93	87-112	3
1,3-Dichlorobenzene	ug/L (ppb)	50	96	93	88-105	3
1,4-Dichlorobenzene	ug/L (ppb)	50	93	92	87-104	1
1,2-Dichlorobenzene	ug/L (ppb)	50	96	92	86-107	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	88	85	65-126	3
1,2,4-Trichlorobenzene	ug/L (ppb)	50	92	94	86-109	2
Hexachlorobutadiene	ug/L (ppb)	50	104	105	78-116	1
Naphthalene	ug/L (ppb)	50	94	94	89-114	0
1,2,3-Trichlorobenzene	ug/L (ppb)	50	104	105	89-111	1

Date of Report: 09/20/12
Date Received: 09/10/12
Project: 2012-265A, F&BI 209111

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 209111-15 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<10	92	62-131
Chloromethane	ug/L (ppb)	50	<10	92	68-127
Vinyl chloride	ug/L (ppb)	50	<0.2	103	76-124
Bromomethane	ug/L (ppb)	50	<1	96	67-127
Chloroethane	ug/L (ppb)	50	<1	99	69-123
Trichlorofluoromethane	ug/L (ppb)	50	<1	99	75-121
Acetone	ug/L (ppb)	250	<10	83	68-137
1,1-Dichloroethene	ug/L (ppb)	50	<1	91	75-118
Methylene chloride	ug/L (ppb)	50	<5	89	64-120
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	94	74-120
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	92	75-119
1,1-Dichloroethane	ug/L (ppb)	50	<1	94	82-109
2,2-Dichloropropane	ug/L (ppb)	50	<1	91	62-124
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	93	83-109
Chloroform	ug/L (ppb)	50	<1	92	81-110
2-Butanone (MEK)	ug/L (ppb)	250	<10	84	75-122
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	89	76-114
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	96	77-116
1,1-Dichloropropene	ug/L (ppb)	50	<1	89	81-110
Carbon tetrachloride	ug/L (ppb)	50	<1	95	74-119
Benzene	ug/L (ppb)	50	<0.35	92	79-108
Trichloroethene	ug/L (ppb)	50	<1	90	79-105
1,2-Dichloropropane	ug/L (ppb)	50	<1	94	83-110
Bromodichloromethane	ug/L (ppb)	50	<1	95	77-118
Dibromomethane	ug/L (ppb)	50	<1	93	82-109
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	92	78-123
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	100	76-120
Toluene	ug/L (ppb)	50	<1	93	82-108
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	98	77-118
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	95	83-110
2-Hexanone	ug/L (ppb)	250	<10	92	75-128
1,3-Dichloropropane	ug/L (ppb)	50	<1	95	84-109
Tetrachloroethene	ug/L (ppb)	50	<1	91	69-114
Dibromochloromethane	ug/L (ppb)	50	<1	97	66-133
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	97	85-110
Chlorobenzene	ug/L (ppb)	50	<1	93	82-107
Ethylbenzene	ug/L (ppb)	50	<1	94	79-112
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	97	78-118
m,p-Xylene	ug/L (ppb)	100	<2	94	81-111
o-Xylene	ug/L (ppb)	50	<1	93	82-110
Styrene	ug/L (ppb)	50	<1	97	73-116
Isopropylbenzene	ug/L (ppb)	50	<1	97	80-112
Bromoform	ug/L (ppb)	50	<1	90	45-151
n-Propylbenzene	ug/L (ppb)	50	<1	92	77-116
Bromobenzene	ug/L (ppb)	50	<1	92	84-110
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	94	78-114
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	100	82-117
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	91	77-116
2-Chlorotoluene	ug/L (ppb)	50	<1	91	79-112
4-Chlorotoluene	ug/L (ppb)	50	<1	91	80-112
tert-Butylbenzene	ug/L (ppb)	50	<1	94	81-114
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	94	76-115
sec-Butylbenzene	ug/L (ppb)	50	<1	93	80-115
p-Isopropyltoluene	ug/L (ppb)	50	<1	93	78-116
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	90	81-110
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	89	79-109
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	91	81-110
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	97	67-128
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	86	77-113
Hexachlorobutadiene	ug/L (ppb)	50	<1	90	66-122
Naphthalene	ug/L (ppb)	50	<1	98	79-120
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	96	78-115

Date of Report: 09/20/12
Date Received: 09/10/12
Project: 2012-265A, F&BI 209111

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	109	100	56-138	9
Chloromethane	ug/L (ppb)	50	99	96	66-131	3
Vinyl chloride	ug/L (ppb)	50	108	107	73-126	1
Bromomethane	ug/L (ppb)	50	93	93	65-131	0
Chloroethane	ug/L (ppb)	50	99	100	69-125	1
Trichlorofluoromethane	ug/L (ppb)	50	98	99	75-124	1
Acetone	ug/L (ppb)	250	80	79	64-136	1
1,1-Dichloroethene	ug/L (ppb)	50	91	93	72-122	2
Methylene chloride	ug/L (ppb)	50	86	87	56-128	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	95	94	76-120	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	89	91	74-122	2
1,1-Dichloroethane	ug/L (ppb)	50	95	94	85-107	1
2,2-Dichloropropane	ug/L (ppb)	50	99	101	83-119	2
cis-1,2-Dichloroethene	ug/L (ppb)	50	93	93	85-105	0
Chloroform	ug/L (ppb)	50	91	92	83-107	1
2-Butanone (MEK)	ug/L (ppb)	250	83	82	75-118	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	90	90	85-107	0
1,1,1-Trichloroethane	ug/L (ppb)	50	95	96	81-114	1
1,1-Dichloropropene	ug/L (ppb)	50	93	93	85-107	0
Carbon tetrachloride	ug/L (ppb)	50	93	95	77-118	2
Benzene	ug/L (ppb)	50	93	92	81-107	1
Trichloroethene	ug/L (ppb)	50	91	92	80-104	1
1,2-Dichloropropane	ug/L (ppb)	50	95	94	86-106	1
Bromodichloromethane	ug/L (ppb)	50	93	93	76-117	0
Dibromomethane	ug/L (ppb)	50	91	92	86-106	1
4-Methyl-2-pentanone	ug/L (ppb)	250	89	90	85-113	1
cis-1,3-Dichloropropene	ug/L (ppb)	50	103	104	78-120	1
Toluene	ug/L (ppb)	50	91	92	86-105	1
trans-1,3-Dichloropropene	ug/L (ppb)	50	100	102	82-116	2
1,1,2-Trichloroethane	ug/L (ppb)	50	98	94	87-106	4
2-Hexanone	ug/L (ppb)	250	85	88	84-117	3
1,3-Dichloropropane	ug/L (ppb)	50	94	92	86-107	2
Tetrachloroethene	ug/L (ppb)	50	91	92	81-106	1
Dibromochloromethane	ug/L (ppb)	50	91	94	57-138	3
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	94	95	89-107	1
Chlorobenzene	ug/L (ppb)	50	91	91	86-104	0
Ethylbenzene	ug/L (ppb)	50	93	92	87-107	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	92	93	79-117	1
m,p-Xylene	ug/L (ppb)	100	93	93	87-107	0
o-Xylene	ug/L (ppb)	50	92	93	86-107	1
Styrene	ug/L (ppb)	50	97	98	87-110	1
Isopropylbenzene	ug/L (ppb)	50	95	96	87-108	1
Bromoform	ug/L (ppb)	50	85	88	27-167	3
n-Propylbenzene	ug/L (ppb)	50	92	92	87-109	0
Bromobenzene	ug/L (ppb)	50	90	90	86-108	0
1,3,5-Trimethylbenzene	ug/L (ppb)	50	95	94	88-108	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	102	98	82-116	4
1,2,3-Trichloropropane	ug/L (ppb)	50	90	90	75-117	0
2-Chlorotoluene	ug/L (ppb)	50	90	89	85-109	1
4-Chlorotoluene	ug/L (ppb)	50	91	91	87-107	0
tert-Butylbenzene	ug/L (ppb)	50	94	94	86-110	0
1,2,4-Trimethylbenzene	ug/L (ppb)	50	94	93	87-109	1
sec-Butylbenzene	ug/L (ppb)	50	94	93	88-110	1
p-Isopropyltoluene	ug/L (ppb)	50	94	94	87-112	0
1,3-Dichlorobenzene	ug/L (ppb)	50	90	89	88-105	1
1,4-Dichlorobenzene	ug/L (ppb)	50	88	88	87-104	0
1,2-Dichlorobenzene	ug/L (ppb)	50	90	90	86-107	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	89	90	65-126	1
1,2,4-Trichlorobenzene	ug/L (ppb)	50	88	88	86-109	0
Hexachlorobutadiene	ug/L (ppb)	50	94	94	78-116	0
Naphthalene	ug/L (ppb)	50	98	98	89-114	0
1,2,3-Trichlorobenzene	ug/L (ppb)	50	97	97	89-111	0

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, Washington 98119

RE: 209111
Lab ID: 1209041

September 19, 2012

Attention Michael Erdahl:

Fremont Analytical, Inc. received 2 sample(s) on 9/11/2012 for the analyses presented in the following report.

Organochlorine Pesticides by EPA Method 8081
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

Fremont Analytical

Date: *09/19/2012*

CLIENT: Friedman & Bruya
Project: 209111
Lab Order: 1209041

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1209041-001	B-9-3	09/07/2012 1:05 PM	09/11/2012 3:30 PM
1209041-002	B-10-3	09/07/2012 1:20 PM	09/11/2012 3:30 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Fremont Analytical

Case Narrative

WO#: **1209041**
Date: **9/19/2012**

CLIENT: Friedman & Bruya
Project: 209111

I. SAMPLE RECEIPT:
All samples were received intact.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Fremont Analytical

Analytical Report

WO#: **1209041**
Date Reported: **9/19/2012**

Client: Friedman & Bruya
Project: 209111
Lab ID: 1209041-001
Client Sample ID: B-9-3

Collection Date: 9/7/2012 1:05:00 PM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 3223		Analyst: PH
gamma-Chlordane	ND	0.0134		mg/Kg-dry	1	9/19/2012 5:02:00 AM
alpha-Chlordane	ND	0.0134		mg/Kg-dry	1	9/19/2012 5:02:00 AM
Chlordane, Total	ND	0.0134		mg/Kg-dry	1	9/19/2012 5:02:00 AM
Surr: Decachlorobiphenyl	121	65-135		%REC	1	9/19/2012 5:02:00 AM
Surr: Tetrachloro-m-xylene	100	65-135		%REC	1	9/19/2012 5:02:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R5658		Analyst: CM
Percent Moisture	36.2			wt%	1	9/12/2012 10:02:49 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1209041**
Date Reported: **9/19/2012**

Client: Friedman & Bruya
Project: 209111
Lab ID: 1209041-002
Client Sample ID: B-10-3

Collection Date: 9/7/2012 1:20:00 PM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Organochlorine Pesticides by EPA Method 8081				Batch ID: 3223		Analyst: PH
gamma-Chlordane	ND	0.0110		mg/Kg-dry	1	9/19/2012 5:25:00 AM
alpha-Chlordane	ND	0.0110		mg/Kg-dry	1	9/19/2012 5:25:00 AM
Chlordane, Total	ND	0.0110		mg/Kg-dry	1	9/19/2012 5:25:00 AM
Surr: Decachlorobiphenyl	135	65-135		%REC	1	9/19/2012 5:25:00 AM
Surr: Tetrachloro-m-xylene	101	65-135		%REC	1	9/19/2012 5:25:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R5658		Analyst: CM
Percent Moisture	25.7			wt%	1	9/12/2012 10:02:49 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Fremont Analytical

Date: *9/19/2012*

Work Order: 1209041
CLIENT: Friedman & Bruya
Project: 209111

QC SUMMARY REPORT

Organochlorine Pesticides by EPA Method 8081

Sample ID: **MB-3223**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **9/18/2012**		RunNo: **5765**		
Client ID: **MBLKS**	Batch ID: **3223**					Analysis Date: **9/19/2012**		SeqNo: **113473**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
gamma-Chlordane	ND	0.0100									
alpha-Chlordane	ND	0.0100									
Chlordane, Total	ND	0.0100									
Surr: Decachlorobiphenyl	0.0374		0.05000		74.8	65	135				
Surr: Tetrachloro-m-xylene	0.0480		0.05000		96.1	65	135				

Sample ID: **LCS-3223**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **9/18/2012**		RunNo: **5765**		
Client ID: **LCSS**	Batch ID: **3223**					Analysis Date: **9/19/2012**		SeqNo: **113474**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
gamma-Chlordane	0.455	0.0100	0.5000	0	90.9	65	135				
alpha-Chlordane	0.457	0.0100	0.5000	0	91.5	65	135				
Surr: Decachlorobiphenyl	0.0572		0.05000		114	65	135				
Surr: Tetrachloro-m-xylene	0.0487		0.05000		97.3	65	135				

Sample ID: **1209041-002ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **9/18/2012**		RunNo: **5765**		
Client ID: **B-10-3**	Batch ID: **3223**					Analysis Date: **9/19/2012**		SeqNo: **113477**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
gamma-Chlordane	ND	0.0111						0	0	30	
alpha-Chlordane	ND	0.0111						0	0	30	
Chlordane, Total	ND	0.0111						0	0	0	
Surr: Decachlorobiphenyl	0.0637		0.05528		115	65	135		0		
Surr: Tetrachloro-m-xylene	0.0554		0.05528		100	65	135		0		

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Fremont Analytical

Date: *9/19/2012*

Work Order: 1209041
CLIENT: Friedman & Bruya
Project: 209111

QC SUMMARY REPORT

Organochlorine Pesticides by EPA Method 8081

Sample ID: **1209041-002AMS**	SampType: **MS**			Units: **mg/Kg-dry**		Prep Date: **9/18/2012**		RunNo: **5765**			
Client ID: **B-10-3**	Batch ID: **3223**					Analysis Date: **9/19/2012**		SeqNo: **113478**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
gamma-Chlordane	0.547	0.0107	0.5361	0	102	65	135				
alpha-Chlordane	0.552	0.0107	0.5361	0	103	65	135				
Surr: Decachlorobiphenyl	0.0698		0.05361		130	65	135				
Surr: Tetrachloro-m-xylene	0.0534		0.05361		99.6	65	135				

Sample ID: **LCS_TECH. CHLORDA**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **9/18/2012**		RunNo: **5765**			
Client ID: **LCSS**	Batch ID: **3223**					Analysis Date: **9/18/2012**		SeqNo: **113479**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlordane, Total	1,180	0.0100	1,000	0	118	65	135				
Surr: Decachlorobiphenyl	49.4		50.00		98.7	65	135				
Surr: Tetrachloro-m-xylene	48.7		50.00		97.4	65	135				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

SUBCONTRACT SAMPLE CHAIN OF CUSTODY 120941

Page # 1 of 1

Send Report To: Michael Erdahl
Company: Friedman and Bruya, Inc.
Address: 3012 16th Ave W
City, State, ZIP: Seattle, WA 98119
Phone #: (206) 285-8282 Fax #: (206) 283-5044

SUBCONTRACTER: Fremont
PROJECT NAME/NO.: 209111
PO #: B-894
REMARKS: Please Email Results

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins and Furans by 8290	EPH	VPH	Nitrate	Sulfate	Alkalinity	Chlordane				Notes
B-9.3		9/7/12	1:05	Soil	1							X				
B-10.3		9/7/12	1:20	Soil	1							X				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished:	Michael Erdahl	Friedman & Bruya	9/11/12	12:54pm
Received by:	Clare Griggs	FAI	9-11-12	3:39pm
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

209111

SAMPLE CHAIN OF CUSTODY ME 09-10-12

A04 / V4 / VS3

Page # 1 of 6

Send Report To Richard Simpson
Company The Riley Group
Address 17522 Bothell Way NE
City, State, ZIP Bothell WA 98011
Phone # (425) 415-0551 Fax #

SAMPLERS (signature) [signature]

PROJECT NAME/NO. 2012-265A

PO#

REMARKS

TURNAROUND TIME
☐ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	HCID						Notes
B-1-3	01	9-7	9:25	Soil	1							X						(#9-pr RS 9/14/12
B-1-6	02	"	9:25	"	1													
B-1-11	03	"	9:30	"	1							X						
B-1-12.5	04 A-E	"	9:35	"	5													
B-1	05 A-E	"	9:40	H_2O	5			(X)				X						
B-2-3	06	"	9:55	Soil	1							X						
B-2-7	07	"	10:00	"	1													
B-2-10	08	"	10:05	"	1							X						
B-2-12.5	09 A-E	"	10:10	"	5													Samples received at 4 °C
B-2	10 A-E	"	10:15	H_2O	5													

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Richard Simpson	RGI	9.10.12	1335
Received by: [signature]	Tracy Davison	Pos Doc 2	9-10-12	1535
Relinquished by:				
Received by: [signature]	DAKO	F&BT	11	14:30

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

209111

SAMPLE CHAIN OF CUSTODY

ME 09-10-12

A04/V4/V83

Page # 1 of 6

Send Report To Richard Simpson

Company The Riley Group

Address

City, State, ZIP

Phone # Fax #

SAMPLERS (signature)

PROJECT NAME/NO. 2012-265 A

PO#

REMARKS

TURNAROUND TIME
☐ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	HCID						Notes
						ANALYSES REQUESTED												
B-3-4	11	9-7	10:20	soil	1							X						
B-3-7	12		10:25		1													
B-3-10	13		10:30		1							X						
B-3-12	14 A-E		10:37	↓	5													
B-3	15 A-E		10:40	H2O	5				X									
B-4-3	16		10:45	soil	1							X						
B-4-8	17		10:50		1													
B-4-10	18 A-E		10:55		5							X						
B-4-16	19		11:00	↓	1													
B-4	20 A-E	↓	11:05	H2O	5				X									

Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Richard Simpson	RGI	9/10/12	1335
Received by:		Tammy Jackson	Fed Ex	9-10-12	1335
Relinquished by:					
Received by:			Fed Ex	9-10-12	14:34

20911 1

SAMPLE CHAIN OF CUSTODY

ME 09-10-12 A04/3 V4 / V83

Page # _____ of 8

Send Report To Richard Simpson

Company The Riley Group

Address _____

City, State, ZIP _____

Phone # _____ Fax # _____

SAMPLERS (signature) SJ

PROJECT NAME/NO. 2012-265A

PO# _____

REMARKS

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ RUSH _____

Rush charges authorized by _____

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	HCID	Notes
B-5-4	21	9-7	11:10	Soil	1								
B-5-7	22		11:15		1								
B-5-11	23 A-F		11:20		5							X	
B-5-16	24		11:25		1								
B-5	25 A-F		11:30	H2O	5				X			X	
B-6-4	26		11:40	Soil	1							X	
B-6-6	27		11:45		1								
B-6-10.5	28 A-F		11:50		5								
B-6-16	29		11:55		1								Samples received at 4 °C
B-6	30 A-F		12:00	H2O	5				X			X	

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Richard Simpson	RGI	9.10.12	1535
Received by:			POSTAL X	9.10.12	1535
Relinquished by:					
Received by:		DAVID	FEDEX	9.11.12	11:30

209111

SAMPLE CHAIN OF CUSTODY ME 09-10-12

A04/4V4/0883

Page # 1 of 6

Send Report To Richard Simpson

Company The Riley Group

Address

City, State, ZIP

Phone # Fax #

SAMPLERS (signature)

PROJECT NAME/NO. 2012-265A

PO#

REMARKS

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	HCID	Chlordane					Notes
B-7-4	31	9-7	12:15	Soil	1													
B-7-7	32		12:20		1													
B-7-8.5	33 A-E		12:25		5							X						
B-8-4	34		12:30	Soil	1							X						
B-8-7	35		12:35		1													
B-8-11	36 A-E		12:40		5							X						
B-8-16	37		12:45		1													
B-8	38 A-E		12:50	H2O	5				X									
B-9-3	39 A-B		~~1:00~~ 1:05	Soil	1								X					Samples received at 4 °C 402 Received moist
B-9-9	40 A-E		~~1:10~~ 1:10		5							X						Received moist 402

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Richard Simpson	RGI	9.10.12	1335
Received by:	Lacey Erickson	POSTAL K	9.10.12	1335
Relinquished by:				
Received by:		FF BT	9-10-12	14:30

Friedman & Bruya, Inc
3012 16th Avenue West
Seattle, WA 98119-2029
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Fax (206) 283-5044

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SAMPLE CHAIN OF CUSTODY ME 09-10-12

A04/V24/VS3

Page # 5 of 6

Send Report To Richard Simpson

Company: Riley Group,

Address: 17522 Bothell Way NE, Ste A

City, State, ZIP Bothell, WA 98011

Phone # 425 415-0551 Fax # 425 415-0311

SAMPLERS (signature)

PROJECT NAME/NO. 2012-265 A

PO #

REMARKS

Attention:
Dave Bair dbair@riley-group.com

TURNAROUND TIME
Standard (2 Weeks)
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Chlordane	417D					Notes
B-9-8	41 A-B	9-7	1:15	Soil	1													Received more 40z
B-9	42 A-E	"	1:20	H_2O	5				(X)									
B-10-3	43 AB	"	1:35	Soil	2							X						
B-10-6	44 A-B	"	1:40	"	2													
B-10-10	45 A-F	"	1:45	"	6													
B-10-12	46 A-B	"	1:50	"	2													
B-10	47 A-E	"	1:55	H_2O	5													
B-11-4	48	"	2:05	Soil	1													
B-11-7	49	"	2:10	"	1								X					Samples received at 4 °C
B-11-9	50 A-E	"	2:15	"	5													

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Richard Simpson	RGI	9.10.12	1335
Received by:		Kathy Goldsby	Postal	9.10.12	1335
Relinquished by:					
Received by:		DAVID	FEDEX	9-10-12	14:30

FORMS\COC\COC.DOC

209111

SAMPLE CHAIN OF CUSTODY

ME 09-10-12

A04/V4/VB3

Page # 6 of 6

Send Report To Richard Gipson

Company: Riley Group,

Address: 17522 Bothell Way NE, Ste A

City, State, ZIP Bothell, WA 98011

Phone # 425 415-0551 Fax # 425 415-0311

SAMPLERS *(signature)*

PROJECT NAME/NO. 2012-265A

PO #

REMARKS

Attention:
Dave Bair dbair@riley-group.com

TURNAROUND TIME
Standard (2 Weeks)
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	4 ID						Notes
B-11-12	51	9-7	2:20	soil	1													
B-11	52 A-E	↓	2:25	H2O	5				X			X						
																		Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Richard Gipson	RGI	9.10.12	1335
Received by:			Parker	9.10.12	1335
Relinquished by:					
Received by:			Ex BZ	9.10.12	1625