



The Riley Group, Inc.

August 29, 2013

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

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

Dear Ms. Schafer:

The Riley Group, Inc. (RGI) is pleased to present our Supplemental Phase II Subsurface Investigation (Supplemental 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).

The Supplemental Phase II was performed at the request of Columbia Bank in order to further assess the extent of chlordane impacted groundwater on the Property and to comply with the Washington Department of Ecology's (Ecology) request for installation of a point of compliance groundwater monitoring well on the Property.

PROJECT BACKGROUND

RGI completed a Phase I Environmental Site Assessment (ESA) of the Property on August 3, 2012 (RGI project number 2012-265). The Phase I ESA identified the following environmental concerns in connection with the Property:

- Historical use of the Property 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 (Building 2 on Figure 2) were identified.
- In 1994, 1995, 1997, and 2001, cleanup actions were undertaken where at least 300 cubic yards (total volume unknown) of chlordane-contaminated soil was removed from several excavation areas situated on the Property. Remedial excavations reached depths of up to 10 feet. Previous reports indicated that the *in-situ* soil left in-place after the remedial excavation efforts contained concentrations of chlordane that were below the Model Toxics Control Act (MTCA) Method B soil cleanup level for chlordane of 2.86 milligrams/kilogram (mg/kg), at that time.

SERVING THE PACIFIC NORTHWEST

Tacoma, Washington
Phone 253.565.0552

Corporate Office
17522 Bothell Way Northeast
Bothell, Washington 98011
Phone 425.415.0551 ♦ Fax 425.415.0311
www.riley-group.com

Kennewick, Washington
Phone 509.586.4840

- In 2001, Georgia Pacific and their consultant reported that their cleanup and investigation of the Property was completed and that the Property had been fully remediated. The approximate locations of historical remedial excavations are illustrated on the attached Figures 2 through 4.
- 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, situated on the southeastern portion of the Property and MW3, situated on the east-adjointing single-family residential property) regularly had chlordane concentrations ranging between 1.2 micrograms/liter ($\mu\text{g/L}$) to 36 $\mu\text{g/L}$, above the MTCA Method B groundwater cleanup level of 0.25 $\mu\text{g/L}$ for chlordane. This chlordane groundwater cleanup level of 0.25 $\mu\text{g/L}$ was selected by the previous consultants as being protective of human health and the environment.
- 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 from Clear Lake). Based on the groundwater flow direction, it was concluded that the Property was located down-gradient of Clear Lake. In addition, lake sediment sampling and testing showed no elevated chlordane concentrations. Therefore, based on groundwater flow direction and their lake sediment sampling and testing data, the chlordane groundwater contamination underlying the Property (or Site) was not considered a potential threat to the nearby surface water body (Clear Lake).
- The results of an aquifer test performed on the groundwater monitoring wells indicated that the shallow groundwater was considered a potential drinking water source. As stated above, the groundwater cleanup level selected for chlordane at that time was the Method B groundwater cleanup level of 0.25 $\mu\text{g/L}$ (which is the current Method B cleanup level for groundwater).
- Based on groundwater monitoring data obtained from 1996 through 2004 (see Table 2), Georgia Pacific and their consultant concluded that the elevated chlordane concentrations in groundwater were limited to monitoring wells MW1 (located on the Property) and MW3 (located on the east-adjointing Property) and that chlordane contamination was immobile and would naturally degrade until the chlordane concentrations were either non-detect, or reduced to concentrations below the Method B groundwater cleanup levels. At that time, Ecology, under the Voluntary Cleanup Program (VCP), concurred with their interpretation of the soil and groundwater data and issued a No Further Action (NFA) letter in July 2004. The NFA included a restrictive covenant recorded on the Property and required 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 five years of 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 groundwater at monitoring wells MW1 and MW3 was observed. Chlordane concentrations in groundwater still exceeded the MTCA Method B groundwater cleanup level of 0.25 $\mu\text{g/L}$ at monitoring wells MW1 (on the Property) and MW3 (located off the Property). During this time period, chlordane concentrations in groundwater at MW1 and MW3 ranged from 1.5 $\mu\text{g/L}$ to 6.79 $\mu\text{g/L}$ and 1.0 $\mu\text{g/L}$ to 4.9 $\mu\text{g/L}$, respectively. Ecology concluded that the decline in chlordane concentrations in groundwater,

as naturally occurring degradation) did not occur as speculated in 2004. Ecology implied that restrictive covenant was partially prefaced on the fact that the natural degradation of chlordane was an active and thereby valid remedial process.

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 on the east-adjoining property), the existing Restrictive Covenant was no longer considered protective of human health.
3. In April 2012, based on Ecology's 5-year review, Ecology rescinded that 2004 NFA letter and placed the Property back on the Confirmed and Suspected Contaminated Sites database.
 - In 2012, as part of their 5-year review, Ecology also requested additional down-gradient point of compliance groundwater monitoring well to better define the nature and extent of chlordane contaminated groundwater.

RGI recommended a Phase II Subsurface Investigation and Geophysical Survey of the Property based on the above-mentioned environmental concerns.

RGI completed a Phase II Subsurface Investigation (Phase II) of the Property in October of 2012. The results of the Phase II are documented in the *Phase II Subsurface Investigation* (Phase II) dated November 9, 2012 by RGI (RGI project number 2012-265A). During the Phase II, RGI conducted a geophysical survey and advanced 11 test probes on the Property, four of which were completed as groundwater monitoring wells. Soil and groundwater sampling and analyses were also conducted during the Phase II. The Phase II presented the following conclusions:

- 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 the Phase II.
- RGI re-evaluated the previously selected chlordane soil and groundwater screening levels for the Property and selected more appropriate soil and groundwater screening levels, which are considered protective of human health and the environment under the MTCA regulation. No MTCA Method A soil or groundwater cleanup levels are available for chlordane. Therefore, for soil, RGI calculated a site-specific Method B soil screening level considered protective of groundwater of 2.05 mg/kg. For groundwater, RGI selected the Applicable or Relevant and Appropriate Requirements (ARAR), which consists of the State and Federal Primary Maximum Contaminant Level (MCL) for chlordane of 2.0 µg/L. As stated above, the 2004 chlordane soil and groundwater cleanup levels selected and referenced by Ecology and the previous environmental consultant were 2.85 mg/kg and 0.25 µg/L, respectively.
- No target analytes were detected in soil at concentrations above applicable screening levels.

- Four of the seven groundwater monitoring wells located on the Property intercepted groundwater containing chlordane concentrations ranging from 2 µg/L to 7.7 µg/L, which are above the groundwater screening level of 2.0 µg/L. No other target analytes were encountered in groundwater at concentrations above applicable groundwater screening levels.
- Three groundwater monitoring wells MW3, MW6, and MW7 (MW5 was decommissioned) were located off of the Property and not accessible, therefore, not sampled and tested as part of the October to November 2012 investigation.

Based on the findings of the Phase II, Ecology's request to install a down-gradient point of compliance well and subsequent discussions between RGI and Columbia Bank, RGI recommended the installation of three additional groundwater monitoring wells and additional groundwater monitoring on the Property.

The scope of work for this project was performed in general accordance with Task 1 described in our *Supplemental Phase II Subsurface Investigation and Engineers Cleanup Estimate Preparation Proposal* dated January 21, 2012 by RGI. Mr. Bruce Farnham of Columbia Bank authorized RGI to proceed with Task 1 of the scope of work.

SCOPE OF WORK

The scope of work performed for this project included the following tasks:

- Performed public and private utility locating in an attempt to identify the location(s) of buried utility lines servicing the existing structures at the Property.
- Advanced three borings on the Property using standard Hollow Stem Auger (HSA) drilling techniques. Borings were completed as groundwater monitoring wells MW12, MW13, and MW14. Collected soil samples for laboratory analyses during drilling.
- Obtained casing elevations from the north side of casing for monitoring wells MW3, MW6, MW7, MW12, MW13, and MW14 and utilized this data to determine hydraulic gradient and groundwater flow direction information for the Property.
- Collected groundwater samples from groundwater monitoring wells for analysis of chlordane.
- Compared analytical results from soil and groundwater samples to soil and groundwater screening levels considered protective of human health and the environment under the MTCA regulation.
- Prepared this report presenting our findings, observations, conclusions, and recommendations.

UTILITY LOCATING

At least 48 hours prior to commencing with our Supplemental Phase II, 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 also retained the services of a private utility locator, to locate private water, natural gas, electric, and other metallic underground utility conduits potentially located in the proposed drilling locations.

SUPPLEMENTAL PHASE II SUBSURFACE INVESTIGATION

On May 24, 2013, RGI retained the services of Boretec to advance three borings, which were completed as groundwater monitoring wells (MW12, MW13, and MW14). Borings were installed using a full-size, truck-mounted hollow stem auger drill rig.

Monitoring wells MW12, MW13, and MW14 were installed along the northern boundary and intended to better define the nature and extent of chlordane groundwater contamination encountered on the Property in previous subsurface investigations. These wells were also intended to comply with Ecology's request for installation of potential points of compliance for groundwater on the Property.

All three borings were advanced to a depth of approximately 20 feet below ground surface (bgs) and well screen was placed between approximately 10 and 20 feet bgs. Groundwater was observed in groundwater monitoring wells at a depth of approximately 8 feet bgs at the time of drilling.

A total of 12 discrete soil samples were collected from the three boring locations. Soil samples were collected at approximate 5-foot intervals and field screened using visual and olfactory observations and screened for the presence of volatile organic compounds (VOCs) using a photoionization detector (PID). Field screening did not indicate the presence of contamination in any of the soil samples.

Soils were logged continuously during drilling and soil conditions encountered were described using the Unified Soil Classification System (USCS). Shallow subsurface soils encountered during drilling generally consisted of mixtures of silt and sand grading to a coarse sand starting at approximately 13 feet bgs. Soil conditions encountered during drilling are presented on the boring logs in Appendix A.

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.

GROUNDWATER MONITORING WELLS

Groundwater Monitoring Well Construction

All three groundwater monitoring wells installed during this Supplemental Phase II were constructed with 2-inch-diameter well screen and casing. Each monitoring well included 10 feet of 0.010-inch slotted well screen. A silica sand filterpack was placed around each well screen and extended from the bottom of the well to approximately 2 feet above the screen. The annulus outside the casing, and above the sand pack, was backfilled with bentonite and completed with an approximately 1-foot concrete surface seal and a flush mount traffic-rated monument. Monitoring well construction details are presented on the boring logs in Appendix A.

All groundwater monitoring wells were developed at the time of installation utilizing a submersible pump to remove fines and reduce turbidity from the well and surrounding sand pack.

Groundwater Elevation Determination

RGI surveyed top of casing (TOC) elevations for monitoring wells MW-3, MW-6, MW-7, MW-12, MW-13, and MW-14. Elevations were obtained using a laser level and stadia rod. TOC elevations recorded for each monitoring well were based on data from the previously surveyed groundwater monitoring well MW-4. The TOC elevations ranged from 41.415 feet to 46.035 feet.

Depth to groundwater in groundwater monitoring wells ranged from 4.96 feet to 10.52 feet bgs with a groundwater flow direction generally to the north-northwest, which is away from Clear Lake. The approximate hydraulic gradient was 0.002 feet per foot (MW-7 to MW14). This data is consistent with the previously reported groundwater flow direction.

Groundwater Monitoring Well Sampling

On May 28, 2013, RGI collected groundwater samples from ten on-Property wells (MW1, MW2, MW4 and MW8 through MW14) and three off-Property wells (MW3, MW6, and MW7). Prior to collecting groundwater samples, groundwater levels were obtained from each well and each well was subsequently purged using a peristaltic pump and dedicated polyethylene tubing until either three well casing volumes were purged from the well or water quality parameters (temperature, pH and conductivity) stabilized.

Groundwater samples were collected using standard EPA low-flow groundwater sampling methodology at a flow rate of less than 100 milliliters per minute. Groundwater was pumped directly from the tubing into laboratory supplied containers appropriate for chlordane analysis.

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.

Chlordane was determined to be the only contaminant of concern for the Property based on data obtained from previous subsurface investigations. No MTCA Method A soil or groundwater cleanup levels have been established for chlordane. Therefore, RGI selected soil and groundwater screening levels considered protective of human health and the environment under the MTCA regulation. RGI's selection of chlordane groundwater and soil screening levels are discussed below.

Groundwater Screening Level for Chlordane

WAC 173-340-700(5)(a) indicates that it is acceptable to use Applicable or Relevant and Appropriate Requirements (ARARs) in lieu of MTCA Method A cleanup levels when no MTCA Method A cleanup level has been established for a given compound provided that the ARAR is sufficiently protective of human health and the environment and does not present a cancer risk in excess of one in one hundred thousand (1×10^{-5}).

The groundwater screening level selected for the Property is ARAR, which is 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 screening level for chlordane is the State Primary MCL of $2 \mu\text{g/L}$. This screening level was evaluated by RGI and does not exceed a cancer risk of 1×10^{-5} and is, therefore, in compliance with WAC 173-340-705(5).

Soil Screening Level for Chlordane

WAC 173-340-720 requires that the soil cleanup level be protective of groundwater when it is used as a source of potable drinking water. RGI utilized the Ecology Worksheet for Calculating Soil Cleanup Levels for Unrestricted Land Use to calculate a Property-specific soil screening level for chlordane that is considered protective of groundwater and the direct contact exposure pathway. The worksheet and details pertaining to this calculation are presented in Appendix C.

Summary of Soil and Groundwater Screening Levels for Chlordane

It should be noted that the soil and groundwater screening levels selected above for chlordane are different than those selected during previous investigations. The 2004 and current and applicable chlordane screening levels are summarized below.

Year	Soil Screening Level	Groundwater Screening Level
2004	2.86 mg/kg – established Method B cleanup level (based on the soil direct contact exposure pathway)	0.25 $\mu\text{g/L}$ – based on established Method B cleanup level
Current	2.05 mg/kg (most stringent soil screening level based on the soil direct contact exposure pathway and protection of groundwater)	2 $\mu\text{g/L}$ – ARAR*

* The ARAR does not exceed a cancer risk of 1×10^{-5} and can be used in lieu of the MTCA Method B value under the MTCA regulation.

ANALYTICAL LABORATORY ANALYSIS

A total of two soil samples, thirteen groundwater samples and a trip blank quality control sample were submitted to Friedman & Bruya, Inc., an Ecology-accredited laboratory, for the following analysis.

- Chlordane (an organochlorine pesticide) using EPA Method 8081.

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 Supplemental Phase II are included in Appendix C.

LABORATORY ANALYTICAL RESULTS

Analytical results for soil samples and soil screening levels are summarized in Table 1.

Analytical results for current and select historical groundwater samples and groundwater screening levels are summarized in Table 2 and illustrated on Figure 3.

Soil Analytical Results

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

On-Property Groundwater Analytical Results

Chlordane was not detected at a concentration above the groundwater screening level of 2 µg/L in any of the 10 on-Property groundwater monitoring wells. In six of these monitoring wells, including three of the recently installed monitoring wells as points of compliance for groundwater (MW12, MW13, and MW14), chlordane was not detected above the laboratory method detection limit. In the remaining four monitoring wells (MW1, MW2, MW4MW11 and Groundwater concentrations of chlordane in the remaining four wells ranged from 0.1 µg/L to 1.7 µg/L

Off-Property Groundwater Analytical Results

Chlordane was detected at a concentration of 3.5 µg/L in one off-Property groundwater monitoring well MW3. This concentration exceeds the groundwater screening level for chlordane of 2.0 µg/L. MW3 is situated approximately 40 feet east of the eastern Property boundary.

Chlordane was not detected at concentrations above the laboratory detection limit in the remaining two off-Property groundwater monitoring wells MW6 and MW7 .

CONCLUSIONS

Based on the results of this Supplemental Phase II, RGI concludes that Ecology would consider granting a Property-Specific No Further Action determination for the Clear Lake Property based on the following facts:

- Groundwater flow direction, based on groundwater elevation data from all 14 monitoring wells, is to the north-northwest, which is away from Clear Lake. This north-northeast groundwater flow direction is consistent with historical groundwater monitoring data reported by others.
- The appropriate groundwater screening level selected for the Property is ARAR, which is the State Primary MCLs as established under the EPA NPDWRs (and not the Ecology MTCA Method B Value of 0.25 µg/L as previously selected by others). The applicable groundwater screening level for chlordane is the State Primary MCL of 2 µg/L. This screening level was evaluated by RGI and does not exceed a cancer risk of 1×10^{-5} and is, therefore, in compliance with WAC 173-340-705(5).
- During the May 2013 sampling event, all monitoring wells located on the Property intercepted shallow groundwater with either non-detectable concentrations of chlordane, or had concentrations below the groundwater screening level for chlordane of 2 µg/L.
- The natural degradation of chlordane appears to be occurring in the subsurface, albeit at a slow process.

Groundwater concentrations of chlordane detected in monitoring well MW3, located on the east-adjointing single family residential property, exceed the groundwater screening level of 2 µg/L. Monitoring well MW3 is located approximately 40 feet east of the eastern boundary. During the May 2013 sampling event, monitoring well MW3 had a chlordane concentration of 3.5 µg/L, and appears to have steadily decreased over the last 16 years (from an initial concentration of 17 µg/L in 1996).

Any recommendations will be submitted under separate cover.

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.


Jerry Sawetz
Senior Environmental Scientist



Paul D. Riley, LG, LHG
Principal

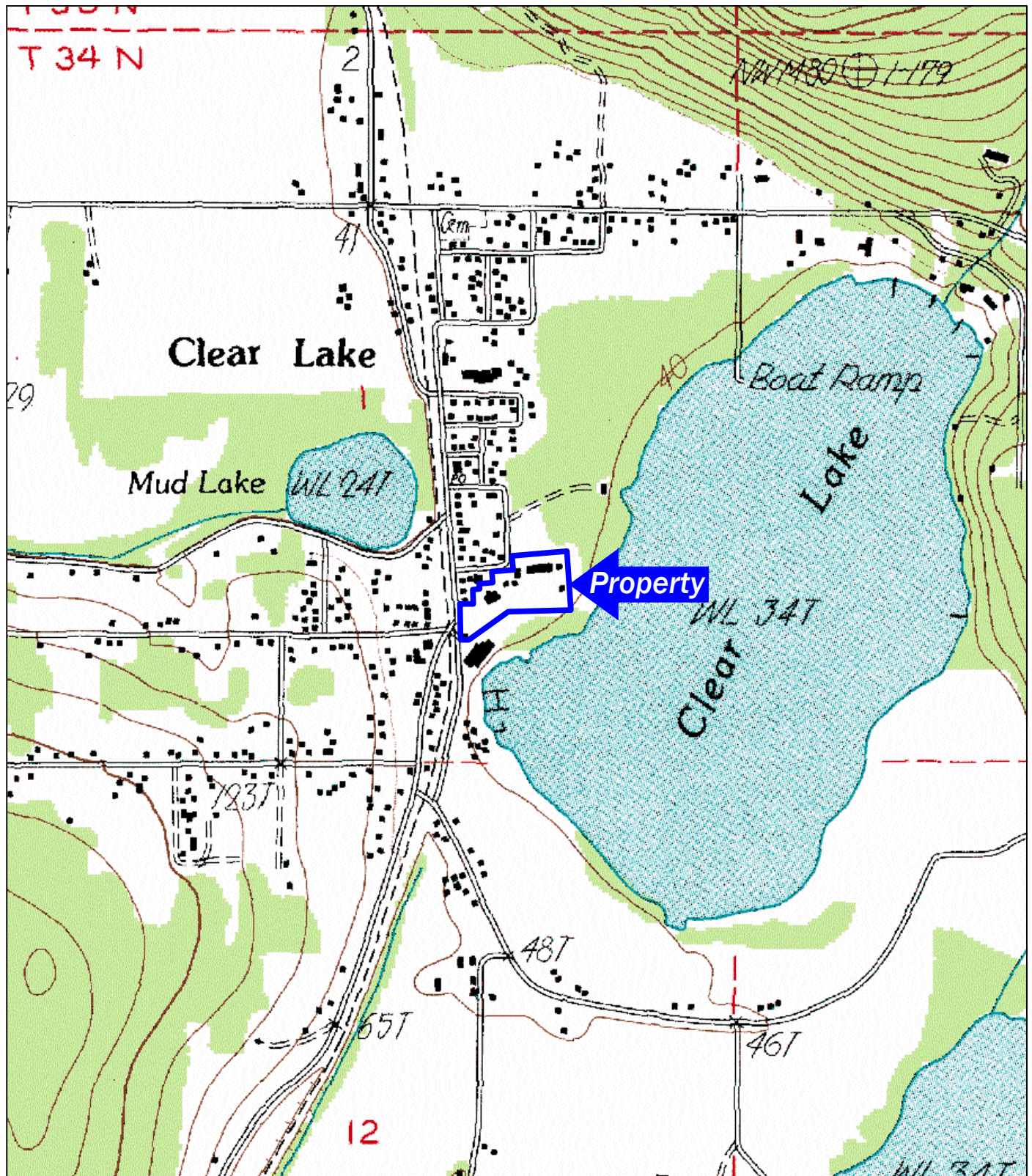
Attachments:

Figure 1, Property and Surrounding Area with Historical Features
Figure 2, May 28, 2013 Groundwater Elevation Contours
Figure 3, Property Plan with Groundwater Analytical Data
Table 1, Summary of Soil Sample Analytical Laboratory Results
Table 2, Summary of Groundwater Analytical Laboratory Results

Appendix A, Groundwater Monitoring Well Logs
Appendix B, Ecology Worksheet for Calculating Chlordane Soil Cleanup Levels
Appendix C, Analytical Laboratory Reports and Sample Chain of Custody Forms

Report Distribution:

Ms. Christina Schafer (one bound copy and PDF)



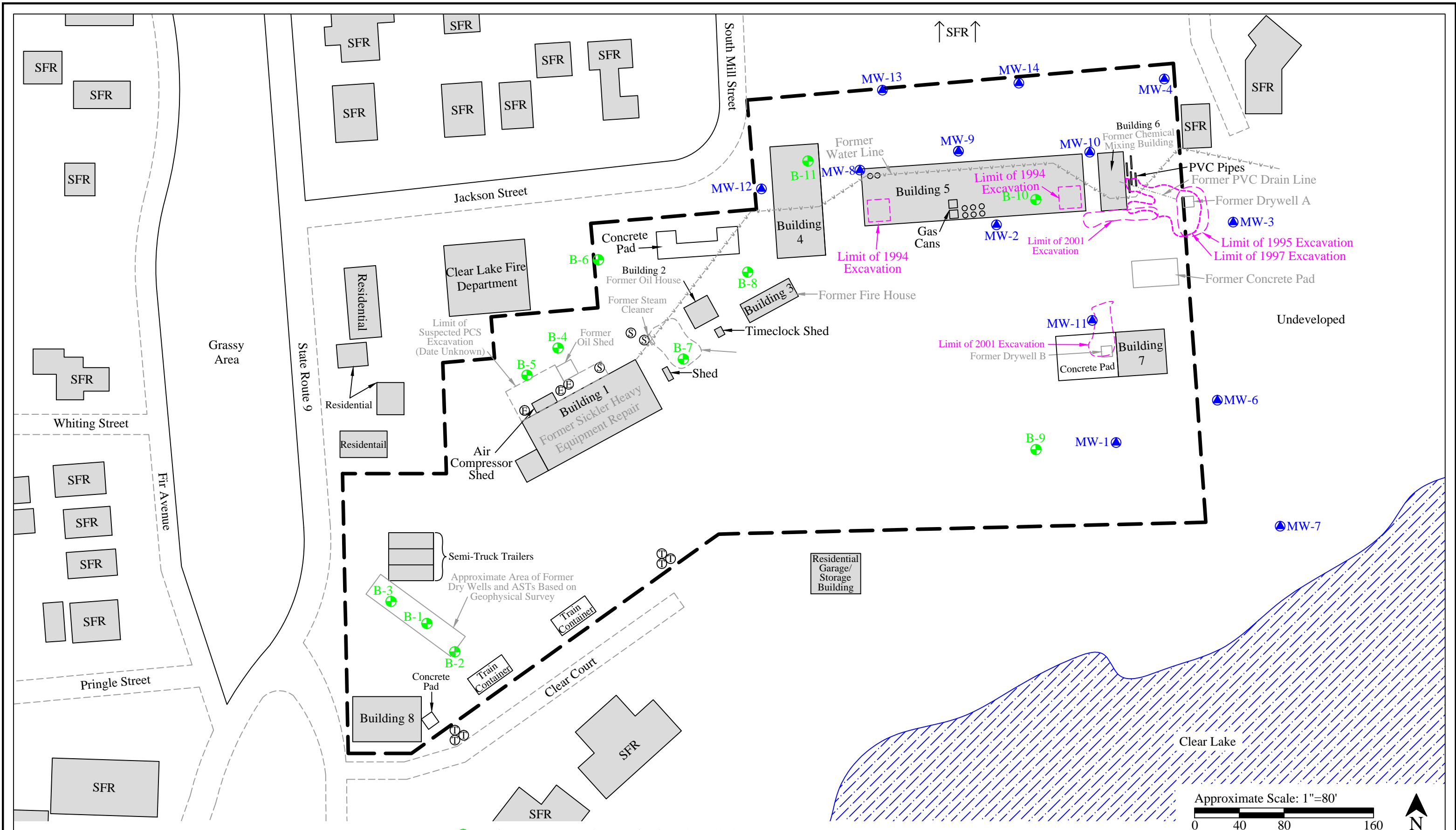
USGS, 1985, Sedro Woolley South, Washington
7.5-Minute Quadrangle

Approximate Scale: 1"=1000'



The Riley Group, Inc.
17522 Bothell Way Northeast, Suite A
Bothell, Washington 98011
Phone: 425.415.0551 ♦ Fax: 425.415.0311

Clear Lake Industrial Park		Figure 1
RGI Project Number	Property Vicinity Map	Date Drawn:
2012-265B		08/2013
Address: 12785 State Route 9 and 12827 South Front Street, Clear Lake Washington 98253		

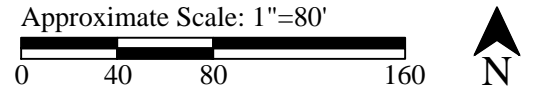


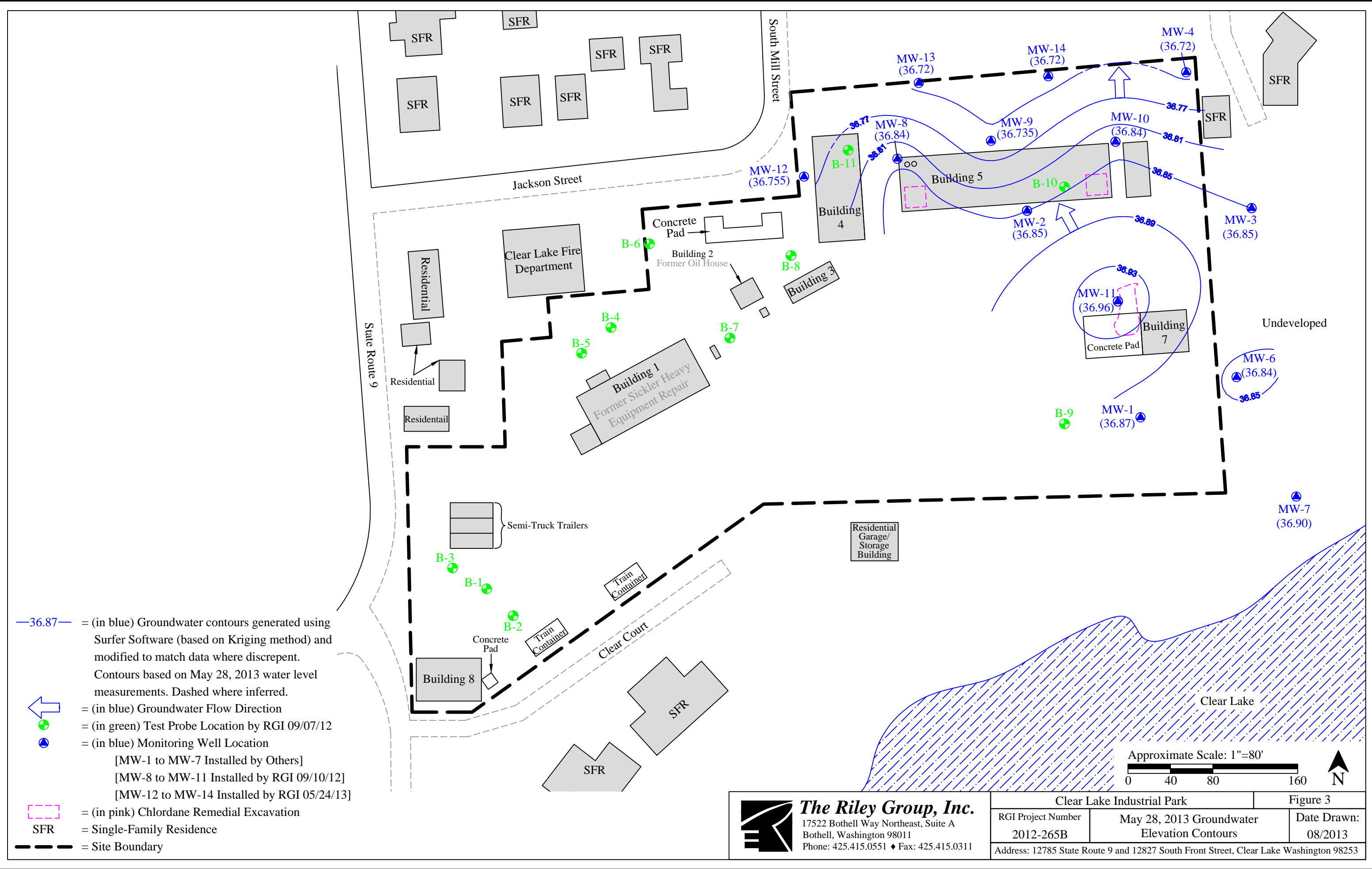
- = (in pink) Chlordane Remedial Excavation
- = Pole-Mounted Transformer
- = Single-Family Residence
- = Site Boundary
- = 55-Gallon Drum
- = Engines
- = Septic Cleanout Port

- = (in green) Test Probe Location by RGI 09/07/12
- = (in blue) Monitoring Well Location
- [MW-1 to MW-7 Installed by Others]
- [MW-8 to MW-11 Installed by RGI 09/10/12]
- [MW-12 to MW-14 Installed by RGI 05/24/13]

The Riley Group, Inc.
 17522 Bothell Way Northeast, Suite A
 Bothell, Washington 98011
 Phone: 425.415.0551 ♦ Fax: 425.415.0311

Clear Lake Industrial Park		Figure 2
RGI Project Number 2012-265B	Property and Surrounding Area with Historical Features	Date Drawn: 08/2013
Address: 12785 State Route 9 and 12827 South Front Street, Clear Lake Washington 98253		

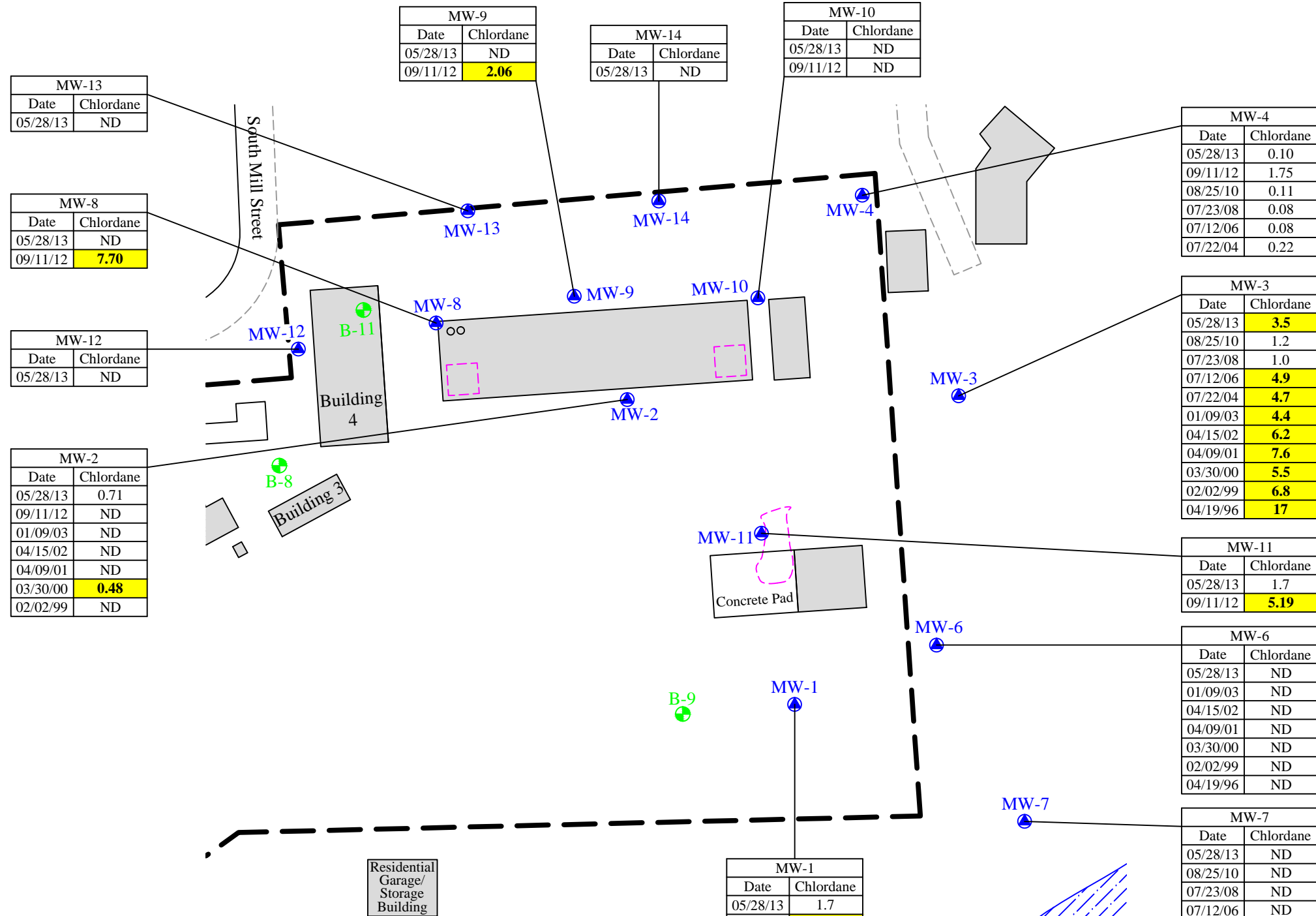




- 36.87— = (in blue) Groundwater contours generated using Surfer Software (based on Kriging method) and modified to match data where discrepant. Contours based on May 28, 2013 water level measurements. Dashed where inferred.
- ← = (in blue) Groundwater Flow Direction
- ⊕ = (in green) Test Probe Location by RGI 09/07/12
- = (in blue) Monitoring Well Location
 [MW-1 to MW-7 Installed by Others]
 [MW-8 to MW-11 Installed by RGI 09/10/12]
 [MW-12 to MW-14 Installed by RGI 05/24/13]
- ⬡ = (in pink) Chlordane Remedial Excavation
- SFR = Single-Family Residence
- = Site Boundary

The Riley Group, Inc.
 17522 Bothell Way Northeast, Suite A
 Bothell, Washington 98011
 Phone: 425.415.0551 ♦ Fax: 425.415.0311

Clear Lake Industrial Park		Figure 3
RGI Project Number 2012-265B	May 28, 2013 Groundwater Elevation Contours	Date Drawn: 08/2013
Address: 12785 State Route 9 and 12827 South Front Street, Clear Lake Washington 98253		



MW-13	
Date	Chlordane
05/28/13	ND

MW-8	
Date	Chlordane
05/28/13	ND
09/11/12	7.70

MW-12	
Date	Chlordane
05/28/13	ND

MW-2	
Date	Chlordane
05/28/13	0.71
09/11/12	ND
01/09/03	ND
04/15/02	ND
04/09/01	ND
03/30/00	0.48
02/02/99	ND

MW-9	
Date	Chlordane
05/28/13	ND
09/11/12	2.06

MW-14	
Date	Chlordane
05/28/13	ND

MW-10	
Date	Chlordane
05/28/13	ND
09/11/12	ND

MW-4	
Date	Chlordane
05/28/13	0.10
09/11/12	1.75
08/25/10	0.11
07/23/08	0.08
07/12/06	0.08
07/22/04	0.22

MW-3	
Date	Chlordane
05/28/13	3.5
08/25/10	1.2
07/23/08	1.0
07/12/06	4.9
07/22/04	4.7
01/09/03	4.4
04/15/02	6.2
04/09/01	7.6
03/30/00	5.5
02/02/99	6.8
04/19/96	17

MW-11	
Date	Chlordane
05/28/13	1.7
09/11/12	5.19

MW-6	
Date	Chlordane
05/28/13	ND
01/09/03	ND
04/15/02	ND
04/09/01	ND
03/30/00	ND
02/02/99	ND
04/19/96	ND

MW-7	
Date	Chlordane
05/28/13	ND
08/25/10	ND
07/23/08	ND
07/12/06	ND
07/22/04	ND
01/09/03	ND
04/15/02	ND
04/09/01	ND
03/30/00	ND
02/02/99	ND

MW-1	
Date	Chlordane
05/28/13	1.7
09/11/12	6.79
08/25/10	1.5
07/23/08	1.8
07/12/06	1.3
07/22/04	2.7
01/09/03	2.7
04/15/02	2.6
04/09/01	2.0
03/30/00	1.3
02/02/99	2.4
04/19/96	1.2

= Groundwater Analytical Data in micrograms per liter (ug/L) for Chlordane

Not all historical groundwater monitoring well data is displayed.

Data displayed is intended to be representative of historical chlordane-impacted groundwater concentration trends.

= (in green) Test Probe Location by RGI 09/07/12

= (in blue) Monitoring Well Location

[MW-1 to MW-7 Installed by Others]

[MW-8 to MW-11 Installed by RGI 09/10/12]

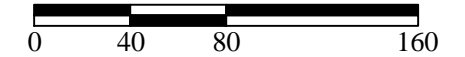
[MW-12 to MW-14 Installed by RGI 05/24/13]

= (in pink) Chlordane Remedial Excavation

= Single-Family Residence

= Site Boundary

Approximate Scale: 1"=80'



The Riley Group, Inc.

17522 Bothell Way Northeast, Suite A
Bothell, Washington 98011
Phone: 425.415.0551 ♦ Fax: 425.415.0311

Clear Lake Industrial Park

Figure 4

RGI Project Number

Property Plan with Groundwater

Date Drawn:

2012-265B

Analytical Data

08/2013

Address: 12785 State Route 9 and 12827 South Front Street, Clear Lake Washington 98253

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. 2012-265B

Sample Number	Sample Depth	Sample Date	PID	Chlordane		
				Total	Gamma	Alpha
MW-13-5	5	05/24/13	5.3	ND<0.0101	ND<0.0101	ND<0.0101
MW-13-10	10	05/24/13	3.0	----	----	----
MW-13-15	15	05/24/13	2.7	----	----	----
MW-13-20	20	05/24/13	2.1	----	----	----
MW-14-5	5	05/24/13	7.8	ND<0.0107	ND<0.0107	ND<0.0107
MW-14-10	10	05/24/13	3.5	----	----	----
MW-14-15	15	05/24/13	2.1	----	----	----
MW-14-20	20	05/24/13	3.1	----	----	----
Property-Specific Soil Screening Level¹				2.05¹	2.05¹	2.05¹

Notes

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.

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

ND = Not detected at noted analytical detection limit.

---- = Not analyzed or not applicable.

¹ MTCA Method A Cleanup Level was not available. Therefore, a property-specific soil cleanup level, protective of groundwater quality, was calculated (see report text and Appendix B for further discussion).

Table 2. Summary of Groundwater 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. 2012-265B

Sample Number	Sample Date	Top of Casing (TOC) Elevation	Depth to Water (below TOC)	Groundwater Elevation	BTEX				HCID			Other VOCs	Total MTCA 5 Metals					Dissolved MTCA 5 Metals					Chlordane Total
					B	T	E	X	Gasoline	Diesel	Heavy Oil		As	Cd	Cr	Pb	Hg	As	Cd	Cr	Pb	Hg	
Groundwater Grab Sampling																							
B-1	09/07/12	----	13	----	ND<0.35	ND<1	ND<1	ND<2	ND<200	ND<500	ND<500	ND	----	----	----	----	----	----	----	----	----	----	
B-2	09/07/12	----	13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
B-3	09/07/12	----	13	----	ND<0.35	ND<1	ND<1	ND<2	----	----	----	ND	----	----	----	----	----	----	----	----	----	----	
B-4	09/07/12	----	11	----	ND<0.35	ND<1	ND<1	ND<2	----	----	----	ND	----	----	----	----	----	----	----	----	----	----	
B-5	09/07/12	----	11.5	----	ND<0.35	ND<1	ND<1	ND<2	ND<200	ND<500	ND<500	ND	----	----	----	----	----	----	----	----	----	----	
B-6	09/07/12	----	11	----	ND<0.35	ND<1	ND<1	ND<2	ND<200	ND<500	ND<500	ND	----	----	----	----	----	----	----	----	----	----	
B-8	09/07/12	----	11	----	ND<0.35	ND<1	ND<1	ND<2	----	----	----	ND	----	----	----	----	----	----	----	----	----	----	
B-9	09/07/12	----	5	----	ND<0.35	ND<1	ND<1	ND<2	----	----	----	ND	----	----	----	----	----	----	----	----	----	----	
B-10	09/07/12	----	10.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
B-11	09/07/12	----	10.5	----	ND<0.35	ND<1	ND<1	ND<2	ND<200	ND<500	ND<500	ND	----	----	----	----	----	----	----	----	----	----	
On-Property Groundwater Monitoring Well Sampling																							
MW-1 - Screened Interval 7 to 17 feet bgs/Total Depth 17 feet bgs																							
MW-1	05/28/13	41.83	4.96	36.87	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.7	
MW1	10/04/12	41.83	6.39	35.44	----	----	----	----	----	----	----	----	ND<1	ND<1	1.69	ND<1	ND<0.1	ND<1	ND<1	ND<1	ND<0.1	----	
MW-1	09/11/12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	6.79	
MW-1	08/25/10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.5	
MW-1	07/23/08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.8	
MW-1	07/12/06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.3	
MW-1	07/22/04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2.7	
MW-1	01/09/03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2.7	
MW-1	04/15/02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2.6	
MW-1	04/09/01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2.0	
MW-1	03/30/00	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.3	
MW-1	02/02/99	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2.4	
MW-1	04/19/96	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.2	
MW-2 - Screened Interval 10 to 20 feet bgs/Total Depth 20 feet bgs																							
MW-2	05/28/13	47.37	10.52	36.85	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.71	
MW2	10/04/12	47.37	11.99	35.38	----	----	----	----	----	----	----	----	5.97	ND<1	2.9	ND<1	ND<0.1	ND<1	ND<1	ND<1	ND<0.1	----	
MW-2	09/11/12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<1.00	
MW-2	01/09/03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06	
MW-2	04/15/02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.02	
MW-2	04/09/01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06	
MW-2	03/30/00	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.48	
MW-2	02/02/99	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.033	
MW-2	04/19/96	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MTCA Method A Cleanup Levels for Ground Water					5	1,000	700	1,000	800/1,000¹	500	500	Analyte Specific	5	5	50	15	2	5	5	50	15	2	NA
Groundwater Screening Level					5	1,000	700	10,000	----	----	----	Analyte Specific	10	5	100	15	2	10	10	100	15	2	2

Table 2 Continued. Summary Groundwater 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 Date	Top of Casing (TOC) Elevation	Depth to Water (below TOC)	Groundwater Elevation	BTEX				HCID			Other VOCs	Total MTCA 5 Metals					Dissolved MTCA 5 Metals					Chlordane Total
					B	T	E	X	Gasoline	Diesel	Heavy Oil		As	Cd	Cr	Pb	Hg	As	Cd	Cr	Pb	Hg	
MW-4 - Screened Interval 10 to 20 feet bgs/Total Depth 20 feet bgs																							
MW4	05/28/13	44.49	7.77	36.72	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.10	
MW4	10/04/12	44.49	9.21	35.28	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW-4	09/11/12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.75	
MW-4	08/25/10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.11	
MW-4	07/23/08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.08	
MW-4	07/12/06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.08	
MW-4	07/22/04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.22	
MW-4	01/09/03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06	
MW-4	04/15/02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06	
MW-4	04/09/01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06	
MW-4	03/30/00	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06	
MW-4	02/02/99	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.033	
MW-4	04/19/96	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW-8 - Screened Interval 5.5 to 11.5 feet bgs/Total Depth 12 feet bgs																							
MW-8	05/28/13	45.70	8.86	36.84	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.045	
MW8	10/04/12	45.70	10.35	35.35	----	----	----	----	----	----	----	----	87.0	11.9	782	860	1.3	ND<1	ND<1	ND<1	ND<1	ND<0.1	----
MW-8	09/11/12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	7.70	
MW-9 - Screened Interval 7 to 12 feet bgs/Total Depth 12 feet bgs																							
MW-9	05/28/13	44.775	8.04	36.735	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.044	
MW9	10/04/12	44.775	9.46	35.315	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW-9	09/11/12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2.06	
MW-10 - Screened Interval 7 to 12 feet bgs/Total Depth 12 feet bgs																							
MW-10	05/28/13	43.15	6.31	36.84	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.039	
MW10	10/04/12	43.15	7.85	35.30	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW-10	09/11/12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<1.00	
MW-11 - Screened Interval 11 to 15 feet bgs/Total Depth 15 feet bgs																							
MW-11	05/28/13	46.42	9.46	36.96	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.7	
MW11	10/04/12	46.42	10.99	35.43	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW-11	09/11/12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	5.19	
MW-12 - Screened Interval 10 to 20 feet bgs/Total Depth 20 feet bgs																							
MW-12	05/28/13	46.035	9.28	36.755	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.050	
MW-13 - Screened Interval 10 to 20 feet bgs/Total Depth 20 feet bgs																							
MW-13	05/28/13	44.79	8.07	36.72	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.044	
MW-14 - Screened Interval 10 to 20 feet bgs/Total Depth 20 feet bgs																							
MW-14	05/28/13	43.225	6.51	36.715	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.042	
MTCA Method A Cleanup Levels for Ground Water					5	1,000	700	1,000	800/1,000¹	500	500	Analyte Specific	5	5	50	15	2	5	5	50	15	2	NA
Groundwater Screening Level					5	1,000	700	10,000	----	----	----	Analyte Specific	10	5	100	15	2	10	10	100	15	2	2

Table 2 Continued. Summary Groundwater 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 Date	Top of Casing (TOC) Elevation	Depth to Water (below TOC)	Groundwater Elevation	BTEX				HCID			Other VOCs	Total MTCA 5 Metals					Dissolved MTCA 5 Metals					Chlordane Total
					B	T	E	X	Gasoline	Diesel	Heavy Oil		As	Cd	Cr	Pb	Hg	As	Cd	Cr	Pb	Hg	
Off-Property Groundwater Monitoring Well Sampling																							
MW-3 - Screened Interval/Total Depth Unknown																							
MW-3	05/28/13	42.14	5.29	36.85	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	3.5
MW-3	08/25/10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.2
MW-3	07/23/08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.0
MW-3	07/12/06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	4.9
MW-3	07/22/04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	4.7
MW-3	01/09/03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	4.4
MW-3	04/15/02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	6.2
MW-3	04/09/01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	7.6
MW-3	03/30/00	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	5.5
MW-3	02/02/99	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	6.8
MW-3	04/19/96	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	17
MW-5 - Screened Interval/Total Depth Unknown (Well Decommissioned in 2002)																							
MW-5	01/09/03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MW-5	04/15/02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MW-5	04/09/01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MW-5	03/30/00	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06
MW-5	02/02/99	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.033
MW-5	04/19/96	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.05
MW-6 - Screened Interval/Total Depth Unknown																							
MW-6	05/28/13	41.415	4.575	36.84	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.041
MW-6	01/09/03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06
MW-6	04/15/02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06
MW-6	04/09/01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06
MW-6	03/30/00	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06
MW-6	02/02/99	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.033
MW-6	04/19/96	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.3
MW-7 - Screened Interval/Total Depth Unknown																							
MW-7	05/28/13	41.585	4.685	36.90	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.046
MW-7	08/25/10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06
MW-7	07/23/08	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06
MW-7	07/12/06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06
MW-7	07/22/04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06
MW-7	01/09/03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06
MW-7	04/15/02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06
MW-7	04/09/01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06
MW-7	03/30/00	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06
MW-7	02/02/99	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.06
MTCA Method A Cleanup Levels for Ground Water					5	1,000	700	1,000	800/1,000¹	500	500	Analyte Specific	5	5	50	15	2	5	5	50	15	2	NA
Groundwater Screening Level					5	1,000	700	10,000	----	----	----	Analyte Specific	10	5	100	15	2	10	10	100	15	2	2

Table 2 Continued. Summary Groundwater 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 Date	Top of Casing (TOC) Elevation	Depth to Water (below TOC)	Groundwater Elevation	BTEX				HCID			Other VOCs	Total MTCA 5 Metals					Dissolved MTCA 5 Metals					Chlordane
					B	T	E	X	Gasoline	Diesel	Heavy Oil		As	Cd	Cr	Pb	Hg	As	Cd	Cr	Pb	Hg	Total
Trip Blanks*																							
MW-15	05/28/13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	ND<0.039	
MTCA Method A Cleanup Levels for Ground Water					5	1,000	700	1,000	800/1,000¹	500	500	Analyte Specific	5	5	50	15	2	5	5	50	15	2	NA
Groundwater Screening Level					5	1,000	700	10,000	----	----	----	Analyte Specific	10	5	100	15	2	10	10	100	15	2	2

Notes:

Not all historical groundwater monitoring well data is displayed. Data displayed is intended to be representative of historical chlordane-impacted groundwater concentration trends.

Monitoring wells MW1 to MW7 installed by others. Monitoring wells MW8 to MW14 installed by RGI.

Samples collected by RGI field staff using a peristaltic pump under low-flow conditions.

Unless otherwise noted, all analytical results are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

BTEX (benzene, toluene, ethyl benzene, and xylenes) and VOCs (volatile organic compounds) determined using EPA Test Method 8260C.

Gasoline, Diesel, and Oil HCID (Hydrocarbon Identification) determined using Ecology Test Method NWTPH-HCID.

MTCA 5 metals (As = arsenic, 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 prior to analysis (to remove suspended sediment).

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

NA = No MTCA Method A Cleanup Level has been established for chlordane in groundwater.

ND = Not detected at noted analytical detection limit.

* Trip Blank samples are intended to assess whether samples were contaminated from areas outside of the sample location.

---- = Not analyzed or not applicable.

Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A Cleanup Levels for Ground Water (WAC 173-340-900, Table 720-1).

The selected groundwater screening level for the property is the ARAR (Applicable or Relevant and Appropriate Requirement), which consists of the State Primary Maximum Contaminant Levels (MCLs) as established under the Environmental Protection Agency (EPA) National Primary Drinking Water Regulations.

ARARs are referenced in Ecology's CLARC database.

Bold and yellow highlighted results indicate concentrations (if any) that exceed MTCA Method A Cleanup Levels for Ground Water.

Bold and red highlighted results indicate concentrations (if any) that exceed the groundwater screening level (ARAR)

Project Name: **Clear Lake Industrial Park**

Project Number: **2012-265B**

Client: **Columbia Bank**



Boring/Well No.: **MW-12**

Sheet 1 of 1

Date(s) Drilled: 05/24/13	Logged By: SL	Surface Conditions: Grass
Drilling Method(s): Hollow Stem Auger	Drill Bit Size/Type: 2" Diameter	Total Depth of Borehole: 20 feet bgs
Drill Rig Type: Truck Mounted	Drilling Contractor: Borettec	Approximate Surface Elevation: 46.5
Groundwater Level and Date Measured: 9.28 ft bgs on 05/28/13	Sampling Method(s): SPT	Hammer Data : 140 lb, 30 in drop, auto trip
Borehole Backfill: Monitoring Well	Location: 12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington	

Elevation (feet)	Depth (feet)	Sample Type	Sample ID	Sampling Resistance, blows/ft	PID Reading, ppm	Recovery (%)	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Well Log	REMARKS AND OTHER TESTS
46.5	0										Concrete 0 - 1
											Blank 2" PVC 0 - 10
											Bentonite 1 - 8
41.5	5	ML	MW-12-5	8	3.7		ML		Light brown, fine, sandy SILT, soft, dry, no odor, no sheen		
36.5	10	SM	MW-12-10	6	2.9		SM		Dark gray, SILTY SAND, soft, wet, no odor, no sheen		Silica Sand 8 - 20
											Prepack Slotted 2" PVC 10 - 20
31.5	15	SP	MW-12-15	6	2.8		SP		Dark gray, coarse SAND, soft, wet, no odor, no sheen		
26.5	20	SP	MW-12-20	5	2.3		SP		Dark gray, coarse SAND, soft, wet, no odor, no sheen		
									Boring terminated at 20 feet bgs		
21.5	25										

Project Name: **Clear Lake Industrial Park**

Project Number: **2012-265B**

Client: **Columbia Bank**



Boring/Well No.: **MW-13**

Sheet 1 of 1

Date(s) Drilled: 05/24/13	Logged By: SL	Surface Conditions: Grass
Drilling Method(s): Hollow Stem Auger	Drill Bit Size/Type: 2" Diameter	Total Depth of Borehole: 20 feet bgs
Drill Rig Type: Truck Mounted	Drilling Contractor: Boretac	Approximate Surface Elevation: 45
Groundwater Level and Date Measured: 8.07 ft bgs on 05/28/13	Sampling Method(s): SPT	Hammer Data : 140 lb, 30 in drop, auto trip
Borehole Backfill: Monitoring Well	Location: 12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington	

Elevation (feet)	Depth (feet)	Sample Type	Sample ID	Sampling Resistance, blows/ft	PID Reading, ppm	Recovery (%)	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Well Log	REMARKS AND OTHER TESTS
45	0										Concrete 0 - 1
											Blank 2" PVC 0 - 10
											Bentonite 1 - 8
40	5		MW-13-5	8	5.3		ML		Light brown, fine, sandy SILT, soft, dry, no odor, no sheen		
35	10		MW-13-10	5	3.0		SM		Dark gray, SILTY SAND, soft, wet, no odor, no sheen, very low recovery		Silica Sand 8 - 20
30	15		MW-13-15	5	2.7		SP		Dark gray, coarse SAND, soft, wet, no odor, no sheen, low recovery		Prepack Slotted 2" PVC 10 - 20
25	20		MW-13-20	7	2.1		SP		Dark gray, coarse SAND, soft, wet, no odor, no sheen		
	20								Boring terminated at 20 feet bgs		

Project Name: **Clear Lake Industrial Park**

Project Number: **2012-265B**

Client: **Columbia Bank**



Boring/Well No.: **MW-14**

Sheet 1 of 1

Date(s) Drilled: 05/24/13	Logged By: SL	Surface Conditions: Grass
Drilling Method(s): Hollow Stem Auger	Drill Bit Size/Type: 2" Diameter	Total Depth of Borehole: 20 feet bgs
Drill Rig Type: Truck Mounted	Drilling Contractor: Borettec	Approximate Surface Elevation: 43.5
Groundwater Level and Date Measured: 6.51 ft bgs on 05/28/13	Sampling Method(s): SPT	Hammer Data : 140 lb, 30 in drop, auto trip
Borehole Backfill: Monitoring Well	Location: 12785 State Route 9 and 12827 South Front Street, Clear Lake, Washington	

Elevation (feet)	Depth (feet)	Sample Type	Sample ID	Sampling Resistance, blows/ft	PID Reading, ppm	Recovery (%)	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Well Log	REMARKS AND OTHER TESTS
43.5	0										Concrete 0 - 1
											Blank 2" PVC 0 - 10
											Bentonite 1 - 8
38.5	5		MW-14-5	10	7.8		ML		Light brown, fine, sandy SILT, soft, dry, no odor, no sheen		
33.5	10		MW-14-10	7	3.5		SM		Dark gray, SILTY SAND, soft, wet, no odor, no sheen		Silica Sand 8 - 20
											Prepack Slotted 2" PVC 10 - 20
28.5	15		MW-14-15	5	2.1		SP		Dark gray, coarse SAND, soft, wet, no odor, no sheen		
23.5	20		MW-14-20	10	3.1		SP		Dark gray, coarse SAND, soft, wet, no odor, no sheen		
									Boring terminated at 20 feet bgs		
18.5	25										

Project Name: **Clear Lake Industrial Park**

Project Number: **2012-265B**

Client: **Columbia Bank**



Boring Log Key

Sheet 1 of 1

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

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
-  Portland Cement Concrete
-  SILT, SILT w/SAND, SANDY SILT (ML)
-  Silty SAND (SM)
-  Poorly graded SAND (SP)

TYPICAL SAMPLER GRAPHIC SYMBOLS

-  Auger sampler
-  Bulk Sample
-  3-inch-OD California w/ brass rings
-  CME Sampler
-  Continuous Core
-  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.

Worksheet for Calculating Soil Cleanup Levels for Unrestricted & Industrial Land Use

Date: 8/28/2013
 Site Name: Clear Lake Industrial Park
 Evaluator: Jerry Sawetz

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

¹Soil ingestion only; ²Soil dermal contact; ³Soil to Ground Water; ⁴Ground Water ingestion; ⁵Vapor 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 : <input checked="" type="checkbox"/>			
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:			
*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	atm.m ³ /mol
	H_{cc}		unitless

Solubility of the Chemical in Water: for the calculation of soil saturation limit

S 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 ug/l

6. Site-Specific Hydrogeological Characteristics

Total Soil Porosity (default = "0.43"):

n unitless

Volumetric Water Content (default = "0.30"):

θ_w unitless

Volumetric Air Content (default = "0.13"):

θ_a unitless

Dry Soil Bulk Density (default = "1.50"):

ρ_b kg/l

Fraction Soil Organic Carbon (default = "0.001"): for metals, enter "1" for *f_{oc}* value here

f_{oc} unitless

Dilution Factor (default = "20" for unsaturated zone soil; "1" for saturated zone soil; or site-specific)

DF 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 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, <i>C_{sat}</i> :	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, <i>R</i> :	178.9	unitless
--------------------------------	-------	----------

Contaminant migration velocity in saturated zone.

2. Summary of Calculation for each Exposure Pathway

Summary by Exposure Pathway						
Soil Direct Contact			<u>Method B</u> <i>Unrestricted Land Use</i> @ HQ=1.0; RISK =1.0E-6		<u>Method C</u> <i>Industrial Land Use</i> @ HQ=1.0; RISK =1.0E-5	
			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	
Protection of Potable Ground Water			<u>Method B</u> @ HQ=1.0; RISK =1.0E-6		<u>Method C</u> @ HQ=1.0; RISK =1.0E-5	
	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					
Protection of Air Quality <i>(for informational purpose only)</i>			<u>Method B</u> @ HQ=1.0; RISK =1.0E-6		<u>Method C</u> @ HQ=1.0; RISK =1.0E-5	
	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.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

June 11, 2013

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

Dear Mr. Riley:

Included are the results from the testing of material submitted on May 29, 2013 from the 2012-265B, F&BI 305545 project. There is 1 page 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
TRG0611R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 29, 2013 by Friedman & Bruya, Inc. from the The Riley Group 2012-265B, F&BI 305545 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>The Riley Group</u>
305545-01	MW-14-5
305545-02	MW-14-10
305545-03	MW-14-15
305545-04	MW-14-20
305545-05	MW-13-5
305545-06	MW-13-10
305545-07	MW-13-15
305545-08	MW-13-20
305545-09	MW-12-5
305545-10	MW-12-10
305545-11	MW-12-15
305545-12	MW-12-20

Samples MW-14-5 and MW-13-5 were sent to Fremont for chlordane analysis. Review of the enclosed report indicates that all quality assurance were acceptable.

305545 Paul Riley

SAMPLE CHAIN OF CUSTODY ME 05-29-13

B03
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) 465-0551 Fax # _____

SAMPLERS (signature) Staffa
 PROJECT NAME/NO. 2012-265B 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							Notes
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Chloride	
MW-14-5	01	5/24	9:50	soil	1							X	
MW-14-10	02		9:55										
MW-14-15	03		10:05										
MW-14-20	04		10:15										
MW-13-5	05		11:00									X	
MW-13-10	06		11:05										
MW-13-15	07		11:10										
MW-13-20	08		11:20										
MW-12-5	09		12:20										Samples received at 10 °C
MW-12-10	10		12:25										

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: <u>Staffa</u>	Staffa Lam	RKD	5/29	12:00
Received by: <u>[Signature]</u>	Ken Dawson	Postal Exp	5-29	4:00
Relinquished by: _____				
Received by: <u>[Signature]</u>	DD UD	FE BI	5-29-13	14:15



3600 Fremont Ave. N.
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: 305545
Lab ID: 1305224

June 07, 2013

Attention Michael Erdahl:

Fremont Analytical, Inc. received 2 sample(s) on 5/31/2013 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,

A handwritten signature in black ink, appearing to read "M. Dee".

Michael Dee
Sr. Chemist / Principal



Date: 06/07/2013

CLIENT: Friedman & Bruya
Project: 305545
Lab Order: 1305224

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1305224-001	MW-14-5	05/24/2013 9:50 AM	05/31/2013 9:35 AM
1305224-002	MW-13-5	05/24/2013 11:00 AM	05/31/2013 9:35 AM

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

CLIENT: Friedman & Bruya

Project: 305545

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

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.



CLIENT: Friedman & Bruya
Project: 305545

Lab ID: 1305224-001

Collection Date: 5/24/2013 9:50:00 AM

Client Sample ID: MW-14-5

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Organochlorine Pesticides by EPA Method 8081

Batch ID: 4749

Analyst: PH

gamma-Chlordane	ND	0.0107		mg/Kg-dry	1	6/6/2013 8:58:00 PM
alpha-Chlordane	ND	0.0107		mg/Kg-dry	1	6/6/2013 8:58:00 PM
Chlordane, Total	ND	0.0107		mg/Kg-dry	1	6/6/2013 8:58:00 PM
Surr: Decachlorobiphenyl	94.0	54.6-157		%REC	1	6/6/2013 8:58:00 PM
Surr: Tetrachloro-m-xylene	98.6	59.3-135		%REC	1	6/6/2013 8:58:00 PM

Sample Moisture (Percent Moisture)

Batch ID: R8713

Analyst: JS

Percent Moisture	23.6			wt%	1	6/3/2013 10:18:18 AM
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Lab ID: 1305224-002

Collection Date: 5/24/2013 11:00:00 AM

Client Sample ID: MW-13-5

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Organochlorine Pesticides by EPA Method 8081

Batch ID: 4749

Analyst: PH

gamma-Chlordane	ND	0.0101		mg/Kg-dry	1	6/6/2013 8:46:00 PM
alpha-Chlordane	ND	0.0101		mg/Kg-dry	1	6/6/2013 8:46:00 PM
Chlordane, Total	ND	0.0101		mg/Kg-dry	1	6/6/2013 8:46:00 PM
Surr: Decachlorobiphenyl	95.1	54.6-157		%REC	1	6/6/2013 8:46:00 PM
Surr: Tetrachloro-m-xylene	102	59.3-135		%REC	1	6/6/2013 8:46:00 PM

Sample Moisture (Percent Moisture)

Batch ID: R8713

Analyst: JS

Percent Moisture	19.4			wt%	1	6/3/2013 10:18:18 AM
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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

Work Order: 1305224
CLIENT: Friedman & Bruya
Project: 305545

QC SUMMARY REPORT
Organochlorine Pesticides by EPA Method 8081

Sample ID: LCS-TECHNICAL CHLO	SampType: LCS	Units: mg/Kg	Prep Date: 6/6/2013	RunNo: 8792							
Client ID: LCSS	Batch ID: 4749		Analysis Date: 6/6/2013	SeqNo: 176556							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chlordane, Total	1.00	0.0100	1.000	0	100	65	135				
Surr: Decachlorobiphenyl	0.0498		0.05000		99.7	54.6	157				
Surr: Tetrachloro-m-xylene	0.0482		0.05000		96.5	59.3	135				

Sample ID: 1305224-002AMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 6/4/2013	RunNo: 8792							
Client ID: MW-13-5	Batch ID: 4749		Analysis Date: 6/6/2013	SeqNo: 176557							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

gamma-Chlordane	0.529	0.0105	0.5274	0	100	57.7	150	0.5198	1.79		
alpha-Chlordane	0.521	0.0105	0.5274	0	98.8	67.6	149	0.5141	1.36		
Surr: Decachlorobiphenyl	0.0577		0.05274		109	54.6	157		0		
Surr: Tetrachloro-m-xylene	0.0517		0.05274		97.9	59.3	135		0		

Sample ID: 1305224-002AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 6/4/2013	RunNo: 8792							
Client ID: MW-13-5	Batch ID: 4749		Analysis Date: 6/6/2013	SeqNo: 176558							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

gamma-Chlordane	0.520	0.0104	0.5221	0	99.6	57.7	150				
alpha-Chlordane	0.514	0.0104	0.5221	0	98.5	67.6	149				
Surr: Decachlorobiphenyl	0.0570		0.05221		109	54.6	157				
Surr: Tetrachloro-m-xylene	0.0505		0.05221		96.7	59.3	135				

Sample ID: 1305224-002ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 6/4/2013	RunNo: 8792							
Client ID: MW-13-5	Batch ID: 4749		Analysis Date: 6/6/2013	SeqNo: 176559							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

gamma-Chlordane	ND	0.0103						0	0	30	
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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

Work Order: 1305224
 CLIENT: Friedman & Bruya
 Project: 305545

QC SUMMARY REPORT
Organochlorine Pesticides by EPA Method 8081

Sample ID: 1305224-002ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 6/4/2013	RunNo: 8792							
Client ID: MW-13-5	Batch ID: 4749		Analysis Date: 6/6/2013	SeqNo: 176559							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

alpha-Chlordane	ND	0.0103						0	0	30	
Chlordane, Total	ND	0.0103						0	0	30	
Surr: Decachlorobiphenyl	0.0510		0.05126		99.5	54.6	157		0		
Surr: Tetrachloro-m-xylene	0.0521		0.05126		102	59.3	135		0		

Sample ID: LCS-4749	SampType: LCS	Units: mg/Kg	Prep Date: 6/4/2013	RunNo: 8792							
Client ID: LCSS	Batch ID: 4749		Analysis Date: 6/6/2013	SeqNo: 176562							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

gamma-Chlordane	0.487	0.0100	0.5000	0	97.5	67	132				
alpha-Chlordane	0.484	0.0100	0.5000	0	96.9	72.4	138				
Surr: Decachlorobiphenyl	0.0523		0.05000		105	54.6	157				
Surr: Tetrachloro-m-xylene	0.0475		0.05000		95.0	59.3	135				

Sample ID: MB-4749	SampType: MBLK	Units: mg/Kg	Prep Date: 6/4/2013	RunNo: 8792							
Client ID: MBLKS	Batch ID: 4749		Analysis Date: 6/6/2013	SeqNo: 176563							
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	0.0412		0.05000		82.5	54.6	157				
Surr: Tetrachloro-m-xylene	0.0498		0.05000		99.6	59.3	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

Client Name: **FB**

 Work Order Number: **1305224**

 Logged by: **Chelsea Ward**

 Date Received: **5/31/2013 9:35:00 AM**
Chain of Custody

1. Were custodial seals present? Yes No Not Required
2. Is Chain of Custody complete? Yes No Not Present
3. How was the sample delivered? Courier

Log In

4. Coolers are present? Yes No NA
- Samples kept in fridge until pick-up.**
5. Was an attempt made to cool the samples? Yes No NA
6. Were all coolers received at a temperature of >0° C to 10.0°C Yes No NA
7. Sample(s) in proper container(s)? Yes No
8. Sufficient sample volume for indicated test(s)? Yes No
9. Are samples properly preserved? Yes No
10. Was preservative added to bottles? Yes No NA
11. Is there headspace present in VOA vials? Yes No NA
12. Did all sample containers arrive in good condition?(unbroken) Yes No
13. Does paperwork match bottle labels? Yes No
14. Are matrices correctly identified on Chain of Custody? Yes No
15. Is it clear what analyses were requested? Yes No
16. Were all holding times able to be met? Yes No

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text" value="Michael Erdahl"/>	Date:	<input type="text" value="5/31/2013"/>
By Whom:	<input type="text" value="Chelsea Ward"/>	Via:	<input checked="" type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text" value="Incorrect Sample"/>		
Client Instructions:	<input type="text" value="See Below."/>		

18. Additional remarks/Disrepancies

Second sample on COC had sample ID MW-13-5 with sampling time of 11AM. On bottle label, sample ID was MW-14-15 with sampling time of 10:05AM. Contacted client to see whether COC was incorrect or if we received the wrong sample. Client verified that we were given the wrong sample and he would have the correct sample ready for pick-up at our convenience.

Item Information

Item #	Temp °C	Condition
Sample	10.0	Good

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

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

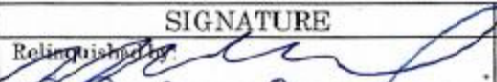
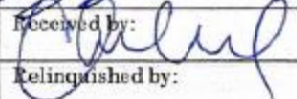
SUBCONTRACTOR <u>Fremont</u>	
PROJECT NAME/NO. <u>305545</u>	PO# <u>C-378</u>
REMARKS <u>Please Email Results</u>	

Page # 1 of 1

TURNAROUND TIME	
<input checked="" type="checkbox"/> Standard (2 Weeks)	
<input type="checkbox"/> RUSH	
Rush charges authorized by: _____	
SAMPLE DISPOSAL	
<input type="checkbox"/> Dispose after 30 days	
<input type="checkbox"/> Return samples	
<input type="checkbox"/> 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
MW-14-5		5/24/13	950	Soil	1							X	
MW-13-5		1	1100	↓	1							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
	Michael Erdahl	Friedman & Bruya	5/30/13	11:15
	Chelsea Ward	FAI	5/31/13	9:35
Relinquished by:				
Received by:				



14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 7, 2013

Paul Riley
The Riley Group, Inc.
17522 Bothell Way NE, Suite A
Bothell, WA 98011

Re: Analytical Data for Project 2012-265B
Laboratory Reference No. 1305-249

Dear Paul:

Enclosed are the analytical results and associated quality control data for samples submitted on May 30, 2013.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal stroke extending to the right.

David Baumeister
Project Manager

Enclosures

Date of Report: June 7, 2013
Samples Submitted: May 30, 2013
Laboratory Reference: 1305-249
Project: 2012-265B

Case Narrative

Samples were collected on May 29, 2013 and received by the laboratory on May 30, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: June 7, 2013
 Samples Submitted: May 30, 2013
 Laboratory Reference: 1305-249
 Project: 2012-265B

CHLORDANE EPA 8081B

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	MW-1					
Laboratory ID:	05-249-01					
Tech. Chlordane	1.7	0.038	EPA 8081B	5-31-13	6-3-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
TCMX	67	39-93				
DCB	65	31-108				
Client ID:	MW-2					
Laboratory ID:	05-249-02					
Tech. Chlordane	0.71	0.040	EPA 8081B	5-31-13	6-3-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
TCMX	69	39-93				
DCB	85	31-108				
Client ID:	MW-3					
Laboratory ID:	05-249-03					
Tech. Chlordane	3.5	0.040	EPA 8081B	5-31-13	6-3-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
TCMX	73	39-93				
DCB	85	31-108				
Client ID:	MW-4					
Laboratory ID:	05-249-04					
Tech. Chlordane	0.10	0.042	EPA 8081B	5-31-13	6-3-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
TCMX	71	39-93				
DCB	89	31-108				
Client ID:	MW-6					
Laboratory ID:	05-249-05					
Tech. Chlordane	ND	0.041	EPA 8081B	5-31-13	6-3-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
TCMX	66	39-93				
DCB	63	31-108				

Date of Report: June 7, 2013
 Samples Submitted: May 30, 2013
 Laboratory Reference: 1305-249
 Project: 2012-265B

CHLORDANE EPA 8081B

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	MW-7					
Laboratory ID:	05-249-06					
Tech. Chlordane	ND	0.046	EPA 8081B	5-31-13	6-3-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
TCMX	65	39-93				
DCB	71	31-108				

Client ID:	MW-8					
Laboratory ID:	05-249-07					
Tech. Chlordane	3.2	0.045	EPA 8081B	5-31-13	6-3-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
TCMX	57	39-93				
DCB	73	31-108				

Client ID:	MW-9					
Laboratory ID:	05-249-08					
Tech. Chlordane	ND	0.044	EPA 8081B	5-31-13	6-3-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
TCMX	67	39-93				
DCB	85	31-108				

Client ID:	MW-10					
Laboratory ID:	05-249-09					
Tech. Chlordane	ND	0.039	EPA 8081B	5-31-13	6-3-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
TCMX	64	39-93				
DCB	80	31-108				

Client ID:	MW-11					
Laboratory ID:	05-249-10					
Tech. Chlordane	1.7	0.039	EPA 8081B	5-31-13	6-3-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
TCMX	65	39-93				
DCB	81	31-108				

Date of Report: June 7, 2013
 Samples Submitted: May 30, 2013
 Laboratory Reference: 1305-249
 Project: 2012-265B

CHLORDANE EPA 8081B

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	MW-12					
Laboratory ID:	05-249-11					
Tech. Chlordane	ND	0.050	EPA 8081B	5-31-13	6-3-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
TCMX	67	39-93				
DCB	85	31-108				

Client ID:	MW-13					
Laboratory ID:	05-249-12					
Tech. Chlordane	ND	0.044	EPA 8081B	5-31-13	6-3-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
TCMX	66	39-93				
DCB	84	31-108				

Client ID:	MW-14					
Laboratory ID:	05-249-13					
Tech. Chlordane	ND	0.042	EPA 8081B	5-31-13	6-3-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
TCMX	65	39-93				
DCB	85	31-108				

Client ID:	MW-15					
Laboratory ID:	05-249-14					
Tech. Chlordane	ND	0.039	EPA 8081B	5-31-13	6-3-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
TCMX	75	39-93				
DCB	94	31-108				

Date of Report: June 7, 2013
 Samples Submitted: May 30, 2013
 Laboratory Reference: 1305-249
 Project: 2012-265B

**CHLORDANE EPA 8081B
 QUALITY CONTROL**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0531W1					
Tech. Chlordane	ND	0.020	EPA 8081B	5-31-13	6-3-13	
Surrogate:	<i>Percent Recovery</i>		<i>Control Limits</i>			
TCMX	65	39-93				
DCB	83	31-108				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0531W1										
	SB	SBD	SB	SBD		SB	SBD				
gamma-BHC	0.0303	0.0295	0.0500	0.0500	N/A	61	59	32-138	3	15	
Heptachlor	0.0363	0.0353	0.0500	0.0500	N/A	73	71	50-124	3	15	
Aldrin	0.0373	0.0364	0.0500	0.0500	N/A	75	73	43-133	2	15	
Dieldrin	0.0995	0.0974	0.125	0.125	N/A	80	78	48-128	2	15	
Endrin	0.112	0.110	0.125	0.125	N/A	89	88	48-139	2	15	
4,4'-DDT	0.0991	0.0978	0.125	0.125	N/A	79	78	52-129	1	15	
Surrogate:											
TCMX						68	68	39-93			
DCB						85	87	31-108			



Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
 - B - The analyte indicated was also found in the blank sample.
 - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
 - E - The value reported exceeds the quantitation range and is an estimate.
 - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
 - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
 - I - Compound recovery is outside of the control limits.
 - J - The value reported was below the practical quantitation limit. The value is an estimate.
 - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
 - L - The RPD is outside of the control limits.
 - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
 - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
 - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
 - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
 - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
 - P - The RPD of the detected concentrations between the two columns is greater than 40.
 - Q - Surrogate recovery is outside of the control limits.
 - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
 - T - The sample chromatogram is not similar to a typical _____.
 - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
 - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
 - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
 - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
 - X - Sample extract treated with a mercury cleanup procedure.
 - X1 - Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.
 - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
 - Z -
- ND - Not Detected at PQL
 PQL - Practical Quantitation Limit
 RPD - Relative Percent Difference

