SITE CHARACTERIZATION
KRIS'S MINI MART
6000 PORTAL WAY
FERNDALE, WA 98248
FS ID# 96443724

prepared for:

Mr. Narain Naidu
Kris's Mini Mart
6000 Portal Way
Ferndale, WA 98248

March 12, 2014

nwhatcom
ENVIRONMENTAL

soil | water | air
compliance consulting

228 East Champion Street, Suite 101, Bellingham, WA 98225
tel 360.752.9571 | **fax** 360.752.9573 | *www.whatcomenvironmental.com*

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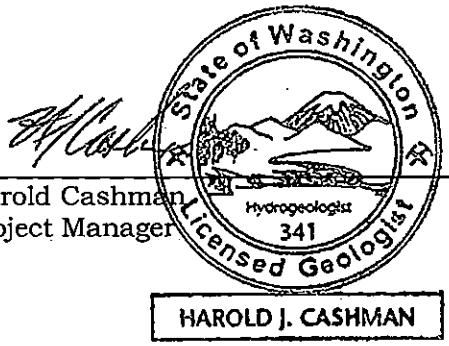

Harold Cashman
Project Manager

Thom Davis
QA/QC Reviewer

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EXECUTIVE SUMMARY

A release of petroleum products to soil was discovered at the Kris's Mini Mart retail fueling station located at 6000 Portal Way in Ferndale, Washington (Figure 1) during tank system maintenance/repair activities performed on a gasoline underground storage tank (UST). A Site Check was conducted following the discovery of a hole in the super unleaded tank (Tank ID#:40536) on July 27, 2012. The leak was located in the bottom of the tank near the dipstick striker plate on the north end of the UST. The leaking tank was reported to Ecology (ERTS #636609). The tank was repaired in August 2012. The site has been listed in the Washington Department of Ecology (Ecology) Leaking Underground Storage Tank (LUST) database since 1992.

Seven soil borings were advanced at the site using a hollow stem auger and seven groundwater monitoring wells were installed on May 7-9, 2013, to characterize the extent of the gasoline release. Soil and groundwater samples were collected for laboratory analysis.

Field screening and laboratory analytical results were used to evaluate the subsurface conditions at the boring locations. Field screening and laboratory analytical results of soil samples collected during the well installation process indicated that petroleum impacted soil is located south of the UST pit and below the fuel dispenser area. The petroleum impacted soil is located at a depth of approximately 6 feet below the ground surface (bgs) in native sandy soil.

Laboratory analytical results for groundwater samples collected from the monitoring wells indicate that petroleum impacted groundwater is located southeast of the gasoline UST pit and in the fuel dispenser area.

This Site Characterization report was prepared by Whatcom Environmental Services on behalf of Kris's Mini Mart. The report documents the results of a Site Characterization conducted in accordance with WAC 173-340-450(5)(b).

1.0 INTRODUCTION

This report documents the results of site characterization/remedial investigation work conducted at Kris's Mini Mart located at 6000 Portal Way in Ferndale, WA (the subject property). The site location is shown on Figure 1. Kris's Mini Mart is an operating retail fueling station and convenience store.

Based on the historical soil and groundwater contamination documented at the site in the 1990's (discussed below) and the discovery of a leaking gasoline tank, a site characterization investigation was initiated. Seven soil borings were advanced at the site using a hollow stem auger and seven groundwater monitoring wells were installed on May 7-9, 2013. Soil samples were collected from each soil boring to further characterize the areal extent of soil contamination previously documented at the subject property during an Underground Storage Tank (UST) Site Check conducted at the property in September 2012 (WES, 2012).

Field screening and laboratory analytical results of soil samples collected during the well installation process indicated that petroleum impacted soil is located south of the UST pit and below the fuel dispenser area. The petroleum impacted soil is located at a depth of approximately 6 feet below the ground surface (bgs) in native sandy soil.

Laboratory analytical results for groundwater samples collected from the monitoring wells indicate that petroleum impacted groundwater is located southeast of the gasoline UST pit and in the fuel dispenser area.

2.0 SUBJECT PROPERTY DESCRIPTION

Kris's Mini Mart is currently an operational retail fueling station. The property has been assigned the Facility Site ID#: 96443724. Four operational USTs are located on the subject property; two regular unleaded tanks (10,000 and 8,000 gallon), one super unleaded tank (8,000 gallon), and one diesel tank (6,000 gallon). The site is listed in the LUST database with its status listed as 'Cleanup Started'. Four historical tanks were removed from the site during a 1990s facility upgrade which razed the entire property and rebuilt a new fueling station and convenience store.

The subject property is situated approximately 0.1 miles east of Interstate 5 (I-5) Freeway Exit #263, approximately 0.35 miles north of the Nooksack River, and approximately 0.9 miles north/northeast of the city of Ferndale's downtown business core. The site is zoned as Highway Commercial by the City of Ferndale. The site is bordered on the north and east by commercial and rural residential properties; on the west by I-5 and Portal Way; and on the south by other rural residential properties. A site location map is provided as Figure 1.

The subject property has a median elevation of approximately 40 feet above mean sea level and the site topography is generally flat. The property is covered by asphalt pavement and two structures; a convenience store and fuel dispenser canopy. Stormwater is collected in catch basins and routed through an oil/water separator located in the southwest corner of the subject property.

2.1 SITE GEOLOGY

The subject property is located in the northern portion of the Puget Sound Basin. The region is characterized by thick sequences of Pleistocene glacial advance outwash and melt-water deposits that settled on a basement of tectonically deformed sedimentary and ancient metamorphic bedrock. The glacial deposits have been reworked by more recent fluvial, lacustrine, and aeolian actions into the landforms present today.

Soils in the area of the subject property are described in the Soil Survey of Whatcom County Area Washington (USDA, 1992). Soils at the property are described as Tromp loam with slopes ranging from 0 to 2 percent. The Tromp loam is a very deep, moderately-well drained soil that formed in a mixture of volcanic ash and loess over glacial outwash.

The site is underlain by glacial outwash of the Sumas Stade of the Pleistocene Epoch (WSDNR, 2000). The outwash consists of loose, moderately to well-sorted gravels, sandy gravels, and coarse to medium sands with rare areas of fine sand and silt. Bedding is massive to well-stratified. Color is brown to gray depending on oxidation state. Thickness ranges from 3 meters to as much as 280 meters.

Field evidence confirmed that the site is underlain by the glacial outwash of the Sumas Stade. The general geologic sequence encountered in the soil borings was:

- 0 to 0.25 ft - Asphalt
- 0.25 to 1.25 ft - Imported fill material consisting of brown sandy gravel. This material was likely used to level the site prior to development.
- 1.25 to 15 ft - Native soil consisting of brown medium sand that was loose and moist to wet (at depth).

The soil boring locations are shown on Figure 2. All of the soil borings encountered medium sand to 14 feet below ground surface (bgs). Soil borelogs are included in Appendix A.

2.2 SOIL PHYSICAL PROPERTIES

Four soil samples collected from the 2013 soil borings (B-8 5.5-6.0, B-10 8.0-8.5, B-10 13.0-13.5, B-13 5.5-6.0) were analyzed for physical properties including grain size distribution, bulk density, porosity, and hydraulic conductivity. All analyses were performed by applicable ASTM, EPA or API methodologies.

The physical properties analysis determined that the site soils have a native hydraulic conductivity ranging from 7.23E-03 cm/sec to 1.12E-02 cm/sec, averaging 6.56E-03 cm/sec. The soil intrinsic permeability ranges from 7.16E-08cm^2 to 1.09E-07 cm^2, averaging 6.45E-08 cm^2. All four samples were categorized as medium sand.

The soil physical properties data are summarized in Table 1. A copy of the physical properties data report is included in Appendix B.

2.3 SITE HYDROGEOLOGY

Groundwater was encountered in each soil boring at a depth of approximately 4 feet bgs. Seven groundwater monitoring wells are currently located on the subject property. Seven new groundwater monitoring wells were installed as part of the 2013 remedial investigation. The elevations of the top of the monitoring well casings were surveyed by a licensed surveyor. Groundwater at the site generally flows from the northwest to the southeast with an average gradient of approximately 0.0025 ft/ft. The groundwater flow direction and gradient maps are presented in Appendix C.

3.0 SITE HISTORY AND PREVIOUS INVESTIGATIONS

Several previous investigations have been conducted at the subject property since 1992 when petroleum contaminated soil was encountered during the upgrade of the site to its current configuration. Two historical reports were found in the Department of Ecology's UST/LUST files; a 1992 UST Site Assessment report and a 1993 Site Closure report. The two reports were reviewed by Whatcom Environmental as part of a subsurface investigation conducted in 2003 (WES, 2003).

Results of the 2003 subsurface investigation indicated that diesel and gasoline range soil and groundwater contamination were located along the southwestern portion of the subject property. An air sparge/vapor extraction system was installed at the site in 2004 to enhance natural bioremediation. Groundwater at the site was monitored between 2003 and 2011.

In November 2010 tank monitoring activities indicated that water was entering the super unleaded tank. A tank tightness test indicated there was a leak on top of the tank at the fill spout riser pipe. The riser pipe was replaced in early 2011. In 2011 tank monitoring activities again indicated that water was entering the super unleaded tank. The riser pipe was re-inspected and found to be intact. The tank was taken out of service. In July 2012 the tank was drained and inspected and water was observed entering the bottom of the tank. A hole in the bottom of the tank was identified at the weld seam of the tank gauging striker plate. The hole along the failed striker plate weld seam was approximately 2 inches long and 1 inch wide and "L" shaped. The hole was repaired by NW Tank Lining and Inspection Inc. on August 28, 2012.

A UST Site Check was conducted following the tank repair per the Underground Storage Tank Regulation WAC 173-360-370 (2). The UST Site Check discovered gasoline range soil and groundwater contamination southeast of the UST pit.

The Site Characterization work was initiated in 2012 and continued in 2013 in accordance with the Model Toxics Control Act WAC 173-340-450(5)(b).

A brief summary of the site ownership history and historical remedial reports is provided below in chronological order.

3.1 HISTORICAL OWNERSHIP SUMMARY

Historical title documents were reviewed and historical Polk City directories were searched to establish the ownership history of the subject property. The first indication of the site as an automobile filling and service station was in a 1931 title document/lease agreement where it was listed as "Anderson's Service", branded as an Associated Oil Company station. The site was listed also in the 1931 Polk directory. The property has also been known as; "Tex's Arco and Big Little Grocery" (1982), "T.J.'s Market" (1987), "Lee's Mini Mart" (1992 - a Texaco branded station). No listing was found for any of those business names in the historical Polk directories. The property ownership history is summarized below:

- Chevron Texaco Corp (Associated Oil) 1931-1937
    - Leased property from Magnus Anderson
- Magnus Anderson and Berna Magdalena Anderson pre- 4/10/45
- James W. Nelson and Viola Anna Nelson 4/10/45 - 8/9/45
- Harold Ahlstedt and Asta C. Ahlstedt 8/9/45 - 6/28/74
- Herman B Filbeck and Bertie Filbeck 6/28/74 - 2/2/76
- Frank E. Sirmans and Donna J. Sirmans 2/2/76 - 2/12/81
- Northwestern Commercial Bank 2/12/81 - 9/20/84
- Thomas James Hull and Alberta K. Hull 6/4/82 - 12/13/86
- Robin and Cathy LaFave 12/13/86- 11/18/94
- Richard G. and Marilyn Sievers 12/13/86 - 7/14/03
- Larry E. and Phyllis L. Bird 12/13/86 - 10/8/90
- Darrell K. Bornstein, Jr. 12/18/87 - 7/3/97
- James Unruh and Leanne Unruh 11/18/94- 10/21/97
- Rick D. Sievers 10/21/97 - 7/14/03
- Narain and Munsi S. Naidu 7/14/03 - present

3.2 1992 - UST SITE ASSESSMENT

A copy of a 1992 UST Site Assessment report prepared by Materials Testing & Consulting of Mount Vernon, Washington was reviewed (MTC, 1992). The report was prepared at the time four new tanks were installed at the site as part of a property

upgrade and remodel project. Five USTs were removed from the ground from four separate tank pits located at three areas on the property (east of the current dispenser canopy and in the southwest and northwest corners of the site). The tank pit soils were sampled and samples collected in the southwest corner were found to be the most highly contaminated by kerosene from leakage of an aboveground storage tank historically located in that vicinity. Water samples collected from the open pits indicated that the southern half of the property had been adversely impacted by petroleum contamination. The report conclusions stated that due to the high water table at the site, impacted soils were not removed and a biological agent would be used to remediate subsurface contamination at the site.

Five groundwater monitoring wells were installed at the site in 1992. The wells were identified as MW-1 through MW-5. The well locations are shown on Figure 2. The wells were presumably installed using saw cut PVC pipe constructed in or near the removed UST tank pits. There are no borelogs or well installation diagrams for the wells, and it is assumed they were installed during backfilling of the tank pits. It is unknown if the original five wells are screened across the water table.

3.3 1993 - SITE CLOSURE REPORT

A copy of a 1993 Site Closure report prepared by Pacific Remediation, Inc. of Mount Vernon, Washington was reviewed (PRI, 1993). The report stated that, following the application of a biological remediation agent, groundwater sampling indicated that the site was cleaned to the applicable cleanup levels in place at the time. No description of the process used to treat the soil and/or groundwater was provided in the report. A note written by Ecology personnel and attached to the document indicated that Ecology recommended further monitoring of the site groundwater and confirmatory soil sampling to help further characterize the site.

3.4 2003 - SUBSURFACE SOIL AND GROUNDWATER INVESTIGATION

A subsurface soil and groundwater investigation was conducted by Whatcom Environmental Services Inc. at the subject property in 2003 (WES, 2003). Six soil borings were drilled at the site using a GeoProbe drill rig to further characterize the extent of subsurface soil and groundwater contamination on the southern portion of the

property. The boring locations are shown on Figure 2. Soil samples were collected from five of the six soil borings. Groundwater samples were also collected from five of the borings. Laboratory analytical results indicated that soil and groundwater in the southwest corner of the property were contaminated with gasoline, diesel, and lube-oil range total petroleum hydrocarbons (TPH) and BTEX constituents at concentrations exceeding the Model Toxics Control Act (MTCA) Method A cleanup levels. The report recommended that further remedial action be conducted at the subject property.

3.5 2003 - PRODUCT RECOVERY SUMP AND AIR SPARGE/VAPOR EXTRACTION SYSTEM INSTALLATION

Remedial actions commenced at the site in March 2003. One product extraction sump was installed along the southern fence line. The extraction sump location is shown on Figure 2. The extraction sump was installed to allow for the recovery of floating petroleum product from the groundwater surface. The extraction sump was constructed of 18-inch diameter vertically slotted PVC piping that was inserted into the ground approximately 6 feet. Pea gravel was used to fill in the area surrounding the pipe up to approximately 40 inches bgs. Clean fill was used to bring the area surrounding the pipe up to grade. A manhole cover was used to protect the top of the extraction sump and the area was asphalted.

The extraction sump was periodically pumped over the course of a year and the oily water and free product were stored in 55-gallon drums prior to offsite disposal. Approximately six full drums of oily water and recovered product were generated. The product thickness in the drums was measured using oil sensitive paste and a volume of recovered product was estimated from the thickness of the layer. Approximately 100 gallons of free product were recovered from the extraction sump.

An air sparge/vapor extraction (AS/VE) system was installed at the site between 2003 and 2004. Six air sparge wells were installed in May 2003 on the southern half of the property (AS-1 through AS-6). The wells were constructed using 2-inch diameter machine slotted PVC. The wells were installed to a depth of approximately 16 feet below ground surface (bgs) and screened from approximately 13 to 16 feet bgs. Copies of the 2003 AS well installation diagrams are included in Appendix D.

The AS/VE system lines were installed in June 2003. The AS lines were constructed using 2 inch PVC. The horizontal VE lines were constructed with 4 inch

perforated corrugated plastic drain line. The VE lines were encased in a geo-textile fabric sock and backfilled in gravel. The AS lines were installed approximately 2 feet bgs and the VE lines were installed approximately 1.5 feet bgs. The lines run to an equipment enclosure located at the southwest corner of the subject property. The AS/VE system components are shown on Figure 2.

Two new monitoring wells (MW-6 and MW-7) were constructed along the southern property fence line on May 30, 2003. The wells were constructed to act as groundwater recirculation wells. Copies of the well installation diagrams are included in Appendix D.

The VE system was brought online on September 17, 2004 after all floating petroleum product had been removed from the extraction sump. The AS system was turned on November 8, 2004. The system has been operational since that time. The original AS blower malfunctioned and was replaced with an air compressor in 2010.

Groundwater monitoring has occurred periodically since 1994. The groundwater monitoring results are discussed in Section 7.

3.6 2012 – UST SITE CHECK

Whatcom Environmental Services Inc. conducted an Underground Storage Tank Site Check for the UST system on September 10, 2012 (WES, 2012). The Site Check was conducted following the discovery of a hole in the super unleaded tank (Tank ID#:40536) in July of that year. The leak was located in the bottom of the tank near the dipstick striker plate on the north end of the UST. The leaking tank was reported to Ecology (ERTS #636609). The tank was repaired in August 2012.

Soil and groundwater samples were collected as part of the Site Check. Soil samples were collected from the four sides of the tank pit (outside of the tank pit footprint) via direct push soil borings in accordance with Ecology's Guidance for Site Checks and Site Assessments for Underground Storage Tanks (Ecology, 2003). Groundwater samples were collected from all soil borings.

Field screening and soil sample analytical results indicated that soil on the south side of the tank pit has been impacted by gasoline range TPH at concentrations exceeding the MTCA Method A target cleanup level. Groundwater analytical results

indicated that shallow groundwater located south and southeast of the tank pit has been impacted by gasoline range TPH and benzene at concentrations exceeding the MTCA Method A cleanup levels.

3.7 2013 – SITE CHARACTERIZATION AND MONITORING WELL INSTALLATION

Additional site characterization work was initiated in May 2013 in order to better characterize the extent of the gasoline release discovered during the UST Site Check. The results of that investigation are presented in this report. Seven soil borings were advanced at the site using a hollow stem auger and seven groundwater monitoring wells were installed. Soil samples were collected from each soil boring to characterize the areal and vertical extent of soil contamination previously documented at the subject property.

Field screening and laboratory analytical results from soil samples collected during the well installation process indicate that petroleum impacted soil is located south of the UST pit, beneath the fuel dispenser islands, and south and east of the fuel dispenser islands at depths ranging from approximately 6 to 14 feet below the ground surface (bgs).

Laboratory analytical results of groundwater samples collected from the monitoring wells indicate that petroleum impacted groundwater is located to the south and southeast of the UST pit and beneath the fuel dispenser islands.

4.0 INVESTIGATIVE METHODS

The subsurface conditions at the site were investigated in an attempt to delineate the areal extent of the gasoline release to soil and groundwater documented in the previous investigations, and to identify any other contamination related to the operation of the property as a retail fueling station. Seven soil borings were drilled and soil samples were collected for laboratory analysis. Seven groundwater monitoring wells were installed in the borings, and groundwater samples were collected for laboratory analysis.

4.1 SOIL BORINGS AND SOIL SAMPLE COLLECTION

Subsurface utilities were publicly located several days prior to drilling and the boring locations were pre-cleared to a depth of approximately 5 feet bgs using a hand auger before initiating each soil boring. The drill rig equipment was decontaminated prior to initiating each soil boring. The borings were continuously cored to an average depth of 14 feet below grade. Soil cores were logged in the field and soil descriptions generally followed ASTM D 2487 'Unified Soil Classification System' procedures for description and identification of soils. The soil borings were identified as B-8 through B-14. Soil boring logs are included in Appendix A.

The soil cores were evaluated in the field for organic vapors using a photoionization detector (PID) and for petroleum products using sheen tests. Immediately after the soil cores were described, a portion of each sample was sheen tested and the remainder of the sample was placed in a labeled re-sealable bag. The PID was inserted into the re-sealable bag in order to evaluate the presence of organic vapors, and a headspace organic vapor detection in parts per million (ppm) was recorded on the boring log. Sheen tests were recorded as: NS – no sheen, VSS – very slight sheen, SS – slight sheen, MS – moderate sheen, and HS – heavy sheen.

One or more soil samples were collected from each soil boring location via EPA Method 5035A in sample containers provided by the lab. Soil samples were stored on ice in a cooler immediately after collection. Standard industry protocols regarding sample collection, preservation, chain-of-custody, and shipping were followed. The

samples were identified by both the boring number from which they originated and the depth from which they were collected.

4.2 SOIL SAMPLE ANALYTICAL PROCEDURES

The samples were analyzed at ALS Laboratory Group in Everett, Washington. ALS is accredited by the Washington State Department of Ecology. Strict chain-of-custody and QA/QC protocols were followed for each sample. The following laboratory methods were used to analyze the soil samples:

NWTPH-Dx: Diesel and oil range TPH

NWTPH-Gx: Gasoline range TPH

EPA Method 8021: Benzene, toluene, ethylbenzene, and total xylenes (BTEX constituents) and Methyl tert-butyl ether (MTBE)

EPA Method 8260: Ethylene dichloride (EDC) and Ethylene dibromide (EDB)

EPA Method 6020: Lead (Pb)

4.3 GROUNDWATER MONITORING WELL INSTALLATION AND GROUNDWATER SAMPLING PROCEDURE

Groundwater monitoring wells were installed in each of the seven soil borings. The wells were identified as MW-8 through MW-14. The monitoring wells were installed to a depth of 15 feet bgs and were constructed with machine slotted, 2-inch diameter PVC pipe. The well screen lengths are 10 feet and the top of the PVC well casings are protected with flush mounted well monuments. The 2013 groundwater monitoring well construction diagrams are provided in Appendix E.

The wells were developed using disposable bailers. Water was bailed from each well until the turbidity decreased. Each monitoring well was sampled using the low-flow sampling technique, recommended and approved by the U.S. Environmental Protection Agency (USEPA, 1998). The low-flow sampling technique minimizes the impact of the purging process on groundwater chemistry and provides an accurate representation of the groundwater's condition at the time of sampling. A YSI Model 556 multi probe meter was used in conjunction with a flow-through cell to monitor groundwater chemistry

during the low-flow purging process. Purging was considered adequate and groundwater samples were collected when the water chemistry parameters had stabilized.

Groundwater samples were collected in sample bottles provided by the analytical laboratory and stored on ice in a cooler immediately after collection. Dissolved arsenic and lead samples were filtered in the field using a disposable 0.45 µm in-line filter. One duplicate sample and one equipment blank sample were also collected during each sampling event. Standard industry protocols regarding sample collection, preservation, chain-of-custody, and shipping were followed. Groundwater samples were identified by the monitoring well identification number of the well from which they were collected.

4.4 GROUNDWATER SAMPLE ANALYTICAL PROCEDURE

All groundwater samples were analyzed at ALS Laboratory Group in Everett, Washington. Strict chain-of-custody and QA/QC protocols were followed for each sample. The following laboratory methods were used to analyze the groundwater samples:

NWTPH-Dx: Diesel and oil range TPH

NWTPH-Gx: Gasoline range TPH

EPA Method 8021: BTEX and MTBE

EPA Method 8260 SIM: EDC and EDB

EPA Method 200.8: Dissolved Pb

All samples were analyzed within the prescribed holding times, and the equipment blank and duplicate sample results were within acceptable limits.

5.0 SOIL AND GROUNDWATER SCREENING LEVELS

The MTCA Method A target cleanup levels for soil and groundwater were selected as screening levels for this site characterization. Those levels have been established for unrestricted land use in accordance with WAC 173-340 and can be found in Table 740-1 and Table 740-2 (Ecology, 2007).

A simplified TEE (WAC 173-340-7492) was conducted and it was determined that the concentrations of contaminants listed in MTCA Table 749-2 (Ecology 2007) for unrestricted land use are required to be used as soil cleanup levels at the subject property (WAC 173-340-7492(1)(d)). The only soil contaminants of potential concern at the site affected by the TEE determination are gasoline range organics, diesel range organics, and lead. The MTCA Method A cleanup level for gasoline range organics in soil is 100 mg/kg, and the Table 749-2 (Priority Contaminants of Ecological Concern) cleanup level for gasoline range organics in soil is 200 mg/kg. The MTCA Method A cleanup level for diesel range organics in soil is 2,000 mg/kg, and the Table 749-2 cleanup level for diesel range organics in soil is 460 mg/kg. The MTCA Method A cleanup level for lead in soil is 250 mg/kg, and the Table 749-2 cleanup level for lead in soil is 220 mg/kg.

6.0 SOIL SAMPLE RESULTS

The site characterization work described herein has provided further information related to the horizontal and vertical extent of contamination at the site. The soil boring locations are shown on Figure 2. The soil sample descriptions, depths of collection and field screening results are included in Table 2, and the laboratory analytical data are summarized in Table 3. The original laboratory analytical data reports are provided in Appendix F.

Fifteen soil samples were collected (B-8 through B-14 at various depths) to further characterize the contamination discovered at the subject property. Multiple soil samples (*B-9 6ft, B-10 6.5ft, B-11 6.5ft, B-11 10ft, B-12 6.5ft*) contained detections of gasoline range TPH at concentrations exceeding the MTCA Method A target cleanup level. Samples *B-14 2ft* and *B-14 9ft* contained diesel range TPH exceeding the MTCA Method A target cleanup level. Multiple soil samples (*B-9 6ft, B-9 14ft, B-10 6.5ft, B-11 6.5ft, B-12 6.5ft, and B-13 6.5ft*) contained BTEX constituent concentrations above the target cleanup levels. Several soil samples contained natural background concentrations of lead (ranging up to 5.8 mg/kg) which all met the MTCA Method A target cleanup level of 250 mg/kg. The natural background levels for lead are approximately 17 mg/kg Statewide and approximately 10.8 mg/kg for Whatcom/Skagit Counties (Ecology, 1994). The soil analytical data are summarized in Table 3.

All samples were analyzed within the prescribed holding times, and sample analytical QA/QC results were within acceptable limits.

7.0 GROUNDWATER SAMPLE RESULTS

Groundwater samples were collected for laboratory analysis in May, August, and November 2013, and February 2014. The groundwater monitoring well locations are shown on Figure 3. Groundwater analytical data are summarized in Table 4. The original laboratory analytical data reports are provided in Appendix G.

The water quality indicator parameter measurements were collected immediately prior to sample collection as per the EPA recommended low-flow groundwater sampling method (USEPA 1998). The depth-to-water and final water quality indicator parameter measurements for each well are shown on Table 5.

Gasoline range TPH and BTEX constituents were detected in the samples collected from monitoring wells MW-8 through MW-13 during the four quarterly sampling events. Gasoline range TPH and BTEX constituents were detected at concentrations which exceeded the MTCA Method A target cleanup levels in wells MW-8, MW-9, MW-10, MW-11, MW-12, and MW-13. Diesel range TPH was detected at concentrations which exceeded the MTCA Method A target cleanup level in wells MW-11, MW-12, and MW-14.

Concentrations of MTBE, EDC, EDB, and lead were not detected in any of the wells at concentrations above the laboratory's reporting limits during any of the sampling events.

Based on the gasoline and diesel concentrations detected in wells MW-11 and MW-12, it appears that the dissolved gasoline plume and diesel plume have co-mingled beneath the fuel dispenser area. Dissolved gasoline and diesel range TPH concentrations detected in February 2014 are shown on Figure 4.

8.0 TERRESTRIAL ECOLOGICAL EVALUATION

In order to confirm the site is not a threat to the environment, a terrestrial ecological evaluation (TEE) was conducted in accordance with WAC 173-340-7490. The goal of the TEE is to determine if contaminants remaining onsite pose a threat to terrestrial ecological receptors (plants and wildlife). The site did not qualify for a primary exclusion (WAC 173-340-7491) because there were more than 1.5 acres of undeveloped land located within 500 feet of the site. A simplified TEE (WAC 173-340-7492) was conducted and it was determined that the concentrations of contaminants listed in Table 749-2 for industrial properties are required to be used as cleanup levels at the subject property (WAC 173-340-7492(1)(d)).

Documentation related to the TEE decision making process is included in Appendix H.

9.0 CONCLUSIONS

A site characterization investigation was completed at the Kris' Mini Mart retail fueling station located at 6000 Portal Way in Ferndale, Washington. The investigation was undertaken in an effort to characterize the subsurface soil and groundwater conditions at the site and to establish a groundwater monitoring well system.

Seven hollow stem auger soil borings were advanced to a depth of 15 feet bgs on May 7-9, 2013. One or more soil samples were collected from each soil boring location for laboratory analysis to characterize the extent of soil contamination present at the site. Soil sample results indicated that gasoline range TPH and benzene were present at concentrations which exceeded the MTCA Method A target cleanup levels at depths ranging from 6 to 10 feet bgs in the native sandy soils located south and southeast of the USTs and beneath the fuel dispenser islands. Diesel range TPH was detected at concentrations which exceeded the MTCA Method A target cleanup level at depths ranging from 2 to 9 feet bgs south of the fuel dispenser islands.

Groundwater monitoring wells were installed in each soil boring. The depth to water was determined to range from approximately 3 to 5 feet bgs. Groundwater was determined to flow towards the southeast. Groundwater sample results indicated that gasoline range TPH and BTEX constituents were present at concentrations which exceeded the MTCA Method A target cleanup levels in wells located south and southeast of the USTs and beneath the fuel dispenser islands. Diesel range TPH was detected at concentrations which exceeded the MTCA Method A target cleanup level in wells located between the fuel dispenser islands and south of the fuel dispenser islands.

Based on the gasoline and diesel concentrations detected in wells MW-11 and MW-12, it appears that the dissolved gasoline plume and diesel plume have co-mingled beneath the fuel dispenser area.

A Feasibility Study will be conducted to evaluate remedial options for the site.

10.0 LIMITATIONS

No site investigation can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Performance of this investigation by Whatcom Environmental Services Inc. is intended to reduce, but not eliminate, uncertainty regarding the potential for environmental contamination in connection with the subject property.

The interpretation of subsurface soil and groundwater conditions is based on Whatcom Environmental Services' field observations and chemical analytical data collected from relatively widely spaced sampling locations at the site. It is possible that contamination exists beneath portions of the site that were not explored, sampled, or analyzed. No warranty, express or implied, is given regarding the presence of hidden or unidentified sources of contamination of the subject property. In addition, no warranty, express or implied is given regarding geotechnical or geologic hazards.

This environmental report is based on conditions that existed at the time the investigation was performed and samples collected. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, or by natural events such as floods, earthquakes, ground instability, or groundwater fluctuations.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted environmental practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

This report has been prepared for use by Kris's Mini Mart (Mr. Narain Naidu). Whatcom Environmental Services prepares a report for the client's exclusive use for a particular project and in accordance with generally accepted practices at the time of investigation. This report was prepared for exclusive use by the client and its agents and may not be used, relied upon, or assigned to a third party without written consent from Whatcom Environmental Services Inc. This report is not intended for use by others, and the information contained herein is not applicable to other sites. This report may be made available to regulatory agencies.

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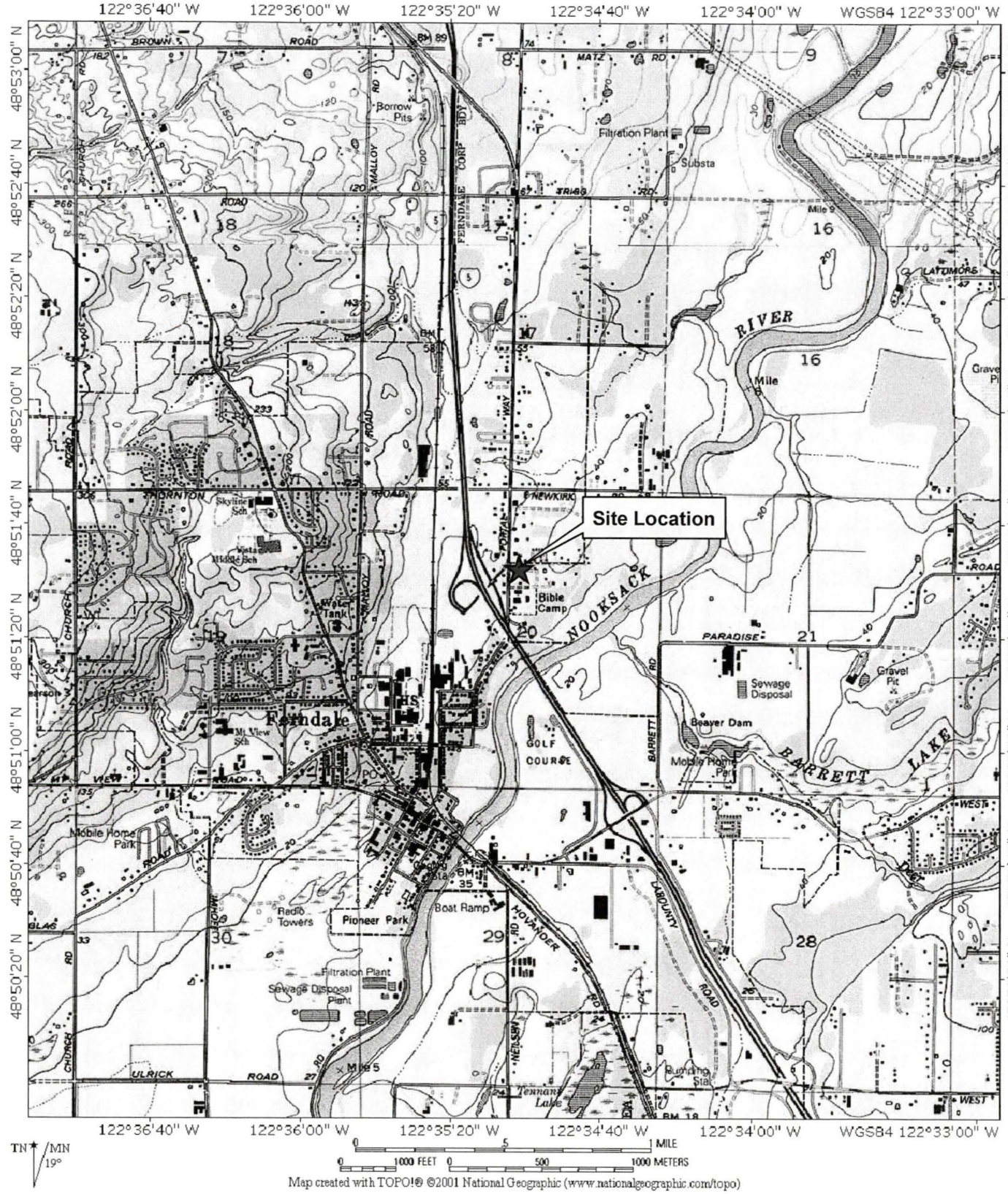
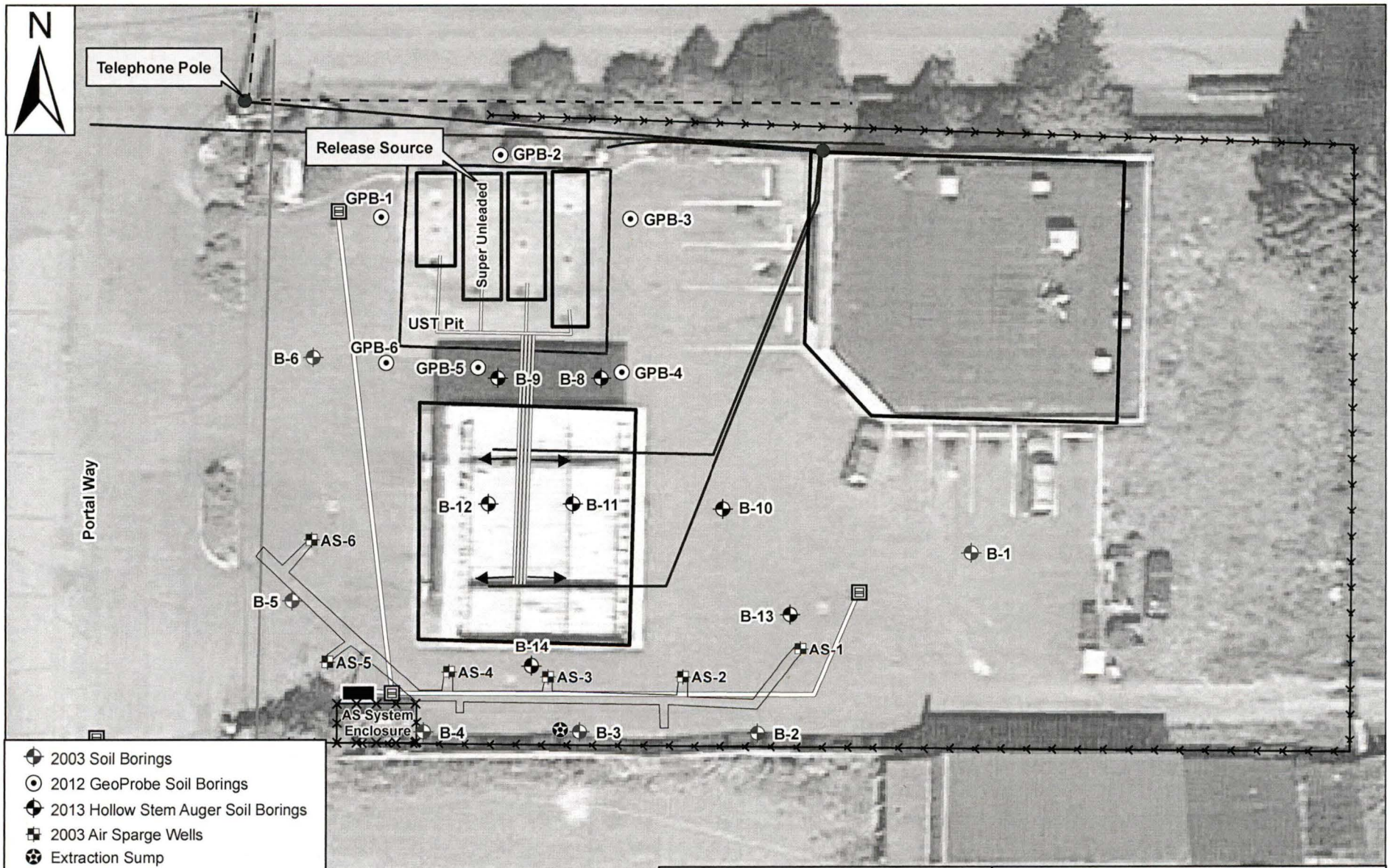


Map created with TOPO!® ©2001 National Geographic (www.nationalgeographic.com/topo)

Prepared for:	Prepared by:	Site Location Map	
Kris's Mini Mart	whatcom ENVIRONMENTAL	Kris's Mini Mart 10/17/13	Figure 1



All data are approximate and should be used as relative location reference only.
2011 Aerial Photograph (GoogleEarth)

0 10 20 40 60 Feet

1 inch equals 30 feet

Prepared for:

Kris's Mini Mart

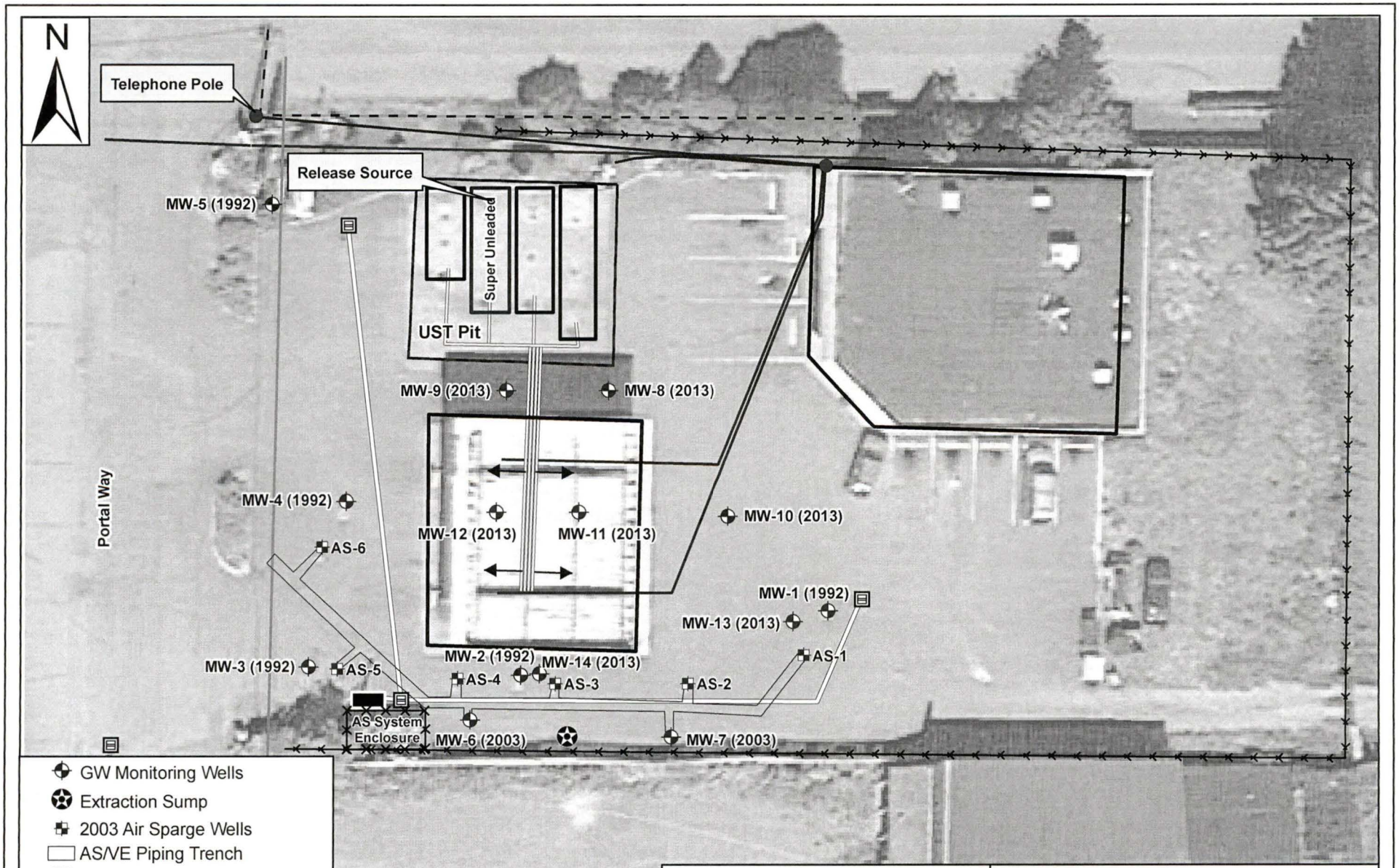
Prepared by:

whatcom ENVIRONMENTAL

Soil Boring Location Map

Kris's Mini Mart
3/4/14

Figure 2



All data are approximate and should be used as relative location reference only.
2011 Aerial Photograph (GoogleEarth)

0 10 20 40 60 Feet

1 inch equals 30 feet

Prepared for:

Kris's Mini Mart

Prepared by:

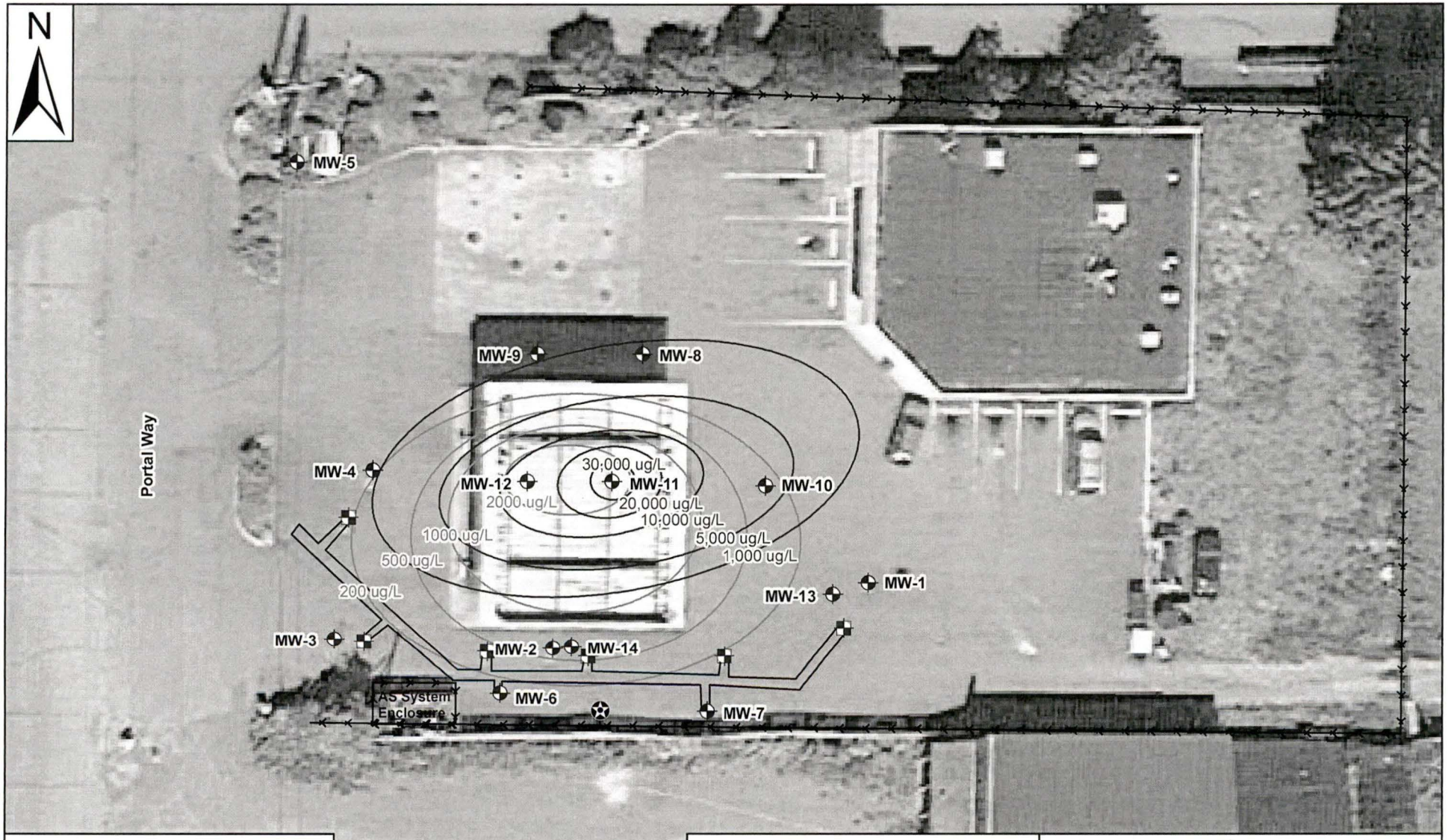
whatcom ENVIRONMENTAL

Groundwater Monitoring Well Location Map

Kris's Mini Mart

3/4/14

Figure 3



Monitoring Wells
2003 Air Sparge Wells
AS/VE Piping Trench
Extraction Sump
Gx Concentrations 2/6/14
Dx Concentrations 2/6/14

All data are approximate and should be used for relative location reference only.
2011 Aerial Photograph (GoogleEarth)

0 30 60 Feet
1 inch equals 30 feet

Prepared for:

Kris's Mini Mart

Prepared by:

whatcom ENVIRONMENTAL

Dissolved Gasoline & Diesel Concentration Map (2/6/2014)

Kris's Mini Mart
3/10/14

Figure 4

Table 1. Soil Physical Properties - Kris's Mini Mart, 6000 Portal Way, Ferndale

Sample ID	Date	Grain Density g/cm^3	Dry Bulk Density g/cm^3	Volumetric Water Content cm^3/cm^3	Total Measured Porosity cm^3/cm^3	Air Filled Porosity cm^3/cm^3	Intrinsic Permiability cm^2	Native Hydraulic Conductivity cm/sec	Description USCS/ATSM	Median Grain Size mm
B-8 5.5-6.0	5/21/2013	2.71	1.49	0.452	0.234	0.217	1.09E-07	1.12E-02	Medium Sand	0.611
B-10 8.0-8.5	5/21/2013	2.70	1.54	0.429	0.112	0.317	2.29E-08	2.33E-03	Medium Sand	0.481
B-10 13.0-13.5	5/21/2013	2.71	1.57	0.419	0.191	0.229	7.16E-08	7.23E-03	Medium Sand	0.55
B-13 5.5-6.0	5/21/2013	2.70	1.63	0.397	0.177	0.220	5.46E-08	5.48E-03	Medium Sand	0.877

Table 2. Soil Sample Descriptions - Kris's Mini Mart, 6000 Portal Way, Ferndale

Sample ID	Date	Location and Description	Sheen Test*	PID (ppm)
B-8 (8.5 ft)	5/7/13	Collected 8.5 ft bgs from southeast corner of UST pit. Medium sand, brown, minor gravel, loose, wet	NS	128
B-9 (6 ft)	5/7/13	Collected 6 ft bgs from south of center of UST pit, at first indication of petroleum impacts. Medium sand, brown, loose, wet	MS	821
B-9 (9 ft)	5/7/13	Collected 9 ft bgs from south of center of UST pit. Medium sand, brown, loose, wet	SS	860
B-9 (14 ft)	5/7/13	Collected 14 ft bgs from south of center of UST pit, at bottom of boring. Medium sand, brown, loose, wet	NS	11.5
B-10 (6.5 ft)	5/8/13	Collected 6.5 ft bgs east of dispenser slab at indication of petroleum impacts. Medium sand, brown, loose, wet	HS	4800
B-10 (14 ft)	5/8/13	Collected 6.5 ft bgs east of dispenser slab at bottom of boring. Medium sand, brown, loose, wet	NS	65
B-11 (6.5 ft)	5/9/13	Collected 6.5 ft bgs beneath east side of dispenser slab at indication of petroleum impacts. Medium sand, brown, loose, wet	HS	2705
B-11 (10 ft)	5/9/13	Collected 10 ft bgs beneath east side of dispenser slab Medium sand, brown, loose, wet	VSS	564
B-11 (15 ft)	5/9/13	Collected 15 ft bgs beneath east side of dispenser slab at bottom of boring. Medium sand, minor gravel, brown, loose, wet	NS	2
B-12 (6.5 ft)	5/9/13	Collected 6.5 ft bgs beneath west side of dispenser slab at indication of petroleum impacts.	MS	1516

Table 2. Soil Sample Descriptions - Kris's Mini Mart, 6000 Portal Way, Ferndale

Sample ID	Date	Location and Description	Sheen Test*	PID (ppm)
		Medium sand, brown, loose, moist		
B-13 (6.5 ft)	5/7/13	Collected 6.5 ft bgs east of south end of dispenser slab at indication of petroleum impacts.	MS	147
		Medium sand, brown, loose, wet		
B-13 (14 ft)	5/7/13	Collected 14 ft bgs east of south end of dispenser slab at bottom of boring.	NS	0.0
		Medium sand, brown, loose, wet		
B-14 (2 ft)	5/7/13	Collected 2 ft bgs south of center of dispenser slab at indication of petroleum impacts.	SS	190
		Medium sand, minor gravel, brown, loose, moist		
B-14 (6 ft)	5/7/13	Collected 6 ft bgs south of center of dispenser slab.	SS	4
		Medium sand, brown, loose, moist		
B-14 (9 ft)	5/7/13	Collected 9 ft bgs south of center of dispenser slab at indication of petroleum impacts.	MS	302
		Medium sand, brown, loose, wet		
B-16 (6.5 ft)	5/9/13	Duplicate sample collected 6.5 ft bgs from B-11.	HS	2705
		Medium sand, brown, loose, wet		

* NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

Table 3. Soil Sample Analytical Results - Kris's Mini Mart, 6000 Portal Way, Ferndale

Sample ID	Date	NWTPH-Gx Volatile Range mg/kg	NWTPH-Dx Diesel Range mg/kg	NWTPH-Dx Oil Range mg/kg	EPA-8021 Benzene mg/kg	EPA-8021 Toluene mg/kg	EPA-8021 Ethylbenzene mg/kg	EPA-8021 Xylenes mg/kg	EPA-8021 MTBE mg/kg	EPA-8260 EDB mg/kg	EPA-8260 EDC mg/kg	EPA-6020 Lead mg/kg
MTCA Method A Clean-up Levels		100/30*	2,000	2,000	0.03	7	6	9	0.1	0.005	--	250
Table 749-2 Cleanup Levels		200	460	--	--	--	--	--	--	--	--	220
B-8 (8.5 ft)	5/7/13	4.6	ND(<25)	ND(<50)	ND(<0.03)	ND(<0.05)	ND(<0.05)	ND(<0.20)	ND(<0.10)	ND(<5.0)	ND(<10)	2.0
B-9 (6 ft)	5/7/13	**1300**	ND(<220)	ND(<50)	*ND(<0.60)*	ND(<1.0)	**6.1**	**7.0**	*ND(<2.0)*	ND(<5.0)	ND(<10)	1.9
B-9 (9 ft)	5/7/13	**92**	ND(<25)	ND(<50)	*ND(<0.06)*	**0.12**	0.19	ND(<0.40)	*ND(<0.20)*	NA	NA	NA
B-9 (14 ft)	5/7/13	ND(<3.0)	ND(<25)	ND(<50)	**0.12**	0.085	ND(<0.05)	ND(<0.20)	ND(0.10)	NA	NA	NA
B-10 (6.5 ft)	5/8/13	**4900**	ND(<220)	ND(<50)	*ND(<3.0)*	**82**	**21**	**300**	*ND(<10)*	ND(<5.0)	ND(<10)	2.1
B-10 (14 ft)	5/8/13	ND(<3.0)	NA	NA	ND(<0.03)	0.061	ND(<0.05)	0.24	ND(<0.10)	NA	NA	NA
B-11 (6.5 ft)	5/9/13	**3000**	ND(<220)	ND(<50)	*ND(<1.5)*	**36**	**22**	**300**	*ND(<5.0)*	ND(<5.0)	ND(<10)	2.3
B-11 (10 ft)	5/9/13	**59**	ND(<25)	ND(<50)	ND(<0.03)	0.54	0.44	4.2	ND(<0.10)	NA	NA	NA
B-11 (15 ft)	5/9/13	ND(<3.0)	NA	NA	ND(<0.03)	ND(<0.05)	ND(<0.05)	ND(<0.20)	ND(<0.10)	NA	NA	2
B-12 (6.5 ft)	5/9/13	**2600**	ND(<220)	ND(<50)	*ND(<1.2)*	ND(<2.0)	2.2	**110**	*ND(<4.0)*	NA	NA	NA
B-13 (6.5 ft)	5/7/13	6.2	ND(<25)	ND(<50)	**0.031**	0.072	ND(<0.05)	ND(<0.20)	ND(<0.10)	NA	NA	NA
B-13 (14 ft)	5/7/13	ND(<3.0)	NA	NA	ND(<0.03)	ND(<0.05)	ND(<0.05)	ND(<0.20)	ND(<0.10)	NA	NA	NA
B-14 (2 ft)	5/7/13	*ND(<130)*	**2200**	1400	*ND(<0.30)*	ND(<0.50)	ND(<0.50)	ND(<2.0)	ND(<1.0)	NA	NA	NA
B-14 (6 ft)	5/7/13	ND(<3.0)	330	310	ND(<0.03)	ND(<0.05)	ND(<0.05)	ND(<0.20)	ND(<0.10)	NA	NA	NA
B-14 (9 ft)	5/7/13	ND(<70)	**2600**	950	*ND(<0.30)*	ND(<0.50)	1.1	ND(<2.0)	ND(<1.0)	ND(<5.0)	ND(<10)	5.8
B-16 (6.5 ft) (dup. of B-11)	5/9/13	**2600**	ND(<220)	ND(<50)	ND(<1.5)	**22**	**15**	**230**	*ND(<5.0)*	NA	NA	2.2

* - Cleanup level dependent on BTEX concentrations

ND - indicates analyte was not detected at level above reporting limit (shown in parentheses)

NA - indicates that the sample was Not Analyzed for the specified analyte

BOLD - indicates that the concentration in the sample exceeds the MTCA Method A target cleanup levels

Italics - indicated that the laboratory reporting limit was rasied above the MTCA Method A target cleanup level due to dilution of the sample

All samples collected using EPA Method 5035A

Table 4. Groundwater Sample Analytical Results - Kris's Mini Mart, 6000 Portal Way, Ferndale

Sample ID	Date	NWTPH-Gx Gasoline Range µg/L	NWTPH-Dx Diesel Range µg/L	NWTPH-Dx Lube-Oil Range µg/L	EPA-8021 Benzene µg/L	EPA-8021 Toluene µg/L	EPA-8021 Ethylbenzene µg/L	EPA-8021 Xylenes µg/L	EPA-8021 MTBE µg/L	EPA-8260 EDC µg/L	EPA-8260 EDB µg/L	EPA-200.8 Lead (Dissolved) µg/L
MTCA Method A Clean-up Levels		1,000/800*	500	500	5	1,000	700	1,000	20	5	0.01	15
MW-1	2/22/1994	500	NA	NA	**46**	ND(<100)	5.6	15.7	NA	NA	NA	NA
	4/5/1995	40	NA	NA	**6.1**	ND(<1.0)	ND(<1.0)	ND(<1.0)	NA	NA	NA	NA
	2/6/2003	130	ND(<130)	ND(<250)	**980**	50	2	ND(<3)	ND(<3)	NA	NA	NA
	7/26/2005**	Not enough water in well to sample										
	10/26/2006	Not enough water in well to sample										
	2/14/2007	ND(<50)	ND(<130)	ND(<250)	**45**	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	7/11/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/27/2008	ND(<50)	ND(<130)	ND(<250)	**22**	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	9/11/2008	Not enough water in well to sample										
	2/24/2009	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	2/9/2010	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	NA	NA	NA	NA
	11/9/2010	ND(<50)	NA	NA	**7.1**	ND(<1)	ND(<1)	ND(<3)	NA	NA	NA	NA
	2/16/2011	ND(<50)	ND(<130)	ND(<250)	1	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	11/3/2011	Not enough water in well to sample										
	5/23/2013	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	8/12/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/6/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	2/22/1994	ND(<100)	NA	NA	ND(<1)	ND(<1)	ND(<1)	ND(<1)	NA	NA	NA	NA
	6/20/1994	400	NA	NA	**5.2**	0.8	4.6	9.5	NA	NA	NA	NA
	4/5/1995	700	NA	NA	**27**	ND(<3)	3	9	NA	NA	NA	NA
	11/18/2002	**2,800**	**4,100**	**2,300**	**2,000**	170	11	20	**180**	NA	NA	NA
	2/6/2003	**1,600**	**2,300**	**920**	**4,000**	99	11	19	ND(<15)	NA	NA	NA
	7/26/2005	**2,700**	**1,400**	**810**	**1,200**	300	59	330	ND(<60)	NA	NA	NA
	10/26/2006	Not enough water in well to sample										
	2/14/2007	ND(<250)	**5,200**	**2,600**	**86**	16	36	130	ND(<3)	NA	NA	NA
	7/11/2007	**1,400**	**800**	310	**150**	40	50	180	3	NA	NA	NA
	2/27/2008	270	320	ND(<250)	**26**	3	14	58	ND(<3)	NA	NA	NA
	9/11/2008	**980**	**1,400**	340	**22**	6	28	110	NA	NA	NA	NA
	2/24/2009	300	**2,200**	**740**	**7**	5	7	23	ND(<3)	NA	NA	NA
	2/24/2009 (dup)	310	**2,000**	**740**	**7**	5	8	26	ND(<3)	NA	NA	NA
	2/9/2010	120	**2,400**	**690**	3.6	1.3	3.1	4.0	NA	NA	NA	NA
	11/9/2010	81	NA	NA	2.2	ND(<1)	ND(<1)	ND(<3)	NA	NA	NA	NA
	2/16/2011	ND(<50)	NA	NA	1.2	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	11/3/2011	110	**2,000**	**930**	1.1	ND(<1)	1.7	ND(<3)	NA	NA	NA	NA
	8/12/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/6/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 4. Groundwater Sample Analytical Results - Kris's Mini Mart, 6000 Portal Way, Ferndale

Sample ID	Date	NWTPH-Gx Gasoline Range µg/L	NWTPH-Dx Diesel Range µg/L	NWTPH-Dx Lube-Oil Range µg/L	EPA-8021 Benzene µg/L	EPA-8021 Toluene µg/L	EPA-8021 Ethylbenzene µg/L	EPA-8021 Xylenes µg/L	EPA-8021 MTBE µg/L	EPA-8260 EDC µg/L	EPA-8260 EDB µg/L	EPA-200.8 Lead (Dissolved) µg/L
MTCA Method A Clean-up Levels		1,000/800*	500	500	5	1,000	700	1,000	20	5	0.01	15
MW-3	2/22/1994	ND(<100)	NA	NA	ND(<1)	ND(<1)	ND(<1)	ND(<1)	NA	NA	NA	NA
	6/20/1994	ND(<100)	NA	NA	ND(<1)	ND(<1)	ND(<1)	ND(<1)	NA	NA	NA	NA
	4/5/1995	ND(<100)	NA	NA	0.8	ND(<1)	ND(<1)	ND(<1)	NA	NA	NA	NA
	2/6/2003	ND(<50)	480	**750**	4	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	7/26/2005	Not enough water in well to sample										
	10/26/2006	Not enough water in well to sample										
	2/14/2007	ND(<50)	250	300	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	7/11/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/27/2008	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	9/11/2008	Not enough water in well to sample										
	2/24/2009	ND(<50)	140	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	2/9/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/9/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/16/2011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/3/2011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/23/2013	ND(<50)	**1,000**	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	8/12/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/6/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	6/20/1994	ND(<100)	NA	NA	ND(<1)	42	ND(<25)	ND(<25)	NA	NA	NA	NA
	4/5/1995	ND(<100)	NA	NA	ND(<1)	2	ND(<25)	ND(<25)	NA	NA	NA	NA
	11/18/2002	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	2/6/2003	ND(<50)	ND(<130)	ND(<250)	**14**	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	7/26/2005	ND(<50)	ND(<130)	ND(<250)	**5**	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	10/26/2006	Not enough water in well to sample										
	2/14/2007	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	7/11/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/27/2008	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	9/11/2008	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	2/24/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/9/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/9/2010	ND(<50)	NA	NA	ND(<1)	ND(<1)	ND(<1)	ND(<3)	NA	NA	NA	NA
	2/16/2011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/3/2011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/23/2013	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	8/12/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/6/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 4. Groundwater Sample Analytical Results - Kris's Mini Mart, 6000 Portal Way, Ferndale

Sample ID	Date	NWTPH-Gx Gasoline Range µg/L	NWTPH-Dx Diesel Range µg/L	NWTPH-Dx Lube-Oil Range µg/L	EPA-8021 Benzene µg/L	EPA-8021 Toluene µg/L	EPA-8021 Ethylbenzene µg/L	EPA-8021 Xylenes µg/L	EPA-8021 MTBE µg/L	EPA-8260 EDC µg/L	EPA-8260 EDB µg/L	EPA-200.8 Lead (Dissolved) µg/L
MTCA Method A Clean-up Levels		1,000/800*	500	500	5	1,000	700	1,000	20	5	0.01	15
MW-5	2/25/2003	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	7/26/2005	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	10/26/2006	Not enough water in well to sample										
	2/14/2007	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	7/11/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/27/2008	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	9/11/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/24/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/9/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/9/2010	ND(<50)	NA	NA	ND(<1)	ND(<1)	ND(<1)	ND(<3)	NA	NA	NA	NA
	2/16/2011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/3/2011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/23/2013	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	8/12/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/6/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	7/26/2005	**1,300**	**1,400**	ND(<250)	**740**	31	9	65	ND(<15)	NA	NA	NA
	10/26/2006	ND(<50)	**2,800**	**1,300**	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	2/14/2007	ND(<50)	**740**	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	7/11/2007	ND(<50)	**4,900**	**640**	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	2/27/2008	ND(<50)	**2,100**	420	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	9/11/2008	ND(<50)	360	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	2/24/2009	ND(<50)	**3,100**	390	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	2/9/2010	ND(<50)	**2,200**	350	ND(<1)	ND(<1)	ND(<1)	ND(<3)	NA	NA	NA	NA
	11/9/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/16/2011	ND(<50)	**810**	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	11/3/2011	60	**840**	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	NA	NA	NA	NA
	5/23/2013	ND(<50)	**7,800**	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	8/12/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/6/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 4. Groundwater Sample Analytical Results - Kris's Mini Mart, 6000 Portal Way, Ferndale

Sample ID	Date	NWTPH-Gx Gasoline Range µg/L	NWTPH-Dx Diesel Range µg/L	NWTPH-Dx Lube-Oil Range µg/L	EPA-8021 Benzene µg/L	EPA-8021 Toluene µg/L	EPA-8021 Ethylbenzene µg/L	EPA-8021 Xylenes µg/L	EPA-8021 MTBE µg/L	EPA-8260 EDC µg/L	EPA-8260 EDB µg/L	EPA-200.8 Lead (Dissolved) µg/L
MTCA Method A Clean-up Levels		1,000/800*	500	500	5	1,000	700	1,000	20	5	0.01	15
MW-7	7/26/2005	**130,000**	**14,000**	**5,100**	**24,000**	**29,000**	**1,700**	**14,000**	*ND(<1500)*	NA	NA	NA
	10/26/2006	ND(<50)	**1,600**	**790**	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	2/14/2007	ND(<50)	**900**	**540**	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	7/11/2007	ND(<50)	320	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	2/27/2008	ND(<50)	500	280	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	9/11/2008	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	NA	NA	NA
	2/24/2009	56	340	250	ND(<1)	ND(<1)	1	ND(<3)	ND(<3)	NA	NA	NA
	2/9/2010	ND(<50)	**500**	310	ND(<1)	ND(<1)	ND(<1)	ND(<3)	NA	NA	NA	NA
	11/9/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/16/2011	**1,100**	ND(<130)	ND(<250)	**15**	34	25	250	ND(<3)	NA	NA	NA
	11/3/2011	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	NA	NA	NA	NA
	5/23/2013	460	**510**	ND(<250)	3.3	69	1.7	60.0	ND(<3)	NA	NA	NA
	5/23/2013 (dup. MW-17)	530	490	ND(<250)	3.8	79	1.9	72.0	ND(<3)	NA	NA	NA
	8/12/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/6/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-8	5/22/2013	**6,100**	ND(<250)	ND(<250)	**43**	6.4	5.9	16.0	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
	8/12/2013	**990**	ND(<250)	ND(<250)	2.5	2.6	2.3	3.7	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
	11/14/2013	**960**	250	ND(<250)	ND(<1)	2.2	1.6	ND(<3)	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
	2/6/2014	**1,700**	160	ND(<250)	**46.0**	24.0	3.4	12.0	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
MW-9	5/22/2013	**4,000**	ND(<250)	ND(<250)	**40**	5.9	9.7	49.0	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
	8/12/2013	**3,500**	ND(<250)	ND(<250)	**22**	2.4	8.7	57.0	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
	11/14/2013	**1,000**	ND(<130)	ND(<250)	**6.3**	ND(<1)	ND(<1)	ND(<3)	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
	11/14/13 (dup. MW-15)	**970**	ND(<130)	ND(<250)	**5.2**	ND(<1)	ND(<1)	3.5	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
	2/6/2014	**800**	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	7.8	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
MW-10	5/22/2013	**12,000**	ND(<250)	ND(<250)	3.9	**1,200**	180	**1,600**	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
	8/12/2013	**2,400**	ND(<130)	ND(<250)	**6.9**	130	38	290	ND(<6)	ND(<0.02)	ND(<0.01)	ND(<1)
	11/14/2013	690	ND(<130)	ND(<250)	1.7	87	5.1	78	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
	2/6/2014	**6,300**	270	ND(<250)	ND(<5)	510	60.0	**1,000**	ND(<15)	ND(<0.02)	ND(<0.01)	ND(<1)
MW-11	5/22/2013	**41,000**	*ND(<2500)*	ND(<250)	**18**	**2,400**	**740**	**7,300**	*ND(<30)*	ND(<0.02)	ND(<0.01)	ND(<1)
	8/12/2013	**39,000**	*ND(<630)*	ND(<250)	**66**	**2,100**	**910**	**7,200**	ND(<75)	ND(<0.02)	ND(<0.01)	ND(<1)
	11/14/2013	**20,000**	**1,500**	ND(<250)	*ND(<20)*	**1,300**	430	**4,200**	*ND(<60)*	ND(<0.02)	ND(<0.01)	ND(<1)
	2/6/2014	**34,000**	**2,500**	ND(<250)	*ND(<25)*	**1,600**	660	**6,800**	*ND(<75)*	ND(<0.02)	ND(<0.01)	ND(<1)
MW-12	5/22/2013	**31,000**	*ND(<2500)*	ND(<250)	**120**	880	290	**5,900**	*ND(<75)*	ND(<0.02)	ND(<0.01)	ND(<1)
	8/13/2013	**41,000**	*ND(<1300)*	ND(<250)	*ND(<50)*	**1,000**	400	**8,400**	ND(<150)	ND(<0.02)	ND(<0.01)	ND(<1)
	8/13/13 (dup. MW-15)	**37,000**	*ND(<630)*	ND(<250)	*ND(<25)*	880	340	**7,500**	ND(<75)	ND(<0.02)	ND(<0.01)	ND(<1)
	11/14/2013	**14,000**	**2,500**	ND(<250)	*ND(<10)*	220	110	**2,800**	*ND(<30)*	ND(<0.02)	ND(<0.01)	ND(<1)
	2/6/2014	**14,000**	**2,800**	ND(<250)	*ND(<10)*	310	130	**2,800**	*ND(<30)*	ND(<0.02)	ND(<0.01)	ND(<1)
	2/6/2014 (dup. MW-15)	**12,000**	**2,200**	ND(<250)	*ND(<10)*	250	110	**2,400**	*ND(<30)*	ND(<0.02)	ND(<0.01)	ND(<1)

Table 4. Groundwater Sample Analytical Results - Kris's Mini Mart, 6000 Portal Way, Ferndale

Sample ID	Date	NWTPH-Gx Gasoline Range µg/L	NWTPH-Dx Diesel Range µg/L	NWTPH-Dx Lube-Oil Range µg/L	EPA-8021 Benzene µg/L	EPA-8021 Toluene µg/L	EPA-8021 Ethylbenzene µg/L	EPA-8021 Xylenes µg/L	EPA-8021 MTBE µg/L	EPA-8260 EDC µg/L	EPA-8260 EDB µg/L	EPA-200.8 Lead (Dissolved) µg/L
MTCA Method A Clean-up Levels		1,000/800*	500	500	5	1,000	700	1,000	20	5	0.01	15
MW-13	5/22/2013	**2,000**	ND(<250)	ND(<250)	**8.3**	6.8	38	200	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
	8/13/2013	65	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	8.8	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
	11/14/2013	**3,100**	320	ND(<250)	ND(<5)	57	48	700	ND(<15)	ND(<0.02)	ND(<0.01)	ND(<1)
	2/7/2014	81	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	10	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
MW-14	5/22/2013	460	**1,000**	ND(<250)	ND(<1)	ND(<1)	6.9	ND(<3)	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
	5/22/2013 (dup. MW-15)	480	**890**	ND(<250)	ND(<1)	ND(<1)	6.8	ND(<3)	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
	8/13/2013	ND(<50)	280	ND(<250)	ND(<1)	ND(<1)	2.0	ND(<3)	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
	11/14/2013	ND(<50)	480	380	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
	2/7/2014	ND(<50)	470	**550**	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	ND(<0.02)	ND(<0.01)	ND(<1)
Equipment Blank	5/22/2013 (MW-16)	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	ND(<0.02)	ND(<0.01)	NA
	5/23/2013 (MW-18)	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	ND(<0.02)	ND(<0.01)	NA
	8/13/2013 (MW-16)	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	ND(<0.02)	ND(<0.01)	NA
	11/14/2013 (MW-16)	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	ND(<0.02)	ND(<0.01)	NA
	2/6/2014 (MW-16)	ND(<50)	ND(<130)	ND(<250)	ND(<1)	ND(<1)	ND(<1)	ND(<3)	ND(<3)	ND(<0.02)	ND(<0.01)	NA

* - Cleanup level dependent on BTEX concentrations

ND - indicates analyte was not detected at level above reporting limit (shown in parentheses)

NA - indicates that the sample was Not Analyzed for the specified analyte

Bold indicates that selected analyte concentration was reported above the MTCA Method A cleanup level

italics - indicated that the laboratory reporting limit was rasied above the MTCA Method A target cleanup level due to dilution of the sample

** - VE System turned on 9/10/2004. AS System turned on 11/8/2004.

*** - As of 7/11/07, all wells are sampled using a "low-flow" sample collection technique

Table 5. Groundwater Chemistry Parameters
Kris's Mini Mart, 6000 Portal Way, Ferndale

Well ID	Date	DTW (ft)	Temp (°C)	EC (mS/cm)	TDS	Salinity	DO (mg/L)	pH	ORP (mV)
MW-1	5/23/2013	3.71	17.43	0.091	0.059	0.04	0.05	6.64	40.7
	8/12/2013	NA	NA	NA	NA	NA	NA	NA	NA
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA
	2/6/2014	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	5/23/2013	4.05	16.31	0.057	0.037	0.03	2.85	6.59	96.9
	8/12/2013	NA	NA	NA	NA	NA	NA	NA	NA
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA
	2/6/2014	NA	NA	NA	NA	NA	NA	NA	NA
MW-3	5/23/2013	3.64	15.41	0.235	0.152	0.11	2.62	6.65	120.3
	8/12/2013	NA	NA	NA	NA	NA	NA	NA	NA
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA
	2/6/2014	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	5/23/2013	3.9	14.99	0.262	0.171	0.13	2.83	6.93	85.5
	8/12/2013	NA	NA	NA	NA	NA	NA	NA	NA
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA
	2/6/2014	NA	NA	NA	NA	NA	NA	NA	NA
MW-5	5/23/2013	3.72	12.19	0.337	0.219	0.16	0.24	6.84	96.3
	8/12/2013	NA	NA	NA	NA	NA	NA	NA	NA
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA
	2/6/2014	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	5/23/2013	3.93	14.14	0.341	0.221	0.16	0.07	6.46	10.8
	8/12/2013	NA	NA	NA	NA	NA	NA	NA	NA
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA
	2/6/2014	NA	NA	NA	NA	NA	NA	NA	NA
MW-7	5/23/2013	4.21	14.24	0.333	0.216	0.16	0.02	6.99	-13.4
	8/12/2013	NA	NA	NA	NA	NA	NA	NA	NA
	11/14/2013	NA	NA	NA	NA	NA	NA	NA	NA
	2/6/2014	NA	NA	NA	NA	NA	NA	NA	NA
MW-8	5/23/2013	4.05	14.53	0.221	0.144	0.11	0.28	6.44	-17.3
	8/12/2013	5.45	19.43	0.288	0.187	0.14	0.15	6.5	-58.6
	11/14/2013	4.44	14.73	0.231	0.15	0.11	0.03	6.9	-56.8
	2/6/2014	3.90	8.02	0.282	0.183	0.13	1.27	6.59	23.3
MW-9	5/23/2013	4.09	12.62	0.207	0.134	0.10	0.20	6.41	38.0
	8/12/2013	5.48	17.89	0.262	0.17	0.12	0.11	6.49	-67.4
	11/14/2013	4.47	15.17	0.258	0.168	0.12	0.19	6.67	9.1
	2/6/2014	3.95	8.19	0.208	0.135	0.10	1.57	6.61	72.9
MW-10	5/23/2013	4.22	13.46	0.309	0.201	0.15	0.15	6.6	16.1
	8/12/2013	5.63	17.4	0.283	0.184	0.14	0.12	6.67	-18.3
	11/14/2013	4.66	14.75	0.273	0.177	0.13	0.02	6.77	-47.4
	2/6/2014	4.06	9.23	0.274	0.178	0.13	0.16	6.73	-47.9
MW-11	5/23/2013	4.32	12.7	0.525	0.164	0.12	0.27	6.5	15.5
	8/12/2013	5.71	16.72	0.24	0.156	0.11	0.16	6.5	-48.6
	11/14/2013	4.71	15.13	0.236	0.153	0.11	0.02	7.08	-141.5
	2/6/2014	4.16	8.97	0.264	0.171	0.13	0.25	6.67	-45.1
MW-12	5/23/2013	4.19	12.64	0.287	0.187	0.14	0.17	6.63	28.6
	8/12/2013	5.55	17.17	0.25	0.163	0.12	1.06	6.58	-17.2
	11/14/2013	4.58	16.67	0.259	0.169	0.12	0.04	6.89	-90.6
	2/6/2014	4.02	9.84	0.289	0.188	0.14	0.32	6.81	-32.5
MW-13	5/23/2013	3.87	14.95	0.24	0.156	0.11	0.13	6.58	44.6
	8/12/2013	5.29	19.71	0.283	0.184	0.13	0.56	6.66	35.3
	11/14/2013	4.32	15.48	0.287	0.186	0.14	0.27	6.74	-13
	2/7/2014	3.69	9.89	0.286	0.186	0.14	3.02	6.66	30.0
MW-14	5/23/2013	3.99	14.38	0.274	0.178	0.13	0.32	6.76	40.8
	8/12/2013	5.36	21.02	0.246	0.16	0.12	1.24	6.86	34.1
	11/14/2013	4.25	16.73	0.276	0.179	0.13	1.57	6.97	48.7
	2/7/2014	3.82	10.92	0.280	0.182	0.13	0.44	7.01	46.2

NA - indicates that the sample was Not Analyzed for the specified analyte

APPENDIX A

Soil Borelogs

Boring Log

Project: Kris' Mini Mart
Client: Narian Naidu
Boring Number: B-8
Location: SE of UST pit
Date Completed: 5/7/2013

Sheet: 1 of 1
Drilled by: EDI - Tom Adams
Logged by: Thom Davis
First Encountered Water: 3 ft
Total Depth: 14 feet bgs

Depth/Description	Blow Count*	PID (ppm)	Sheen	Sample
0.0 to 0.25 ft: Asphalt				
0.25 to 0.75 ft: Sandy gravel fill material, brown, loose, moist	Cleared to 5' bgs with hand auger for utilities before drilling	2.0	VSS	
0.75 to 5.0 ft: Medium sand with minor gravel, brown, loose, moist (wet below 3 feet)		0.0	NS	
5.0 to 6.5 ft: Medium to coarse sand, brown loose, wet (geotechnical sample)	12-12-19	12.7	NS	5.5-6'
7.5 to 9.0 ft: Medium sand, minor gravel brown, loose, wet	4-5-10	128 @8.5'	NS	8.5'
12.5 to 14.0 ft: No recovery - Heaving sands	10-24-40	No Recovery		

* - A California Split-Spoon sampler was used to collect samples and record Blow Counts (unless otherwise noted)

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NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

Boring Log

Project: Kris' Mini Mart
Client: Narian Naidu
Boring Number: B-9
Location: South center of UST pit
Date Completed: 5/7/2013

Sheet: 1 of 1
Drilled by: EDI - Tom Adams
Logged by: Thom Davis
First Encountered Water: 4 ft
Total Depth: 14 feet bgs

Depth/Description	Blow Count*	PID (ppm)	Sheen	Sample
0.0 to 0.25 ft: Asphalt				
0.25 to 1.25 ft: Sandy gravel fill material, brown, loose, moist	Cleared to 5' bgs with hand auger for utilities before drilling	0.0	NS	
1.25 to 5.0 ft: Medium to coarse sand, minor gravel, brown, loose, moist (wet below 4.0 ft)		6.7	VSS	
5.0 to 6.5 ft: Medium sand, brown, loose, wet	6-12-14	821	MS	6.0'
7.5 to 9.0 ft: Medium sand, minor gravel, brown, loose, wet	9-14-24	860	SS	9.0'
12.5 to 14.0 ft: Medium sand, brown, loose, wet	14 and 50 for 6 in.	11.5	NS	14.0'

* - A California Split-Spoon sampler was used to collect samples and record Blow Counts (unless otherwise noted)

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NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

Boring Log

Project: Kris' Mini Mart
Client: Narian Naidu
Boring Number: B-10
Location: East of canopy and dispensers
Date Completed: 5/8/2013

Sheet: 1 of 1
Drilled by: EDI - Tom Adams
Logged by: Thom Davis
First Encountered Water: 3.5 ft
Total Depth: 14 feet bgs

Depth/Description	Blow Count*	PID (ppm)	Sheen	Sample
0.0 to 0.25 ft: Asphalt				
0.25 to 1.25 ft: Sandy gravel fill material, brown, loose, moist	Cleared to 5' bgs with hand auger for utilities before drilling	0	NS	
1.25 to 5.0 ft: Medium sand, brown, loose, wet		16 *@4.5 ft*	NS	
5.0 to 6.5 ft: Medium sand, brown, loose, wet	9-10-16	411 *@6.0 ft*		6.5'
		4,800 *@6.5 ft*	HS	
7.5 to 9.0 ft: Medium sand, brown, loose, wet (geotechnical sample)	9-14-17	1,356 *@7.5 ft*	VSS	8-8.5ft
		56 *@9.0 ft*	VSS	
12.5 to 14.0 ft: Medium sand, minor fine sand, brown, loose, wet (geotechnical sample)	14-26-21	446 *@12.5 ft*	NS	14.0' 13-13.5ft
		65 *@14.0 ft*	NS	
Driller noted approximately 1.5 feet of heaving sands in boring before installing well.				

* - A California Split-Spoon sampler was used to collect samples and record Blow Counts (unless otherwise noted)

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www.whatcomenvironmental.com

NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

Boring Log

Project: Kris' Mini Mart
Client: Narian Naidu
Boring Number: B-11
Location: East side; under canopy
Date Completed: 5/9/2013

Sheet: 1 of 1
Drilled by: EDI - Tom Adams
Logged by: Thom Davis
First Encountered Water: 4.0 ft
Total Depth: 15 feet bgs

Depth/Description	Blow Count*	PID (ppm)	Sheen	Sample
0.0 to 0.67 ft: Concrete slab				
0.67 to 0.8 ft: Asphalt layer				
0.8 to 1.75 ft: Sandy gravel fill material, brown, loose, moist	Cleared to 5' bgs with hand auger for utilities before drilling	*50 @ 1 ft* *73 @ 1.3 ft*	VSS VSS	
1.75 to 2.75 ft: Sandy silt, dark, brown, firm, moist (organic layer)		*9 @ 2 ft* *2 @ 3.8 ft*	VSS VSS	
2.75 to 5.0 ft: Medium sand, brown, loose, moist (wet below 4 ft bgs)		*300 @ 4.25 ft* *2,344 @ 5 ft*	SS HS	
5.0 to 6.5 ft: Limited recovery. Medium sand, brown, loose, wet	5-6-9	2,705 @ 6.5 ft	HS	6.5'
10.0 to 11.5 ft: Limited recovery. Medium sand, brown, loose, wet	10-17-29	564 @ 10 ft	VSS	10'
15.0 to 16.5 ft: Medium sand, minor gravel, brown, loose, wet	9-15-17	2 @ 15 ft	NS	15'

Regular split spoon sampler used to collect sample at this interval

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Boring Log

Project: Kris' Mini Mart
Client: Narian Naidu
Boring Number: B-12
Location: West side; under canopy
Date Completed: 5/9/2013

Sheet: 1 of 1
Drilled by: EDI - Tom Adams
Logged by: Thom Davis
First Encountered Water: 4 ft
Total Depth: 15 feet bgs

Depth/Description	Blow Count*	PID (ppm)	Sheen	Sample
0.0 to 0.67 ft: Concrete slab				
0.67 to 0.8 ft: Asphalt layer				
0.8 to 2.0 ft: Sandy gravel fill material, brown, loose, moist	Cleared to 5' bgs with hand auger for utilities before drilling			
2.0 to 2.6 ft: Sandy silt, dark, brown, firm, moist (organic layer)		1		
2.6 to 5.0 ft: Medium sand, brown, loose, moist (wet below 4 feet bgs)		350 *@4 ft*		
5.0 to 6.5 ft: Medium sand; brown, loose, wet	5-17-22	525 *@5 ft*	MS	
		550 *@6 ft*	MS	
		1,516 *@6.5 ft*	MS	6.5'
10.0 to 11.5 ft: Medium sand, brown, loose, wet	10-22-50 for 6"	250 *@10 ft*		
		165 *@10.25 ft*	SS	
		447 *@11 ft*	MS	
15.0 to 16.5 ft: No recovery. *Regular split spoon sampler used to collect sample at this interval*	9-11-17	No Recovery		
Driller noted approximately 2.0 feet of heaving sands in boring before installing well.				

* - A California Split-Spoon sampler was used to collect samples and record Blow Counts (unless otherwise noted)

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Boring Log

Project: Kris' Mini Mart
Client: Narian Naidu
Boring Number: B-13
Location: South of store door, near MW-1
Date Completed: 5/7/2013

Sheet: 1 of 1
Drilled by: EDI - Tom Adams
Logged by: Thom Davis
First Encountered Water: 4 ft
Total Depth: 14 feet bgs

Depth/Description	Blow Count*	PID (ppm)	Sheen	Sample
0.0 to 0.25 ft: Asphalt				
0.25 to 1.25 ft: Sandy gravel fill material, brown, loose, moist	Cleared to 5' bgs with hand auger for utilities before drilling	0.0	VSS	
1.25 to 5.0 ft: Medium sand, brown, loose, moist (wet below 4 feet)		0.0	VSS	
5.0 to 6.5 ft: Medium sand, brown, loose, wet (geotechnical sample)	9-12-17	80 @ 5 ft	SS	5.5-6'
		147 @ 6.5 ft	MS	6.5'
7.5 to 9.0 ft: Pounded rock. Limited recovery. Medium to coarse sand, brown, loose, wet	26-24-19	0.0	NS	
12.5 to 14.0 ft: Medium sand, brown, loose, wet *Regular split spoon sampler used to collect sample at this interval*	14 and 50 for 5"	0.0	NS	14'

* - A California Split-Spoon sampler was used to collect samples and record Blow Counts (unless otherwise noted)

WHATCOM ENVIRONMENTAL SERVICES INC.

www.whatcomenvironmental.com

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Boring Log

Project: Kris' Mini Mart
Client: Narian Naidu
Boring Number: B-14
Location: South center of dispensers, near MW-2
Date Completed: 5/7/2013

Sheet: 1 of 1
Drilled by: EDI - Tom Adams
Logged by: Thom Davis
First Encountered Water: 5 ft
Total Depth: 14 feet bgs

Depth/Description	Blow Count*	PID (ppm)	Sheen	Sample
0.0 to 0.25 ft: Asphalt				
0.25 to 1.25 ft: Sandy gravel fill material, brown, loose, moist	Cleared to 5' bgs with hand auger for utilities before drilling	92 @1 ft		
1.25 to 5.0 ft: Medium sand, brown, loose, moist		190 @2 ft	SS	2'
		2 @4 ft		
5.0 to 6.5 ft: Medium sand, brown, loose, wet	0-0-1			
		3.8 @6 ft	SS	6'
7.5 to 9.0 ft: Medium sand, brown, loose, wet	3-3-3	302	MS	9'
12.5 to 14.0 ft: Medium sand, brown, loose, wet	9-36-50 for 4"	5	VSS	

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APPENDIX B

Soil Physical Properties Analysis

PTS Laboratories, Inc.

8100 Secura Way • Santa Fe Springs, CA 90670
Telephone (562) 347-2500 • Fax (562) 907-3610

May 31, 2013

Harold Cashman
Whatcom Environmental Services
228 E. Champion Street, Suite 101
Bellingham, WA 98225

Re: PTS File No: 43321
Physical Properties Data
Kris's Mini Mart

Dear Mr. Cashman:

Please find enclosed report for Physical Properties analyses conducted upon samples received from your Kris's Mini Mart project. All analyses were performed by applicable ASTM, EPA, or API methodologies. An electronic version of the report has previously been sent to your attention via the internet. The samples are currently in storage and will be retained for thirty days past completion of testing at no charge. Please note that the samples will be disposed of at that time. You may contact me regarding storage, disposal, or return of the samples.

PTS Laboratories appreciates the opportunity to be of service. If you have any questions or require additional information, please contact Rachel Spitz at (562) 347-2504.

Sincerely,
PTS Laboratories

for Rachel

Michael Mark Brady, P.G.
District Manager

Encl.

PTS Laboratories

Project Name: Kris's Mini Mart
Project Number: N/A

PTS File No: 43321
Client: Whatcom Environmental Services

TEST PROGRAM - 20130515

CORE ID	Depth ft.	Core Recovery ft.	New Mexico RBDM Pkg.				Notes
		Plugs:	Vert. 1"				
Date Received: 20130515							
B-8 5.5-6.0	5.5-6	0.50	X				
B-10 8.0-8.5	8-8.5	0.50	X				
B-10 13.0-13.5	13-13.5	0.50	X				
B-13 5.5-6.0	5.5-6	0.50	X				
TOTALS:	4 cores	2.00	4				4

Laboratory Test Program Notes

Contaminant identification: _____

Standard TAT for basic analysis is 10 business days.

New Mexico RBDM Package: Intrinsic permeability to water/hydraulic conductivity, total porosity, air-filled porosity, dry bulk density, volumetric moisture content, foc, and grain size analyses.

PTS File No: 43321
Client: Whatcom Environmental Services

PHYSICAL PROPERTIES DATA - NEW MEXICO PACKAGE RBDM

PROJECT NAME: Kris's Mini Mart
PROJECT NO: N/A

			METHODS:	API RP40		ASTM D2216/API RP40	API RP40		API RP 40; EPA 9100	
									25.0 PSI CONFINING STRESS	
SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	ANALYSIS DATE	GRAIN DENSITY [g/cm^3]	DRY BULK DENSITY [g/cm^3]	VOLUMETRIC WATER CONTENT AS FRACTION OF Vb [cm^3/cm^3]	TOTAL MEASURED POROSITY [cm^3/cm^3]	AIR FILLED POROSITY [cm^3/cm^3]	INTRINSIC PERMEABILITY TO WATER [cm^2]	NATIVE HYDRAULIC CONDUCTIVITY [cm/sec]
B-8 5.5-6.0	5.6	V	20130521	2.71	1.49	0.452	0.234	0.217	1.09E-07	1.12E-02
B-10 8.0-8.5	8.1	V	20130521	2.70	1.54	0.429	0.112	0.317	2.29E-08	2.33E-03
B-10 13.0-13.5	13.1	V	20130521	2.71	1.57	0.419	0.191	0.229	7.16E-08	7.23E-03
B-13 5.5-6.0	5.6	V	20130521	2.70	1.63	0.397	0.177	0.220	5.46E-08	5.48E-03

(1) Sample Orientation: H = horizontal; V = vertical; R = remold (2) Native State or Effective = With as-received pore fluids in place (3) Permeability to water and hydraulic conductivity measured at saturated conditions

PTS Laboratories

PTS File No: 43321
Client: Whatcom Environmental Services

ORGANIC CARBON DATA - TOC (foc)

(METHODOLOGY: WALKLEY-BLACK)

PROJECT NAME: Kris's Mini Mart
PROJECT NO: N/A

SAMPLE ID.	DEPTH, ft.	ANALYSIS DATE	ANALYSIS TIME	SAMPLE MATRIX	TOTAL ORGANIC CARBON, mg/kg	FRACTION ORGANIC CARBON, g/g
B-8 5.5-6.0	5.6	20130528	1032	SOIL	2350	2.35E-03
B-10 8.0-8.5	8.1	20130528	1032	SOIL	4550	4.55E-03
B-10 13.0-13.5	13.1	20130528	1032	SOIL	1450	1.45E-03
B-13 5.5-6.0	5.6	20130528	1032	SOIL	4000	4.00E-03
Blank	N/A	20130528	1032	BLANK	ND	ND
SRM D079-542	N/A	20130528	1032	SRM	3300	3.30E-03
				Reporting Limit:	100	1.00E-04

QC DATA

SRM ID/Lot No.	REC (%)	Control Limits	Certified Concentration mg/kg	QC Performance Acceptance Limits, mg/kg Lower	Upper
SRM D079-542	97	75-125	3400	2550	4250

ND = Not Detected

PARTICLE SIZE SUMMARY

(METHODOLOGY: ASTM D422)

PROJECT NAME: Kris's Mini Mart
PROJECT NO: N/A

Sample ID	Depth, ft.	Description USCS/ASTM (1)	Median Grain Size, mm	Particle Size Distribution, wt. percent				
				Gravel	Sand Size			Silt/Clay
					Coarse	Medium	Fine	
B-8 5.5-6.0	5.6	Medium sand	0.611	2.50	7.59	57.81	30.39	1.70
B-10 8.0-8.5	8.1	Medium sand	0.481	0.70	2.89	57.95	35.52	2.94
B-10 13.0-13.5	13.1	Medium sand	0.550	2.10	3.96	64.65	25.07	4.23
B-13 5.5-6.0	5.6	Medium sand	0.887	5.14	13.59	67.64	10.95	2.69

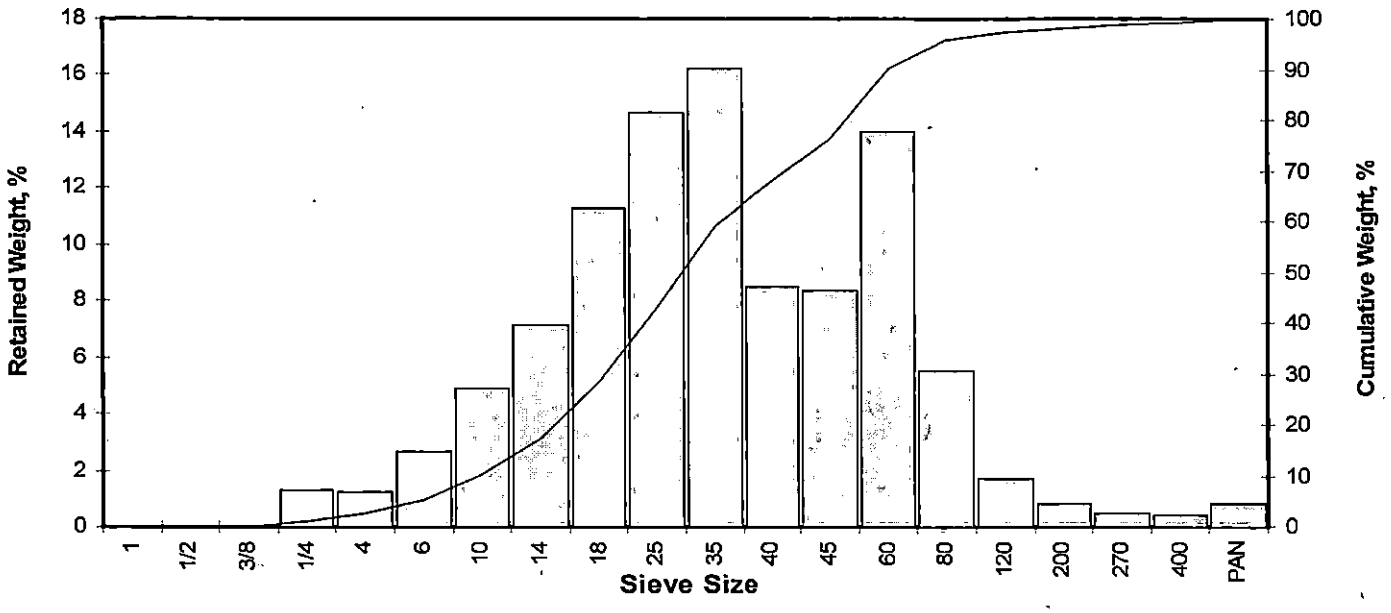
(1) based on Mean fromTrask

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client:	Whatcom Environmental Services	**PTS File No:**	43321
Project:	Kris's Mini Mart	**Sample ID:**	B-8 5.5-6.0
Project No:	N/A	**Depth, ft:**	5.6

Gravel	Sand			Silt/Clay
	coarse	medium	fine	



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	1.91	1.30	1.30
0.1873	4.757	-2.25	4	1.75	1.20	2.50
0.1324	3.364	-1.75	6	3.92	2.68	5.18
0.0787	2.000	-1.00	10	7.20	4.92	10.09
0.0557	1.414	-0.50	14	10.44	7.13	17.22
0.0394	1.000	0.00	18	16.52	11.28	28.51
0.0278	0.707	0.50	25	21.47	14.66	43.17
0.0197	0.500	1.00	35	23.81	16.26	59.43
0.0166	0.420	1.25	40	12.41	8.48	67.91
0.0139	0.354	1.50	45	12.25	8.37	76.27
0.0098	0.250	2.00	60	20.50	14.00	90.27
0.0070	0.177	2.50	80	8.02	5.48	95.75
0.0049	0.125	3.00	120	2.53	1.73	97.48
0.0029	0.074	3.75	200	1.20	0.82	98.30
0.0021	0.053	4.25	270	0.66	0.45	98.75
0.0015	0.037	4.75	400	0.63	0.43	99.18
			PAN	1.20	0.82	100.00
TOTALS				146.42	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-1.78	0.1355	3.441
10	-1.01	0.0795	2.020
16	-0.59	0.0591	1.501
25	-0.16	0.0438	1.114
40	0.39	0.0300	0.762
50	0.71	0.0241	0.611
60	1.02	0.0195	0.494
75	1.46	0.0143	0.363
84	1.78	0.0115	0.292
90	1.99	0.0099	0.252
95	2.43	0.0073	0.185

Measure	Trask	Inman	Folk-Ward
Median, phi	0.71	0.71	0.71
Median, in.	0.0241	0.0241	0.0241
Median, mm	0.611	0.611	0.611
Mean, phi	0.44	0.60	0.63
Mean, in.	0.0291	0.0261	0.0254
Mean, mm	0.738	0.662	0.645
Sorting	1.752	1.181	1.229
Skewness	1.040	-0.097	-0.140
Kurtosis	0.212	0.784	1.068
Grain Size Description (ASTM-USCS Scale)		Medium sand (based on Mean from Trask)	

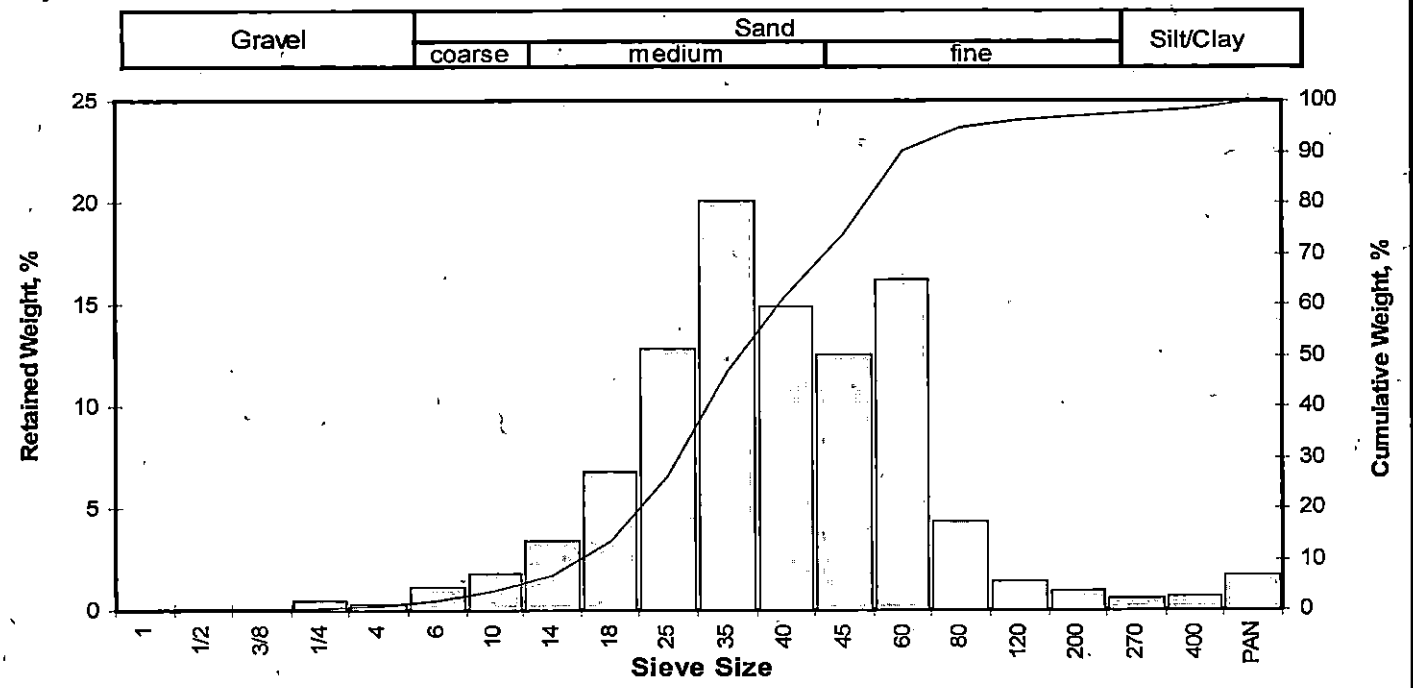
Description	Retained on Sieve #	Weight Percent
Gravel	4	2.50
Coarse Sand	10	7.59
Medium Sand	40	57.81
Fine Sand	200	30.39
Silt/Clay	<200	1.70
	Total	100

Phone: (562) 907-3607 Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client:	Whatcom Environmental Services	**PTS File No:**	43321
Project:	Kris's Mini Mart	**Sample ID:**	B-10 8.0-8.5
Project No:	N/A	**Depth, ft:**	8.1



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	0.75	0.43	0.43
0.1873	4.757	-2.25	4	0.48	0.27	0.70
0.1324	3.364	-1.75	6	1.97	1.12	1.81
0.0787	2.000	-1.00	10	3.13	1.78	3.59
0.0557	1.414	-0.50	14	5.91	3.35	6.94
0.0394	1.000	0.00	18	11.93	6.77	13.71
0.0278	0.707	0.50	25	22.57	12.80	26.51
0.0197	0.500	1.00	35	35.46	20.11	46.62
0.0166	0.420	1.25	40	26.31	14.92	61.55
0.0139	0.354	1.50	45	22.20	12.59	74.14
0.0098	0.250	2.00	60	28.53	16.18	90.32
0.0070	0.177	2.50	80	7.73	4.38	94.70
0.0049	0.125	3.00	120	2.56	1.45	96.15
0.0029	0.074	3.75	200	1.60	0.91	97.06
0.0021	0.053	4.25	270	1.06	0.60	97.66
0.0015	0.037	4.75	400	1.19	0.67	98.34
			PAN	2.93	1.66	100.00
TOTALS				176.31	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-0.79	0.0681	1.729
10	-0.27	0.0476	1.209
16	0.09	0.0370	0.940
25	0.44	0.0290	0.737
40	0.84	0.0221	0.560
50	1.06	0.0189	0.481
60	1.22	0.0169	0.428
75	1.53	0.0137	0.347
84	1.80	0.0113	0.286
90	1.99	0.0099	0.252
95	2.60	0.0065	0.165

Measure	Trask	Inman	Folk-Ward
Median, phi	1.06	1.06	1.06
Median, in.	0.0189	0.0189	0.0189
Median, mm	0.481	0.481	0.481
Mean, phi	0.88	0.95	0.98
Mean, in.	0.0213	0.0204	0.0199
Mean, mm	0.542	0.519	0.506
Sorting	1.457	0.858	0.943
Skewness	1.052	-0.128	-0.108
Kurtosis	0.203	0.978	1.281

Grain Size Description (ASTM-USCS Scale)	Medium sand (based on Mean from Trask)

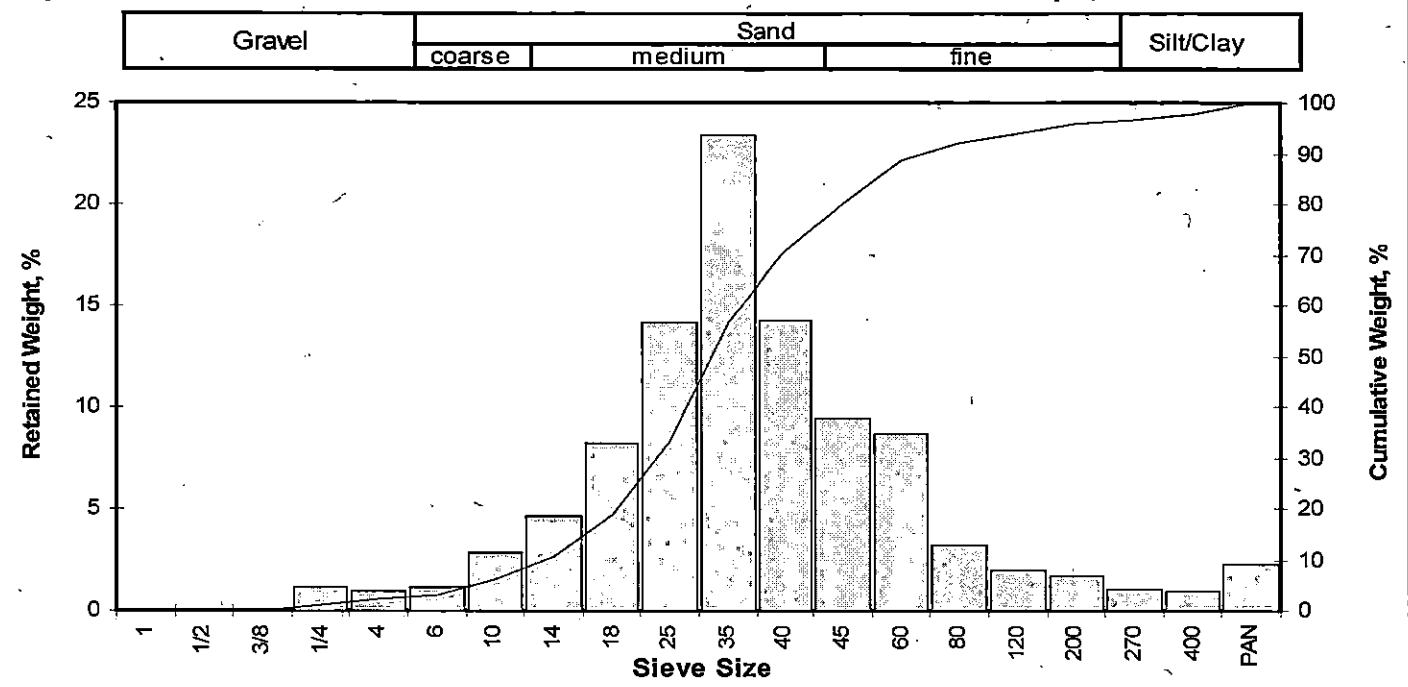
Description	Retained on Sieve #	Weight Percent
Gravel	4	0.70
Coarse Sand	10	2.89
Medium Sand	40	57.95
Fine Sand	200	35.52
Silt/Clay	<200	2.94
	Total	100

Phone: (562) 907-3607 Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client:	Whatcom Environmental Services	**PTS File No:**	43321
Project:	Kris's Mini Mart	**Sample ID:**	B-10 13.0-13.5
Project No:	N/A	**Depth, ft:**	13.1



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	1.76	1.18	1.18
0.1873	4.757	-2.25	4	1.38	0.92	2.10
0.1324	3.364	-1.75	6	1.63	1.09	3.19
0.0787	2.000	-1.00	10	4.29	2.87	6.06
0.0557	1.414	-0.50	14	6.95	4.65	10.71
0.0394	1.000	0.00	18	12.26	8.20	18.91
0.0278	0.707	0.50	25	21.13	14.13	33.04
0.0197	0.500	1.00	35	35.00	23.41	56.44
0.0166	0.420	1.25	40	21.33	14.26	70.71
0.0139	0.354	1.50	45	14.16	9.47	80.18
0.0098	0.250	2.00	60	12.99	8.69	88.87
0.0070	0.177	2.50	80	4.83	3.23	92.10
0.0049	0.125	3.00	120	2.95	1.97	94.07
0.0029	0.074	3.75	200	2.55	1.71	95.77
0.0021	0.053	4.25	270	1.52	1.02	96.79
0.0015	0.037	4.75	400	1.36	0.91	97.70
			PAN	3.44	2.30	100.00
TOTALS				149.53	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-1.28	0.0954	2.423
10	-0.58	0.0587	1.491
16	-0.18	0.0445	1.131
25	0.22	0.0339	0.861
40	0.65	0.0251	0.638
50	0.86	0.0217	0.550
60	1.06	0.0189	0.479
75	1.36	0.0153	0.389
84	1.72	0.0120	0.304
90	2.18	0.0087	0.221
95	3.41	0.0037	0.094

Measure	Trask	Inman	Folk-Ward
Median, phi	0.86	0.86	0.86
Median, in.	0.0217	0.0217	0.0217
Median, mm	0.550	0.550	0.550
Mean, phi	0.68	0.77	0.80
Mean, in.	0.0246	0.0231	0.0226
Mean, mm	0.625	0.586	0.574
Sorting	1.488	0.949	1.184
Skewness	1.052	-0.096	-0.004
Kurtosis	0.186	1.470	1.674
Grain Size Description (ASTM-USCS Scale)		Medium sand (based on Mean from Trask)	

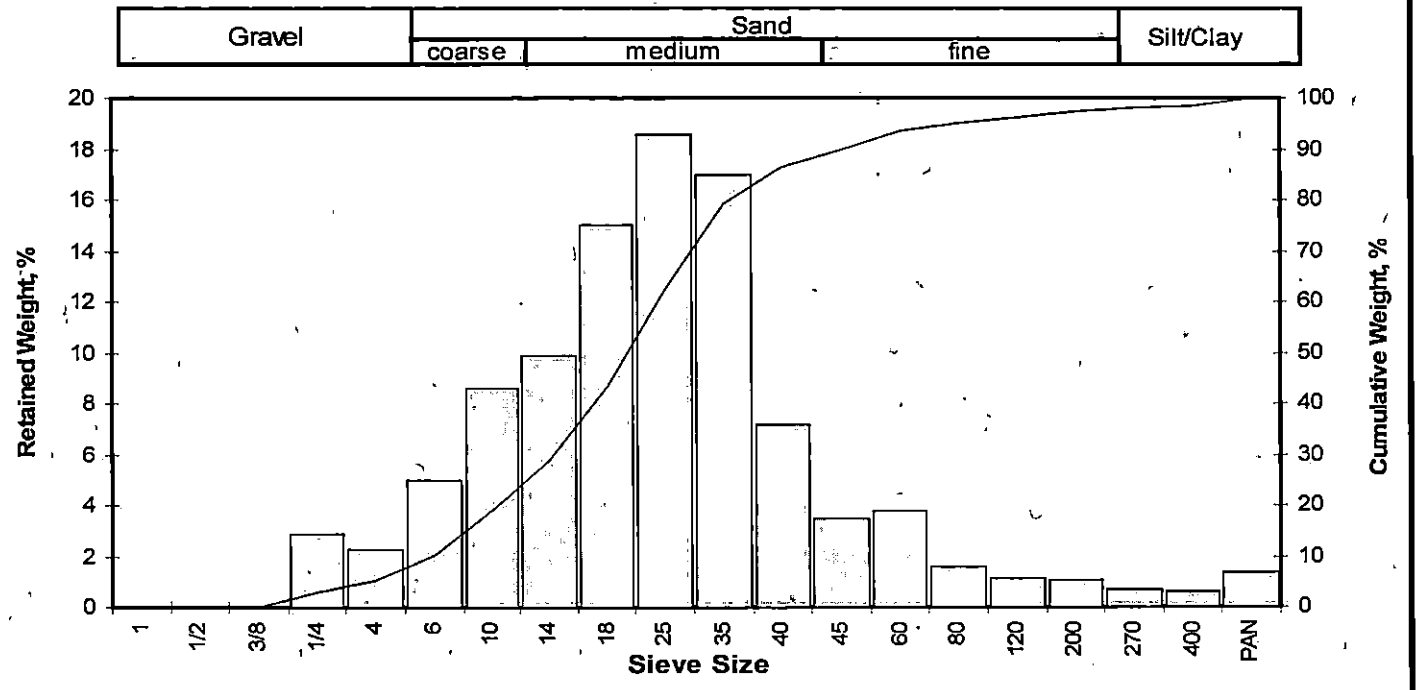
Description	Retained on Sieve #	Weight Percent
Gravel	4	2.10
Coarse Sand	10	3.96
Medium Sand	40	64.65
Fine Sand	200	25.07
Silt/Clay	<200	4.23
	Total	100

Phone: (562) 907-3607 Fax: (562) 907-3610

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D422M

Client:	Whatcom Environmental Services	**PTS File No:**	43321
Project:	Kris's Mini Mart	**Sample ID:**	B-13 5.5-6.0
Project No:	N/A	**Depth, ft:**	5.6



Opening		Phi of	U.S. Sieve	Sample Weight	Incremental Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	0.00	0.00	0.00
0.2500	6.351	-2.67	1/4	5.12	2.88	2.88
0.1873	4.757	-2.25	4	4.02	2.26	5.14
0.1324	3.364	-1.75	6	8.86	4.98	10.12
0.0787	2.000	-1.00	10	15.31	8.61	18.73
0.0557	1.414	-0.50	14	17.55	9.87	28.59
0.0394	1.000	0.00	18	26.66	14.99	43.58
0.0278	0.707	0.50	25	33.08	18.60	62.18
0.0197	0.500	1.00	35	30.25	17.01	79.19
0.0166	0.420	1.25	40	12.77	7.18	86.37
0.0139	0.354	1.50	45	6.11	3.44	89.80
0.0098	0.250	2.00	60	6.66	3.74	93.55
0.0070	0.177	2.50	80	2.87	1.61	95.16
0.0049	0.125	3.00	120	1.96	1.10	96.26
0.0029	0.074	3.75	200	1.87	1.05	97.31
0.0021	0.053	4.25	270	1.20	0.67	97.99
0.0015	0.037	4.75	400	1.13	0.64	98.62
			PAN	2.45	1.38	100.00
TOTALS				177.87	100.00	100.00

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	-2.28	0.1906	4.842
10	-1.76	0.1335	3.392
16	-1.24	0.0928	2.358
25	-0.68	0.0632	1.604
40	-0.12	0.0428	1.086
50	0.17	0.0349	0.887
60	0.44	0.0290	0.736
75	0.88	0.0214	0.545
84	1.17	0.0175	0.445
90	1.53	0.0137	0.347
95	2.45	0.0072	0.183

Measure	Trask	Inman	Folk-Ward
Median, phi	0.17	0.17	0.17
Median, in.	0.0349	0.0349	0.0349
Median, mm	0.887	0.887	0.887
Mean, phi	-0.10	-0.04	0.03
Mean, in.	0.0423	0.0403	0.0384
Mean, mm	1.075	1.025	0.977
Sorting	1.717	1.203	1.317
Skewness	1.053	-0.173	-0.104
Kurtosis	0.174	0.965	1.242
Grain Size Description (ASTM-USCS Scale)		Medium sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	5.14
Coarse Sand	10	13.59
Medium Sand	40	67.64
Fine Sand	200	10.95
Silt/Clay	<200	2.69
	Total	100

Phone: (562) 907-3607 Fax: (562) 907-3610

PTS Laboratories, Inc.

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

COMPANY	Whatcom Environmental Services
ADDRESS / CITY / ZIP CODE	228 E. Champion St #101, Bellingham, WA 98225
PROJECT MANAGER	Harold Cashman
PROJECT NAME	Kris's Mini Mart
PHONE NUMBER	(360) 752-9571
PROJECT NUMBER	
FAX NUMBER	(360) 752-9573
SITE LOCATION	Ferndale, WA
SAMPLER SIGNATURE	HCash

ANALYSIS REQUEST

SAMPLE ID NUMBER	DATE	TIME	DEPTH, FT	NUMBER OF SAMPLES	SOIL PROPERTIES PACKAGE	HYDRAULIC CONDUCTIVITY PACKAGE	PORE FLUID SATURATIONS PACKAGE	TCEQ/TNRCC PROPERTIES PACKAGE	CAPILLARITY PACKAGE	FLUID PROPERTIES PACKAGE	PHOTOLOG: CORE PHOTOGRAPHY	MOISTURE CONTENT, ASTM D2216	POROSITY: TOTAL, API RP40	POROSITY: EFFECTIVE, ASTM D426M	SPECIFIC GRAVITY, ASTM D854	BULK DENSITY (DRY), API RP40 or ASTM D2937	AIR PERMEABILITY, API RP40	HYDRAULIC CONDUCTIVITY, EPA9100, API RP40, D5084	GRAIN SIZE DISTRIBUTION, ASTM D422/4464M	TOC: WALKLEY-BLACK	ATTERBERG LIMITS, ASTM D4318	New Mexico RBDM Parameters			COMMENTS
B-8 5.5-6.0	5/7/13		5.5-6.0																			X			
B-10 8.0-8.5	5/8/13		8.0-8.5																			X			
B-10 13.0-13.5	5/8/13		13.0-13.5																			X			
B-13 5.5-6.0	5/7/13		5.5-6.0																			X			
			70.8°F																						

PO#

TURNAROUND TIME
24 HOURS ☐ 5 DAYS ☐
48 HOURS ☐ NORMAL ☒
72 HOURS ☐
OTHER: _____

SAMPLE INTEGRITY (CHECK):
INTACT ____ ON ICE ____

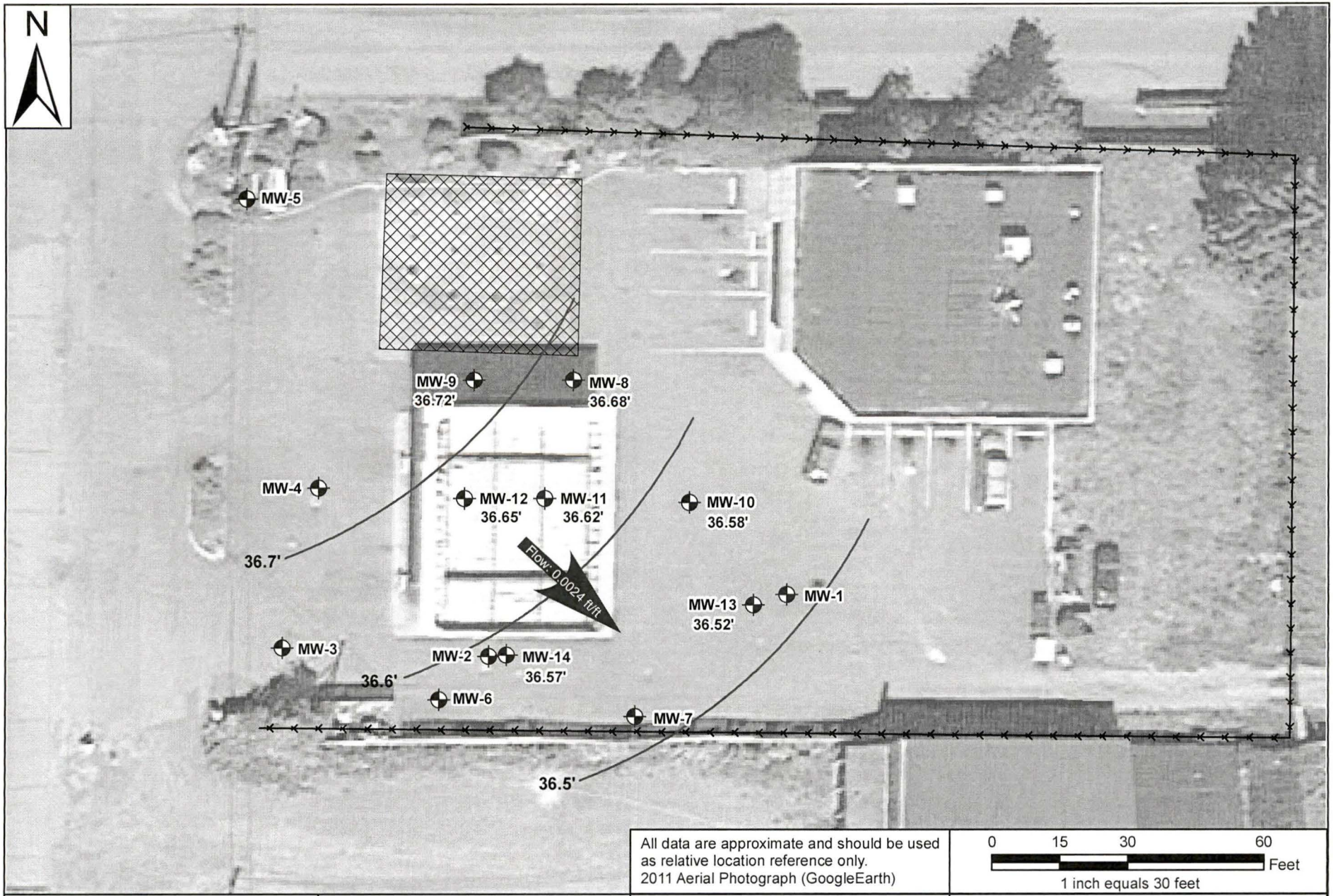
PTS QUOTE NO.

PTS FILE: 43321

1. RELINQUISHED BY	2. RECEIVED BY	3. RELINQUISHED BY	4. RECEIVED BY
COMPANY: Whatcom Environmental	COMPANY: PTS LABS	COMPANY	COMPANY
DATE: 5/13/13 TIME: 2:45	DATE: 5/15/13 TIME: 14:10	DATE TIME	DATE TIME

APPENDIX C

Groundwater Contour Maps



All data are approximate and should be used as relative location reference only.
2011 Aerial Photograph (GoogleEarth)

0 15 30 60 Feet

1 inch equals 30 feet

GW Elevation Contours 5/22/13

Monitoring Wells

Prepared for:

Kris's Mini Mart

Prepared by:

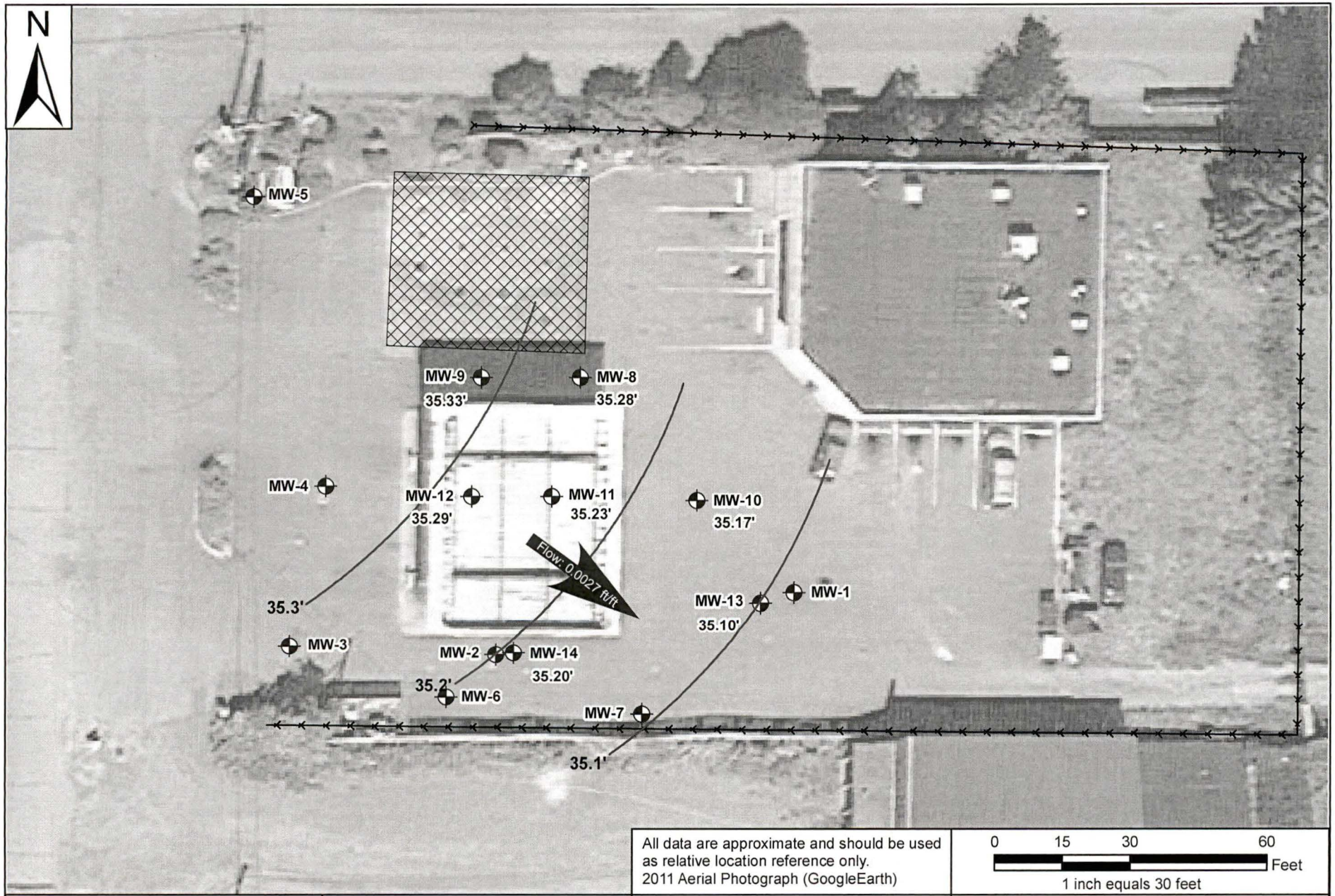
whatcom ENVIRONMENTAL

Groundwater Countour Map (5/22/2013)

Kris's Mini Mart

2/10/14

Figure C-1



All data are approximate and should be used as relative location reference only.
2011 Aerial Photograph (GoogleEarth)

0 15 30 60 Feet

1 inch equals 30 feet

GW Elevation Contour 8/12/13

Monitoring Wells

Prepared for:

Kris's Mini Mart

Prepared by:

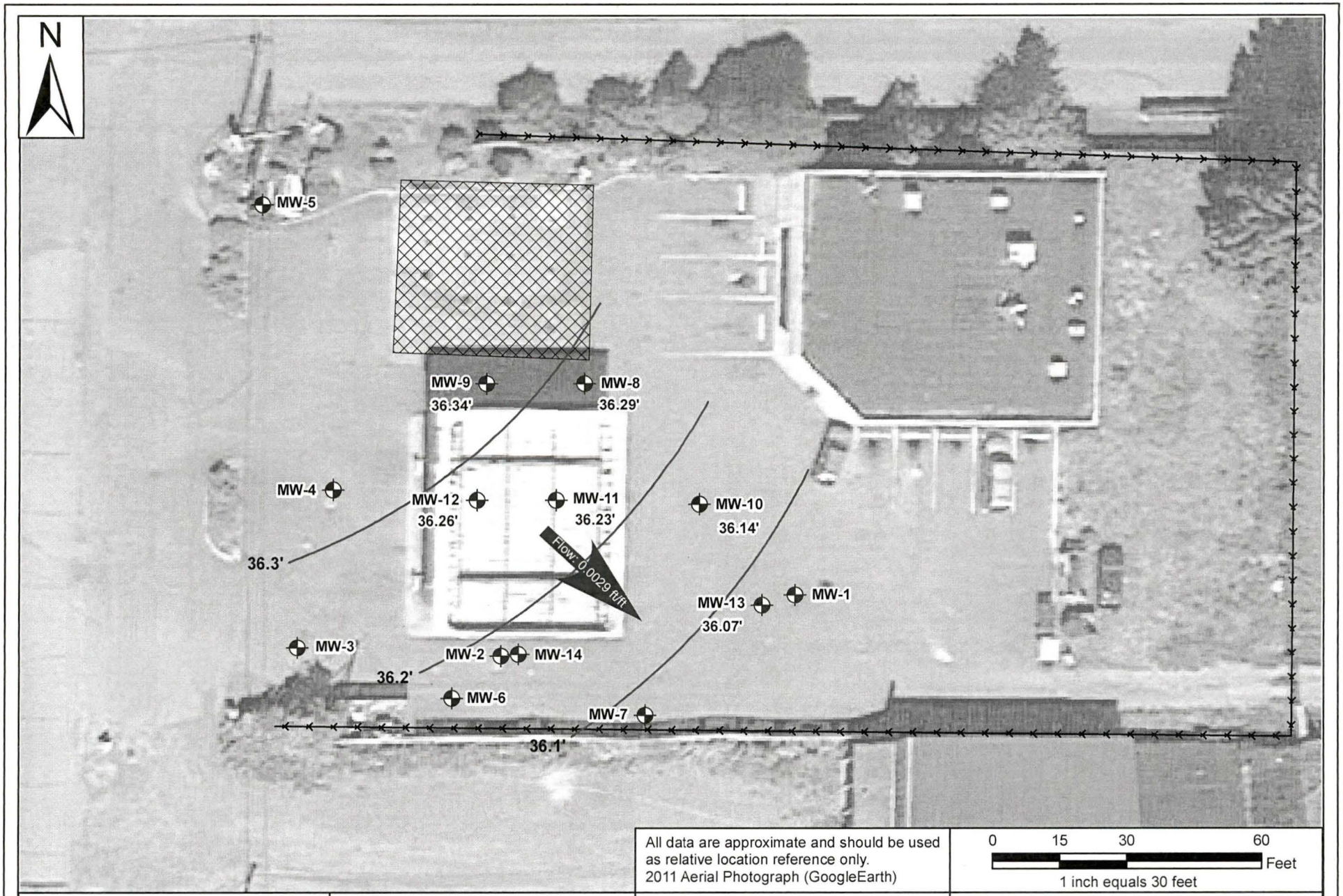
whatcom ENVIRONMENTAL

Groundwater Contour Map (8/12/2013)

Kris's Mini Mart

2/10/14

Figure C-2



All data are approximate and should be used as relative location reference only.
2011 Aerial Photograph (GoogleEarth)

0 15 30 60 Feet

1 inch equals 30 feet

— GW Elevation Contours 11/14/13

Monitoring Wells

Prepared for:

Kris's Mini Mart

Prepared by:

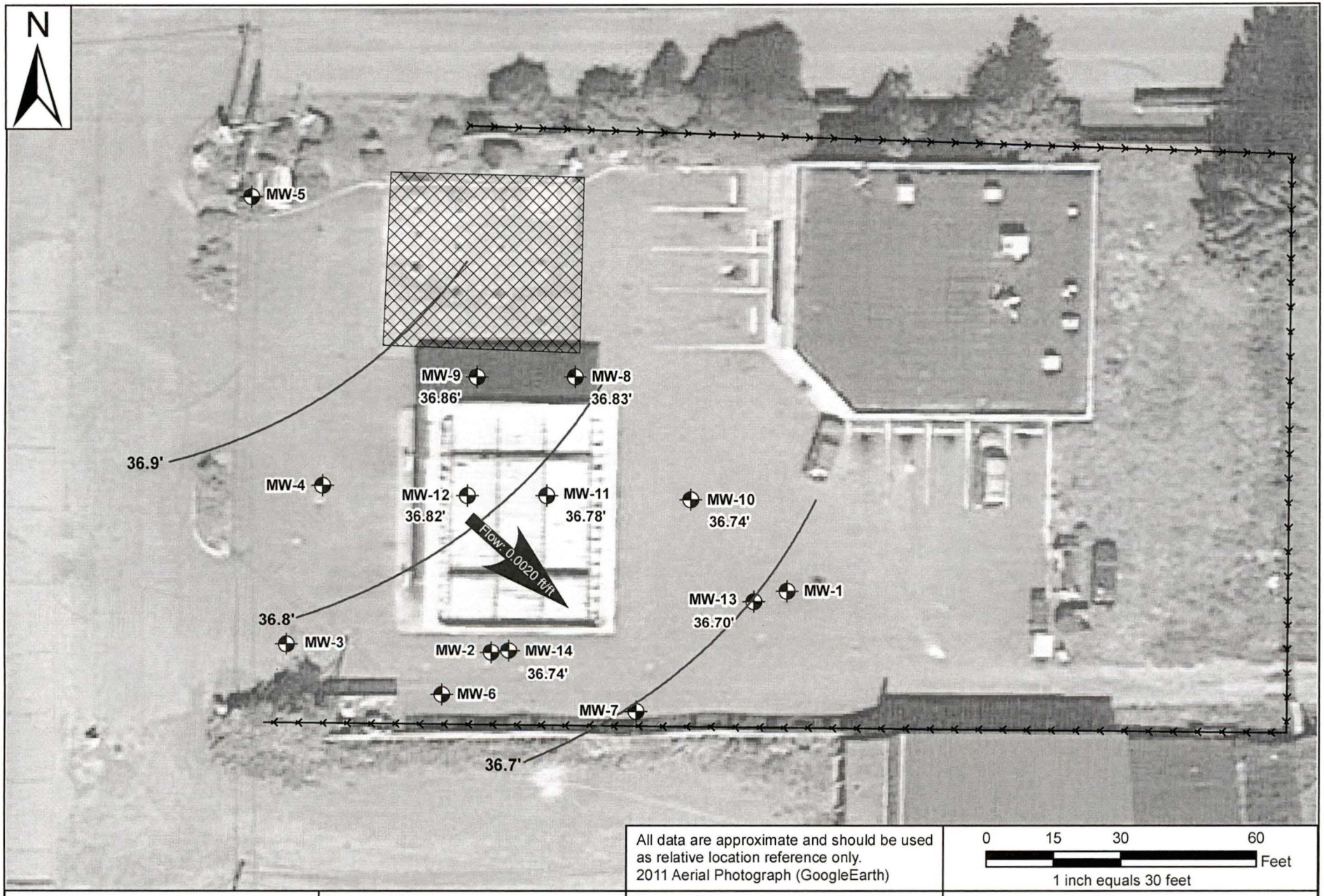
whatcom ENVIRONMENTAL

Groundwater Contour Map (11/14/2013)

Kris's Mini Mart

2/10/14

Figure C-3



All data are approximate and should be used as relative location reference only.
2011 Aerial Photograph (GoogleEarth)

0 15 30 60 Feet

1 inch equals 30 feet

GW Elevation Contours 2/6/14

Monitoring Wells

Prepared for:

Kris's Mini Mart

Prepared by:

whatcom ENVIRONMENTAL

Groundwater Contour Map (2/6/2014)

Kris's Mini Mart

2/10/14

Figure C-4

APPENDIX D

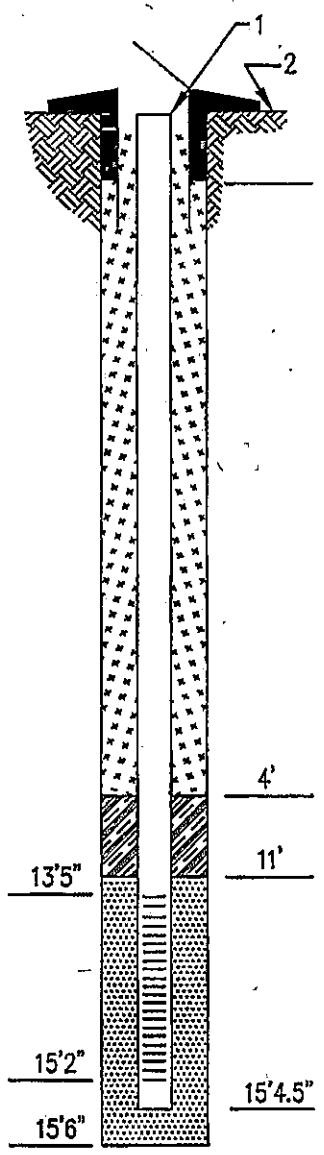
2003 Well Construction Diagrams

Sym	Samp Loc	PID (ppm)	Depth (Feet)

Geologic Description

METHOD | SS=Split Spoon | C=Cuttings

Air Sparge Well
Piezometer



Depths in Feet
from Ground Surface
(Not to Scale)

Design Specifications

Elevations:
(feet MSL) 1 _____ 2 _____

Coordinates: X _____ Y _____

Type of Casing: [X] PVC Sched. 40 Flush Thread
[ ] Stainless Steel [ ] _____

Casing Diameter: [X] 2" [ ] 3" [ ] 4" [ ] 6" [ ] _____

Screen Slot: [ ] 0.008 [X] 0.010 [ ] _____

Screen Style: [X] Machine Slot [ ] Wire Wrap [ ] _____

Sand Pack: Norton 10-20 Silica Sand

Bentonite Seal: [ ] 1/2" Pellets [X] Hole Plug [ ] Slurry
[ ] 1/4" Pellets [ ] _____

Grout Type: 3/8 Baroid Weight: _____

Bore Hole Diameter: 11"

Drill Rig: [X] Hollow Stem [ ] Rotary [ ] _____

Drilled By: Holocene Drilling- Matt Graham

Logged By: Harold Cashman

Completion Date: 5/29/03

Date	D-T-W	MSL	Date	Field pH	Field EC

Comments: No sheen in cuttings

Whatcom Environmental Services

AS-1

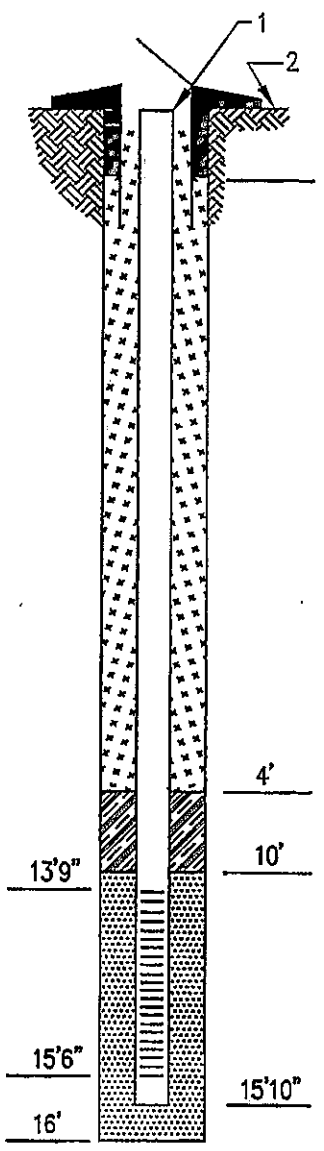
Project: Sievers
Location: 6000 Portal Way

Sym	Samp Loc	PID (ppm)	Depth (Feet)

Geologic Description

METHOD	SS=Split Spoon	C=Cuttings

Air Sparge Well
Piezometer



Depths in Feet
from Ground Surface
(Not to Scale)

Design Specifications

Elevations:
(feet MSL) 1 _____ 2 _____

Coordinates: X _____ Y _____

Type of Casing: [X] PVC Sched. 40 Flush Thread
[ ] Stainless Steel [ ] _____

Casing Diameter: [X] 2" [ ] 3" [ ] 4" [ ] 6" [ ] _____

Screen Slot: [ ] 0.008 [X] 0.010 [ ] _____

Screen Style: [X] Machine Slot [ ] Wire Wrap [ ] _____

Sand Pack: Norton 10--20 Silica Sand

Bentonite Seal: [ ] 1/2" Pellets [X] Hole Plug [ ] Slurry
[ ] 1/4" Pellets [ ] _____

Grout Type: 3/8 Baroid Weight: _____

Bore Hole Diameter: 11"

Drill Rig: [X] Hollow Stem [ ] Rotary [ ] _____

Drilled By: Holocene Drilling-- Matt Graham

Logged By: Harold Cashman

Completion Date: 5/29/03

Date	D--T--W	MSL	Date	Field pH	Field EC

Comments: Slight sheen in cuttings

Whatcom Environmental Services

AS-2

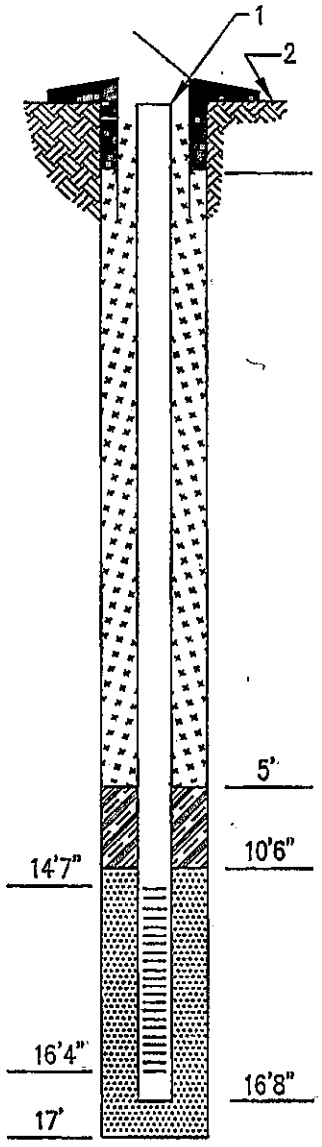
Project: Sievers
Location: 6000 Portal Way

Sym	Samp Loc	PID (ppm)	Depth (Feet)

Geologic Description

METHOD	SS=Split Spoon	C=Cuttings

Air Sparge Well
Piezometer



Depths in Feet
from Ground Surface
(Not to Scale)

Design Specifications

Elevations: (feet MSL) 1 _____ 2 _____

Coordinates: X _____ Y _____

Type of Casing: [X] PVC Sched. 40 Flush Thread
[ ] Stainless Steel [ ] _____

Casing Diameter: [X] 2" [ ] 3" [ ] 4" [ ] 6" [ ] _____

Screen Slot: [ ] 0.008 [X] 0.010 [ ] _____

Screen Style: [X] Machine Slot [ ] Wire Wrap [ ] _____

Sand Pack: Norton 10-20 Silica Sand

Bentonite Seal: [ ] 1/2" Pellets [X] Hole Plug [ ] Slurry
[ ] 1/4" Pellets [ ] _____

Grout Type: 3/8 Baroid Weight: _____

Bore Hole Diameter: 11"

Drill Rig: [X] Hollow Stem [ ] Rotary [ ] _____

Drilled By: Holocene Drilling- Matt Graham

Logged By: Harold Cashman

Completion Date: 5/29/03

Date	D-T-W	MSL	Date	Field pH	Field EC

Comments: Heavy sheen in cuttings

Whatcom Environmental Services

AS-3

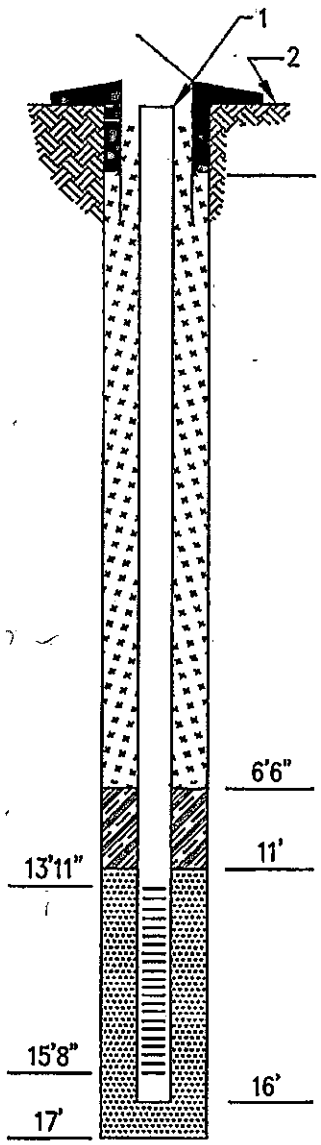
Project: Sievers
Location: 6000 Portal Way

Sym	Samp Loc	PID (ppm)	Depth (Feet)

Geologic Description

METHOD | SS=Split Spoon | C=Cuttings

Air Sparge Well
Piezometer



Depths in Feet
from Ground Surface
(Not to Scale)

Design Specifications

Elevations:
(feet MSL) 1 _____ 2 _____

Coordinates: X _____ Y _____

Type of Casing: [X] PVC Sched. 40 Flush Thread
[ ] Stainless Steel [ ] _____

Casing Diameter: [X] 2" [ ] 3" [ ] 4" [ ] 6" [ ] _____

Screen Slot: [ ] 0.008 [X] 0.010 [ ] _____

Screen Style: [X] Machine Slot [ ] Wire Wrap [ ] _____

Sand Pack: Norton 10-20 Silica Sand

Bentonite Seal: [ ] 1/2" Pellets [X] Hole Plug [ ] Slurry
[ ] 1/4" Pellets [ ] _____

Grout Type: 3/8 Baroid Weight: _____

Bore Hole Diameter: 11"

Drill Rig: [X] Hollow Stem [ ] Rotary [ ] _____

Drilled By: Holocene Drilling- Matt Graham

Logged By: Harold Cashman

Completion Date: 5/29/03

Date	D-T-W	MSL	Date	Field pH	Field EC

Comments: Heavy sheen in cuttings

Whatcom Environmental Services

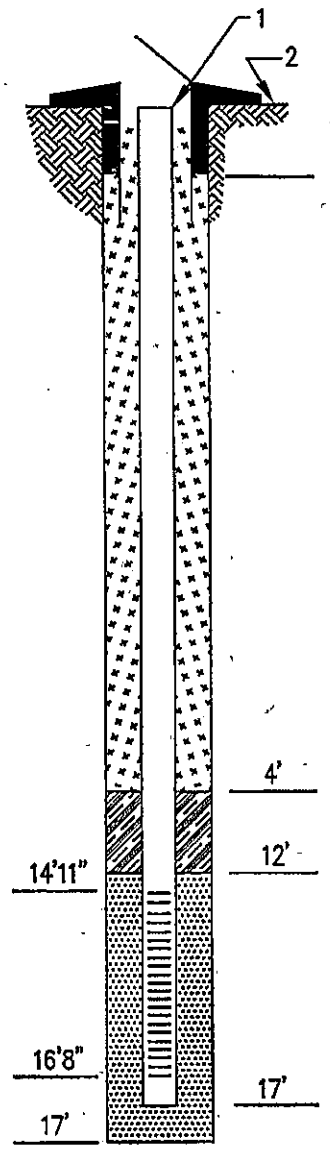
AS-4

Project: Sievers
Location: 6000 Portal Way

Sym	Samp Loc	PID (ppm)	Depth (Feet)	Geologic Description

METHOD	SS=Split Spoon	C=Cuttings

Air Sparge Well
Piezometer



Depths in Feet
from Ground Surface
(Not to Scale)

Design Specifications

Elevations:
(feet MSL) 1 _____ 2 _____

Coordinates: X _____ Y _____

Type of Casing: [X] PVC Sched. 40 Flush Thread
[ ] Stainless Steel [ ] _____

Casing Diameter: [X] 2" [ ] 3" [ ] 4" [ ] 6" [ ] _____

Screen Slot: [ ] 0.008 [X] 0.010 [ ] _____

Screen Style: [X] Machine Slot [ ] Wire Wrap [ ] _____

Sand Pack: Norton 10-20 Silica Sand

Bentonite Seal: [ ] 1/2" Pellets [X] Hole Plug [ ] Slurry
[ ] 1/4" Pellets [ ] _____

Grout Type: 3/8 Baroid Weight: _____

Bore Hole Diameter: 11"

Drill Rig: [X] Hollow Stem [ ] Rotary [ ] _____

Drilled By: Holocene Drilling- Matt Graham

Logged By: Harold Cashman

Completion Date: 5/29/03

Date	D-T-W	MSL	Date	Field pH	Field EC

Comments: Heavy sheen in cuttings

Whatcom Environmental Services

AS-5

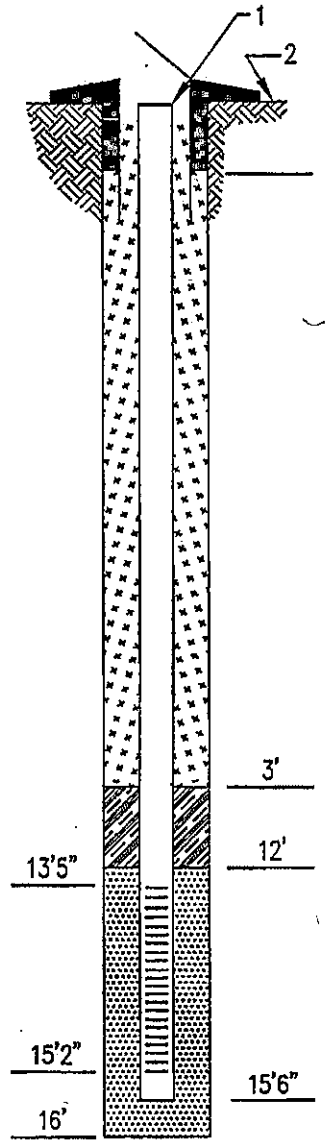
Project: Sievers
Location: 6000 Portal Way

Sym	Samp Loc	PID (ppm)	Depth (Feet)

Geologic Description

METHOD	SS=Split Spoon	C=Cuttings

Air Sparge Well ☐
Piezometer ☐



Depths in Feet
from Ground Surface
(Not to Scale)

Design Specifications

Elevations:
(feet MSL) 1 _____ 2 _____

Coordinates: X _____ Y _____

Type of Casing: ☒ PVC Sched. 40 Flush Thread
☐ Stainless Steel ☐ _____

Casing Diameter: ☒ 2" ☐ 3" ☐ 4" ☐ 6" ☐ _____

Screen Slot: ☐ 0.008 ☒ 0.010 ☐ _____

Screen Style: ☒ Machine Slot ☐ Wire Wrap ☐ _____

Sand Pack: Norton 10–20 Silica Sand

Bentonite Seal: ☐ 1/2" Pellets ☒ Hole Plug ☐ Slurry
☐ 1/4" Pellets ☐ _____

Grout Type: 3/8 Baroid Weight: _____

Bore Hole Diameter: 11"

Drill Rig: ☒ Hollow Stem ☐ Rotary ☐ _____

Drilled By: Holocene Drilling– Matt Graham

Logged By: Harold Cashman

Completion Date: 5/30/03

Date	D–T–W	MSL	Date	Field pH	Field EC

Comments: Moderate sheen in cuttings

Whatcom Environmental Services

AS–6

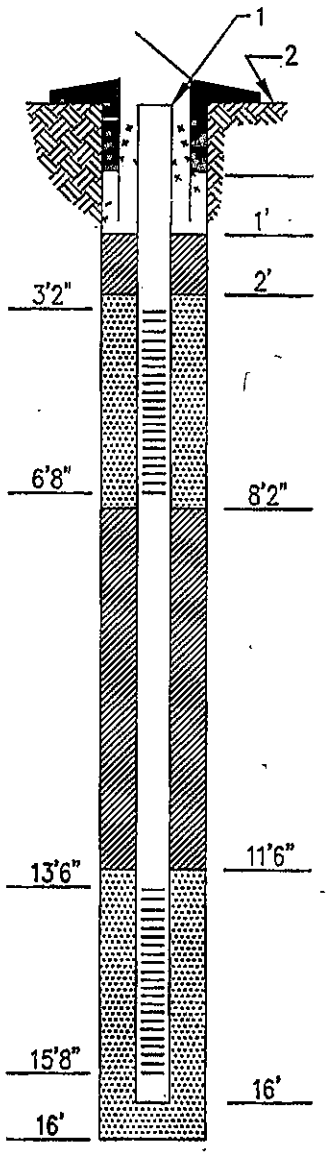
Project: Sievers
Location: 6000 Portal Way

Sym	Samp Loc	PID (ppm)	Depth (Feet)

Geologic Description

METHOD		SS=Split Spoon	C	C=Cuttings

DDC Well	X
Piezometer	



Depths in Feet
from Ground Surface
(Not to Scale)

Design Specifications

Elevations:
(feet MSL) 1 _____ 2 _____

Coordinates: X _____ Y _____

Type of Casing: [X] PVC Sched. 40 Flush Thread
[ ] Stainless Steel [ ] _____

Casing Diameter: [X] 2" [ ] 3" [ ] 4" [ ] 6" [ ] _____

Screen Slot: [ ] 0.008 [X] 0.010 [ ] _____

Screen Style: [X] Machine Slot [ ] Wire Wrap [ ] _____

Sand Pack: Norton 10–20 Silica Sand

Bentonite Seal: [ ] 1/2" Pellets [X] Hole Plug [ ] Slurry
[ ] 1/4" Pellets [ ] _____

Grout Type: 3/8 Baroid Weight: _____

Bore Hole Diameter: 11"

Drill Rig: [X] Hollow Stem [ ] Rotary [ ] _____

Drilled By: Holocene Drilling– Matt Graham

Logged By: Harold Cashman

Completion Date: 5/30/03

Date	D–T–W	MSL	Date	Field pH	Field EC

Comments: Heavy sheen in cuttings

Whatcom Environmental Services

MW–6

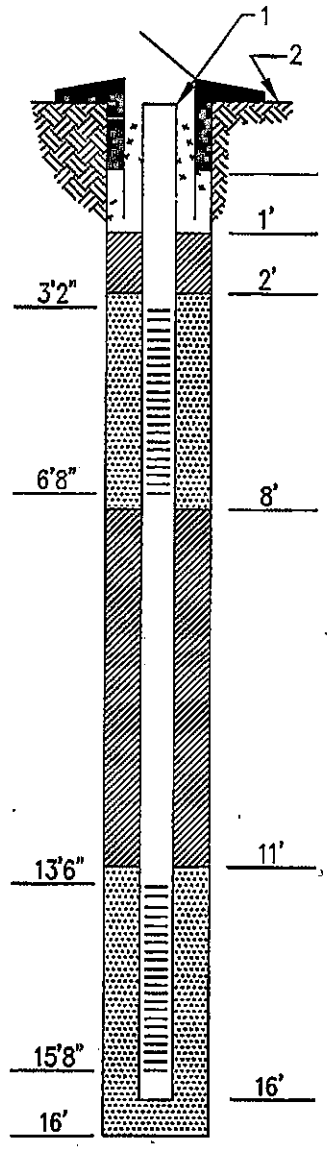
Project: Sievers
Location: 6000 Portal Way

Sym	Samp Loc	PID (ppm)	Depth (Feet)

Geologic Description

METHOD		SS=Split Spoon	C	C=Cuttings

DDC Well	X
Piezometer	



Depths in Feet
from Ground Surface
(Not to Scale)

Design Specifications

Elevations:
(feet MSL) 1 _____ 2 _____

Coordinates: X _____ Y _____

Type of Casing: [X] PVC Sched. 40 Flush Thread
[ ] Stainless Steel [ ] _____

Casing Diameter: [X] 2" [ ] 3" [ ] 4" [ ] 6" [ ] _____

Screen Slot: [ ] 0.008 [X] 0.010 [ ] _____

Screen Style: [X] Machine Slot [ ] Wire Wrap [ ] _____

Sand Pack: Norton 10–20 Silica Sand

Bentonite Seal: [ ] 1/2" Pellets [X] Hole Plug [ ] Slurry
[ ] 1/4" Pellets [ ] _____

Grout Type: 3/8 Baroid Weight: _____

Bore Hole Diameter: 11"

Drill Rig: [X] Hollow Stem [ ] Rotary [ ] _____

Drilled By: Holocene Drilling– Matt Graham

Logged By: Harold Cashman

Completion Date: 5/30/03

Date	D–T–W	MSL	Date	Field pH	Field EC

Comments: Heavy sheen in cuttings

Whatcom Environmental Services

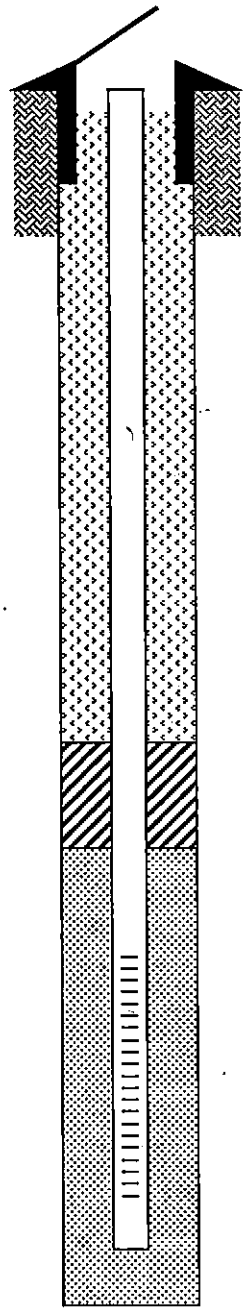
MW–7

Project: Sievers
Location: 6000 Portal Way

APPENDIX E

2013 Well Construction Diagrams

Well Design Specifications



Not to Scale

Depths in Feet Below Ground Surface

0.5

2

3.5

13.5

14

14

Elevations (feet): Top of Casing: 40.73
Mean Sea Level (MSL) Ground Elevation: 41.42

Coordinates: 11218924.4690E 682966.2994N

Coordinate System: Nad 83 2011

Type of Casing: PVC

Casing Diameter: 2"

Screen Slot: 0.010

Screen Style: Cut Slot

Sand Pack: Colorado 10/20

Bentonite Seal: Medium Chip

Grout Type: **Weight:**

Bore Hole Diameter: 8"

Drill Rig: B-61

Drilled by: Tom Adams - EDI

Logged by: Thom Davis - WES

Completion Date: 5/7/2013

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
5/23/2013	4.05	36.68	6.44	0.221
8/12/2013	5.45	35.28	6.50	0.288
11/14/2013	4.44	36.29	6.90	0.231
2/6/2014	3.9	36.83	6.59	0.282

Comments: Heaving sands at 12 feet

Project: Kris' Mini Mart

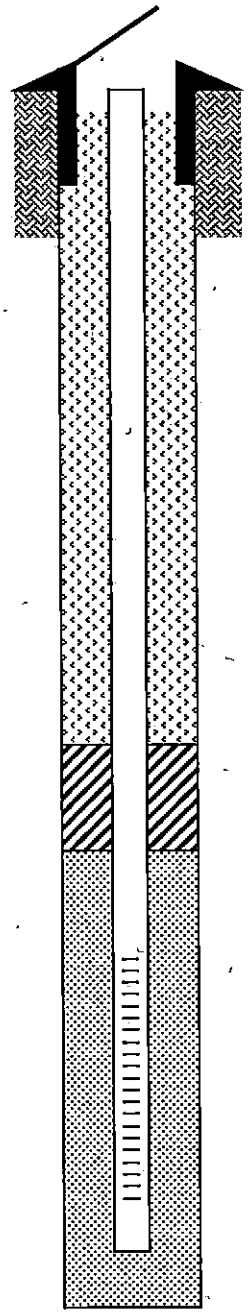
Location: Southeast of T.P.

Whatcom Environmental Services
228 East Champion Street #101
Bellingham, WA 98225
(360) 752-9571

MW-8

Ecology Well ID:
BHE-487

Well Design Specifications



Not to Scale

Depths in Feet Below Ground Surface

1

2

3.8

13.8

14

14

Elevations (feet): Top of Casing: 40.81
Mean Sea Level (MSL) Ground Elevation: 41.01

Coordinates: 121.8898.6350E 682966.6488N

Coordinate System: Nad 83 2011

Type of Casing: PVC

Casing Diameter: 2"

Screen Slot: 0.010

Screen Style: Machine Slot

Sand Pack: Colorado 10/20

Bentonite Seal: Medium Chip

Grout Type: **Weight:**

Bore Hole Diameter: 8"

Drill Rig: B-61

Drilled by: Tom Adams - EDI

Logged by: Thom Davis - WES

Completion Date: 5/7/2013

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
5/23/2013	4.09	36.72	6.41	0.207
8/12/2013	5.48	35.33	6.49	0.262
11/14/2013	4.47	36.34	6.67	0.258
2/6/2014	3.95	36.86	6.61	0.208

Comments:

Project: Kris' Mini Mart

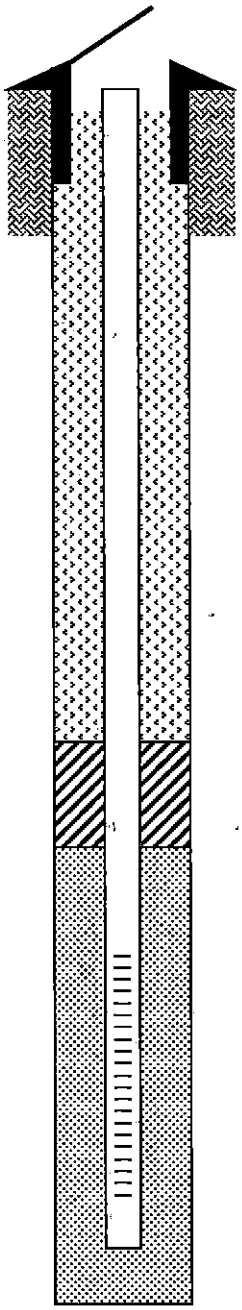
Location: South of T.P.

Whatcom Environmental Services
228 East Champion Street #101
Bellingham, WA 98225
(360) 752-9571

MW-9

Ecology Well ID: **BHE-488**

Well Design Specifications



Not to Scale

Depths in Feet Below Ground Surface

1

2.5

4.5

14.5

15

15

Elevations (feet): Top of Casing: 40.80
Mean Sea Level (MSL) Ground Elevation: 41.16

Coordinates: 1218939.1410E 682931.6129N

Coordinate System: Nad 83 2011

Type of Casing: PVC

Casing Diameter: 2"

Screen Slot: 0.010

Screen Style: Machine Slot

Sand Pack: Colorado 10/20

Bentonite Seal: Medium Chip.

Grout Type: **Weight:**

Bore Hole Diameter: 8"

Drill Rig: B-61

Drilled by: Tom Adams - EDI

Logged by: Thom Davis - WES

Completion Date: 5/8/2013

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
5/23/2013	4.22	36.58	6.60	0.309
8/12/2013	5.63	35.17	6.67	0.283
11/14/2013	4.66	36.14	6.77	0.273
2/6/2014	4.06	36.74	6.73	0.274

Comments: 1.5' heave sands
While flushing heave sands well dipped to 15' bgs
Added 9" extension attached with slip joint - non glue

Project: Kris' Mini Mart

Location: East of dispenser slab

Whatcom Environmental Services
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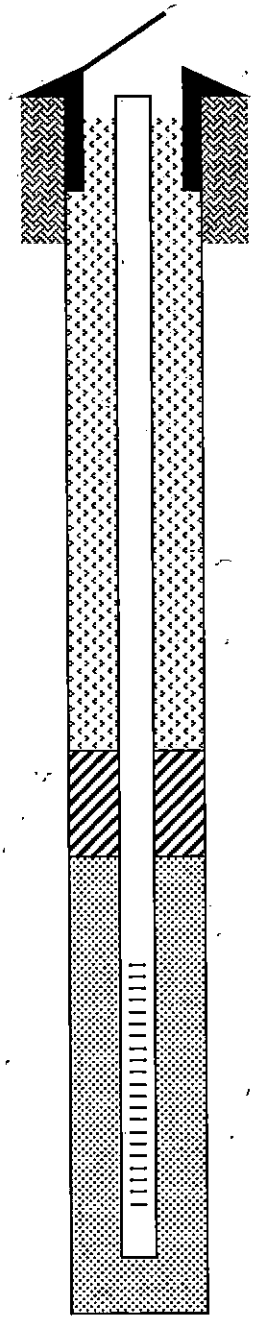
MW-10

Ecology Well ID: **BHE-491**

Well Design Specifications



Not to Scale

Depths in Feet Below Ground Surface

1

2

3.5

13.5

14

14

Elevations (feet): Top of Casing: 40.94
Mean Sea Level (MSL) Ground Elevation: 41.29

Coordinates: 1218914.4310E 682933.4834N

Coordinate System: Nad 83 2011

Type of Casing: PVC

Casing Diameter: 2"

Screen Slot: 0.010

Screen Style: Machine Slot

Sand Pack: Colorado 10/20

Bentonite Seal: Medium Chip

Grout Type: **Weight:**

Bore Hole Diameter: 8"

Drill Rig: Sim Co - Track Rig

Drilled by: Tom Adams - EDI

Logged by: Thom Davis - WES

Completion Date: 5/9/2013

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
5/23/2013	4.32	36.62	6.50	0.525
8/12/2013	5.71	35.23	6.50	0.240
11/14/2013	4.71	36.23	7.08	0.236
2/6/2014	4.16	36.78	6.67	0.264

Comments:

Project: Kris' Mini Mart

Location: East side slab under canopy

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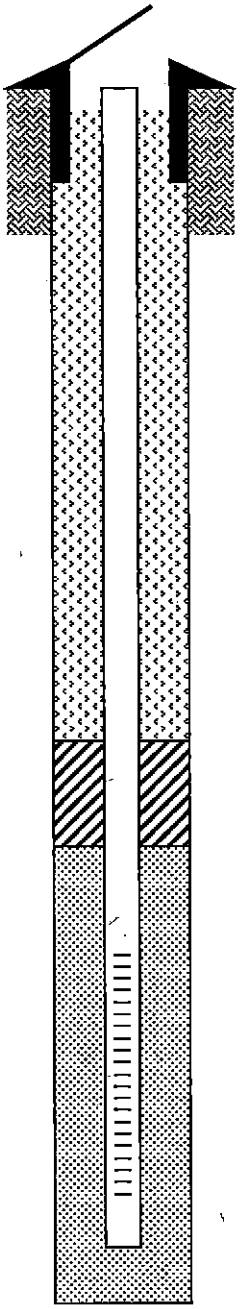
MW-11

Ecology Well ID: **BHE-493**

Well Design Specifications



Not to Scale

Depths in Feet Below Ground Surface

1

2

3.8

13.8

14

14

Elevations (feet): Top of Casing: 40.84
Mean Sea Level (MSL) Ground Elevation: 41.18

Coordinates: 1218896.0810E 682934.3747N

Coordinate System: Nad 83 2011

Type of Casing: PVC

Casing Diameter: 2"

Screen Slot: 0.010

Screen Style: Machine Slot

Sand Pack: Colorado 10/20

Bentonite Seal: Medium Chip

Grout Type: **Weight:**

Bore Hole Diameter: 8"

Drill Rig: Sim Co - Track Rig

Drilled by: Tom Adams - EDI

Logged by: Thom Davis - WES

Completion Date: 5/9/2013

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
5/23/2013	4.19	36.65	6.63	0.287
8/12/2013	5.55	35.29	6.58	0.250
11/14/2013	4.58	36.26	6.89	0.259
2/6/2014	4.02	36.82	6.81	0.289

Comments: 2' Heavy Sand at 14' bgs

Project: Kris' Mini Mart

Location: West side under canopy

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228 East Champion Street #101
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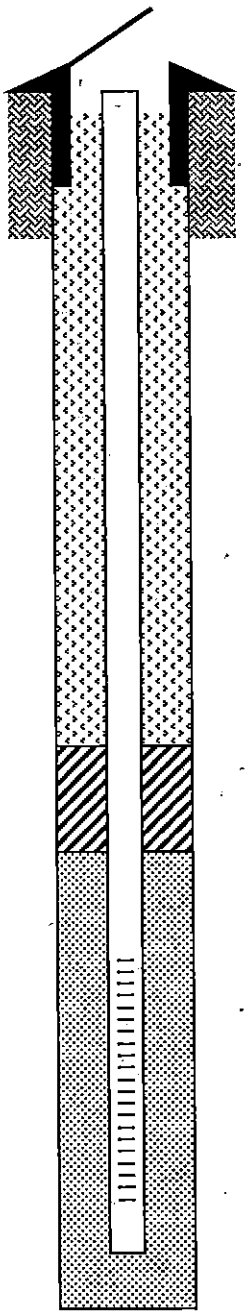
MW-12

Ecology Well ID: **BHE-492**

Well Design Specifications



Depths in Feet Below Ground Surface

1

2

3.5

13.5

14

14

Not to Scale

Elevations (feet): Top of Casing: 40.39
Mean Sea Level (MSL) Ground Elevation: 40.83

Coordinates: 1218965.5130E 682914.3803N

Coordinate System: Nad 83 2011

Type of Casing: PVC

Casing Diameter: 2"

Screen Slot: 0.010

Screen Style: Machine Slot

Sand Pack: Colorado 10/20

Bentonite Seal: Medium Chip

Grout Type: **Weight:**

Bore Hole Diameter: 8"

Drill Rig: B-61

Drilled by: Tom Adams - EDI

Logged by: Thom Davis - WES

Completion Date: 5/7/2013

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
5/23/2013	3.87	36.52	6.58	0.240
8/12/2013	5.29	35.10	6.66	0.283
11/14/2013	4.32	36.07	6.74	0.287
2/7/2014	3.69	36.70	6.66	0.286

Comments:

Project: Kris' Mini Mart

Location: In front of store

Whatcom Environmental Services
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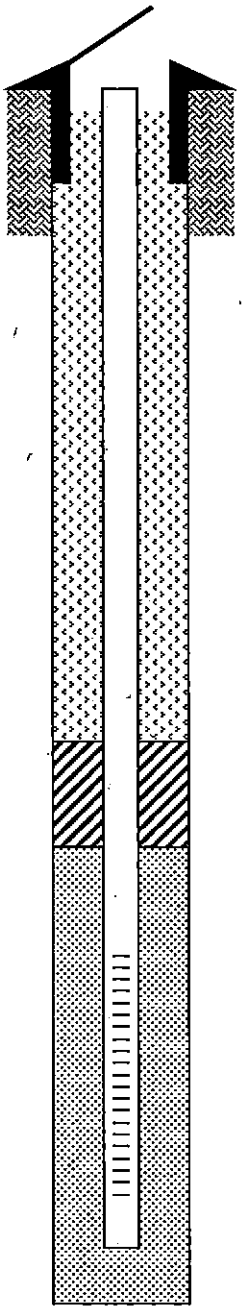
Bellingham, WA 98225
(360) 752-9571

MW-13

Ecology Well ID: **BHE-490**

Well Design Specifications



Not to Scale

Depths in Feet Below Ground Surface

1

2

3.5

13.5

14

14

Elevations (feet): Top of Casing: 40.56
Mean Sea Level (MSL) Ground Elevation: 41.05

Coordinates: 1218907.3890E 682903.2713N

Coordinate System: Nad 83 2011

Type of Casing: PVC

Casing Diameter: 2"

Screen Slot: 0.010

Screen Style: Machine Slot

Sand Pack: Colorado 10/20

Bentonite Seal: Medium Chip

Grout Type: **Weight:**

Bore Hole Diameter: 8"

Drill Rig: B-61

Drilled by: Tom Adams - EDI

Logged by: Thom Davis - WES

Completion Date: 5/7/2013

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
5/23/2013	3.99	36.57	6.76	0.274
8/12/2013	5.36	35.20	6.86	0.246
11/14/2013	4.25	36.31	6.97	0.276
2/7/2014	3.82	36.74	7.01	0.28

Comments:

Project: Kris' Mini Mart

Location: South center dispensers

Whatcom Environmental Services
228 East Champion Street #101
Bellingham, WA 98225
(360) 752-9571

MW-14

Ecology Well ID: **BHE-489**

APPENDIX F

Soil Laboratory Analytical Data Report

May 20, 2013

Mr. Thom Davis
Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

Dear Mr. Davis,

On May 10th, 16 samples were received by our laboratory and assigned our laboratory project number EV13050059. The project was identified as your Kris' Mini Mart. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2013 EV13050059 -01
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/7/2013 9:30:00 AM
CLIENT SAMPLE ID	B-8 8.5ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**4.6**	3.0	1	MG/KG	05/10/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	0.10	1	MG/KG	05/10/2013	DLC
Benzene	EPA-8021	U	0.030	1	MG/KG	05/10/2013	DLC
Toluene	EPA-8021	U	0.050	1	MG/KG	05/10/2013	DLC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	05/10/2013	DLC
Xylenes	EPA-8021	U	0.20	1	MG/KG	05/10/2013	DLC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	05/10/2013	LAP
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	05/10/2013	LAP
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/14/2013	GAP
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/14/2013	GAP
Lead	EPA-6020	**2.0**	0.50	5	MG/KG	05/13/2013	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**73.8**	05/10/2013	DLC
TFT	EPA-8021	**74.8**	05/10/2013	DLC
C25	NWTPH-DX	**94.4**	05/10/2013	LAP
1,2-Dichloroethane-d4	EPA-8260	**106**	05/14/2013	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline.

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2013 EV13050059 -02
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/7/2013 11:30:00 AM
CLIENT SAMPLE ID	B-9 6ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**1300**	300	100	MG/KG	05/13/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	2.0	20	MG/KG	05/13/2013	DLC
Benzene	EPA-8021	U	0.60	20	MG/KG	05/13/2013	DLC
Toluene	EPA-8021	U	1.0	20	MG/KG	05/13/2013	DLC
Ethylbenzene	EPA-8021	**6.1**	1.0	20	MG/KG	05/13/2013	DLC
Xylenes	EPA-8021	**7.0**	4.0	20	MG/KG	05/13/2013	DLC
TPH-Diesel Range	NWTPH-DX	U	220	1	MG/KG	05/10/2013	LAP
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	05/10/2013	LAP
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/14/2013	GAP
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/14/2013	GAP
Lead	EPA-6020	**1.9**	0.50	5	MG/KG	05/13/2013	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 100X Dilution	NWTPH-GX	**0.0951 gs2**	05/13/2013	DLC
TFT 20X Dilution	EPA-8021	**2.95 GS2**	05/13/2013	DLC
C25	NWTPH-DX	**89.1**	05/10/2013	LAP
1,2-Dichloroethane-d4	EPA-8260	**182 GS1**	05/14/2013	GAP

GS1 - Surrogate outside of control limits due to matrix effect.
gs2 - Surrogate outside of control limits due to dilution.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline.
Diesel range product reporting limits raised due to volatile range product overlap.

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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2013 EV13050059 -03
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/7/2013 11:45:00 AM
CLIENT SAMPLE ID	B-9 9ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**92**	6.0	2	MG/KG	05/13/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	0.20	2	MG/KG	05/13/2013	DLC
Benzene	EPA-8021	U	0.060	2	MG/KG	05/13/2013	DLC
Toluene	EPA-8021	**0.12**	0.10	2	MG/KG	05/13/2013	DLC
Ethylbenzene	EPA-8021	**0.19**	0.10	2	MG/KG	05/13/2013	DLC
Xylenes	EPA-8021	U	0.40	2	MG/KG	05/13/2013	DLC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	05/10/2013	LAP
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	05/10/2013	LAP
Benzene	EPA-8260	**13**	5.0	1	UG/KG	05/17/2013	GAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 2X Dilution	NWTPH-GX	**99.1**	05/13/2013	DLC
TFT 2X Dilution	EPA-8021	**98.4**	05/13/2013	DLC
C25	NWTPH-DX	**92.4**	05/10/2013	LAP
Toluene-d8	EPA-8260	**94.9**	05/17/2013	GAP

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline.

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2013 EV13050059 -04
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/7/2013 11:56:00 AM
CLIENT SAMPLE ID	B-9 14ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	05/10/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	0.10	1	MG/KG	05/10/2013	DLC
Benzene	EPA-8021	**0.12**	0.030	1	MG/KG	05/10/2013	DLC
Toluene	EPA-8021	**0.085**	0.050	1	MG/KG	05/10/2013	DLC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	05/10/2013	DLC
Xylenes	EPA-8021	U	0.20	1	MG/KG	05/10/2013	DLC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	05/10/2013	LAP
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	05/10/2013	LAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**79.5**	05/10/2013	DLC
TFT	EPA-8021	**76.7**	05/10/2013	DLC
C25	NWTPH-DX	**61.0**	05/10/2013	LAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	5/20/2013
		ALS JOB#:	EV13050059
		ALS SAMPLE#:	-05
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/7/2013 1:45:00 PM
CLIENT SAMPLE ID	B-14 2ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	130	20	MG/KG	05/14/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	1.0	10	MG/KG	05/13/2013	DLC
Benzene	EPA-8021	U	0.30	10	MG/KG	05/13/2013	DLC
Toluene	EPA-8021	U	0.50	10	MG/KG	05/13/2013	DLC
Ethylbenzene	EPA-8021	U	0.50	10	MG/KG	05/13/2013	DLC
Xylenes	EPA-8021	U	2.0	10	MG/KG	05/13/2013	DLC
TPH-Diesel Range	NWTPH-DX	**2200**	250	10	MG/KG	05/13/2013	LAP
TPH-Oil Range	NWTPH-DX	**1400**	500	10	MG/KG	05/13/2013	LAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 20X Dilution	NWTPH-GX	**0.274 GS2**	05/14/2013	DLC
TFT 10X Dilution	EPA-8021	**1.06 GS2**	05/13/2013	DLC
C25 10X Dilution	NWTPH-DX	**117 DS2**	05/13/2013	LAP

U - Analyte analyzed for but not detected at level above reporting limit.
GS2 - Surrogate outside of control limits due to dilution.
DS2 - Due to high dilution factor surrogate results should be considered uncontrolled.
Chromatogram indicates that it is likely that sample contains diesel 1 and lube oil.
Gasoline range reporting limit raised due to semivolatile range product overlap.

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2013 EV13050059 -06
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/7/2013 1:55:00 PM
CLIENT SAMPLE ID	B-14 6ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	05/13/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	0.10	1	MG/KG	05/13/2013	DLC
Benzene	EPA-8021	U	0.030	1	MG/KG	05/13/2013	DLC
Toluene	EPA-8021	U	0.050	1	MG/KG	05/13/2013	DLC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	05/13/2013	DLC
Xylenes	EPA-8021	U	0.20	1	MG/KG	05/13/2013	DLC
TPH-Diesel Range	NWTPH-DX	**330**	25	1	MG/KG	05/10/2013	LAP
TPH-Oil Range	NWTPH-DX	**310**	50	1	MG/KG	05/10/2013	LAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**75.7**	05/13/2013	DLC
TFT	EPA-8021	**74.4**	05/13/2013	DLC
C25	NWTPH-DX	**94.5**	05/10/2013	LAP

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains diesel 1 and lube oil.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2013 EV13050059 -07
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/7/2013 2:10:00 PM
CLIENT SAMPLE ID	B-14 9ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	70	10	MG/KG	05/13/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	1.0	10	MG/KG	05/13/2013	DLC
Benzene	EPA-8021	U	0.30	10	MG/KG	05/13/2013	DLC
Toluene	EPA-8021	U	0.50	10	MG/KG	05/13/2013	DLC
Ethylbenzene	EPA-8021	1.1	0.50	10	MG/KG	05/13/2013	DLC
Xylenes	EPA-8021	U	2.0	10	MG/KG	05/13/2013	DLC
TPH-Diesel Range	NWTPH-DX	2600	120	5	MG/KG	05/13/2013	LAP
TPH-Oil Range	NWTPH-DX	950	50	1	MG/KG	05/10/2013	LAP
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/14/2013	GAP
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/14/2013	GAP
Lead	EPA-6020	5.8	0.50	5	MG/KG	05/13/2013	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 10X Dilution	NWTPH-GX	0.799 GS2	05/13/2013	DLC
TFT 10X Dilution	EPA-8021	1.02 GS2	05/13/2013	DLC
C25	NWTPH-DX	110	05/10/2013	LAP
1,2-Dichloroethane-d4	EPA-8260	103	05/14/2013	GAP

GS2 - Surrogate outside of control limits due to dilution.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains diesel 1 and lube oil.
Gasoline range reporting limit raised due to semivolatile range product overlap.

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2013 EV13050059 -08
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/7/2013 4:05:00 PM
CLIENT SAMPLE ID	B-13 6.5ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**6.2**	3.0	1	MG/KG	05/13/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	0.10	1	MG/KG	05/13/2013	DLC
Benzene	EPA-8021	**0.031**	0.030	1	MG/KG	05/13/2013	DLC
Toluene	EPA-8021	**0.072**	0.050	1	MG/KG	05/13/2013	DLC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	05/13/2013	DLC
Xylenes	EPA-8021	U	0.20	1	MG/KG	05/13/2013	DLC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	05/10/2013	LAP
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	05/10/2013	LAP
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	05/10/2013	LAP
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	05/10/2013	LAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**85.5**	05/13/2013	DLC
TFT	EPA-8021	**82.1**	05/13/2013	DLC
C25	NWTPH-DX	**94.0**	05/10/2013	LAP
C25	NWTPH-DX	**94.0**	05/10/2013	LAP

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline.

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2013 EV13050059 -09
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/7/2013 4:20:00 PM
CLIENT SAMPLE ID	B-13 14ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	05/10/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	0.10	1	MG/KG	05/10/2013	DLC
Benzene	EPA-8021	U	0.030	1	MG/KG	05/10/2013	DLC
Toluene	EPA-8021	U	0.050	1	MG/KG	05/10/2013	DLC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	05/10/2013	DLC
Xylenes	EPA-8021	U	0.20	1	MG/KG	05/10/2013	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**72.4**	05/10/2013	DLC
TFT	EPA-8021	**72.5**	05/10/2013	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2013 EV13050059 -10
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/8/2013 8:55:00 AM
CLIENT SAMPLE ID	B-10 6.5ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**4900**	300	100	MG/KG	05/10/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	10	100	MG/KG	05/10/2013	DLC
Benzene	EPA-8021	U	3.0	100	MG/KG	05/10/2013	DLC
Toluene	EPA-8021	**82**	5.0	100	MG/KG	05/10/2013	DLC
Ethylbenzene	EPA-8021	**21**	5.0	100	MG/KG	05/10/2013	DLC
Xylenes	EPA-8021	**300**	20	100	MG/KG	05/10/2013	DLC
TPH-Diesel Range	NWTPH-DX	U	220	1	MG/KG	05/11/2013	LAP
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	05/11/2013	LAP
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/14/2013	GAP
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/14/2013	GAP
Lead	EPA-6020	**2.1**	0.50	5	MG/KG	05/13/2013	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 100X Dilution	NWTPH-GX	**0.0243 GS2**	05/10/2013	DLC
TFT 100X Dilution	EPA-8021	**0.0457 GS2**	05/10/2013	DLC
C25	NWTPH-DX	**99.4**	05/11/2013	LAP
1,2-Dichloroethane-d4	EPA-8260	**111**	05/14/2013	GAP

GS2 - Surrogate outside of control limits due to dilution.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains extremely weathered gasoline.
Diesel range product reporting limits raised due to volatile range product overlap.

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2013 EV13050059 -11
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/8/2013 9:15:00 AM
CLIENT SAMPLE ID	B-10 14ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	05/13/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	0.10	1	MG/KG	05/13/2013	DLC
Benzene	EPA-8021	U	0.030	1	MG/KG	05/13/2013	DLC
Toluene	EPA-8021	**0.061**	0.050	1	MG/KG	05/13/2013	DLC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	05/13/2013	DLC
Xylenes	EPA-8021	**0.24**	0.20	1	MG/KG	05/13/2013	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**80.9**	05/13/2013	DLC
TFT	EPA-8021	**81.8**	05/13/2013	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	5/20/2013
		ALS JOB#:	EV13050059
		ALS SAMPLE#:	-12
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/9/2013 9:15:00 AM
CLIENT SAMPLE ID	B-12 6.5ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	2600	120	40	MG/KG	05/13/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	4.0	40	MG/KG	05/13/2013	DLC
Benzene	EPA-8021	U	1.2	40	MG/KG	05/13/2013	DLC
Toluene	EPA-8021	U	2.0	40	MG/KG	05/13/2013	DLC
Ethylbenzene	EPA-8021	2.2	2.0	40	MG/KG	05/13/2013	DLC
Xylenes	EPA-8021	110	8.0	40	MG/KG	05/13/2013	DLC
TPH-Diesel Range	NWTPH-DX	U	220	1	MG/KG	05/11/2013	LAP
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	05/11/2013	LAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 40X Dilution	NWTPH-GX	0.0857 GS2	05/13/2013	DLC
TFT 40X Dilution	EPA-8021	0.109 GS2	05/13/2013	DLC
C25	NWTPH-DX	81.9	05/11/2013	LAP

GS2 - Surrogate outside of control limits due to dilution.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains extremely weathered gasoline.
Diesel range product reporting limits raised due to volatile range product overlap.

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2013 EV13050059 -13
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/9/2013 11:20:00 AM
CLIENT SAMPLE ID	B-11 6.5ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**3000**	150	50	MG/KG	05/13/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	5.0	50	MG/KG	05/13/2013	DLC
Benzene	EPA-8021	U	1.5	50	MG/KG	05/13/2013	DLC
Toluene	EPA-8021	**36**	2.5	50	MG/KG	05/13/2013	DLC
Ethylbenzene	EPA-8021	**22**	2.5	50	MG/KG	05/13/2013	DLC
Xylenes	EPA-8021	**300**	10	50	MG/KG	05/13/2013	DLC
TPH-Diesel Range	NWTPH-DX	U	220	1	MG/KG	05/11/2013	LAP
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	05/11/2013	LAP
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/14/2013	GAP
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/14/2013	GAP
Lead	EPA-6020	**2.3**	0.50	5	MG/KG	05/13/2013	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 50X Dilution	NWTPH-GX	**0.0303 GS2**	05/13/2013	DLC
TFT 50X Dilution	EPA-8021	**0.0778 GS2**	05/13/2013	DLC
C25	NWTPH-DX	**73.8**	05/11/2013	LAP
1,2-Dichloroethane-d4	EPA-8260	**109**	05/14/2013	GAP

GS2 - Surrogate outside of control limits due to dilution.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains extremely weathered gasoline.
Diesel range product reporting limits raised due to volatile range product overlap.

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2013 EV13050059 -14
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/9/2013 11:40:00 AM
CLIENT SAMPLE ID	B-11 10ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**59**	3.0	1	MG/KG	05/13/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	0.10	1	MG/KG	05/13/2013	DLC
Benzene	EPA-8021	U	0.030	1	MG/KG	05/13/2013	DLC
Toluene	EPA-8021	**0.54**	0.050	1	MG/KG	05/13/2013	DLC
Ethylbenzene	EPA-8021	**0.44**	0.050	1	MG/KG	05/13/2013	DLC
Xylenes	EPA-8021	**4.2**	0.20	1	MG/KG	05/13/2013	DLC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	05/11/2013	LAP
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	05/11/2013	LAP

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**107**	05/13/2013	DLC
TFT	EPA-8021	**107**	05/13/2013	DLC
C25	NWTPH-DX	**94.4**	05/11/2013	LAP

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains extremely weathered gasoline.

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2013 EV13050059 -15
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/9/2013 12:00:00 PM
CLIENT SAMPLE ID	B-11 15ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	05/11/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	0.10	1	MG/KG	05/11/2013	DLC
Benzene	EPA-8021	U	0.030	1	MG/KG	05/11/2013	DLC
Toluene	EPA-8021	U	0.050	1	MG/KG	05/11/2013	DLC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	05/11/2013	DLC
Xylenes	EPA-8021	U	0.20	1	MG/KG	05/11/2013	DLC
Lead	EPA-6020	2.0	0.50	5	MG/KG	05/13/2013	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	71.9	05/11/2013	DLC
TFT	EPA-8021	72.1	05/11/2013	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2013 EV13050059 -16
CLIENT CONTACT:	Thom Davis	DATE RECEIVED:	5/10/2013
CLIENT PROJECT:	Kris' Mini Mart	COLLECTION DATE:	5/9/2013 1:00:00 PM
CLIENT SAMPLE ID	B-16 6.5ft	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**2600**	150	50	MG/KG	05/13/2013	DLC
Methyl T-Butyl Ether	EPA-8021	U	5.0	50	MG/KG	05/13/2013	DLC
Benzene	EPA-8021	U	1.5	50	MG/KG	05/13/2013	DLC
Toluene	EPA-8021	**22**	2.5	50	MG/KG	05/13/2013	DLC
Ethylbenzene	EPA-8021	**15**	2.5	50	MG/KG	05/13/2013	DLC
Xylenes	EPA-8021	**230**	10	50	MG/KG	05/13/2013	DLC
TPH-Diesel Range	NWTPH-DX	U	220	1	MG/KG	05/11/2013	LAP
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	05/11/2013	LAP
Lead	EPA-6020	**2.2**	0.50	5	MG/KG	05/13/2013	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 50X Dilution	NWTPH-GX	**0.0349 GS2**	05/13/2013	DLC
TFT 50X Dilution	EPA-8021	**0.0743 GS2**	05/13/2013	DLC
C25	NWTPH-DX	**84.5**	05/11/2013	LAP

GS2 - Surrogate outside of control limits due to dilution.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains extremely weathered gasoline.
Diesel range product reporting limits raised due to volatile range product overlap.

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc.	DATE:	5/20/2013
	228 E. Champion St., Suite 101	ALS SDG#:	EV13050059
	Bellingham, WA 98225	WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Thom Davis		
CLIENT PROJECT:	Kris' Mini Mart		

LABORATORY BLANK RESULTS

MBG-051013S - Batch 3729 - Soil by NWTPH-GX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	05/10/2013	DLC

MB-051013S - Batch 3729 - Soil by EPA-8021

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Methyl T-Butyl Ether	EPA-8021	U	0.10	1	MG/KG	05/10/2013	DLC
Benzene	EPA-8021	U	0.030	1	MG/KG	05/10/2013	DLC
Toluene	EPA-8021	U	0.050	1	MG/KG	05/10/2013	DLC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	05/10/2013	DLC
Xylenes	EPA-8021	U	0.20	1	MG/KG	05/10/2013	DLC

MB-051013S2 - Batch 3728 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	05/10/2013	LAP
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	05/10/2013	LAP

MB-051413S - Batch 3739 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/14/2013	GAP
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/14/2013	GAP
Benzene	EPA-8260	U	5.0	1	UG/KG	05/14/2013	GAP
Toluene	EPA-8260	U	10	1	UG/KG	05/14/2013	GAP
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/14/2013	GAP

MB-051713S - Batch 3750 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/17/2013	GAP
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/17/2013	GAP
Benzene	EPA-8260	U	5.0	1	UG/KG	05/17/2013	GAP
Toluene	EPA-8260	U	10	1	UG/KG	05/17/2013	GAP
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/17/2013	GAP

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc.	DATE:	5/20/2013
	228 E. Champion St., Suite 101	ALS SDG#:	EV13050059
	Bellingham, WA 98225	WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Thom Davis		
CLIENT PROJECT:	Kris' Mini Mart		

LABORATORY BLANK RESULTS

MB-051013S - Batch 3726 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Lead	EPA-6020	U	0.10	1	MG/KG	05/13/2013	RAL

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