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Remedial Investigation and Feasibility Study Report for

Asotin County Regional Landfill

Prepared for:

Washington State Department of Ecology, and
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Acronyms

µ	micro
ACRL	Asotin County Regional Landfill
ARAR	Applicable Relevant Appropriate Requirements
ASTDR	Agency for Toxic Substances and Disease Registry
ASTM	American Society of Testing and Materials
bgs	below ground surface
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
cfs	cubic feet per second
CLP	Contract Laboratory Program
cm/sec	centimeters per second
COC	Contaminants of Concern
CRBG	Columbia River Basalt Group
CSM	conceptual site model
DNAPL	dense non-aqueous phase liquid
DO	dissolved oxygen
DPE	dual phase extraction
DQO	data quality objectives
Ecology	Washington State Department of Ecology
EIM	Environmental Information Management System
EPA	Environmental Protection Agency
Freon-11	trichlorofluoromethane
Freon-12	dichlorodifluoromethane
FRTR	Federal Remediation Technologies Roundtable
FS	Feasibility Study
ft	feet
ft/day	feet per day
ft^2/day	square feet per day
g/ml	grams per milliliter
GCL	geosynthetic clay liner
gpd/ft	gallons per day/per foot
gpm	gallons per minute
HC	hydraulic conductivity
HDPE	high-density polyethylene
LCS	Leachate Control System
MCL	maximum contaminant level
mil	millimeter
msl	mean sea level
MTCA	Model Toxics Control Act
MW	monitoring well
NOAEL	no observed adverse effect level
ORP	oxidation/ reduction potential
PA	Preliminary Assessment

PCB	Poly-chlorinated biphenyls
PCE	tetrachloroethene
PDB	Passive-diffusive bag
ppb	parts per billion
ppm	parts per million
PPP	Public Participation Plan
PUD	Asotin County Public Utilities District
RAOs	Remedial Action Objectives
RCRA	Resource Conservation Recovery Act
RI	Remedial Investigation
S/S	solidification and stabilization
SAP	Sampling and Analysis Plan
SPT	Standard Penetration Test
SVOC	semi-volatile organic compound
TCE	trichloroethene
TEE	terrestrial ecological evaluation
USCS	Unified Soil Classification System
VOC	volatile organic compound
WAC	Washington Administrative Code
WARM	Washington Ranking Method

1.0 Introduction

This report presents the findings from a focused remedial investigation (RI) and feasibility study (FS) conducted for Asotin County Regional Landfill (ACRL) located in Asotin County, Washington. This report has been prepared for ACRL in accordance with an existing consultant agreement between ACRL and CH2M HILL detailed in Amendment No. 5, titled *Asotin County Regional Landfill: 2008 & 2009 Groundwater Monitoring Program Services for Assessment Monitoring Program Development, Remedial Investigation, and Feasibility Study* (June 26, 2008*)*. This report is the Task 4 deliverable (Remedial Investigation and Feasibility Study Report) as described in the Amendment No. 5 Agreement.

In addition, this report was developed for the Washington State Department of Ecology (further referred to as "Ecology") to satisfy the Task 4 deliverable as communicated by ACRL to Ecology in the Letter Of Intent dated November 20, 2008 (Appendix A). This report is prepared in support of ACRL's efforts for conducting groundwater cleanup actions under the *Independent Remedial Action* of Model Toxics Control Act (MTCA), Chapter 173-340-515, Washington Administrative Code (WAC). Information provided in this report will support future required actions under MTCA cleanup process, including, but not limited to, development of a Cleanup Action Plan.

1.1 Purpose and Objectives

This report consists of two main parts including (1) a focused RI, and (2) an FS. The purpose of the RI is to collect data necessary to adequately characterize the site for the FS; the purpose of the FS is to develop, evaluate, and select a cleanup action under MTCA regulations. Results from the RI and FS findings are collectively documented into a RI and FS Report (herein).

The RI consists of a written and pictorial representation of the environmental, physical, and chemical processes describing the transport of contaminants from the source area through environmental media to potential receptors. Specific objectives of the RI are to provide a "framework" of site conditions that is intended to integrate all pertinent groundwater-related site information from available sources as follows:

(1) characterizing site conditions, site hydrogeology, and the regional hydrogeologic framework,

(2) characterizing the sources of contamination and related nature and extent of shallow groundwater contamination at the site,

(3) identifying the potential exposure to human and environmental receptors.

The information presented in this RI and FS Report generally follows information required under (1) MTCA, Chapter 173-340-350, WAC, *Remedial Investigation and Feasibility Study*, and (2) guidance provided in *ASTM Designation: E 1689-95 – Standard Guide for Developing Conceptual Site Models for Contaminated Sites* (ASTM International, 2008). The updated conceptual site model (CSM) presented in the RI is intended to be a working document current at the time of development and may be amended or updated in the future if additional substantive site characterization data are obtained.

1.2 MTCA Applicability

The regulatory framework applicable to groundwater corrective action for the closed landfill are governed under two separate but related regulations including (1) Chapter 173-340, WAC, *Model Toxics Control Act (MTCA) - Cleanup Regulation*, and (2) Chapter 173-351, WAC, *Criteria for Municipal Solid Waste Landfills*. A chronological summary of the applicability of groundwater cleanup requirements under these governing regulations is discussed below. To compliment the summary, Appendix A contains key documentation related to cleanup actions for the closed landfill.

In 1980, a Resource Conservation Recovery Act (RCRA) Open Dump Inventory inspection was conducted by Ecology, which resulted in the inclusion of the landfill onto the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database. The reason for inclusion of the site onto the CERCLIS database was because of the potential for groundwater contamination based on landfill activities at the time of the site inspection.

In 1987, Ecology conducted a field reconnaissance and preliminary assessment (PA) of the landfill. In 1988, Ecology issued findings from the PA (Appendix A). Based on the PA findings, Ecology ranked the site as 5 (lowest risk) using the Washington Ranking Method (WARM) system. The WARM ranking of 5 was based on the potential for groundwater contamination from the closed landfill. The WARM ranking placed the closed landfill on Ecology’s Hazardous Sites List pending cleanup action effectively under the requirements of MTCA. Cleanup sites remain on Ecology’s site register (i.e., Hazardous Sites List) until cleanup standards have been achieved.

Preliminary groundwater investigations performed in 1990 by Howard Consultants (Howard Consultants, 1990) identified the presence of shallow groundwater contamination in areas immediately downgradient of the closed landfill. Follow-on investigations performed by Howard Consultants (Howard Consultants, 1992) and Asotin County (Asotin County, 1994) confirmed the presence of shallow groundwater contamination from the closed landfill. Effectively, these investigation findings substantiated the ‘initial discovery’ of contamination as the initial step under MTCA.

In 1994, Ecology and Asotin County entered into stipulated *Agreed Order* actions to address deficiencies identified in the groundwater monitoring well network and sufficiency of hydrogeologic characterization at the site. In 1996, Ecology confirmed (via letter in Appendix A) that all required actions in the 1994 Stipulated *Agreed Order* had been fulfilled and noted that further corrective action would not be required (at that time); however, the letter cited that supplemental corrective action would be required if increasing groundwater concentration trends were observed from the newly initiated groundwater monitoring program.

In 1995, in cooperation with Asotin County Health District, Asotin County modified its landfill operations permit to incorporate the entire groundwater monitoring network, including the closed landfill and active cells, under the modern regulations of Chapter 173-351, WAC. This permit modification enacted the same monitoring, reporting, and associated corrective action provisions of the modern regulations for the entire monitoring well network.

In 2008, Ecology formally communicated (via letter in Appendix A) that the facility would need to move ahead with assessment monitoring (per corrective action for landfill standards in *Assessment Monitoring Program*, Chapter 173-351-440, WAC) in response to applicable monitoring triggers consisting of increasing concentration trends and selected groundwater constituent levels exceeding drinking water standards under applicable criteria (*Water Quality Standards for Ground Waters in the State of Washington*, Chapter 173-200, WAC). Assessment Monitoring requires that the owner must sample an expanded suite of constituents, characterize the contamination in all flow paths by installation of additional monitoring wells, and effectively trigger the site into corrective action requirements under MTCA. In response to the 1994 site ranking and landfill monitoring triggers into Assessment Monitoring, Asotin County is implementing corrective action measures under the *Independent Remedial Action* of MTCA.

2.0 Site Description and Conditions

This section summarizes the site location, study area description, adjacent properties, and facility operations.

2.1 Site Location

ACRL is in Asotin County, which is located in the southeastern corner of Washington State. ACRL is located approximately 3 miles southwest of the City of Clarkston. The landfill area occupies 76.5 acres within the southern portion of Section 36, Township 11N, Range 45E, Willamette Meridian. The site address is 2901 6th Ave, Clarkston, Washington, 99403. Figure 2-1 is a vicinity map.

2.2 Study Area and Adjacent Properties

The limits of the study area are focused on the closed landfill waste disposal area and the associated impacted shallow groundwater system (i.e. first-water) beneath and immediately downgradient of the closed landfill. Given the history of the closed landfill and applicable regulations at the time of waste placement, potentially impacted vadose-zone soils and/or air-quality in vadose-zone soils adjacent to and beneath the waste materials were not a primary media of interest for this study. The focus of the RI and the study area of interest is the shallow groundwater system beneath and immediately downgradient of the closed landfill.

Figure 2-2 shows the landfill waste units are within property owned by Asotin County Public Works Department. The Asotin County property boundary includes all of Section 36, T11N, R4E. This property boundary lies immediately south of the perimeter of the landfill and extends roughly 1 mile to the north of the landfill. Areas to the north of the landfill (along the Dry Creek drainage) are largely undeveloped and consist of agricultural fields and sparsely vegetated rangeland. Areas to the south and east of the landfill are rural residential development; the majority of rural residences and associated development are found south and east of the easternmost portion of the landfill.

2.3 Facility Operations

The following sub-sections describe the landfill facility operations, which includes a summary of waste units, closure actions, engineering controls, groundwater monitoring program, explosive landfill gases monitoring program, and institutional controls.

2.3.1 Waste Units

The facility includes an old (closed) landfill and an active disposal area. Figure 2-3 shows the approximate boundaries of the different waste units that are present at ACRL. The original landfill consisted of an unlined waste disposal area located in the western half of the site (further referred to as the “closed landfill”). The closed landfill received waste from

1975 to 1991, and was formally closed in 1993 under the requirements of the *Minimum Functional Standards for Solid Waste Handling,* Chapter 173-304, WAC.

Current waste disposal activities occur within a series of three lined cells (referred to as Cells A, B, and C). Cell A opened in 1991; Cells B and C began operations in 1997. A fourth cell (Cell D) is reserved to support future landfill expansion expected to open in approximately 2015, and would be the easternmost of the four lined cells. The active, lined cells are operated in accordance with modern landfill regulations, *Criteria for Municipal Solid Waste Landfills*, Chapter 173-351, WAC.

2.3.2 Closure Actions and Engineering Controls for Closed Landfill

The closed landfill received waste from 1975 until 1991; closure of the landfill occurred from 1991 to 1993. The closed landfill was operational prior to the regulatory requirements enacted in 1988 under Chapter 173-304, WAC, which prescribe a bottom liner system and leachate collection system. Therefore, the closed landfill was not constructed with a bottom liner system and thus does not collect "leachate" from the bottom of the waste units. Leachate, according to Chapter 173-351, WAC, is "a liquid that has passed through or emerged from solid waste and contains soluble, suspended or miscible materials removed from such waste." Mitigation of mobilized constituents from the waste materials within the closed landfill is from engineering controls consisting of a low-permeability soil cap and enhanced by a stormwater management plan to minimize the potential for infiltration of precipitation through the buried wastes.

During closure, the old landfill was covered (capped) with a minimum of 2 feet of native soils, and then graded to collect and divert stormwater off of the cover to the natural drainage pathway along Dry Creek. The cover material was obtained from construction (excavation of native soils) of the lined Cell A. During subsequent construction of Cells B and C, additional cover material was placed over the old landfill to reduce the cover slopes for potential reclamation of the area as useable space for recreation or County business. Positive stormwater drainage was maintained to the Dry Creek drainage area. This work resulted in thickening the soil cover by several feet (up to 50 feet in some locations) of low-permeability native materials. These materials have provided effective diversion of precipitation away from the cover and underlying wastes, as observed during the RI field investigations described later in this report.

In addition to the cover and stormwater management, the closed landfill has an active gas extraction system installed along the southern margin of the landfill to prevent potentially explosive gas (i.e., methane gas) migration to nearby residential houses. The gas extraction system includes nine landfill gas wells screened within the waste materials (extraction gas wells shown as "LFG" -01 through -09 on Figure 2-3). The well heads are plumed into a single line and routed to the flare station in the southwest corner of the closed landfill. Landfill gas is thermally treated at the flare station in accordance with applicable regulations.

2.3.3 Engineering Controls for Active Cells

Engineering controls for the active cells are included in this report for a comprehensive discussion of facility operations. However, the active cells are not considered a source of groundwater contamination (as described in Section 3).

The active landfill cells employ both bottom liner and leachate collection systems compliant with Chapter 173-351-200, WAC. Operationally, any water that percolates through the solid waste in the landfill or is contaminated by water that has percolated through refuse or has come in contact with uncovered refuse is collected and managed as "leachate." The purpose of the leachate control system (LCS) for the active cells is to control leachate head build up on the liner system to less than 12 inches in accordance with Chapter 173-351-300, WAC, and to transmit leachate to a central collection point for proper disposal/treatment. Each individual cell has its own separate LCS that collects and transmits leachate to a pump station where it is conveyed to the sanitary sewer.

The bottom liner of Cell A consists of 24 inches of soil-bentonite with a maximum permeability of 1 x 10-7 centimeters per second (cm/sec) covered by a 60-millimeter (mil), high-density polyethylene (HDPE) geomembrane. The geomembrane is covered by 18 inches of drainage/operations layer material to protect the liner section and to provide for leachate drainage. Cells B and C employ a geosynthetic clay liner (GCL) in place of the 24-inch-thick soil-bentonite layer. Similarly, 18 inches of sand overlay the bottom liner system for leachate collection and liner protection in Cells B and C. To enhance leachate drainage, strip drains are placed on top of the geomembrane. Strip drains convey leachate into the central leachate collector lines, which are located in the center of each cell and sloped at about 2 percent from south to north. The central leachate collector lines are installed with cleanouts at the top of the cell side on both the north and south ends. Each central collection line ties in with a vertical pipe penetration that manifolds to a mainline for drainage to the pump station.

In addition to the leachate collection system, landfill gas collection trenches are installed within the active waste areas as lifts are completed. These horizontal trenches are connected to a landfill gas manifold that extracts the gas under vacuum and conveys it to the flare for thermal destruction.

2.3.4 Groundwater Monitoring Program

Groundwater monitoring is performed in accordance with Asotin County's *Groundwater Sampling Plan, Asotin County Regional Landfill* (Asotin County, July 2008). As mentioned previously, the current landfill operations permit designates a "multi-unit" groundwater monitoring program that was developed and includes the same monitoring and reporting provisions for all wells at the facility regardless of their location to the closed unlined landfill (closed under Chapter 173-304, WAC) or to the active, lined cells (designed and operating under Chapter 173-351, WAC). Thus, the modern regulations of Chapter 173-351, WAC, are applicable to the entire monitoring well network regardless of the proximity to closed landfill or active cells.

The existing monitoring network includes twelve monitoring wells that are located around the immediate perimeter of both the closed and active portion (i.e., cells A, B and C) of the landfill (Figure 2-3). The network includes three monitoring wells (MW-01, MW-11, and MW-12) located hydraulically upgradient of the landfill; eight monitoring wells located hydraulically downgradient of the landfill; and one well (MW-13) located hydraulically cross-gradient of the landfill. Table 2-1 summarizes the well construction details (i.e., well depth and screen interval).

Monitoring well designation respective of the closed landfill and the active cells was performed in 2007 and documented in *173-351 WAC Demonstration Evaluation: Asotin County Regional Landfill Groundwater Monitoring Program, Asotin County, Washington* (CH2M HILL, 2007). Based on geographic location, hydraulic relationships, and geochemical signatures, the well network specific to the closed landfill or active cell area is summarized below.

Groundwater Monitoring Well Network for Closed Landfill:

- Two Upgradient Wells: MW-01 and MW-11
- Seven Downgradient Wells: MW-03, MW-04, MW-05, MW-06 (see note below), MW-07, MW-09 and MW-10.

Groundwater Monitoring Well Network for Active Cells:

- One Upgradient Well: MW-12
- One Cross-Gradient Well: MW-13
- One Downgradient Well: MW-02

Note that monitoring well MW-06 is located hydraulically in a potential overlap area that may be considered downgradient of both the closed landfill and the active cells. However, given the observed low-level detects of VOCs in MW-06, consistent with the same contaminants of concern (COCs) in wells further west near the closed landfill, MW-06 is considered part of the network for the closed landfill (CH2M HILL, 2007).

Groundwater samples collected from 1997 to 2008 have been analyzed for constituents under the *Detection Monitoring Program*, Chapter 173-351-430, WAC, Appendixes I and II. The detection monitoring program consists of quarterly monitoring for general chemistry (i.e., cations-anions), dissolved metals, and volatile organic compounds (VOCs). Samples are collected from dedicated equipment and sampling pumps in accordance with low-flow sampling procedures (Puls and Barcelona, 2004). Samples analyzed for dissolved metals are filtered in the field at the time of sample collection. Field parameters are measured during sample collection, which include depth to water, temperature, pH, and conductivity. Quarterly monitoring reports are submitted to Ecology within 60 days (typically) of receipt of the respective quarterly sampling data. Year-end annual reports are submitted to Ecology on April 1 following the previous year's sampling.

Beginning with the first quarter 2008 sampling event, ACRL transitioned into the *Assessment Monitoring Program* requirements of Chapter 173-351-440, WAC. The *Assessment Monitoring Program* was triggered for the facility in response to selected wells showing a slight increasing concentration trend for the COCs, and selected constituents above the Chapter 173-200, WAC, criteria. Assessment monitoring includes an expanded suite of constituents, including an extensive list of volatiles, semi-volatiles, pesticides, herbicides, and poly-chlorinated biphenyls (PCBs). The *Assessment Monitoring Program* is performed annually (at least) at all wells in addition to the quarterly *Detection Monitoring Program* (described above). Any new constituents detected under the expanded program are sampled quarterly.

2.3.5 Landfill Gas Monitoring Program

Potentially explosive landfill gases are monitored via landfill gas monitoring probes installed around the perimeter of the landfill in accordance with *Operating Criteria*, Chapter 173-351-200, WAC. The current gas monitoring network includes ten gas monitoring probes designated as GP-01 through GP-10 (shown in Figure 2-3). Gas probes GP-01 through -07 are around the perimeter of the closed landfill, whereas GP-08, -09, and -10 are around the active cell area. Gas monitoring probes are sampled quarterly and tested for methane, oxygen, and carbon dioxide. Monitoring activities and results are presented annually to Ecology.

2.3.6 Land Use Controls

Land-use controls, also known as "institutional controls," are defined broadly as legal (or regulatory) measures that limit human exposure by restricting activity, use, and access to properties with residual contamination. Land use controls are typically used in tandem with physical or engineering controls, such as fences or containment caps, to protect public health and the environment.

Per MTCA, land use controls are measures undertaken to limit or prohibit activities that may interfere with the integrity of an action that may result in exposure to hazardous substances at a site. As related to the closed landfill, institutional control measures include its closure in 1993 under the regulations of Chapter 173-304-407, WAC. Closure actions include institutional controls such as a perimeter fence; operational signage for public disposal activities restricting public access to closed landfill; routine maintenance of engineered controls (discussed above); routine monitoring of landfill gas and groundwater (discussed above); and a financial assurance program.

3.0 Previous Investigations

This section summarizes previous investigations and routine monitoring that have led to the identification and confirmation of the COCs at the site.

3.1 Site Inspections and Site Hazard Ranking

Initial findings by Ecology substantiated the *Site Discovery and Reporting* of MTCA per Chapter 173-340-300, WAC. These included the RCRA Open Dump Investigation inspection in 1980 and the PA field reconnaissance findings in 1987 (described in Section 1.2, MTCA Applicability). These findings effectively initiated the initial steps of MTCA cleanup regulation, placed the landfill on Ecology's Hazardous Waste Site Register, and led to further hydrogeologic characterization studies at the site.

3.2 Preliminary Hydrogeologic Characterization Studies

Key sources of groundwater-related information were reviewed during the RI/FS process to develop a preliminary conceptual site model (CSM) and to confirm the COCs for the site. In addition, the preliminary hydrogeologic studies helped to formulate data needs for the focused RI conducted in 2009 (as described in Section 4). A summary of these preliminary hydrogeologic characterization studies and key findings is presented below.

Report, Hydrogeologic Analysis and Monitoring Well Construction for the Asotin County Regional Landfill, Asotin County, Washington (Howard Consultants, 1990). This characterization effort included the installation of nine groundwater monitoring wells (including MW-01, -02, -03, -04, -05, -06, -07, -08, and -08A) and a geophysical survey. Based on the site investigation work, the report included a hydrogeologic assessment and development of hydrogeologic cross-sections. As stated in the report, "the site conditions at the landfill suggest an area of higher hydraulic conductivity in the area of MW-04, and MW-07/-03, which should be the preferential pathway for contaminant movement." In addition, the report stated that "the present locations (of the aforementioned monitoring wells) allow effective monitoring of any potential leachate plume from the landfill."

Preliminary Hydrogeologic Assessment Report for the Construction of Additional Groundwater Monitor Wells at the Asotin County Landfill, Asotin County, Washington (Howard Consultants, 1992). This report was prepared as requested by Ecology in response to low-level detections of tetrachloroethlene (PCE) observed in MW-05. This report consisted of five elements including (1) literature review and beneficial use survey; (2) development of a conceptual model of the site; (3) a complete monitoring scheme with maps and proposed well locations; (4) site reconnaissance to assess well placement; and (5) records review to identify potential sources of contamination from the closed landfill. This report included groundwater quality results from seven wells, including MW-01, -02, -03, -04, -05, -06, and the deep Bovay well. Recommendations in this report led to the installation of four additional monitoring wells to assess the observed contamination, including MW-05A, MW-09, MW-10, and MW-11.

Supplemental Geologic and Hydrogeologic Study, Asotin County Landfill, Asotin County, Washington (Asotin County, 1994). This report was completed by Asotin County in accordance with the Stipulated *Agreed Order* dated June 28, 1994 (Appendix A). This report presented an interpreted hydrogeologic summary of the regional and local hydrogeology. The report also included groundwater quality results from twelve monitoring wells (and the seep) sampled during 1993-1994. Conclusions in the report confirmed that low-level detections of VOCs, namely PCE and TCE, exceeded MTCA Method A cleanup levels in three wells (MW-05, -09, and -10). The report noted that the observed VOC concentrations showed evidence of decline, likely as a result of the implementation of the institutional controls and landfill cover system. The report recognized that continued groundwater quality monitoring was appropriate for the closed landfill and that further study would be completed as additional groundwater sampling events were performed.

Summary Technical Memorandum, Hydrogeologic Assessment and Monitoring Well Installation, Asotin County Landfill, Asotin County, Washington (CH2M HILL, 1995). This study was performed by Asotin County and CH2M HILL in conjunction with Ecology to bring the facility into full compliance with the State of Washington *Criteria for Municipal Solid Waste Landfills*, Chapter 173-351, WAC. This characterization effort included advancement of four exploratory borings, two of which were converted into resource protection monitoring wells for expansion of the active cell area (MW-12, MW-13). This study also included decommissioning of the Bovay well, slug tests, soil properties' testing, and development of hydrogeologic cross-sections. Key conclusions from this study noted that the groundwater monitoring system at the site appeared to be designed well to detect landfill-derived COCs from the existing (closed) and future expansion cells (active cells).

3.3 Source Demonstration Studies

An evaluation was performed in 2007 to identify or differentiate the inferred source of contamination between the closed landfill and the active cells. Results from the evaluation were submitted to Ecology in a document titled *173-351 WAC Demonstration Evaluation: Asotin County Regional Landfill Groundwater Monitoring Program, Asotin County, Washington* (CH2M HILL, 2007). This demonstration evaluation was a technical evaluation to support ACRL's hypothesis that the closed landfill was the source of contamination and not the new/active cells designed and operated under Chapter 173-351, WAC. Following submittal of this report, Ecology met with ACRL in January 2008 to discuss the report findings; it was agreed to by all parties that the source of contamination was from the closed landfill and not from the active cell area.

3.4 Detection Monitoring Program

The *Detection Monitoring Program* was initiated in 1997 for the landfill well network and is currently active under the provisions of Chapter 173-351-400, WAC. These regulations govern the groundwater monitoring for both the closed landfill and active cells. To date, historic groundwater monitoring data under this program includes a total of 12 monitoring wells sampled from 1997 to 2009 (13 years). Quarterly sampling is performed at nine of the wells, whereas the remaining three wells are sampled annually. Data from these wells is evaluated in accordance with the reporting requirements of Chapter 173-351-400, WAC.

This includes statistical evaluations and identification of concentrations above conservative risk-based drinking water criteria of Chapter 173-200, WAC. Quarterly and annual monitoring reports are compiled and are submitted to Ecology; Appendix B contains analytical data and statistical summaries from the most recent *2009 Annual and 4th Quarter Groundwater Monitoring Report* (CH2M HILL, 2010).

Based on the most recent *2009 Annual and 4th Quarter Groundwater Monitoring Report* (CH2M HILL, 2010), the following key conclusions are related to confirmation of the COC at the site:

- Four VOCs were detected during the November 2009 sampling event, including PCE, TCE, dichlorodifluromethane, and trichlorodifluoromethane. PCE was detected at MW-05, MW-06, MW-07, MW-09, and MW-10; TCE was detected at MW-05, MW-09, and MW-10; dichlorodifluoromethane was detected in MW-05, MW-06, MW-07, MW-09, MW-10, and MW-11; and finally, trichlorofluoromethane was detected at MW-06 and MW-07. These detections of VOCs have consistently been observed in wells that are hydraulically linked to the closed landfill.
- The concentration of PCE exceeds the Chapter 173-200, WAC, criteria (0.8 µg/L) in downgradient wells MW-05, MW-06, MW-07, MW-09 and MW-10 with most recent values of 11.7, 2.4, 10, 4.2 and 10.6 µg/l, respectively. TCE concentrations from fourth quarter 2009 do not exceed the criteria of 3.0 µg/L; there are no criteria for dichlorodifluoromethane or trichlorofluoromethane.
- For wells with sufficient detects of VOCs, statistical tests via Mann-Kendall test for trend show no significant change except a slight increasing trend at MW-06 for PCE (this trend result is from recent observations assuming data from 1st quarter 2006 to 4th quarter 2009, total of 16 observations).

3.5 Assessment Monitoring Program

Following communication and correspondence with Ecology, ACRL transitioned into the *Assessment Monitoring Program* (per Chapter 173-351-440, WAC) beginning with the first quarter 2008 sampling event. ACRL performed the second consecutive annual sampling of the *Assessment Monitoring Program* in 2009. Findings presented in the most recent *2009 Annual and 4th Quarter Groundwater Monitoring Report* (CH2M HILL, 2010) confirmed that the Assessment Monitoring sampling conducted in 2008 and 2009 did not identify any additional (or new) COC other than those detected and reported under the routine *Detection Monitoring Program* (described in Section 3.4).

3.6 Contaminants of Concern

Shallow groundwater downgradient of the closed landfill contains elevated concentrations of VOCs, primarily PCE and TCE. Based on previous correspondence with Ecology, PCE and TCE in shallow groundwater are the designated COCs for the site. These COCs have been confirmed at the site in shallow groundwater during preliminary hydrogeologic characterization studies in the early 1990s (described above). Following their initial discovery, these COCs continue to be monitored and assessed through the detection and assessment monitoring programs (as described above).

COC designation is based on the potential for a chemical to adversely impact human or ecological receptors. This risk-based determination is reflected in the numerical concentration ‘criteria’ (based on risk) established under applicable state or federal regulations for a given constituent on a media-specific basis. Other VOCs, such as dichlorodifluoromethane (Freon-12) and trichlorofluoromethane (Freon-11), are also frequently detected through routine site monitoring, though there are no established maximum contaminant levels (MCLs) to quantify their concentrations with respect to risk-based criteria. Therefore, PCE and TCE in groundwater are the COCs and are the focus of the RI and FS study. A summary of the physical and chemical characteristics of these COCs in their pure form are summarized below.

3.6.1 Physical and Chemical Characteristics of Perchloroethlyne (PCE):

PCE is a manufactured chemical compound widely used for the dry cleaning of fabrics (often commonly called dry-cleaning fluid) and for metal degreasing. It is also used to make other chemicals and is used in some consumer products. Other names for PCE include perchloroethylene, perc, and tetrachloroethylene. PCE is a nonflammable liquid at room temperature. It evaporates easily into the air and has a sharp, sweet odor. Most people can smell PCE when it is present in the air at a concentration of 1 part per million (1 ppm).

In pure liquid form, PCE is a dense, non-aqueous phase liquid (DNAPL). PCE has the chemical formula C_2Cl_4. In the environmental industry, it is called a DNAPL because it has a density of 1.6227 g/ml at 20^{o}C, a solubility in water of 150 mg/L at 25^{o}C), and it adsorbs onto carbon (K_{oc} = 2.2-2.7). PCE has a vapor pressure of 18.47 mmHg and a Henry's law constant of 0.018 atm-m^3/mol. As a result of these properties, PCE released in liquid form at the surface can migrate into the subsurface via gravity drainage. Compared to TCE, PCE is more dense, less soluble, and less volatile.

3.6.2 Physical and Chemical Characteristics of Trichloroethylene (TCE):

TCE is a volatile organic compound (VOC) with the chemical formula C_2HCl_3. In the environmental industry, it is called a DNAPL because it has a high density (1.465 g/ml), low solubility in water (1.070 g/L at 20^{o}C), and it adsorbs onto carbon (K_{oc} = 2.03-2.7). TCE has a vapor pressure of 74 mmHg and a Henry's law constant of 0.011 atm-m^3/mol. As a result of these properties, PCE released at the surface can migrate in the subsurface as DNAPL, as fingers of residual saturation moving more or less vertically through the saturated zone, and as dissolved molecules in groundwater.

4.0 Remedial Investigation

This section summarizes the focused RI conducted in 2009 for the closed landfill in accordance with MTCA Chapter 173-340-350, WAC. The overall purpose of the RI was to collect additional data to adequately characterize the site for the purpose of performing the FS. The information in this section includes a summary of field investigation, laboratory analysis, and results specific to the focused RI conducted in 2009. Section 5.0, *Conceptual Site Model,* provides a more comprehensive interpretation of all site investigation data, including previous investigations and the recent RI findings.

4.1 Field Investigation and Well Installation

The focused RI activities were conducted in approximately 5 weeks from March 9 through April 10, 2009. The RI field activities and associated field data collection were performed in accordance with the *Sampling and Analysis Plan, Asotin County Regional Landfill, Asotin County, Washington* (CH2M HILL, 2009a). The sampling and analysis plan (SAP) incorporated comments received from Ecology on the draft SAP submitted prior to the RI in early March 2009. Table 4-1 summarizes the project-specific data needs and associated test methods for the focused RI.

An overview of the field activities performed during the focused RI included the following activities:

- Collected qualitative and quantitative subsurface characterization data during borehole advancement at eight planned investigation locations in the vicinity of the closed landfill, including the following characterization areas (shown in Figure 4-1 summarized in Table 4-2):
  - Three (3) locations drilled within the former waste trenches (that is, refuse) identified as “interior” gas monitoring probes/extraction wells GP-LGW-10, GP-LGW-11, and GP-LGW-12.
  - Three (3) locations along the downgradient (northern) perimeter of the closed landfill identified as gas monitoring probes GP-05, GP-06, and GP-07.
  - Two (2) locations in the inferred downgradient (northern) discharge area of the closed landfill near Dry Creek drainage identified as MW-14 and MW-15.

- Collected representative soil samples during borehole advancement at selected depth intervals for lithologic logging and for laboratory materials testing; a subset of the archived samples were selected for physical properties soil testing to help quantify subsurface characteristics. One of the soil samples beneath the landfill waste materials was submitted for chemical analyses.

- Documented the installation of two new gas monitoring probes within the interior of the closed landfill (GP-LGW-10 and GP-LGW-11). The borehole at GP-LGW-12 encountered the top of waste materials; however, it was not drilled deep enough to justify installation of a gas monitoring probe as planned. This borehole was abandoned.

- Documented the subsurface conditions and installation of three new perimeter gas monitoring probes (GP-05, GP-06, and GP-07) along the northern (downgradient) perimeter for the closed landfill.
- Documented subsurface conditions and installation of three new groundwater monitoring wells in areas downgradient of the closed landfill near Dry Creek. The new monitoring wells included two co-located wells at the MW-14 location (that is, one shallow completion designated as MW-14S and one deep completion designated MW-14D); and one shallow well at MW-15.
- Developed the three, newly installed groundwater monitoring wells to remove residual formation fines from the filter pack and well screen materials and to promote hydraulic connection between the well screen and adjacent formation.
- Performed single-well hydraulic testing at three new monitoring wells to assess groundwater flow characteristics of the shallow groundwater unit.

A detailed description of the RI field investigation activities has been previously submitted to Ecology in an interim-status data report titled *Summary of Remedial Investigation and Monitoring Well/Gas Probe Completion Details for the Closed Landfill, Asotin County Regional Landfill, Clarkston, Washington* (CH2M HILL, 2009b). As mentioned in this interim-status submittal, the aforementioned document did not include analytical testing results or substantive interpretation. Salient site-characterization information from the RI is summarized below; Sections 4.2 and 4.3 present the laboratory test methods and results, respectively.

To compliment the discussions, additional detail is included on the boring logs and well completion diagrams in Appendix C. For completeness, Appendix C includes all available subsurface boring logs and well/gas completion diagrams discussed in Section 5.

4.1.1 Landfill Cover and Source Area Investigation

Subsurface conditions and materials observed at investigation locations GP-LGW-10, GP-LGW -11, and GP-LGW-12 demonstrated the landfill soil cover was 25 to 30 feet thick overlying the former waste trenches (refuse). Observed thickness of the refuse material at GP-LGW-10 and -11 was roughly 40 to 50 feet thick. Conditions encountered during the RI at the interior closed landfill locations were generally consistent with expected conditions. Characterization of the landfill soil cover, refuse material, and native soils beneath the refuse are discussed below.

The landfill cover consists of fine-grained cohesive soils logged as light brown to tan clay with silt, dry to moist, hard, with occasional zones of silty sand, silty/clayey gravel, and silt. Auger advancement rates were typically very slow/rough within the landfill soil cover, consistent with the high standard penetration test (SPT) blow counts and/or refusal (that is, blow count N-values correlating with “hard” consistency). Rough drilling conditions were encountered at the western end of the closed landfill at GP-LGW-12, indicating the presence of coarse gravels and cobbles intermixed with the fine-grained clay soils.

Refuse materials from the waste trenches were recovered during auger advancement via drill cuttings at ground surface. Limited drive samples were attempted while drilling through the refuse materials, as described in the SAP. The refuse interval at GP-LGW-10 and GP-LGW-11 was observed from 30 to 71 feet below ground surface (bgs) (41 feet thick), and from 25 to >78 feet bgs (>53 feet thick), respectively. The refuse material at GP-LGW-11 was not fully penetrated; however, the contact between the bottom of the refuse and underlying native soils is inferred at approximately 80 feet bgs based on conditions at GP-LGW-10 and historical observations of trench thickness. Refuse material typically consisted of plastic, wood fragments, paper, and metal fragments. Refuse materials were found to be dry. There was no evidence of saturated conditions within the interior or at the bottom of the waste trench (at GP-LGW-10 and GP-LGW -11).

Soil was encountered below the refuse (that is, beneath the waste trench) in GP-LGW-10 at approximately 72 feet bgs and was inferred to be native material. A total of three SPT drive samples were collected from GP-LGW-10 (SPT-4, SPT-5, and SPT-6) at depths beneath the waste trench to characterize soil and for laboratory testing. Soil samples collected from GP-LGW-10 at 72 to 75 feet bgs were logged as tan to brown sandy silt with trace clay, moist, and hard.

4.1.2 Interior Landfill Gas Well Installation

Prior to the RI, the source mechanism inferred to impact shallow groundwater was landfill gas. To assess the landfill gas hypothesis, the RI work included installation of gas monitoring probes within the landfill (and along the perimeter, discussed below) to quantify landfill gas concentrations and help delineate potential source areas. Landfill gas well installations included two interior gas monitoring wells to supplement the existing nine interior landfill gas wells (LFG-01 through LFG-09); and three new perimeter gas monitoring probes (GP-05, -06, and -07) along the northern perimeter to supplement the existing four gas probes (GP-01, -02, -03, and -04) along the southern perimeter of the landfill.

After advancement to the desired borehole depth (or refusal), two interior gas extraction wells were converted into gas monitoring probes (GP-LGW-10 and GP-LGW-11). The screen intervals were installed adjacent to the refuse materials. As noted above, the refuse interval at GP-LGW-10 and GP-LGW-11 was observed from 30 to 71 feet bgs (41 feet thick), and from 25 to >78 feet bgs (>53 feet thick), respectively. The refuse material at GP-LGW-11 was not fully penetrated; however, the contact between the bottom of the refuse and underlying native soils is inferred at approximately 80 feet bgs based on conditions at GP-LGW-10 and historical observations of trench thickness. Based on these conditions, the screen intervals were installed from 29-69 ft bgs, and 27 to 77 ft bgs, respectively, for GP-LGW-10 and GP-LGW-11. As noted above, subsurface conditions at GP-LGW-12 precluded advancement to target depth and thus a probe was not installed.

4.1.2 Perimeter Landfill Gas Probe Installation

To compliment the interior gas well installations (and to comply with explosive gases monitoring per Chapter 173-200, WAC), the RI program included installation of three supplemental gas monitoring probes. Three new perimeter gas monitoring probes (identified as GP-05, -06, and -07) were installed to supplement the existing four gas probes (GP-01, -02, -03, and -04) along the southern perimeter of the landfill.

The three new perimeter gas probes were installed in the unsaturated zone at relatively shallow depths of up to 30 feet bgs. Subsurface conditions observed at GP-05 and GP-06 locations consisted of silty gravel with trace sand and occasional zones of silt. Conditions observed at GP-07 consisted of silt and silty gravel from 0 to 8 feet bgs, overlying a sequence of weathered basalt from approximately 8 to 30 feet bgs (bottom of borehole). The presence of basalt in GP-07 was inferred from air-rotary drill cuttings (rock chips) and slower advancement rate. Basalt was not observed in any other boring locations during the April 2009 RI. This isolated basalt occurrence is not believed to represent a laterally continuous basalt sequence/layer but rather a discontinuous "slump-block" feature deposited via floods or erosion within the upper Gravel Unit. This observation is consistent with a relatively thin basalt sequence observed in nearby well MW-05 from roughly 1170 to 1150 feet mean sea level (msl) (CH2M HILL, 2007).

4.1.3 Groundwater Investigation and Well Installation

The focused RI program included supplemental groundwater characterization and associated monitoring well installation. The groundwater investigation was conducted in a focused area downgradient of the closed landfill near Dry Creek drainage. A summary of subsurface conditions and well installation is presented below.

Subsurface Conditions and Well Installation Summary:

A focused shallow groundwater investigation was performed during the RI to compliment the source area/source mechanism characterization via the landfill gas wells/probes. The primary objectives of the groundwater investigation were to (1) assess the nature and extent of contamination for the COC, and (2) refine the understanding of hydrostratigraphy and groundwater flow characteristics of the uppermost water-bearing unit. The shallow groundwater investigation was conducted in areas immediately north of the closed landfill in the inferred discharge area along Dry Creek drainage.

Per the SAP, the groundwater investigation included subsurface characterization at two locations and ultimately resulted in the installation of three shallow groundwater monitoring wells. Two monitoring wells were co-located at MW-14 including a shallow installation (MW-14S) and a deeper installation (MW-14D) within the upper saturated unit. Figure 4-1 shows the supplemental RI wells, identified as MW-14S, MW-14D, and MW-15; Table 4-2 contains completion details, depths, and survey information. Appendix C contains boring logs and well completion details for the focused RI.

Subsurface conditions at MW-14D consisted of approximately 70 feet of silty gravel and gravelly clay with occasional sand lenses, overlying the tan-yellow clay marker unit (aquitard). A distinct sand interval was observed between the Gravel Unit and underlying tan-yellow clay aquitard. Characteristics distinguishing the upper Gravel Unit from the underlying clay marker unit were observable mainly by the presence of gravel in the upper Gravel Unit, consistency of the gravel versus the Clay Unit, and noteworthy color differences between the two units.

The Gravel Unit was logged primarily as tan-brown silty gravel with sand, intermixed with zones of silt, gravelly silt, and gravelly clay. Consistency of the Gravel Unit was typically "dense" (for coarse-grained samples) or "hard" (for fine-grained samples), consistent with the rough drilling action and/or relatively slow air-rotary advancement rate. In contrast, the Clay Unit was logged as tan-yellow clay with silt, trace fine-sand, and iron staining common. Consistency of the Clay Unit was "hard." The SPT drive samples penetrated this fine-grained Clay Unit with fewer blow counts than the overlying Gravel Unit.

Two separate water-bearing zones were observed within the Gravel Unit at the MW-14S/D location; the upper saturated zone was encountered from approximately 12 to 20 feet bgs, and the lower saturated zone was encountered from approximately 57 to 71 feet bgs (immediately above the Clay Unit). These two water-bearing zones substantiated the rationale to install two co-located wells at this location: MW-14S was installed in the upper zone from 10 to 20 feet bgs, and MW-14D was installed in the lower saturated interval from 58 to 71 feet bgs. Soils adjacent to the shallow completion zone (MW-14S) were logged as silty gravel with sand, whereas soils adjacent to the deeper completion zone (MW-14D) were logged as fine-medium clean sand with trace silt. Conditions observed between the two saturated intervals/screen zones from approximately 20 to 45 feet bgs were logged primarily as clay with gravel and with limited evidence of saturation.

At the MW-15 location, the RI objectives were to (1) identify the occurrence of "first-water" for well installation purposes to facilitate groundwater quality sampling, and (2) to characterize the Gravel Unit in areas further downgradient along the Dry Creek drainage. Advancement at MW-15 was conducted to a total depth of 39 feet bgs in the Gravel Unit, as determined by the CH2M HILL field representative. Materials observed consisted of well-graded gravel with sand and silt from zero to 12 feet bgs, transitioning into gravelly clay with clayey gravel from 12 to 39 feet bgs. The occurrence of "first-water" (that is, saturated soil) was observed at relatively shallow depths from approximately 9 to 12 feet bgs, which substantiated the target zone for monitoring well construction (screened from 7.5 to 12.5 feet bgs). The tan-yellow Clay Unit was not encountered at this location to a depth of 39 feet bgs.

Single Well Hydraulic Tests:

In accordance with the SAP, single-well hydraulic tests were performed at the three new monitoring wells (MW-14S, MW-14D, and MW-15) to help characterize groundwater flow characteristics. Appendix D contains the single well test data, including arithmetic plots of test response data and manual water-level measurements.

Two empirical equations developed by Jacob (Jacob, 1950) relate the specific capacity of a well to aquifer transmissivity. Specific capacity relationships to aquifer transmissivity were derived by modifying the Jacob (Jacob, 1950) equation, assuming an average well diameter, average duration of pumping, and using typical values for the storage coefficient. The specific capacity of a well is the yield per unit of drawdown, after a given time has elapsed, or when the drawdown has stabilized. Dividing the yield of the well (pumping rate) by the stabilized drawdown (assuming measured at the same time) gives the specific capacity. The following two empirical equations (Driscoll, 1986) provide a simple method to estimate aquifer transmissivity, based on specific capacity values obtained from single well pumping test data:

$T = (1500) * Q / s$ for unconfined aquifers where:

T = transmissivity (gpd/ft)
Q = pumping rate (gpm)
s = sustained drawdown (ft)

$T = (2000) * Q / s$ for confined aquifers where:
T = transmissivity (gpd/ft)
Q = pumping rate (gpm)
s = sustained drawdown (ft)

Aquifer permeability (hydraulic conductivity) is the property of a water-bearing formation that relates to the ease by which groundwater flows through the aquifer formation. Aquifer transmissivity is related to hydraulic conductivity and aquifer thickness by the following relationship:

$T = K * b$ where:
T = transmissivity (ft^2/day)
K = hydraulic conductivity (ft/day)
b = saturated aquifer thickness (ft)

Re-arranging this expression yields $K = T/b$, to estimate aquifer hydraulic conductivity based on calculated transmissivity (via single well pumping test results) and saturated aquifer thickness. Based on this approach, Table 4-3 summarizes the single well test response and associated hydraulic conductivity estimates.

Based on these specific capacity relationships, the estimated hydraulic conductivity ranged (respectively) from 0.8 to 130 ft/day for the shallow, unconfined Gravel Unit at MW-14S and MW-15 locations. These estimates for the shallow, unconfined Gravel Unit are typical for (theoretical) materials ranging from silty sand/gravel to well sorted sand (Anderson and Woessner, 1992; Fetter, 1994). Soils adjacent to the well screen at MW-14S were described earlier as silty gravel with sand; the soils adjacent to the well screen at MW-15 were described as well graded gravel with silt and sand.

The hydraulic conductivity at MW-14D was estimated at (greater than or equal to) 1,250 ft/day; this well is completed in the lower portion of the Gravel Unit and inferred to be confined based on field observations, screen interval, and groundwater levels. This estimate for the deeper (confined) Gravel Unit is typical of (theoretical) clean sand or gravel (Anderson and Woessner, 1992; Fetter, 1994). Soils adjacent to the screen at MW-15 were classified as fine-medium clean sand with trace silt.

Single well hydraulic testing data and related hydraulic estimates are believed useful to help characterize groundwater flow conditions and further the development of the updated CSM. However, limitations or qualifications to these test methods include the following:

(1) the monitoring wells are completed as 2-inch diameter resource protection monitoring wells and not specifically designed for pumping tests (this setup precluded the use of a larger diameter pump)

(2) the shallow completion depth (particularly at MW-15), which limited the amount of available drawdown

(3) the underlying Jacob (or commonly referred to as the Theis) assumptions, which are based on idealistic aquifer conditions and may not be fully satisfied from the actual test setup and physical environment

Hydraulic test data from single-well tests are considered useful to assess general hydraulic characteristics. However, considering these limitations, the hydraulic test data should be considered estimates and used accordingly for their intended purpose.

4.2 Laboratory Test Methods

As detailed in the SAP, laboratory testing was performed for the RI to help quantify site conditions. Project-specific data quality objectives (DQOs) were identified (detailed in the SAP) through the DQO process/planning tool (USEPA 1994a, 2000, 2006) to meet the data user's needs for each planned characterization activity. As a result of the DQO planning process, project-specific data needs were developed for the RI (and are summarized in Table 4-1).

Following the RI, a SAP Addendum was developed to reflect the actual sampling locations, methods, and frequency of sampling (provided in Table 4-4). Laboratory testing included four primary categories, including (1) physical properties soil testing, (2) analytical soils testing, (3) analytical landfill gas testing, and (4) analytical groundwater testing. A summary of the RI laboratory tests, test methods, types of samples, and number of samples is provided below.

4.2.1 Soil Sampling and Physical Properties Test Methods

A combination of SPT split-spoon drive samples and grab samples (drill cuttings) were collected at regular intervals during borehole advancement for stratigraphic logging and to assist with hydrogeologic interpretation. Typically, SPT drive samples were collected at the groundwater monitoring wells (MW-14S, MW-14D, and MW-15) and interior gas monitoring probe locations (GP-LGW-10, GP-LGW -11, and GP-LGW -12); whereas grab samples were collected via air-rotary drill cuttings at the three downgradient perimeter locations (GP-05, GP -06, and GP -07). Samples were placed in sealable plastic bags, labeled, and archived.

A total of 40 SPT split-spoon drive samples were collected with an over-size 3-inch-diameter split-spoon sampling device driven with a 300-pound free-falling auto-hammer. SPT split-spoon drive samples were typically collected at approximately 5-foot intervals at groundwater monitoring well locations MW-14S/D and MW-15, and at less frequent intervals during advancement within the non-refuse portion of the interior closed landfill locations (GP-LGW-10, GP-LGW-11, and GP-LGW-12). Consistent with the SAP, limited sampling was performed while drilling through the refuse materials in the closed landfill. Grab samples of the drill cuttings during air-rotary borehole advancement were collected to aid in the stratigraphic logging at downgradient perimeter gas probes GP-05, GP-06, and GP-07 (5- or 10-foot intervals or at observed lithologic changes).

Physical properties soil testing was performed on a sub-set of soil samples obtained from (1) the landfill soil cover and native materials under the waste trench, and () selected samples from MW-14D and MW-15. A total of fourteen (14) soil samples were selected from the archived samples to be submitted for physical properties soil testing to support field soil classifications and provide additional qualitative information for the primary soil and hydrostratigraphic units of interest. The selected soil samples were submitted to a certified materials testing laboratory—Budinger and Associates, Inc.—in Spokane, Washington

(2009). Soil sample test methods, ASTM designation, and number of tests were as described below.

- Moisture Content (ASTM D-2216); 12 samples tested
- Gradation Analysis (ASTM D-422); 4 samples tested
- Percent Passing a No. 200 Sieve (ASTM D-1140); 3 samples tested
- Hydrometer Analysis (ASTM D-422); 2 samples tested

In addition to the laboratory tests, soils were field classified according to the Unified Soil Classification System (USCS) visual-manual procedure (American Society of Testing and Materials [ASTM D-2488]). Field observations of soil moisture and general advancement rate changes also were used to qualitatively interpret formation variations. Materials interpreted to be fill soil material (that is, non-native soils such as landfill cover) were characterized using general physical and grain-size terminology. Materials observed to be refuse from the closed landfill were characterized based on gross physical characteristics. Drill cutting material interpreted to be in situ basalt or basalt rubble was described based on rock grain-size terminology, recognizing that in-place rock would result in angular cuttings with fresh surfaces from air-rotary drilling methods. Soil moisture characteristics and the presence of saturated conditions were recorded on the boring logs.

4.2.2 Soil Sampling and Analytical Test Methods

Per the SAP, soil samples collected beneath the refuse materials at interior investigation locations were planned for analytical testing to assess source mechanisms of contaminant migration. The waste trench was fully penetrated and native soils beneath the refuse were sampled at GP-LGW-10; however, due to difficult advancement conditions the native soil beneath the refuse material at GP-LGW-11 and -12 was not reached.

One of the drive samples from inferred native soils beneath the waste trench at GP-LGW-10 was deemed suitable and selected for analytical testing. The soil sample submitted for analytical testing was SPT-5 and represented a depth of 72.5-73.5 ft bgs (roughly 2 feet below the bottom of the waste trench, estimated at 70 ft bgs). The sample was shipped to Pace Analytical Laboratories in Seattle, Washington. The soil sample was analyzed for VOCs in soils via test method 8260B/5035 (for soils). Because the waste trenches were not fully penetrated at the GP-LGW-11 or GP-LGW-12 locations, native samples beneath the trench were not collected at these locations.

4.2.3 Landfill Gas Sampling and Analytical Methods

Landfill gas quality samples were collected from five interior locations (GP-LGW-10, -11; LGW's -4, -8, and -9) and five perimeter locations (GP-1, -3, -5, -6, and -7) as shown in the SAP Addendum (Table 4-4). The interior locations were sampled during two sampling events in May and June 2009, respectively; the perimeter landfill gas sampling included one event in May 2009. Landfill gas samples were collected via a SUMMA canister and submitted to Air Toxics, Ltd. for analysis. Analytical test methods included methane, oxygen, carbon dioxide, and a broad suite of VOCs (Method TO-15) including the primary COCs (PCE and TCE).

4.2.4 Groundwater Sampling and Analytical Methods

Groundwater quality samples were collected from the three wells installed during the RI (MW-14S, -14D, and -15) as show in SAP Addendum (Table 4-4). Groundwater samples were collected via two different methods including (1) typical low-flow purge methods, and (2) passive-diffusive bag (PDB) method. Typical low-flow purge sampling was performed at MW-14S, -14D, and -15 during a monthly schedule from May to October 2009 (a total of 6 consecutive monthly events). PDB sampling was performed to compliment the low-flow purge sampling and was performed at two existing well locations (MW-05 and MW-07) during two separate events in June and July 2009, respectively. Note that the PDB sampling approach included two PDBs deployed within the upper and lower screen interval at each well during each event (as described in the SAP).

Field measured parameters during low-flow groundwater sampling included depth to water, pH, temperature, conductivity, turbidity, dissolved oxygen (DO), and oxidation/ reduction potential (ORP). Analytical test methods for the typical low-flow purge sampling included general chemistry, dissolved metals, and a broad suite of VOCs (including the COCs TCE and PCE); analytical test methods for the PDB samples only included VOCs.

4.3 Remedial Investigation Results

This section summarizes the results from the focused RI with respect to soils physical properties testing, soil analytical testing, landfill gas analytical testing, groundwater field parameters, and groundwater analytical testing.

4.3.1 Soils Testing Physical Properties Results

Table 4-5 summarizes the physical properties soil testing results; Appendix E contains the soils testing laboratory data reports and gradation analysis plots.

Moisture content was tested on all samples submitted, with particular emphasis/interest in the moisture content of landfill cover material, soils underlying waste trenches, and conditions in the saturated interval of the Gravel Unit. Moisture content (as percent) was relatively low for the landfill soil cover ranging from 15 to 22 percent (average of 19 percent), consistent with the relatively low moisture content at 21 percent observed beneath the waste trench at GP-LGW-10 (SPT-5; 73.5 to 75 ft bgs). The moisture content was relatively high at samples corresponding to saturated depths in MW-14D and MW-15, ranging from 25 to 44 percent (average of 35 percent).

Gradation analysis results helped to quantify the Gravel Unit characteristics and generally supported the field classifications (as summarized in Table 4-5). Gradation testing results from 23 to 40 ft bgs at MW-14D (SPT-5, -6, and -8) demonstrate the presence of cohesive fine-grained silt & clay zones intermixed within the silty-clayey Gravel Unit. The two samples submitted for hydrometer testing demonstrate the fine-grained samples logged as "clay" were correctly assigned (reference samples from MW-14D, SPT-6 and SPT-16). In addition, the fine-grained sample submitted from the inferred tan-yellow Clay Unit (aquitard) were confirmed as having 80 percent "fines" (42 percent clay, 38 percent silt), 20 percent fine-sand, and no gravel.

4.3.2 Soils Testing Analytical Results

Appendix E contains the soils analytical laboratory results from sample GP-LGW-10, which was analyzed by Pace Analytical Services. This sample was collected from the inferred native soils underlying the refuse trench materials in the eastern-central portion of the landfill at a depth of 72.5 to 73.5 ft bgs. Results show that the COCs (namely PCE and TCE) are non-detect; the only VOCs detected include acetone at 71 μg/kg and 2-butanone at 25 μg/kg. Note that these low-level detections in soil of acetone and 2-butanone are not found in any of the groundwater samples. It should be noted that this soil sample represents a very limited portion of the overall landfill area covering roughly 46 acres within a specific waste trench on the eastern side of the landfill. The soils analytical test result does support that the eastern portion of the landfill is not a potential source area impacting groundwater.

4.3.3 Landfill Gas Analytical Results

Appendix F contains the landfill gas analytical test results obtained during the focused RI from Air Toxics, LTD. Landfill gas results were reviewed and Table 4-6 summarizes the selected COCs. Results show that the landfill gas concentrations for the COCs (PCE and TCE) are relatively high at interior locations (particularly LGW-08 and LGW-09 in the western portion of the landfill), whereas relatively low-level concentrations are observed at all perimeter locations sampled. Additional landfill gas constituents, namely Freon-11, Freon-12, vinyl chloride, and trans-DCA were detected as shown in Table 4-6; vinyl chloride is a degradation product of PCE.

The landfill gas monitoring data were collected to assess source areas and source mechanisms potentially impacting shallow groundwater. Two types of landfill gas evaluations were performed to assess if the observed site conditions supported the conceptual theory that landfill gas was the primary source mechanism impacting shallow groundwater. These two landfill gas evaluations are summarized below.

The first type of landfill gas evaluation consisted of theoretical "equilibrium calculations" comparing the observed PCE and TCE landfill gas concentrations to observed groundwater concentrations. The equilibrium calculations were performed to predict the extent to which landfill gas may contribute to PCE and TCE concentrations in groundwater near the closed landfill. Results from this evaluation support the landfill gas hypothesis. Appendix G contains details of this evaluation.

The second type of indirect landfill gas evaluation consisted of a comparison between upgradient and downgradient well locations of general chemistry groundwater 'indicator parameters' (per the approach in Landau et al, 2000; and Kerfoot 2004). This method assumes that most inorganic ions do not migrate in the gaseous phase, thus, if inorganic ions in groundwater associated with a leachate-type source are not observed to increase along with elevated VOCs in groundwater, then landfill gas may be implicated as a significant source of VOCs in groundwater. Results from this evaluation support the landfill gas hypothesis. Appendix H contains details of this evaluation.

4.3.4 Groundwater Field Parameter Results

As described in the SAP, groundwater field measured parameters were collected as part of the groundwater sampling protocol for stabilization prior to collection of a water quality sample. Groundwater field measurements included depth to water, pH, temperature, conductivity, turbidity, DO, and ORP. Table 4-7 summarizes the RI groundwater field measured parameters.

Prior to well purging during sample activities, depth to water measurements at each well location represent static groundwater levels at the time of measurement. Static groundwater level measurements were converted to elevations as shown in Table 4-7. Static groundwater elevations are used to assess groundwater flow characteristics and groundwater flow direction (discussed in Section 5). Field measured parameters, particularly conductivity, DO, and ORP, may also be useful to characterize groundwater types and potential geochemical interactions.

4.3.5 Groundwater Analytical Results

Appendix I contains the groundwater analytical test results obtained during the focused RI from Pace Analytical. Table 4-8 summarizes the groundwater sampling COC results (TCE and PCE) obtained from the low-flow purge-method. The groundwater results in Table 4-8 summarize the individual event data conducted over a 6-month schedule; and also a calculated mean and range of concentration for 2009 conditions. Note that Table 4-8 also includes COC data from the existing wells sampled quarterly (such as MW-05, -06, -07, -09, -10, and -11) as a comparison to the results from the focused RI. Generally speaking, results show that concentrations observed at the new RI wells, primarily MW-14D and MW-15, are the same order of magnitude as the existing wells installed along the northern downgradient perimeter of the landfill.

As described in the SAP, PDB sampling was also conducted to compliment the low-flow sampling method (above) and to assess the nature of contamination. Table 4-9 summarizes the COCs via the PDB sampling method. PDB results from MW-07 demonstrate that the upper and lower concentrations were similar suggesting the contaminants are well mixed; whereas at MW-05 there is evidence of chemical stratification considering the upper sample concentration was slightly lower than the lower sample concentration. In both cases, the magnitude of groundwater concentrations via the low-flow sampling method (Table 4-8) are generally comparable to or higher than the concentrations observed via the PDB method (Table 4-9). These findings support that the historic low-flow sampling methods generate conservative results at the two wells tested that have elevated levels of the COCs.

4.3.6 Groundwater Data Quality Review

In accordance with the SAP, the groundwater monitoring data were reviewed to assess the appropriate use or "usability" of the analytical data based on the QA/QC data submitted. The QA was performed in accordance with the EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Low Concentration Organic Data Review* (USEPA, 1994 and 2008) and the EPA CLP *National Functional Guidelines for Inorganic Data Review* (USEPA, 2004). Appendix I provides details of the data review. Based on the 2009 QA data review, none of the groundwater COCs (TCE and PCE) required flagging and are considered suitable to assist with site decisions regarding cleanup action alternatives. Some of the analytical data required flagging as described in the data review (Appendix I).

Following completion of the QA data review, the groundwater data were uploaded to Ecology's data repository in February 2010. Ecology's database is the *Environmental Information Management* (EIM) system which is used to store physical, chemical, and biological data for a variety of hazardous waste sites in the State of Washington. The EIM database is available to public access.

5.0 Conceptual Site Model

This section provides an updated Conceptual Site Model (CSM) based on the information reviewed from previous investigations (per Section 3) and the focused RI (per Section 4). The basis of the updated CSM assimilates information presented in previous sections of the report into a more interpretive discussion using the following key sources of information:

- Preliminary Hydrogeologic Characterization Studies
- Regional Hydrogeologic Setting
- Site Hydrogeology and Depositional Sequence
- Contamination Source Characterization
- Nature and Extent of Contamination

5.1 Regional Site Conditions

The following sections summarize the regional site conditions with respect to setting, climatology, geology, and hydrogeology.

5.1.1 Setting

Asotin County is characterized by a large central plateau with elevations ranging from approximately 2,000 to 3,000 feet, which is deeply incised by drainage courses trending in a northeasterly direction and discharging to the Snake River. Elevations within Asotin County range from approximately 5,000 feet in the Blue Mountains located in the southwest corner to approximately 800 feet along the Snake River in the northeast corner. Much of the County is rugged and, therefore, undeveloped. The Blue Mountains, and the Grande Ronde and Snake River canyons and sub-canyons occupy approximately half of the County’s total land area.

The Snake River forms Asotin County’s eastern boundary with Idaho. The County is bounded by Garfield County to the west and northwest, Whitman County to the north, and by Oregon to the south. The County encompasses approximately 633 square miles. Approximately three-fourths of this land is range and farm land used for cattle grazing and dry-land wheat farming. The remainder (outside of the small urban areas) is forested and is also used for grazing in addition to recreation and timber production (CH2M HILL, 2008).

Asotin County is roughly 90 percent private land. Only two percent of the County’s area is devoted to urban areas, such as the City of Clarkston and the City of Asotin. Five percent of the County (approximately 50 square miles) is owned by the federal government and is operated by the National Forest Service as part of the Umatilla National Forest. The remaining three percent of the land in Asotin County is operated by the Bureau of Land Management, the Department of Natural Resources, and Fish and Wildlife (CH2M HILL, 2008).

5.1.2 Climatology

Asotin County has a seasonal pattern of short, dry summers and long, humid winters. The prevailing wind is from the northwest during the summer. During late fall and early winter, the winds are from the south. Although winds of up to 50 mph have been recorded at the landfill site, wind speed is from 0 to 3 mph for 45 percent of the time (CH2M HILL, 2008). The average annual temperature in the area ranges from an average high in July of 81°F to an average low in January of 33°F in Lewiston, Idaho, the site for which records are kept by the National Weather Service (National Weather Service, 2008).

The average annual precipitation recorded at the nearby Lewiston Airport is 12.9 inches, and the peak daily rainfall is 2.2 inches (based on 25-year history, 24-hour storm event). Figure 5-1, which shows the average annual precipitation recorded by the Lewiston Airport, illustrates that since 1997 the Lewiston-Clarkston area has received below-average annual precipitation with the seasonal average observed in 2008 at 8.4 inches. ACRL receives on average approximately 30 percent less precipitation than the Lewiston Airport, based on the landfill's own weather station records. Moderate snowfalls of about 8 inches occur during the winter, which is reflected in the annual precipitation total based on snow-water-equivalent.

5.1.3 Regional Geology

The following sections describe the geologic setting, depositional history, and geologic structure in the Lewiston-Clarkston region.

Geologic Setting:

The study area lies within the Lewiston Basin, which comprises 400 square miles situated in the southeastern section of the Washington and western north-central portion of Idaho. The Lewiston Basin is characterized by the drainages of the Snake and Clearwater Rivers and their tributaries.

The Lewiston-Clarkston areas are located on the eastern edge of the Columbia Plateau. The Columbia Plateau encompasses the Lewiston Basin, which is dominated by flood basalt from the Columbia River Basalt Group (CRBG). Geologically, the CRBG has been deposited over older granitic and metamorphic basement complex at depth. The sequence of the CRBG consists of multiple layers of basalt with lacustrine and fluvial sediments from the Latah Formation deposited between successive basalt layers. From oldest to youngest (from the base upward), the CRBG is divided into three formations: Grande Ronde Basalt, Wanapum Basalt, and the Saddle Mountains Basalt. Through time, the Snake and Clearwater River Canyons have eroded and incised all three basalt formations (IDEQ , 2005).

The total thickness of the CRBG sequence in the Lewiston-Clarkston area is estimated at 2,500 ft thick (Hooper et al., 1985). Geology of the area is illustrated in the Geologic Map of the Clarkston 15 Minute Quadrangle, Idaho and Washington (included as Plates 1 and 2 in Appendix J). A generalized geologic cross-section depicting the regional stratigraphy of the area is provided in Plate 2 of Appendix J.

The Grande Ronde Basalt erupted between 15.5 and 17 million years ago, and is the oldest of the units in the CRBG. The Grande Ronde Basalt is estimated at approximately 1,300 ft thick in the Lewiston-Clarkston area (Schuster, 1993). Basalt flows of the Grande Ronde formation occurred in a relatively rapid succession creating a relatively thick and massive sequence; thus, sedimentary interbeds are largely absent and the degree of weathering on successive flow-tops (i.e., between eruptions) is limited (Cohen, 1980). In the vicinity of the landfill, the top of the Grande Ronde Basalt underlies the entire landfill at a depth of approximately 700 ft bgs.

The Wanapum Basalt is stratigraphically younger (lies above) than the Grande Ronde Basalt and erupted from approximately 14.5 to 15.5 million years ago. The Wanapum Basalt consists of approximately 12 individual basalt flows (Schuster, 1993). The Saddle Mountains Basalt is stratigraphically younger (lies above) the Wanapum Basalt and erupted from approximately 6 to 14.5 million years ago. The Saddle Mountains Basalt consists of approximately 14 individual basalt flows (Hooper et al., 1985).

Alluvial deposits found in the region are geologically younger than the basalt flows (described above) and originate from early Pliocene Clarkston Heights Gravel and the uppermost sedimentary interbed of the Saddle Mountains formation. The Clarkston Heights Gravel was deposited during numerous flood events and thus consists of a heterogeneous mixture of gravel and sand with interbedded and interfingered deposits of silt and clay.

The youngest geologic materials in the region are near-surface soils, which are typically formed from wind-deposited loess and basalt residium. The surface soil consists of silts and sandy silts (with occasional fine gravel) to a depth of approximately 10 to 16 feet. Portions of the upper 6 feet of silts are of aeolian origin; the remainder of the silts and sandy silts appear to be deposited by water.

Depositional History:

The depositional history of these basalt units (and younger alluvial units) is complex and important for the understanding of regional and local hydrogeologic setting. Key depositional characteristics include (1) sedimentary interbeds forming between successive basalt flows of the Wanapum and Saddle Mountains formations; (2) the fact that the Saddle Mountains Basalt is an intra-canyon basalt sequence; (3) ancient catastrophic flood events; and (4) recent alluvial deposition. These depositional characteristics are described below.

Relatively long periods of time separated eruption events between individual basalt flows from the Wanapum and Saddle Mountains Basalt; the time between successive basalt flows allowed the formation of freshwater lakes in depressions created by local topographic subsidence. Sediments were deposited in these lakes, forming sedimentary interbeds that were later covered by subsequent basalt flows. The Sweetwater Creek interbed is an example of a significant sedimentary interbed that formed immediately following the period of Wanapum Basalt extrusion (Cohen, 1980). The Sweetwater Creek interbed is composed of silt & clay interbedded with thin lenses of sand and gravel; the unit is approximately 100 to 300 ft thick in the Lewiston-Clarkston area.

Saddle Mountains Basalt flowed into the area after the Snake and Clearwater rivers had begun to form their present drainage patterns. Thus, because the Saddle Mountains Basalt intruded into developed river drainages, they buried alluvial deposits that had begun to form as a result of previous alluvial deposition. This depositional environment created alluvial deposits which are found within the basalt sequence.

In addition to the basalt and sedimentary interbeds, two ancient catastrophic flood events occurred during the last glaciations: the Lake Missoula and Lake Bonneville floods. These flood events contributed large volumes of sediment to the Snake and Clearwater drainages in the Lewiston-Clarkston area. Following these catastrophic flood events, alluvial material continued to accumulate in the river drainages and form the deposits that can be found in the present-day Snake and Clearwater River drainages.

Geologic Structure of the Lewiston-Clarkston Area:

The geologic materials in the Lewiston-Clarkston area have been deformed by post-Miocene tectonism into an asymmetrical syncline with a centrally plunging east-west axis (Howard Consultants, 1990). Because the site is located approximately one-half mile south of the east-west trending axis of the syncline, basalt flows and sedimentary interbeds (and overlying alluvial deposits) near the landfill generally dip to the north or the northeast at two to four degrees (Howard Consultants, 1990). The synclinal bowl forms the Lewiston Basin.

5.1.4 Regional Hydrogeology

This section provides a summary of the regional hydrogeology of the area including surface water and groundwater in the vicinity of Asotin County.

Surface Water:

A number of perennial streams exist within Asotin County, generally trending in a north to northeasterly direction and discharging to the Snake River, which forms the eastern and northern borders of Asotin County. In addition to the Snake River, two streams of importance within the County are Asotin Creek and the Grande Ronde River. Figure 2-1 shows the surface water features in the immediate vicinity of the landfill.

Asotin Creek has its headwaters in the Blue Mountains and flows northeasterly through the northern half of the County, discharging to the Snake River near the City of Asotin. Asotin Creek drains an area of 322 square miles, with peak flows of 1,000 to 1,500 cubic feet per second (cfs).

The Grande Ronde River flows through the southern portion of the County in the Blue Mountains, approximately 3 miles north of and parallel to the Oregon border. The Grande Ronde has incised a relatively large canyon several thousand feet deep along its lower reaches. Peak discharges up to 35,000 cfs have been recorded in the Grande Ronde system.

A number of small springs and seeps occur in the general vicinity of the landfill. The springs appear to be correlated with mapped outcrops of sedimentary interbeds within the Saddle Mountains Formation. Most of the springs are topographically and stratigraphically higher in elevation than the landfill (Howard Consultants, 1992).

Groundwater:

Regional groundwater occurrence and movement is controlled by the geology of the area. Regional groundwater flow systems in the Lewiston-Clarkston area can be delineated based on regional geologic characteristics and groundwater data from wells completed in different geologic units.

In general, three groundwater flow systems are found in the Lewiston-Clarkston area, which include (1) a lower, confined basalt aquifer, (2) an upper, confined basalt aquifer, and (3) a shallow, unconfined alluvial aquifer. The lower and upper basalt aquifers are described in this section; the shallow, unconfined alluvial aquifer is the primary focus of the CSM report and is described in the next (i.e., local hydrogeology) and subsequent sections.

Lower Basalt Aquifer:

The lower basalt aquifer (locally referred to as the Lewiston Basin Aquifer) is a sole source aquifer for the users in the Lewiston-Clarkston area (Federal Register, 53, FR 49920, December 12, 1998). The lower basalt aquifer is found in basalt of the Grande Ronde Formation. The Grande Ronde Formation typically contains excellent aquifers because there are few sedimentary interbeds to inhibit groundwater movement. In addition, the major drainages in the local area intersect only the upper portion of the Grande Ronde Formation, allowing recharge from surface sources without interrupting the lateral continuity of the lower aquifer (Cohen, 1980).

Recharge to the Grande Ronde Basalt aquifer occurs in the Blue Mountains to the southwest and in the Snake and Clearwater River canyons where the structural attitude or orientation of the basalt flows allows direct infiltration of water into the basalt rock. Recharge to the lower basalt aquifer in the Lewiston-Clarkston area outside of the Snake and Clearwater River drainages is negligible due to (1) low annual precipitation combined with relatively high evapotranspiration rates; (2) the presence of fine-grained sedimentary interbeds limiting vertical infiltration; and (3) characteristics of basalt flow interiors that limit deep vertical infiltration/recharge.

The lower basalt aquifer discharges to the Snake River downstream of the confluence of the Snake and Clearwater Rivers (Cohen, 1980). Groundwater levels in wells completed in the lower aquifer near the confluence of the Snake and Clearwater rivers are generally equal to or slightly below the elevation of the Snake and Clearwater rivers, thus indicating a river-aquifer interconnection. Appendix J shows the areas of recharge and discharge for the lower aquifer (wells completed in the Grande Ronde) (Plate 3).

Upper basalt aquifer:

The upper basalt aquifer in the Lewiston-Clarkston area is located within basalts of the Saddle Mountains Formation. The upper basalt aquifer is confined above by sedimentary interbeds found at an elevation of approximately 1,000 feet above sea level; the upper basalt aquifer is confined (or separated) from the lower basalt aquifer (found in the underlying Grande Ronde Basalt Formation) from a combination of (1) sedimentary interbeds between the two basalt formations, and/or (2) massive basalt flow interiors with relatively low vertical hydraulic conductivity.

Recharge to the upper basalt aquifer is believed to be limited to irrigation and precipitation in the area. Irrigation and/or precipitation in the area infiltrates into the upper alluvial system via gravity drainage. However, given the presence of low-permeability sedimentary interbeds—combined with the high evapotranspiration rates and relatively limited precipitation/irrigation in the region—only a small amount of water recharges the upper basalt aquifer. This environment results in a relatively ineffective resource and a relatively unproductive aquifer system. A water-well survey conducted in the vicinity of the landfill suggests limited utilization of the upper basalt aquifer. Additional information from the water-well survey and potential receptors is provided in Section 6.0.

5.2 Local Site Conditions

The following sub-sections describe the "local site conditions," which includes characterization of the local surface water, site hydrostratigraphy, and shallow groundwater in the vicinity of the landfill.

5.2.2 Surface Water

The surface water features in the immediate vicinity of the site include the Dry Creek and the seep (shown on different scales via Figure 2-2 and Figure 2-3). Characteristics of Dry Creek and the seep are discussed below.

Dry Creek is an ephemeral stream with a drainage area originating south-southwest of the landfill and then flowing northeast just north of the landfill. From the landfill, Dry Creek drainage slopes to and is oriented toward the north-northeast, and eventually turns to the north-northwest just prior to the confluence with the Snake River. Surface water in-channel flow within Dry Creek drainage has not been observed in recent years, except under extreme precipitation events (personal communication from Steve Becker, April 2009).

A seep is observed within the Dry Creek channel roughly 650 ft north of the landfill. The seepage area is limited in extent to roughly 10 ft^2 and is characterized by enhanced vegetation, moist soils, and limited surficial ponding. The seep discharge is insufficient to generate flow within Dry Creek drainage; presumably the relatively low rate of discharge is less than evapotranspiration rates. The seep is inferred to be an expression of shallow groundwater and correlates to the approximate elevation of shallow groundwater in that area.

5.2.3 Site Hydrostratigraphy

Although the hydrogeologic setting at ACRL is reasonably complex, a sufficient body of geologic, hydrogeologic, and borehole geophysical information is available to create a representative and supportable CSM for the site. This CSM provides the framework for describing and understanding the observed geologic, hydraulic, and geochemical attributes that must be considered, in whole, when attempting to understand contaminant sources and groundwater flow paths.

As discussed in Section 3, a significant number of subsurface investigations have been performed at the site. Figure 5-2 is a map illustrating the subsurface investigation locations. Based on the previous site characterization efforts and available hydrogeologic information (summarized in Section 3), Table 5-1 is an inventory of the available subsurface boring logs, gas probes, and monitoring well information. Subsurface information from Table 5-1 was developed based on a review of the boring logs and completion diagrams (in Appendix C). This information, coupled with the regional hydrogeologic framework (described above), has been used to develop a conceptual hydrostratigraphic section with related site-specific observations (shown in Figure 5-3).

In addition, two hydrogeologic cross-sections have been developed in the vicinity of the closed landfill. Figure 5-2 is a plan-view location of these cross-sections (A-A′, and B-B′); cross-section A-A′ is oriented from south to north through the center of the closed landfill (shown in Figure 5-4); cross-section B-B′ is oriented from west to east along the northern perimeter of the landfill (shown in Figure 5-5). Noteworthy characteristics of these hydrostratigraphic units are described below.

There are four primary hydrostratigraphic units found in the vicinity of the landfill area, which includes (1) a relatively thin soil horizon consisting of windblown "loess"; (2) a highly interbedded and interfingered Gravel Unit with varying amounts of sand, silt, and clay; (3) a fine-grained white-yellow Clay Unit effectively acting as an aquitard beneath the landfill; and (4) basalt basement rocks at depth. These units are consistent with the regional framework described above. Specific observations and unit thickness of these primary units near the landfill are briefly described below.

- ***Soil horizon (loess):*** The "loess deposits" mantle the ground surface in the vicinity of the landfill, consisting of a thin sequence (up to 20 feet thick) of fine grained silt to silty sand. This unit may be absent in the vicinity of Dry Creek due to erosion; this unit is not saturated.
- ***Gravel Unit:*** The Gravel Unit consists of an interbedded, interfingered, heterogeneous mixture of poorly graded gravel and sand with varying amounts of silt and clay; the Gravel Unit ranges in thickness from approximately 100 to 200 feet. The Gravel Unit is believed to be a combination of the Clarkston Heights Gravel and the lower sedimentary interbed of the Saddle Mountains Formation (Howard Consultants, 1992b;, CH2M HILL, 1995). Depending on site topography, this unit is saturated at depths ranging from approximately 60 to 140 feet below ground surface (bgs), and is the primary water-bearing zone targeted by the ACRL monitoring network (i.e., typically represents the uppermost monitorable groundwater unit).
- ***Clay Unit:*** The Clay Unit found beneath the Gravel Unit in the vicinity of the landfill is approximately 40 to 60 feet thick. This distinctively light-colored (typically white to yellow-tan) fine-grained unit effectively acts as an aquitard and promotes the development of saturated conditions in the overlying heterogeneous Gravel Unit. The Clay Unit has low plasticity and greater than 80 percent "fines" passing No. 200 sieve; vertical hydraulic conductivity of this unit via laboratory testing is 1×10^{-8} cm/sec (CH2M HILL, 1995). This aquitard unit is believed to represent a fine-grained sedimentary interbed of the Saddle Mountain formation (CH2M HILL, 1995). The relatively flat contact elevation of this unit suggests that it has not been extensively eroded, and the overlying deposition of the higher-energy Gravel Unit materials has preserved this aquitard unit in the vicinity of the landfill.
- ***Basalt Unit:*** Columbia River Basalt units found beneath the Clay Unit underlie the site at depth; the basalt unit encountered at depths of approximately 200 to 250 ft bgs in the vicinity of the landfill is inferred to be Wanapum Basalt (CH2M HILL, 1995). Limited subsurface expressions of Saddle Mountain basalt also are thought to be present in localized areas around the landfill, lying between the Gravel Unit and underlying silt/clay interbed. One or more water-bearing horizons are known to present within the Wanapum Basalt Sequence, generally within thin interflow zones that exhibit a greater permeability and water-yielding capacity than interior portions of the basalt rock mass

that are generally more massive and less permeable. Localized groundwater occurrences in the deeper basalt sequence do not appear to be in direct hydraulic connection with saturated portions of the above-lying Gravel Unit. Evidence supporting this includes (1) a downward vertical gradient between the Gravel Unit and underlying basalt water-bearing zones; (2) the presence of the low permeability clay aquitard unit; and (3) the presence of dense, massive portions of the basalt sequence (flow interiors) that display a low vertical permeability and impede vertical hydraulic communication between adjacent water-bearing zones.

5.2.4 Shallow Groundwater

The following discussion characterizes the shallow groundwater system in the vicinity of the landfill with respect to groundwater occurrence, groundwater flow direction, and groundwater flow rate.

Groundwater Occurrence:

Shallow groundwater (i.e., "first water") beneath the landfill occurs within the interbedded and interfingered Gravel Unit of the Clarkston Heights Gravel and/or Saddle Mountain sedimentary interbed (CH2M HILL, 1995). Though heterogeneous in its character, this Gravel Unit (including significant interbeds of sand, silt and clay) serves as the primary monitoring zone for purposes of groundwater monitoring at ACRL. Depending upon site topography and vertical relief, the depth to shallow groundwater in the vicinity of the landfill varies from approximately 40 to 160 feet bgs. Saturated thickness of the Gravel Unit is up to 60 feet, but the water-bearing characteristics can vary considerably due to the distinct lithologic variability that occurs vertically within the Gravel Unit. A fine-grained yellow-white clay layer 40 to 60 feet thick underlies the Gravel Unit beneath much of the site. This distinct lithologic unit serves as a prominent aquitard unit that defines the base of the shallow groundwater system.

Recharge to the shallow groundwater unit is predominantly from localized precipitation and surface runoff infiltration. Seasonal precipitation-related infiltration rates are thought to be low due to relatively high evapotranspiration rates in this semi-arid setting (Howard Consultants, 1992). However, localized changes in land use (i.e., residential development) adjacent to the landfill are expected to contribute an additional quantity of subsurface recharge via irrigation and/or septic system contributions. A discharge zone of shallow groundwater is inferred to be the seep located approximately 650 ft north of the landfill (discussed in Section 5.2.2).

Hydrographs for wells completed in the shallow groundwater bearing unit (i.e., Gravel Unit) have been developed and are presented in Figures 5-6 and 5-7. Figure 5-6 shows the site hydrograph from 1993 to 2009; Figure 5-7 shows the site hydrograph in a subset of the wells from 2003 to 2009 (i.e., enhanced scale).

In the vicinity of the active cells area, these hydrographs illustrate that wells up or cross-gradient of the active cell area (i.e., MW-12 and MW-13) show water level changes that are rising steadily over the past 8 to 10 years. These localized changes in potentiometric levels likely are caused by recharge from residential septic systems, and are not thought to be indicative of a change in precipitation-related recharge. Precipitation data (discussed in Section 5.3) shows that recent precipitation totals are slightly lower than historical precipitation totals, which would support the concept that increasing groundwater levels may be related to nearby land use changes and increased source of recharge. This observation is consistent with the adjacent land use (i.e., residential houses) south and southeast of the active cell area (in contrast to no houses south of the closed landfill, etc).

In the vicinity of the closed landfill, the hydrographs for wells MW-03, -4, -5, -5A, -6, -7, -9, -10 show a gradual decrease in levels over the past 8 to 10 years on the order of 2 to 3 feet. A noticeable shift in water levels is evident in the 1995 to 1997 timeframe, likely attributed to the closure actions and installation of the lined, active cells that would be expected to reduce infiltration. Wells in the vicinity of the closed landfill do not show the gradual rise in levels and are inferred to be outside the influence of the residential-related infiltration.

Three paired wells were used to evaluate the vertical hydraulic gradient in the Gravel Unit: well pair MW-7 [shallow] and MW-3 [deep]; well pair MW-05 [shallow] and MW-05a [deep]; and well pair MW-14S [shallow] and MW-14D [deep]. Despite a vertical offset of approximately 45 feet in their respective screened intervals, static water levels at MW-7 and MW-3 over the past 8 to 10 years have been relatively similar. Comparison of water level elevations at MW-03 and MW-07 indicates that the vertical hydraulic gradient varies seasonally, both in magnitude and direction. Depending on the season, the vertical gradient can be upward or downward. Generally the water level elevation differences between the two paired wells are small (typically less than 1 foot), which results in a relatively small vertical hydraulic gradient. Similarly, at the MW-05/MW-05a well pair, water level elevations vary seasonally along with the direction of the vertical hydraulic gradient (shown in Figure 5-7). Temporal water level data from wells MW-14S and -14D are insufficient to evaluate temporal characteristics given they were installed in April of 2009; however, measurements from this well pair suggest that the shallow well has slightly higher water level elevation than the lower well.

Groundwater Flow Direction and Hydraulic Parameters:

Figure 5-8 shows the groundwater equipotential lines and the inferred direction of groundwater flow for the shallow Gravel Unit. The inferred direction of groundwater flow beneath the closed landfill is predominantly to the north with a slight north-northeasterly shift just north of the landfill along the Dry Creek drainage. The groundwater flow map shows how groundwater movement is predominantly to the north, which is consistent with the general slope of surface topography to the north toward the Snake River drainage.

Groundwater flow characteristics of the shallow, alluvial aquifer (i.e., Gravel Unit) may be characterized by hydraulic conductivity, transmissivity, and the localized hydraulic gradient. These hydraulic parameters are discussed below.

Hydraulic conductivity estimates for the upper saturated Gravel Unit have been obtained from slug test data (CH2M HILL, 1995) and from the single-well hydraulic testing data performed during the RI in April 2009 (CH2M HILL, 2009a). Table 5-2 summarizes the hydraulic conductivity and aquifer transmissivity estimates for the Gravel Unit.

As described earlier, the Gravel Unit is a heterogenous mixture of soils; the differences observed in hydraulic conductivity for a given well/screen location may be correlated to three general types of soils observed within the Gravel Unit. As shown in Table 5-2, the silty/clayey gravel zones exhibit the lowest hydraulic conductivity in the range of 1 to 37 ft/day; the silty gravel with sand zone exhibits moderate hydraulic conductivity in the range of 130 to 235 ft/day; and the clean sand zones exhibits the highest hydraulic conductivity of 1,200 ft/day at the base of the Gravel Unit in MW-14D.

The hydraulic conductivity values are generally consistent with the theoretical range of hydraulic conductivity for unconsolidated materials consisting of silty sand/gravel to well-sorted sand (Fetter, 1994). The clean sand zones deposited within an otherwise silty/clayey gravel matrix is believed to represent a paleochannel and influence groundwater flow in this area. The location of the paleochannel is believed to be generally correlated with the location and alignment of Dry Creek; the extent and size of the paleochannel in vicinity of the landfill is believed to be consistent with a tributary drainage feature the size of present-day Dry Creek and does not represent a regionally extensive depositional feature.

Aquifer transmissivity is defined as a measure of the amount of water that can be transmitted horizontally through a hydrostratigraphic unit width by the full saturated thickness of the aquifer under a hydraulic gradient of 1 (Fetter, 1994). Transmissivity is calculated as a function of hydraulic conductivity multiplied by the saturated aquifer thickness (as shown in Table 5-2). Similar to hydraulic conductivity, the transmissivity values may be correlated to three general types of soils observed within the heterogeneous Gravel Unit (as described above).

Horizontal hydraulic gradients for the shallow alluvial Gravel Unit typically range from 0.006 to 0.03 ft/ft. The steepest groundwater gradients occur in the vicinity of the active cells (i.e., 0.03); the flattest gradients occur across the western portion of the closed landfill (0.006). In the vicinity of Dry Creek drainage near MW-14S and MW-15, the hydraulic gradient is comparable to the gradient observed near the active sells (as shown in Figure 5-8).

Lower Confining Unit Characteristics:

The Clay Unit is stratigraphically older (and thus beneath) the shallow water-bearing Gravel Unit (Figure 5-3). The relatively lower hydraulic conductivity of the underlying Clay Unit supports development of saturated conditions in overlying Gravel Unit (characterized above). The Clay Unit is found in all locations in the vicinity of the closed landfill and is an important hydrostratigraphic unit in terms of impeding the vertical migration of contaminants that may originate from the closed landfill. Hydraulic characteristics of the Clay Unit are described below.

Hydraulic properties of the fine-grained Clay Unit are estimated based on physical soil properties testing results obtained from selected soil-samples. Soil samples obtained from the Clay Unit at MW-14D (SPT-16 at 75.5 ft bgs) demonstrate that 80 percent of the sample passed a #200 sieve and would be classified as “clay” (CH2M HILL, 2009b). Vertical hydraulic conductivity testing results via samples from the Clay Unit at abandoned soil boring B-1 (located in the center of the active cell area) show values on the order of 10^{-8} cm/sec (hydraulic conductivity values based flex wall perimeter via Method ASTM D-5084; reference CH2M HILL, 1995). These findings are consistent with theoretical values of hydraulic conductivity for clay sized soil particles that range from 10^{-6} to 10^{-9} cm/sec (Fetter, 1994). Vertical hydraulic conductivity of the Clay Unit is at least 1 to 4 orders of magnitude lower than the overlying horizontal hydraulic conductivity of the Gravel Unit.

These findings support that the Clay Unit effectively serves as the lower-confining unit of the uppermost groundwater unit.

5.3 Contamination Source Characterization

This section summarizes the contamination source characterization with respect to landfill operation/disposal activities, waste trench characteristics, types of wastes, and inferred contamination sources materials. These observational characteristics of landfill operation and source characterization provide a context for the quantified nature and extent of contamination (described subsequently).

5.3.1 Overview

The closed landfill boundaries cover an area of approximately 46 acres on the western end of the site (shown in Figure 2-3). Waste placement and landfill operations began in 1975. Waste placement started near the westernmost boundary and advanced eastward. Wastes were placed into shallow trenches dug into the native soils. The closed landfill stopped receiving waste in 1991, and was officially closed under the framework of Chapter 173-304, WAC, in 1993. A summary of these landfill activities and related source materials are described below.

Waste Trench and Soil Cover Configuration:

A conceptual understanding of the former waste trenches has been developed based on historic observations and recent RI characterization efforts. Historic observations (Becker, pers. comm., April 2009) noted that the former waste trenches were created by excavating near-vertical walled trenches into native soils. The excavated trenches were visually estimated at roughly 25 to 30 feet wide and estimated to be approximately 30 feet deep. Once the trenches were filled with refuse to approximate grade they were covered with several feet of low-permeability fill soil obtained from the excavated trenches. Field observations noted that the waste trenches were oriented north-south and spacing between trenches was estimated at roughly 30 feet apart.

Field investigations conducted during the April 2009 RI (CH2M HILL, 2009a) helped to refine the understanding of trench location and actual thickness via GP-LGW-10, -11, and-12; coupled with a review of the existing gas extraction wells (LGW-1 through -9). Based on conditions found at these gas probe/extraction well locations, maximum thickness of the trenches in the central portion of the landfill was found to be up to 40 to 50 ft thick. Figure 5-4 is a conceptual cross-sectional schematic of the former waste trenches (A-A′ profile). As illustrated on Figure 5-4, the former waste trenches were covered with approximately 3 to 4 ft of low-permeability soil cover, which was then overlain by roughly 10 to 30 feet of compacted fill material. The fill material overlying the soil cap consisted of native soils (predominantly silty-clayey gravel or gravelly-clay) excavated from the active-cell area. The fill material was highly compacted during placement.

Contamination Source Materials:

Wastes and contamination sources within the closed landfill have been described by Howard Consultants in 1992 in the document titled *Preliminary Hydrogeologic Assessment Report for the Construction of Additional Groundwater Monitoring Wells at the Asotin County*

Regional Landfill, Asotin County, Washington (Howard Consultants, 1992a). The following information from Howard Consultants (in italics) summarizes the documented information regarding contamination source materials placed in the closed landfill.

> *Essentially no written records exist with respect to the types and associated volumes of wastes placed within the landfill, or the locations within the landfill where individual types of wastes were buried*
>
> *The types of wastes placed in the landfill varied as a function of time in concert with the development of environmental regulations. There were very few documented disposal restrictions when the landfill opened in the mid 1970's. It was reported that pesticide containers were prohibited from the landfill throughout the operational period. However, all other types of waste were accepted during the early years of landfill operation. Until about 1980, the waste stream included household trash, industrial waste, sewage treatment plant sludges, and septic tank pumpage sludges.*
>
> *Sewage treatment plant sludges from Clarkston, Lewiston, and Asotin were hauled to the landfill from about the mid 1970's (start of operation) through the end of 1985. Ecology commented on the sludge disposal in two letters in 1984 and again in 1985.Termination of the sludge disposal at the landfill at the end of 1985 may have been in response to these letters.*
>
> *Sludge and effluent from pumping of septic tanks or settling tanks were deposited at the landfill from the start of operation (about 1975) to about the mid 1980's. This included septic tanks as well as tanks associated with various types of businesses such as car washes, cleaners, and garages.*

Consistent with the findings from Howard Consultants (1992a), research in support of the RI/FS effort did not identify any new substantive written records with respect to contamination source materials placed into the closed landfill. Sources reviewed included archives from the landfill, Ecology's Eastern Regional Office, and Asotin County Health District. However, it is important to emphasize that available documentation supports that waste placement activities generally began in the western portion of the landfill and then moved eastward. Considering the timeline of the types of wastes placed, it is inferred that the majority of the industrial wastes (i.e., sewage and septic sludge, solvents, dry-cleaning waste, etc.) were placed during early operations (roughly 1975 to 1985) and are expected to be located primarily in the western portion of the landfill.

Limitations and Uncertainty in Source Materials Characterization:

As noted above, limited records exist during early operations with respect to the types, quantities, and geochemical characteristics of materials placed within the waste trenches. The following limitations or uncertainty preclude the ability to accurately estimate source volumes and/or chemical composition:

- Location and configuration of the actual trench geometry cannot be accurately determined from existing data.
- Actual volume of discrete sludge or sewage effluent types is unknown.
- Chemical composition or concentration of individual parameters of discrete sludge types is unknown.

5.4 Nature and Extent of Contamination

The objective of this section is to provide an interpreted updated CSM as related to the 'nature and extent' of contamination. To facilitate discussions, the analytical results for landfill gas are summarized in Table 4-6, and the analytical results for groundwater COC's are summarized in Table 4-8. Analytical results from May 2009 event are also shown graphically in plan view (Figure 5-9) and respectively in cross-sections A-A′ (Figure 5-10) and B-B′ (Figure 5-11). In addition to the spatial representations of the COC, temporal groundwater data for PCE and TCE in selected wells are provided in Figure 5-12 and Figure 5-13, respectively.

5.4.3 Nature of Contamination:

The following discussion describes the inferred 'nature of contamination' with respect to the source of contaminants, sourcing of the COCs, contamination characteristics/phase, and contaminant mobilization in groundwater. The following bullets are presented in a chronological sequence with respect to sources of COCs, mechanisms impacting shallow groundwater, and mobilization/transport of the COCs once in groundwater.

- The source area of contaminants are located within buried waste trenches located within the boundaries of the closed landfill delineation area (plan-view boundaries of closed landfill illustrated in Figure 2-3). The waste trenches were capped with roughly 10 to 30 feet of overlying high-compacted fill soil; an individual trench is typically 20 to 30 feet wide and may be on the order of 30 to 50 feet thick. The orientation of the trenches is believed typically north-south; there are believed to be at least as many trenches that may coincide with the existing number of gas extraction wells (LGW-01 through -09). The bottom of the refuse or waste trenches lie approximately 70 to 80 feet above shallow groundwater (as illustrated in Figure 5-4; cross-section A-A′). A focused source area of concern is located primarily in western portion (roughly half) of the closed landfill. This inference is based on a combination of historic landfill activities, supported by elevated geochemical conditions in this area.

- Primary source materials of concern include industrial sludge and sewage treatment plant effluent pumped into these waste trenches primarily during early operations over a 10-year span from about 1975 to 1985. Industrial sludges and sewage treatment plant effluent are known to contain VOCs. Historic and recent groundwater sampling data confirm the presence of these COCs (namely PCE and TCE) in shallow groundwater.

- Geochemical characteristics of PCE and TCE in solution (i.e. sludges) have the propensity to vaporize. PCE and TCE in solution readily mobilize and diffuse to adjacent media such as the vadose zone capillary fringe and ultimately may diffuse into shallow groundwater. Once in solution (i.e., shallow groundwater), the predominant mechanisms would include advective groundwater flow and geochemical processes such as diffusion, dispersion, adsorption, retardation, and/or potential re-vaporization into the capillary fringe or vadose zone soils.

- Historic and current sourcing of COC to shallow groundwater may include mechanisms such as leachate (i.e., sludge) infiltration via gravity drainage, landfill gas effect, or a combination of both. The predominant mechanism currently impacting shallow groundwater is believed to be landfill gas effect/mobilization to groundwater based on the following lines of evidence:

  - Observed concentrations of the COC in groundwater are several orders of magnitude below the concentrations that would be expected from a DNAPL-type source. Concentrations (detections) of PCE and TCE in near-field wells are in the range of 1 to 20 µg/L which are not indicative of a DNAPL source; presence of a DNAPL source would be indicative of concentrations over 100 mg/L .
  - Theoretical 'equilibrium calculations' comparing the observed PCE and TCE landfill gas vapor concentrations to observed groundwater concentration support the landfill gas effect. Appendix G contains details of the evaluation.
  - A comparison between upgradient and downgradient well locations of general chemistry groundwater 'indicator parameters' supports the landfill gas effect (per the approach in Landau et al, 2004; and Kerfoot 2004). Appendix H contains details of this evaluation.
  - An implied relationship exists between extraction of landfill gas (via LGW-01 through LGW-09) and resultant decreases in groundwater concentration for the COC. As shown in Figures 5-12 and 5-13, a temporal plot of the COC from 1993 to 2009 in downgradient wells supports this concept. This time-series plot shows a significant reduction in concentration at well MW-05 immediately following initiation of the gas extraction system; then an inferred slight rebound effect from about 2004 to present which correlates to operational changes in the system (i.e., reduced withdrawal of landfill gas). Note also that MW-05 is the well located closest to the inferred source materials; thus, it would be expected to exhibit the most pronounced cause-effect relationship of source removal and improved conditions.
  - RI field observations at interior closed landfill locations demonstrate that cap is effective in limiting vertical infiltration of precipitation through the waste material. This finding is supported by soil moisture tests in the cap; lack of observed saturated zones; refuse material in the trenches was dry; and the soil sample submitted for chemical analyses (below refuse) was non-detect for the COC tested. These findings would support the landfill gas effect rather than a leachate or gravity-driven source mechanism.
  - PDB sampling at two locations suggest the low-flow sampling data is generally representative of the conditions within the respective screen intervals; there were not any DNAPL-type concentrations observed within the lower screen interval, which further supports the landfill gas hypothesis rather than a leachate-driven source mechanism.

- Once the COCs are in solution, groundwater flow characteristics of the heterogeneous Gravel Unit then dictate the contaminant mobilization further downgradient of the landfill. Groundwater flow occurs within the heterogeneous Gravel Unit with sufficient interconnection of preferential flow zones to be considered a single groundwater bearing unit underlain by clay aquitard. Lines of evidence supporting that the Gravel Unit is a single hydrostratigraphic unit (i.e., hydraulically connected) include the following:

  - Three nested well pairs are present to evaluate flow characteristics, which include an upper and lower completion within the Gravel Unit in a similar location. As noted in Section 5; these include wells MW-05/-05A, MW-07/-03, and MW-14S/-14D. Although data is limited for 14S/-14D, these locations show (1) comparable water levels between the upper and lower wells, and (2) seasonal gradient reversals. These observations support the concept that the Gravel Unit is a single hydrostratigraphic unit.
  - Monitoring results from wells MW-14S and -14D show detects of the COC, which supports the concept that the upper and lower zones of the Gravel Unit are hydraulically interconnected. Although the deeper completions at MW-03 and 05A are non-detect, these locations may be too close to the source areas to allow sufficient mixing into the lower zone. At more distant locations from the source area such as 14S/14D, both the upper and lower zones exhibit contamination.

- Groundwater flow direction from the closed landfill is predominantly to the north (as described in Section 5). A shift of flow direction to the north-northeast aligned with the Dry Creek drainage is supported by the potentiometry in wells MW-14S/14D and MW-15 in relation to other wells. This flow direction is consistent with the local topography in the vicinity of Dry Creek; and, consistent with a general flow-direction toward the inferred regional discharge area to the north (i.e., Snake River).
- Depositional characteristics of the Gravel Unit support the concept that coarse-grained alluvial paleochannel deposits occur within the otherwise fine-grained silty-clayey matrix; this environment results in preferential groundwater flow within the uppermost groundwater bearing unit (i.e., Gravel Unit). The presence of a coarse-grained alluvial paleochannel within the Gravel Unit is supported by the following:
  - The depositional sequence observed at MW-05/05A, MW-09, MW-10, and MW-14D. Logs for these wells indicate the screen interval is completed in a relatively clean sand zone within an otherwise silty/clayey gravel matrix (Table 5-1).
  - Hydraulic response and groundwater flow properties of MW-14D (coarser-grained materials presumably lying within the paleochannel) exhibit significantly greater yield in comparison to MW-14S and MW-15 (finer-grained materials are not indicative of a higher conductivity paleochannel). This supports the concept of preferential flow zones.

- Preferential groundwater flow, and thus, preferential contaminant migration, is believed to occur at locations in proximity to Dry Creek drainage. Evidence of preferential flow theory correlated with elevated concentrations of PCE and TCE are supported by wells completed in coarser-grained channel deposits; examples include MW-05, MW-09, MW-10, and MW-14D. In contrast, wells completed in finer-grained zones of the Gravel Unit (such as MW-14S, MW-15) exhibit relatively lower concentrations of the COC in comparison to the coarser-grained areas.

- Figure 5-14 shows the natural degradation process of PCE/TCE. The end-products of this natural degradation process include breakdown into secondary contaminants such as ethane and vinyl chloride. These secondary constituents are not observed in the current downgradient groundwater monitoring locations. Given that it has been more than 20 years since source materials were place in the landfill, and if natural attenuation were occurring it would be expected that these secondary constituents would be observed in recent data. Existing conditions may not be present at the site to support natural breakdown of PCE/TCE. Biodegradation of PCE and TCE may be enhanced, but would require additional site evaluation and is considered low probability given the lack of evidence under existing conditions.

5.4.4 Extent of Contamination

The "extent of contamination" as related to the gaseous phase (i.e., landfill gas effect) and aqueous phase (i.e., shallow groundwater) is discussed below. Landfill gas data provide a conceptual understanding of source mechanisms and extent of contamination related to shallow groundwater. The landfill gas data represent focused sampling events conducted in 2009. The groundwater data provides historical information to develop descriptive statistics (mean concentration and ranges) and temporal characteristics.

Extent of Landfill Gas Contamination:

Landfill gas concentrations collected during the focused RI in 2009 are generally highest in western portion of closed landfill; landfill gas concentrations extend laterally and vertically from the source area (i.e., waste trenches), but do not significantly extend outside the inferred boundaries of the closed landfill. General observations supporting this include the following:

- Significantly elevated landfill gas concentrations are observed at the westernmost interior locations at LGW-08 and LGW-09
- Moderately elevated gas concentrations are observed at central or eastern interior locations such as LGW-04, GP-LGW-10, and GP-LGW-11
- Low-level (or non-detect) concentrations are observed at perimeter locations such as GP-01, -03, -05, -06, and -07

Elevated landfill gas concentrations in the western portion of the landfill are consistent with findings from a soil-gas survey performed by Howard Consultants in 1993. Results of the soil-gas survey are summarized in a report titled *Soil-Gas Survey of the Closed Cell, Asotin County Landfill, Asotin, Washington* (Howard Consultants, 1993). Sample methodology consisted of establishing a sampling grid of 12 sampling locations on 200-foot spacing; auguring 3 to 4 feet into the closed landfill cover; driving a soil-gas probe into the cover material (approximately 5 to 6 feet deep); collecting a landfill gas sample; and backfilling the sampling hole with bentonite. Constituents analyzed from the 12 sampling locations included halogenated VOCs, methane, carbon dioxide, oxygen, and nitrogen. Results from the 1993 soil-gas survey showed that halogenated VOCs were identified in the extreme western edge of the landfill, which is consistent with the findings from the 2009 RI.

Additional detail regarding the extent of landfill gas contamination of the COCs at the interior and perimeter locations from the RI sampling conducted in 2009 are discussed below.

Perimeter Gas Probes: GP-01, GP-03, GP-05, GP-06, and GP-07:

GP-01D: exhibits relatively low-levels of PCE and TCE air-concentrations. PCE air-concentration is 430 ug/m^3; TCE air-concentration is 13 ug/m^3.

GP-03S: exhibits relatively low-levels of PCE air-concentration at 300 ug/m^3; TCE is non-detect.

GP-05: exhibits relatively low-levels of PCE air-concentration at 850 ug/m^3; TCE is non-detect.

GP-06: exhibits non-detect results of PCE and TCE. The presence of basalt slump-blocks are observed in nearby borings/wells (Bovay, MW-09, MW-05/05A, and GP-07), which may influence landfill gas migration in this area (reference Cross-Section B-B′ shown in Figure 5-11).

GP-07: exhibits relatively low-levels of PCE at 1000 ug/m^3; TCE air-concentration is non-detect.

Interior Landfill Gas Extraction Wells or Gas Probes: LGW-4, -8, -9; GP-LGW-10, GP-LGW-11

LGW-04: exhibits moderate levels of PCE air-concentration at 7200 ug/m^3, and moderate levels of TCE at 2500 ug/m^3.

LGW-08: exhibits relatively high levels of PCE at 49,000 ug/m^3, and high levels of TCE air-concentration at 25,000 ug/m^3.

LGW-09: exhibits moderate to high levels of PCE air-concentration at 11,000 ug/m^3, and moderate levels of TCE air concentration at 3200 ug/m^3.

GP-LGW-10: exhibits moderate levels of PCE air-concentration at 2700 ug/m^3, and moderate levels of TCE air-concentration at 1100 ug/m^3.

GP-LGW-11: exhibits moderate levels of PCE air-concentration at 4000 ug/m^3, and moderate levels of TCE air-concentration at 910 ug/m^3.

Extent of Groundwater Contamination:

The following generalized observations have been developed with respect to the extent of groundwater contamination for the COCs at the site:

- Groundwater concentrations of PCE and TCE are highest at wells MW-05 and MW-14D in comparison to other wells; these wells are believed to be located directly within the paleochannel and represent the preferred contaminant migration route.

- Groundwater concentrations observed in well MW-15 show moderately low-levels of PCE and TCE, respectively at 5.0 and 1.8 ug/L (average of 6 events). This well is completed in the upper portion of the Gravel Unit and is located the furthest distance from the source area at an approximate distance of 2,000 feet.

- Seep concentrations (located between wells MW-14S/-14D and MW-15) were evaluated during preliminary hydrogeologic assessments in 1995; seep sampling results showed low-levels of PCE (1.9 ug/L) and non-detect for TCE. The topographic expression of the seep surface elevation is estimated at roughly 1,110 to 1,112 ft; this elevation compares well with the nearby groundwater potentiometry of MW-14S at approximately 1,112 ft msl. Therefore, the seep waters are inferred to be an expression of shallow groundwater. Given the volatilization potential of the COCs, the monitoring well data from MW-14S and MW-15 is believed more representative of shallow groundwater than the seep.

A detailed discussion of the extent of groundwater contamination is provided below. Specifically, this includes descriptive statistics (i.e. mean concentration and range) and temporal characteristics (i.e., recent trends) for the COCs. Groundwater data in Table 4-8 include summary statistics that were developed from 2009 quarterly sampling at the existing perimeter network (wells MW-11, -05, -06, -07, -09, and -10) and monthly data from the RI wells MW-14S, -14D, and -15 (sampled monthly from May through October 2009). Temporal characteristics from the wells around the perimeter of the closed landfill (wells MW-01, -11, -03, -04, -05, -06, -09, and -10) were evaluated via *Mann-Kendall* test for trend based on results from first quarter 2006 to fourth quarter 2009 (typically 16 observations; summarized in Appendix B). There is insufficient data from wells MW-14S, -14D, and -15 to assess a statistical change in concentration.

Upgradient Wells: MW-01 and -11:

MW-01 and -11: These wells show non-detect conditions for PCE and TCE throughout the period of record. These conditions would be expected given their hydraulic position ‘upgradient’ of the closed landfill area.

Downgradient Perimeter Wells: MW-03, -04, -05, -06, -07, -09, and -10:

MW-03: TCE and PCE are non-detect; thus, a range, average, or temporal evaluation is not applicable. Well MW-03 is completed at the base of the Gravel Unit immediately above the underlying Clay Unit and does not indicate an impacted flow-path from the closed landfill source materials.

MW-04: TCE and PCE are non-detect; thus, a range, average, or temporal evaluation is not applicable. Well MW-04 is completed within the upper portion of the saturated interval of the Gravel Unit and located due north of the landfill. Wells adjacent to MW-04 (described below) exhibit elevated concentrations of the COCs, indicating that MW-04 is not completed in a preferential flow path that is hydraulically linked to the source materials.

MW-05: This well exhibits the highest (recent average) concentration of PCE and the second highest TCE concentrations at the site; these elevated concentrations may be attributed to its location immediately north of the western half of the closed landfill in close proximity to the source materials (discussed in Section 5.0). PCE concentration range is 11.4 to 20 ug/L with a mean concentration of 14.5 ug/L. TCE concentration range is 1.6 to 2.3 ug/L, with a mean concentration of 1.8 ug/L. A statistical trend test shows no significant trend; however, a direct comparison of most recent 2009 concentrations to “historic” conditions (i.e., pre-1995) shows an overall reduction in PCE and TCE over this timeframe (Figures 5-12 and 5-13, time-series plots).

MW-06: This well is located on the northeastern margin of the closed landfill and exhibits elevated levels of PCE and low-levels of TCE in most recent sampling data. PCE concentration ranges from 1.8 to 4.0 ug/L, with a mean value of 3.1 ug/L. Except for two low-level detects of TCE observed second quarter 2007 and again second quarter 2009, TCE has been non-detect for the entire period of monitoring (Figures 5-12 and 5-13, time-series plots). Prior to 2001, PCE was not detected in MW-06; however, since second quarter 2001 PCE concentration has been consistently observed at low-levels. Statistical trend test shows an increasing trend for PCE; there is insufficient detects for trend test of TCE in MW-06.

MW-07: This well exhibits elevated levels of PCE (third highest concentration at the site); TCE is non-detect. PCE concentration range is 1.8 to 10.0 ug/L, with a mean concentration of 6.8 ug/L. Statistical trend test shows no significant trend for PCE; insufficient detects to test trend for TCE.

MW-09: This well exhibits elevated levels of PCE and low-levels of TCE. PCE concentration is in the range of 2.9 to 4.5 ug/L, with an average of 3.6 ug/L. TCE concentration range is 1.2 to 1.4 ug/L, with a mean value of 1.3 ug/L. Statistical trend test shows no significant trend for PCE or TCE.

MW-10: This well located on the northwestern margin of the closed landfill and exhibits elevated levels of PCE; and low-levels of TCE. PCE concentration range is 3.1 to 5.7 ug/L, with a mean value of 4.3 ug/L. TCE concentration range is <1 (non-detect) to 1.1 ug/L, with a mean value of <1 ug/L.

Downgradient Wells – Preferential Flow Area: Wells -14S, -14D, and -15

MW-14S: This well is completed in the upper saturated portion of the Gravel Unit along an inferred preferential flow pathway from the closed landfill. This well exhibits low-levels of PCE and is non-detect for TCE. PCE concentration ranges from < 1 (non-detect) to 2.8 ug/L, with mean value of 1.0 ug/L.

MW-14D: This well is completed in the lower portion of the Gravel Unit (immediately above the lower confining unit) along an inferred preferential flow pathway from the closed landfill. This well exhibits elevated levels of PCE and TCE. PCE concentration ranges from 12.9 to 18.6 ug/L; with a mean value of 15.2 ug/L. TCE concentration range is 5.2 to 6.7 ug/L; with a mean value of 6.1 ug/L.

MW-15: This well is completed in the upper saturated portion of the Gravel Unit along an inferred preferential flow pathway from the closed landfill. This well exhibits moderate levels of PCE and TCE. PCE concentration range is 3.6 to 7.2 ug/L; with a mean value of 5.0 ug/L. TCE concentration range is 1.7 to 2.2 ug/L; with a mean value of 1.8 ug/L.

5.5 Data Gaps and Limitations

A significantly enhanced understanding of site conditions has been developed as summarized in the CSM. The updated CSM was developed using data from preliminary studies, combined with the findings from the focused RI completed in April 2009 (CH2M HILL, 2009b). The current CSM is believed sufficient to support the FS process and select a preferred cleanup action alternative (as presented in Sections 7 and 8).

The CSM may be used to help determine if significant data gaps exist, and what additional data needs are necessary. Data gaps and limitations are expected to some degree for all hazardous waste sites. The degree of site uncertainty and data needs is largely related to the magnitude of the problem and the complexity of the physical environment.

Based on the current CSM, data gaps and limitations exist for the landfill site, which preclude the ability to adequately characterize the extent of groundwater contamination in areas further downgradient of the landfill. Supplemental site characterization is needed to (1) confirm and validate the preferential groundwater flow direction in the Dry Creek drainage, and (2) adequately define the lateral extent of contamination in the shallow groundwater unit. Supplemental characterization of the extent of shallow groundwater contamination is necessary to:

- Support the *Potential Receptors* evaluation (as presented in Section 6.0)
- Support the remedial action objectives (as presented in Section 6.0)
- Support the (final) selection of cleanup action alternatives (as presented in Sections 7.0 and 8.0)

The proposed supplemental RI program assumes hydrogeologic characterization and installation of additional groundwater monitoring wells to assess the extent of contamination. The proposed investigation locations target the inferred preferential contaminant migration pathway in the vicinity of Dry Creek drainage. The supplemental RI program may be refined based on input from Ecology, Asotin County Health District, and the public. In addition, the supplemental RI program may be adjusted based on field investigation findings at the initial site investigation locations. Costing assumptions for the supplemental RI are discussed in Section 8.

6.0 Potential Receptors Evaluation

This section presents the findings from a potential receptors evaluation that was performed to support the RI/FS. The potential receptors evaluation summarizes the findings from ecological and human health exposure and inferred risk. Remedial action objectives (RAOs) for human health and the environment are also presented in this section.

6.1 Ecological Receptors

This section summarizes the results from a terrestrial ecological evaluation (TEE) performed in accordance with MCTA Chapter 173-340-7491, WAC. Per the regulation, the TEE process is intended to identify those sites that do not have a substantial potential for posing a threat of significant adverse effects to terrestrial ecological receptors, and thus, may be removed from further ecological consideration during the cleanup process. The term "terrestrial ecological receptor" is defined in MTCA Chapter 173-340-200, WAC, as 'plants and animals that live primarily or entirely on land.'

6.1.1 Exposure Assessment

As part of MTCA and preparing a RI/FS, information is gathered to determine if a release of hazardous substances from a site (in this case, the landfill) may pose a threat to the terrestrial environment. Per the procedures identified in Chapter 173-340-7490, WAC, a TEE was conducted based on the *Terrestrial Ecological Evaluation (TEE) Process; Interactive User's Guide* found at http://www.ecy.wa.gov/programs/tcp/policies/terrestrial/TEEHome.htm

The TEE assumed two areas at the landfill that were examined in regard to potential exposure of hazardous substances to terrestrial receptors. These included (1) the closed landfill area where hazardous substances were co-mingled with refuse at depth, and (2) the groundwater seepage area that is located approximately 650 feet north of the closed landfill within the Dry Creek drainage (groundwater seep area illustrated in Figures 2-2 and 2-3). As discussed in Section 5, the seep is inferred to be an expression of shallow groundwater. This hypothesis is supported by groundwater levels and comparable low-level detections of the COC from historic seep sampling results.

Under MTCA, information is collected during the TEE to determine whether a release of hazardous substances poses a threat; to establish site-specific cleanup standards (if necessary); and to use in development of selection cleanup actions (if a threat exists). An investigation per Chapter 173-340-7490(2), WAC, was done to determine the appropriate action for the ACRL site as follows:

- Document an exclusion from any further TEE evaluation
- Conduct a simplified TEE per the requirements of Chapter 173-340-7492, WAC or,
- Conduct a site-specific TEE per the requirements of Chapter 173-340-7493, WAC.

The exclusions from a TEE are defined in Chapter 173-340-7491(1), WAC. Further TEE evaluations are not required if any one of the exclusion criteria is met. Of the four exemption criteria, the most applicable for the landfill site are items 1 and 2 (as summarized in Table 6-1). Details of the TEE evaluation related to these items is presented below.

1. ***All soil contaminated with hazardous substances is, or will be, located below the point of compliance established under Chapter 173-340-7490(4), WAC.*** *To qualify for this exclusion, an institutional control shall be required by the department under Chapter 173-340-440, WAC, for those sites meeting a conditional point of compliance. A conditional point of compliance is set at the biologically active soil zone and is assumed to extend to a depth of six feet. An institutional control is not required if the contamination is at least fifteen feet below the ground surface (Chapter 173-340-7490(4)(b), WAC) which meets the standard point of compliance.*

Qualification: The site qualifies for this exclusion because all of Asotin County's property where hazardous substances were historically placed are located below the conditional point of compliance, which is defined as the biologically active soil zone (presumed by regulation to extend to a depth of 6 feet).

Hazardous substances disposed among landfill refuse were placed into excavated trenches, covered with soil (ranging from 6 inches to 1 foot) on a daily basis after refuse was dumped into a landfill cell. When the landfill cell was closed, refuse materials were additionally covered with a low-permeable soil cap and highly-compacted fill soils that were placed at the surface of the landfill for final cover. As shown in Table 5-1, the closed landfill soil cover thickness ranges from 6 feet (at LFG-4) to upwards of 30 feet (at GP-LGW-10), averaging about 10 to 20 feet thick in the central portion of the landfill. Thus, the majority of soil cover exceeds a depth of 15 feet, which places hazardous substances in these areas below the standard point of compliance where institutional controls are not required.

Ecological risk assessments for upland wildlife focus on oral exposures occurring through the consumption of contaminated food, water, or sediment/soil. Dermal exposure occurs when contaminants are absorbed directly through the skin and inhalation exposure occurs when volatile compounds or fine particulates are inhaled into the lungs. Although methods are available for assessing dermal exposure to humans, data necessary to estimate dermal exposure generally are not available for wildlife. Similarly, methods and data necessary to estimate wildlife inhalation exposures are poorly developed or limited. Additionally, a wildlife receptor's exposure to contaminants by inhalation and dermal contact usually contributes little to its overall exposure. Dermal exposure also is likely to be low, even in burrow-dwelling animals, because of the presence of protective dermal layers (e.g., feathers, fur, or scales). Therefore, for the purposes of this evaluation, both dermal and inhalation exposure are assumed negligible.

Furthermore, groundwater levels in the vicinity of the landfill generally exceed 7 feet bgs, except for the seep area (see Figures 5-4 and 5-5). Except for the seep area (discussed below), the depth to groundwater exceeds depths expected from burrowing animals. For example, the California Department of Toxic Substances Control summarized the burrowing depths of a large number of burrowing mammals and birds and concluded that the soil exposure point concentration for ecological receptors should be based on maximum burrowing depth of less than six feet (DTSC HERD, 1998).

Further north of the closed landfill and within the Dry Creek drainage, the groundwater is relatively shallow and eventually comes to the surface as a groundwater seep. The seep area is confined to a moist zone of soil saturation of less than 25 square feet and is the most plausible exposure point for PCE and TCE at the site. Oak Ridge National Laboratory (ORNL, 1996) has calculated no observed adverse effect level (NOAEL)-equivalent concentrations in drinking water for mammals. These values conservatively assume that all drinking water is consumed from source contaminated with the given chemical. The lowest NOAEL-based benchmark is 1.6 mg/L for TCE (for a whitetail deer). The reported PCE NOAEL is two times the TCE NOAEL, which would equate to a NOAEL-based benchmark of 3.2 mg/L for PCE. Additionally, considering that TCE and PCE are volatile compounds with low log K_{ow} values (which is an indicator of bioaccumulation potential), bioaccumulation and biomagnification is not expected.

Institutional Controls: The landfill was closed in accordance with landfill closure standards and regulations enforced at the time under Chapter 173-304, WAC. Institutional controls that will prevent waste or hazardous substances from being exposed at shallower depths and thus maintaining the integrity of the landfill cap and cover are:

- Maintaining engineering controls (low-permeable soil cap and landfill cover of highly-compacted fill soils). In addition, Asotin County will maintain a dedicated landfill gas extraction system to capture and thermally treat (i.e., flare) explosive gases from migrating in vadose zone soils. Asotin County will maintain a groundwater monitoring system that monitors groundwater quality. Repairs of cap, cover, gas extraction system and the groundwater monitoring system will be made as needed.
- Providing physical measures to restrict access to the ACRL. A perimeter fence with a locked gate surround the ACRL property to prevent unauthorized entry of the public and prevent large animals from entering the site. In addition, a fence surrounds the seep, providing a physical barrier around the groundwater seepage area that precludes access to large animals (i.e., deer, coyotes) from grazing or drinking in the seep area.
- Limiting use of the closed landfill area in the future by recording on the deed that the landfill must not be disturbed and the cap/cover must remain in-place or repaired if disturbed.
- Providing a financial assurance program to cover all costs associated with the operation and maintenance of the cleanup action, including maintaining institutional controls, compliance monitoring, and corrective measures.

2. ***All soil contaminated with hazardous substances is, or will be covered by buildings, paved roads, pavement, or other physical barriers that will prevent plants or wildlife from being exposed to the soil contamination.*** *To qualify for this exclusion, an institutional control shall be required by Ecology.*

Qualification: As explained above, the hazardous substances within the landfill are covered by the landfill cap and soil cover that provide a physical barrier, preventing wildlife from being exposed to hazardous substances. Institutional controls are in-place as described above.

6.1.2 Risk Characterization

Based on the TEE results, the ecological risk is qualified as low and it is recommended that the site is exempt from further TEE per Chapter 173-340-7491, WAC. Table 6-1 summarizes the exclusion criteria and rationale.

6.2 Human Receptors

This section summarizes the toxicity, exposure, and inferred human health risk from shallow groundwater contamination. Based on available site information, this section provides a limited qualitative human health risk characterization. This evaluation is not a quantitative risk assessment as defined under Chapter 173-340-357, WAC.

6.2.1 Toxicity Overview

The COCs for the site are PCE and TCE in shallow groundwater. Based on these COCs and the impacted media, the general characteristics and toxicity of PCE and TCE are discussed below.

In accordance with Chapter 173-200, WAC (*Water Quality Standards for Ground Waters in the State of Washington*), the risk-based MCL for PCE in groundwater is 0.8 ppb; and the MCL for TCE in groundwater is 3.0 ppb. These criteria are based on conservative drinking water standards developed from federal regulations and adopted by the State of Washington. These regulations apply to all groundwater in the State of Washington that occur in a saturated zone or stratum beneath the surface of land or below a surface water body. This regulation was implemented to maintain the highest quality of the state’s groundwaters and to protect existing and future beneficial uses of the groundwater through the reduction or elimination of the discharge of contaminants to the state’s groundwaters. These levels may be more stringent than the cleanup levels developed under MTCA (discussed below).

Per MTCA regulation, *cleanup levels* for a given site are the concentration of a hazardous substance (in groundwater) that is determined to be protective of human health and the environment under specified exposure conditions; *cleanup standards* apply the cleanup levels to specified location(s) at the site (i.e., point-of- compliance). At the time of this document, cleanup levels and cleanup standards have not been developed for the site. Site-specific cleanup levels will be developed in coordination with Ecology. Per MTCA guidance, cleanup standards are generally established in conjunction with the selection of a specific cleanup action. Cleanup standards will be defined in the (draft) *Cleanup Action Plan* under MTCA.

Regardless of the actual cleanup standards established for the site, the general toxicity of the COCs are presented below as a prelude to the exposure assessment and qualitative risk characterization in subsequent sections. Toxicological information for PCE and TCE obtained from the U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR, 1997) is summarized below.

Toxicity of Perchloroethlyene (PCE):

Like many chlorinated hydrocarbons, PCE is a central nervous system depressant and inhaling its vapors (particularly in closed, poorly ventilated areas) can cause dizziness, headache, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death. After repeated or extended skin contact, PCE may dissolve fats from the skin, resulting in severe skin irritation in work environments where people have been exposed to high concentrations. The International Agency for Research on Cancer has classified PCE as a Group 2A carcinogen, which means that it is probably carcinogenic to humans.

Toxicity of Trichloroethylene (TCE):

When inhaled, TCE depresses the central nervous system. Its symptoms are similar to those of alcohol intoxication, beginning with headache, dizziness, and confusion and progressing with increasing exposure to unconsciousness. Much of what is known about the human health effects of TCE is based on occupational exposures. Beyond the effects to the central nervous system, workplace exposure to TCE has been associated with toxic effects in the liver and kidney.

The carcinogenicity of TCE was first evaluated in laboratory animals in the 1970s. Cancer bioassays performed by the National Cancer Institute (later the National Toxicology Program) showed that exposure to TCE is carcinogenic in animals, producing liver cancer in mice, and kidney cancer in rats. Numerous epidemiological studies have been conducted on TCE exposure in the workplace, with differing opinions regarding the strength of evidence between TCE and human cancer. The National Toxicology Program's 11th Report on Carcinogens categorizes TCE as “reasonably anticipated to be a human carcinogen,” based on limited evidence of carcinogenicity from studies in humans and sufficient evidence of carcinogenicity from studies in experimental animals. Recent studies in laboratory animals and observations in human populations suggest that exposure to TCE might be associated with congenital heart defects. While it is not clear what levels of exposure are associated with cardiac defects in humans, there is consistency between the cardiac defects observed in studies of communities exposed to TCE contamination in groundwater and the effects observed in laboratory animals. TCE can also affect the fertility of males and females in laboratory animals, but the relevance of these findings to humans is not clear.

6.2.2 Exposure Assessment

Exposure to human receptors from contaminated groundwater use/ingestion is not expected. Although not anticipated with current understanding of site conditions, potential exposure may include withdrawal of and subsequent ingestion (or contact) of groundwater from residential water wells in the vicinity of the landfill. The seep is not considered an exposure pathway to human receptors given that access to the seep is prohibited via institutional controls (i.e., perimeter fence) and considering that seep waters do not discharge and migrate away from the actual seepage area. Exposure to seep waters is considered for ecological receptors (as discussed in Section 6.1, above).

Asotin County performed an inventory of residential wells in the vicinity of the landfill to assess potential human exposure. Following the well inventory assessment, Asotin County developed a focused list of residential wells and contacted the owners for permission to collect a water quality sample. A summary of the well inventory assessment and subsequent residential sampling results are provided below.

Residential Well Inventory:

A water well search in the vicinity of the landfill was conducted using Ecology's on-line database (website: http://apps.ecy.wa.gov/welllog/). The well search from Ecology's website included an area of interest assumed to be approximately 6 square miles north of the landfill (and south of the Snake River) as defined below:

- Sections 23, 24, 25,26, 35 and 36 of Township 11 North, Range 45 East; and
- Sections 19, 30 and 31 of Township 11 North, Range 46 East.

Records found from Ecology's website from the residential well search are provided in Appendix K; which includes a summary table of the wells and associated map identifying the wells and their approximate location. A total of 21 well records were identified in this area of interest, excluding duplicate entries, wells north of the Snake River, and 4 resource protection monitoring well records identified near the landfill. An inventory of the wells, the well address, the township, range, section and quarter-quarter designations, and the well depth, diameter, and completion date is included in Table K1 (of Appendix K). The depth of the residential wells ranges from 110 to 955 ft bgs. Based on the information on the logs, groundwater from many of the deeper residential wells is inferred to withdraw groundwater from a lower (i.e., deeper) hydrostratigraphic unit than the shallow Gravel Unit associated with the landfill monitoring program.

Residential Well Sampling:

In November 2009, ACRL staff contacted a total of 12 well owners in the focused area of concern (shown in Appendix K) and informed them of the groundwater issue and requested permission to collect a water quality sample. Of these, a total of 9 residential well owners responded and provided Asotin County authorization to collect a grab sample of their well water.

On December 22, 2009, grab samples were collected from 9 residential wells designated as RW-01 through RW-09 (shown in Appendix K). Grab samples were obtained by opening a spigot at the associated residence (typically nearest the wellhead) and allowing the well to purge for approximately 5 to 10 minutes. Samples were collected directly from the spigot in laboratory-supplied 40-mL containers. Following collection, the samples were submitted to Pace Analytical Laboratory and analyzed for VOCs by EPA Method 8260B. Laboratory results from the December 22, 2009 residential sampling are provided in Appendix K. Residential well testing results confirm that the COC (TCE and PCE) associated with the landfill are not detected in the nine residential wells sampled.

Municipal Water Sampling Program:

As discussed in Section 5, the lower basalt aquifer (locally referred to as the *Lewiston Basin Aquifer*) is a sole source aquifer for the users in the greater Lewiston-Clarkston area (designated via Federal Register, 53, FR 49920, December 12, 1998). Asotin County Public Utilities District (PUD) conducts routine water-quality sampling to ensure that the municipal water meets all federal- and state-mandated water quality criteria. The PUD sampling program includes sampling of 6 municipal water wells located in Clarkston, Washington. The PUD municipal wells are designated as "Well No." -1, -2, -3, -5, -6, and -7 (as shown in Appendix L). PUD sampling includes a broad suite of constituents and the results are available to the public in *Annual Water Quality Reports*. The most recent VOC sampling performed by PUD in June 2006 did not detect any chemicals above established criteria. The well closest to the landfill is PUD Well No. 5, located roughly 1.5 miles east-northeast from the landfill.

Members of the Lewiston-Clarkston Valley Drinking Water Source Protection Planning Team recently initiated a drinking water source protection plan in a document titled *Drinking Water Source Protection Plan for the City of Lewiston and Lewiston Orchards Irrigation District, in collaboration with the Asotin County Public Utility District, Clarkston, Washington; January 26, 2010* (City of Lewiston and Asotin County Public Utility District, 2010). The purpose of the plan is to ensure protection of the drinking water for the communities of Lewiston and Clarkston as follows: (1) address and rectify noted deficiencies as identified in the latest sanitary survey; (2) work with local land owners, cities and conservation agencies to prevent contamination from entering well areas; and (3) develop and provide public awareness and education materials to water users.

The potential for contamination originating from the uppermost Gravel Unit (i.e., a landfill source) migrating to and impacting the local municipal aquifer (i.e., the Lewiston Basin Aquifer*)* is extremely unlikely considering the following:

> (1) The Lewiston Basin Aquifer is associated with the basalt of the Grande Ronde Formation, which is hydrostratigraphically much deeper than the shallow Gravel Unit associated with the landfill contamination issue. As shown in Figure 5-3, the top of the Lewiston Basin Aquifer (within the Grande Ronde Unit) occurs at elevation 600 ft msl; whereas the saturated portion of the shallow Gravel Unit in the vicinity of the landfill occurs at elevation 1050 to 1100 ft msl. The presence of fine-grained sedimentary interbeds within the uppermost basalt sequence and low-permeability basalt flow interiors would limit vertical infiltration between these units.
>
> (2) Recharge to the Lewiston Basin Aquifer occurs in the Blue Mountains to the southwest and in the Snake and Clearwater River canyons, which lie considerably to the south and east of the landfill (as shown in Appendix J, Plate 3). Discharge areas of the Lewiston Basin Aquifer occur along the Snake River to the north of the landfill. This relationship of recharge to discharge suggests a general flow-direction to the north in the Lewiston Basin Aquifer. Although unlikely given item (1) above, if contaminants theoretically migrated vertically from the shallow alluvial unit (near the landfill) to the lower basalt aquifer, the impacts would be observed downgradient of the PUD municipal wells and would not adversely impact the municipal wells.

6.2.3 Risk Characterization

Based on the residential sampling results, combined with the current understanding of site conditions, there are no known exposure scenarios related to human contact with shallow groundwater that has been impacted by the landfill. Based on the current exposure characterization, the potential human health risk is qualified as “extremely low.” As discussed above, likelihood for shallow groundwater contamination in the shallow Gravel Unit to migrate vertically through lower confining units and into the deep municipal water supply aquifer (i.e., Grande Ronde Unit) is extremely low and highly unlikely. Asotin County PUD will continue to verify that the municipal water distribution system meets all federal and state drinking water criteria.

To further assess the potential human health risk concerns, Asotin County will continue to periodically test residential wells in the future. In addition, Asotin County will perform supplemental RI work to assess the downgradient extent of contamination (as noted in Section 5.5, Data Gaps and Limitations).

6.3 Remedial Action Objectives

Remedial action objectives (RAOs) are specific goals for protecting human health and the environment that also define a framework for developing cleanup actions. As described earlier, triggers into corrective action and associated remedial actions for the site are based on (1) shallow groundwater exceeding conservative risk-based MCLs in the state of Washington via Chapter 173-200, WAC, and (2) increasing groundwater concentration trends, which trigger Assessment Monitoring and corrective action under MTCA via Chapter 173-351-440, WAC. Considering the nature of the existing contamination and the potential for hazardous substances from the landfill to pose future potential risks to adjacent media and resources, the following RAOs have been developed:

- Assess potential exposure to human health receptors and reduce ingestion (or contact) by humans of groundwater withdrawn or diverted from a private, unregulated source, used as drinking water, and containing COC exceeding risk-based standards for drinking water
- Minimize or prevent future transport of landfill-related hazardous source substances to shallow groundwater
- Reduce COC concentrations in shallow groundwater to acceptable and appropriate cleanup levels

These RAOs are the general framework for the FS, which helps guide the screening of suitable technologies (discussed in Section 7.0). In addition, these RAOs will assist with the development of cleanup action alternatives that meet the MTCA requirements and are believed consistent with Ecology expectations for a focused FS.

7.0 Feasibility Study of Cleanup Action Alternatives

The goal of this FS is to develop and evaluate cleanup action alternatives and support selection of a cleanup action for the site. The FS presented in this report is conducted under the *Independent Remedial Action* of MTCA using FS guidance under Chapter 173-340-350, WAC. Under the *Independent Remedial Action*, the selected cleanup action alternative will be implemented in a direct and beneficial way by the County. The FS evaluation process includes a preliminary screening of remedial technologies, development of cleanup action alternatives consisting of one or more remedial technologies, and a detailed evaluation of cleanup action alternatives to identify a preferred alternative for the site.

7.1 Key Site Considerations

Key factors influencing development of applicable and appropriate alternatives include site hydrogeology, nature of contamination, and consideration of the site status as a permitted landfill. These considerations are discussed below.

The closed landfill occupies an area of approximately 46 acres where waste was placed in excavated trenches, with limited written documentation available for locations and disposal materials. The COC have been identified as PCE and TCE. Monitoring indicates the presence of volatilized and diffused PCE and TCE concentrations in vadose zone soils and groundwater at the site. The closed landfill has an implemented soil cover (cap) that, based on remedial investigation results, appears effective. Therefore, gravity-driven leachate is not considered a primary contributing factor for observed contaminant migration and distribution in groundwater. The following site conditions were considered in developing applicable and appropriate remedial alternatives following consideration of site landfill conditions, contaminant nature and distribution, and site hydrogeology as discussed in the RI:

- The pre-existence of site institutional controls to prevent routes of exposure to human and environmental receptors
- The effectiveness of the existing landfill cap in preventing contaminant migration caused by percolation of infiltrating precipitation
- Site status as a permitted landfill
- Heterogeneous condition of the landfill waste
- Depth and area of contaminated material
- Distribution of chlorinated VOC contamination in landfill waste trenches and adjacent soils

- Highly heterogeneous nature of site hydrogeology, characterized by preferential groundwater flow paths

7.2 Technology Screening and Alternative Evaluation Methodology

A comprehensive range of remedial technologies was screened according to the criteria specified in Chapter 173-340-350(b), WAC. The remedial technologies retained through the screening were used to develop three cleanup action alternatives using one or more of the remedial technologies. These cleanup action alternatives were evaluated on the basis of the requirements and the criteria in Chapter 173-340-360, WAC.

The comprehensive range of technologies used in the screening was developed from the Federal Remediation Technologies Roundtable (FRTR) Technology Screening Matrix. In accordance with Chapter 173-340-350(b),WAC, technologies screened from further detailed consideration that either clearly did not meet the minimum requirements specified in Chapter 173-340-360, WAC, or were not technically possible at the site. Cleanup Alternatives that are technically possible at the site and that meet all minimum requirements stated in Chapter 173-340-360(2), WAC, were evaluated by a disproportionate cost analysis, as described in Chapter 173-340-360(3)(e), WAC. A preferred alternative was identified based on this initial analysis of remedial technologies and detailed analysis of cleanup alternatives

The range of remedial technologies was adopted from the comprehensive remedial treatment list compiled by the FRTR. The FRTR was established in 1990 as a collaborative body among federal agencies involved in hazardous waste site cleanup. Member agencies include U.S. Department of Defense, U.S. Air Force, U.S. Army, U.S. Navy, U.S. Department of Energy, U.S. Department of the Interior, U.S. Environmental Protection Agency, and National Aeronautics and Space Administration. The FRTR Treatment Technology Screening Matrix presents a comprehensive list of 59 treatment technologies. For the feasibility study, the list was organized based on site considerations and technologies, and those already implemented were grouped into the No Additional Action alternative, illustrated in Table 7-1.The screening resulted in retained technologies that were used to develop the cleanup alternatives used for detailed evaluation according to criteria set forth in Chapter 173-340-350(8)(b), WAC.

Detailed evaluation of the cleanup action alternatives was conducted with respect to the cleanup action threshold requirements (Chapter 173-340-360(2)(a), WAC) and other requirements including use of permanent solutions to the maximum extent practicable, provide for a reasonable restoration time frame, and consider public concerns. Alternatives evaluated are ranked from most to least permanent, according to criteria from Chapter 173-340-360(3)(e)(i)(A), WAC.

7.3 General Response Actions

General response actions represent a group of actions or a broad category of responses that are designed to yield a permanent and significant reduction in the toxicity, mobility, volume, or likely contact with contaminants. General response actions typically are media-specific and may include treatment, containment, removal, or any combination of these technologies. In addition, institutional controls can be implemented on location-specific or site-wide basis to manage or prevent unauthorized access to contaminated areas.

The following general response actions are considered for addressing contaminated soil and groundwater at the ACRL Site:

- No Action
- Institutional Controls
- Engineering Controls
- Treatment

Table 7-2 summarizes these general response actions. These general responses were used to organize and screen remedial technologies by media. Removal was not included as part of a general action for soil given the site's status as a permitted landfill, but is discussed in more detail under remedial technologies related to soil.

7.4 Screening of Remedial Technologies

The following section presents a comprehensive screening of remedial technologies for the ACRL Site. The screening process is based on criteria from Chapter 173-340(8)(b), WAC. Remedial technologies for which one or more of the screening criteria apply were screened from further detailed consideration. Screening criteria include:

- WAC 173-340-350(8)(b)(i)
    - Not technically possible at the site
- WAC 173-340-360(2)(a)
    - Protect human health and the environment
    - Comply with cleanup standards
    - Comply with applicable state and federal law
    - Costs are clearly disproportionate to benefits

These criteria were applied in evaluation of the remedial technologies and summarized in Table 7-1. The evaluation is discussed in the following sections applicable to general responses and the identified media: soil, soil gas, and groundwater.

7.4.1 No Additional Action

Containment

Containment is the presumptive remedy for municipal landfills, and can include capping, landfill gas treatment, institutional controls (all present at new and old landfill cells at ACRL), and leachate collection and treatment (present at new landfill cells, but absent in older landfill cells). While existing containments at ACRL are believed sufficient to prevent migration of contaminants resulting from percolation of infiltrating precipitation, diffusion of volatilized COCs through the subsurface is not completely controlled.

Landfill Cap treatment at ACRL manages human and ecological exposure risks at ACRL, and limits vertical infiltration of water into the wastes that could create contaminated leachate. This treatment has already been implemented, and represents the baseline alternative in conjunction with institutional controls.

Institutional Controls

An institutional control is an administrative action taken to limit exposure to hazardous substances, including land use restrictions; environmental monitoring requirements; site access and security measures; or deed restrictions and advisories to notify current and prospective future users about potential contamination concerns. Institutional controls cannot be used as a substitute for cleanup actions that would otherwise be technically possible (Chapter 73-340-440(2), WAC). However, institutional controls are required if (1) cleanup action results in residual concentrations that exceed Method A or Method B CULs, (2) conditional POCs have been established, or (3) Ecology makes a determination that such controls are required (Chapter 173-340-440(1), WAC).

Common controls include fencing or other physical barriers that restrict site access, signage, and zoning, as well as deed notices that place limitations on land use. Environmental monitoring is used to ensure that potential risks to human health and the environment are controlled while the remedy is being implemented. Institutional controls are readily implemented, and their cost can be significantly lower relative to other technologies. This mechanism can be especially effective at sites where there is limited exposure potential.

Institution controls are implemented at the ACRL Site, including physical barriers to the site, permit restrictions, and advisories against excavation or other disturbance. Institutional controls are last on MTCA's priority list of preferred remedial measures.

7.4.2 Soil Technologies

Site data suggest that COCs at ACRL have volatilized and diffused into soil vapor adjacent to the waste trenches. The general categories of containment; excavation and off-site disposal; excavation and ex situ treatment; and in situ treatment are evaluated for soil remediation technologies.

Excavation and Off-Site Disposal or Ex Situ Treatment

Excavation consists of removing contaminated soil from the subsurface through the use of excavation equipment. The volume of landfill waste potentially involved in site remediation would render excavation impractical. *Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfill Sites* (USEPA, February 1991) states: "An example of an impracticable alternative might be excavation and incineration of the contents of a landfill that contains more than 100,000 cubic yards of waste." *Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills* (USEPA, 1996) states: "If all of the following questions can be answered in the affirmative, it is likely that characterization and/or treatment of hot spots is warranted:

1. Does evidence exist to indicate the presence and approximate location of waste?

2. Is the hot spot known to be principal-threat waste?
3. Is the waste in a discrete, accessible part of the landfill?
4. Is the hot spot known to be large enough that its remediation will reduce the threat posed by the overall site, but small enough that it is reasonable to consider removal (e.g., 100,000 cubic yards or less)?"

The description continues with: "EPA expects that few CERCLA municipal landfills will fall into this category; rather, based on the Agency's experience, the majority of sites are expected to be suitable for containment only, based on the heterogeneity of the waste, the lack of reliable information concerning disposal history, and the problems associated with excavation through refuse."

The closed landfill area occupies 46 acres; trenches were described from institutional operations' personal knowledge as being 25 to 30 feet wide, with spacings of approximately 30 feet between them. Trench depths were reported to be approximately 30 feet. Subsequent investigations have revealed trench depths of 40 to 50 feet, under 3 to 4 feet of low permeability soil and 10 to 30 feet of compacted material. Assuming an average total depth of excavation of 50 feet, only 2.7 percent of the landfill could be excavated to generate 100,000 cubic yards of excavation.

Data suggest a diffusive rather than discrete distribution of contamination at the site outside of the trench locations, and existing records do not indicate the approximate location of principal threat waste or significant quantity of wastes containing site COCs. Therefore, none of the four criteria, which together can warrant removal by excavation, is met.

Off-Site Disposal and Ex Situ Treatment Technologies Screened from Further Consideration

Off-Site and ex situ technologies are predicated on excavation. Given that excavation of source material is not retained for further evaluation, the following remedial technologies are screened from further evaluation.

- Off-Site Disposal
- Biopiles
- Composting
- Landfarming
- Slurry-Phase Biological Treatment
- Chemical Extraction
- Chemical Reduction/Oxidation
- Dehalogenation
- Separation
- Soil Washing
- Solidification/Stabilization

- Hot Gas Decontamination
- Incineration
- Open Burn/Open Detonation
- Pyrolysis
- Thermal Desorption

In Situ Treatment

In contrast with off-site disposal or ex situ treatment, in situ soil remediation technologies do not require excavation of landfill wastes and/or surrounding soils, and are therefore individually compared in this preliminary technology screening. Five in situ soil treatment technologies were screened from further evaluation because they are not technically possible at the site and therefore violate Chapter 173-340-350(8)(b)(ii), WAC. These technologies include:

- ***Bioventing:*** an in situ treatment in which oxygen is delivered to contaminated unsaturated soils by forced air movement to increase oxygen availability and stimulate aerobic biodegradation. Bioventing is not technically possible at the site because aerobic conditions are not conducive to biodegradation of PCE and TCE. Additionally, landfill operations are focused on maintaining relatively anaerobic conditions to facility lower temperatures and mitigation of potential landfill ignition. Therefore this technology is screened from further evaluation.
- ***Electrokinetic Separation:*** uses application of low intensity direct current through soil between ceramic electrodes to desorb and mobilize ions toward collection systems. Treatment with this technology is not technically possible, because the site COCs are unsuitable for this time of process.
- ***Fracturing:*** employs blasting, hydraulics, or pneumatics to impose forces in subsurface materials that create cracks, which can improve mass transfer limitations in tight soils for a variety of treatments. It is not technologically feasible or desirable to enhance treatment with fracturing, in the landfill setting.
- ***Phytoremediation:*** uses plants to remove, transfer, stabilize, and destroy contaminants in soil and sediment. Site treatment is not technologically possible with phytoremediation, because the contaminated zone exists almost entirely outside of the influence of the plant root zone.
- ***Solidification:*** a remediation technology in which contaminants are physically bound or enclosed within a stabilized mass; in ***stabilization*** chemical reactions are induced between the stabilizing agent and contaminants to reduce their mobility. Solidification and stabilization (S/S) technologies have limited effectiveness against volatile contaminant constituents and are logistically problematic in the site setting; therefore, it is not technologically possible at the site.

Two additional in situ soil treatment technologies were screened from detailed evaluation because they are not protective of human health and the environment, and would not comply with Chapter 173-340-360(2)(a)(i), WAC. These screened technologies would not treat or contain site COCs, and/or would potentially increase migration of site COCs and/or present additional human health or environmental hazards. These technologies include:

- ***Landfill Cap Enhancements/Alternatives***: Can be enacted to reduce or eliminate contaminant migration via percolation. This can be achieved by gutters or vegetative cover. All data indicate that the existing landfill cap is effective in preventing migration of contaminants by percolation of infiltrated precipitation. Landfill cap enhancements or alternatives therefore would not treat or provide additional containment of site contamination and would not provide additional protection of human health and the environment.

- ***Soil Flushing:*** a treatment technology in which water or water containing an additive to enhance contaminant solubility is applied to the soil or injected into the groundwater to raise the water table into the contaminated zone, leaching contaminants into groundwater which is then extracted and treated. This technology does not treat or contain site COCs, could result in leachate production and compromise protectiveness provided by the cap, and potentially increase migration of site COCs; therefore, it is not protective of human health and the environment.

Technologies previously screened out and not retained for evaluation were also identified to present no ability to comply with cleanup regulations (Chapter 173-340-360(2)(ii), WAC) (illustrated in Table 7-1).

Three additional in situ soil treatment technologies were screened from detailed evaluation because they would not comply with applicable state or federal laws, and therefore not comply with Chapter 173-340-360(2)(iii), WAC. The screened out technologies involve the injection of large volumes of liquid into the closed portion of the landfill and/or creating conditions potentially resulting in landfill ignition, and include:

- ***Enhanced Biological Remediation:*** a process in which desorption and degradation of organic contaminants by naturally occurring microbes is stimulated by circulating water-based solutions such as nutrients or other amendments. This technology would inject large volumes of liquid into the closed portion of the landfill, and would not comply with applicable state and federal laws.

- ***In Situ Thermal Treatment*** uses steam or hot air injection or electrical resistance, electromagnetic, fiber optic, or radio wave frequency heating to increase volatilization rate to facilitate extraction. This technology would increase potential combustion of landfill contents and therefore would not comply with applicable state and federal laws.

- ***Vitrification*** uses an electric current to melt earthen materials at extremely high temperatures (2,900°F to 3,650 °F), thereby immobilizing most inorganics and destroying organics by pyrolysis. This technology would increase potential for combustion of landfill contents and therefore would not comply with applicable state and federal laws.

In Situ Treatment Technologies Retained for Further Consideration

Based on the screening of technologies using MTCA minimum requirements, the following is retained for detailed analysis.

Soil Vapor Extraction: a remediation technology in which vacuum is applied through extraction wells to create a pressure/concentration gradient that induces gas-phase volatiles to be removed from soil through extraction wells. The technology is applicable to volatile compounds, such as site COCs and chlorinated VOCs. A Soil Vapor Extraction (SVE) pilot study is necessary to determine number and locations of extraction wells; radius of influence; gas flow rates; optimal applied vacuum; contaminant mass removal rates; and whether or not treatment of off gas will be necessary. Site subsurface heterogeneity could require discrete screen intervals to optimize vacuum influence and area effect to address the contaminated areas. While in situ SVE projects are typically completed in 1 to 3 years, total mass and diffusion of contaminants into surrounding soils could potentially extend the cleanup timeframe.

7.4.3 Air Emissions/Soil Gas Technologies

These technologies represent treatment options for soil gases that could potentially be used in conjunction with SVE source removal.

Air Emission Treatment Technologies Screened from Further Consideration

One air emission treatment technology was screened from detailed evaluation because it is not technically possible at the site (Chapter 173-340-350(8)(b)(ii), WAC).

- ***Membrane Separation:*** systems used to enhance condensers designed for recovery of dilute gaseous VOC feed streams. Condenser bleed streams are concentrated in the membrane separation chamber, and then returned to the compressor for further recovery. This technology is limited by an inability to handle fouling constituents in soil, an inability to handle fluctuations in VOC concentration, and a sensitivity of membranes to moisture; therefore treatment with membrane separation is not technologically possible at this site.

Three air emission treatment technologies were screened from detailed evaluation because the cost of treatment is clearly disproportionate to the benefits (Chapter 173-340-360(3)(e), WAC).

- ***Biofiltration:*** a treatment technology in which vapor-phase organic contaminants are pumped through a soil bed and sorb to the soil surface, where they are degraded by microorganisms in the soil. Primarily used to treat non-halogenated VOCs and fuel hydrocarbons, this process is less effective with CVOCs.

- ***High Energy Destruction:*** uses high-voltage electricity to destroy VOCs at room temperature. While this technology has been demonstrated to be effective in destroying TCE and PCE during extended laboratory trials, this technology remains in the research and development stage. The lack of certainty of the protectiveness and effectiveness of this technology over the long term as compared to less costly soil gas treatment technologies, such as vapor-phase carbon adsorption, indicates that the cost of this technology is clearly disproportionate to the benefits.

- ***Scrubbers:*** remove air pollutants by inertial or diffusive impaction, reaction with sorbent or reagent slurry, or absorption into a liquid solvent. While typically used to treat particulate matter and inorganic fumes, wet scrubbers are occasionally used to control VOCs. Very little data, however, exist for this application. The lack of certainty of the protectiveness and effectiveness of this technology over the long term as compared to less costly soil gas treatment technologies, such as vapor-phase carbon adsorption, indicates that the cost of this technology is clearly disproportionate to the benefits.

Air Emission Treatment Technologies Retained for Further Consideration

Based on the screening of technologies using MTCA minimum requirements, the following two technologies are retained for detailed analysis:

- ***Oxidation:*** a technology in which organic contaminants are destroyed by a high temperature combustor or lower temperature catalytic oxidizer. Economics tend to favor combustors for gases with higher concentrations of organic contaminants, and catalytic oxidizers for gases with less than 1,000 to 5,000 parts per million by volume (ppmv) organic constituent concentrations. Halogenated compounds can interfere with the operation of catalytic units. Methane concentrations would be the critical consideration in the practicality of this technology.

- ***Vapor Phase Carbon Adsorption:*** a remedial technology in which pollutants are removed from air by physical adsorption onto activated carbon grains. Granular activated carbon (GAC) systems typically consist of one or more vessels connected in series or parallel operating under atmospheric, positive, or negative pressure. Economics can favor pretreatment before vapor phase GAC treatment for highly contaminated air streams. Destruction of halogenated solvents in GAC is possible through steam reforming, and recovery of halogenated solvents is possible through desorption with hot nitrogen gas and subsequent condensation in the Brayton-cycle heat pump process.

7.4.4 Groundwater Technologies

In contrast to soil remediation technologies, groundwater treatment technologies would not contain or remove contaminant source material. The application of groundwater treatment technologies at ACRL limit contaminated groundwater plume extent, rather than address source contamination. Therefore, groundwater treatment technologies do not represent a significant acceleration of contaminant source treatment versus the No Additional Action Alternative.

Pump and Treat

All treatment technologies in this category require pumping and subsequent treatment of groundwater. Effective capture of site groundwater is made difficult by site hydrogeology resulting in preferential flow paths. Pump and treat technologies do not address contaminated soil/sludge source material in the unsaturated zone, and would require an extended timeframe of cleanup without complimentary source removal.

Pump and Treat Technologies Screened from Further Consideration

Five groundwater pump and treat treatment technologies were screened from detailed evaluation because they are not technically possible at the site (Chapter 173-340-350(8)(b)(ii), WAC):

- ***Bioslurping:*** combines bioventing and vacuum-enhanced free product recovery. This treatment is not technically possible at the site because site COCs require anaerobic conditions for biodegradation, and COC contamination at the site does not take the Light Non-Aqueous Phase Liquid (LNAPL) form.

- ***Deep Well Injection:*** uses injection wells to place treated or untreated liquid waste into geologic formations with no potential to allow migration of contaminants into potentially potable aquifers. Typically used for industrial and hazardous wastes, this technology continues under strict regulatory control. Groundwater control with this technology is not technically possible at the site because there is no evidence of an acceptable, hydraulically inert reservoir that can accept pumped contaminated groundwater.
- ***Dual Phase Extraction (DPE)*** is a technology in which a high vacuum is applied to simultaneously remove various combinations of groundwater, separate-phase petroleum product, and hydrocarbon vapor from the subsurface. Extraction wells include screened intervals in contaminated soils and groundwater, removing contaminants above and below the water table. This treatment is not technically possible at the site because there is no evidence of LNAPLs onsite for free product recovery**.**
- ***Ion Exchange*** removes ions from the aqueous phase by exchange with counter ions in the exchange medium. This groundwater treatment technology is not technically possible at the site, as this technology is not applicable to the COCs.
- ***Precipitation/Coagulation/Flocculation*** technologies transform dissolved metals into an insoluble solid, facilitating removal. This process is not applicable to the COCs and therefore this groundwater treatment technology is not technically possible at the site.

Deep well injection was already screened out of the evaluation, but also does not comply with applicable state or federal laws (Chapter 173-340-360(2)(iii), WAC).

Two groundwater pump and treat treatment technologies were screened from detailed evaluation because the cost of treatment is clearly disproportionate to the benefits (Chapter 173-340-360(3)(e), WAC).

- ***Advanced Oxidation Processes:*** use UV light in combination with ozone or hydrogen peroxide to destroy organic contaminants in an ex situ treatment tank. Double bonded organic compounds such as PCE and TCE are typically rapidly destroyed in the UV/oxidation process. Heavy metal ions in groundwater can foul UV quartz sleeves, and pretreatment may be required. Costs may be higher than competing technologies because of energy requirements.
- ***Separation:*** technologies that concentrate contaminated waste through physical and/or chemical means. ***Distillation*** makes use of vaporization and condensation to concentrate higher volatility compounds into a distillate. Distillation units are comparatively tall, and can cover large areas. In ***membrane pervaporation***, VOCs are diffused by vacuum from heated water through permeable membranes that preferentially adsorb VOCs, which are subsequently condensed for disposal.

Pump and Treat Technologies Retained for Further Consideration

Seven pump and treat treatment technologies were evaluated using MTCA minimum requirements and are retained for detailed analysis:

- ***Adsorption/Absorption:*** treats aqueous waste streams by molecular adhesion of contaminants to the adsorptive sorptive clay surface. If spent sorptive clay cannot be regenerated, it must be disposed as hazardous waste. Performance of sorptive clays is often less predictable than granular activated carbon systems.
- ***Bioreactors:*** degrade contaminants in pumped groundwater with microorganisms in attached or suspended systems. Anaerobic bioreactors or bioreactors with cometabolites are used to treat halogenated VOCs. Limitations to treatment of site contaminated groundwater using a bioreactor include: the dilute nature of contaminated groundwater would require the addition of nutrients; biological degradation of site groundwater may be inhibited, as no evidence of natural biological degradation has been observed; and site COCs would have a tendency to volatilize, reducing the benefit of the investment in biological degradation.
- ***Constructed Wetlands:*** use natural physical, geochemical, and biological processes inherent in an artificial wetland ecosystem to accumulate and remove contaminants from influent waters. Constructed Wetlands are typically long-term technologies intended to operate continuously for years. Although laboratory studies of cometabolism, reductive dechlorination, and alternate respiration of CVOCs exist, successful treatment of CVOCs in treatment wetlands is not established. Site COCs would tend to volatilize, reducing the benefit of the investment in treatment wetlands. Treatment wetlands could also create an additional route of exposure to terrestrial fauna.
- ***Air Stripping:*** a groundwater treatment technology in which volatile organics are partitioned from extracted groundwater by increasing the surface area of the contaminated water exposed to air. Volatilized compounds are either released to atmosphere or treated in subsequent vapor phase treatment. Air stripping in packed towers or aeration tanks has been shown to be effective in removing TCE and PCE from extracted groundwater. Process energy costs are high, off-gases could require treatment, and oxidation of minerals in groundwater could foul packing material.
- ***GAC/Liquid Phase Carbon Adsorption:*** utilizes a series of canisters or columns containing activated carbon, to which dissolved contaminants in pumped groundwater adsorb. When concentration of contaminants in the effluent exceeds an established threshold, the activated carbon must be regenerated or disposed of. Lower contaminant concentrations in groundwater would allow for faster flow rates, and a more economical liquid phase carbon adsorption system.
- ***Sprinkler Irrigation:*** transfers dissolved VOCs to the vapor phase by use of standard sprinkler irrigation systems, thereby releasing VOCs directly into the atmosphere. This technology requires a minimum of capital investment, but water ponding, drift, regulatory approval, and public acceptance are issues to consider before implementation.

In Situ Groundwater Treatment Technologies Screened from Further Consideration

Five in situ groundwater treatment technologies were screened from detailed evaluation because they are not technically possible at the site (Chapter 173-340-350(8)(b)(ii), WAC). These technologies include:

- ***Air Sparging:*** a treatment technology in which air is injected into saturated matrices to remove contaminants by volatilization, and is usually operated in conjunction with SVE. This technology is not considered applicable to the site, because it is anticipated that subsurface heterogeneity would limit the achievable air bubble/contaminated groundwater surface area of contact, and therefore severely limit contaminant volatilization achieved by air sparging. The primary cost driver of air sparging is surface area of contamination; the secondary is depth of contamination.

- ***Hydrofracturing Enhancements:*** a technology in which pressurized water is injected through wells cracks low permeability and over consolidated sediments, and cracks are filled with porous media substrates for bioremediation, or to improve pumping efficiency. It is not technologically possible to enhance treatment with fracturing, based on the site subsurface materials.

- ***In-Well Air Stripping:*** a technology in which air is injected into a double screened well, stripping some contaminants from groundwater in the well, while lifting the water in the well and forcing it out the double screen and drawing groundwater in the lower screen. Contaminants stripped from groundwater are drawn of by vacuum extraction. This technology is not considered applicable to the site, because it is anticipated that subsurface heterogeneity would limit the achievable air bubble/contaminated groundwater surface area of contact, and therefore severely limit contaminant volatilization achieved by in-well air stripping. Because contaminant reduction in this technology is dependent on the establishment of a hydraulic circulation pattern in which groundwater can repeatedly be drawn in the bottom screen of the in-well air stripper, partially stripped of contaminants, and ejected out the top screen, it is anticipated that this technology would be even less effective than air sparging.

- ***Phytoremediation:*** a remediation technology that uses plants to remove, transfer, stabilize and destroy contamination in groundwater. It is not technically possible to remediate site ground water with phytoremediation, because the saturated zone is almost entirely well outside of the root zone of plants.

- ***Physical Barriers:*** consist of vertically excavated trenches filled with bentonite slurry to direct or contain groundwater flow. It is not technically possible to prevent migration of COCs in groundwater with physical barriers because the widely distributed and diffuse nature of volatilized Chlorinated Volatile Organic Compounds (CVOCs) renders impossible the segregation of incipient groundwater from diffused source contamination; and the strong, high velocity drainage pattern of site hydrogeology renders permanent retention of contaminated groundwater impossible.

One additional in situ groundwater treatment technology was screened from detailed evaluation because it is not protective of human health and the environment (Chapter 173-340-360(2)(a)(i), WAC). This screened out technology does not treat or contain site COCs, and may increase migration of site COCs and/or present additional human health or environmental hazards.

- ***Chemical Oxidation:*** used to convert hazardous contaminants to non-hazardous or less toxic compounds that are more stable, less mobile, and/or inert by injection of liquid or gaseous chemical oxidants. Applied to site groundwater, chemical oxidants would be delivered by injection wells and/or sparge points. In-situ chemical oxidation is a rapidly acting treatment technology, but a near immediate rebound of COCs in groundwater would be expected after application of this technology to groundwater, as source contamination would not be treated. Also, subsurface heterogeneity could limit the effective contact between oxidant and contaminants of concern.

Technologies previously screened out and not retained for evaluation were also identified as presenting no ability to comply with cleanup regulations (Chapter 173-340-360(2)(ii), WAC) (as shown in Table 7-1).

Two additional in situ groundwater treatment technologies were screened from detailed evaluation because the cost of treatment is clearly disproportionate to the benefits (Chapter 173-340-360(3)(e), WAC).

- ***Thermal Treatment*** of groundwater is a remediation technology in which steam is forced into the aquifer through injection wells to vaporize volatile and semi-volatile contaminants, so that they rise to the unsaturated zone, where they can be removed by SVE. Target contaminants are typically SVOCs, as other processes tend to be more cost-effective in treating VOCs. Time of treatment and treatment rate are the major cost drivers for groundwater thermal treatment.

- ***Passive/Reactive Treatment Walls*** constructed of zero-valent iron or other treatment materials are installed across the flow path of a contamination plume to degrade or contain contaminants while allowing groundwater to pass through. Passive treatment walls are generally intended for long-term operation to control migration of contamination in groundwater. Site hydrogeology would likely require an iron treatment wall to intercept the entire drainage channel, creating a major disturbance to site hydrogeology, and necessitating a large volume of excavation and installation of treatment medium. Quantity of treatment material, magnitude of disturbance, additional monitoring required for this longer term technology, and public perception of this treatment option are all concerns to be considered.

In Situ Groundwater Treatment Technologies Retained for Further Consideration

In situ groundwater treatment technologies evaluated using MTCA minimum requirements that are retained for further consideration are:

- ***Enhanced Biological Remediation*** applied to ACRL would involve the enhancement of anaerobic bioremediation of chlorinated VOCs by injection of nutrients into groundwater. Although enhanced biological remediation has been successfully used to treat chlorinated VOCs in groundwater, the absence of evidence of naturally occurring anaerobic degradation reduces the likelihood of effectiveness of enhanced biological remediation; and the complex heterogeneity and preferential flow paths of subsurface conditions would likely limit delivery of nutrients to contaminated groundwater. Because of the relatively low cost and ease of implementing enhanced biological remediation, the potential for a future pilot study of this technology in conjunction with the selected cleanup alternative is retained. The absence of observed natural biological degradation supports the likelihood that applied enhanced biological remediation would be ineffective.

7.5 Cleanup Action Alternatives

The technologies that were retained for further consideration were combined into cleanup alternatives and carried forward to a more detailed evaluation consistent with MTCA requirements for identifying and evaluating cleanup actions (Chapter 173-340-360, WAC). Three cleanup action alternatives were evaluated using MTCA criteria.

- **Alternative 1—No Additional Action: Institutional Controls and Containment**
  The No Additional Action alternative typically is defined as not taking any additional proactive steps to effect a site cleanup and generally is included as a baseline for comparison purposes. For the ACRL Site, the No Additional Action alternative would mean that the site would continue to be managed under current (permitted) conditions with existing containment measures, including routine monitoring and the maintenance of the existing landfill cap. The No Additional Action alternative includes applicable existing institutional controls, such as physical barriers to site access, signage, zoning, deed notices, and limitations on land use. Prevention of migration of contaminants by percolating infiltration, and natural attenuation processes such as biodegradation and mass transfer of contaminants through vapor diffusion and groundwater advection, dispersion, and dilution processes are considered the primary mechanisms of remedial action.

- **Alternative 2—Source Removal and Treatment, Institutional Controls, and Containment**
  This alternative would combine (1) mass removal and treatment of site COCs by SVE, (2) continuance of existing institutional controls to prevent exposure to contamination, and (3) maintenance of existing landfill cap to prevent migration of contaminants by percolating infiltrated precipitation. SVE would be used to remove contaminant mass from the site, control dispersion of volatilized COC, and reduce transfer of vapor phase contaminants to groundwater. An SVE pilot study would be necessary to determine number and locations of extraction wells, radius of influence, gas flow rates, optimal applied vacuum, contaminant mass removal rates, and appropriate off gas treatment. Soil vapor influent monitoring and groundwater monitoring would be used to measure the effectiveness of this remedial measure.

- **Alternative 3—Groundwater Control and Treatment, Institutional Controls, and Containment**
  This alternative would combine (1) engineering control and treatment of contaminated groundwater by groundwater pumping, air stripping of pumped groundwater, and vapor phase carbon adsorption of the air stripper exhaust, (2) continuance of existing institutional controls to prevent exposure to contamination, and (3) maintenance of existing landfill cap to prevent migration of contaminants by percolating infiltrated precipitation. The evaluation of air stripping and vapor phase adsorption of air stripper exhaust as the most practical permanent ex situ treatment of groundwater is summarized in Table 7-3. This alternative would use conventional technologies to control and treat site groundwater without addressing the contamination source or migration of contamination to groundwater by vapor-phase diffusion. A pilot study would be necessary to evaluate the performance of and develop design parameters for groundwater control and treatment. Without source removal or control it is likely that groundwater remediation technologies implemented under this alternative would have

to be operated in perpetuity to continue to achieve groundwater control and treatment. Groundwater quality data would be used to evaluate the effectiveness of remedial measures.

7.6 Evaluation of Alternatives

7.6.1 Evaluation Criteria

WAC 173-340-360 establishes minimum requirements for and procedure for selecting cleanup actions. The alternatives here considered in detail meet the threshold requirements for cleanup actions, as stated in Chapter 173-340-360(2), WAC, including:

- Protects human health and the environment
- Complies with cleanup standards
- Complies with applicable state and federal law
- Provides for compliance monitoring

Other requirements used in the selection of a preferred alternative, as stated in Chapter 173-340-360(2)(b), WAC, are:

- Use permanent solutions to the maximum extent practicable
- Provide for a reasonable restoration timeframe
- Consider public concerns

The following sections discuss these evaluation criteria and their application in the selection of a preferred alternative.

Use of Permanent Solutions to the Maximum Extent Practicable

The method employed to select the alternative that uses permanent solutions to the maximum extent possible is the disproportionate cost analysis described in Chapter 173-340-360(3)(e), WAC. The alternatives evaluated were ranked from most to least permanent, and the most practicable permanent solution was selected as the baseline. If the incremental costs of the evaluated alternative over that of a lower cost alternative were found to exceed the incremental benefits, that alternative was found to be disproportionate in cost, and therefore not selected.

The criteria used to rank the evaluated alternatives in terms of permanence comply with Chapter 173-340-360(3)(f), WAC, and include:

Protectiveness of human health and the environment, including reduction of risk, time required to reduce risk, and risks resulting from implementation of the alternative

Permanence of reduction in toxicity, mobility, or volume of hazardous substances includes the adequacy of the alternative in destroying hazardous substances, the reduction of hazardous substance releases and sources, the degree of irreversibility of the treatment, and the characteristics and quantity of treatment residuals generated.

Cost to implement the alternative includes cost of construction, net present value of long-term costs, developed at a conceptual level for comparable purposes for the alternatives.

Effectiveness over the long term includes the certainty that the alternative will be successful; its reliability during cleanup; the magnitude of residual risk with the alternative in place; and the effectiveness of controls required to manage treatment residues or remaining wastes.

Management of short-term risks addresses the risk to human health and the environment during construction and implementation, and the effectiveness of measures that will be taken to manage such risks.

Technical and administrative implementability considers whether the alternative is technically possible; whether off-site facilities, services, and materials are available; administrative and regulatory requirements; scheduling; size; complexity; monitoring requirements; access for construction operations and monitoring; integration with existing facility operations; and other current or potential remedial actions.

Consideration of public concerns addresses the extent to which the alternative addresses any concerns the community may have regarding the alternative. This includes concerns from individuals, community groups, local governments, tribes, federal and state agencies, or any other organization that may have an interest in or knowledge of the site.

Reasonable Restoration Timeframe

The determination of whether each alternative provides for a reasonable restoration timeframe was made according to the factors described in Chapter 173-340-360(4)(b), WAC, including:

- Potential risks posed by the site to human health and the environment
- Practicability of achieving a shorter restoration time frame
- Current use of the site, surrounding areas, and associated resources that are, or may be, affected by releases from the site
- Potential future use of the site, surrounding areas, and associated resources that are, or may be, affected by releases from the site
- Availability of alternative water supplies
- Likely effectiveness and reliability of institutional controls
- Ability to control and monitor migration of hazardous substances from the site
- Toxicity of the hazardous substances at the site
- Natural processes that reduce concentrations of hazardous substances and have been documented to occur at the site or under similar site conditions

The FS considered these restoration timeframe factors as part of the evaluation of the cleanup action alternatives.

Consideration of Public Concerns

Asotin County is in the process of implementing public participation voluntarily under the Independent Remedial Action of MTCA. Public participation is being implemented to inform the public and provide for public comment on cleanup actions. A draft Public Participation Plan (PPP) was developed in February 2010; the draft PPP will be finalized and available to the public. Regardless of final alternative selected, the PPP will provide public information about the background and nature of contamination at the site, MTCA regulations, and status of cleanup actions. As part of the PPP, public will have the opportunity to comment on the following documents:

- Draft RI/FS Report – Public Meeting August 2010 (approximate date)
- Draft Cleanup Action Plan – Public Meeting April 2011 (approximate date)

7.6.2 Cleanup Alternative Comparison

The following is a discussion of each of the proposed cleanup action alternatives with respect to the criteria given above. Table 7-4 summarizes the comparison of MTCA required criteria for selection of the cleanup action for the proposed alternatives. Table 7-5 summarizes costs for the proposed cleanup alternatives, with detailed costing assumption worksheets included in Appendix M.

Alternative 1 – No Additional Action: Institutional Controls and Containment

Threshold Criteria

- ***Protects human health and the environment*****—**Existing containment, including existing landfill cap and institutional controls, prevent exposure to site contaminants and migration of contaminants with percolating infiltrated precipitation or run on. However, site COCs are inferred to migrate from higher concentrations of diffused vapor-phase contaminant into site groundwater at detectable levels.
- ***Complies with cleanup standards and ARARs*****—**Potentially, could satisfy conditional point of compliance requirements, based on results of supplemental RI (as presented in Section 5.5 – Data Gaps and Limitations).
- ***Provides for compliance monitoring*****—**Potentially, monitoring capability and program developed in the supplemental RI could satisfy requirements for monitoring to establish protectiveness of human health and the environment.

Disproportionate Cost Analysis

Disproportionate cost criteria described in Chapter 173-340-360(3)(e), WAC, were used to rank the alternatives from most to least permanent and for comparison of the benefits and associated costs with each of the alternatives.

- ***Protectiveness*****—**The No Additional Action alternative does not reduce any existing risk to human health or the environment; conversely, its implementation does not incur additional on-site or off-site risks. Time required until cleanup is achieved by the No Additional Action alternative is not known, but it is understood to be a long term process.

- ***Permanence—***Toxicity, volume, and sources of release of site COCs are primarily irreversibly reduced by the gradual natural process of diffusion, any occurring on-site biodegradation, and collateral destruction from landfill gas flaring occurring at the site. The existing landfill cap reduces mobility of contaminants by preventing infiltration or run on from percolating to contamination source material and potentially leaching contaminants.
- ***Cost —***This alternative incurs no additional costs beyond the continuation of routine monitoring, maintenance of institutional controls, and maintenance of the existing landfill cap. As summarized in Table 7-5 (and detailed in Appendix M), the disproportionate cost analysis assumptions for Alternative 1 include the following:
    - Routing groundwater monitoring in accordance with Chapter 173-351-400, WAC.
    - Routine explosive gases monitoring in accordance with Chapter 173-200, WAC.
    - Laboratory analytical costs associated with groundwater and explosive gases testing requirements (from above).
    - Operations and maintenance of the existing landfill cap.
    - Institutional Controls.
- ***Effectiveness over the long term—***Although it is recognized that natural processes will eventually successfully eliminate contamination at the site, the time until this will occur is unknown and understood to be long term, and the expected rate of contaminant reduction would be extremely low. The magnitude of risk to potential receptors and the effectiveness of containment and institutional controls in preventing exposure are currently understood to be acceptable; a more refined understanding of risk and effectiveness of controls will be developed in the supplemental RI.
- ***Management of short-term risks—***The No Additional Action does not incur short term risks associated with construction or implementation.
- ***Technical and administrative implementability—***The No Additional Action is demonstrated to be technically and administratively implementable, as this alternative represents a continuation of existing practices.
- ***Consideration of public concerns –*** Public concerns will be address in accordance with the PPP.

Reasonable Restoration Timeframe

This alternative relies on natural processes that occur very gradually at the site to achieve cleanup. The restoration timeframe is unknown, but is understood to be as long as or longer than the restoration timeframe of any other cleanup alternative. Although concentrations of volatilized site contaminants in subsurface soil pore space and potential degradation products are toxic to human health and the environment, there is no evidence of imminent unacceptable risk posed by the site to human health and the environment. The existing institutional controls are expected to continue to prevent contact with hazardous substances onsite. This alternative would not take action to control inferred low rate migration of volatilized COCs into site groundwater. Site status as landfill precludes conflicts of current or potential future uses of the site proper; however, potential impacts on downgradient well users would have to be considered. This alternative would provide the ability to monitor for but not control hypothetical future migration of hazardous substances from the site.

Alternative 2 – Source Removal, Institutional Controls, and Containment

Threshold Criteria

- *Protects human health and the environment—*Alternative 2 includes all the protections discussed in Alternative 1, with the added benefit of contaminant mass removal and volatilized contaminant plume reduction through SVE. The supplemental RI and a SVE pilot study would generate data that could be used in estimating the reduction of migration of volatilized contaminants into site groundwater resulting from reduction of soil gas contamination concentrations due to SVE system operation.

- *Complies with cleanup standards and ARARs—*This alternative represents a practical means of contaminant removal, and therefore is the most likely and capable of meeting cleanup goals and satisfying ARARs.

- *Provides for compliance monitoring—*The existing network of monitoring wells for groundwater and landfill gas, plus potential future monitoring wells, allows for the monitoring of soil gas contaminant concentrations and impacted groundwater. Alternative 2 would include provisions for monitoring that would meet MTCA requirements for compliance monitoring and attainment of goals for protection, performance, and conformational monitoring.

Disproportionate Cost Analysis

Disproportionate cost criteria described in Chapter 173-340-360(3)(e), WAC, were used to rank the alternatives from most to least permanent and for comparison of the benefits and associated costs with each of the alternatives.

- *Protectiveness—*This alternative would reduce the mass of contamination in the soil and the migration of volatilized contaminants into site groundwater, thereby reducing risk to human health and the environment. Although existing engineering and institutional controls are protective of human health and the environment, the primary risk theoretical pathways of exposure are inhalation of volatilized COCs from site soil or groundwater or ingestion of site COCs from site groundwater. Mass removal of COCs from site soil will reduce the inhalation pathway from site soils, and is expected to indirectly reduce the inhalation or ingestion pathway from groundwater. The time required to reduce risk at the facility and achieve cleanup goals with this alternative is dependent on observed system performance data. In general, when the system is observed to be reaching an asymptotic minimum for COC concentrations, the system can be shut down and a rebound can be monitored for, to establish whether maximum attainable treatment with the system has been achieved.

- *Permanence—*This alternative represents the only practical means of contaminant mass removal and control of the gas-phase plume in site soils. Mass removed would be permanently eliminated from the site. This alternative would produce a volume of extracted soil vapor. Data from the pilot study would be used to determine whether this off-gas represents a potential risk to human health and the environment or needs treatment. It is anticipated that in full-scale treatment operation SVE off-gas would be treated by granular activated carbon adsorption, although treatment by thermal oxidation could be a more preferable option, if methane concentrations are sufficiently high.

- ***Cost*—** Alternative 2 would include the costs of institutional controls and monitoring of Alternative 1, as well as the installation of extraction wells, soil vapor extraction system with vapor treatment, operation, and maintenance of the SVE system. As summarized in Table 7-5 (and detailed in Appendix M), the disproportionate cost analysis assumptions for Alternative 2 includes the following:
  - Conducting a 6-8 week SVE pilot study from the existing landfill gas system. Based on the SVE pilot-test study results, for costing purposes it is assumed that a long-term SVE system would also include the following elements.
  - Installation of five supplemental landfill gas extraction wells completed in the westernmost portion of the closed landfill; three of the extraction wells would be completed within refuse/trenches, and two of the extraction wells would extract landfill gas from native soils beneath the refuse/trenches. This approach considers the source area of concern/source mechanisms as described Section 5.
  - Installation of a long-term SVE and treatment system; including a permanent structure with appropriate electrical facilities, blower unit, and granular activated carbon (GAC) unit.
  - Routine operations, maintenance, and monitoring of the long-term SVE treatment system performance.
  - Institutional Controls.

- ***Effectiveness over the long term*—** It is expected that the alternative would significantly reduce volatilized COC concentrations in vadose-zone soils within 5 to 10 years of operation; depending on the results from the pilot-study, noticeable reductions in shallow groundwater could be expected within an estimated period of 10 to 20 years. Although the actual time required for groundwater remediation is unknown, given site contaminant distribution, site geology, and prior performance of SVE systems, it anticipated that volatilized COC would be reduced to an absolute treatment minimum within an estimated period of 10 to 20 years. Alternative 2 uses established remedial technologies that are expected to be reliable during the period of active remediation. Existing engineering and institutional controls and reduction of soil gas COC concentrations are expected to be effective in minimizing risks both during and after the period of active remediation for Alternative 2.

- ***Management of short-term risks*—** Risks associated with the installation of extraction wells and the construction and operation of the SVE system would be managed by the use of standard operating procedures and the development and execution of appropriate health and safety plans, to minimize potential for exposure. Management of short-term risk is considered effective for these activities, with limited risk to human health and the environment during implementation. It is assumed that SVE system off-gas would be treated by GAC adsorption during the full-scale implementation of SVE. GAC adsorption is an established remedial technology, and is considered to be reliable in managing risk associated with exposure to SVE off-gas.

- ***Technical and administrative implementability—*** Alternative 2 uses conventional remediation technologies at a site in which technologies of similar means of installation, complexity, and mode of operation, landfill gas monitoring wells and landfill gas extraction and flaring, are successfully in place. It is anticipated that operation and maintenance of the SVE system and monitoring of remedial action performance will integrate successfully into similar existing practices at the facility.

- ***Consideration of public concerns –*** Public concerns will be addressed in accordance with the PPP.

Reasonable Restoration Timeframe

Although the actual time required for remediation is unknown, it has been estimated at up to 20 years. However, as noted above, significant reductions of source contaminants in soils are expected to occur in roughly a 5- to 10-year period. Thus, Alternative 2 represents a practical option to significantly reduce the restoration timeframe relative to the No Additional Action alternative. By removing volatilized contaminants along with extracted soil vapor, Alternative 2 is a practical option to address the migration of diffused volatilized contaminants from site soils into groundwater. It is anticipated that existing institutional controls will continue to be sufficient to protect human health and the environment from exposure to toxic contaminants at the site. Site status as landfill precludes conflicts of current or potential future uses of the site proper; however, potential impacts on downgradient well users would have to be considered. This alternative would provide the ability to monitor for and potentially control hypothetical future migration of hazardous substances from the site in groundwater.

Alternative 3 – Groundwater Control and/or Treatment, Institutional Controls, and Containment

Threshold Criteria

- ***Protects human health and the environment—*** Alternative 3 would include the existing landfill cap and institutional controls present in the No Additional Action alternative, and also would include additional protectiveness against potential exposure to contamination from impacted groundwater in the form of engineering control and treatment of site groundwater by groundwater pumping, air stripping, and GAC treatment of air stripper off-gas.

- ***Complies with cleanup standards and ARARs—*** Alternative 3 provides a means of engineering control and treatment of impacted groundwater; however, removal of source contamination and prevention of migration from source material to groundwater are not addressed.

- ***Provides for compliance monitoring—*** The existing network of monitoring wells for groundwater, plus potential future monitoring wells, allows for the monitoring of impacted groundwater. Alternative 3 would include provisions for monitoring that would meet MTCA requirements for compliance monitoring and attainment of goals for protection, performance, and conformational monitoring.

Disproportionate Cost Analysis

Disproportionate cost criteria described in Chapter 173-340-360(3)(e), WAC, were used to rank the alternatives from most to least permanent and for comparison of the benefits and associated costs with each of the alternatives.

- ***Protectiveness —*** While data does not show evidence of existing or imminent exposure based risk from impacted groundwater, Alternative 3 includes the protective measure of groundwater control and treatment in addition to the existing containment and institutional controls of the No Additional Action alternative. However, since Alternative 3 does not address contaminant source removal or the migration of contaminants from soil to groundwater and there is no evidence of natural degradation at the site, it is anticipated that an improvement in groundwater quality which could trigger a completion of groundwater pumping activities would not occur for an indefinite period of time.

- ***Permanence—***While it is anticipated that air stripping would be successful in removing CVOCs from pumped groundwater, it is not anticipated that Alternative 3 would cause a significant reduction in mass of contaminants, because COC migration into groundwater is a very slow process at the site. Although it is expected that Alternative 3 would control migration of COCs in groundwater, it is not expected that the diffused mass of CVOCs existing in site soil vapor would be reduced more quickly than in the No Additional Action alternative. It is assumed that off-gas generated by air stripping activities would be treated by GAC adsorption, and that treated groundwater would be discharged into the bed of Dry Creek.

- ***Cost—*** Alternative 3 would include the costs of institutional controls and monitoring of Alternative 1, as well as the installation of groundwater extraction wells, groundwater pump and treat system and air stripping and vapor treatment, as well as operation and maintenance of the groundwater pumping system. As summarized in Table 7-5 (and detailed in Appendix M), the disproportionate cost analysis assumptions for Alternative 3 includes the following:
  - Installation of two groundwater extraction wells to facilitate a groundwater extraction system pilot-study. The two groundwater extraction wells for the groundwater extraction pilot-study target the preferential groundwater flow zone respectively near MW-14S/D and MW-05/05A.
  - Conducting a groundwater extraction pilot-study from the two groundwater extraction wells (noted above). Based on the groundwater extraction pilot-test study results, for costing purposes it is assumed that a long-term groundwater pump and treatment system would consist of the following additional elements.
  - Installation of 22 supplemental groundwater extraction wells completed along the downgradient toe of the landfill to capture and extract contaminated groundwater. Extraction well locations consider existing site constraints and would be located roughly along the existing downgradient well network along the Dry Creek drainage; withdrawal rate and extraction well spacing design assumptions based on site conditions and groundwater hydraulics presented in Section 5.
  - Installation of a long-term groundwater extraction and treatment system; including a permanent structure with appropriate utilities, electrical, permanent structure, air-stripper, and granular activated carbon (GAC) unit. It is assumed that treated

groundwater (below applicable criteria) would be passively discharged to the Dry Creek drainage.

- Routine operations, maintenance, and monitoring of the long-term groundwater pump and treatment system performance.
- Institutional Controls.

- ***Effectiveness over the long term—*** Alternative 3 does not address source removal or migration of contaminants from soil to groundwater, so therefore does not represent an accelerated restoration timeframe relative to the No Additional Action alternative. The achievable effectiveness of engineering control of impacted groundwater by pumping is unknown; subsurface heterogeneity and preferential flow paths could impact groundwater extraction rates favorably or unfavorably. Groundwater pumping, air stripping, and vapor phase GAC adsorption are conventional remediation technologies; however, significant maintenance and replacement of components would be anticipated. It is expected that treatment by air stripping would be adequate to meet discharge requirements established for treated groundwater, and that GAC adsorption would be adequate to control contaminant releases into the atmosphere from air stripper exhaust.
- ***Management of short-term risks—***addresses the risk to human health and the environment during construction and implementation, and the effectiveness of measures that will be taken to manage such risks. Risks associated with the installation of extraction wells and the construction and operation of the pump and treat system would be managed by the use of standard operating procedures and the development and execution of appropriate health and safety plans, to minimize potential for exposure. Management of short-term risk is considered effective for these activities, with limited risk to human health and the environment during implementation. It is assumed that air stripper off-gas would be treated by GAC adsorption during full-scale implementation. GAC adsorption is an established remedial technology, and is considered to be reliable in managing risk associated with exposure to air stripper off-gas.
- ***Technical and administrative implementability —***While Alternative 3 utilizes conventional remedial technologies, the ultimate success of groundwater pumping in controlling impacted groundwater is unknown. Additionally, the anticipated slow rate of contaminant removal under Alternative 3 suggests that pump and treat operation would have to be maintained for an indefinite timeframe before cleanup is complete. The technologies utilized in Alternative 3 are of similar means of installation, complexity, and mode of operation to technologies in operation at ACRL: monitoring wells and leachate collection and treatment. It is anticipated that operation and maintenance of the groundwater pumping and treatment system and monitoring of remedial action performance would integrate successfully into similar existing practices at the facility. It is expected that a modification of the NPDES permit for the facility would have to occur in order to dispose of treated groundwater by discharge to Dry Creek.
- ***Consideration of public concerns—*** Public concerns will be addressed in accordance with the PPP.

Reasonable Restoration Timeframe

Alternative 3 would employ engineering controls to reduce migration of contaminants in groundwater while relying on natural processes that occur very gradually at the site to achieve cleanup. The restoration timeframe is not anticipated to be significantly shorter than the No Additional Action alternative. Although concentrations of volatilized site contaminants in subsurface soil pore space and potential degradation products are toxic to human health and the environment, there is no evidence of imminent unacceptable risk posed by the site to human health and the environment. The existing institutional controls plus engineering control of impacted groundwater by pumping are expected to have the effect of continued prevention of contact with hazardous substances onsite. This alternative would not take action to control inferred low rate migration of volatilized COCs into site groundwater. Site status as landfill precludes conflicts of current or potential future uses of the site proper; however, potential impacts on downgradient well users would have to be considered. This alternative would provide the ability to monitor for hypothetical future migration of hazardous substances from the site, and would provide for a level of control on the migration of contaminants in site groundwater.

8.0 Preferred Cleanup Alternative and Recommended Interim-Actions

This section presents the preferred remedial alternative for cleanup of COCs in shallow groundwater at the ACRL Site. The information and analysis presented in Section 7.0 serves as the technical basis for comparing and ranking the remedial alternatives, and for selecting a preferred site cleanup action. In addition, recommended interim actions are presented to assist with cleanup decisions related to the preferred cleanup alternative.

8.1 Preferred Cleanup Alternative

Alternative 2, Source Removal, Institutional Controls, and Containment, is the preferred cleanup action for the ACRL Site. Alternative 2 is recommended for the following reasons:

- It meets all threshold criteria
- It has the greatest reduction of toxicity, mobility, and volume of hazardous substances
- It addresses source removal
- It has the shortest anticipated restoration time frame
- It provides a factor of protection that is comparable to or better than other remedial alternatives
- It is readily implemented

The additional costs of Alternative 2 versus the No Additional Action alternative are clearly outweighed by the potential benefits of contaminant mass removal; control of migration of contaminants from soil to groundwater; reduction in groundwater concentration; and accelerated restoration timeframe. As data does not suggest an imminent risk to human health or the environment from impacted groundwater, the incremental cost of Alternative 3 is disproportionate to the incremental benefit of Alternative 3. Therefore, Alternative 3 was not selected as the preferred alternative.

It is reasonable to assume that volatilized contaminant concentrations in soil pore space would show a demonstrable decline in response to SVE source removal activities. Remedial benefits of SVE on impacted groundwater are dependent on soil gas and groundwater interactions, which are complex. The applicability of the preferred alternative (Alternative 2) will be further evaluated as part of a pilot study program, as included in this alternative.

8.2 Recommended Interim-Actions

Asotin County understands that *Interim Actions* (per Ch. 173-340-430, WAC) under the *Independent Remedial Action* of MTCA may be performed at any time during the cleanup process to assist with cleanup decisions. Interim actions are recognized under MTCA to complete an RI/FS study and/or be supportive of the long-term design of the selected cleanup action alternative. Interim-actions are recommended for the site in support of (1) refinements to the CSM with respect to adequate characterization of the extent of contamination; (2) RAOs as presented in Section 5; (3) evaluation and selection of long-term cleanup action alternative; and (4) development of a cleanup action plan. Prior to development of a cleanup action plan, Asotin County will meet with Ecology to discuss the (draft) RI/FS findings and proposed interim-actions.

Based on these objectives, the following interim-actions are recommended:

Interim-Action #1:

Conduct a supplemental RI to further characterize the extent of shallow groundwater contamination.

The proposed supplemental RI program assumes hydrogeologic characterization and installation of four additional groundwater monitoring wells (& associated testing) to assess the extent of contamination. The focus of the proposed investigation locations are generally within the inferred preferential contaminant migration pathway in the vicinity of Dry Creek drainage. The supplemental RI program may be refined based on input from Ecology, Asotin County Health District, and the public. In addition, the supplemental RI program may be adjusted based on field observations and test results from initial locations. Appendix M contains the cost assumptions for conducting the supplemental RI.

Interim-Action #2:

Conduct a short-duration SVE pilot-test of the preferred cleanup action alternative (Alternative 2, discussed above and mentioned in Section 7.0).

Performance monitoring data from an SVE pilot-study are needed to evaluate the radius of influence, gas extraction rates, optimal vacuum, contaminant mass removal areas, contaminant mass removal rates, and off-gas treatment. Performance monitoring results from the pilot-study will be evaluated to determine (as appropriate) the number of supplemental long-term interior landfill gas extraction wells and associated long-term gas treatment system. Appendix M contains cost assumptions for conducting the SVE pilot-study.

The SVE pilot-study approach and test assumptions include the following:

- Enhanced SVE extraction from the existing landfill gas extraction well network. The existing landfill gas extraction well network consists of nine vertical landfill gas wells (LGW's) completed within refuse materials/waste trenches as shown in Figure 5-9.
- Landfill gas extraction will be enhanced via a portable blower/extraction unit connecting the nine landfill gas wells.
- Duration of the SVE pilot-test assumes 6-8 weeks of enhanced landfill gas extraction and performance monitoring.
- Landfill gas emissions may be directly vented to the atmosphere during the 6-8 week pilot-test (Cleary, pers. comm., December 2009).

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Washington State Well Log viewer via Ecology's on-line database. Public website: http://apps.ecy.wa.gov/welllog/

Tables

TABLE 2-1

Groundwater Monitoring Well Construction Summary

Remedial Investigation and Feasibility Study Report

Well[1]	Northing[2]	Easting[2]	Ref. Point Elevation[3]	Ground Elevation	Screen Length	Well Screen Elevation Top	Well Screen Elevation Bottom	Sand Pack Elevation Top	Sand Pack Elevation Bottom	Pump Intake[4]	Well Depth[5]
MW-01	49865.94	46241.57	1276.63	1275.6	20	1128	1108	1131	1104	1120	170
MW-02	51294.54	47841.93	1197.65	1196.2	20	1097	1077	1097	1076	1085	121
MW-03	51199.65	46836.47	1156.35	1154.9	10	1067	1057	1069	1055	1063	99
MW-04	51100.36	46356.66	1155.07	1154.0	20	1109	1089	1111	1086	1100	65
MW-05	50878.65	45617.23	1191.16	1189.4	20	1120	1100	1122	1098	1110	91
MW-06	51217.07	47278.45	1176.82	1175.4	20	1110	1090	1112	1060	1099	87
MW-07	51210.61	46846.59	1155.95	1154.6	15	1121	1106	1123	1106	1113	50
MW-09	51034.72	45954.43	1193.65	1192.3	10	1107	1097	1110	1094	1104	99
MW-10	50634.36	45299.70	1193.22	1191.8	10	1117	1107	1119	1104	1112	88
MW-11	49868.47	46017.89	1280.47	1279.2	10	1124	1114	1112	1092	1116	170
MW-12	49942.60	47610.71	1262.34	1259.2	20	1121	1101	1131	1091	1110	172
MW-13	50726.69	48682.34	1195.61	1192.5	10	1049	1039	1052	1036	1044	165
**** Note: wells -14S, -14D, and -15 are not currently in WAC 173-351-400 Monitoring Program ****											
MW-14S	402377.328	2494792.51	1123.30	1121.1	10	1111	1101	1116	1100	1106	20
MW-14D	402382.584	2494793.584	1123.33	1121.1	13	1063	1050	1062	1048	1056	71
MW-15	402903.413	2495247.487	1102.71	1100.5	5	1093	1088	1090	1087	1090	13

Notes:

1 - Wells MW-14S, -14D, and -15 were installed in April 2009 during the RI and are not currently part of the WAC 173-351-400 Monitoring Program.

2 - Washington State Plane Coordinates (NAD83)

3 - Reference point elevation is top of PVC casing; all elevations in feet above mean sea level (NAVD88)

4 - Approximate elevation of pump intake (bottom of Redi-Flow Pump intake) within the well screen interval; wells -14S, -14D, and -15 sampled via peristaltic pump.

5 - Well depth is feet below ground surface

TABLE 4-1
Remedial Investigation – Project Specific Data Needs
Remedial Investigation and Feasibility Study Report

Matrix	Analyte	Data Use	Data User
Field Measurements -Groundwater Measurement	pH, temperature, conductivity, depth to groundwater (field)	Stability for groundwater sampling.	Field Sampling Team, Hydrogeologists, Remedial Technologists,
Field Measurements – Groundwater Measurement	Depth to groundwater (converted to groundwater elevation)	Groundwater flow characteristics, groundwater flow direction, updating the conceptual site model	Hydrogeologists, Remedial Technologists, Regulators
Laboratory – Groundwater Sample	Geochemical Indicator Parameters[1]	Nature and extent of contamination, updating the site conceptual model, evaluating contaminant transport mechanisms	Hydrogeologists, Remedial Technologists, Regulators
Laboratory – Groundwater Sample	Broad suite of VOC's including primary contaminants of concern: PCE, TCE[1]	Nature and extent of contamination, updating the site conceptual model, evaluating contaminant transport mechanisms	Hydrogeologists, Remedial Technologists, Regulators
Field – Landfill Gas Measurement	Temperature, Methane, Carbon Dioxide, and Oxygen	Nature and extent of contamination, updating the site conceptual model, evaluating contaminant transport mechanisms	Hydrogeologists, Remedial Technologists, Regulators
Laboratory – Landfill Gas Sample	Broad Suite of VOC's (TO-15) including primary contaminants of concern: PCE, TCE[3]	Nature and extent of contamination, updating the site conceptual model, evaluating contaminant transport mechanisms	Hydrogeologists, Remedial Technologists, Regulators
Laboratory – Soils Testing	Physical properties and VOC's in soil (8260B/5035)	Updating site conceptual model	Hydrogeologists, Remedial Technologists,

Notes:

1. A detailed summary of the data types and constituents for the RI is included in the *Sampling and Analysis Plan (SAP), Asotin County Regional Landfill, Asotin County, Washington* (CH2M HILL, March 2009). Results from the focused RI in 2009 are presented in Section 4.3.

TABLE 4-2
Remedial Investigation – Monitoring Well and Gas Probe Installation Summary
Remedial Investigation and Feasibility Study Report

Well ID	Install Date	Elev. (ft) (gs)[1]	Elev. (ft) (toc)[1]	Northing/Easting[1]		Total Depth of Boring (ft bgs / elev. ft)	Casing Diameter (inches)	Screen Length (ft)	Screen Slot Size (inches)	Screen Interval (ft bgs / elev. ft)	Refuse Interval (ft bgs / elev ft.)	Groundwater Level (ft btc / elev. ft)[2]	Comments
Groundwater Monitoring Wells:													
MW-14S	03/26/2009	1121.1	1123.30	402377.328	2494792.510	20/ 1101	2	10	0.010	10 – 20 / 1111 – 1101	NA	10.97 / 1112.33	Drilled via air-rotary. MW-14S installed approximately 5 ft south of MW-14D; surface completion monument includes both wells within the same concrete pad but drilled via separate boreholes. Well location shown in Figure 4-1.
MW-14D	03/25/2009	1121.1	1123.33	402382.584	2494793.584	79 / 1042	2	13	0.010	58 – 71 / 1063 – 1050	NA	13.10 / 1110.23	Drilled via air-rotary. MW-14D installed approximately 5' north of MW-14S.
MW-15	03/27/2009	1100.5	1102.71	402903.413	2495247.487	41 / 1060	2	5	0.010	7.5 – 12.5 / 1093 – 1088	NA	12.19 / 1090.52	Drilled via air-rotary. MW-15 installed approximately 600 ft downgradient of MW-14S/D location. MW-15 borehole was advanced beyond the target shallow well completion zone to a total depth of 41 ft bgs to characterize the upper gravel unit; the lowermost section of the borehole was abandoned with bentonite from 13.5 to 41 ft bgs.
Perimeter Gas Monitoring Probes:													
GP-05	03/12/2009	1145.7	NA	401859.701	2494518.000	20 / 1125	2	15	0.040	4.5 – 19.5 / 1141 – 1126	NA	NA	Drilled via air-rotary. Drive samples not collected at this location; field logs generated from air-rotary drill cuttings. Cuttings observed consisted primarily of silty gravel with silt zones.
GP-06	03/11/2009	1160.9	NA	401547.895	2494020.620	30 / 1131	2	25	0.040	5 – 30 / 1156 – 1131	NA	NA	Drilled via air-rotary. Drive samples not collected at this location; field logs generated from air-rotary drill cuttings. Cuttings observed consisted primarily of silty gravel with silt zones.
GP-07	03/11/2009	1191.6	NA	401218.547	2493300.041	30 / 1162	2	25	0.040	5 – 30 / 1186.6 – 1161.6	NA	NA	Drilled via air-rotary. Moderately weathered remnant basalt block encountered from approximately 8 to 30 ft bgs; basalt inferred from air-rotary drill cuttings and slower advancement rate. Basalt was not observed in any other boring locations during the RI. This isolated basalt occurrence is not believed to represent a laterally or vertically continuous basalt layer bur rather a slump-block deposited within the upper gravel unit.
Interior Gas Monitoring Probes:													
GP-LGW-10	04/03/2009	1271.6	NA	401393.643	2494699.745	75 / 1197	1	40	0.040	29 – 69 / 1243 – 1203	30 – 71.5 / 1241 – 1200	NA	Drilled via hollow-stem auger. Initial attempts to drill with 12 ft diameter auger were unsuccessful due to difficult drilling conditions in refuse. Driller switched to a 6 ½ " diameter auger to improve advancement/penetration rate. Contractor specifications called for a 4-inch diameter probe installation, however, due to drilling difficulty and reduced boring diameter, the completion was reduced to a 1-inch diameter probe.
GP-LGW-11	04/08/2009	1276.1	NA	401205.040	2494277.023	78 (Refusal) / 1198	1	50	0.040	27 – 77 / 1249 – 1199	25 – 78+ / 1251 – 1198+	NA	Drilled via hollow-stem auger. As described for GP-LGW-10, this boring was drilled using the smaller 6 ½ -inch diameter auger. At deeper depths the auger advancement rate slowed significantly and the boring was terminated (i.e., refusal) was called at 78 ft bgs in refuse material (presumably near the bottom of the waste trench).
GP-LGW-12	Borehole Abandonded – 4/08/2009	1279.0	NA	401015.026	2493699.183	28 (Refusal) / 1251	NA	NA	NA	NA	22 – ? / 1257 – ?	NA	Drillled via hollow-stem auger. A total of 7 shallow borings were drilled in the vicinity of abandoned GP-LGW-12 (shown in Figure 4-1) before final refusal was called at 28 ft bgs. Auger advancement was complicated at this location due to larger cobbles and very hard soils within the landfill cover sequence; and also due to scrap metal and other large woody debris in the refuse material. All borings were back-filled with bentonite and the final location was staked for surveying (which represented a waste trench location).

Abbreviations:
NA = Not applicable. See "comments" column for additional details.
"ft" = Unit of length in feet.
"gs" = Reference point, ground surface.
"toc" = Reference point, top of well casing.
"ags" and "bgs" = Reference point measured in feet above/below ground surface at respective location.
"btc" = Reference point measured from below top of well casing.
"elev" = elevation.

Notes:
1 Survey performed by Asotin County in May 2009; datum is Washington State Plane, NAD83, NAVD88.

2 Groundwater levels measured on May 27 & 28, 2009; groundwater levels reported in feet below top of casing (ft btc) / elevation (elev. ft.).

TABLE 4-3
Remedial Investigation - Single Well Hydraulic Testing Summary
Remedial Investigation and Feasibility Study Report

Well ID	Testing Date	Pre-Test Water Level (ft btc / elev. ft)	Inferred Saturated Aquifer Thickness & Type (ft)[1]	Soil Type/ Hydrogeologic Unit[2]	Pumping Rate – Min-Max (gpm)	Pumping Duration (mins)	Pumping Volume (gals)	Average/ Sustained Pumping Rate (gpm)	Sustained Water Level Response (drawdown ft btc)	Recovery Period (mins)[3]	Estimated Hydraulic Conductivity (ft/day)	Comments
MW-14S	04/09/09	9.24 / 1114.06	13 – Unconfined	Silty GRAVEL (GM) with sand.	0.36 – 0.43	61	~ 23	0.40	7.70	~ 18	0.8	Estimated hydraulic conductivity for the shallow, unconfined gravel unit at MW-14S consistent with theoretical (i.e, book) values for “silty sand/gravel” (Anderson & Woessner, 1992) and “sandy silt” (Fetter, 1994).
MW-14D	04/10/09	12.94 / 1110.39	15 - Semi- Confined or Confined	Upper screen zone poorly graded clean SAND (SP); Lower screen zone clayey GRAVEL (GC)	7.0	25	200	7.0	Negligible (less than 0.05)	NA	Estimated at ≥ 1,250	Negligible response via pumping at sustained 7 gpm rate; transmissivity estimate assumes a conservative lower-bound via specific capacity relationship assuming a drawdown value 0.1 ft. Estimated hydraulic conductivity for this “secondary” (confined) water-bearing unit is approximately (greater than or equal to)1 to 3 orders of magnitude higher than respective values in the shallowest, unconfined units at MW-15 and MW-14S.
MW-15	04/09/09	11.49 / 1091.22	~ 3 - Unconfined	Well graded silty/sandy GRAVEL (GW) to silty GRAVEL (GM)	0.96	23	20	1.0	0.60	~ 5	130	Estimated hydraulic conductivity for the shallow, unconfined gravel unit at MW-15 consistent with theoretical (i.e., book) values for “fine-medium clean sand” (Anderson & Woessner, 1992) and “well sorted sand” (Fetter, 1994). Estimated hydraulic conductivity at MW-15 is approximately 2 orders of magnitude higher than MW-14S.

TABLE 4-4

Remedial Investigation Sampling and Analysis Plan Addendum - Sampling Locations, Methods, and Schedule

Remedial Investigation and Feasibility Study Report

Media:	Locations:	Method:	Analysis:	2009 SAP Sampling Schedule						Comment:
				May	June	July	Aug	Sept	Oct	
Groundwater	MW-14S, MW-14D, MW-15	Standard Low-Flow Purge	General chemistry, dissolved metals, and VOC's.	x	x	x	x	x	x	Background data development to occur on monthly schedule for 6 consecutive events.
Groundwater	MW-05, MW-07 (existing wells)	No-purge Passive Diffusive Bags (PDB); upper and lower screen intervals	VOC's	x		x				No-purge passive diffusive bag (PDB) sampling performed to evaluate data variability & nature and extent of contamination. Dual-level samples per location (i.e., two samples per location per event).
Landfill Gas - Interior Locations	GP-LGW-10, -11, -12 (new) LGW-4, -8, -9 (existing)	SUMMA© Canister	Methane, O_2, CO_2 (ASTM D1946) and VOC's (TO-15)	x		x				Air sample at interior locations focusing on primary contaminants of concern in landfill gas.
Landfill Gas - Perimeter Locations	GP-1, -3 (existing) GP-5, -6, -7 (new)	SUMMA© Canister	Methane, O_2, CO_2 (ASTM D1946) and VOC's (TO-15)	x						Air sample at perimeter locations focusing on primary contaminants of concern in landfill gas.

Notes:

1. Sample methods and full listing of analyses included in the Sampling and Analysis Plan, Asotin County Regional Landfill, Asotin County, Washington (CH2M HILL, 2009).
2. Results presented in Section 4.3.

TABLE 4-5
Remedial Investigation - Physical Properties Soil Testing Results
Remedial Investigation and Feasibility Study Report

Boring & Sample ID	Sample Type	Sample Depth (ft bgs)	Generalized Field Description (ASTM D-2488)	Generalized Laboratory Description[1] (ASTM D-2488)	Moisture Content (D-2216) (%)	Summary of Gradation Analyses[2]			Minus #200 Sieve (D-1140) (%)	Hydrometer Analysis	
						(D-422) Gravel (%)	(D-422) Sand (%)	(D-422) Fines (%)		(D-422 Silt (%)	(D-422 Clay (%)
GP-LGW-10	SPT-1	9.5 – 11.0’	Borderline SILT to silty fine SAND (ML/SM)	--	22.4	--	--	--	--	--	--
GP-LGW-10	SPT-5	73.5 – 75.0’	Poorly graded fine SAND w/ silt (SP)	--	20.9	--	--	--	--	--	--
GP-LGW-11	SPT-1	9.0 – 10.5’	CLAY w/ silt (CL)	--	20.9	--	--	--	--	--	--
GP-LGW-11	SPT-2	19.0 – 20.0’	CLAY w/ silt (CL)	--	17.1	--	--	--	--	--	--
GP-LGW-12	SPT-1	9.5 – 11.0’	SILT w/ gravel (ML)	--	15.0	--	--	--	--	--	--
GP-LGW-12	SPT-2	19.5 – 21.0’	CLAY w/ silt (CL)	--	18.9	--	--	--	--	--	--
MW-14D	SPT-3	13.5 – 14.2’	Silty GRAVEL (GM)	Silty Gravel with Sand (GM)	30.6	51	33	16	--	--	--
MW-14D	SPT-5	23.5 – 25.0’	CLAY w/ gravel (CL)	Gravelly Lean Clay with Sand (CL)	35.7	20	16	64	--	--	--
MW-14D	SPT-6	28.5 – 29.9’	CLAY w/ trace gravel (CL)	Lean Clay with Sand (CL)	43.2	8	17	75	--	30	45
MW-14D	SPT-8	38.5 – 40.0’	CLAY w/ trace gravel (CL)	--	43.9	--	--	--	86	--	--
MW-14D	G-12 (Grab)	~ 58.5	Poorly graded fine to medium SAND (SP)	Poorly Graded Sand with Silt (SP-SM)	29.0	0	87	13	--	--	--
MW-14D	SPT-16	75.5 – 76.5’	Light-tan CLAY (CL) – marker bed	Lean Clay with Sand (CL)	33.9	0	20	80	--	38	42
MW-15	SPT-4	19.0 – 20.5’	CLAY w/ trace gravel (CL)	--	25.1	--	--	--	64	--	--
MW-15	SPT-7	34.0 – 36.0’	GRAVEL w/ clay (GP – GC)	Lean Clay with Sand (CL)	40.6	6	13	81	--	--	--

General:

Reference Appendix E for soils laboratory testing results.

Footnotes:

1 - Generalized laboratory descriptions are inferred from gradation and hydrometer analysis results and based on USCS visual-manual procedure (ASTM D-2488)

2 - Summary of gradation analyses results presented by representative percentage of gravel (3-inch to #4 mesh sieve), sand (#4 to #200 mesh sieve), and fines (silt or clay sized particles that passed a #200 mesh sieve).

TABLE 4-6

Remedial Investigation - Landfill Gas Analytical Results

Remedial Investigation and Feasibility Study Report

				ASTM 1946 Results[3]			TO-14A/TO-15 Results[4]					
Location[1]	**Type[2]**	**Date**	**Units**	**Oxygen**	**Carbon Dioxide**	**Methane**	**PCE**	**TCE**	**trans-1,2-Dichloroethene**	**Vinyl Chloride**	**Freon 11**	**Freon 12**
LGW-04	IX	5/19/2009	ug/m3	3.3E+07	5.9E+08	3.2E+08	7200	2500	300	13000	320	3400
LGW-04	IX	7/22/2009	ug/m3	3.7E+07	5.8E+08	2.9E+08	5000	1500	260	20000	210	2800
LGW-08	IX	5/19/2009	ug/m3	3.8E+07	4.0E+08	1.2E+08	49000	25000	990	14000	620	11000
LGW-09	IX	7/22/2009	ug/m3	3.5E+07	5.6E+08	2.8E+08	11000	3200	250	9100	550	2600
LGW-10	IP	5/19/2009	ug/m3	2.1E+08	1.8E+08	8.5E+07	2700	1100	110	690	ND	110
LGW-10	IP	7/22/2009	ug/m3	8.4E+06	5.2E+08	3.6E+08	4400	2500	420	3100	ND	750
LGW-11	IP	5/19/2009	ug/m3	2.4E+08	1.0E+08	4.1E+07	4000	910	150	440	ND	1100
LGW-11	IP	7/22/2009	ug/m3	3.0E+07	6.3E+08	3.4E+08	4600	1500	640	3500	770	2500
GP-01D	PUG	5/19/2009	ug/m3	2.6E+08	2.0E+07	2.0E+06	430	13	ND	ND	20	280
GP-03S	PUG	5/19/2009	ug/m3	2.4E+08	4.7E+07	ND	300	ND	ND	ND	ND	31
GP-05	PDG	5/19/2009	ug/m3	2.7E+08	1.3E+07	ND	850	ND	ND	ND	16	340
GP-06	PDG	5/19/2009	ug/m3	2.4E+08	1.5E+07	ND	ND	ND	ND	ND	ND	ND
GP-07	PDG	5/19/2009	ug/m3	2.5E+08	2.0E+07	ND	1000	69	ND	ND	10	9900

Notes:

1. Sample locations shown in Figure 5-2.
2. Sample location types as follows:
   IX = Interior (Active) Gas Extraction Well - gas conveyed to active flare station.
   IP = Interior Gas Monitoring Probe (1-inch diameter PVC screened within waste trench; installed during March-April09 RI)
   PUG = Perimeter Gas Monitoring Probe - Located to the South (or up-gradient) of the Closed Landfill
   PDG = Perimeter Gas Monitoring Probe - Located to the North (or down-gradient) of the Closed Landfill.
3. Results from testing Method ASTM 1946 for Oxygen, CO2, and Methane.
4. Selected contaminants of concern (COC's) for analytical Method TO-14A/TO-15.

ND = Not Detected at Method Reporting Limit

TABLE 4-7

Remedial Investigation - Groundwater Field Parameter Results

Remedial Investigation and Feasibility Study Report

Well	Date	DTW (ft btc)	Groundwater Elevation (ft msl)	Temp. (Celcius)	pH	Cond. (µS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)
MW-14S	5/28/2009	10.97	1112.33	15.2	7.30	1,100	134	7.75	18.1
	6/29/2009	11.25	1112.05	17.6	7.34	1,080	126	9.16	1.6
	7/22/2009	11.30	1112.00	17.0	7.38	1,150	145	4.37	162 [a]
	8/19/2009	11.30	1112.00	17.3	7.16	1,140	159	7.35	6.1
	9/28/2009	11.58	1111.72	17.3	7.03	1,060	136	18.19 [b]	31.0
	10/29/2009	11.50	1111.80	15.2	7.32	1,060	229	7.87	0.0
MW-14D	5/28/2009	13.20	1110.13	--	--	--	--	--	--
	6/29/2009	13.16	1110.17	16.6	7.22	1,250	128	5.59	19.0
	7/22/2009	13.22	1110.11	16.4	7.06	1,410	132	4.42	339 [a]
	8/19/2009	13.21	1110.12	16.2	7.23	1,270	136	4.80	6.6
	9/28/2009	13.30	1110.03	15.7	7.12	1,200	120	18.28 [b]	110[a]
	10/29/2009	13.21	1110.12	14.4	7.45	1,210	232	5.47	17.0
MW-15	5/27/2009	12.19	1089.81	29.0	7.40	900	89	5.38	5.8
	6/29/2009	12.35	1089.65	17.6	7.58	1,130	99	10.03	1.5
	7/22/2009	12.39	1089.61	18.1	7.39	1,210	71	9.76	121 [a]
	8/19/2009	12.49	1089.51	20.9	7.47	1,180	50	8.41	5.5
	9/28/2009	12.69	1089.31	17.7	7.21	1,100	135	17.98 [b]	30.0
	10/29/2009	12.60	1089.40	14.7	7.31	1,090	194	8.95	0.0

General Notes:

1. Groundwater field measurement parameters per sampling protocol in *Sampling and Analysis Plan* (SAP), (CH2M HILL, 2009).
2. Depth to water (DTW) represents static level prior to purging; all other parameters represent final stabilized reading prior to sampling.

Footnotes:

[a]: Probable malfunction with turbidity meter. CH2M field personnel recalibrated and attempted to troubleshoot.

[b]: Probable malfunction with DO meter, attempted to recalibrate in field.

TABLE 4-8.1

Remedial Investigation - Groundwater Analytical Results (PCE via Low-Flow)

Remedial Investigation and Feasibility Study Report

	PCE Groundwater Concentrations (ug/L)								
Date	**MW-11**	**MW-05**	**MW-06**	**MW-07**	**MW-09**	**MW-10**	**MW-14S**	**MW-14D**	**MW-15**
2/23/09	0.5								
2/24/09			1.8	1.8					
2/25/09		12			3.4	3.1			
5/27/09	0.5	20			4.5	4.1			5.4
5/28/09			4	10			1.3	14.2	
6/29/09							0.5	12.9	4.7
7/22/09							0.5	17.8	4.5
8/18/09	0.5	11.4			2.9	5.7			
8/19/09			3.4	8.7			0.5	12.9	3.6
9/28/09							0.5	18.6	4.5
10/29/09							2.8	14.8	7.2
11/23/09	0.5	11.7	2.4	10	4.2	10.6			
Descriptive Statistics for 2009 Sampling									
min	<1	11.4	1.8	1.8	2.9	3.1	<1	12.9	3.6
max	<1	20	4	10	4.5	5.7	2.8	18.6	7.2
mean	<1	14.5	3.1	6.8	3.6	4.3	1.0	15.2	5.0
median	<1	12	3.4	8.7	3.4	4.1	<1	14.5	4.6
stdev	0.0	4.2	1.0	3.9	0.7	3.3	0.9	2.5	1.2
n	4	4	4	4	4	4	6	6	6

TABLE 4-8.2

Remedial Investigation - Groundwater Analytical Results (TCE via Low-Flow)

Remedial Investigation and Feasibility Study Report

	TCE Groundwater Concentrations (ug/L)								
Date	**MW-11**	**MW-05**	**MW-06**	**MW-07**	**MW-09**	**MW-10**	**MW-14S**	**MW-14D**	**MW-15**
2/23/09	0.5								
2/24/09			0.5	0.5					
2/25/09		1.6			1.2	0.5			
5/27/09	0.5	2.3			1.4	0.5			2.2
5/28/09			1.2	0.5			0.5	6.6	
6/29/09							0.5	5.2	1.7
7/22/09							0.5	6.7	1.7
8/18/09	0.5	1.6			1.2	1.1			
8/19/09			1.2	0.5			0.5	6.4	1.7
9/28/09							0.5	6.3	1.9
10/29/09							0.5	5.6	1.8
11/23/09	0.5	1.1	0.5	0.5	1.3	1.5			
Descriptive Statistics for 2009 Sampling									
min	<1	1.6	<1	<1	1.2	<1	<1	5.2	1.7
max	<1	2.3	1.2	<1	1.4	1.1	<1	6.7	2.2
mean	<1	1.8	1.0	<1	1.3	0.7	<1	6.1	1.8
median	<1	1.6	1.2	<1	1.2	0.5	<1	6.35	1.75
stdev	0.0	0.5	0.4	0.0	0.1	0.5	0.0	0.6	0.2
n	4	4	4	4	4	4	6	6	6

Notes:

1/2 method reporting limit shown for non-detect results and used for statistical calculations

Groundwater concentrations shown in ug/L.

Values from MW-14S, MW-14D, and MW-15 represent monthly sampling over 6-month schedule; all others are quarterly sampling.

TABLE 4-9

Remedial Investigation - Groundwater Analytical Results - Passive Diffussive Bag (PDB) Method

Remedial Investigation - Groundwater Analytical Results (via PDB Method)

Location	Tetrachloroethene (PCE)		Trichloroethene (TCE)		Dichlorodifluoromethane		Trichlorofluoromethane	
	June 29	July 22	June 29	July 22	June 29	July 22	June 29	July 22
MW-05 (pdb 76 ft)	2.8	1.7	nd	nd	nd	nd	nd	nd
MW-05 (pdb 90 ft)	13.4	8.4	1.9	1.9	2	nd	nd	nd
MW-07 (pdb 40 ft)	6.2	5.3	nd	nd	8.2	8.8	38.5	43.3
MW-07 (pdb 49 ft)	5.3	4.7	nd	nd	8.7	13.2	40.1	51.3
173-200 Criteria	0.8		3		No criteria		No criteria	

Notes:

1) "pdb" = passive diffusive bag samples collected at indicated depths below top of well casings.

2) concentrations reported in ug/L

3) "nd" indicates constituent not detected above laboratory reporting limit of 1 ug/L

4) Site-specific cleanup levels and cleanup standards under MTCA have not been developed; Chapter 173-351 WAC criteria shown for reference.

TABLE 5-1

Subsurface Investigation Inventory

Remedial Investigation and Feasibility Study Report

Location ID	Investigation Type	General Location	Install Date	Ground Surface Elevation (ft msl)	TOC Elevation (ft msl)	Boring Depth (ft)	Borehole Diameter (in)	Screen Interval, Top (ft bgs)	Screen Interval, Bottom (ft bgs)	Screen Elevation, Top (ft msl)	Screen Elevation, Bottom (ft msl)	Screen Soil/Material Type	Comments
--- Borings and Monitoring Wells ---													
MW-01	Monitoring Well	UG Closed LF	1990	1275.6	1276.63	190	8	149	167	1128	1110	Basalt gravel & top of white-yellow clay	Active WAC 173-351 Monitoring Well for Closed Landfill.
MW-02	Monitoring Well	DG Active Cells	1990	1196.2	1197.65	142	8	99	119	1097	1077	Clayey sand and gravel	Active WAC 173-351 Monitoring Well for Active Cells.
MW-03	Monitoring Well	DG Closed LF	1990	1154.9	1156.35	107	8	88	98	1067	1057	Black basalt gravel	Active WAC 173-351 Monitoring Well for Closed Landfill.
MW-04	Monitoring Well	DG Closed LF	1990	1154.0	1155.07	103	8	44	64	1110	1090	Gravel	Active WAC 173-351 Monitoring Well for Closed Landfill.
MW-05	Monitoring Well	DG Closed LF	1990	1189.4	1191.16	137	8	70	90	1119	1099	Med-coarse yellow, quartz sand	Active WAC 173-351 Monitoring Well for Closed Landfill.
MW-05A[a]	Monitoring Well	DG Closed LF	1993	1190.1	1191.23	112	8	98	108	1092	1082	Clayey sand	Inactive groundwater monitoring well (used for WL meas.)
MW-06	Monitoring Well	DG Closed LF	1990	1175.4	1176.82	160	8	65	85	1110	1090	Brown clay & silt	Active WAC 173-351 Monitoring Well for Closed Landfill.
MW-07	Monitoring Well	DG Closed LF	1990	1154.6	1155.95	48	8	33	48	1121	1106	Brown clay	Active WAC 173-351 Monitoring Well for Closed Landfill.
MW-08	Monitoring Well	DG; NE of Active Cells	1990	1192.9	1193.77	324	12	287	297	906	896	Fractured basalt	Inactive groundwater monitoring well (used for WL meas.)
MW-08A	Monitoring Well	DG; NE of Active Cells	1990	1192.9	1193.77	324	12	50	60	1143	1133	Sand & Brown clay (dry)	Inactive groundwater monitoring well (used for WL meas.)
MW-09[a]	Monitoring Well	DG Closed LF	1993	1192.3	1193.65	99	8	85	95	1107	1097	Sand	Active WAC 173-351 Monitoring Well for Closed Landfill.
MW-10[a]	Monitoring Well	DG Closed LF	1993	1191.8	1193.22	88	8	75	85	1117	1107	Yellow sand	Active WAC 173-351 Monitoring Well for Closed Landfill.
MW-11[a]	Monitoring Well	UG Closed LF	1993	1279.2	1280.47	170	8	155	165	1124	1114	Unknown (log not available)	Active WAC 173-351 Monitoring Well for Closed Landfill.
MW-12 (B-2)	Monitoring Well	UG Active Cells	3/7/1995	1259.2	1262.34	250	Unknown	145	165	1114	1094	Silty Gravel (GM)	Active WAC 173-351 Monitoring Well for Active Cells.
MW-13 (B-3)	Monitoring Well	XG Active Cells	3/10/1995	1192.5	1195.61	200	Unknown	150	160	1042	1032	Lean clay to clayey gravel	Active WAC 173-351 Monitoring Well for Active Cells.
MW-14S (upper zone)	Monitoring Well	DG; near groundwater seep	3/26/2009	1121.1	1123.30	20	2	10	20	1111	1101	Silty Gravel (GM)	Well completed during April 2009 RI.
MW-14D (lower zone)	Monitoring Well	DG; near groundwater seep	3/25/2009	1121.1	1123.33	79	2	58	71	1063	1050	Fine-med clean, white-yellow quartz sand	Well completed during April 2009 RI.
MW-15	Monitoring Well	DG; north of groundwater seep	3/27/2009	1100.5	1102.71	39	2	7.5	12.5	1093	1088	Sandy-silty Gravel (GW-GM)	Well completed during April 2009 RI.
BOVAY (abandoned)	Monitoring Well	North of Closed LF	Unknown	1163	NA	504	Unknown	476	486	687	677	Porous Basalt	Preliminary hydrogeologic characterization (abandoned)
HCl-1 (abandoned)	Boring	Active Cell Area	4/25/1989	Unknown	NA	150	Unknown	NA	NA	NA	NA	NA	Preliminary hydrogeologic characterization (abandoned)
B-1 (abandoned)	Boring	Active Cell Area	3/27/1995	~1229	NA	275	Unknown	NA	NA	NA	NA	NA	Geotechnical boring (abandoned)
B-4 (abandoned)	Boring	Active Cell Area	3/14/1995	~1190	NA	260	Unknown	NA	NA	NA	NA	NA	Geotechnical boring (abandoned)
-- Landfill Gas Monitoring Probes and Landfill Gas Extraction Wells --													
LGW-01	Gas Extraction Well	Closed LF Interior	11/1/1995	1270	NA	46	26	21	45	1249	1225	Completed in refuse/waste trench	Refuse interval 10-44 ft bgs (34 ft thick)
LGW-02	Gas Extraction Well	Closed LF Interior	11/7/1995	1270	NA	37	24	24	36	1246	1234	Completed in refuse/waste trench	Refuse interval 12-35 ft bgs (23 ft thick)
LGW-03	Gas Extraction Well	Closed LF Interior	11/7/1995	1270	NA	41	24	28	40	1242	1230	Completed in refuse/waste trench	Refuse interval 12-40 ft bgs (28 ft thick)
LGW-04	Gas Extraction Well	Closed LF Interior	11/7/1995	1270	NA	33	26	20	32	1250	1238	Completed in refuse/waste trench	Refuse interval 6-31 ft bgs (25 ft thick)
LGW-05	Gas Extraction Well	Closed LF Interior	11/6/1995	1270	NA	33	26	21	33	1249	1237	Completed in refuse/waste trench	Refuse interval 8-32? ft bgs (>24 ft thick).
LGW-06	Gas Extraction Well	Closed LF Interior	11/8/1995	1270	NA	44	26	30	40	1240	1230	Completed in refuse/waste trench	Refuse interval 10-40 ft bgs (30 ft thick).
LGW-07	Gas Extraction Well	Closed LF Interior	11/2/1995	1270	NA	21	26	14	20	1256	1250	Completed in refuse/waste trench	Refuse interval 7-19 ft bgs (12 ft thick).
LGW-08A/08	Gas Extraction Well	Closed LF Interior	11/8/1995	1270	NA	34	26	21	32	1249	1238	Completed in refuse/waste trench	Refuse interval 7-32 ft bgs (25 ft thick)
LGW-09	Gas Extraction Well	Closed LF Interior	11/1/1995	1270	NA	40	26	27	38	1243	1232	Completed in refuse/waste trench	Refuse interval 8-38 ft bgs (30 ft thick).
GP-LWG-10	Gas Monitoring Probe	Closed LF Interior	4/3/2009	1271.6	NA	75	6	29	69	1243	1203	Completed in refuse/waste trench	Refuse interval 30-71.5 ft bgs (41.5 ft thick)
GP-LWG-11	Gas Monitoring Probe	Closed LF Interior	4/8/2009	1276.1	NA	78	6	27	77	1249	1199	Completed in refuse/waste trench	Refuse interval 25-78+ ft bgs (refusal at 78 ft bgs)
GP-LWG-12 (abandoned)	Abandoned Gas Probe	Closed LF Interior	4/8/2009	1279	NA	28	6	NA	NA	NA	NA	NA	Refuse interval 22-?? ft bgs (borehole abandoned 4/8/2009)
GP-01D	Gas Monitoring Probe	S. of Closed LF	4/24/1995	1270	NA	30	4	26	30	1244	1240	Basalt Gravel	Perimeter gas monitoring probe per Ch. 173-351-200 WAC
GP-01S	Gas Monitoring Probe	S. of Closed LF	4/24/1995	1270	NA	17	4	11	15	1259	1255	Silt	Perimeter gas monitoring probe per Ch. 173-351-200 WAC
GP-02D	Gas Monitoring Probe	S. of Closed LF	4/25/1995	1270	NA	28	4	24	28	1246	1242	Basalt Gravel	Perimeter gas monitoring probe per Ch. 173-351-200 WAC
GP-02S	Gas Monitoring Probe	S. of Closed LF	4/25/1995	1270	NA	15	4	11	15	1259	1255	Silt	Perimeter gas monitoring probe per Ch. 173-351-200 WAC
GP-03D	Gas Monitoring Probe	S. of Closed LF	4/25/1995	1270	NA	20	4	16	20	1254	1250	Silty Sand	Perimeter gas monitoring probe per Ch. 173-351-200 WAC
GP-03S	Gas Monitoring Probe	S. of Closed LF	4/25/1995	1270	NA	10	4	6	10	1264	1260	Sandy Silt	Perimeter gas monitoring probe per Ch. 173-351-200 WAC
GP-04D	Gas Monitoring Probe	S. of Closed LF	4/28/1995	1235	NA	21	4	17	21	1218	1214	Not shown on log	Perimeter gas monitoring probe per Ch. 173-351-200 WAC
GP-04S	Gas Monitoring Probe	S. of Closed LF	4/28/1995	1235	NA	10	4	6	10	1229	1225	Silt	Perimeter gas monitoring probe per Ch. 173-351-200 WAC
GP-05	Gas Monitoring Probe	N. of Closed LF	3/12/2009	1145.7	NA	20	6	4.5	19.5	1141	1126	Silt & silty gravel	Perimeter gas monitoring probe per Ch. 173-351-200 WAC
GP-06	Gas Monitoring Probe	N. of Closed LF	3/11/2009	1160.9	NA	31	6	5	30	1156	1131	Silt & silty gravel	Perimeter gas monitoring probe per Ch. 173-351-200 WAC
GP-07	Gas Monitoring Probe	N. of Closed LF	3/11/2009	1191.6	NA	31	6	5	30	1187	1162	Silty gravel and basalt slump block/rock	Perimeter gas monitoring probe per Ch. 173-351-200 WAC
GP-08	Gas Monitoring Probe	S. of Active Cells	3/16/2009	~1260	NA	79.5	6	9	79	1251	1181	Silty/clayey Gravel	Perimeter gas monitoring probe per Ch. 173-351-200 WAC
GP-09	Gas Monitoring Probe	E. of Active Cells	3/9/2009	~1170	NA	39.5	6	4	39	1166	1131	Silty sand and silty gravel	Perimeter gas monitoring probe per Ch. 173-351-200 WAC
GP-10	Gas Monitoring Probe	N. of Active Cells	3/12/2009	~1195	NA	40	6	4.5	39.5	1191	1156	Mixture of Silt Sand, Silt, and Gravel.	Perimeter gas monitoring probe per Ch. 173-351-200 WAC

Notes:

[a] - Actual boring logs not available - information shown based on available tabulated data.

Site investigation locations shown in Figure 5.2

Boring logs and well/probe completion details (when applicable) provided in Appendix C;

Information tabulated in Table 5-1 based on interpretted information from logs; elevations, depths, and completion detail rounded to nearest foot and is approximated.

UG = Upgradient; XG = cross-gradient; DG = downgradient; LF = landfill; WL = water level.

TABLE 5-2

Hydraulic Properties of Shallow Groundwater Unit

Remedial Investigation and Feasibility Study Report

Well:	**Test Method**[1]	**Saturated Thickness**[2]	**Hydraulic Conductivity**[3]		**Transmissivity**[4]	**Screen Zone/Conditions**[5]	**Generalized Soils Adjacent to Screen Zone**[5]
		(ft)	**(cm/sec)**	**(ft/day)**	**(ft^2/day)**		
MW-01	Slug Test	37	8.85E-05	**0.3**	**9**	Upper zone; first water; unconfined	Clayey GRAVEL with silt
MW-14S	Single Well	11	2.82E-04	**0.8**	**9**		
MW-12	Slug Test	27	3.18E-04	**0.9**	**24**		
MW-13	Slug Test	10	1.31E-02	**37**	**370**		
MW-15	Single Well	4	4.59E-02	**130**	**520**	Upper zone; first water; unconfined	Silty GRAVEL to well graded GRAVEL with silt & sand
MW-04	Slug Test	30	7.20E-02	**204**	**6120**		
MW-09	Slug Test	17	8.28E-02	**235**	**3988**		
MW-14D	Single Well	13	4.24E-01	**1200**	**15600**	Lower zone; semi-confined	Poorly graded SAND, trace fines (relatively clean)

Coluumn Header Notes:

1 Test methods include (1) slug-tests analyzed via Bower & Rice (CH2M HILL, 1995), and (2) single-well specific capacity tests performed during RI in April 2009 (CH2M HILL, 2009).

2 Saturated thickness based on August 2009 water level; unconfined thickness assumes static level to screen bottom; confined thickness assumes screen length.

3 Hydraulic conductivity shown in two typical units; centimeters per second and feet per day (both values are the same).

4 Transmissivity calculated by multiplying thickness (ft) by conductivity (ft/day): $T = K*b = ft^2/d$.

5 Screen zone and hydrologic conditions discussed in Section 5; reference Appendix C for boring log and well completion detail.

TABLE 6-1

Terrestrial Ecological Evaluation Summary

Remedial Investigation and Feasibility Study Report

Exclusion No.	**Exclusion Detail**	**Yes or No?**	**Are Institutional Controls Required?**
1.	Will soil contamination be located at least 6 feet beneath the ground surface and less than 15 feet?	Yes*	Yes
	Will soil contamination be located at least 15 feet beneath the ground surface?	Yes*	No
	Will soil contamination be located below the conditional point of compliance?	Yes	Yes
2.	Will soil contamination be covered by buildings, paved roads, pavement, or other physical barriers that will prevent plants or wildlife from being exposed?	Yes	Yes

* All soil contamination is located at least 6-feet beneath the ground surface, however, most contaminated soils are located deeper than 15-feet.

TABLE 7-1
Feasibility Study - Screening of Remedial Technologies
Remedial Investigation and Feasibility Study Report

	Not Technically Possible at Site	Not Protective of Human Health and	Does Not Comply with Cleanup Regulations	Does Not Comply with Applicable State and	Cost of Treatment Clearly Disproportio	RETAINED for Alternatives
No Additional Action						
Existing Containment						
Institutional Controls and Landfill Cap						**Retained**
Soil, Sediment, Bedrock, and Sludge						
Excavation and Off-Site Disposal or Ex-Situ Treatment						
Off-Site Disposal	**X**				X	-
Biopiles	**X**				X	-
Chemical Extraction	**X**				X	-
Chemical Reduction/Oxidation	**X**				X	-
Composting	**X**				X	-
Dehalogenation	**X**				X	-
Hot Gas Decontamination	**X**				X	-
Incineration	**X**				X	-
Landfarming	**X**				X	-
Open Burn/Open Detonation	**X**				X	-
Pyrolysis	**X**				X	-
Slurry Phase Biological Treatment	**X**				X	-
Separation	**X**				X	-
Soil Washing	**X**				X	-
Solidification/Stabilization	**X**				X	-
Thermal Desorption	**X**				X	-
In-Situ Treatment						
Bioventing	**X**					-
Chemical Oxidation				X		-
Enhanced Bioremediation				X		-
Electrokinetic Separation	**X**	X	X	X		-
Fracturing	**X**	X	X	X		-
Landfill Cap Enhancements/Alternatives		X	X			-
Phytoremediation	**X**	X	X			-
Soil flushing		X		X		-
Soil Vapor Extraction						**Retained**
Solidification/Stabilization	**X**	X	X			-
Thermal Treatment				X		-
Vitrification				X		-
Air Emissions/Soil Gas Treatment						
Vapor Treatment Technologies						
Biofiltration					X	-
HighEnergy Destruction					X	-
Membrane Separation	**X**					-
Oxidation						**Retained**
Scrubbers					X	-
Vapor Phase Carbon Adsorption						**Retained**
Ground Water, Surface Water, and Leachate						
Pump and Treat						
Adsorption/Absorption						**Retained**
Advanced Oxidation Processes					X	-
Air Stripping						**Retained**
Bioreactors						**Retained**
Bioslurping	**X**					-
Constructed Wetlands						**Retained**
Deep Well Injection	**X**			X		-
Dual Phase Extraction	**X**					-
Granulated Activated Carbon/Liquid Phase Carbon Adsorption						**Retained**
Groundwater Pumping						**Retained**
Ion Exchange	**X**					-
Precipitation/Coagulation/Flocculation	**X**					-
Separation					X	-
Sprinkler Irrigation						**Retained**

TABLE 7-1

Feasibility Study - Screening of Remedial Technologies

Remedial Investigation and Feasibility Study Report

	Not Technically Possible at Site	**Not Protective of Human Health and**	**Does Not Comply with Cleanup Regulations**	**Does Not Comply with Applicable State and**	**Cost of Treatment Clearly Disproportio**	**RETAINED for Alternatives**
In-Situ Treatment						
Air Sparging	**X**	X	X			-
Chemical Oxidation		X	X		X	**-**
Enhanced Bioremediation						**Retained**
Hydrofracturing Enhancements	**X**	X	X		X	**-**
In-Well Air Stripping	**X**	X	X			**-**
Passive/Reactive Treatment Walls					X	**-**
Phytoremediation	**X**	X	X			**-**
Physical Barriers	**X**	X	X		X	**-**
Thermal Treatment				X		**-**

Notes:

X = Technology screened from detailed consideration by this criterion

- = Technology is screened from detailed consideration

Retained = Technology retained for detailed consideration

TABLE 7-2

Feasibility Study - General Response Actions for Soil and Groundwater

Remedial Investigation and Feasibility Study Report

Action	Description
General Response Actions for Impacted Soil	
No Action (Institutional and Engineering Controls)	Serves as a baseline comparison option. Assumes no additional engineering technologies are used beyond the existing landfill cap. Also assumes continuation of existing institutional controls, including signage, fencing, natural barriers, and deed restrictions, and provides for routine maintenance of facilities and monitoring.
Treatment	Provides treatment of site soil using treatment systems to reduce source COC concentrations in affected soil.
General Response Actions for Soil Gas	
No Action	Serves as a baseline comparison option. Assumes no treatment technologies are used, and off-gas is released directly into the atmosphere.
Treatment	Provides treatment of off-gas using treatment systems.
General Response Actions for Impacted Groundwater	
No Action	Serves as a baseline comparison option. Assumes site groundwater would be managed under current conditions, and includes evaluation of natural attenuation processes for COCs.
Institutional Controls	Reduces potential for human contact with contaminated groundwater as per above, and may also include limiting local use of groundwater and providing alternative sources to local users.
Engineering Controls	Prevents, retards, or redirects COC migration in groundwater, by way of physical barriers or pumping systems to hydraulically isolate or limit migration of COCs.
Treatment	Treatment of or applications to site groundwater to reduce COC concentrations in groundwater plume.

TABLE 7-3

Feasibility Study - Comparison of Ex-situ Groundwater Treatment Technologies

Remedial Investigation and Feasibility Study Report

	Sorptive Clays	**Air Stripping and Vapor Phase GAC**	**Bioreactors**	**Constructed Wetlands**	**Liquid Phase GAC**	**Sprinkler Irrigation**
Disproportionate Cost Analysis Permanent Solution Ranking[1]	5	1	6	3	2	4
Protectiveness	Medium	High	Low	Medium	High	Medium
Permanence	Medium	High	Low	Medium	HIgh	Medium
Relative Cost[2]	Medium-High	Medium	Medium	Medium-High	Medium-Low	High
Long-Term Effectiveness	Medium	High	Low	Medium	High	Medium
Short-Term Risk Management	High	HIgh	High	Moderate	HIgh	Moderate
Implementability	Medium-High	High	Medium-High	Medium	Medium-High	Low

Notes:

1. Ex-situ groundwater treatment technologies are ranked from most permanent (1) to least permanent (6) in accordance with WAC 173-340-360(e)(ii)(A)

2. Relative cost is given, with "High" indicating least expensive, and "Low" indicating most expensive treatment option

TABLE 7-4

Feasibility Study - Comparison of Proposed Alternatives with MTCA Requirements

Remedial Investigation and Feasibility Study Report

Criteria	**Alternative 1** **No Additional Action**	**Alternative 2** **Source Removal, Institutional Controls, and Containment**	**Alternative 3** **Groundwater Control and Treatment, Institutional Controls, and Containment**
Threshold Criteria			
Protect Human Health and the Environment	YES	YES	YES
Comply with Cleanup Standards and ARARs	YES	YES	YES
Provide for Compliance Monitoring	YES	YES	YES
Other Requirements			
Disproportionate Cost Analysis Permant Solution Ranking	Low	High	Medium
Protectiveness	Medium	High	Medium-High
Permanence	Low	High	Low
Pilot Test Cost	N/A	$135,000	$236,000
Full Scale Cost	N/A	$838,000	$1,763,000
Anuual O/M & Monitoring Cost	$90,000	$60,000	$98,000
Long-Term Effectiveness	Low-Medium	Medium-High	Medium
Short-Term Risk Management	High	Medium-High	Medium-High
Implementability	High	Medium-High	Low-Medium
Considers Public Concerns	YES	YES	YES
Reasonable Restoration Time Frame	NO (>30 years)	YES (10-20 years)	NO (>30 years)

Notes:

1. Costs shown assume Disproportionate Cost Analysis per MTCA 173-340-360.
2. Reference Table 7-5 and Appendix M for costing assumption detail.

TABLE 7-5

Feasibility Study - Summary of Disproportionate Cost Analysis Assumptions per WAC 173-340-360.
Remedial Investigation and Feasibility Study Report

Description	Cost Type	Cost Frequency	Subtotal Costs ($)	Cost Type	Total Cost ($)	Comments:
Interim-Action #1:						
Supplemental Remedial Investigation: characterize the extent of groundwater contamination in areas further downgradient from landfill.	Capital Improvements	Once	$89,000	Construction	**$123,000**	Supplemental RI performed to assess extent of groundwater contamination, assess human health concerns, and supports any alternative selected. Assumes 4 new monitoring wells in areas downgradient in preferential flow zone. Includes 1 round of water quality testing and data summary report.
			$34,000	Engineering (design, well oversight, data report)		
Alternative 1: No Additional Action						
No Additional Action: monitoring and institutional controls	Operation, Maintenance, Monitoring	Annually	$69,000	County O&M	**$90,000**	Assumes annual groundwater and landfill gas monitoring per Ch. 173-351 WAC, routine operation & maintenance, and institutional controls performed by County.
			$21,000	Engineering (reporting)		
Alternative 2: Source Removal & Treatment, Institutional Controls, Containment						
Interim-Action #2: Landfill Gas Extraction Pilot-Test: assess landfill gas extraction performance via existing system in support of Alternative 2 as preferred long-term cleanup action and to support long-term treatement design.	Capital Improvements	Once	$60,000	Construction	$135,000	Assumes a short-duration (6-8 week) pilot study from existing landfill gas system. Existing system includes 9 interior landfill gas wells as shown in Figure 2-3 (LFG-1 through LFG-9). Pilot-study assumes landfill gas is vented directly to atmosphere without treatment; long-term system includes landfill gas treatment.
			$75,000	Engineering (design & performance monitoring)		
Long-Term Landfill Gas Extraction & Treatment System: installation of supplemetnal interior and perimeter landfill gas extraction wells and construction of treatment system.	Capital Improvements	Once	$284,000	Construction (installation of supplemental landfill gas wells)	$838,000	Long-term landfill gas treatement system cost estimate assumes supplemental interior landfill gas wells are needed to compliment and optimize the existing extraction well network. Supplemental interior landfill gas extraction well costs assume 3 new interior landfill gas wells installed/screened within the waste trench material in western portion of landfill; and, 2 new landfill gas wells installed/screened in native soils below waste trench. Design depths illustrated Appendix M sheets and are based on subsurface conditions discussed in Section 5. Long-term treatment system incudes structure, piping, extraction-system (blower), and granular activated carbon (GAC) unit.
			$286,000	Construction (construction of landfill gas treatment system)		
			$268,000	Engineering (oversight for well install and long-term system design/startup)		
Long-Term Landfill Gas Extraction System Operations & Maintenance:	Operation, Maintenance, Monitoring	Annually	$90,000	Alt 1 - County O&M	$150,000	Assumes annual operation and maintenance of Alternative 2 (long-term landfill gas treatment system) and the baseline Alternative 1 (routine monitoring and institutional controls). Performed by County.
			$60,000	Alt 2 - County O&M		
Alternative 2 Total Cost - Assumes Capital Improvements and 1 Year of O&M for Alt 1 and Alt 2:					**$1,123,000**	
Alternative 3: Groundwater Control & Treatment, Institutional Controls, Containment						
Groundwater Extraction Pilot Test: installation of extraction wells and performing pumping tests to assess site hydraulics for design and optimization of long-term groundwater pump and treatment system.	Capital Improvements	Once	$70,000	Construction (pilot study - install 2 new groundwater extraction wells)	$236,000	Pilot-study cost estimate assumes installation of 2 new extraction wells completed in the preferential flow zones respectively near MW-14D and MW-05/05A. Pilot-study assumes two groundwater pumping tests performed to assess site-hydraulics and evaluate long-term groundwater extraction system design. Cost estimate for pilot-study assumes discharge water will be conveyed to on-site sewer which is routed to the Clarkston wastewater treatment system.
			$68,000	Construction (pilot-study groundwater pumping tests)		
			$98,000	Engineering (oversight for well install and pumping tests)		
Long-Term Groundwater Pump and Treat System: assumes installation of long-term extraction system (new wells) and groundwater pump and treatment system.	Capital Improvements	Once	$638,000	Construction (installation of groundwater extraction wells)	$1,763,000	Long-term groundwater pump & treatment system cost estimate assumes 2 additional high-yield wells (4 total; including 2 installed during pilot-study) and 20 supplemental low-yield extraction wells to hydraulically contain and extract groundwater that would be conveyed to the long-term treatment system. Conceptual-level well locations, spacing, and extraction rate based on conceptual site model (as discussed in Section 5). Long-term groundwater pump & treatment system includes extraction wells, conveyance pipes, treatment structure, air-stripper, and GAC unit designed to treat an estimated 50 to 150 gpm (combined sustained rate) with groundwater concentrations in the range of 5 to 20 ppb (TCE).
			$630,000	Construction (construction of treatment system)		
			$495,000	Engineering (oversight, design, and system startup)		
Long-Term Groundwater Pump and Treat System Operations and Maintenance:	Operation, Maintenance, Monitoring	Annually	$90,000	Alt 1 - County O&M	$188,000	Assumes annual operation and maintenance of Alternative 3 (long-term groundwater pump & treat system) and the baseline Alternative 1 (routine monitoring and institutional controls). Performed by County.
			$98,000	Alt 3 - County O&M		
Alternative 3 Total Cost - Assumes Capital Improvements and 1 Year of O&M for Alt. 1 and Alt. 3:					**$2,187,000**	

Notes:

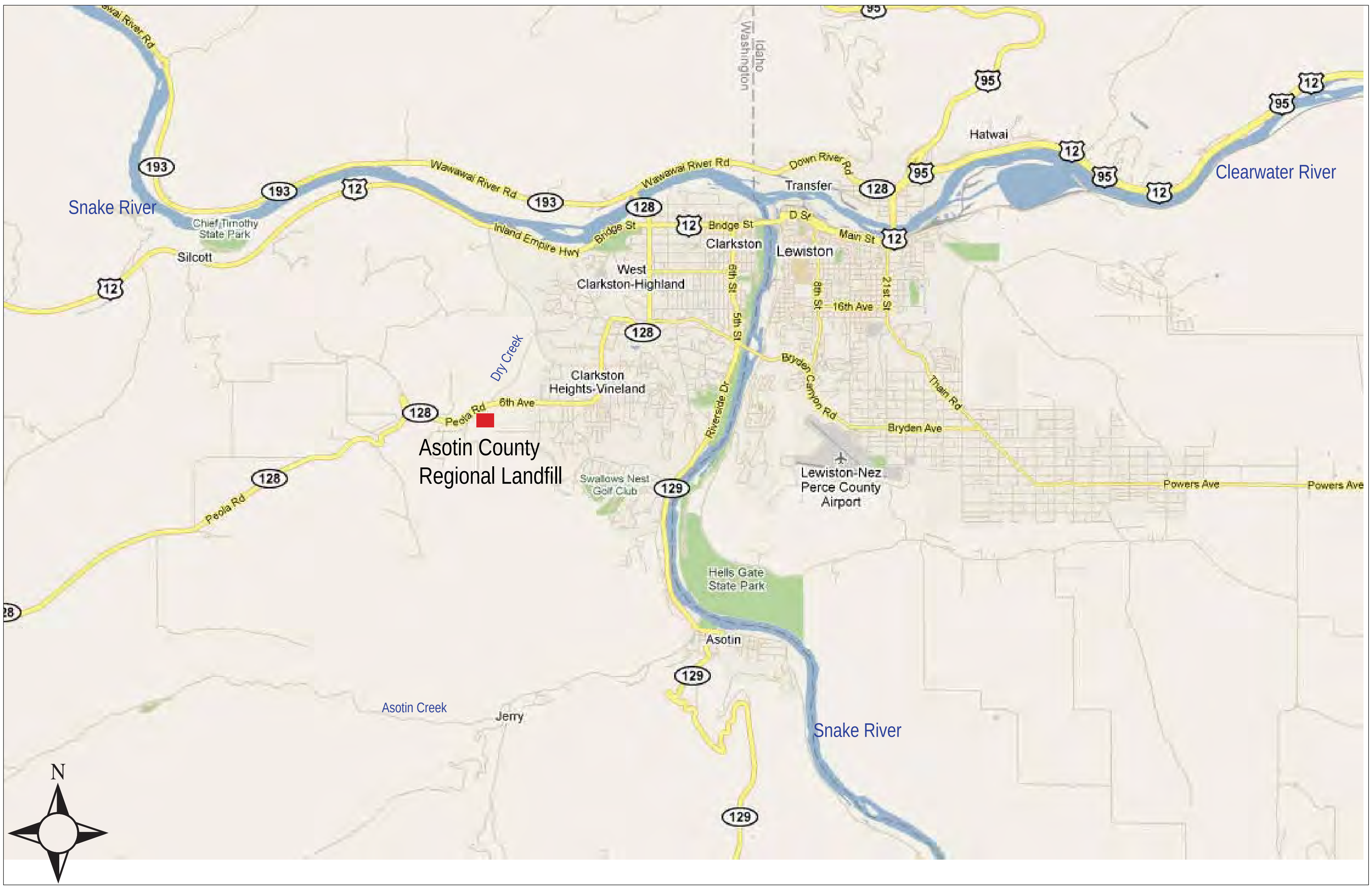
1. See separately in Appendix M the conceptual design sketches and detailed cost assumption worksheets for supporting information.
2. Annual operation & maintenance (O&M) for Alt. 2 includes both Alt. 1 and Alt. 2 costs; similarly the annual O&M for Alt 3 includes the Alt. 1 and Alt 3 costs.
3. Costs and benefits compared are both quantitative and qualitative; cost assumptions also include best use of professional judgment [WAC 173-340-360(3)(e)(ii)(C)]

Figures

VICINITY MAP

Source: US Census Maps
WASHINGTON STATE COUNTIES

SITE LOCATION MAP



0 2 4 MILES

SCALE 1 INCH = 2 MILES

Figure 2-1
Vicinity Map
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

Source: Google Maps

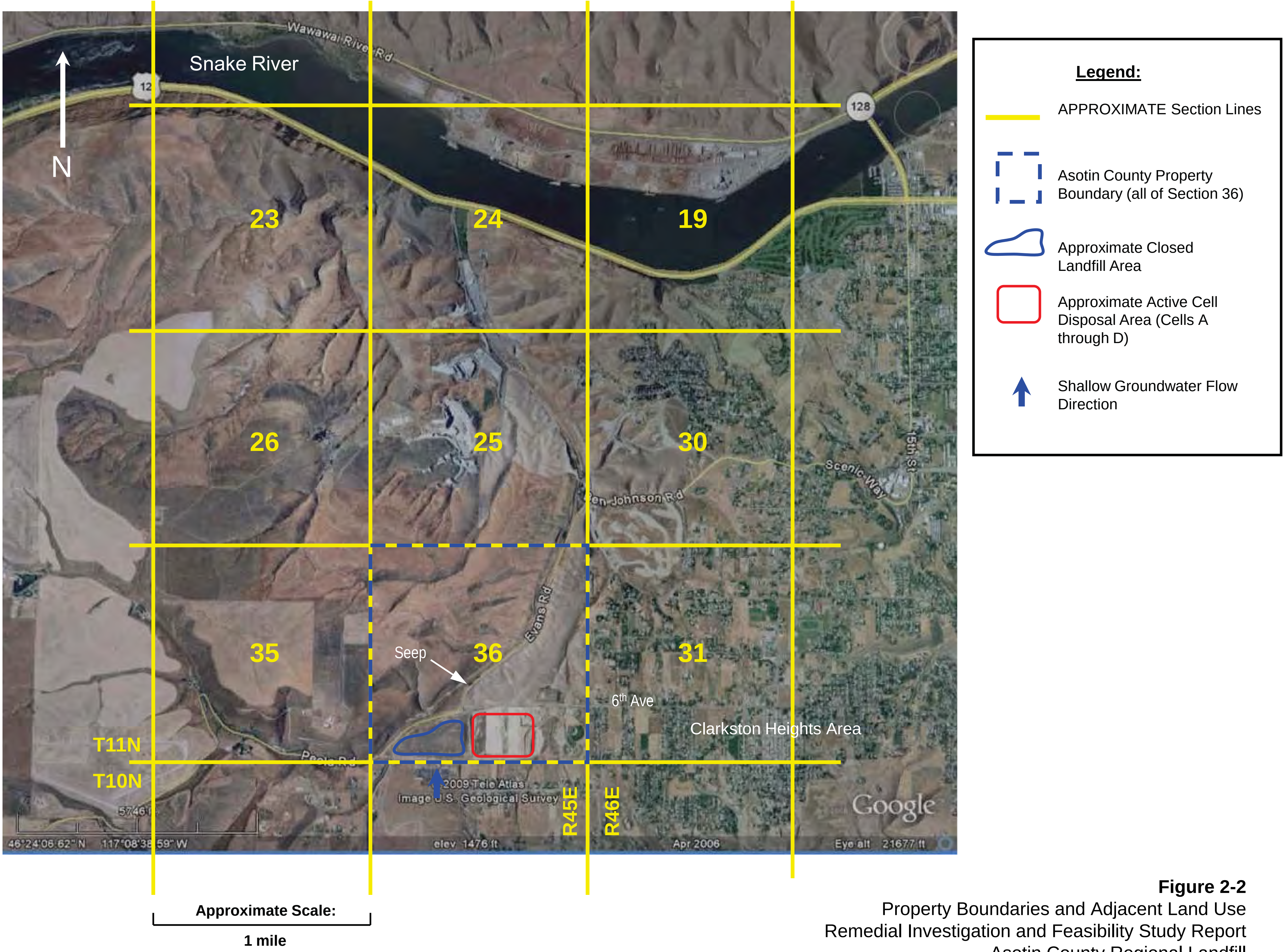


Figure 2-2
Property Boundaries and Adjacent Land Use
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

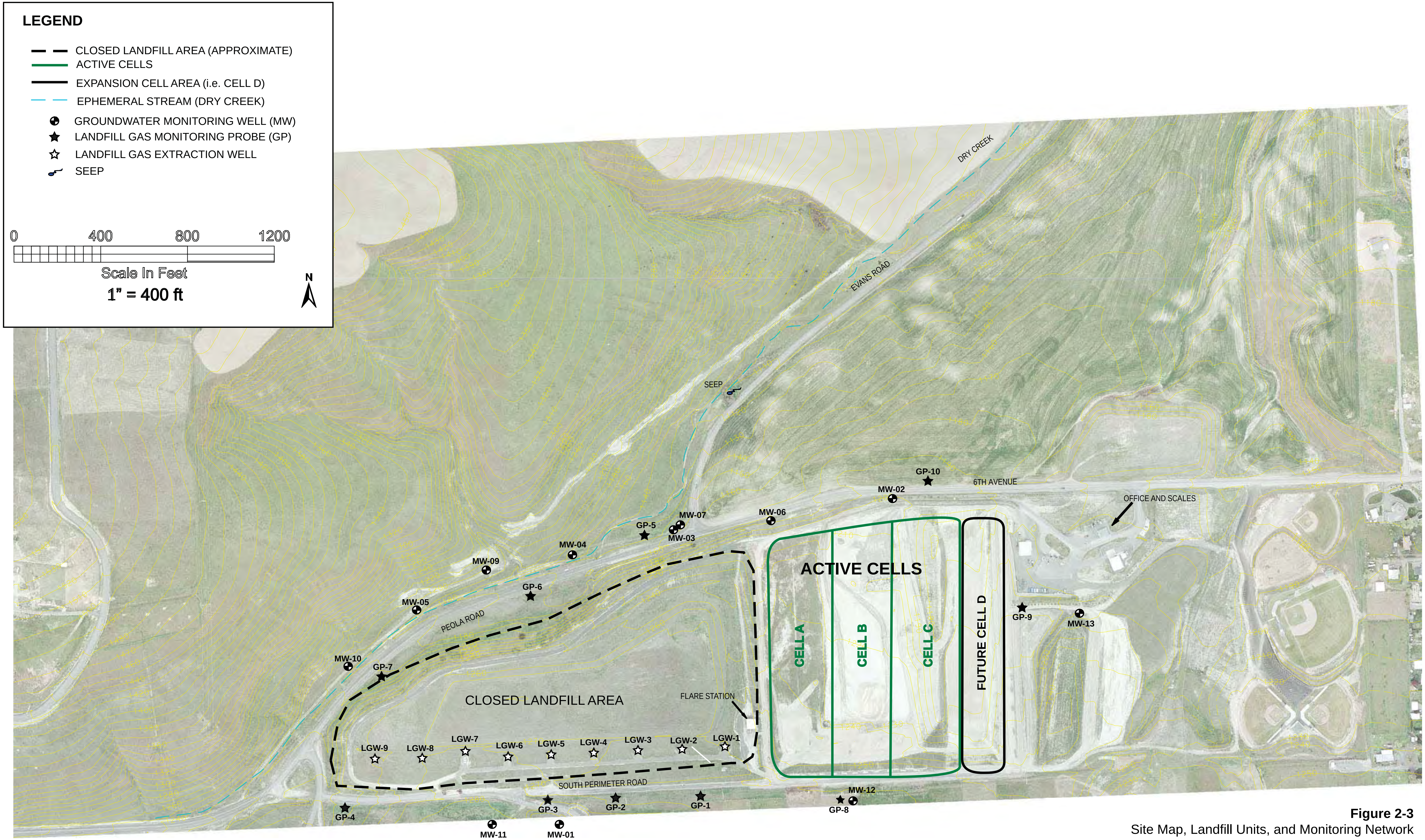


Figure 2-3
Site Map, Landfill Units, and Monitoring Network
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

Note:
Map illustrates active groundwater monitoring network per Chapter 173-351, WAC; and active explosive gasses monitoring network per Chapter 173-351-200, WAC.

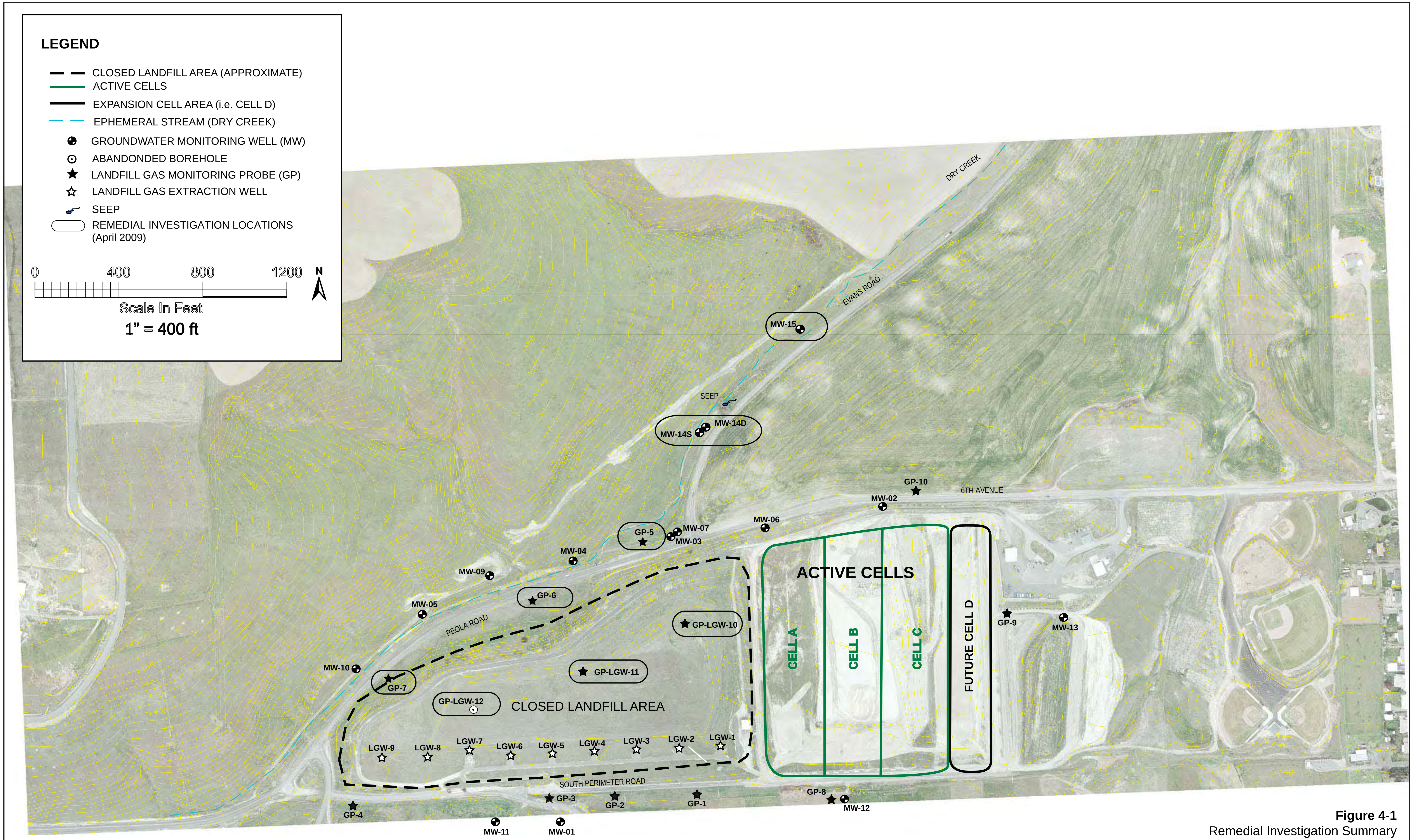
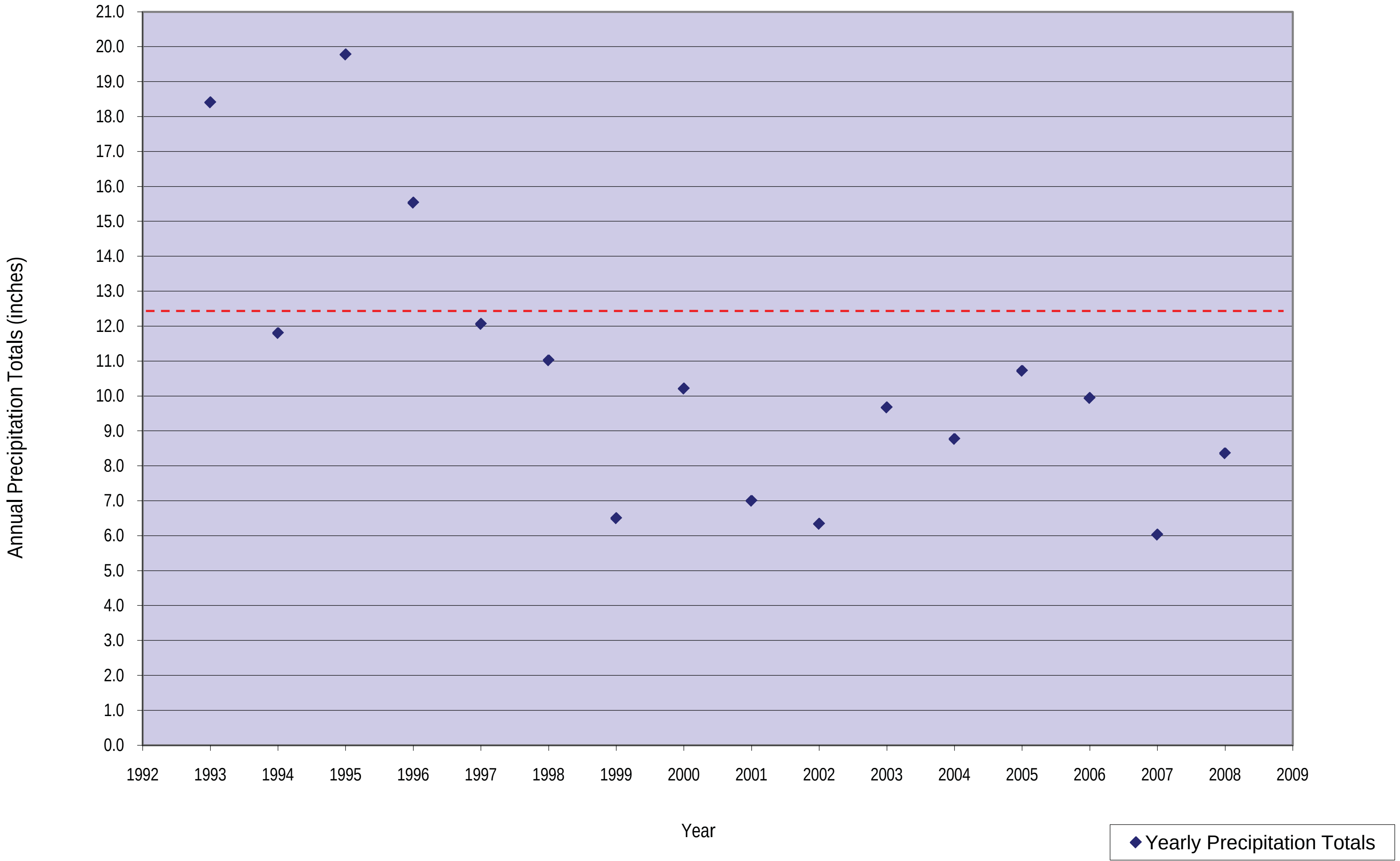


Figure 4-1
Remedial Investigation Summary
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

Lewiston-Clarkston Airport Precipitation Totals for Years 1993-2008



- - - - Average annual precipitation for Lewiston-Clarkston area is 12.5 inches (NWS Lewiston, Idaho).

Figure 5-1
Average Annual Precipitation
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

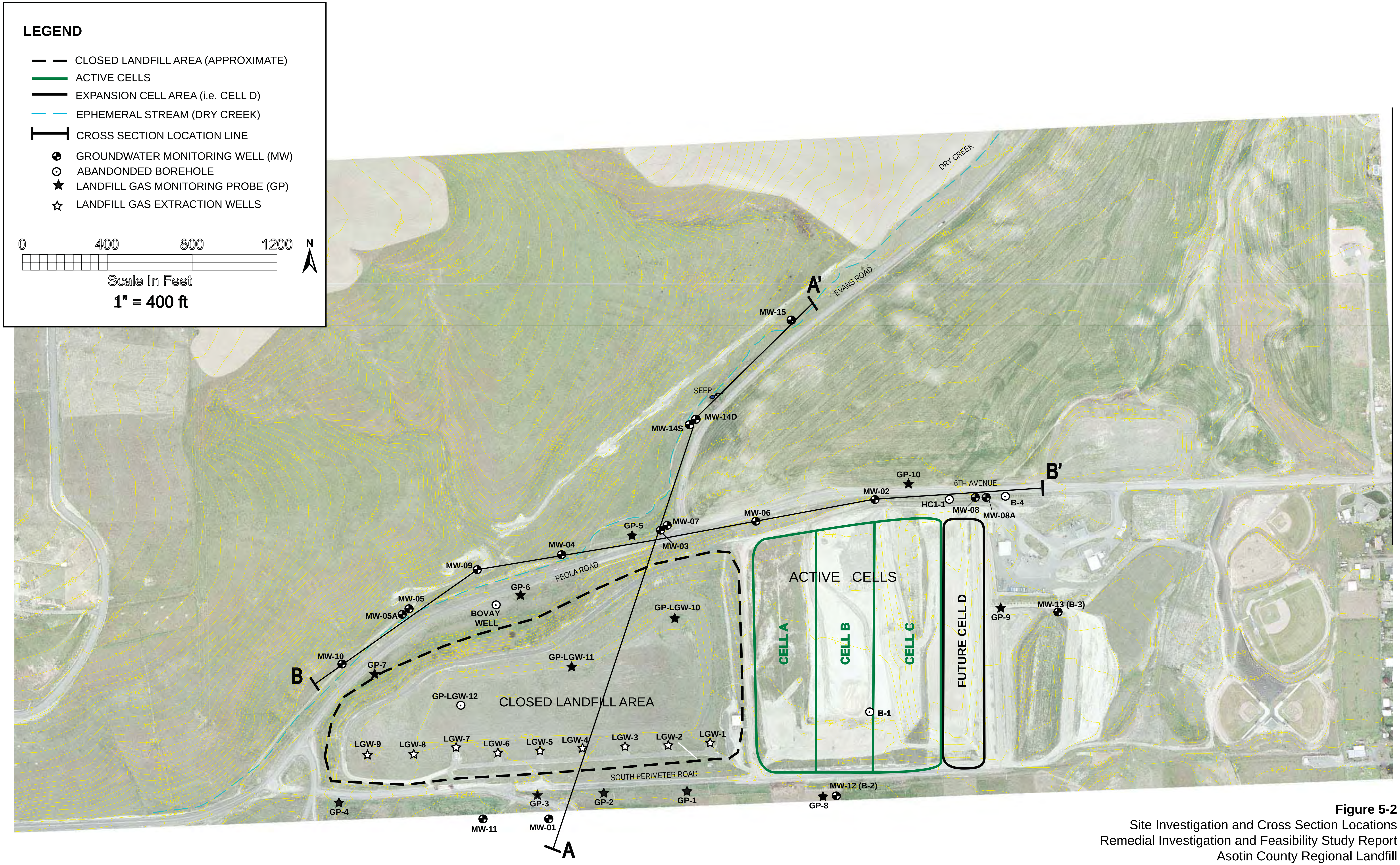
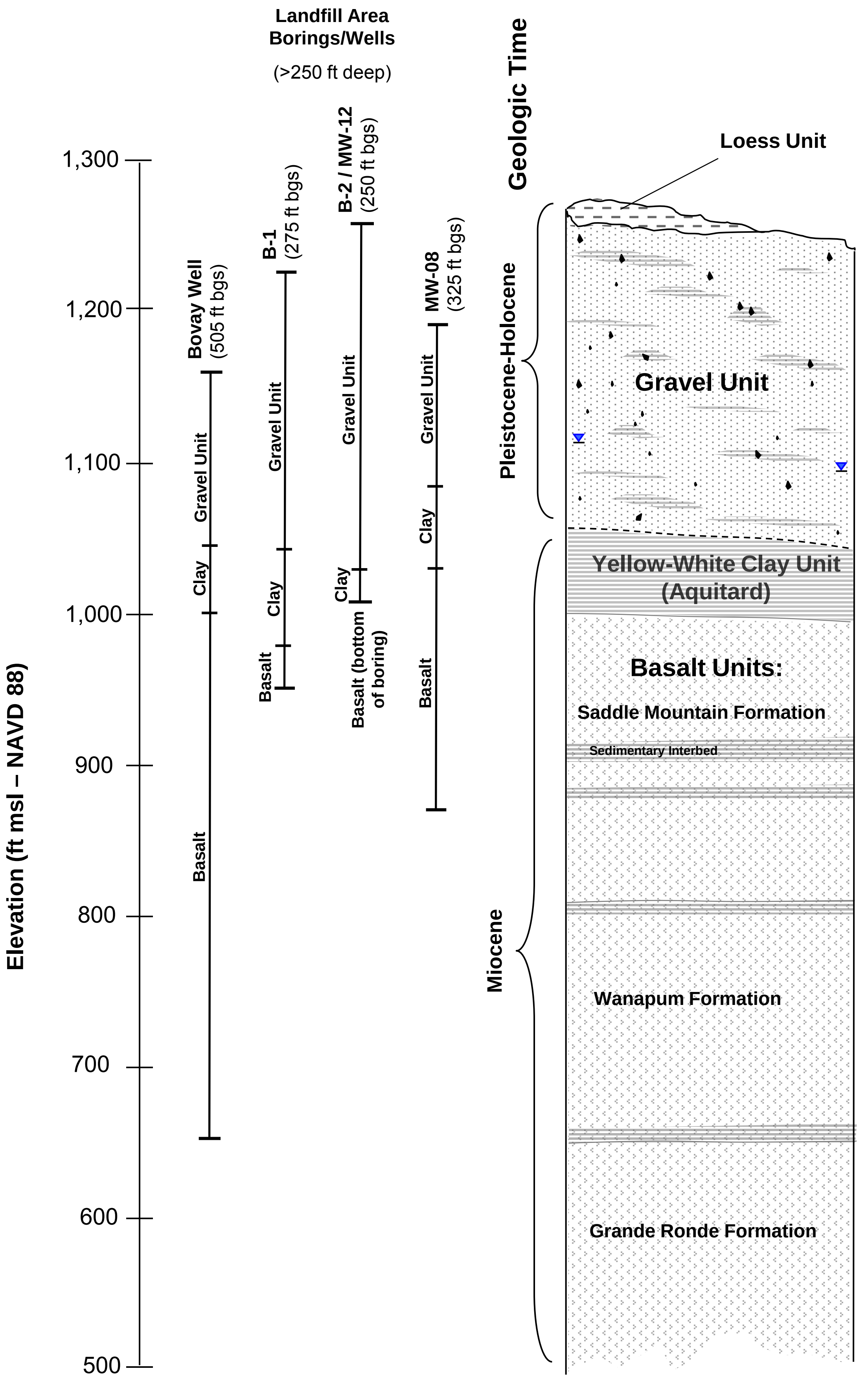


Figure 5-2
Site Investigation and Cross Section Locations
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

Regional Hydrostratigraphic Units:



Regional Hydrostratigraphic Units and Related Site-Specific Observations:

Loess Unit: [Holocene to Pleistocene]

- Depositional environment is glacial loess (CH2M HILL, 1995).
- Unit is comprised of fine sand to silt size particles based on laboratory testing and field classification.
- Unit thickness ranges from 0 to 20 ft thick; unit is absent at many locations due to erosion. Presence/absence of unit is difficult to distinguish from underlying fine-grained zones in upper Gravel Unit. Unit is believed absent within the Dry Creek drainage due to erosion.

Gravel Unit: [Pleistocene]

- Depositional environment is a combination of Clarkston Heights Gravel and uppermost sedimentary interbed of the Saddle Mountains Formation (Howard Consultants, 1990 and 1992; Asotin County, 1994; and CH2M HILL, 1995).
- Unit is characterized as "highly interbedded and interfingered poorly graded gravel and sand with varying amounts of silt and clay" (CH2M HILL, 1995). Materials encompassing almost the entire range of unconsolidated materials in the Unified Soil Classification System (USCS) are interbedded within the Gravel Unit. The Gravel Unit stratigraphy is indicative of an alluvial depositional environment; coarser deposits of gravel and sand are associated with high to medium energy environment, while finer-grained deposits (i.e., silts and clays) are associated with low-energy or "back-water" environments. Color typically logged as grey to tan with dark grey to black basalt gravels.
- Regional unit thickness ranges from 100 to 220 ft thick (Howard Consultants, 1992); local unit thickness observed at in the vicinity of the landfill ranges from 90 to 200 ft thick.
- Unit is saturated at it's base interval immediately overlying the fine-grained clay unit (described below); the potentiometric surface elevation at the base of the gravel unit suggests a saturated thickness of approximately 60 ft; however, saturated intervals (and thus groundwater flow) are believed to occur within preferential flow zones (i.e., coarser materials) within the ~ 60 ft thick sequence.
- Depth to groundwater (or "first-water") at the site ranges from 10 to 160 ft bgs depending upon well location and topography; groundwater elevation at the site ranges from approximately 1128 ft msl in upgradient locations to 1090 ft msl at locations downgradient along Dry Creek.
- Groundwater flow characteristics have been assessed from subsurface soil conditions, groundwater yield during air-rotary drilling, slug tests, groundwater levels/hydraulic gradient, and laboratory test data. Gravel Unit exhibits a wide-range of hydraulic conductivity values given the depositional history and interbedded nature (range of 10-2 to 10-5 cm/sec). Recharge to this unit is inferred to originate from precipitation and surface runoff along Dry Creek.

Clay Unit: [Miocene]

- Depositional environment of clay unit represents a fine-grained sedimentary interbed of the Saddle Mountain Formation (described below).
- Clay unit is characterized by visually distinct yellow-white color with low plasticity and greater than 80 percent "fines" passing No. 200 sieve. Unit is lithologically homogenous and laterally continuous beneath the closed landfill.
- Thickness of unit ranges from approximately 40 to 60 ft in the vicinity of the landfill. Structure of clay unit in the vicinity of the landfill generally slopes to the north at approximately a 2 percent slope due to regional syncline (Howard Consultants, 1990).
- Fine-grained clay unit effectively acts as an aquitard and marks the lower limit of uppermost groundwater (i.e., "first-water") which is the target monitoring zone for the landfill. Given that saturated conditions are observed immediately above the clay unit suggests the Gravel Unit (above) is relatively coarser-grained than the clay unit. Vertical hydraulic conductivity of the clay unit is estimated at $1X10^{-8}$ cm/sec based on laboratory testing results (CH2M HILL, 1995).

Basalt Units: [Miocene]

- Basalt units are identified as belonging to the Yakima Basalt Subgroup of the Columbia River Basalt Group (Salami, 1978; Hooper, 1985). The Yakima Basalt Subgroup has been subdivided (from youngest to oldest) into three formations: Saddle Mountain, Wanapum, and Grande Ronde.
- Sedimentary interbeds are observed in upper sequence in the Saddle Mountain and Wanapum Formations; whereas the Grande Ronde basalt flows were deposited in massive sequence and lack sedimentary interbeds.
- The Yakima Basalt Subgroup is on the order of 2,500 ft thick and underlies the entire Clarkston-Lewiston Basin; thickness of the Grand Ronde is estimated at 1300 ft; and the thickness of the Wanapum and Saddle Mountain Formation is on the order of 400 ft in the vicinity of the landfill. Top elevation of the basalt unit in the vicinity of the landfill is observed in four wells at approximately 1,000 ft msl. Structure of the basalt units slope to north at 2 percent due to regional syncline; east-west axis of syncline found to north of landfill.
- Municipal water supply wells withdraw water from the the Grande Ronde unit; the regional resource is referred to as the *Lewiston Basin Aquifer* (formerly the Russel Aquifer). Grande Ronde basalts are interpreted to have high horizontal permeability and low vertical permeability (IDEQ, 2005). Hydrostratigraphic confining zones found below the Gravel Unit and above the Grande Ronde basalt include the Clay Unit, sedimentary interbeds from and basalt flow interiors of Saddle Mountains and Wanapum Formations. Recharge to the Lewiston Basin Aquifer occurs in the Snake and Clearwater River Canyons (including Asotin and Lapwai Creek) where the structural elevation of the basalt flows outcrop and permit infiltration into the basalt rock; the nearest recharge area is along the Asotin Creek drainage approximately 3 miles southeast of the landfill (up and cross-gradient from the landfill area).

Figure 5-3
Regional Units and Site Characteristics
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

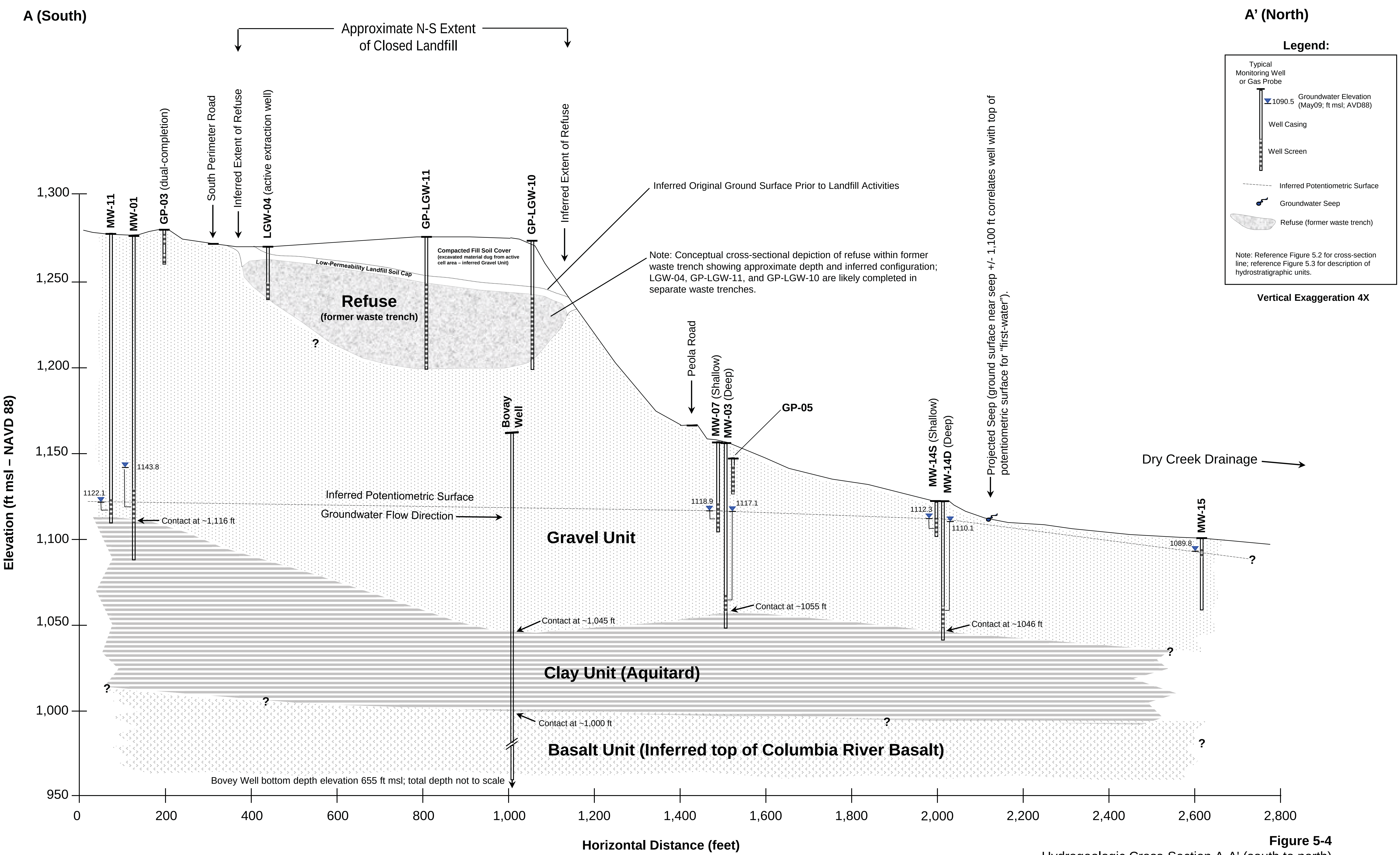


Figure 5-4
Hydrogeologic Cross-Section A-A' (south to north)
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

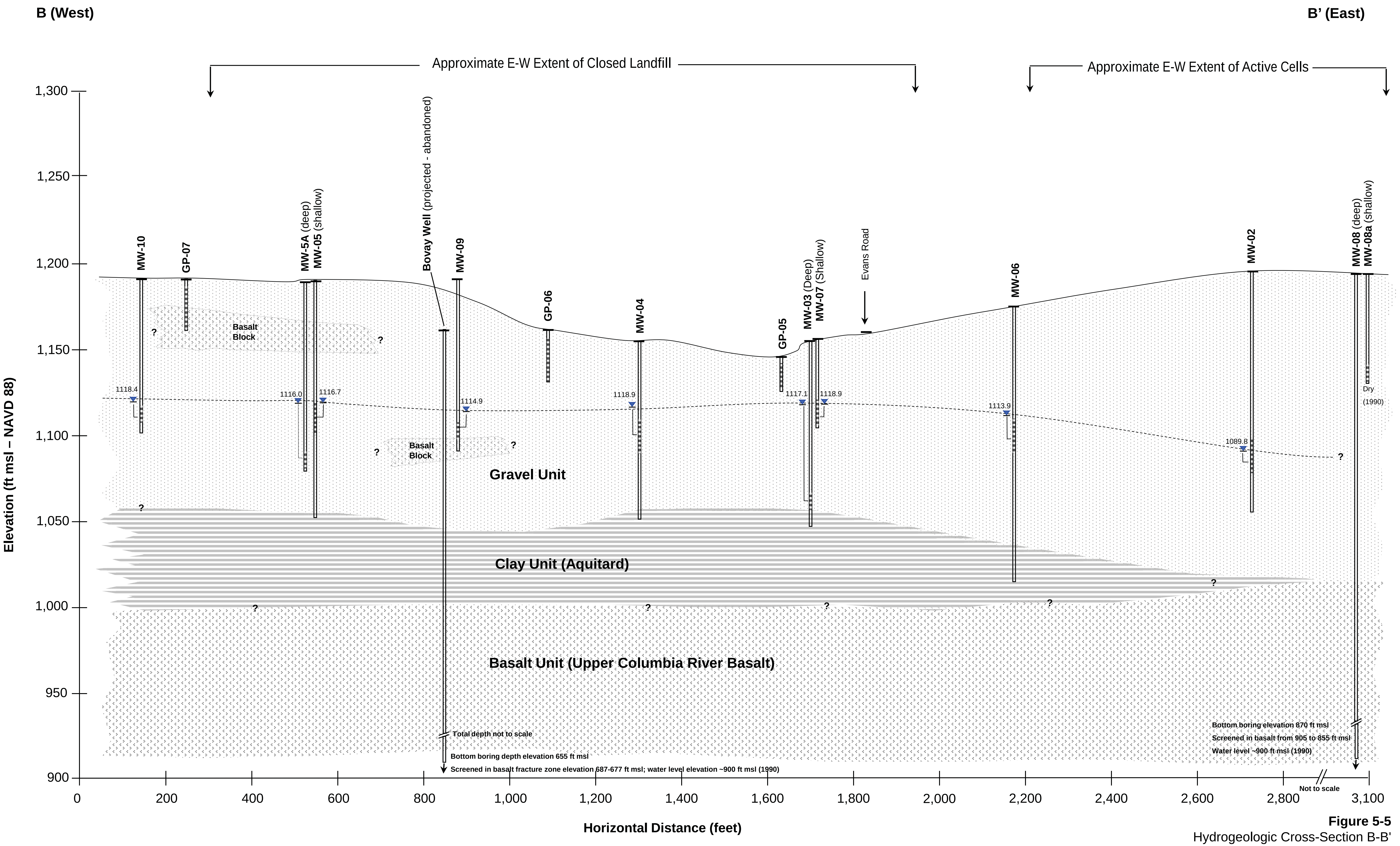


Figure 5-5
Hydrogeologic Cross-Section B-B'
(west to east - downgradient perimeter wells)
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

Note:

See Figure 5.2 for section location; see Figure 5.3 for unit description.

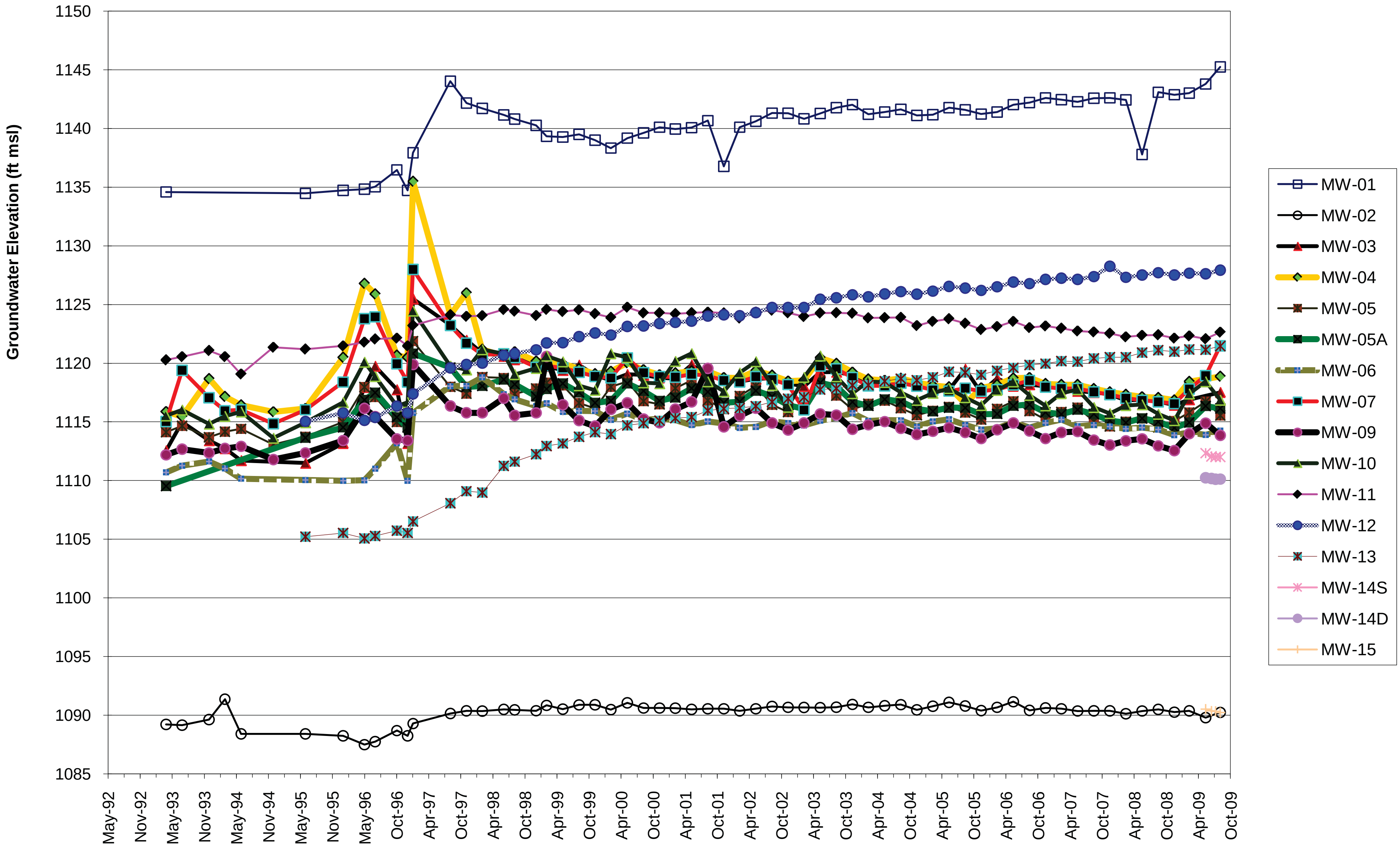


Figure 5-6

Site Hydrograph (all wells - 1993 to 2009)
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

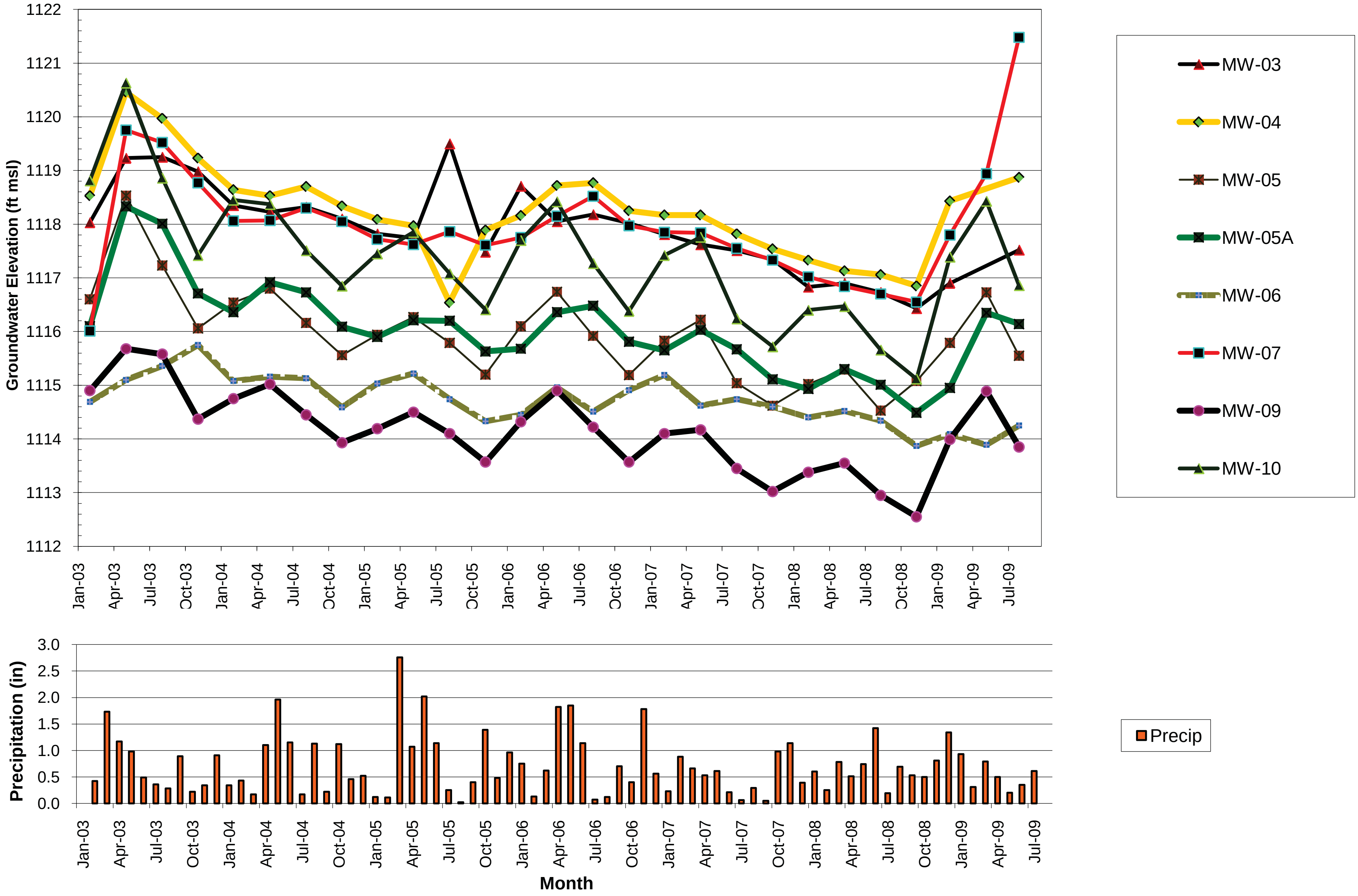


Figure 5-7

Site Hydrograph (select wells - 2003 to 2009)

Remedial Investigation and Feasibility Study Report

Asotin County Regional Landfill

CH2MHILL

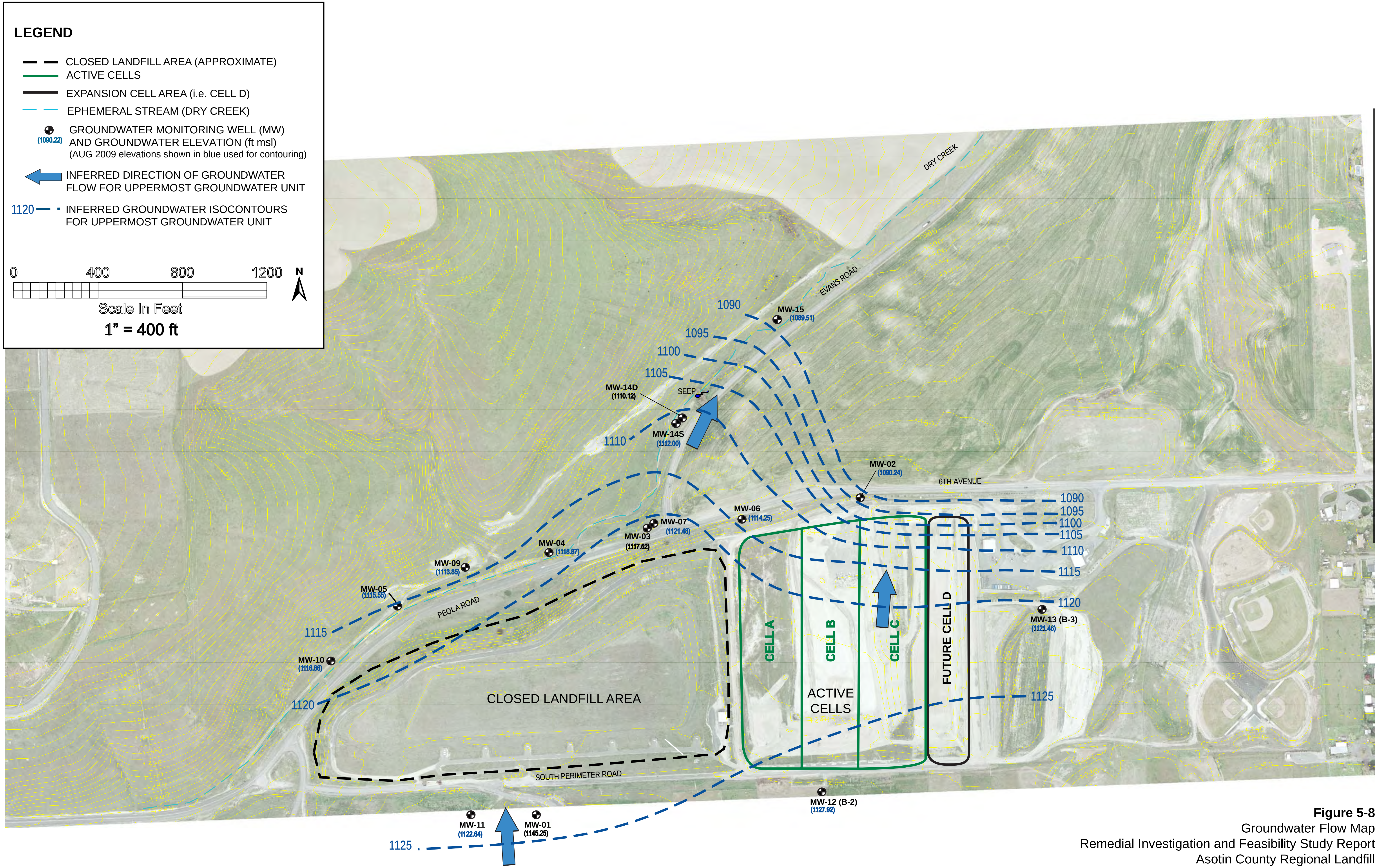


Figure 5-8
Groundwater Flow Map
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

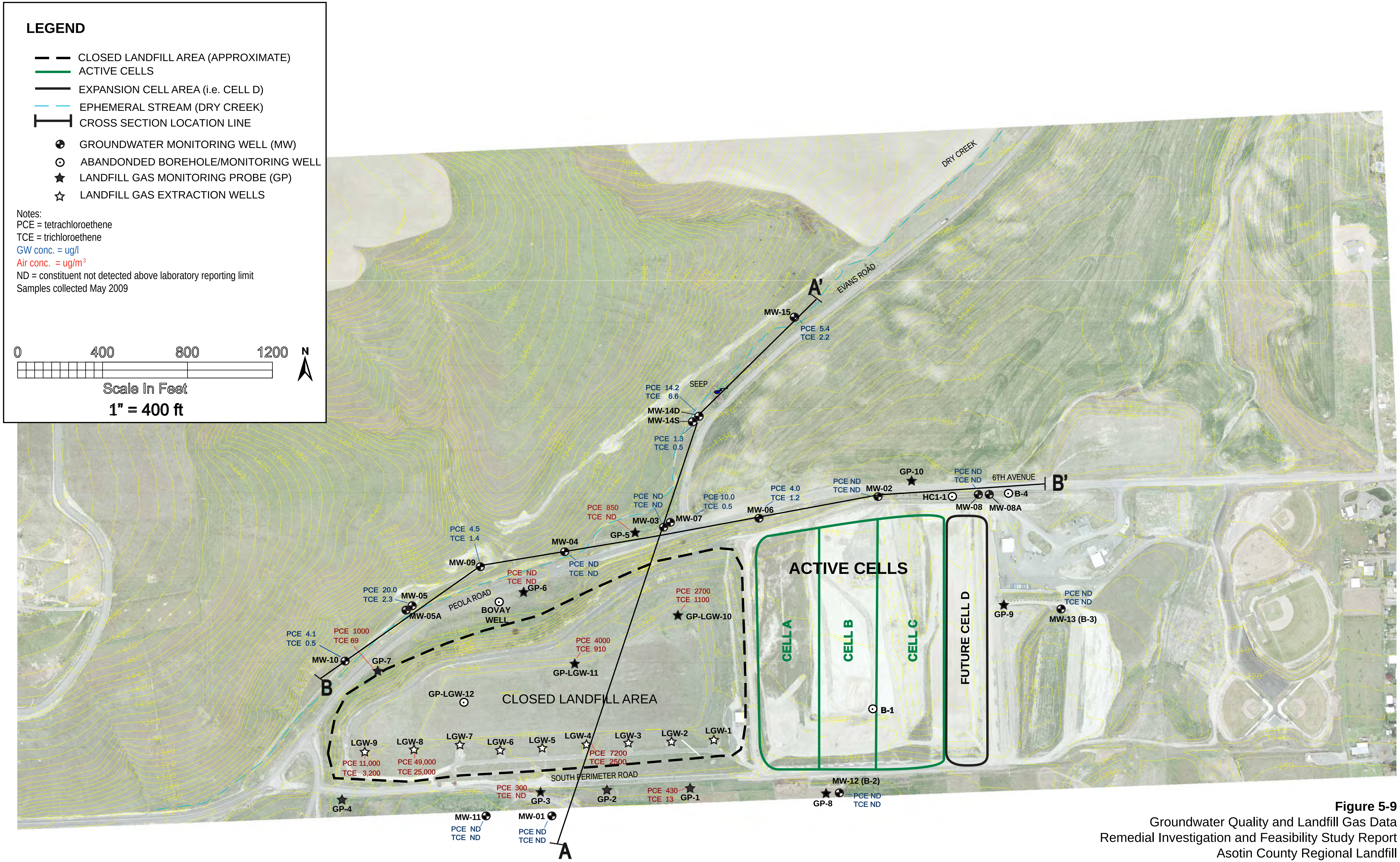


Figure 5-9
Groundwater Quality and Landfill Gas Data
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

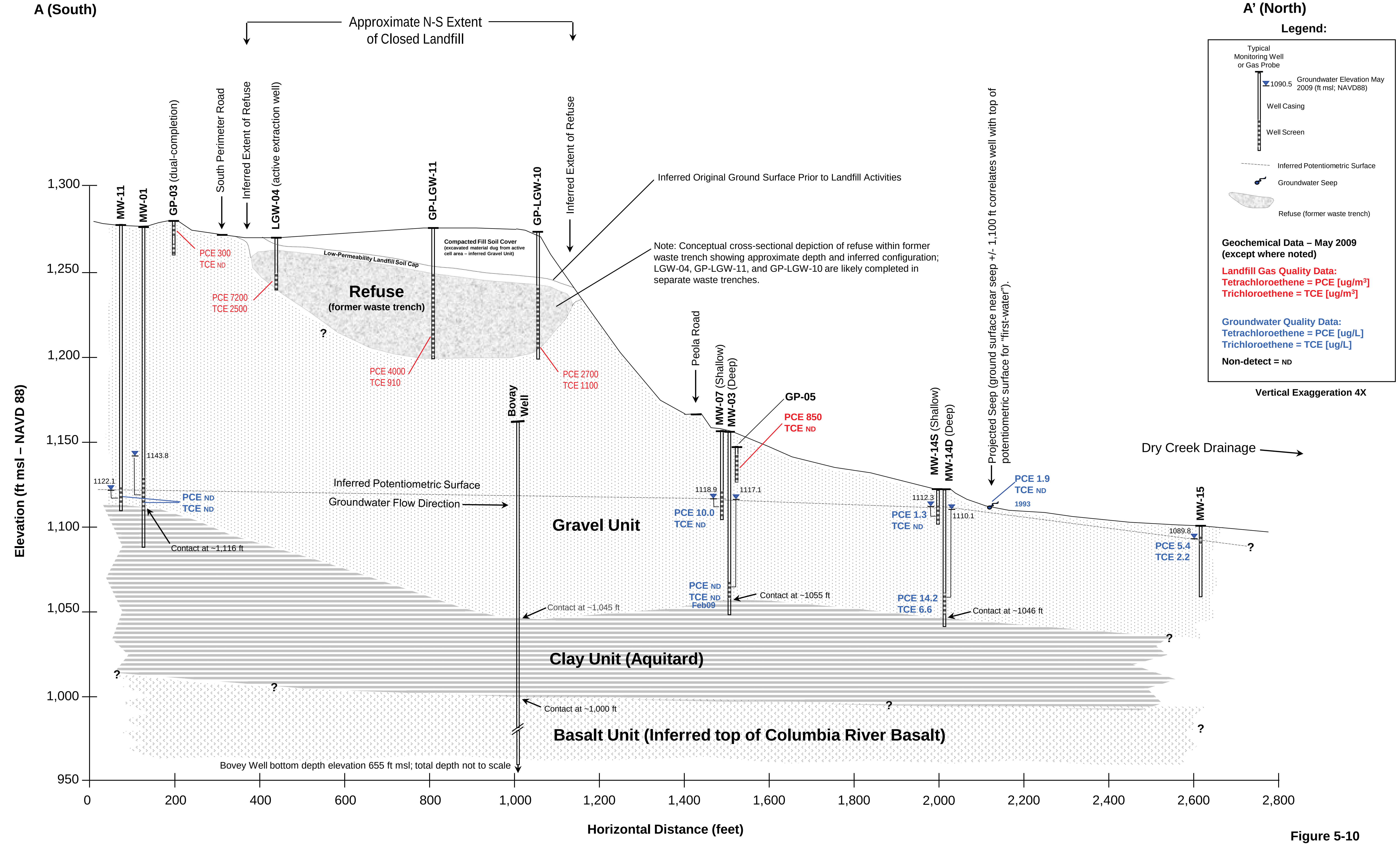


Figure 5-10
Groundwater and Landfill Gas Analytical Results
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

NOTE:
Reference Figure 5.2 for section location; reference Figure 5.3 for description of hydrostratigraphic units.

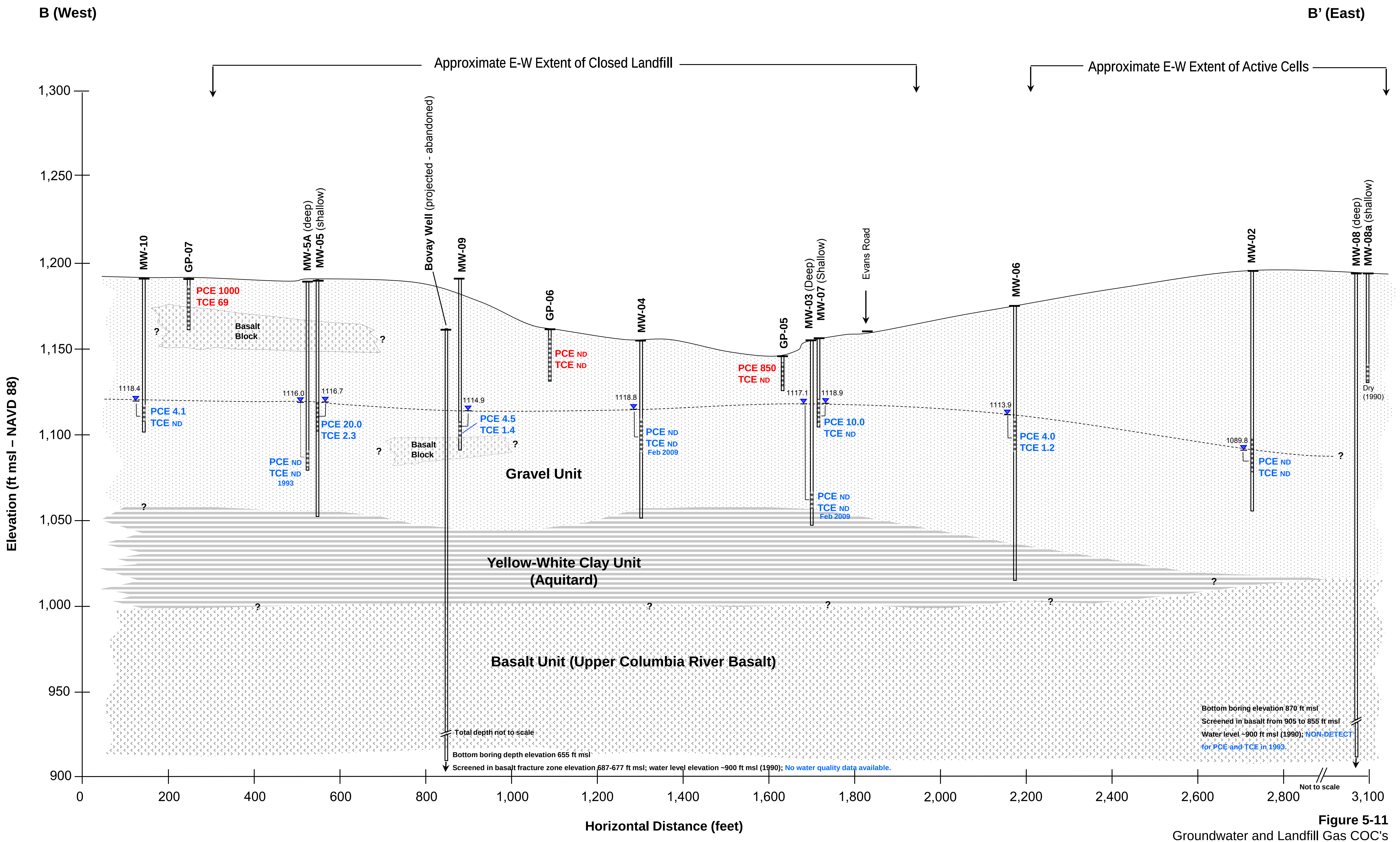
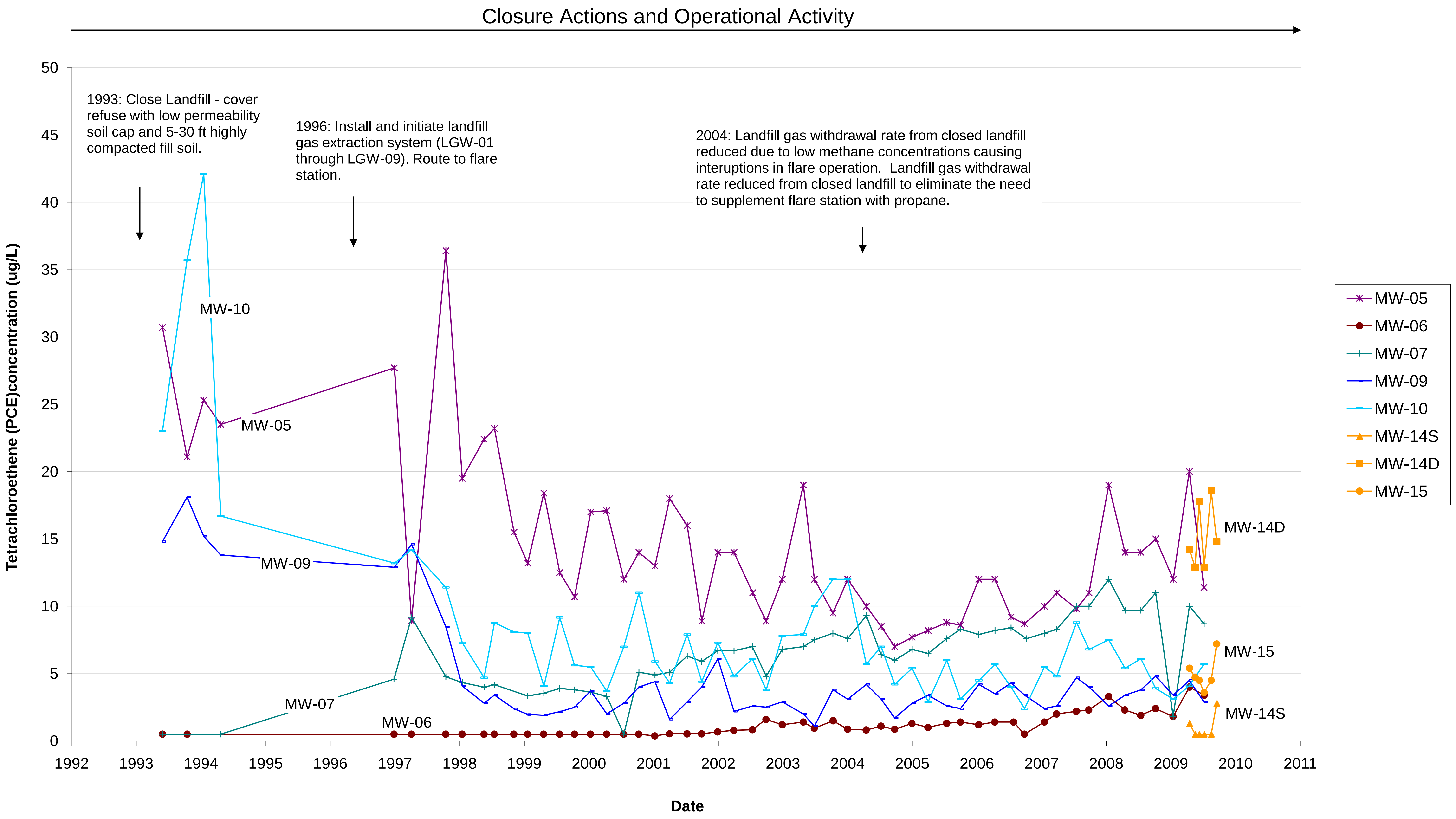


Figure 5-11
Groundwater and Landfill Gas COC's
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

NOTE:
Reference Figure 5.2 for section location; reference Figure 5.3 for description of hydrostratigraphic units.
Analytical data represents May 2009 data except where noted.



Closure Actions and Operational Activity

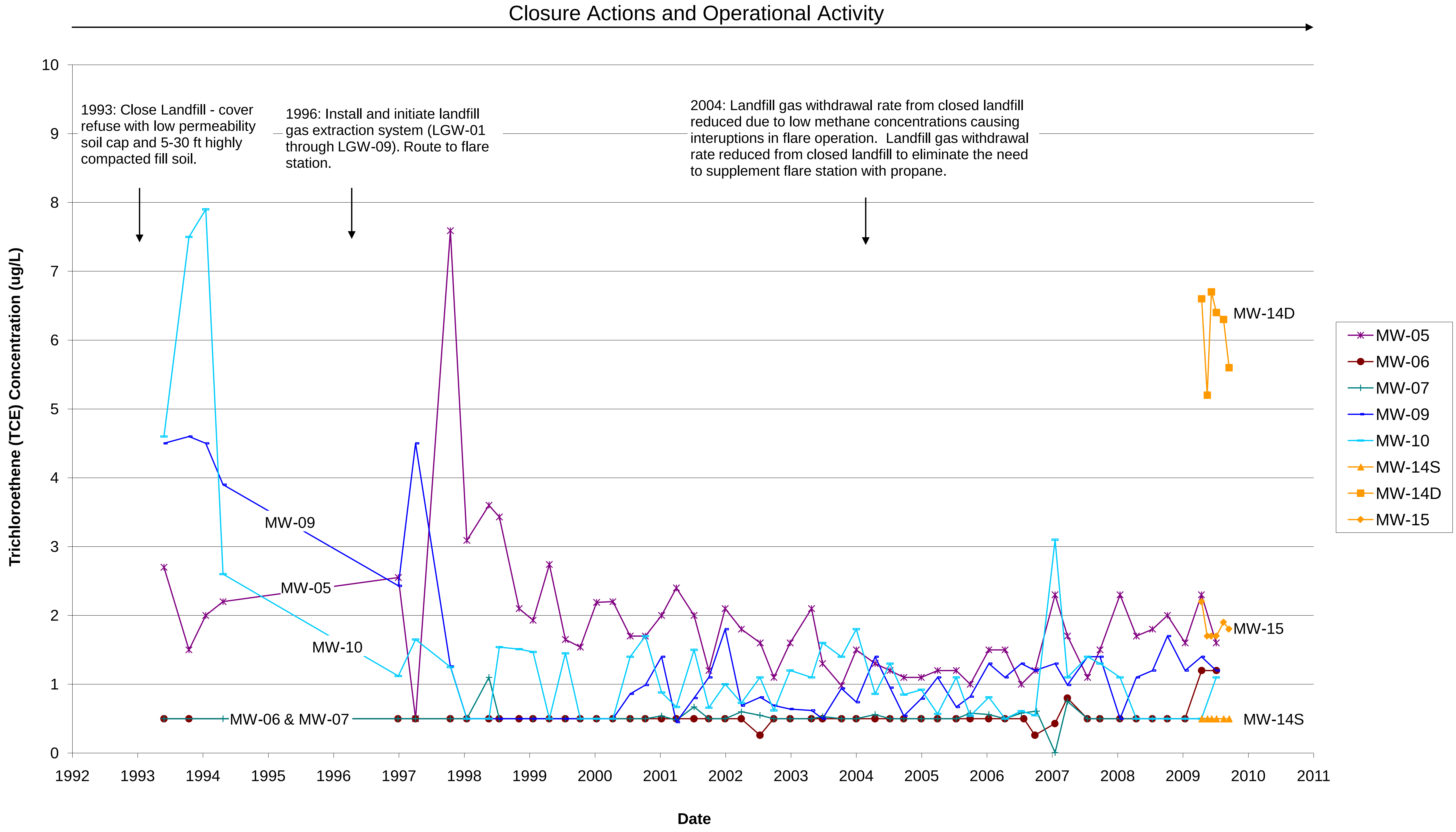
1993: Close Landfill - cover refuse with low permeability soil cap and 5-30 ft highly compacted fill soil.

1996: Install and initiate landfill gas extraction system (LGW-01 through LGW-09). Route to flare station.

2004: Landfill gas withdrawal rate from closed landfill reduced due to low methane concentrations causing interuptions in flare operation. Landfill gas withdrawal rate reduced from closed landfill to eliminate the need to supplement flare station with propane.

Notes:
"U" values (non-detect) ploted as 1/2 the reporting limit
"J" values (detections below reporting limit) plotted as reported

Figure 5-12
Tetrachloroethene (PCE) Concentrations in Groundwater
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill



Notes:
"U" values (non-detect) ploted as 1/2 the reporting limit
"J" values (detections below reporting limit) plotted as reported

Figure 5-13
Trichloroethene (TCE) Concentrations in Groundwater
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

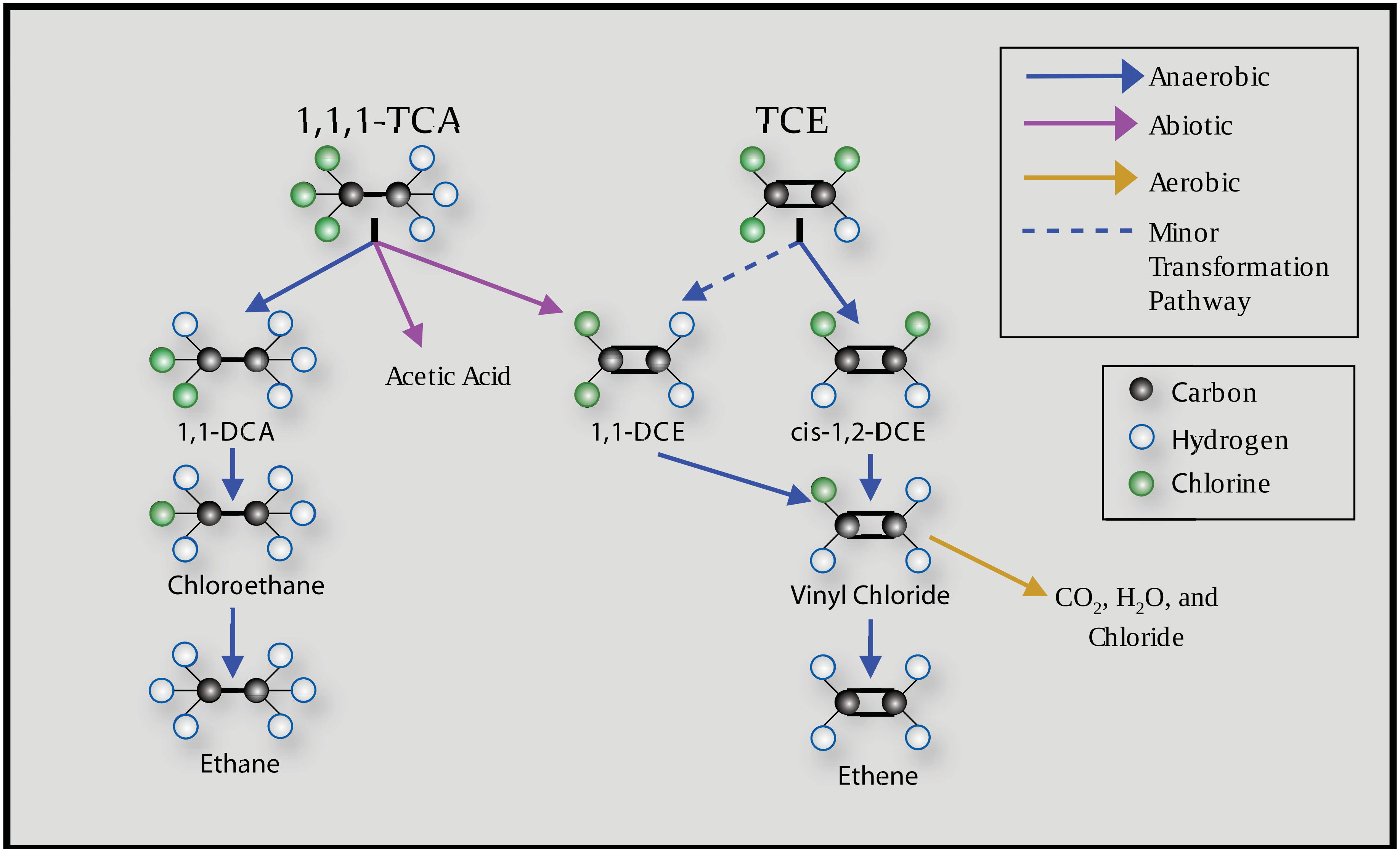


Figure 5-14
Degradation Process of PCE and TCE
Remedial Investigation and Feasibility Study Report
Asotin County Regional Landfill

SOURCE: Honeywell

A - 1 **Phase I Site Inspection Letter from Ecology, 1987**
A - 2 **Phase I Site Inspection Report, Asotin County Regional Landfill (Ecology, 1988)**
A - 3 **Hazard Site Ranking Letter from Ecology, 1991**
A - 4 **Revised Ranking of Asotin County Landfill Letter from Ecology, 1994**
A - 5 **Letter and Stipulated Agreed Order by Ecology, 1994**
A - 6 **Final Letter on Status of Asotin County Landfill with Agreed Order, from Ecology, 1996**
A - 7 **Ecology Letter to Health District and Asotin County, RE: Regulatory Requirements, 2007**
A - 8 **Ecology Letter to Health District, RE: Assessment Monitoring at Asotin County Landfill, 2008**
A - 9 **Asotin County Letter to Ecology, RE: MTCA Cleanup Letter of Intent, 2008**
A - 10 **Memorandum to Ecology, Asotin County Regional Landfill, Remedial Investigation Workplan (CH2M HILL, 2008)**
A - 11 **Ecology Letter to Asotin County, Acknowledgement MTCA Cleanup Action, 2009**

Appendix A
Documentation Related to Cleanup Actions for Closed Landfill

A - 1

Phase One Site Inspection Letter from Ecology, 1987

ANDREA BEATTY RINIKER
Director

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

M E M O R A N D U M

November 20, 1987

TO: Asotin County Landfill Files
FROM: Michael J. Spencer MJS
SUBJECT: Phase I Site Inspection

I conducted a PA/SI Phase I Site Inspection (SI) at the Asotin County Landfill site in Clarkston during the afternoon of October 23, 1987.

I met with Eric Berger, Public Works Director/County Engineer, and Steve Becker at the City Hall at 14:30. I went over the PA for the Asotin County Landfill, stressing that the main concern was the metal sludges the landfill accepted from Omark Inc. (Lewiston, ID) during 1974-1980.

Eric did not know much about this, as he was relatively new with the county. He did say that the landfill was still accepting sludges from Lewiston, Idaho, under the end of this year, but none designated as dangerous or hazardous waste.

We went out on-site at 15:00. The landfill property is leased from Washington Department of Natural Resources (Public School Trust Lands). There was some activity at the fill area, although normally at this time of day no more is accepted and cover is applied. The current operation appeared orderly and sanitary.

The county was excavating a newer area to the northeast of the present operations. Application had been made for a liner variance, as the native soils used there had permeability of 11^{-6} - 10^{-7}. This area would not be used until permit was issued.

The nearest well was at a farm house about one mile to the west. There are several PUD wells upgradient to the site. Eric showed me where a downgradient well would be placed in the near future. A contract was being let for its installation. He was hoping that the PUD wells could be utilized as background wells, as due to depth to water (> 100 feet) well construction would be expensive.

Plans/specifications of monitoring wells will be sent to me shortly. Quite likely no further action will be necessary at this site if the county will be sampling its own wells and working with the county health department.

Weather was sunny, mid-60°s. No wind.

MJS:ra

cc: Bob Kievit, EPA WOO
Carl Nuechterlein, Ecology
Ron Neu, Asotin County Health Department

A - 2

Phase I Site Inspection Report, Asotin County Regional Landfill (Ecology, 1988)

PHASE I SITE INSPECTION REPORT

ASOTIN COUNTY LANDFILL
CLARKSTON, ASOTIN COUNTY, WASHINGTON

WAD980514475

September 1988

Report Prepared by:

Michael J. Spencer
Washington State Department of Ecology
Preliminary Assessment/Site Inspection Unit
Hazardous Waste Investigations and Cleanup Program

SITE NAME/ADDRESS

Asotin County Landfill
Peola Road
Clarkston, Washington 99403

INVESTIGATION PARTICIPANTS

Michael J. Spencer	Environmentalist Washington State Department of Ecology Hazardous Waste Investigations and Cleanup Program M/S PV-11 Olympia, WA 98504-8711 (206) 438-3016
Eric Berger Steve Becker	Asotin County P.O. Box 160 Asotin, WA 99402 (509) 243-4174

PRINCIPAL SITE CONTACT

Eric Berger	Asotin County (509) 243-4174

DATE OF PHASE I SITE INSPECTION

October 23, 1987

INTRODUCTION

The Asotin County Landfill site, Clarkston, Washington (hereinafter referred to as site), has been identified by the U.S. Environmental Protection Agency (EPA) Region X and the Washington State Department of Ecology (Ecology) as requiring additional information to accurately profile the nature and extent of past waste disposal activities.

The Potential Hazardous Waste Site Preliminary Assessment (PA) of November 4, 1984 recommended that a Site Inspection (SI) be performed to determine if any contamination by hazardous constituents has occurred due to past disposal practices on-site.

The Superfund Amendments and Reauthorization Act of 1986 (SARA) maintains the original goal of an SI: the step in the site evaluation process during which field investigators collect the data necessary to support an EPA decision as to whether to place a site on the list of those that pose the most serious threats to public health and the environment and that appear to warrant remedial action (i.e., the National Priorities List (NPL)). SIs will continue to be designed as limited, essentially one-time sampling events; they will not become extent-of-contamination studies or full-scale risk assessments.

The subsequent inspection, carried out under the Superfund Multi-Site Cooperative Agreement PA/SI Program, is described in this report, along with further recommendations, under the following sections:

1.0 Site Owner/Operator
2.0 Site History and Background
3.0 Environmental Setting
    3.1 Climate
    3.2 Geology/Hydrology
    3.3 Topography and Drainage
    3.4 Ground Water and Surface Water Uses
4.0 Ecology Site Inspection
5.0 Results and Discussion
6.0 Conclusions and Recommendations
7.0 References
8.0 Figures and Tables

    Appendix A: Correspondence/Historical Data
    Appendix B: EPA Site Inspection Report Form
    Appendix C: Photographic Documentation

1.0 SITE OWNER/OPERATOR

The site is leased to the Asotin County Public Works Department, as operators, by the Washington Department of Natural Resources in Ellensburg.

2.0 SITE HISTORY/BACKGROUND

The Asotin County Landfill is a municipal landfill which began operations in 1974. The projected ten year volume of solid waste disposal at that time was approximately 430,000 tons. It was believed at that time that there would be no problems concerning leachate due to the low annual rainfall, soil conditions and drainage patterns.

The original topsoil was to be removed from each succeeding trench when it was opened up and either be placed on the preceding trench in the areas that are completed, or stockpiled to be placed when the fill was completed. The depth of final cover was to be approximately three feet, in accordance with an agreement between the Department of Natural Resources (DNR) (landowner) and Asotin County (landfill operator).

Revegetation was to be accomplished by seeding the fill slopes and other completed landfill areas with native grasses or other suitable ground cover. The PA file shows there were concerns by the county sanitarian (Asotin County Health Department) over litter accumulation and inconsistent daily cover application during the period 1977-1979. An October 1978 letter from the health department to the county stated that the (then) present means of septic tank sludge disposal by use of drying beds at the west end of the already completed portion of the site appeared to be working out quite well and should be allowed to continue.

Correspondence between the same parties a year later (September 1979) indicated that the daily cover concern had been somewhat alleviated and that a continuing effort needed to be made to control litter. It was noted at this time that "medically contaminated" wastes from the Tri-State Hospital were being temporarily disposed of at that time at the landfill, as well as "extreme quantities of treatment plant wastes" from the City of Lewiston.

It appeared at that time that pesticide containers may be the biggest contributor of potential hazardous wastes disposed of at the landfill, and a recommendation was made that only triple-rinsed containers be accepted, flattened upon arrival and immediately covered.

In September 1979 the disposal of extremely hazardous waste became prohibited at Washington State local landfills, with the disposal of dangerous waste allowed only with the approval of the appropriate local county health department.

An April 1980 letter from Jim Malm, Ecology Eastern Regional Office (ERO) to Omark Industries, Lewiston, Idaho, requested an evaluation of the heavy metal-containing sludges being disposed of at the landfill by that company, as the responsibility for designation of an extremely hazardous/dangerous waste rested with the generator of that waste. A correspondence to ERO from Omark a month later reported that their sludge passed four of the six leach tests, in accordance with the Ecology method in WAC 173-302 (current in 1980), and only narrowly failed the most severe tests at pH 3. As the pH of their sludge was approximately nine, they requested, and were granted approval by ERO, with concurrence by the local health department, to further dispose of currently accumulated sludges only until November 19, 1980. (Any further sludge disposal would require re-evaluation in relation to regulations promulgated under the Federal Resource Conservation and Recovery Act of 1976 (RCRA). Omark stated in that letter that they were generating approximately 100 cubic yards of sludge annually, with the following heavy metal composition:

Copper	4-9%
Lead	4-5%
Nickel	2-4%
Zinc	0-1%

(Note: A November 1983 correspondence in the PA file between Doug Dunster, Ecology ERO, and Dale Goodreau, North-Central Idaho Health Department, claimed that the dumping of sludges by Omark at the landfill ceased in November 1980 because of RCRA waste designations:

F006 - Wastewater Treatment sludges from electroplating operations

F008 - Plating bath residues from electroplating operations where cyanide is used

F009 - Spent stripping and cleaning bath solutions from above

K044 - Wastewater treatment sludges from the manufacturing and processing of explosives

K046 - Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds

Mr. Goodreau believed the dumping occurred mainly from 1974 or 1975 until November 1980. The most recent figures for annual production was 161,000 pounds (80.5 tons). He stated that the metals content in the sludges were:

Copper	3.2-9%
Lead	4.2-10%
Nickel	1-4.6%
Zinc	1.2-3%

An inspection of the landfill was made by Ecology ERO and EPA in mid-1980, as part of the RCRA Open Dump Inventory (ODI). An evaluation was made of the facility using criteria published by the EPA, September 13, 1979 in the Federal Register, 40 CFR Part 257. Sections 4004 and 1008 of RCRA authorized EPA to publish these criteria, which provide minimal national standards for the protection of health and the environment from adverse effects resulting from inadequate solid waste disposal. Those facilities that are evaluated and found not to comply (by failing to meet any one or more of the criteria) were to be reported to the EPA and annually published in the ODI as required by Section 4005 of RCRA.

The ODI inspection resulted in determinations of compliance with all federal criteria except for a "pending" for ground water. A recommendation was made to the local health department by ERO in late 1980 that appropriate ground water monitoring wells be constructed and a sampling/analysis program be initiated at the landfill by December 31 of the following year.

The publishing of Asotin County Landfill on the federal ODI list lead to inclusion on the EPA Comprehensive Environmental Response and Liability Information System (CERCLIS) list in February 1980. The November 1984 PA recommended an SI to confirm adequate final cover and integrity and review any ground water monitoring data available. This report details the results of the ensuing SI.

3.0 ENVIRONMENTAL SETTING

The landfill is situated about 2.5 miles southwest of the city limits of Clarkston on a graded plateau at 1,200 feet altitude, mean sea level (MSL), amidst rolling hills in a rural situation. This is within the south half of Section 36, Township 11 North, Range 45 East, Willamette Meridian, at a latitude of 46°27' and a longitude of 117°6'. The landfill area is 126.5 acres, of which currently 45 acres are being used.

3.1 Climate

The climate of Asotin County has both marine and continental characteristics. The Rocky Mountains protect the area from many of the cold arctic air masses moving southward, and the Cascade Range serves as a barrier to the easterly movement of moist air from the Pacific Ocean. The range in elevation from less than 2,000 feet in northern and central farming areas to 6,000 feet in the Blue Mountains results in several climatic zones within the county.

Mean annual precipitation is approximately 13 inches, with the two-year 24-hour precipitation 1.4 inches. The rainfall is fairly evenly distributed throughout the year except for somewhat drier months in July and August. Average annual lake evaporation is approximately 34 inches, whereas the mean potential evapotranspiration is around 19 inches.

3.2 Geology/Hydrology

Regional soils are characterized as shallow to deep, sandy loam, loam, and silt loam, underlain by bedrock or sand and gravel at a depth of 20-40 inches, formed in colluvium, alluvium and weathered basalt. These are further specified as "shallow to very deep soils formed in residiums from basalt; in canyons" with the Kuhl-Alpowa association being predominant in breaks along the Snake River. These are well drained, moderately permeable, cobbly silt loams. Large areas of Asotin soils (strongly sloping to very steep, well drained soils underlain by basalt at a depth of 20-40 inches, formed in a thin layer of loess mixed with some volcanic ash and residuum weathered from the underlying basalt) are found on long ridges with broad tops.

Asotin county contracted Bovay Northwest Inc. to provide engineering consulting services regarding preliminary investigations and analyses at the landfill. In May 1987 eight soil borings (14 to 45 feet deep) were made in the eastern area of the site projected for further use, as well as logging (up to 28 feet deep) 550 horizontal feet of existing trenching on the west boundary of this proposed expansion area. No ground water was encountered in either the borings or the trench, with no springs or surface water flow observed during the field work.

It was found that the surface soil consisted of silts and sandy silts (with occasional fine gravel) to a depth of approximately 10 to 16 feet. Portions of the upper 6 feet of silts were of aeolian origin; the remainder of the silts and sandy silts appeared to be water deposited. The upper silts and sandy silts were underlain by intermittent sandy silts with gravel, or well graded gravel with silts and sand, to a depth of approximately 26 feet in the southeast corner of the site and to refusal depths in the remainder of the borings (depths of 14, 16 and 30 feet).

In the southeast corner of the site, the gravels were underlain by fat clays and silts to the depth explored (depths of 40 and 45 feet, or up to 19 feet of clay and silt below the gravels). In the western portion of the site, the gravels were broken by layers of sand, silt, and silty clay, which total to as thick as 11 feet. The gravels were predominantly of basalt origin and were water deposited. The clays were varied in places and also obviously water deposited.

Geologic maps indicate that the entire site is underlain by basalt. Basalt is shown as exposed at the surface in a small area on the southern border of the site; however no such outcrop was observed during the May 1987 investigation and no basalt was encountered in the borings.

Alkali caliche cementation was observed by Bovay Northwest in the logged existing trench starting at a depth of between 8 and 15 feet with the thickness of up to 5 feet. A layer of caliche silt approximately one foot thick capped the caliche layer throughout the trench. This was underlain by caliche gravels and cobbles where gravels were present. The caliche gravels were underlain by highly cemented (non-alkali) gravels up to 7 feet thick. Caliche was not detected in any of the eight soil borings.

The major source of drinking water in Asotin County is ground water from aquifers in the underlying basalt beds. A 1980 study by P.O. Cohen and D. Ralston, University of Idaho, showed that the piezometric surface of the (local) "Rusell" Basalt Aquifer slopes to the north and west, suggesting a discharge site in the Snake River Channel downstream of its confluence with the Clearwater River at Clarkston/Lewiston. It was concluded that aquifer recharge is from upriver areas of the Snake and Clearwater Rivers and not from the southern highlands, where the landfill is situated.

There are several water supply wells for the City of Clarkston within 1.5 miles of the site. These are relatively deep wells (e.g., 1,340 feet, cased to 653 feet, and 1,069 feet deep, cased to 902 feet and screened at 748-768 and 785-815 feet) into basalt, which begins between 28-341 feet depth. A private domestic well about a mile to the southwest (upgradient) is only 205 feet deep, being cased to 39 feet depth, with a static water level at 85 feet below the top of the well. Again, basalt begins at 30 feet or so.

Some of the Lewiston and Clarkston wells (City of Lewiston, Washington Water Power/Asotin County PUD) have been monitored regularly. They show summer seasonal declines in the water level associated with increased water withdrawal for municipal irrigation. Pump tests made on these wells indicated good hydraulic connection of the aquifer to the Snake River, and hydraulic interconnection of several wells.

3.3 Topography and Drainage

The landfill is situated on a graded plateau in an area of rolling hills southwest of Clarkston, at an altitude of 1200 feet MSL. The Snake River lies approximately 2.25 miles to the north, around 700 feet altitude, MSL, a slope of 4.2%. The Snake River is also about 2.45 miles to the east southeast of the site, at a slope of 3.4%.

Dry Creek, shown on the topographic map as an intermittent stream, passes within several hundred feet of the northern (lower) boundary of the site, as it makes its way north to the Snake River; however file records indicate little, indeed if any, water flow in this more of a ditch than a stream. A seep has been observed in this dry creek about 250 feet north of 6th Avenue (Flora Goldstein, Ecology ERO, 9/29/88).

The overlying local top soils, being sands and gravels to 30 feet depth, would be sufficiently permeable to preclude significant amounts of surface water run off, considering both the relatively low mean annual precipitation and two-year 24-hour rainfall.

3.4 Ground Water and Surface Water Uses

Ground water supplies drinking water to a population of approximately 6,700 people from wells within three miles of the site. The nearest well is just over a mile away (upgradient) from the site. The major use of surface water (Snake River) is recreation and some irrigation.

4.0 ECOLOGY SITE INSPECTION

A Phase I SI was conducted at the Asotin County Landfill site in Clarkston during the afternoon of October 23, 1987.

I met with Eric Berger, Public Works Director/County Engineer, and Steve Becker at the City Hall in Asotin at 1430. I went over the PA for the Asotin County Landfill, stressing that the main concern was the metal sludges the landfill accepted from Omark Inc. (Lewiston, ID) during 1974-1980.

Eric did not know much about this, as he was relatively new with the county. He did say that the landfill was still accepting sludges from Lewiston, Idaho, under the end of this year, but none designated as dangerous or hazardous waste.

We went out on-site at 1500. The landfill property is leased from Washington Department of Natural Resources (Public School Trust Lands). There was some activity at the fill area, although normally at this time of day no more is accepted and cover is applied. The current operation appeared orderly and sanitary.

The county was excavating a newer area to the northeast of the present operations. Application had been made for a liner variance, as the native soils used there had a permeability of 10^{-6} - 10^{-7} (cm/sec). This area would not be used until permit was issued.

The nearest well was at a farm house about one mile to the west. There are several PUD wells upgradient to the site. Eric showed me where a downgradient well would be placed in the near future. A contract was being let for its installation. He was hoping that the PUD wells could be utilized as background wells, as due to depth to water (> 100 feet) well construction would be expensive.

Plans/specifications of monitoring wells will be sent to me shortly. Quite likely no further action will be necessary at this site if the county will be sampling its own wells and working with the county health department, and Ecology (both ERO and Solid Waste).

The weather was sunny, mid-60°s. No wind.

5.0 RESULTS AND DISCUSSION

The main emphasis of this SI was to confirm adequate burial of wastes at the landfill and review available ground water monitoring data. The on-site visit noted an apparent vast improvement in landfill management practices during recent years (relative to earlier reports on file) concerning adequate fill/cover and litter control (see photographs, Appendix C). A new area for future use was under development to meet Washington State Minimum Functional Standards for Solid Waste Handling (WAC 173-304-400). A variance had been requested by the county concerning use of local soils with a very low coefficient of permeability as a liner.

As part of the compliance procedure, the county is also in the process of installing monitoring wells as per WAC 173-304-490. Following the October 1987 SI one downgradient monitoring well had been completed (January 1988) by Bovay Northwest, with analytical results for one round of sampling available the following March.

This 4-inch well was rotary drilled to a depth of 504 feet, cased to this depth, and screened at 476-486 feet, where a minor aquifer producing five gallons per minute was encountered. Other very small water flows of two gallons per minute or less were detected at 42 and 310 feet and, according to the consultant's report, were sealed to prevent cascading of the upper flows to the lower level.

Asotin County, following consultations with/recommendations by Ecology ERO, does not consider this to be a satisfactory downgradient monitoring well due to the penetrations through the two shallower aquifers, and also that the casing was of mild steel (Eric Berger, pers. commun., 9/16/88). They have made application to Ecology Solid Waste for a grant to help finance the completion of four monitoring wells appropriate for ensuring compliance. The analytical results for the sample taken during the January 1988 well installation are considered invalid due to improper sample collection/handling techniques.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The SI determined that Asotin County had made commendable progress in landfill management practices at the Asotin County Landfill, relative to file reports for the late 70's early 80's. Landfill cover appeared adequate, with satisfactory site security measures employed.

Concurrent with this SI, an assessment of the landfill was being made by the county's contractors, Bovay Northwest Inc., who concluded in a February 1988 report:

- Soil and hydrogeological investigations have shown the site is suitable for continued development as a landfill.
- The site is adaptable to meet the Washington State Minimum Functional Standards; however certain variances must be requested.
- The site has approximately 90 acres available for expansion. This should serve the community needs for over 20 years.
- Preliminary earthwork investigations indicate an adequate supply of appropriate daily and final cover material on-site.
- Initial analytical results from the deep monitoring well do not indicate any apparent contamination of the ground water by the landfill. (These were discounted by the county for reasons stated in Section 5.0).
- Methane generation is very low.
- Based on a water balance analysis, the active landfill area can be closed with little or no leachate production using a four foot native material cover

Based on the work accomplished to date the contractors stated that Asotin County should proceed with the following items.

Variances

- Apply for a bottom liner variance.
- Investigate further the justification for a cover system variance.
- Apply for a variance to install lysimeters instead of three additional deep wells. (The County's current plans are to install four wells.)

- Secure a permit to utilize the full site. The permit should define new elevations of finished contours.

Other Actions

In conjunction with variance and permit applications, the County should proceed concurrently with the following:

- Institute a program for continued monitoring and testing of ground water quality and gas generation.
- Set up a survey program to control operations.
- Develop an operations plan suitable for presentation to Ecology.
- Prepare a closure plan for Ecology.

Based on the above considerations for future on-site monitoring activities, and known hydrogeological/climatic factors, it is recommended that PA/SI pursue no further action at this site and that it be removed from the EPA CERCLIS list of active sites.

7.0 REFERENCES

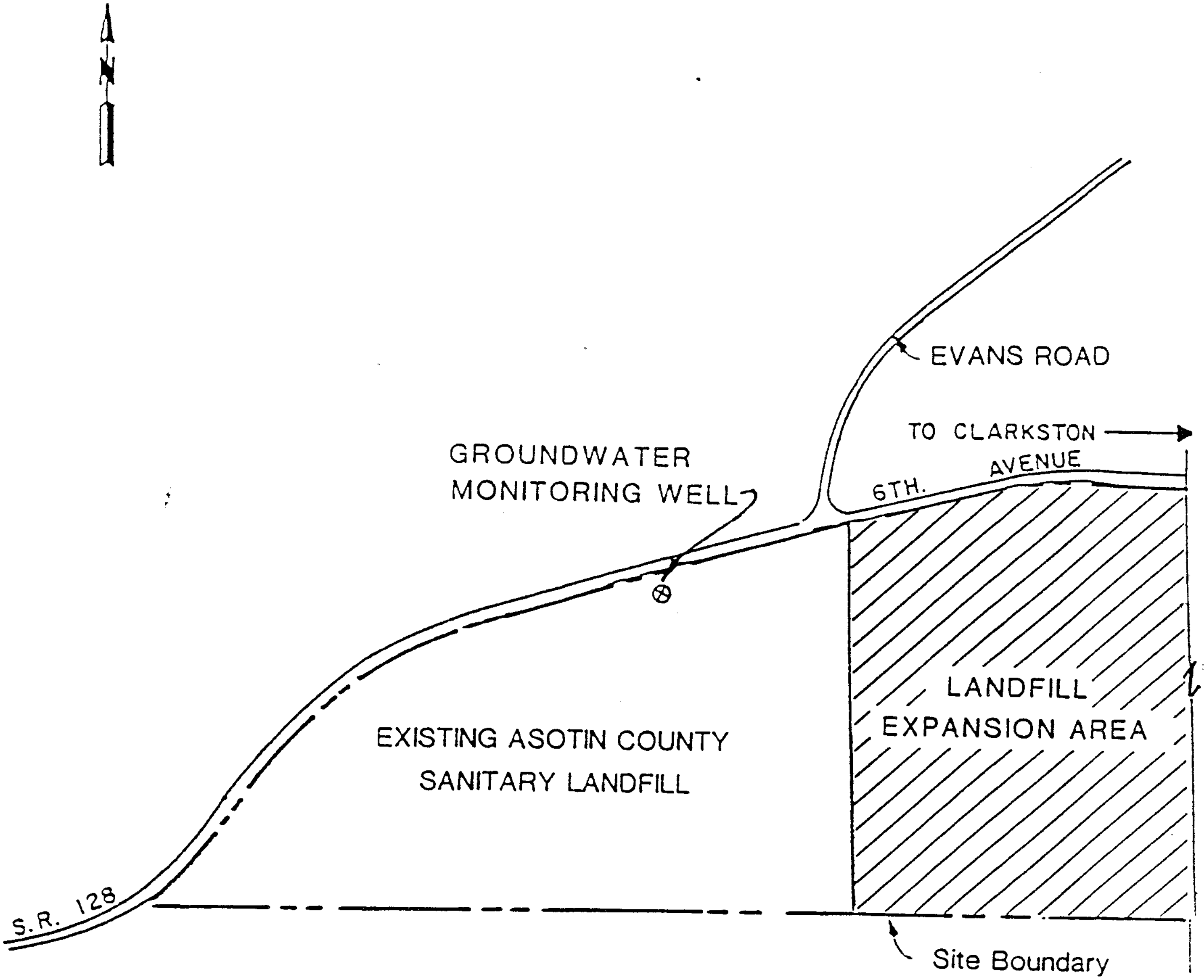
Ecology PA files.

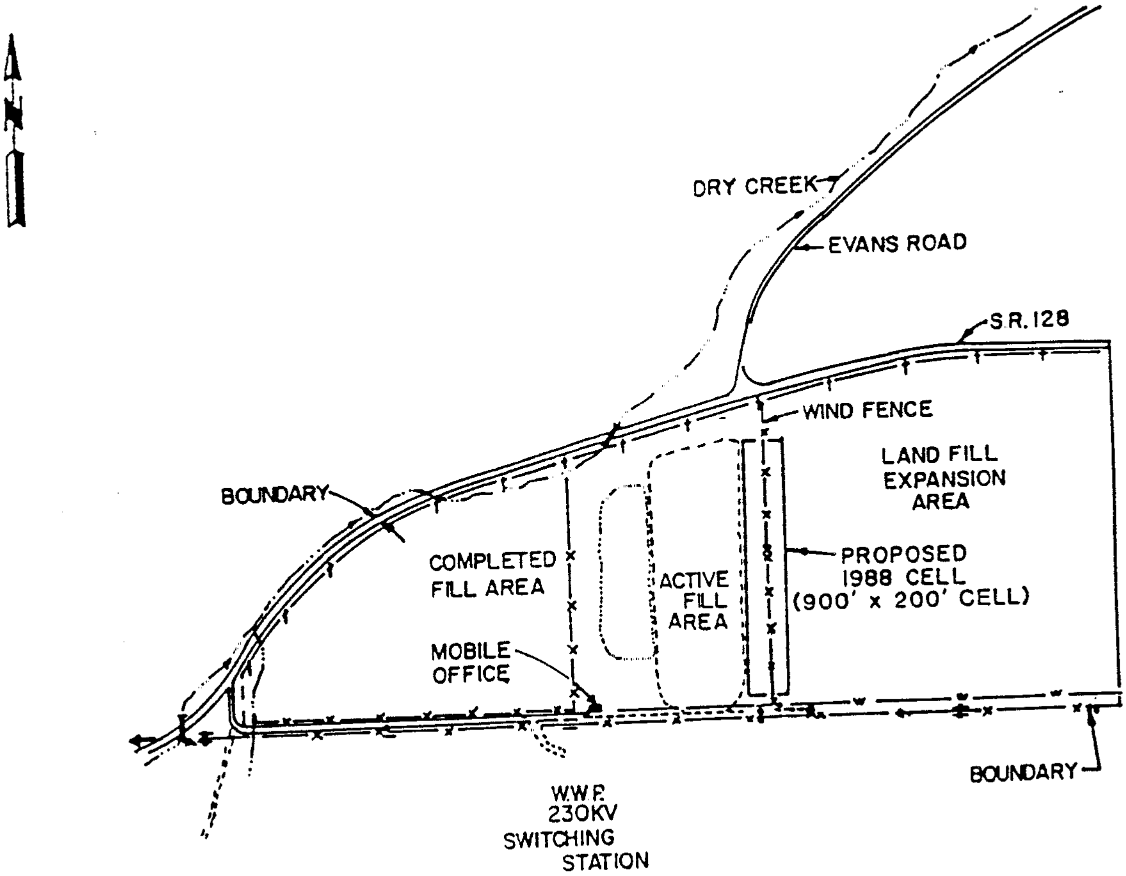
Preliminary Investigations and Analyses, Asotin County Landfill, Asotin County Public Works Department, Bovay Northwest Inc., February 1988.

Soil Surveys of Garfield and Whitman Counties, USDA Soil Conservation Service, December 1974 and April 1980, resp.

U.S.G.S. Clarkston Quad., 1975.

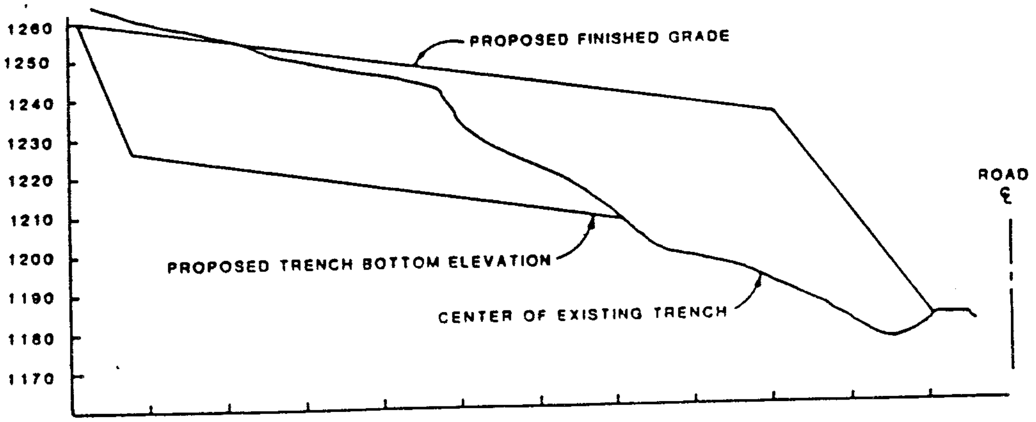
Washington State Data Book, OFM, 1983.


EVANS ROAD
TO CLARKSTON →
6TH. AVENUE
GROUNDWATER MONITORING WELL
LANDFILL EXPANSION AREA
EXISTING ASOTIN COUNTY SANITARY LANDFILL
S.R. 128
Site Boundary



PLAN VIEW

NOT TO SCALE



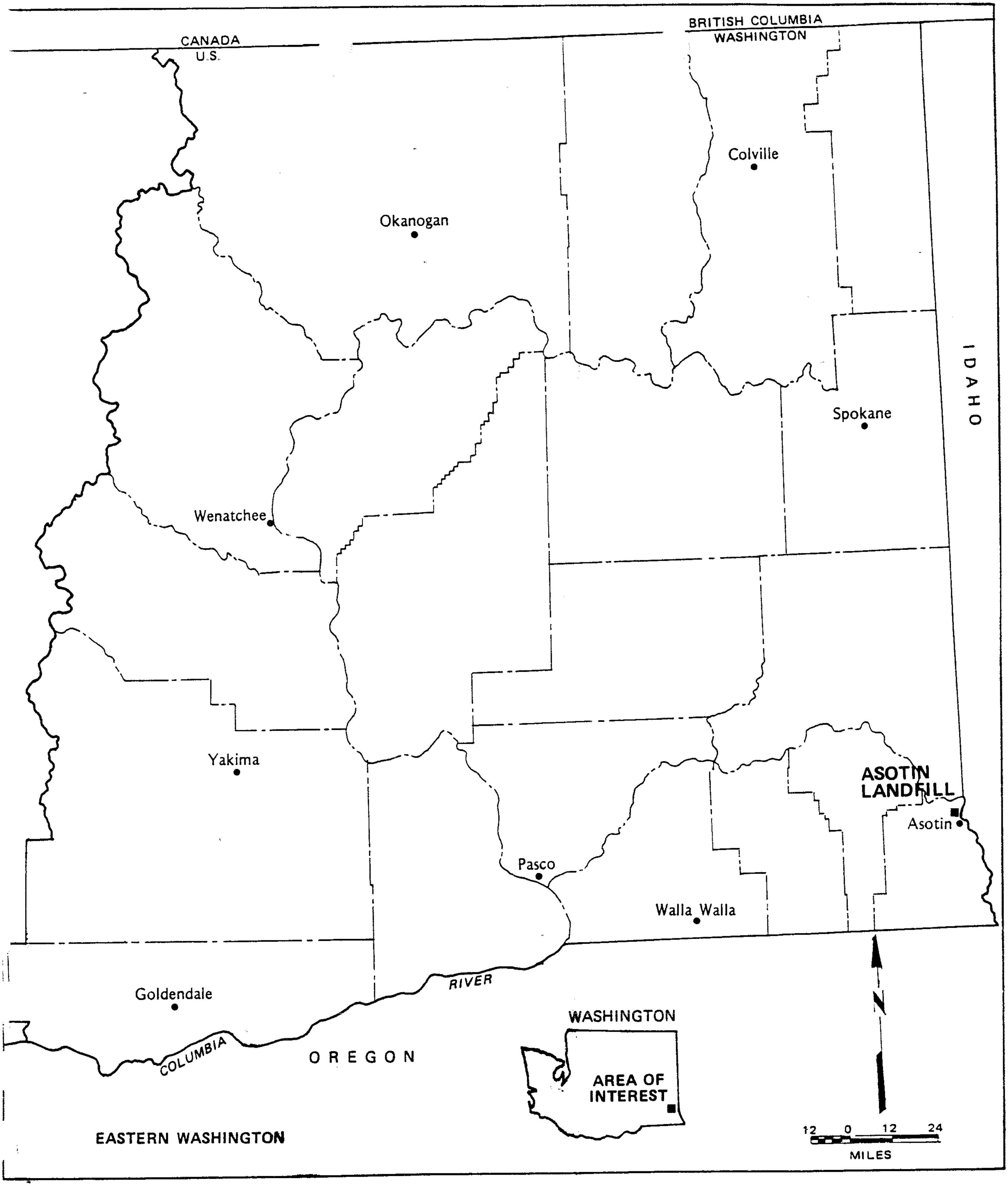
PROFILE LOOKING WEST

ASOTIN COUNTY LANDFILL

PROPOSED 1988 CELL

Bovay Northwest Inc.

JAN. 1988	FIGURE 7-1



LOCATION MAP, ASOTIN LANDFILL, CLARKSTON, ASOTIN COUNTY, WASHINGTON.

WORKSHEET 1
SUMMARY SCORE SHEET

Site Name/Location (City, County, Section/Township/Range):

Asotin County Landfill
Asotin County
SW$^{1}/_{4}$, section 36, T. 11 N., R. 45 E.

Site Description (Include management areas, compounds of concern, and quantities):

The site is an active municipal landfill located southwest of Clarkston. The site covers 126.5 acres and has been in operation since 1974. Electroplating sludges containing heavy metals and possibly pesticide containers were placed in the landfill. Daily cover and final cover of completed cells appears to provide adequate containment to prevent surface releases. The county plans to install a new ground water monitoring well to replace the existing well.

Special Considerations (Include limitations in site file data or data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site, or any other factor(s) over-riding a decision of no further action for the site):

If future ground water monitoring indicates any change in facility conditions, the information should be used to rescore the site.

ROUTE SCORES:

Surface Water/Human Health: X

Surface Water/Environ.: X

Air/Human Health: X

Air/Environmental: X

Ground Water/Human Health: 27.1

OVERALL RANK: 5

Rev. 5/31/91

WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List substances to be considered for scoring: Source: 1

Route not scored. Contaminants not available to this route.

Explain basis for choice of substance(s) to be used in scoring.

List management units to be considered in scoring: Source:_____

Explain basis for choice of unit used in scoring. Source:_____

2. AIR ROUTE

List substances to be considered for scoring: Source: 1

Route not scored. Contaminants not available to this route.

Explain basis for choice of substance(s) to be used in scoring.

List management units to be considered in scoring: Source:_____

Explain basis for choice of unit used in scoring.

WORKSHEET 2 (CONTINUED)
ROUTE DOCUMENTATION

3. GROUND WATER ROUTE

List substances to be considered for scoring: Source: 1

Copper, lead, nickel, and zinc.

Explain basis for choice of substance(s) to be used in scoring.

Contaminants from metal sludges disposed of in landfill.

List management units to be considered in scoring: Source: 1

Landfill.

Explain basis for choice of unit used in scoring.

Site is a closed landfill.

WORKSHEET 3
SUBSTANCE CHARACTERISTICS WORKSHEET FOR MULTIPLE UNIT/SUBSTANCE SITES

Combination 1 Combination 2 Combination 3

Unit:

Substance:

SURFACE WATER ROUTE

Human Toxicity Value:

Environ. Toxicity Value:

Containment Value:

Surface Water Human Subscore:

Surface Water Environ. Subscore:

AIR ROUTE

Human Toxicity/Mobility Value:

Environ. Toxicity/Mobility Value:

Containment Value:

Air Human Subscore:

Air Environ. Subscore:

GROUND WATER ROUTE

Human Toxicity/Mobility Value:

Containment Value:

Ground Water Subscore:

WORKSHEET 4
SURFACE WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS **NOT SCORED**

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Carcinogenicity WOE	PF*	Val.
1.									
2.									
3.									
4.									
5.									
6.									

Source:_____

Highest Value:_____

+2 Bonus Points?_____

Final Toxicity Value_____

*Potency Factor

1.2 Environmental Toxicity

Substance	Acute Criteria (ug/l)	Non-human Mammalian Acute Toxicity (mg/kg)	Value
1.			
2.			
3.			
4.			
5.			
6.			

Source:_____ **Value:**_____

1.3 Substance Quantity

Source:_____ **Value:**_____

Explain basis:______________________________

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

2.0 MIGRATION POTENTIAL **NOT SCORED**

2.1 Containment Source:_____ **Value:**_____
Explain basis:______________________________
____

2.2 Surface Soil Permeability:______________________________ Source:_____ **Value:**_____

2.3 Total Annual Precipitation:____________ inches Source:_____ **Value:**_____

2.4 Max. 2-Yr/24-hour Precipitation:____________ inches Source:_____ **Value:**_____

2.5 Flood Plain:______________________________ Source:_____ **Value:**_____

2.6 Terrain Slope:____________ % ____________ Source:_____ **Value:**_____

3.0 TARGETS

3.1 Distance to Surface Water:______________________________ Source:_____ **Value:**_____

3.2 Population Served within 2 miles: √pop.= ____________ Source:_____ **Value:**_____

3.3 Area Irrigated within 2 miles: 0.75√no. acres= _____ Source:_____ **Value:**_____

3.4 Distance to Nearest Fishery Resource:______________ Source:_____ **Value:**_____

3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s)______________________________ Source:_____ **Value:**_____
____
____
____

4.0 RELEASE
Explain basis for scoring a release to surface water:______________________________ Source:_____ **Value:**_____
____
____
____

WORKSHEET 5
AIR ROUTE
NOT SCORED

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction (WARM Scoring Manual) - Please review before scoring

1.2 Human Toxicity

Substance	Air Standard (ug/m^3)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Carcinogenicity WOE	PF*	Val.
1.									
2.									
3.									
4.									
5.									
6.									

*Potency Factor

Source:______
Highest Value:______
+2 Bonus Points?______
Final Toxicity Value:______

1.3 Mobility (Use numbers to refer to above listed substances)

1.3.1 Gaseous Mobility

Vapor Pressure(s): 1= ; 2= ; 3= Source:______
4= ; 5= ; 6= **Value:**______

1.3.2 Particulate Mobility

Soil type:____________________ Source:______
Erodibility:____________________ **Value:**______
Climatic Factor:____________________

1.4 Final Human Health Toxicity/Mobility Matrix **Value:**______

1.5 Environmental Toxicity/Mobility

Substance	Non-human Mammalian Acute Toxicity	Value	Mobility	Value
1.				
2.				
3.				
4.				
5.				
6.				

Environmental Toxicity/Mobility Matrix Source:______ **Value:**______

WORKSHEET 5 (CONTINUED)
AIR ROUTE
NOT SCORED

1.6 Substance Quantity:______________________ Source:_____ **Value:**_____

Explain basis:______________________

2.0 **MIGRATION POTENTIAL**

2.1 Containment:______________________ Source:_____ **Value:**_____

3.0 **TARGETS**

3.1 Nearest Population:______________________ Source:_____ **Value:**_____

3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s)______________________ Source:_____ **Value:**_____

3.3 Population within 0.5 miles: $\sqrt{}$population=________ Source:_____ **Value:**_____

4.0 **RELEASE**

Explain basis for scoring a release to air:________ Source:_____ **Value:**_____

WORKSHEET 6
GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Carcino-genicity WOE	PF*	Val.
1. copper	1300	2	0.037	1	X	0	X	X	0
2. lead	5	8	X	X	X	0	0.8	X	0
3. zinc	4000	2	0.2	1	X	0	1.0	X	0
4. nickel	100	6	0.02	1	X	0	X	X	0
5.									
6.									

Source: 2

Highest Value: 8

+2 Bonus Points? 2

Final Toxicity Value 10

*Potency Factor

1.2 Mobility (Use numbers to refer to above listed substances)

Cations/Anions 1 - 2, 2 - 2, 3 - 3, 4 - 2 Source: 1 **Value:** 3

OR

Solubility(mg/l)

1.3 Substance Quantity Source: 3 **Value:** 6

Explain basis: approximately 600 cu.yds. of sludges

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 1 **Value:** 6

Explain basis: No liner - 3, soil cover >6" - 1, no leachate collection - 2, no liquids - 0

2.2 Net Precipitation: 0 inches Source: 1 **Value:** 0

2.3 Subsurface Hydraulic Conductivity: 10^{-7} - 10^{-5} Source: 1 **Value:** 2

2.4 Vertical Depth to Ground Water: 85 feet Source: 3 **Value:** 4

WORKSHEET 6 (CONTINUED)
GROUND WATER ROUTE

3.0 TARGETS

3.1 Ground Water Usage: Private, public, irrigation Source: 1 Value: 9

3.2 Distance to Nearest Drinking Water Well: 5280 ft Source: 1 Value: 1

3.3 Population Served within 2 Miles: $\sqrt{6700} = 81.8$ Source: 3 Value: 82

3.4 Area Irrigated by (Groundwater) Wells within 2 miles: $0.75\sqrt{539} = 17$ Source: 1 Value: 17

4.0 RELEASE

Explain basis for scoring a release to ground water: No release observed Source: 1 Value: 0

SOURCES USED IN SCORING

1. Site Hazard Assessment Data Collection Sheets, SAIC, 1991
2. Toxicology Database for use in WARM Scoring, SAIC, June, 1991.
3. WA DOE Site Inspection, Sept. 1988
4.
5.
6.
7.
8.
9.
10.

A - 3

Hazard Site Ranking Letter from Ecology, 1991

COPY

1889

FILE COPY

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

August 20, 1991

Mr. Stephen L. Becker
County of Asotin
P. O. Box 160
Asotin, WA 99402-0160

Dear Mr. Becker:

The Department of Ecology has now assessed a hazard ranking for the Asotin County Landfill site, as required by the Model Toxics Control Act. This is an estimation of the potential threat of this site to human health and the environment, relative to other Washington State sites scored at this time. A ranking of 5 (with 1 being the highest relative risk and 5 being the lowest) has been calculated for this site.

For your information, Ecology will be publishing the ranking of this and other sites in the August 27, 1991 Site Register. The rankings will be used in conjunction with other considerations in determining Ecology's priority for future actions at sites. It is not anticipated this ranking will affect the current activities at the Asotin County Landfill site.

For further information, please contact me at (509) 456-6167.

Sincerely,

Patti Y. Carter
Site Hazard Assessments
Toxics Cleanup Section

PYC:adw

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Revised Ranking of Asotin County Landfill Letter from Ecology, 1994

FILE COPY

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
N. 4601 Monroe, Suite 202 • Spokane, Washington 99205-1295 • (509) 456-2926

July 26, 1994

Stephen L. Becker
County of Asotin
P.O. Box 160
Asotin, WA 99402-0160

Dear Mr. Becker:

Re: Ranking of Asotin County Landfill

This is to inform you that the Department of Ecology (Ecology) has completed its revision of the Washington Ranking Method (WARM) ranking matrix, as proposed in the March 8, 1994 Special Issue of the Site Register. Those hazardous sites where there is actual, or a high potential for, ground water contamination will receive higher WARM rankings if substantial numbers of people nearby are using ground water for drinking water purposes.

This revision has been done in response to legislative direction to Ecology to give higher priority to actual/potential drinking water contamination. The ranking method, as previously used, did not give the highest rankings to sites where groundwater was the only affected pathway. To date, these sites have been noted on Ecology's Hazardous Sites List as having groundwater as the only affected pathway, and that Ecology could choose to give them higher priority where drinking water was affected.

As a result of this matrix revision, your site, previously ranked 5, will still rank a 5. Any changes in rankings due to this revision will be published in the August 23, 1994 Special Issue of the Site Register.

What does this new ranking mean for you?

- There will be no immediate effect if remedial action (cleanup) is already underway at your site. The new ranking will better reflect the priority which Ecology has given this site. For those sites being independently cleaned up, a higher ranking may increase Ecology's role in ensuring that these activities are completed in a timely and satisfactory manner.

- For those sites currently awaiting cleanup, an increase in site ranking will normally result in the site receiving higher priority from Ecology for initiating remedial action.

What does an increase in Ecology's priority mean for you?

- Ecology has been directed by the Legislature to ensure that those sites currently being worked on are of the highest priority of all sites known by the department. Priority for initiating cleanup is set by the WARM ranking, along with consideration of many other site-specific factors.
- An increase in your site's priority means that it will receive increased attention from the department in seeing that this cleanup does occur.
- Ecology prefers, and encourages, cleanups initiated by those owners/operators responsible for the contamination. This can be accomplished through cleanups totally independent of Ecology approval/oversight (independent cleanups), or through formal negotiated agreements, with Ecology oversight, such as consent decrees or agreed orders.
- Where cleanup actions cannot be achieved expeditiously through the above, an Ecology-initiated administrative order (enforcement order) may be issued, requiring cleanup activities by the responsible party without a negotiated agreement.

Please call Mark Fuchs at (509) 456-5008 if you have any questions about the above described options for initiating cleanup of your site. Please call Michael Spencer at (206) 407-7195 if you have any questions/comments about your site ranking change.

Sincerely,

Mark R. Fuchs

Mark R. Fuchs
Section Manager
Toxics Cleanup Program

MRF:KN

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Letter and Stipulated Agreed Order by Ecology, 1994

Christine O. Gregoire
ATTORNEY GENERAL OF WASHINGTON
Ecology Division
629 Woodland Square Loop SE 4th Floor • Lacey WA 98503
Mailing Address: PO Box 40117 • Olympia WA 98504-0117

June 28, 1994

Ray D. Lutes
Prosecuting Attorney
PO Box 220
Asotin, WA 99402

RE: Department of Ecology v. Asotin County

Dear Ray:

Enclosed is the revised Stipulation and Agreed Order of Dismissal. It includes the changes discussed between Nadine and Jim, revised as per our telephone conversation. Several dates for deliverables have been changed, a provision is included for alternative aquifer tests with an appropriate work plan, and paragraph seven now expressly recognizes that Ecology's technical assistance is not intended to prevent the County from exercising its professional judgment. The language was added to paragraph seven so it would not conflict with paragraph six.

With respect to the alternative aquifer tests, I would like to reiterate a point Nadine made to Jim. The reason for using the contaminated well for the aquifer pump test was to try to save the County money in the long run by obtaining information not only for purposes of the new cell, but also for corrective action. In making a decision on the reasonableness of the aquifer pump test, the County should be aware that if the contaminated well is not tested now, that may result in additional corrective action measures being necessary later, at an additional cost to the County.

I very much appreciate your and the County's cooperation in reaching this agreement. Please let me know if there are any outstanding issues to resolve. Otherwise, I understand you will fax a signed copy on Friday and put the original in the mail.

Very truly yours,

Kathryn L. Gerla

KATHRYN L. GERLA
Assistant Attorney General
(206) 459-6321

KLG/may
Enclosure

POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY Appellant, v. ASOTIN COUNTY, acting by and through the ASOTIN COUNTY HEALTH DISTRICT, and the ASOTIN COUNTY PUBLIC WORKS DEPARTMENT Respondent.	)	PCHB 93-243 **STIPULATION AND AGREED ORDER OF DISMISSAL**

Appellant Washington State Department of Ecology (Ecology), and Respondent Asotin County (County), acting by and through the Asotin County Health District and the Asotin County Public Works Department, stipulate to the dismissal of the above appeal pursuant to the following terms and conditions.

I. RECITALS

1. Asotin County Municipal Landfill received a solid waste disposal permit from the Asotin County Health District in January 1993, which was revised in August 1993.

2. Ecology appealed the Health District's issuance of the revised permit on the grounds that the County had failed to conduct adequate groundwater characterization and had failed to establish an adequate system of monitoring wells, in violation of the Solid Waste Management Act, chapter 70.95 RCW, and its

implementing regulations including, but not limited to, WAC 173-304-490(2), WAC 173-304-600(3)(b), and WAC 173-304-460(3)(g)(ii).

3. The parties agree that settlement of these matters without further litigation is reasonable and in the public interest and that entry of this Stipulation and Agreed Order of Dismissal is the most appropriate means of resolving these matters. Ecology and the County agree to settlement of this appeal pursuant to the terms and conditions set forth in this Stipulation which shall constitute a binding agreement between the parties.

4. THEREFORE, in consideration of mutual promises and undertakings set forth below, and in the spirit of setting aside a dispute of the facts before the Pollution Control Hearings Board (PCHB) and avoiding litigation, the parties agree as follows:

II. WORK TO PERFORM

5. Asotin County agrees to accomplish the following activities in accordance with the terms and schedule set forth below. The dates below are the dates by which the specified actions must be completed.

September 1, 1994	Submit to Ecology a revised hydrogeologic report and a hydrogeologic work plan using the HELP Model and Hydrogeologic Report Checklist, attached as Exhibit A, and including the information requested in the 3/2/94 Recommendations for the Asotin County Landfill Hydrogeology and Ground Water Monitoring Program, attached as Exhibit B.

	The work plan must include a schedule for implementation and a schedule for pre-construction meetings with Ecology.
October 30, 1994	Submit to Ecology an interim groundwater monitoring program report, consistent with the requirements in Exhibit B. The report must include parameters, wells, frequency; sampling and analysis plan; reporting requirements; statistics; geochemistry, including Cation/Anion Balance and Trinlinear Plots; and schedules for quarterly and annual reporting requirements. The report must also include an implementation program with schedules. Upon approval by Ecology, the interim groundwater monitoring program shall be incorporated by the Health District into any existing solid waste permit for the landfill and any renewals until a final groundwater monitoring program is approved by Ecology.
June 1, 1995	Complete all borehole geophysics, aquifer pump testing, subsurface boring characterization, and additional well placement, as referenced in Exhibit B and in accordance with the approved hydrogeologic work plan. If reasonable alternatives are not available for disposal of ground water produced during the aquifer pump test, alternative aquifer tests will be used. If other tests are used, the county shall submit a workplan to Ecology in sufficient time for the review procedure to occur under paragraph 6 of this stipulation. Ecology will perform field logging of existing monitoring wells and provide an interpretation. Prior to placing additional wells, Asotin will submit a report proposing the number, location and depth of wells.
July 1, 1995	Submit a final groundwater monitoring program and hydrogeologic report. The final report shall include all new data gathered from preliminary testing. The

	report must include a schedule for implementation. Upon approval by Ecology, the final groundwater monitoring program shall be incorporated by the Health District into the existing solid waste permit for the landfill.
October 1, 1995	Provide a report to Ecology on the status of corrective action(s) performed, and/or corrective actions to be performed.

6. All reports and work plans required in paragraph 5 must be submitted to Ecology for review and approval. Ecology will respond to the reports within 45 days of receipt. Asotin County will incorporate Ecology's comments into the final reports and plans.

7. Ecology will cooperate with Asotin County by providing technical assistance and advice to the County during the implementation of this agreement. Nothing in this paragraph shall limit the County's ability to exercise professional judgment in cooperation with Ecology.

8. Asotin County will provide Ecology with fifteen (15) days advance written notice of any drilling activities and any field activities including geophysical work, aquifer tests, well borings, and sampling.

9. Each party will allow split or replicate samples to be taken by the other party during sampling events.

10. Ecology shall have access to enter and freely move about all property at the landfill site at all reasonable times for the purposes of carrying out Ecology's commitments under

this agreement, conducting tests or collecting samples, and reviewing the County's progress in carrying out its commitments under the agreement. This agreement shall not affect or impair Ecology's authority under existing law to access the site and conduct inspections or investigations.

III. GENERAL TERMS AND CONDITIONS

11. The project coordinators to oversee implementation of this Stipulation are:

FOR THE COUNTY:

James J. Whitbread, P.E.
Asotin County Engineer
P.O. Box 160
Asotin, WA 99402
(509) 243-2074
Fax (509) 243-2003

FOR ECOLOGY:

Nadine Romero
Solid Waste Services Program
P.O. Box 47600
Olympia, WA 98504-7600
(206) 407-6116
FAX (206) 407-6102

The project coordinators will be each party's designated representative for purposes of implementing this agreement. Each party shall send communications regarding implementation of this agreement and all reports, work plans, and other documents required under the agreement to the other party's project coordinator. Either party may change its respective project coordinator by giving at least ten (10) calendar days advance written notice.

12. This Stipulation constitutes the entire and complete agreement between the parties and shall not be amended,

supplemented, or abrogated other than by a written instrument signed by authorized representatives of each party. All exhibits to this agreement are integral and enforceable parts of the agreement.

13. Completion of the actions set forth in this Stipulation, according to the agreed upon terms and conditions herein, shall constitute full and complete settlement of PCHB 93-243. Ecology reserves all legal rights to enforce this agreement and to pursue further administrative or judicial actions against the County should the County fail to comply with this agreement.

14. This agreement does not preclude Ecology from initiating corrective action or any other actions allowed by law on this site. Any corrective action will be taken pursuant to authority under the Model Toxics Control Act, ch. 70.105D RCW, and ch. 173-351 WAC.

15. This Stipulation may be executed in one or more counterparts by each party, and each counterpart is deemed to be an original, all of which taken together constitute one and the same Stipulation.

16. This Stipulation and Agreed Order of Dismissal is effective upon the date it is entered by the PCHB. It shall remain in effect until the parties have completed each of the requirements of the Stipulation.

17. The County and Ecology represent that appropriate personnel for each have reviewed this Stipulation and that the

persons whose signatures are entered below have authority to sign this agreement and bind the respective parties.

WASHINGTON STATE DEPARTMENT OF ECOLOGY	ASOTIN COUNTY
By:	By: James Fuller
Name:	Name: JAMES FULLER
Title:	Title: County Commissioner
Date:	Date: July 1 1994

O R D E R

Having reviewed the foregoing Stipulation and the Board's files and pleadings, and it appearing that the parties have reached agreement, it is now

ORDERED AND ADJUDGED that the foregoing Stipulation is entered as an Order of this Board and PCHB No. 93-243 is a full and complete settlement of this case.

DATED this ______ day of ______, 1994.

POLLUTION CONTROL HEARINGS BOARD

JAMES A. TUPPER, JR., Presiding

ROBERT V. JENSEN, Member

RICHARD C. KELLEY, Member

Stipulation Agreed to
and Presented By:

CHRISTINE O. GREGOIRE
Attorney General

KATHRYN L. GERLA, WSBA #17498
Assistant Attorney General

Stipulation Agreed to, Copy
Received and Notice of
Presentment Waived:

RAY D. LUTES, WSBA #
Prosecuting Attorney
Asotin County

T5\Asotin.sao

A - 6

Final Summary Letter on Status of Asotin County Landfill with Agreed Order, from Ecology, 1996

RECEIVED
OCT 17 1996

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
P.O. Box 47600 • Olympia, Washington 98504-7600
(360) 407-6000 • TDD Only (Hearing Impaired) (360) 407-6006

Jim Whitbread, P.E.
Asotin County Engineer
Public Works Department
P.O. Box 160
Asotin, WA 99402-2074

October 4, 1996

RE: Final Summary Letter on Status of Asotin County Landfill with Agreed Order of July, 1994

Dear Mr. Whitbread:

The Washington Department of Ecology has reviewed the " Summary Report on the Hydrogeologic Assessment and Monitoring Well Installation for the Asotin County Landfill" submitted August 23, 1995. This hydrogeologic study fulfills the requirements as outlined in the Agreed Order of July 1994.

In cooperation with the Department of Ecology, Asotin County has completed additional hydrogeological characterization and landfill repair work, including the installation of two additional wells and a well abandonment. The placement of a well graded landfill cap/cover, surface runoff controls and vegetation has eliminated severe erosion problems at the north face of the landfill and eliminated leachate break outs.

Brief Chronology

On October 19, 1993 I conducted a preliminary site visit of the Asotin County landfill and viewed erosional gullies which had formed on the north face of the landfill two days prior to my visit due to a heavy rainstorm. In a November 22, 1993 report of findings, I requested that the County take immediate corrective action on the cover/cap and perform additional hydrogeologic characterization to define ground water flow paths, the presence of a confining unit separating upper and lower aquifers on the landfill site and implement a ground water monitoring program in accordance with the Municipal Solid Waste Landfill regulations of WAC 173-351.

In July of 1994, Asotin county completed cover repair work and signed an Agreed Order to conduct ground water monitoring, additional hydrogeologic characterization and corrective action as needed on the landfill.

In August of 1994 and February of 1995 the Department of Ecology and the Asotin County landfill conducted a cooperative hydrogeologic investigation which included borehole geophysics and drilling. The county did additional aquifer characterization work, abandoned the Bovay well which had a cracked casing 300 feet below ground surface and performed testing of nearby domestic wells for water quality parameters in July of 1996. In addition, Asotin County has been performing quarterly ground water sampling, cation-anion balances, ground water flow maps and collects and analyzes leachate.

In October of 1995, Asotin County requested Ecology to provide geochemistry training to staff in order to meet the ground water monitoring requirements of WAC 173-351-415 and 430 . Ecology provided this training and joint work sessions in Help Hydrologic Modeling. Asotin County has been persistent in meeting with Ecology to ensure compliance with the Agreed Order of July of 1994.

Corrective Action

At this time, Ecology agrees with Asotin County that additional corrective action work is not needed for the landfill. Leachate breakouts and erosion of the north face as documented earlier have not occurred due to a secure and well graded cap. Water balance modeling and "arid" Asotin County conditions show that with a properly constructed cap very little leachate should be generated. Leachate measurements indicate little to no leachate is generated. However, after peak storms the county should take leachate level measurements when and where possible.

The county should continue to monitor ground water quarterly. If any increasing trends are observed in ground water monitoring parameters additional assessment work and/or corrective action will be necessary. Nearby domestic wells should also be sampled again within two to three years to confirm there are no impacts to water quality in the lower drinking water aquifer.

Outstanding Issues

Ecology will continue to work with Asotin County to implement new low flow ground water sampling techniques. Such techniques may prove to be very beneficial to the ground water monitoring program and eliminate any potential false positive readings of contamination. I strongly urge that a split sampling be conducted in the next year, particularly on impacted wells to discern whether existing low levels of contamination are artifacts from drilling or are in fact contaminants transported in ground water.

In addition, Asotin County should submit a final, hard-bound ground water monitoring program. In early 1996, I reviewed revised memorandums on the ground water monitoring program. However we discussed minor changes/revisions. If I have overlooked these changes or final submittal please contact me. I would like to establish clearly for the file a "final" program in hard bound form which is easily identifiable. This program should be kept on file at the landfill as well for inspections per WAC 173-351 requirements.

The annual and quarterly ground water monitoring reports have excellent discussions on the data results. However, it is important to submit the cation-anion balances and Piper-Trilinear diagrams in these reports. Ecology should continue to work with Asotin County to find a good Trilinear diagram software. Although Ecology has been working with older public-domain software, this software is cumbersome and inflexible for plotting an entire ground water monitoring well system on a trilinear.

Sole Source Aquifer Issues

Finally, the county should submit copies of the Help Modeling results sometime in the next year to the Eastern Regional office for the file showing showing potential quantities of leachate which could be generated by precipitation. The Department of Ecology agrees to help Asotin County work with Multi-Med contaminant fate and transport modeling in future demonstrations for landfill expansion over a sole source aquifer and Help modeling outputs should be used in Multi-Med.

It is important to note here that based on the additional hydrogeologic work, the characteristics of the landfill site, *i.e.* precipitation and hydrogeology, and a properly engineered liner that Asotin County should have no difficulties expanding over a sole source aquifer. The additional hydrogeologic characterization shows the characteristic "yellow-clay" extends across the remainder of the site until it hits a dramatic erosional unconformity in the northeast area (a former Snake River paleo-channel). This clay unit separates upper aquifers from lower drinking water aquifers.

Thus, the only additional work will be providing Ecology results of hydrologic and contaminant fate and transport modeling. Although this is time consumptive, Ecology staff can sit down with the county (much like we did with geochemistry and Help Modeling) to examine theoretical estimates of a liner failure and potential impacts to the Sole Source Aquifer.

Summary

Asotin County has met the requirements of the Agreed Order with the exception of minor revisions as noted above. Asotin County has *vastly* improved its ground water monitoring program and hydrogeologic assessment work.

Cooperative and diligent in meeting new landfill regulations and the Agreed Order, both you and Steve Becker were persistent in meeting with Ecology and following up on the above issues. These past two years of successful study and implementation was due to your hard work and strong technical expertise. You not only sought to protect Asotin County, but to protect its natural environment as well, in a cooperative spirit with the Department of Ecology. You should be commended for your work.

Although I am transferring this project back the regional office I will continue to assist the County and the Eastern Regional office where and when I can. If there are any questions please contact Bud Musgrove at (509) 456-6334 , Mike Hibbler at (509) 456-3270 or me at (360) 407-6116. Thank you.

Sincerely,

Nadine L Romero

Nadine L. Romero
Senior Hydrogeologist
Industrial Section

cc: Asotin County Board of Commissioners
Mr. Doug Mattoon, Public Works Director
Jim Pendowski, Solid Waste Program Manager
Mike Hibbler, Eastern Regional Office
Bud Musgrove, Eastern Regional Office

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Ecology Letter to Health District and Asotin County
RE: Regulatory Requirements, 2007

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
4601 N. Monroe Street • Spokane, Washington 99205-1295 • (509) 329-3400

November 2, 2007

Mr. Juan Caballero
Director of Environmental Health
Asotin County Health District
431 Elm Street
Clarkston, WA 99403-2694

Mr. Steve Becker
Asotin County Regional Landfill
2901 Sixth Avenue
Clarkston, WA 99403

Dear Mr. Caballero and Mr. Becker:

This letter is intended to clarify the regulatory requirements applicable to ground water monitoring at the Asotin County Regional Landfill. Over the last couple of years there has been a good deal of discussion and confusion regarding whether Chapter 173-304 or 173-351WAC should be the basis for action to address contaminants found in ground water at the facility. Ecology has contributed to the confusion with an incorrect interpretation of the rules in our memorandum, Asotin County Landfill – proposed actions, to Asotin County Environmental Health dated January 31, 2006. We are sorry for adding to the confusion instead of providing sound guidance.

Ecology said in the memo, if Asotin County successfully demonstrated the source of ground water contamination is the closed landfill unit, the requirements of WAC 173-351-440, assessment monitoring program, would not apply. Asotin County successfully made the demonstration in the May 23, 2007, *WAC 173-351 Demonstration Evaluation: Asotin County Regional Landfill Groundwater Monitoring Program, Asotin County Washington.* However, all ground water monitoring and corrective action requirements are applicable to closed landfill units if they are part of a multi-unit ground water monitoring system such as the one at ACRL [WAC 173-351-010(2)(b)(iii)]. Therefore, even though Asotin County successfully demonstrated the most likely source of contamination in the ground water is the old landfill closed under Chapter 173-304 WAC, the ground water monitoring requirements of Chapter 173-351 WAC apply to the closed landfill unit.

The applicability of Chapter 173-351 WAC has two primary consequences. First is the role of Asotin County Health District in corrective action at the facility. Chapter 173-304 WAC places corrective action under the jurisdiction of Asotin County Health District [WAC 173-304-490(2)(j)]. Ecology plays the primary role in corrective action under Chapter 173-351 WAC [WAC 173-351-460 and 465]. The second consequence is the applicability of WAC 173-351-440, assessment monitoring program, which is not found in Chapter 173-304 WAC.

We are currently reviewing our records of ground water monitoring, the chronology of events and correspondence related to ground water contamination, and applicable regulatory requirements. Ecology will contact Asotin County Health District and Asotin County, providing what we believe is a reasonable approach for applying assessment monitoring, WAC 173-351-440, at the facility. We are working towards a conclusion based on the information and knowledge we have available.

Ecology appreciates the responsiveness and patience of all parties while working through the jurisdictional issues. Now that the jurisdictional issues are substantially settled, we look forward to continue working collaboratively on the technical issues for addressing the ground water contamination at the site. Please contact me if you have any questions on the points raised in this letter.

Sincerely,

Wayne Krafft

Wayne Krafft
Senior Regulatory & Technical Assistance Specialist
Solid Waste & Financial Assistance Program

cc: Joel Ristau, Asotin County
✓Jay Dehner, CH2M Hill

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Ecology Letter to Health District

RE: Assessment Monitoring at Asotin County Landfill, 2008

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
4601 N Monroe Street • Spokane, Washington 99205-1295 • (509)329-3400

March 17, 2008

Juan Caballero
Director of Environmental Health
Asotin County Health District
431 Elm Street
Clarkston, WA 99403-2694

Re: Assessment Monitoring at the Asotin County Landfill

Dear Mr. Caballero:

Ecology met with the county's consultants, Jay Dehner and Craig Sauer with CH2MHill, on March 13 to discuss groundwater monitoring at the landfill. We agreed that the landfill will follow the assessment monitoring procedures in chapter 173-351 WAC. However, Ecology believes it is appropriate to allow some flexibility on the time period to complete the four sampling events to establish background for the Appendix III constituents. Groundwater contamination at the landfill has been known for many years through quarterly sampling for Appendix I and II constituents. The County proposed establishing background for the identified Appendix III constituents through the regular quarterly sampling rather than completing the four sampling events within a 180-day period. Ecology is comfortable with this modified schedule.

Annual sampling for all Appendix III constituents is required as is quarterly sampling for all Appendix I and II constituents. The county collected samples from all wells during the first quarter sampling event in 2008 and will analyze them for all Appendix III constituents. With the next three events, background will be established for the Appendix III constituents that were detected during the Q1 2008 sampling event. All wells will be analyzed for all Appendix III constituents during Q1 2009 and annually during Q1 thereafter until assessment monitoring is no longer required. The only Appendix III constituents that will be analyzed during the next three quarters are those that were detected during the previous Q1 sampling event.

The following table summarized Appendix III sampling for the next three years:

Quarter	***Year***	***Appendix III Constituents***
1	2008	Sample for all Appendix III constituents.
2	2008	Sample for App. III constituents detected during Q1 2008.
3	2008	Sample for App. III constituents detected during Q1 2008.
4	2008	Sample for App. III constituents detected during Q1 2008.
1	2009	Sample for App. III constituents.
2	2009	Sample for App. III constituents detected during Q1 2009.
3	2009	Sample for App. III constituents detected during Q1 2009.
4	2009	Sample for App. III constituents detected during Q1 2009.
1	2010	Sample for App. III constituents.
2	2010	Sample for App. III constituents detected during Q1 2010.
3	2010	Sample for App. III constituents detected during Q1 2010.
4	2010	Sample for App. III constituents detected during Q1 2010.

Refer to WAC 173-351-440 for additional information about assessment monitoring. Please give me a call or send me an email if you have any questions.

Sincerely,

Cole H. Carter
Senior Hydrogeologist
Solid Waste and Financial Assistance Program

pc: Steve Becker – Asotin County Regional Landfill
Craig Sauer – CH2MHill

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Asotin County Letter to Ecology

RE: MTCA Letter of Intent, 2008

ASOTIN COUNTY LANDFILL
2901 6th Avenue
Clarkston, WA 99403
Phone: (509) 758-1965
Fax: (509) 758-1977

November 20, 2008

Mr. Wayne Krafft
Senior Regulatory & Technical Assistance Specialist
Solid Waste & Financial Assistance Program
Washington State Department of Ecology
4601 N. Monroe Street
Spokane, WA

RE: Assessment Monitoring, Remedial Investigation, and Feasibility Study at Asotin County Regional Landfill

Dear Mr. Wayne Krafft:

This letter has been developed for Washington State Department of Ecology (Ecology) and Asotin County Health District to outline Asotin County's plan for implementation of the required site cleanup actions to address the existing groundwater contamination issues at Asotin County Regional Landfill.

As you know, during recent correspondence and meetings we have been collaboratively working toward identification of the source of contamination and assignment of the appropriate regulatory jurisdiction regarding cleanup actions for the old landfill. In your later dated November 2, 2007 to Mr. Caballero and Mr. Steve Becker it was determined that "....groundwater monitoring requirements of Chapter 173-351 WAC were applicable to the old landfill due to the multi-unit permit designation; in which, Ecology effectively has primacy over administering corrective action." In January 2008, all parties met in Spokane at Ecology's Eastern Regional office to discuss (1) status of the Solid Waste Permit Re-issuance Application, and (2) status of the groundwater monitoring program. As a follow-up to this January 2008 meeting regarding the groundwater monitoring program, Ecology (Mr. Cole Carter) issued a letter to Asotin County Health District (Juan Caballero) clarifying the frequency for performing Assessment Monitoring at the facility.

Compliant with these recent determinations, the landfill initiated Assessment Monitoring during the first quarter sampling event in February 2008; and will follow the specified Assessment Monitoring frequency for the old landfill in concert with Detection Monitoring for the active cells. Results from the initiation of Assessment Monitoring will be detailed in the forthcoming *2008 Annual Groundwater Monitoring Report*, planned for submittal to Ecology in March 2009.

In parallel with conducting Assessment Monitoring, Asotin County plans to initiate site cleanup actions for the old landfill as regulated under Chapter 173-351, *Criteria for Municipal Solid Waste Landfills*; and Chapter 173-340, *Model Toxics Control Act* (MTCA). At this time, Asotin County wishes to secure a formal administrative cleanup agreement with Ecology under MTCA via the Independent Cleanup Option (alternately referred to as the "Voluntary Cleanup Program," or VCP) with technical assistance and consultation by Ecology. Under the VCP, it is assumed that Asotin County will cleanup the site independently and request technical assistance and opinions from Ecology (for a fee) on the sufficiency of cleanup. Ultimately, the end-goal would be to conduct cleanup actions to achieve cleanup goals at the existing point of compliance (wells) for issuance of the "no further action (NFA)" letter by Ecology. Asotin County understands that a transition into an Ecology-supervised agreement (if desired or necessitated by either party) may be sought in the future at any time during the cleanup process. Asotin County plans to secure a formal VCP agreement with Ecology prior to initiation of actual cleanup activities (described below).

Asotin County has been working with CH2M HILL to develop a Remedial Investigation Program in support of conducting a Feasibility Study (FS) for the landfill. Ultimately, the goal of the FS will be to help select and implement a cost-effective cleanup strategy. Under the VCP, Asotin County and CH2M HILL plan to utilize the core cleanup processes under MTCA as guidance, which will include the following tasks and planned coordination items with Ecology:

- Task 1 - Assessment Monitoring Program Development:
  - Confirmation and identification of contaminants of concern,
  - Establishment of cleanup goals,
  - Updates to the monitoring program(s) with respect to the solid-waste permit, groundwater and air-monitoring plan(s), and refinements to statistical evaluations/ reporting.
- Task 2 - Remedial Investigation (RI) Program:
  - Submittal of *RI Workplan* to Ecology for review and comment
  - Conducting the RI work and submittal of an *RI Data Summary Report* to Ecology as an interim-submittal update of project activities and key findings.
- Task 3 - Refined Conceptual Site Model (CSM):
  - Updating the existing CSM,
  - Development of a focused/profile contaminant/fate & transport model
  - Submittal of an updated *CSM Report* to Ecology as an update of site conditions
- Task 4 - Corrective Action Feasibility Study (FS) and RI/FS Summary Report:
  - Compile and submit a draft *RI/FS Summary Report* to Ecology,
  - Participate in a meeting with the agencies to review/discuss the draft *RI/FS Summary Report*,
  - Finalize the draft RI/FS Summary Report via agency feedback and identify next steps in cleanup process with respect to selection and implementation of corrective action measures.

In behalf of Asotin County, CH2M HILL will submit the *RI Workplan* for Ecology review and comment by late November 2008. The *RI Workplan* will outline pertinent details of the RI program, as well as details regarding supplemental perimeter gas monitoring probes planned be installed in cooperation with the RI program for the active cells. A letter outlining the proposed perimeter gas monitoring design & installation locations was submitted recently to Mr. Juan Caballero/Health District in September 2008, and is currently pending comment and approval. Asotin County plans to coordinate with Ecology and Health District on these respective programs and requirements prior to initiation of the actual fieldwork - currently targeted for January-February 2009. Asotin County believes a reasonable timeframe to complete the corrective action tasks (listed above) is approximately 12 to 14 months (or roughly extending into December 2009).

Asotin County looks foreword to working with the agencies and moving ahead with these regulatory requirements for the landfill.

Sincerely,

Stephen L Becker
Solid Waste Supervisor

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Memorandum to Ecology, Asotin County Regional Landfill
RE: Remedial Investigation Workplan (CH2MHILL 2008)

Asotin County Regional Landfill: Remedial Investigation Workplan

TO:	Wayne Krafft/Ecology Cole Carter/Ecology Juan Caballero/Asotin County Health District
COPIES:	Steve Becker/Asotin County Solid Waste Supervisor Joel Ristau/Asotin County Public Works Director Travis Pyle/CH2M HILL Jay Dehner/CH2M HILL Liz Luecker/CH2M HILL Bob Martin/CH2M HILL
FROM:	Craig Sauer/CH2M HILL
DATE:	November 26, 2008

1. Introduction

This memorandum describes the remedial investigation (RI) program referenced in the letter from Asotin County Regional Landfill to Washington Department of Ecology (Ecology) and Asotin County Health District (District), regarding Assessment Monitoring, Remedial Investigation, and Feasibility Study at Asotin County Regional Landfill (letter dated November 20th, 2008). The intent of this submittal is to present the planned approach and details of the RI program, and includes a description of investigation locations, depths, media types, and associated data collection activities.

2. Purpose and Objectives

The purpose of the RI will be to collect supplemental data for the closed landfill to refine the existing understanding of site conditions. This additional information will be used in developing and evaluating site cleanup action alternatives as part of a feasibility study (FS). This *RI Workplan* submittal is provided to facilitate communication and solicit feedback from Ecology regarding the plan elements. This is not a specific submittal requirement under the Voluntary Cleanup Program (VCP) of MTCA 173-340.

3. Remedial Investigation (RI) Workplan

The RI will be conducted addressing three landfill components: 1) additional downgradient groundwater characterization; 2) additional in-landfill gas extraction and monitoring; and 3) additional landfill perimeter gas monitoring. The components and investigation rationale are described in more detail below. The proposed investigation locations are shown in Attachment 1 and includes two cross-sections (Profiles A-A′ and B-B′) showing anticipated subsurface conditions and completion depths for wells and gas probes.

3.1 Additional Downgradient Groundwater Characterization

Two shallow groundwater monitoring wells are proposed (wells MW-14 and MW-15) to be completed at “first-water.” These new wells will help delineate the nature and extent of groundwater contamination. Proposed locations for these wells are based on the following rationale:

- Located downgradient of well MW-07, a well with detected VOCs which are a primary contaminant of concern,
- Located downgradient and within the largest area of the closed landfill footprint, and
- Located within a natural topographic low formed by the Dry Creek drainage along Evans Road, considered to have hydrogeologic conditions most likely to provide a contaminant migration pathway downgradient of the closed landfill.

3.2 Additional In-landfill Gas Monitoring and Extraction Wells

Three new gas monitoring probes/extraction wells (GP-LGW-10, -11, and -12) are proposed within the footprint of the closed landfill. The proposed depths and screen intervals are shown in Profiles A-A′ and B-B′. The target interval for the probes is at the native soil and waste interface, beneath the soil cover and adjacent to the trenches. The wells will be used to evaluate contaminant air concentrations in the vadose zone interior of the closed landfill and outside the inferred capture zone (zone of influence) of existing vertical gas extraction wells. Gas migration in vadoze zone soils has been identified as a potential contaminant migration pathway to shallow groundwater based on low-level gas-detects of gas-phase contaminants, such as dichlorodifluormethane (Freon 12), and corresponding groundwater detects in upgradient wells (MW-01 and MW-11). The gas monitoring probes will be designed also as gas extraction wells to include as part of a remedy, based on feasibility study conclusions and recommendations.

3.3 Additional Landfill Perimeter Gas Monitoring

Six new perimeter gas monitoring probes (GP-5 through GP-10) are proposed along the perimeter of the closed and active landfills to monitor landfill gas (and collect air quality samples). These probes will be installed to satisfy landfill operating criteria standards and will also be used to support the RI/FS program. Monitoring of the gas monitoring network, including existing and newly installed gas probes, will also be used to help refine the conceptual site model (CSM).

4. Key Assumptions

The following assumptions were used in the developing the *RI Workplan* and support of the RI/FS:

- The site was previously ranked a “low” priority by Ecology in 1994 (i.e., WARM ranking of 5, least risk, etc.). Current contamination levels are not significantly elevated in comparison to established risk-based standards, and 10+ years of historic monitoring data has been generated for the site defining an existing conceptual site model.

- Adjustments to the planned RI are anticipated based on observed actual field conditions encountered during the investigation. Remedial investigation work may be implemented in a single effort or in phases based on initial findings; and based on the initial findings, RI activities may be focused on selected alternatives for the FS.
- A site-specific *Sampling & Analysis Plan* (SAP) will be developed to describe the data collection and management protocol in support of the RI/FS program. The *SAP* will detail the procedural and analytical requirements for the RI/FS activities involving the installation of wells/gas probes, collection of soil samples, collection of surface water and groundwater samples, collection of air-monitoring samples, sample handling, and data management. The *SAP* will be used in conjunction with the existing groundwater and gas monitoring plan(s) in support of the RI/FS; The new *SAP* is planned to compliment existing plans and not supersede the existing groundwater monitoring plan. A copy of the *SAP* will be provided to Ecology and Asotin County Health District prior to implementation.
- A site-specific *Health & Safety Plan* (HSP) will be developed for use during the field investigation activities. A copy of the HSP will be available upon request.
- Gas monitoring probes installed for the closed landfill will support the air-monitoring sampling under the RI/FS and provide perimeter gas monitoring requirements under applicable landfill requirements (i.e., Landfill Standards under WAC 173-304-460; or Operating Criteria under WAC 173-351-200).
- The RI activities will require contracting and scheduling with a drilling subcontractor, which may influence project schedule.

5. Planned Schedule

Submittal of this *RI Workplan* is intended to be distributed with sufficient lead-time prior to conducting the actual fieldwork (i.e., minimum 30 days) to allow agency review and comment (if desired). CH2M HILL will coordinate and request feedback from Ecology regarding the RI program prior to implementation. The RI field work is currently planned to occur in January or February 2009. Final schedule is dependent on final subcontractor procurement and scheduling.

Attachment 1:

- Site Map
- Profile A-A′
- Profile B-B′

0 400 800 1200

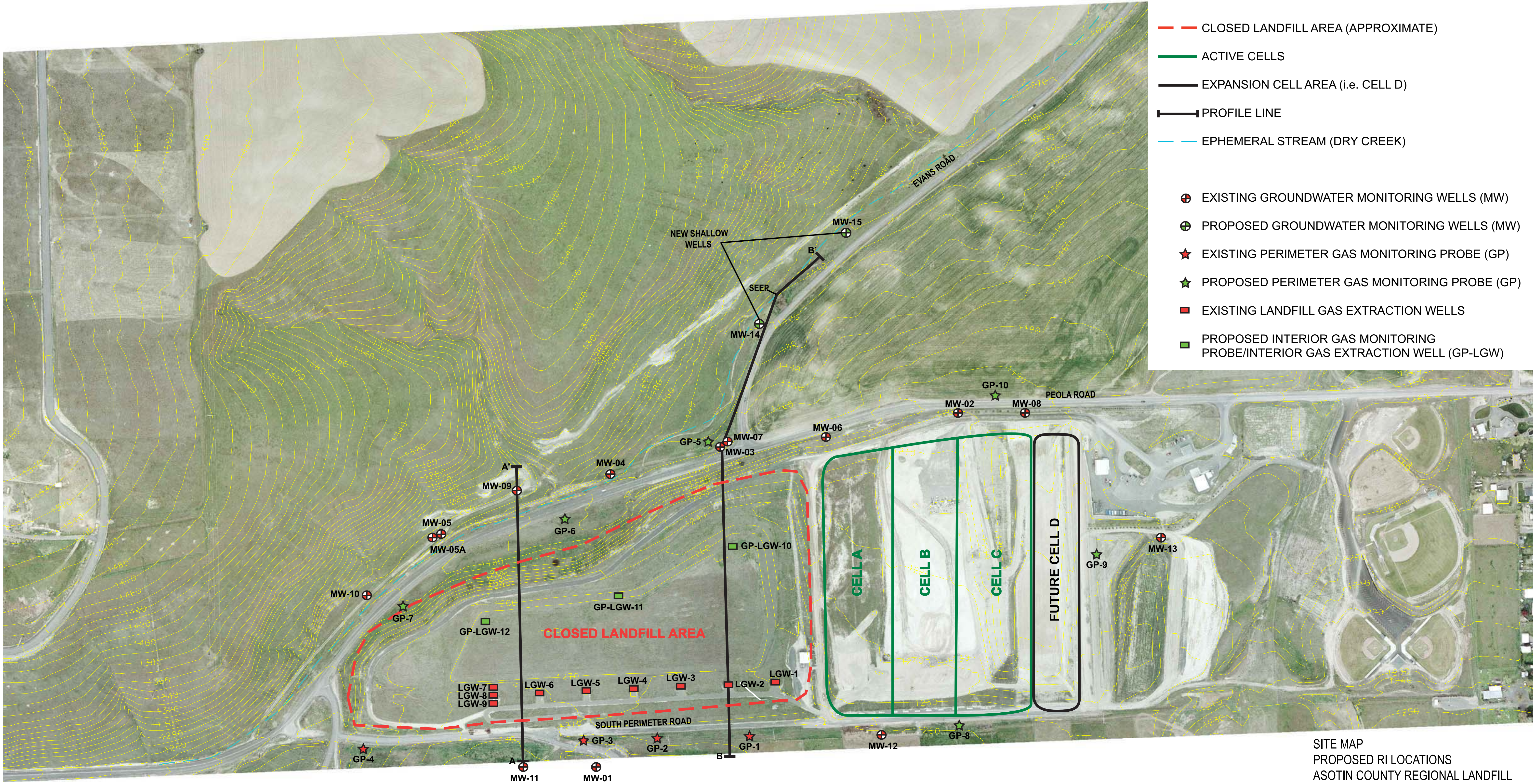
Scale In Feet

1” = 400 ft

N

Notes:

1. The RI program includes a total of 8 locations including 2 shallow groundwater wells, 3 interior gas extraction wells and 3 perimeter gas monitoring probes.
2. A total of 6 perimeter gas monitoring probes will be installed, 3 for active cells and 3 for old landfill. A gas probe installation plan was submitted to Asotin County Health District in September 2008 describing construction detail.



LEGEND

- CLOSED LANDFILL AREA (APPROXIMATE)
- ACTIVE CELLS
- EXPANSION CELL AREA (i.e. CELL D)
- PROFILE LINE
- EPHEMERAL STREAM (DRY CREEK)
- EXISTING GROUNDWATER MONITORING WELLS (MW)
- PROPOSED GROUNDWATER MONITORING WELLS (MW)
- EXISTING PERIMETER GAS MONITORING PROBE (GP)
- PROPOSED PERIMETER GAS MONITORING PROBE (GP)
- 🟥 EXISTING LANDFILL GAS EXTRACTION WELLS
- 🟩 PROPOSED INTERIOR GAS MONITORING PROBE/INTERIOR GAS EXTRACTION WELL (GP-LGW)

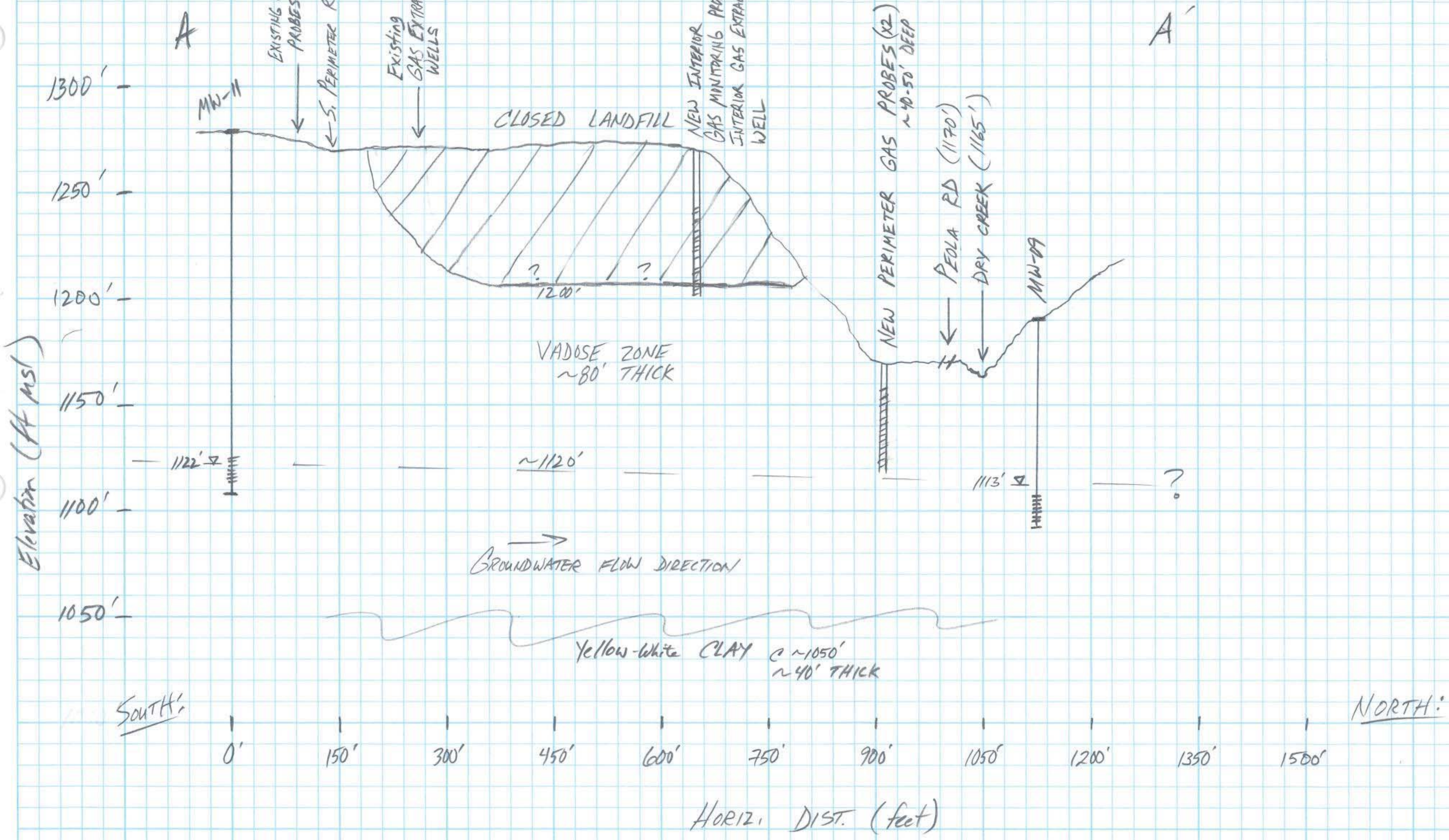
SITE MAP
PROPOSED RI LOCATIONS
ASOTIN COUNTY REGIONAL LANDFILL
RI WORKPLAN
NOVEMBER 2008

CH2MHILL

CH2M HILL

A-A' PROFILE

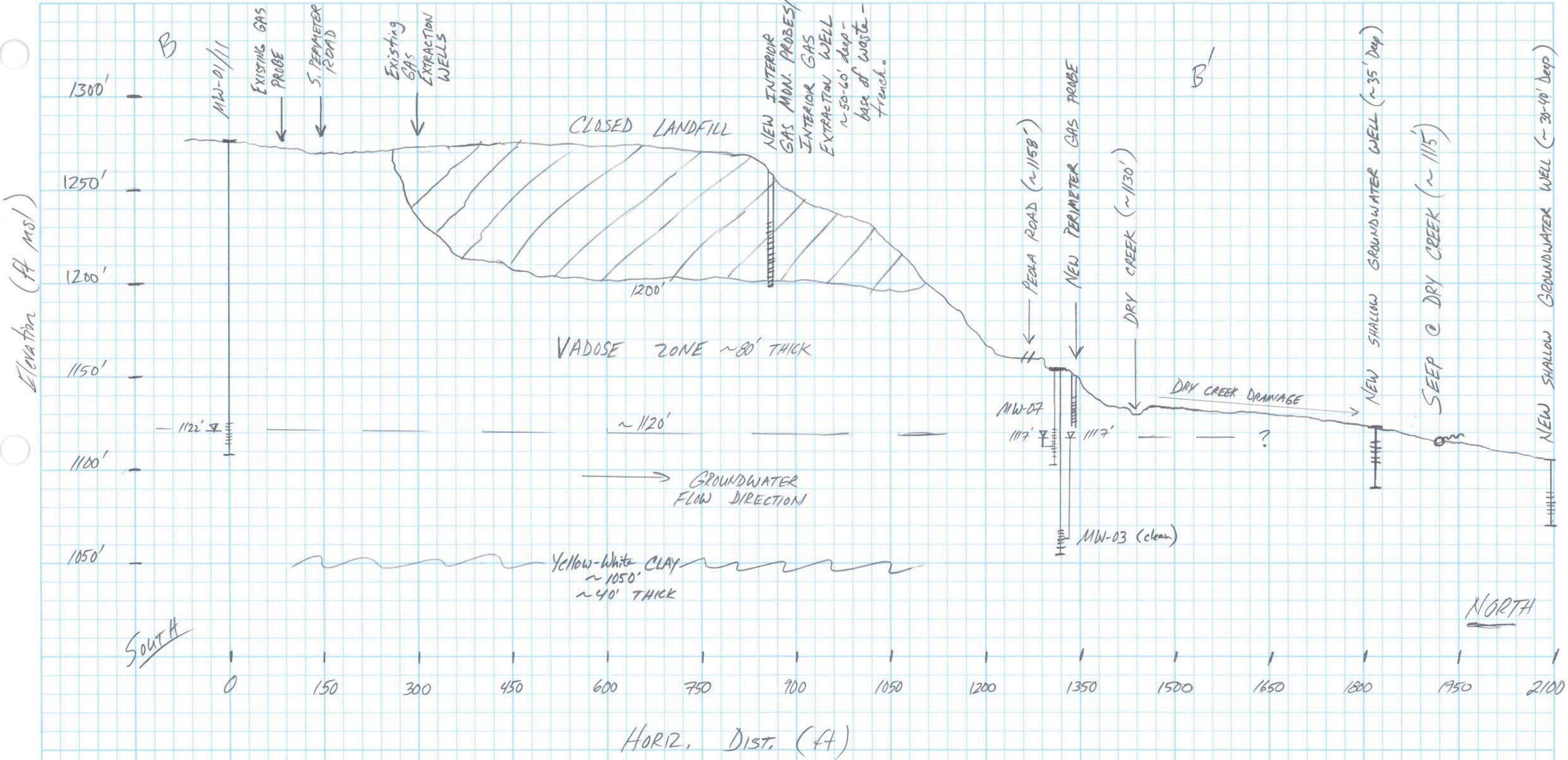
SUBJECT Asotin County Regional Landfill BY C. Sauer PROJECT NO. 331908 DATE 3-3-08 SHT 1 OF 2



Note: Reference the "WAC 173-351 Demo Evaluation" for CSM & Unit Thicknesses.

A-A' CONCEPTUAL PROFILE (SCHEMATIC 1 OF 2)
ASOTIN COUNTY REGIONAL LANDFILL
RI WORKPLAN
NOVEMBER 2008

SUBJECT ACRL B-B' CONCEPTUAL PROFILE BY C. SAUER PROJECT NO. 331908 DATE 3-3-08 SHT 2 OF 2



Note - Reference the "WAC 173-351 Demo Eval." for CSM & Unit Thickness.

B-B' CONCEPTUAL PROFILE (SCHEMATIC 2 OF 2)
ASOTIN COUNTY REGIONAL LANDFILL
RI WORKPLAN
NOVEMBER 2008

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Ecology Letter to Asotin County, Acknowledgement of MTCA Cleanup Action, 2009

RECEIVED MAR 3 0 2009

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
4601 N Monroe Street • Spokane, Washington 99205-1295 • (509)329-3400

March 27, 2009

Joel Ristau
Asotin County Engineer
P. O. Box 160
Asotin, WA 99402

Dear Mr. Ristau:

The Department of Ecology (Ecology) appreciates the initiative taken by Asotin County to clean up the groundwater contamination at the Asotin County Landfill and is pleased that the initial remedial investigation work is underway. As I noted in my letter of November 2, 2007, Ecology effectively has primacy over administering corrective action at the landfill.

Several procedural options are available for cleanups under the Model Toxics Control Act (MTCA). The options range from an independent cleanup to an enforcement order issued by Ecology. In the letter from Steve Becker dated November 20, 2008, he stated that the County wishes to secure a formal agreement with Ecology under the Voluntary Cleanup Program (VCP). As we discussed at our meeting on January 23, Ecology does not believe that VCP is appropriate for this site because of the complexities of the contamination and the long life and post-closure period at the landfill. We understand the county does not want to enter into an Agreed Order with Ecology now; rather you prefer to proceed as an independent cleanup. Ecology is satisfied with Asotin County's proposal to proceed as an independent remedial action with continuing progress. As an independent cleanup, the County does not have access to financial assistance from Ecology. If you later decide to pursue reimbursement for cleanup expenditures under the Remedial Action Grant program, the County can initiate Agreed Order discussions with Ecology.

Ecology is happy to supply as much technical support in a timely manner as possible. We will work with you and your consultants towards the goal of ensuring your independent remedial action conforms to MTCA requirements and reduces contaminants in groundwater to safe levels. Ecology does not formally approve an independent cleanup. However, the proposed program follows the MTCA process of a phased remedial investigation, a feasibility study, a cleanup action plan, and implementation of the plan to achieve MTCA cleanup levels. Given the conformance with MTCA procedures it should be a relatively easy transition if Asotin County chooses to enter into an Agreed Order in the future. One item missing from the plan is public involvement. Ecology has found public involvement improves the process and reduces potential conflicts. We recommend incorporating public involvement in your current program to avoid problems. It is the single issue that could be difficult to resolve if you later enter into an Agreed Order.

Thank you for understanding that other commitments prevented me from responding promptly with this letter. Please contact me to discuss the issue or if you have any questions.

Sincerely,

Wayne Krafft

Wayne Krafft
Section Manager
Solid Waste & Financial Assistance Program

WK:lk

cc: Steve Becker
Juan Cabillero

Appendix B

Groundwater Quality Data from the *2009 Annual Groundwater Monitoring Report*

2009 4th Quarter Groundwater Quality and Statistical Trend Summary
Groundwater Quality Data, Criteria Exceedence, Statistical Trends and Tolerance Limit Results
November 2009
Asotin County Regional Landfill

Chemical Group	Analyte	Unit	Wells Near Closed Landfill						Wells Near Active Cells			WAC 173-200 Criteria
			MW-11 (UG)	MW-05 (DG)	MW-06 (DG)	MW-07 (DG)	MW-09 (DG)	MW-10 (DG)	MW-12 (UG)	MW-02 (DG)	MW-13 (CG)	
Field	Temperature	°C	16.1	15.0	15.2	15.1	15.7	14.2	15.6	15.8	15.0	-
Field	Conductivity	uS/cm	542	1096	780	1101	1109	1083	1025	1194	766	-
Field	pH	unit	7.6	6.8	7.6	7.2	7.0	6.9	7.8	7.6	7.8	6.5-8.5
Gen. Chem.	Alkalinity, Total (as CaCO3)	mg/L	168 ↑	359	187 ↑	325	243	402	157 ↑	127	138	-
Gen. Chem.	Ammonia (as N)	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
Gen. Chem.	Total Dissolved Solids	mg/L	314	**654**	468	**704** ↓	**662**	**651**	**648**	**773**	471 ↑	500
Gen. Chem.	Total Organic Carbon	mg/L	<1	2.1	<1	1.4	1.9	2.9	<1	1.1	<1	-
Major Ion	Calcium	mg/L	26.4	102	43.6	133 ↓	90.6	96.1	70.6 **TL**	69.1	48.8 ↑	-
Major Ion	Chloride	mg/L	29.6	46.9	31.8	25	77	46.4	89.3 ↑	62.7	53.7 ↑	250
Major Ion	Iron	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.3
Major Ion	Magnesium	mg/L	14.7	32.3	11.7	19.7	34	30.8	33.4 ↑	29	23.6 ↑	-
Major Ion	Nitrate (as N)	mg/L	1.2	6.6 ↑	3.9	9.9 ↓	**13.4**	7.7	5.1	**22.7**	4.1	10
Major Ion	Potassium	mg/L	11	7.92	4.93	2.69	7.71	8.08	7.99	9.16	8.14	-
Major Ion	Sodium	mg/L	57.1	80.3	134	69.4	93.8 ↓	97.6	98.6	146	68.3	-
Major Ion	Sulfate	mg/L	53	121 ↓	119	118	128	96.5	225	**262**	135 ↑	250
Trace Metal	Antimony	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-
Trace Metal	Arsenic	mg/L	0.0024	0.002	0.0032	0.001	0.0021 ↓	0.0022	0.0034 ↓	0.0025 ↓	0.0029 ↓	0.05
Trace Metal	Barium	mg/L	0.03	0.141	0.0197	0.0915	0.0779	0.0979	0.0448 ↑	0.0218	0.039 ↑	1
Trace Metal	Beryllium	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-
Trace Metal	Cadmium	mg/L	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	0.01
Trace Metal	Chromium	mg/L	<0.0005	0.0014	0.0077	0.0027	<0.0005	0.00095	0.0016	0.0038	0.0025	0.05
Trace Metal	Cobalt	mg/L	<0.0005	0.00088	0.0027	<0.0005	<0.0005	<0.0005	0.00063	0.0032	0.0053	-
Trace Metal	Copper	mg/L	0.00063	0.0018	<0.0005	<0.0005	0.0019	0.0031	<0.0005	0.0039 ↓	<0.0005	1
Trace Metal	Lead	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.05
Trace Metal	Manganese	mg/L	0.00059	0.0014	0.0061	0.00069	0.00051	<0.0005	0.00087	0.0032	0.002	0.05
Trace Metal	Nickel	mg/L	0.0016	0.0018	0.0013	0.0018	0.001	0.0015	<0.0005	0.0034	0.001	-
Trace Metal	Selenium	mg/L	0.0018 ↓	0.0029 ↓	0.0061 ↓	0.002 ↓	0.0039 ↓	0.0024 ↓	0.0081 ↓	**0.0136** ↓	0.0056 ↓	0.01
Trace Metal	Silver	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-
Trace Metal	Thallium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-
Trace Metal	Vanadium	mg/L	0.0073	0.0164	0.0396	0.0178	0.0174	0.0223	0.0394	0.0255	0.0439	-
Trace Metal	Zinc	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	5
VOC	Dichlorodifluoromethane	ug/L	2.5	3.2	6.8	11.5	1.4	1.6	<1	<1	<1	-
VOC	Tetrachloroethene (PCE)	ug/L	<1	**11.7**	**2.4** ↑	**10**	**4.2**	**10.6**	<1	<1	<1	0.8
VOC	Trichloroethene (TCE)	ug/L	<1	1.1	<1	<1	1.3	1.5	<1	<1	<1	3
VOC	Trichlorofluoromethane	ug/L	<1	<1	1.6	41.5	<1	<1	<1	<1	<1	-

Notes:
Groundwater samples collected November 23 and 24, 2009.
All metals results are dissolved concentrations.
Volatile organic compound (VOC) results only shown for detected constituents.
"UG" = upgradient well; "DG" = downgradient well; "CG" = cross-gradient well (relative to respective landfill area - closed landfill or active cells).
Non-detect values preceded with "<" symbol; non-detect value is laboratory reporting limit. "J" = estimated concentration below laboratory reporting limit.
Bold value indicates concentrations at or above established WAC 173-200 criterion.
Sen's Slope/Mann-Kendall statistical results presented in Appendix C, including statistical summaries for all well-constituent pairs and time-series trend plots.
Tolerance limit statistical results presented in Appendix D.
Trend evaluations performed on data collected since February 2006 (last 15 or 16 results). Tolerance limit calculations performed using all data collected since 1997.
Up-arrow (↑) indicates statistically-significant increasing trend. Down-arrow (↓) indicates statistically-significant decreasing trend.
"**TL**" indicates exceedence of tolerance limit.

Source: *2009 Annual and 4th Quarter Groundwater Monitoring Report (CH2M HILL, 2010).*

C - 1 Boring and Monitoring Wells
C - 2 Landfill Gas Monitoring Probes and Extraction Wells

Electronic Submittal Only

See DVD located in cover of this report

Appendix C
Site Investigation Logs; Monitoring Well and Gas Probe Completion Diagrams

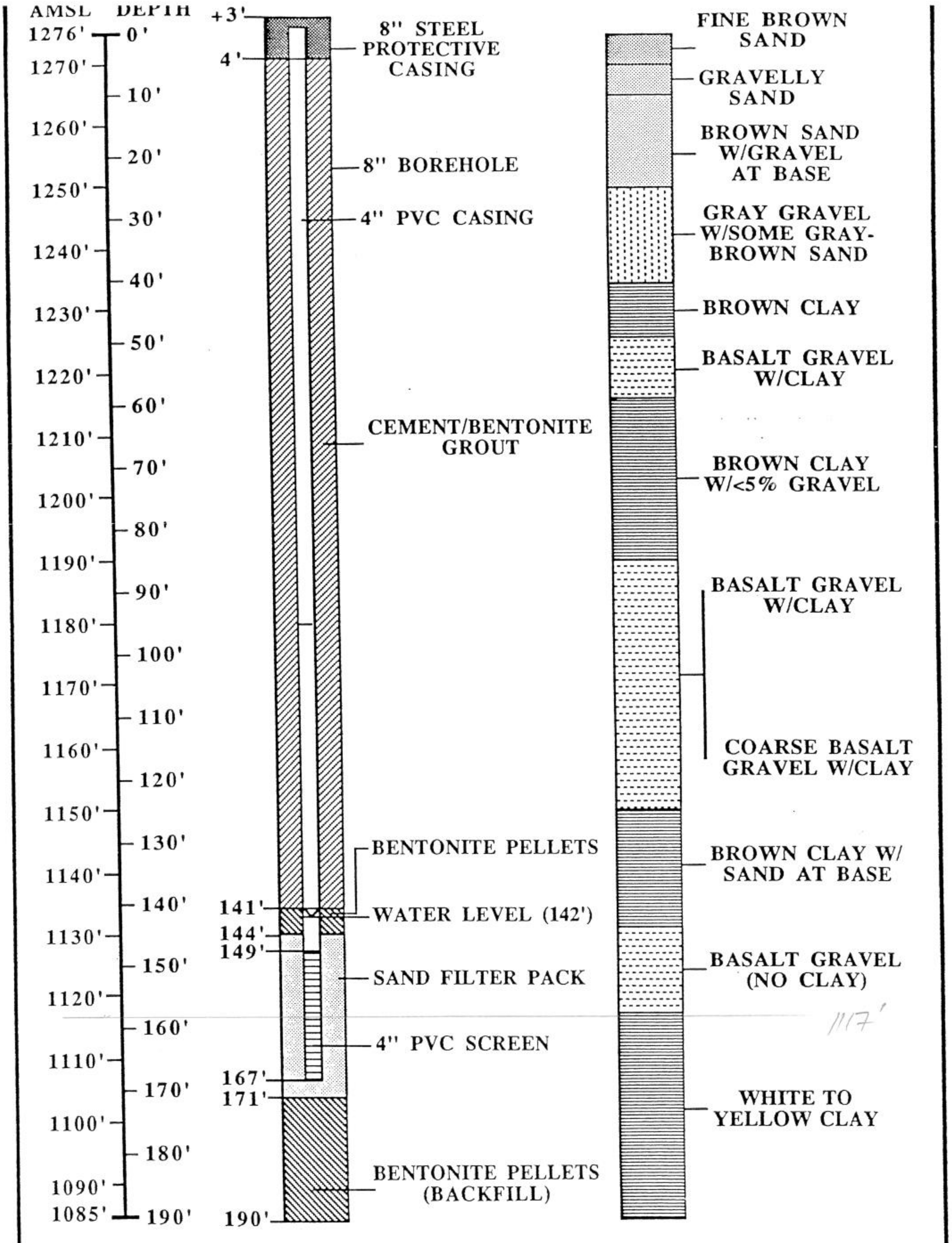
Electronic Submittal Only

See DVD located in cover of this report

C-1

Boring and Monitoring Wells

MW-01

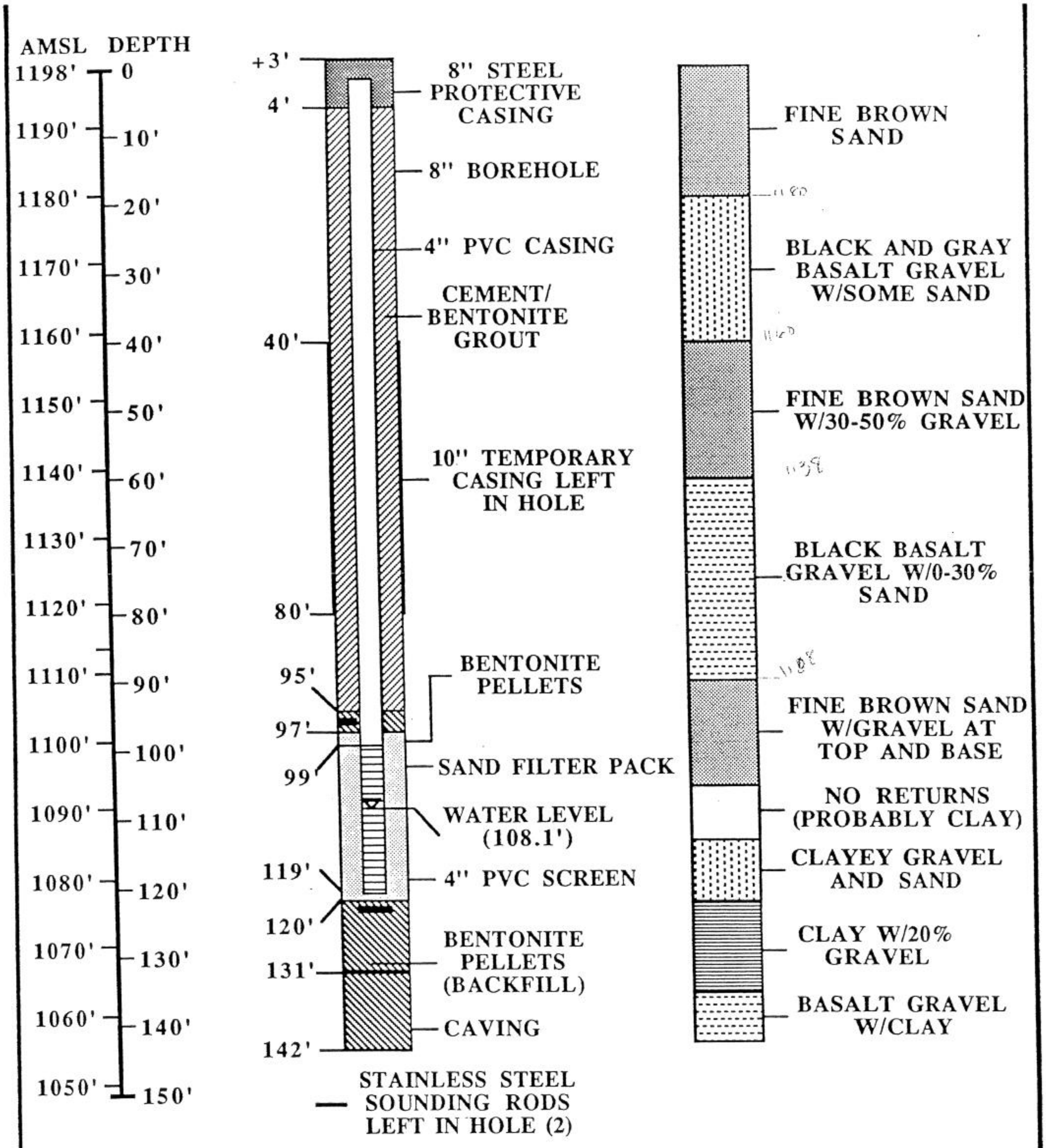


MW-1 Geology and Construction Details

HOWARD CONSULTANTS, INC.
CONSULTING GEOTECHNICAL ENGINEERS

PLATE 11

MW-02



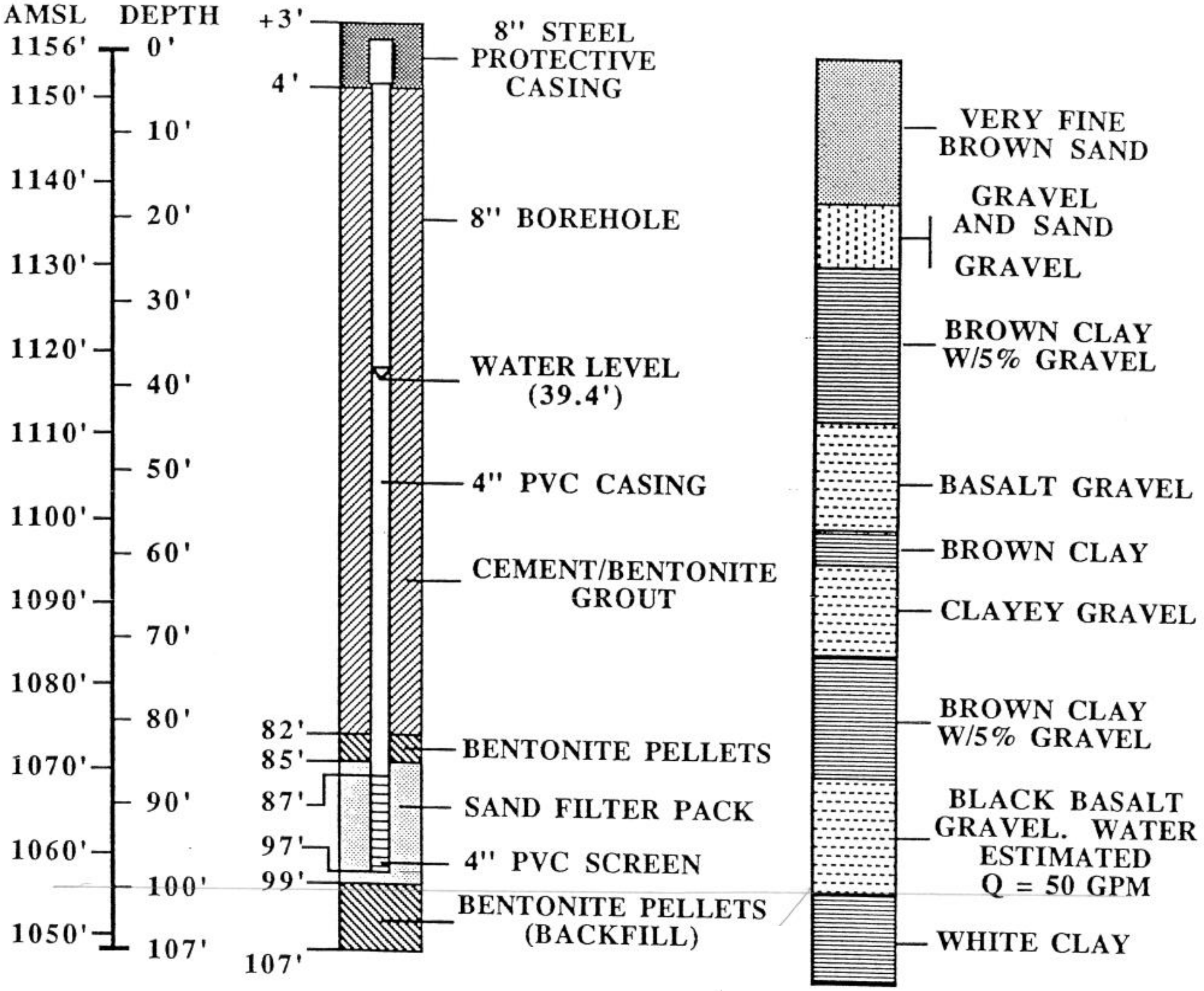
MW-2 Geology and Construction Details

HOWARD CONSULTANTS, INC.
CONSULTING GEOTECHNICAL ENGINEERS

REVISIONS BY ______ DATE ______

FILE ______

BY ______ CHECKED BY ______ DAT ______



MW-3 Geology and Construction Details

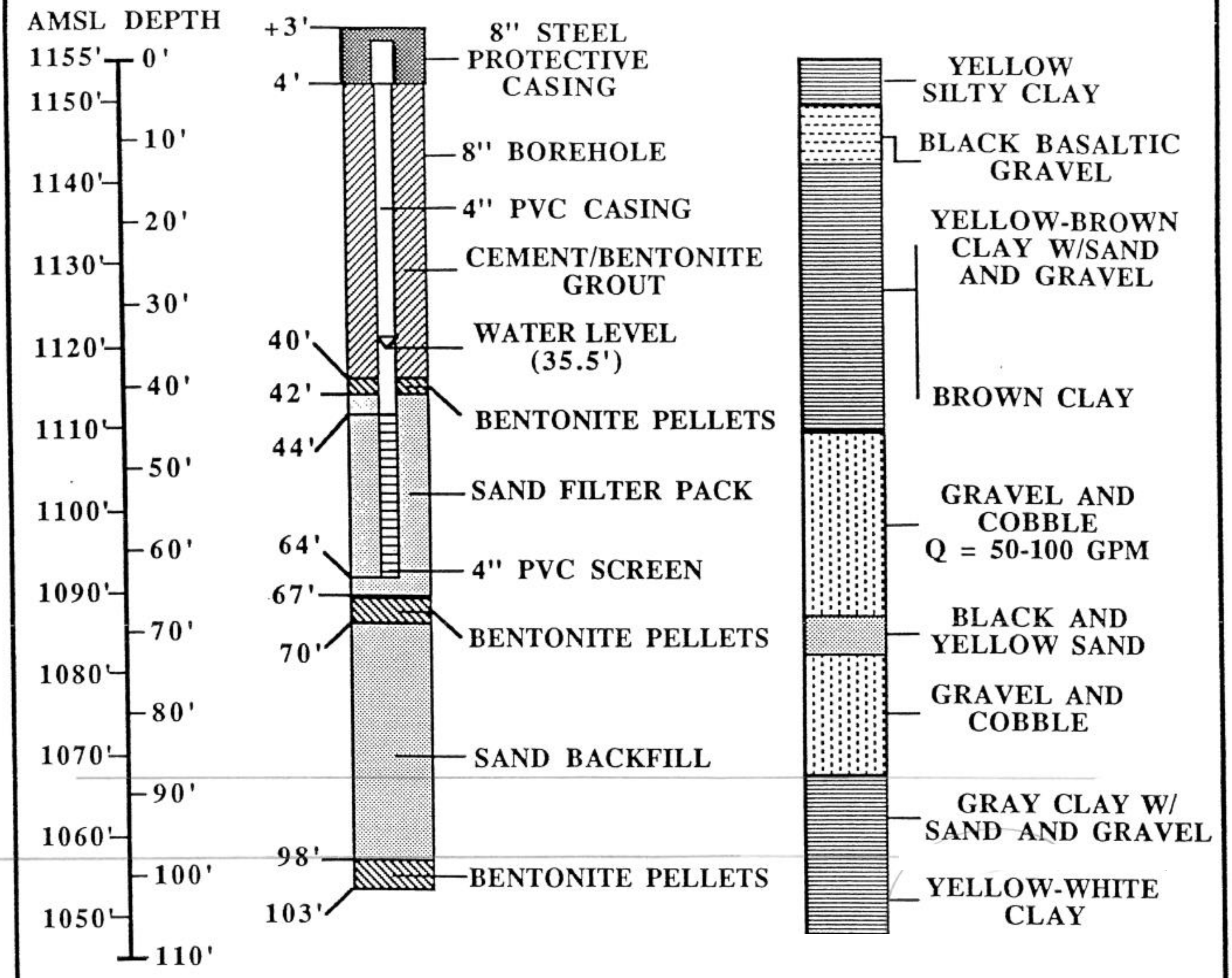
REVISIONS BY ____ DATE ____

FILE ____

BY ____ DATE ____

CHECKED BY ____

MW-04



REVISIONS BY ____ DATE ____

FILE ____

BY ____ CHECKED BY ____ DATE ____

MW-4 Geology and Construction Details

HOWARD CONSULTANTS, INC.
CONSULTING GEOTECHNICAL ENGINEERS

MW-05

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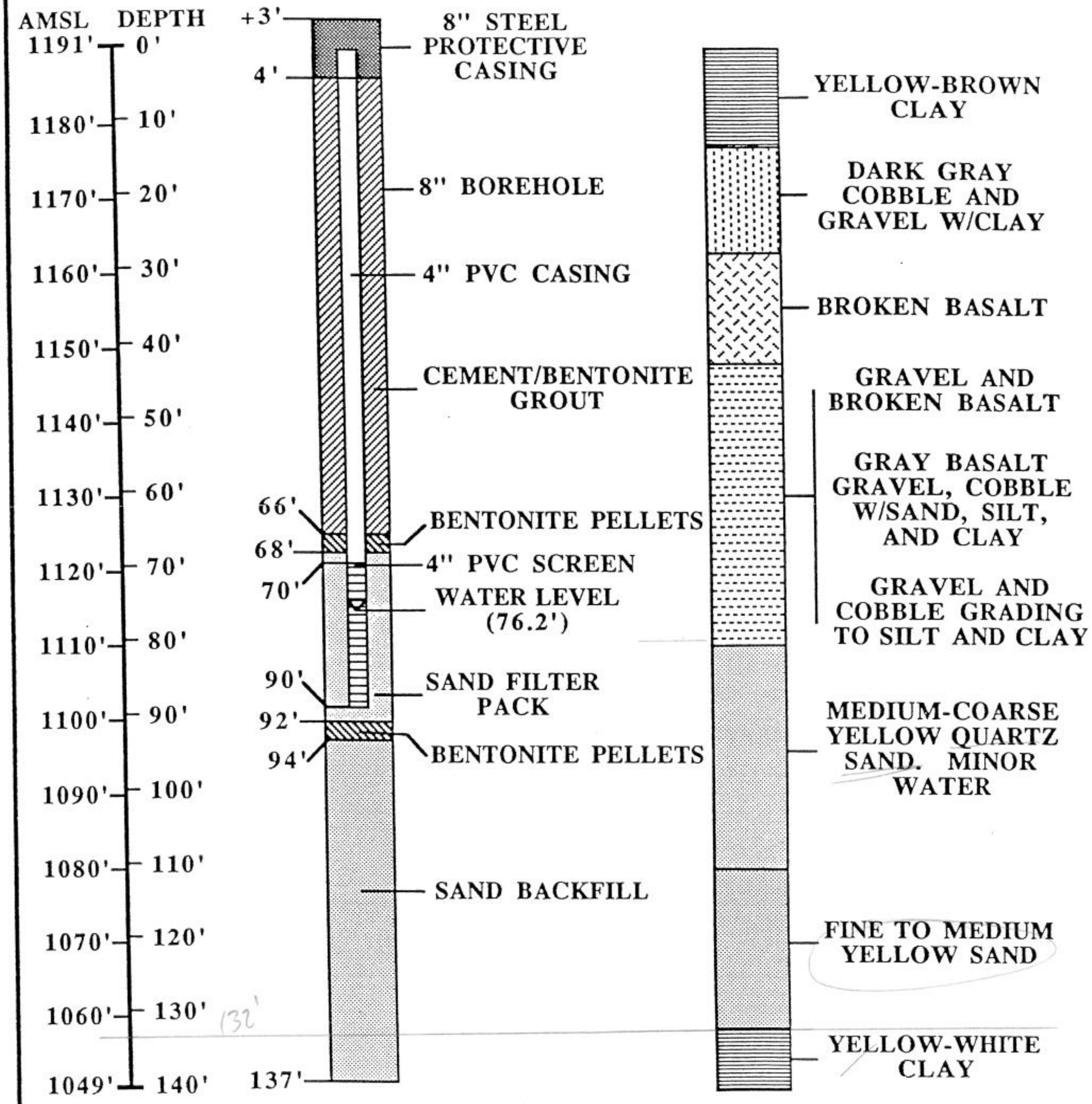
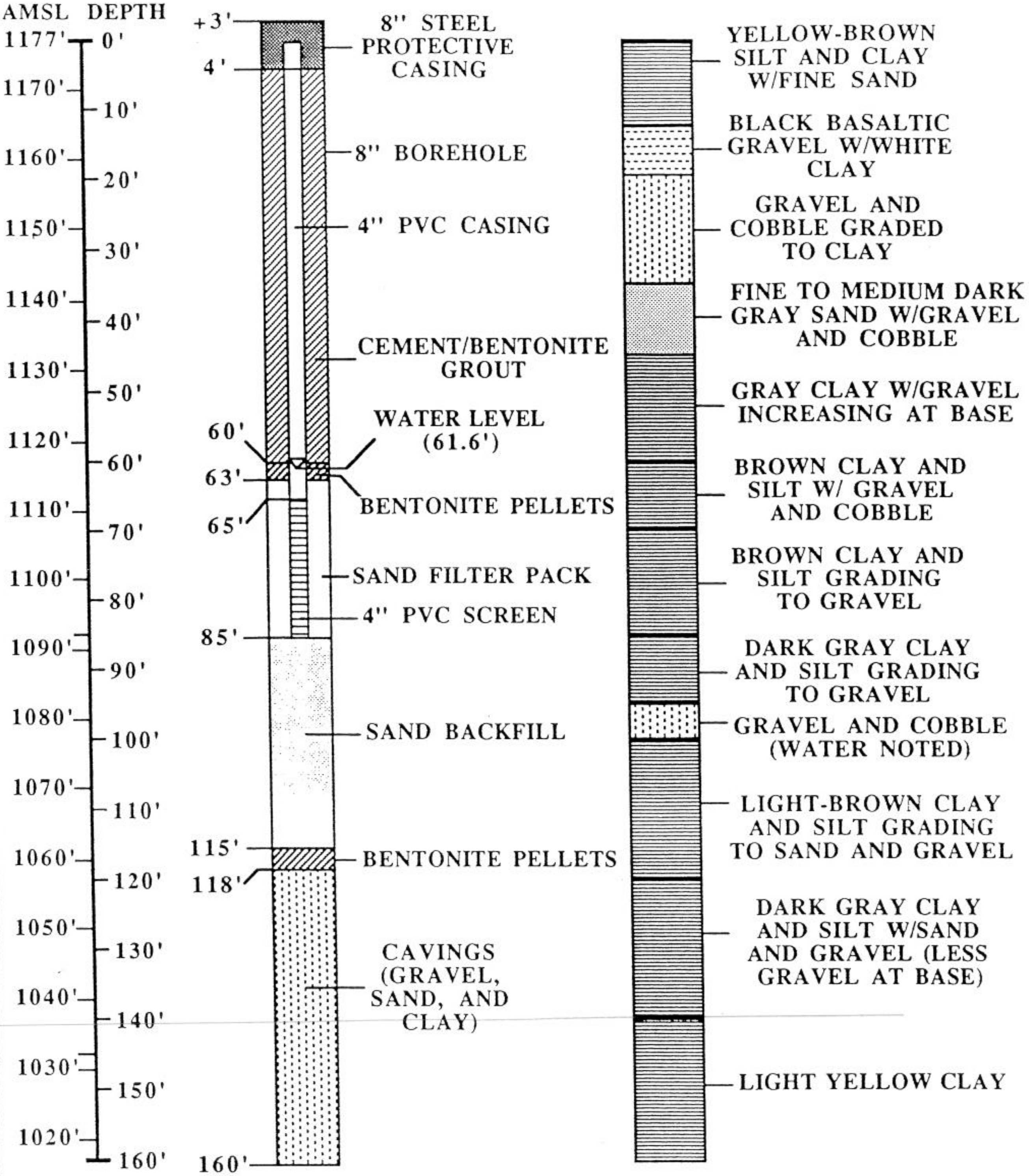


MW-5 Geology and Construction Details

HOWARD CONSULTANTS, INC.
CONSULTING GEOTECHNICAL ENGINEERS

PLATE 15

MW-06



MW-6 Geology and Construction Details

HOWARD CONSULTANTS, INC.
CONSULTING GEOTECHNICAL ENGINEERS

MW-07

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DATE ___

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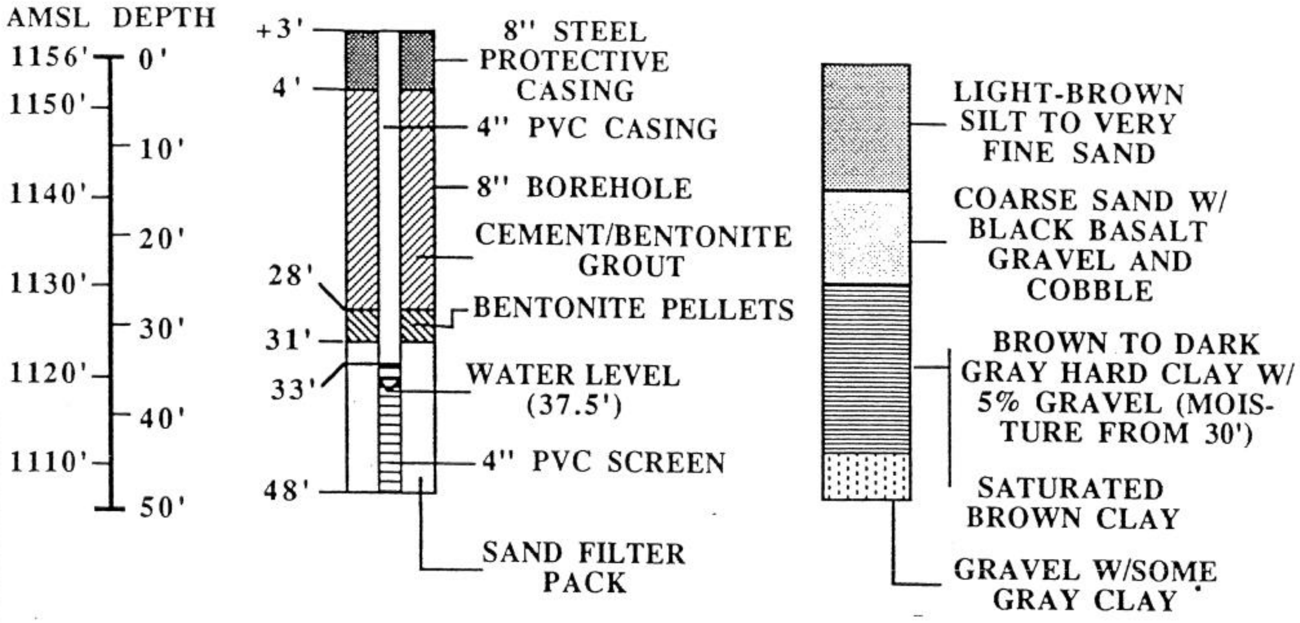
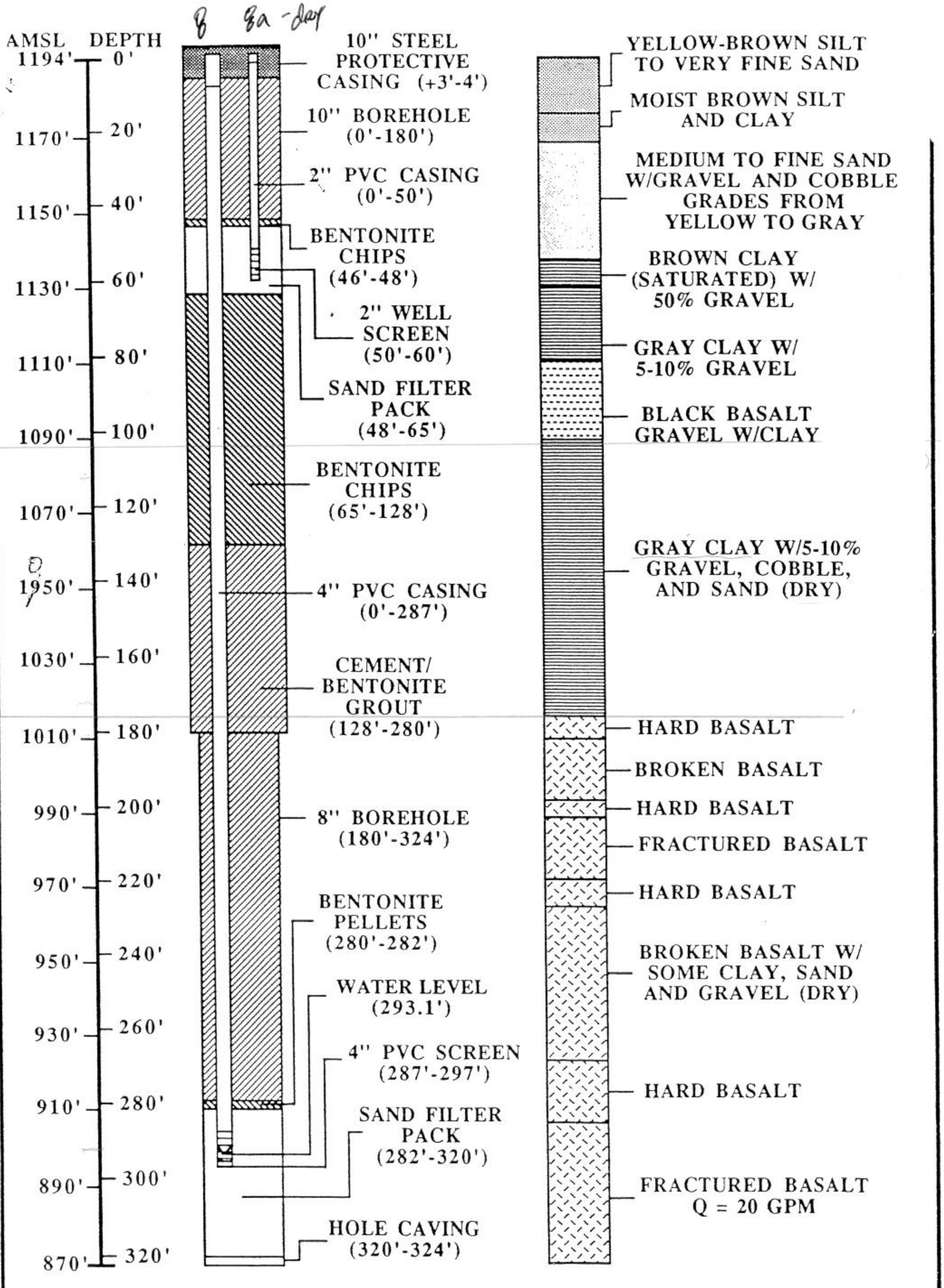


MW-7 Geology and Construction Details

HOWARD CONSULTANTS, INC.
CONSULTING GEOTECHNICAL ENGINEERS

MW-08
MW-08A



MW-8 Geology and Construction Details

HOWARD CONSULTANTS, INC.
CONSULTING GEOTECHNICAL ENGINEERS

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CH2M HILL

MW-12 (B-2)

PROJECT NUMBER NPE40234.A2

B-2 (MW-12)

SHEET 1 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL

LOCATION ASOTIN COUNTY, WASHINGTON

ELEVATION 1258.94 (GROUND)

DRILLING CONTRACTOR CASCADE DRILLING INC.

DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX

WATER LEVELS 147.4 FEET 3/7/95

START 3/1/95

FINISH 3/7/95

LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
						Description based on cuttings indicate by "C" in sample number and type column, no sample retained. "G" indicates grab sample and cuttings retained. DM indicates Dames & Moore type sample taken.
5.0	4.0 6.0	C			GRAVELLY SILT WITH SAND (ML tan/brown, dry, dense	
10.0						See computer log for additional comments an daily time log
15.0						
20.0	20.0 21.5	1-DM	18	10-16-24 (40)	SILTY GRAVEL (GM) tan, dry, medium dense angular gravel to 1 inch diameter	
25.0						
30.0						
35.0	35.0 36.0	2-G			SILTY GRAVEL WITH SAND (GM) tan, dry medium dense	
40.0	40.0 41.5	3-DM	18	9-11-50/5	POORLY GRADED GRAVEL (GP) gray, dry, very dense, angular gravel 2 inches diameter (see comment)	3-DM sample may not be representativ fines may be removed by air, see 2-G for fines and sand matrix which probabl was in sample

NPE40234.A2 | B-2 | SHEET 2 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON

ELEVATION 1258.94 (GROUND) DRILLING CONTRACTOR CASCADE DRILLING INC.

DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX

WATER LEVELS 147.4 FEET 3/7/95 START 3/1/95 FINISH 3/7/95 LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
50.0	50.0 51.0	4-G			CLAYEY GRAVEL (GC) tan, slightly moist, dense with vescular basalt gravel to 1 inch diameter	
55.0						
	56.0 57.0	C			CLAYEY GRAVEL (GC) tan, slightly moist, dense with vescular basalt gravel to 1 inch diameter	
60.0	60.0 61.5	5-DM	6	50/6	CLAYEY GRAVEL (GC) gray, moist, very dense, angular basalt gravel to 1.5 inches diameter	
65.0						
70.0						
75.0						
80.0	80.0 81.5	6-DM	8	29-50/2	CLAYEY GRAVEL (GC) gray, moist, very dense, angular basalt gravel to 1.5 inches diameter	
85.0						
	90.0					

CH2M HILL

NPE40234.A2 | B-2 | SHEET 3 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON

ELEVATION 1258.94 (GROUND) DRILLING CONTRACTOR CASCADE DRILLING INC.

DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX

WATER LEVELS 147.4 FEET 3/7/95 START 3/1/95 FINISH 3/7/95 LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	90.0	7-G			POORLY GRADED GRAVEL WITH CLAY AND SAND, (GP-GC) tan, moist, dense	
95.0						
100.0	100.0 101.5	8-DM	10	11-50/5	CLAYEY GRAVEL, (GC) tan, moist, very dense angular basalt gravel to 1 inch diameter	
105.0						
110.0						
115.0						
120.0	120.0 121.0	9-DM	10	19-50/6	CLAYEY GRAVEL, (GC) tan, moist, very dense, angular basalt gravel to 1 inch diameter	
125.0						
130.0						

CH2M HILL

NPE40234.A2 | B-2 | SHEET 4 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON
ELEVATION 1258.94 (GROUND) DRILLING CONTRACTOR CASCADE DRILLING INC.
DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX
WATER LEVELS 147.4 FEET 3/7/95 START 3/1/95 FINISH 3/7/95 LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
140.0	140.0 141.5	10-DM	8	25-50/5	SILTY GRAVEL, (GM) tan to brown, moist, very dense gravel is very angular basalt to 1.5 inches diameter	3/7/95
145.0						Water standing at 146 feet BGS after hole open for 3 days
150.0	150.0 151.5	11-G			SILTY GRAVEL WITH SAND, (GM) tan, moist, very dense	
155.0						
180.0	160.0 161.5	12-DM	9	30-50/4	POORLY GRADED GRAVEL WITH SILT AND SAND, (GP-GM) tan, moist, very dense, basalt gravel to 1 inch diameter	
185.0						
170.0						
175.0						
	180.0					

NPE40234.A2 | B-2 | SHEET 5 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON

ELEVATION 1258.94 (GROUND) DRILLING CONTRACTOR CASCADE DRILLING INC.

DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX

WATER LEVELS 147.4 FEET 3/7/95 START 3/1/95 FINISH 3/7/95 LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	180.0 181.5	13-DM	8	42-50/3	POORLY GRADED GRAVEL WITH CLAY, (GP-GC) tan to gray, wet, very dense	
185.0						
190.0						
195.0						
200.0	200.00 201.5	14-DM	9	30-50/3	POORLY GRADED GRAVEL WITH SAND, (GP) brown to gray, wet, very dense, angular gravel to 1.5 inches	
205.0						
210.0						
215.0						
220.0	220.0 221.5	15-DM	4	39-59/6-107/6	POORLY GRADED SAND WITH SILT, (SP-SM) tan to gray, wet, very dense	Silt is present as hard angular clumps within coarse sand matrix

NPE40234.A2 | B-2 | SHEET 6 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON

ELEVATION 1258.94 (GROUND) DRILLING CONTRACTOR CASCADE DRILLING INC.

DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX

WATER LEVELS 147.6 FEET 3/7/95 START 3/1/95 FINISH 3/7/95 LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
230.0						CL may be weathering product with in seams of weathered basalt rock
	232.0 233	16-G			WEATHERED BASALT WITH LEAN CLAY (CL) in fractures, clay is yellow, hard, moist	
235.0						
240.0						
245.0						
250.0	249.0 250.0	17-G			HARD FRACTURED BASALT WITH LEAN CLAY (CL) yellow, hard, moist, infracture zones END OF BORING LOG AT 250.0	
255.0						
260.0						
265.0						

MW-13 (B-3)

PROJECT NUMBER NPE40234.A2

BORING NUMBER B-3 (MW-13)

SHEET 1 OF 5

SOIL BORING LOG **MW-13 (B-3)**

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON

ELEVATION 1192.41 (GROUND) DRILLING CONTRACTOR CASCADE DRILLING INC.

DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX

WATER LEVELS 90.6 FEET 3/14/95 START 3/8/95 FINISH 3/10/95 LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
						Description based on cutting indicated by "C" in sample number and type column, no sample retained. "G" indicates grab sample and cuttings retained. DM indicates Dames & Moore type sample taken. See computer log for additional comments and daily time log
5.0	4.00 6.00	C			POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM) tan, dry, moist, dense	
10.0						
15.0						
20.0	20.0 21.5	1-DM	12	14-28-42 (70)	POORLY GRADED GRAVEL (GP) tan, dry, dense well rounded gravel to 1.5 inches diameter	
25.0						
30.0						
35.0						
40.0	40.0 41.5	2-DM	14	14-22-48 (70)	POORLY GRADED GRAVEL WITH SILT (GP-GM) tan, dry, dense well rounded to sub rounded gravel to 1.5 inches diameter	

NPE40234.A2

B-3

SHEET 2 OF 5

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON

ELEVATION 1192.41 (GROUND) DRILLING CONTRACTOR CASCADE DRILLING INC.

DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX

WATER LEVELS 90.6 FEET 3/14/95 START 3/8/95 FINISH 3/10/95 LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
50.0						
55.0						
60.0	60.0 61.5	3-DM	12	18-25-50/5	LEAN CLAY, (CL) brown ot gray and tan, moist, hard	
65.0						
70.0						
	72.0 73.0	C			POORLY GRADED GRAVEL, (GP) tan to gray/black slightly moist, dense	3/9/95
75.0						
80.0	80.0 81.5	4-DM	8	26-32-50/4	POORLY GRADED GRAVEL WITH SAND, (GP) tan to gray, wet, very dense, gravel to 1 inch diameter	
85.0	85.0 88.0	C			CLAYEY GRAVELD, (GC) tan to gray, moist, dense	
	88.0 90.0	C			POORLY GRADED GRAVEL WITH SAND, (GP) tan to gray, moist, dense	

NPE40234.A2 | B-3 | SHEET 3 OF 5

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON

ELEVATION 1192.41 (GROUND) DRILLING CONTRACTOR CASCADE DRILLING INC.

DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX

WATER LEVELS 90.6 FEET 3/14/95 START 3/8/95 FINISH 3/10/95 LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
95.0	95.0 96.0	5-G			POORLY GRADED SAND WITH GRAVEL (SP) tan to light brown, slightly moist, very dense, few .5 inch minus gravel	
100.0	100.0 101.5	6-DM	10	35-50-50/1	POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM) brown/tan with gray gravel to 1 inch diameter, moist, very dense	
105.0						
110.0						
115.0						
120.0	120.0 121.5	7-DM	0	200/6	CLAYEY GRAVEL (GC) tan to gray, moist, hard	Driving rock in 7-DM, could be basalt lens weathered with clay in fractures or as alteration products, description is based on cuttings.
125.0						
130.0						

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NPE40234.A2 | B-3 | SHEET 4 OF 5

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL
LOCATION ASOTIN COUNTY, WASHINGTON
ELEVATION 1192.41 (GROUND)
DRILLING CONTRACTOR CASCADE DRILLING INC.
DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX
WATER LEVELS 90.6 FEET 3/14/95
START 3/8/95
FINISH 3/10/95
LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
140.0	140.0 141.5	8-DM	8	41-50/3	POORLY GRADED GRAVEL WITH SILT AND SAND, (GP-GM) moist, hard tan to gray, gravel is .5 inch diameter	Sample could be slough from above E-log and 7-DM to 8-DM suggest highly weathered basalt zone at 120 feet-135 feet
145.0						
150.0	150.0 151.0	9-G			LEAN CLAY, (CL) with gravel, moist, yellow/gray gravel, hard, gravel to .5 inch diameter	
155.0						Water at 155 feet BGS, 75-100 gpm
160.0	160.0 161.0	10-G			CLAYEY GRAVEL (GC) yellow clay, black gravel, wet, very dense	Static water to 88 feet BGS. No split sample hole caving in wet zone, take grab sample
165.0						
170.0						
175.0						
	180.0					

CH2M HILL

NPE40234.A2 | B-3 | SHEET 5 OF 5

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON
ELEVATION 1192.41 (GROUND) DRILLING CONTRACTOR CASCADE DRILLING INC.
DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX
WATER LEVELS 90.6 FEET 3/14/95 START 3/8/95 FINISH 3/10/95 LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	180.0 181.5	11-G			LEAN CLAY WITH GRAVEL (CL) yellow clay/black gravel, angular to 1 inch diameter, wet, very hard	
185.0						
190.0						
195.0						
200.0	200.0 201.5	12-DM	2	200/2	LEAN CLAY WITH GRAVEL (CL) yellow clay/black gravel, angular to 1 inch diameter, wet, very hard END OF BORING LOG AT 200.0 FEET	
205.0						
210.0						
215.0						
220.0						

MW-14S

CH2MHILL

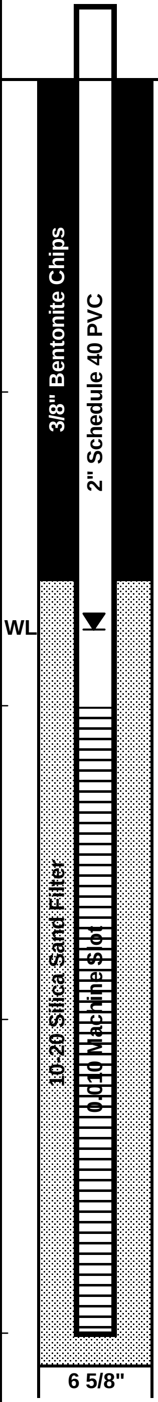
SOIL BORING / WELL LOG

PAGE: 1 OF 1

BORING NO: **MW-14S**
PROJECT NO: **331908.08.A2.03**
PROJECT NAME: Asotin County Regional Landfill Remedial Investigation
LOCATION: Between seep and MW-07, west of Evans Rd.
DRILLING CONTRACTOR: Budinger
TOC ELEVATION: 1123.30
GROUND ELEVATION: 1121.14
START DATE: 3/26/2009
END DATE: 3/26/2009
LOGGER: C. Sauer
DRILLING EQUIPMENT: Mobile B-57 Air rotary w/downhole hammer
BORING DIAMETER (inches): 6 5/8
TOTAL DEPTH (ft): 20
SWL: 10.97 ft btc
SWL DATE: 5/27/2009

Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" (n)	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**
					AIR CUTTINGS: Sandy **GRAVEL** w/ trace silt, dry, brown sand w/gray angular basalt gravel **(GP)**	START: 08:00	**GP**
1							
2							
3							
4	SPT-1	3.5- 3.7	4/18	62/2" **(R)**	Well Graded **GRAVEL** w/ 20% brown sand and trace silt, angular-vesicular-basalt gravel, 1/4 to 1.5-inch dia., very dense, gray and brown, dry **(GP-GM)**		**GP-GM**
5							
6							
7							
8	SPT-2	8.5- 9.5	12/10	41 30/4" **(30/4)**	**SILT** w/ 10% sub-rounded gravel & trace fine sand, clay nodules, slightly moist, hard, light brown to tan w/dark streaks. Gravel in silt matrix **(ML)**		**ML**
9							
10						Decrease in dust from 10-11 ft	
11							
12							
13						Cuttings moist to wet, sandy SILT w/ gravel observed from 12.5-14.5 ft	
14	SPT-3	13.5- 14.2	10/9	26 50/3" **(50/3)**	Silty **GRAVEL** w/ 10% brown sand, wet, very dense, 20-30% silt, angular basalt gravels 1/4 to 2-inch dia. Trace ML & CL zones **(GM)**		**GM**
15						Gravelly, wet cuttings from 15-16 ft	
16							
17						Rougher drilling; Cobble/boulder	
18						Softer drilling action	
19	SPT-4	18.5- 18.8	3/3	50/3" **(R)**	Poor Recovery: Silty/clayey **GRAVEL**, w/ 5% sand, wet, very dense, angular basalt gravels in clay/silt matrix. 50-60% Gravel **(GM-GC)**		**GM-GC**
20							
21						TD ~20.5 ft on 3-26-09	
22							
23							

Well Construction



MW-14D

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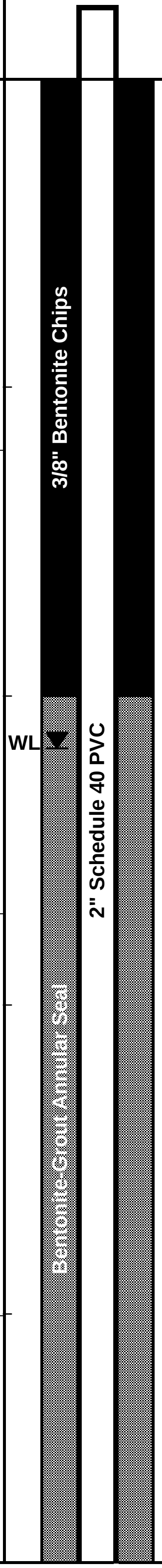
SOIL BORING / WELL LOG

PAGE: 1 OF 4

BORING NO: **MW-14D**
PROJECT NO: **331908.08.A2.03**
PROJECT NAME: Asotin County Regional Landfill Remedial Investigation
LOCATION: Between seep and MW-07
DRILLING CONTRACTOR: Budinger
TOC ELEVATION: 1,123.33
GROUND ELEVATION: 1,121.14
START DATE: 3/19/2009
END DATE: 3/24/2009
LOGGER: R. Greer
DRILLING EQUIPMENT: Mobile B-57 Air rotary w/downhole hammer
BORING DIAMETER (in): 6 5/8
SWL: 13.10 ft btc
TOTAL DEPTH (ft): 79.5
SWL DATE: 5/27/2009

Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" (n)	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**
					AIR CUTTINGS: Sandy **GRAVEL** w/ trace silt, dry, brown sand w/gray angular basalt gravel	START: 13:30 -Moderate/easy advancement	**GP**
1							
2						AIR: ND's, O2: 20.9%	
3							
4	SPT-1	3.5- 3.7	4/18	62/2" **(62/2)**	Well Graded **GRAVEL** w/ 20% brown sand and trace silt, angular-vesicular-basalt gravel, 1/4 to 1.5-inch diameter, very dense, gray and brown, dry **(GP-GM)**		**GP-GM**
5							
6						Change to soft/fine grained drilling conditions at 6 ft bgs - Cuttings gravelly clay w/sand.	
7							
8	SPT-2	8.5- 9.5	12/10	41 30/4" **(30/4)**	**SILT** w/ 10% sub-rounded gravel & trace fine sand, clay nodules, slightly moist, hard, light brown to tan w/dark streaks. Gravel in silt matrix **(ML)**	CUTTINGS: 8.5 ft: Dusty-not saturated	**ML**
9							
10							
11							
12						Driller indicates potential saturation at 12 ft based on dril action/less dust	
13							
14	SPT-3	13.5- 14.2	10/9	26 50/3" **(50/3)**	Silty **GRAVEL** w/ 10% brown sand, wet, very dense, 20-30% silt, angular basalt gravels 1/4 to 2-inch dia. Trace ML & CL zones **(GM)**		**GM**
15							
16						CUTTINGS: Moist, gray basalt, 1/2 to 1-inch gravel w/silt and clay nodules	
17							
18							
19	SPT-4	18.5- 18.8	3/3	50/3" **(50/3)**	Poor Recovery: Silty/clayey **GRAVEL**, w/ 5% sand, wet, very dense, angular basalt gravels in clay/silt matrix. 50-60% Gravel **(GM-GC)**		**GM-GC**
20						Softer drilling	
21							
22							
23							
	SPT-5	23.5-	18/18	20	Gravelly **CLAY** w/trace silt. (cont. on next page)	Sample cohesive-not wet.	**CL**

Well Construction



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SOIL BORING / WELL LOG

PAGE: 2 OF 4

BORING NO: **MW-14D**

Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" **(n)**	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**	**Well Construction**
24	SPT-5 (cont.)	23.5- 25	18/18	30 43 **(n=73)**	Gravelly **CLAY** w/ trace silt, light brown to tan w/iron streaks, hard, dry to slightly moist, 20-30% sub-rounded gravel, 1/2 to 1-inch diameter **(CL)**	Sample cohesive and doesn't appear to be water-bearing. Sample crumbled and smeared to smooth surface=CLAY	**CL**	Bentonite-Grout Annular Seal **2" Schedule 40 PVC**
25								
26								
27								
28								
29	SPT-6	28.5- 29.9	18/15	19 41 35/3" **(n=76)**	Gravelly **CLAY** w/ trace silt, light brown to tan w/iron streaks, hard, dry to slightly moist, 10% rounded gravel, 10% fine sand to silt, trace iron streaks **(CL)**	Sample crumbles and smears to smooth surface, doesn't appear to be water-bearing or saturated	**CL**	
30								
31								
32								
33						Dusty-no water observed in cuttings below 20 ft		
34	SPT-7	33.5- 34.5	14/10	22 50/4" **(50/4)**	**CLAY** w/ wet sandy gravel zone at 34 to 34.3 ft., very hard, wet lense, tan. Clay w/ 20% gravel and 10% sand, iron staining, 1/2 to 1-inch gravels **(CL)**	Change in drilling action and less dust at 33 ft Rough gravel zone @ 32-33 ft Drill rods wet at bottom 15-20 ft FINISH 3-19-09 at 34 ft RESUME 3-20-09	**CL**	
35								
36								
37								
38								
39	SPT-8	38.5- 40	18/18	12 30 32 **(n=62)**	**CLAY** w/ 5-10% weathered gravel & trace fine sand, tan-gray w/ iron staining/streaks, hard, dry to slightly moist, doesn't appear saturated or transmissive of GW flow, trace fine sand lense <2mm thick **(CL)**		**CL**	
40								
41								
42								
43								
44	SPT-9	43-5 44.5	12/11	18 50/5" **(50/5)**	**CLAY** w/ 10-20% sub-rounded gravels and trace fine sand, gray/green, iron nodules, hard, dry to slightly moist, doesn't appear saturated or transmissive of GW flow **(CL)**	Sample cohesive and doesn't appear to be water-bearing. Sample crumbled and smeared to smooth surface=CLAY	**CL**	
45								
46						Soft/clay-like drilling action at 44 ft		
47								
48								
	SPT-10	48.5-	8/11	16	Clayey **GRAVEL** w/ sand. (Cont. on next page)	No evidence of saturation	**GC**	

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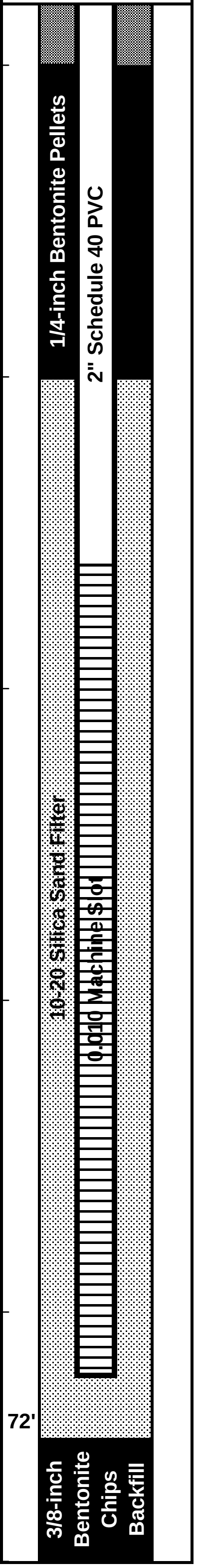
SOIL BORING / WELL LOG

PAGE: 3 OF 4

BORING NO: **MW-14D**

Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" (n)	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**
49	SPT-10	48.5-49.3	8/11	50/5" **(50/5)**	Clayey gray basalt **GRAVEL** (1/4 to 3-inch dia.) w/ 10% sand, 10-15% brown-tan fines, cohesive clay matrix, dry, very dense **(GC, GW-GC)**	Gravel zone within clay unit Inferred to be a gravelly zone at SPT-10, predominantly fine-soft, drill action	**GC-GW-GC**
50							
51							
52							
53							
54	SPT-11	53.5-54.5	12/10	21 32/4" **(32/4)**	Clayey **GRAVEL** to gravelly CLAY, w/ tan-brown san and 20% fines, very dense/hard, dry, no evidence of saturation, rounded basalt gravels (3/4 to 1.5-inch dia.) **(GC-CL)**	Fines smear smooth to surface Gravel clasts occasionally touching	**GC-CL**
55							
56							
57						Encounter water-bearing zone at ~57 ft bgs; formation water produced, <10 gpm via air circulation.	
58							
59	SPT-12	58.5	0/0	Heave	**NO RECOVERY**. Sample washed out; heave. **GRAB**: Poorly graded fine to med **SAND**, wet, w/ heave, <5% fines, 80% silica/quartz, mica and 15% basalt grains, trace silt. Clean **(SP)**	DTW: 12.7 ft bgs w/casing at 58.5 ft bgs	**SP**
60						FINISH 3-20-09 at 57.5 ft RESUME: 3-24-09	
61						Driller observes transition to gravels at 59 ft	
62							
63	SPT-13	63-63.5	2/5	50/5" **(R)**	Basalt **GRAVEL**/cuttings, w/ clay and trace fine sand w/ cobble, iron staining. Gravel angular, pulverized to 2-inch dia. **(GC)**		**GC**
64							
65							
66							
67							
68					Drill action infers same material as above	Unable to verify cuttings due to containment setup	
69							
70						Observe possible decrease in water production, decrease dril chatter. Driller observes tan clay cuttings at ~70.5 - 71 ft	
71	SPT-14	71-72	14/11.5	25 50/5.5" **(50/5.5)**	Tan **SILT** with clay, w/ trace mica, moist, very stiff, non-plastic. No evidence of saturation **(ML)**		**ML**
72							
73							

Well Construction



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SOIL BORING / WELL LOG

PAGE: 4 OF 4

BORING NO: **MW-14D**

Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" **(n)**	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**	**Well Construction**
74	SPT-15	74-75.5	14/18	21 58 97 **(155)**	Tan **SILT** w/ increasing clay w/ trace mica, very stiff, moist. 2-inch silica med. sand lense at 75 ft. Immediate transition to tan CLAY, hard, becoming light tan, not saturated or evidence of GW transmissivity **(ML, SP, CL)**	FINISH drilling at 74 ft. Begin continuous sampling due to subsurface conditions and driller concerns of getting casing stuck	**ML** **SP** **CL**	**3/8-inch Bentonite Chips Backfill**
74.5								
75								
75.5	SPT-16	**75.5** **76.5**	10/12	79 95 **(95)**	Tan-yellow**CLAY** w/ decreasing silt, some iron staining, hard, moist, not saturated, increasing iron staining with depth **(CL)**		**CL**	
76								
76.5	SPT-17 (2" SPT)	**76.5** **77.5**	9/12	33 103 **(103)**	SAME AS ABOVE **(CL)**		**CL**	
77								
77.5	SPT-18 (2" SPT)	**77.5** **78.5**	8/12	87 115 **(115)**	SAME AS ABOVE **(CL)**		**CL**	
78								
78.5	SPT-19 (2" SPT)	**78.5** **79**	7/8	127 82/2" **(82/2)**	SAME AS ABOVE **(CL)**		**CL**	
79						TD by SPT at 79 ft bgs (3-24-09)		6 5/8"
80								
81								
82								
83								
84								
85								
86								
87								
88								
89								
90								
91								
92								
93								

MW-15

CH2MHILL

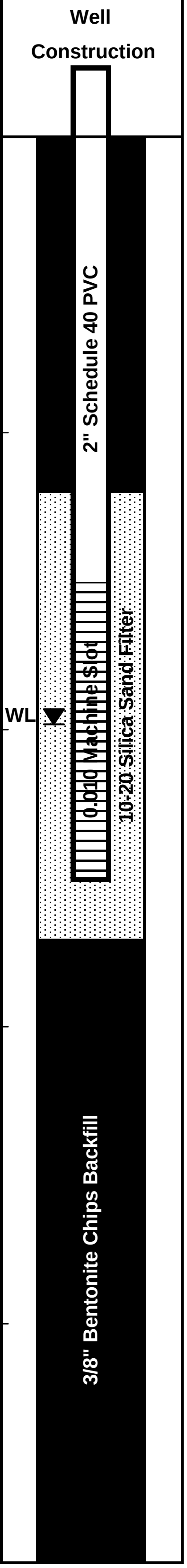
SOIL BORING / WELL LOG

PAGE: 1 OF 2

BORING NO: **MW-15**
PROJECT NO: **331908.08.A2.03**
PROJECT NAME: Asotin County Regional Landfill Remedial Investigation
LOCATION: Near Dry Creek, west of Evans Road
DRILLING CONTRACTOR: Budinger
TOC ELEVATION: 1102.71
GROUND ELEVATION: 1100.48
START DATE: 3/26/2009
END DATE: 3/27/2009
LOGGER: R. Greer
DRILLING EQUIPMENT: Mobile B-57 Air rotary w/downhole hammer
BORING DIAMETER: 6 5/8
SWL: 12.19 ft btc
TOTAL DEPTH: 40.5
SWL DATE: 5/27/2009

Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" **(n)**	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**
						START: 14:15 3-26-09	
1							
2							
3							
4	SPT-1	4 4.9	10/10	34 50/4" **(50/4)**	Sandy gray **GRAVEL** (1/4 to 1/2-inch dia.) w/ 5% silt and brown fines, dry, very dense, 10-15% sand **(GW/GW-GM)**	Rough gravel drilling action	**GW/ GW- GM**
5							
6						Change to soft/fine grained drilling conditions at 6 ft. Cuttings gravelly clay w/sand.	
7							
8						CUTTINGS: 8.5 ft: Dusty-not saturated	
9	SPT-2	9 9.5	4/6	87/6" **(R)**	Poor Recover: Well graded **sandy GRAVEL** to **silty GRAVEL** (1/4 to 3-inch dia.), w/ 5% silt and brown fines, wet, very dense, 10-15% sand **(GW-GM)**	Tip of SPT wet. WL= 9.0 ft.	**GW- GM**
10							
11							
12						Driller indicates potential saturation at 12 ft. based on drill action/less dust	
13							
14	SPT-3	14 15.5	--	28 39 50/3" **(50/3)**	Gravelly **CLAY** w/ trace fine sand, 20-40% gravel, sub-rounded, clasts typically not touching, tan-gray, dry, iron-stained **(CL)**		**CL**
15							
16						Clay matrix w/ significant gravel, not saturated	
17							
18							
19	SPT-4	19 20.5	15/17	15 30 50/5" **(50/5)**	Brown **CLAY** w/ 5% sub-rounded, slightly vesiculed, slightly weathered gravel with trace silt, moderate density, dry. Increasing gravel/cobbles at 20 ft **(CL)**	FINISH: 3-26-09 RESUME: 3-27-09	**CL**
20						Cobble/gravel at 20 ft.	
21							
22							
23							

Well Construction



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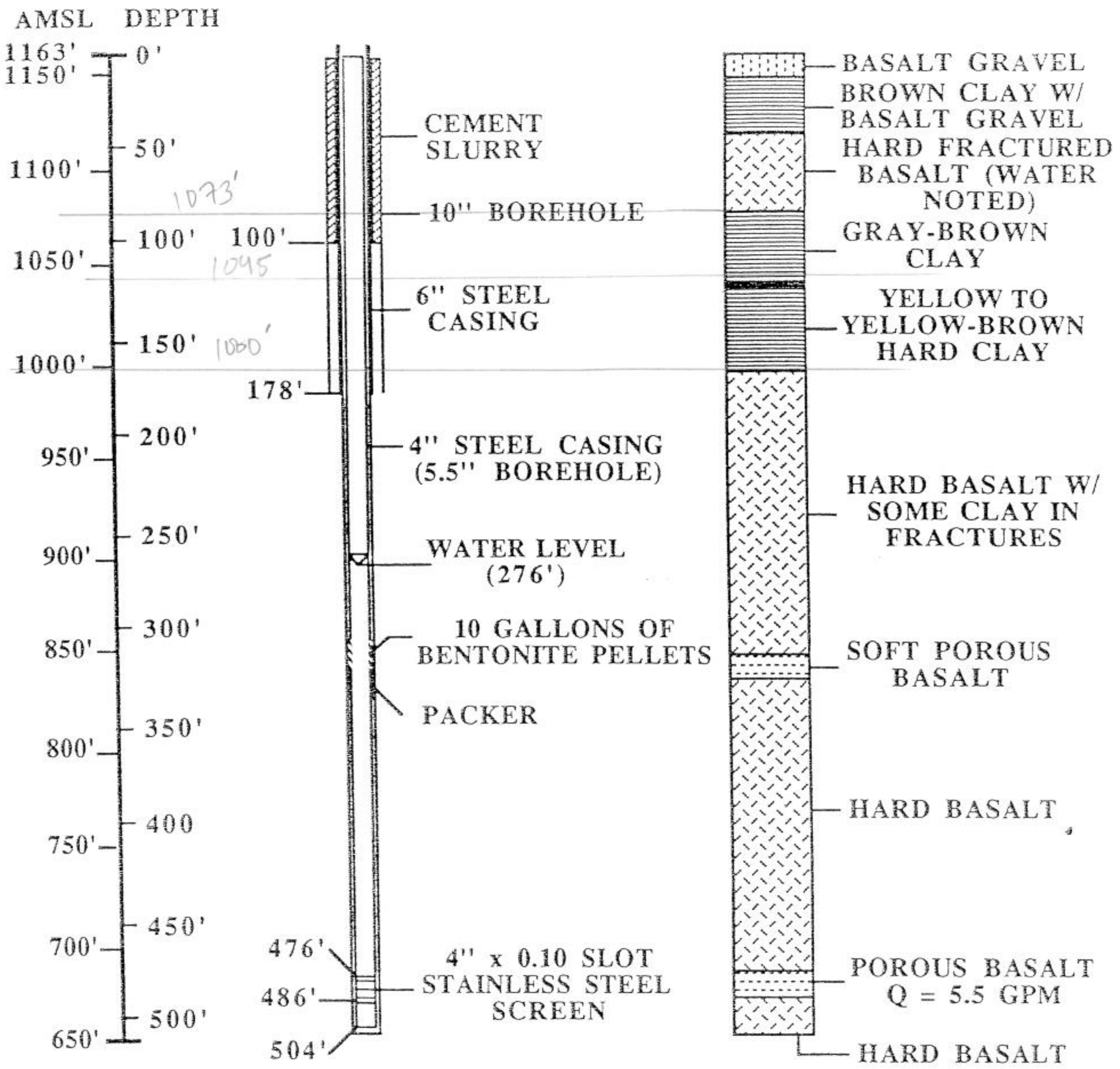
SOIL BORING / WELL LOG

PAGE: 2 OF 2

BORING NO: **MW-15**

Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" **(n)**	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**	**Well Construction**
24	SPT-5	24-25	10/9	34 50/3" **(50/3)**	Brown **CLAY** w/ silt, low plasticity, w/ 10% coarse, sub-rounded gravel, moist, stiff, increasing gravel at 24.8 ft. **(CL)**		**CL**	**3/8" Bentonite Chips Backfill**
25								
26						Driller observes increasing sand and gravel Faster drill advancement		
27								
28								
29	SPT-6	29-29.5	3/6	50/6" **(R)**	Brown **CLAY** w/ trace fine sand and 30% sub-angula gravel, moist, stiff, potential increase in moisture **(CL)**	Moist air cuttings 6 inches of water at 29.5 ft. Probable saturated lense abov clay at 29 ft.	**CL**	
30								
31								
32								
33						Probable large cobble		
34	SPT-7	34-36	20/24	20 21 26 29 **(n= 76)**	Angular coarse **GRAVEL** with clay, moist, for first 2 inches. Abrupt transition to brown CLAY w/ silt and trace fine sand, trace iron staining and trace sub-rounded gravel, stiff, moist **(GP-GC/CL)**		**GP-GC** **CL**	
35								
36								
37								
38								
39	SPT-8	39-40.5	16/18	19 38 45 **(n=83)**	Brown **CLAY** w/ 20% coarse sub-rounded gravel (1/2 to 2-inch dia.), w/ trace iron staining, trace silt with fine sand, moist, stiff **(CL)**	Auto-hammer gear drive malfunction. Drilling manually controls hammer TD: 40.5 ft on 3-27-09	**CL**	6 5/8"
40								
41								
42								
43								
44								
45								
46								
47								
48								

Bovay



Log of the Bovay Well

HOWARD CONSULTANTS, INC.
CONSULTING GEOTECHNICAL ENGINEERS

PLATE 2

EVI 3
BY
DATE
FILE
CHECKED BY
DAT

HCI-1

DEPTH	SYMBOL	SOIL DESCRIPTION	SAMPLE	N VALUE
		Brown silty fine sand.		
		Grading with pebbles.		
25				
		Grading to basalt gravel and boulders.		
		Brown clayey fine sand		
50				
75		Brown clayey sand and gravel.		
100		Grading without clay.		
		Grading to clayey fine sand.		
125		Grading with gravel.		
150		Boring terminated at 150 feet. No water encountered.		

BORING NO. HCI-1
PROJECT NO.
ELEVATION
DATE DRILLED April 24 & 25,1989

ASOTIN COUNTY LANDFILL
WASHINGTON

HOWARD CONSULTANTS, INC.
CONSULTING GEOTECHNICAL ENGINEERS

B-1

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON

ELEVATION 1229' (?) DRILLING CONTRACTOR CASCADE DRILLING INC.

DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX

WATER LEVELS 118 BGS START 2/23/95 FINISH 3/27/95 LOGGER K. CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
					SANDY SILT, (ML) tan, moist, medium stiff	Description based on cuttings indicated by "C" in sample number and type column, no sample retained. "G" indicates grab sample and cuttings retained. DM indicates Dames & Moore type sample taken.
5.0		C				
	10.0					
10.0	11.5	1-DM	12"	10-13-22 (35)	SILT, (ML) tan, dry, very stiff, 1.5 inches diameter rock in upper end of sampler	
	12.0 13.0	C			GRAVELLY SILT, (ML) tan, very slightly moist, very stiff	See computer log for addtional comments and daily time log.
15.0						
	20.0					
20.0	21.5	2-DM	8"	9-41-50/5" (5)	GRAVELLY SILT WITH SAND, (ML) tan, slightly moist, hard	Gravels to 1.5 inches diameter 4 inches slough in top of sample (discard).
25.0						
	27.0 28.0	C			POORLY GRADED SAND WITH SILT AND GRAVEL, (SP-SM) brown, slighty moist, dense	Change at 28 feet to coarser material.
30.0	30.0 34.0	3G			POORLY GRADED GRAVEL WITH SAND AN SILT, (GP-GM) tan to gray, dry, very dense	
35.0	35.0 36.0	C			POORLY GRADED SAND WITH SILT AND GRAVEL, (SP-SM) tan, slightly moist, dense	
	38.0	C			SILT, (ML) brown, moist very stiff	
	40.0					
40.0	41.5	4-DM	8"	11-12-15 (27)	CLAYEY GRAVEL, (GC) brown, moist, stiff, zones of mottled material, mica flakes throughout sample	
	45.0					
45.0	46.0	5-G			LEAN CLAY, (CL) brown, moist, stiff	

CH2M HILL

NPE40234.A2

B-1

SHEET 2 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON

ELEVATION DRILLING CONTRACTOR CASCADE DRILLING INC.

DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX

WATER LEVELS 118 BGS START 2/23/95 FINISH 3/27/95 LOGGER K. CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	52.0 53.0	6-G			SILT (ML) tan to brown moist, stiff few gravel to 1 inch diameter, well rounded	
55.0	55.0 56.0	7-G			POORLY GRADED SAND (SP) tan, moist, medium dense, several 1 inch very well rounded gravel	Starting to pick up gravel and cobbles with sand and silt at 57 feet
60.0	60.0 61.5	8-DM	8"	11-15-18 (23)	POORLY GRADED GRAVEL (GP) gray, dry, medium dense, 3/4 inch to 1/4 inch very angular basalt fragments, (could be cuttings)	
65.0	64.0 65.0	C			SILTY GRAVEL (GM) tan, moist, medium dense	
70.0	70.0 71.5	9-G			SILTY GRAVEL (GM) tan, moist, dense	
	73.0 74.0	10-G			GRAVELLY LEAN CLAY (CL) tan, moist, medium dense	
75.0						
80.0	80.0 81.5	11-DM	16"	12-21-29 (50)	LEAN CLAY (CL) gray/tan/green mottled, moist, very stiff	
85.0						
90.0						
95.0	94.0 95.5	C			GRAVELLY LEAN CLAY (CL) tan/gray, moist, very stiff more gravel in cuttings at 95 feet	
	100.0					

NPE40234.A2	B-1	SHEET 3 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL
LOCATION ASOTIN COUNTY, WASHINGTON
ELEVATION
DRILLING CONTRACTOR CASCADE DRILLING INC.
DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX
WATER LEVELS 118 BGS
START 2/23/95
FINISH 3/27/95
LOGGER K. CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	100.0 101.5	12-DM	16"	12-19-23 (42)	GRAVELLY LEAN CLAY, (CL) brown, moist, very stiff, few 1/2 inch minus gravel, well rounded	
105.0						
110.0						
115.0	115.0 118.0	C			POORLY GRADED SAND WITH SILT AND GRAVEL, (SP-SM) tan, dry, medium dense	Water at 118 feet BGS.
120.0	120.0 121.5	13-DM	14"	50/6"	WELL GRADED GRAVEL WITH SAND, (GM) gray, wet, very dense, very angular gravels and cobbles to 2 inches diameter	Very permeable formation at 125 feet formation taking air and air not lifting cuttngs add foam to help lift cuttings.
125.0						
130.0						
135.0						138 feet vesicular basalt
140.0	140.0 141.5	14-DM	6"	50/6"	VESCULAR BASALT LENS/WEATHERED BASALT ROCK, black/gray, wet, very dense	Sampler driven into basalt rock, highly weathered, vesicular
145.0						
	148.0 149.0	15-G			CLAYEY GRAVEL, (GC) tan, to brown, moist, soft to firm with vesicular basalt gravel	No water returing to surface with air

NPE40234.A2 | B-1 | SHEET 4 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON
ELEVATION DRILLING CONTRACTOR CASCADE DRILLING INC.
DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX
WATER LEVELS 118 BGS START 2/23/95 FINISH 3/27/95 LOGGER K. CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
155.0						
160.0	160.0 161.5	16-DM	9"	70/6"	CLAYEY GRAVEL, (GC) tan, wet, hard	Drilling smoothly in (GC) materials.
165.0						
170.0						
175.0						
180.0	180.0 181.5	17-DM	6"	98/6"	CLAYEY GRAVEL, (GC) brown, wet, very dense angular gravel to 1 inch diameter	
	183.0 186.0	C			POORLY GRADED GRAVEL, (GP) black, wet, very dense	Possbile thin basalt flow, highly weathered
185.0						
190.0	190.0 191.0	18-G			CLAY WITH SAND, (CL) yellow/white, moist, very stiff	190 feet "yellow clay" marker bed at sit
195.0						
	200.0					

CH2M HILL

PROJECT NUMBER
NPE40234.A2

BORING NUMBER
B-1

SHEET 5 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL
LOCATION ASOTIN COUNTY, WASHINGTON
ELEVATION
DRILLING CONTRACTOR CASCADE DRILLING INC.
DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX
WATER LEVELS 118 BGS
START 2/23/95
FINISH 3/27/95
LOGGER K. CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	200.0 201.5	19-DM	18"	18-50-110/6"	LEAN CLAY, (CL) yellow/white/brown, slightly moist, hard	Driller goes to open hole at 190 feet
205.0						
210.0	210.0 212.0	C			LEAN CLAY WITH SAND, (CL) yellow/white/brown, moist, hard to very stiff	
215.0						
220.0	220.0 221.5	20-DM	13"	30-50-50/6"	LEAN CLAY WITH SAND, (CL) yellow/tan, wet, hard, mica flakes and sand in clumpy clay matrix	
225.0						
230.0						
235.0						
240.0	240.0 241.5	21-DM	18"	25-30-59/6"	CLAYEY SAND, (SC) yellow/tan/white, moist, v. dense, fine to medium grain sand with abundant mica flakes	
	243.0				BASALT ROCK, black, dry, fresh unweathered solid basalt	
245.0						

PROJECT NUMBER
NPE40234.A2

BORING NUMBER
B-1

SHEET 6 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON
ELEVATION ________ DRILLING CONTRACTOR CASCADE DRILLING INC.
DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX
WATER LEVELS 118 BGS START 2/23/95 FINISH 3/27/95 LOGGER K. CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
					<u>BASALT ROCK</u>, black, dry, fresh unweathered solid basalt	
255.0						
		22-G				
260.0						
265.0						
270.0						
	275.0					
275.0					END OF BORING LOG AT 275.0 FEET	
280.0						
285.0						
290.0						
295.0						

CH2M HILL **B-4**

PROJECT NUMBER NPE40234.A2

BORING NUMBER B-4

SHEET 1 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON

ELEVATION Saver est ~ 1190' DRILLING CONTRACTOR CASCADE DRILLING INC.

DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX

WATER LEVELS 256 BGS START 3/10/95 FINISH 3/14/95 LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
						Description based on cuttings indicated by "C" in sample number and type column, no sample retained. "G" indicates grab sample and cutttings retained. DM indicates Dames & Moore type sample taken.
5.0						
10.0	10.0 11.0	C			POORLY GRADED SAND WITH GRAVEL (SP) tan, dry, loose	See computer log for additional comments and daily time log
15.0						
20.0	20.0 21.5	1-DM	12	2-4-7 (11)	POORLY GRADED SAND (SP) tan, dry, loose	
25.0						
30.0	30.0 31.0	2-G			POORLY GRADED GRAVEL WITH SAND (GP) tan and gray, dry, medium dense	
35.0						
40.0	40.0 41.5	3-G	0	25-42-50/6	POORLY GRADED GRAVEL WITH SAND (GP) tan and gray, dry medium dense	No sample returned, sample catcher damaged, driller out of catchers. Take grab sample, get catcher for next sample
45.0						

CH2M HILL

PROJECT NUMBER
NPE40234.A2

BORING NUMBER
B-4

SHEET 2 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON

ELEVATION DRILLING CONTRACTOR CASCADE DRILLING INC.

DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX

WATER LEVELS 256 BGS START 3/10/95 FINISH 3/14/95 LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
55.0						
60.0	60.0 61.5	4-DM	12	17-125/6	SILT WITH SAND (ML) tan, slightly moist, hard	
65.0						
70.0	70.0 71.0	5-G			POORLY GRADED GRAVEL (GP) black, slightly moist, dense	
75.0						
80.0	80.0 81.5	6-DM	9	58-100/3	POORLY GRADED GRAVEL WITH SAND (GP) tan sand, black basalt gravel, moist, very dense	
85.0						
90.0						
95.0						
	100.0					

NPE40234.A2

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SHEET 3 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON

ELEVATION ______ DRILLING CONTRACTOR CASCADE DRILLING INC.

DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX

WATER LEVELS 256 BGS START 3/10/95 FINISH 3/14/95 LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	100.0 101.5	7-DM	12	32-100/6	POORLY GRADED SAND WITH GRAVEL (SP) tan sand with black well rounded basalt gravel, moist, very dense	
105.0						
110.0						
115.0						
120.0	120.0 121.5	8-DM	10	45-100/5	POORLY GRADED GRAVEL WITH SILT AND SAND, (GP-GM) tan to black, moist, very dense	
125.0						Driller goes to open hole at 130 feet
130.0						
135.0						
140.0	140.0 141.5	9-DM	12	48-100/3	POORLY GRADED GRAVEL WITH CLAY (GP-GC) tan to gray/black, moist, very dense, 1 inch diameter well rounded basalt gravel	
145.0						

NPE40234.A2

B-4

SHEET 4 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON

ELEVATION DRILLING CONTRACTOR CASCADE DRILLING INC.

DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX

WATER LEVELS 256 BGS START 3/10/95 FINISH 3/14/95 LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
155.0						
180.0	160.0 161.5	10-G			POORLY GRADED GRAVEL WITH SILT AND SAND, (GP-GM) tan with black basalt gravel, slightly moist, very dense	Possible weathered and fractured basalt with infillings of sand and silt in fractures
185.0						
170.0						
175.0						
180.0	180.0 181.0	11-G			POORLY GRADED GRAVEL WITH SILT AND SAND, (GP-GM) tan with black basalt gravel, slightly moist, very dense	Interval from 160 to 239 feet is possible interbedded layers of highly weathered and fractured basalt and gravel with silt and sand. Cannot drive Dames & Moore sample due to nature of formation, driving gives no recovery.
185.0						
190.0	190.0				POORLY GRADED GRAVEL WITH SILT AND SAND, (GP-GM) tan with black basalt gravel, slightly moist, very dense	
195.0		12-G				
	200.0					

PROJECT NUMBER
NPE40234.A2

BORING NUMBER
B-4

SHEET 5 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL LOCATION ASOTIN COUNTY, WASHINGTON

ELEVATION DRILLING CONTRACTOR CASCADE DRILLING INC.

DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX

WATER LEVELS 256 BGS START 3/10/95 FINISH 3/14/95 LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
205.0						
210.0						
215.0						
220.0	220.0				POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM) tan with black basit gravel, slightly moist, very dense	
225.0		C				
230.0	230.0					
235.0						
	239.0					
240.0	240.0	C			BASLT ROCK, black, dry, fresh to slightly weathered	
245.0						

CH2M HILL

PROJECT NUMBER
NPE40234.A2

BORING NUMBER
B-4

SHEET 6 OF 6

SOIL BORING LOG

PROJECT ASOTIN COUNTY LANDFILL
LOCATION ASOTIN COUNTY, WASHINGTON
ELEVATION
DRILLING CONTRACTOR CASCADE DRILLING INC.
DRILLING METHOD AND EQUIPMENT T3W INGERSOL-RAND AIR ROTARY W/HAMMER/ODEX
WATER LEVELS 256 BGS
START 3/10/95
FINISH 3/14/95
LOGGER K.CAMPBELL

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
255.0	256.0					
		C			BASLAT, black, wet, fresh to slightly weathered	Water at 256 feet BGS. Hole stands for 2 hours, no change in water est., less than 1 gpm to hole.
260.0	260.0				END OF BORING LOG AT 260.0 FEET	
265.0						
270.0						
275.0						
280.0						
285.0						
290.0						
295.0						

Electronic Submittal Only

See DVD located in cover of this report

BORING LOG

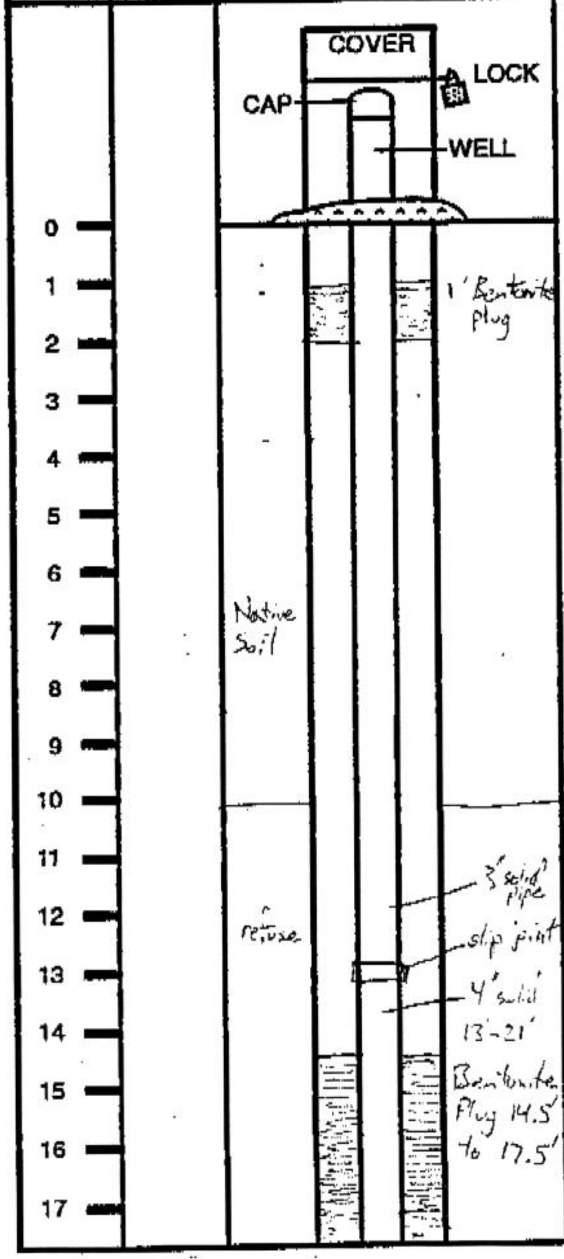
SCS ENGINEERS
Environmental Consultants
2405 140th Ave NE
Suite 107
Bellevue, WA 98005

800-727-6393
FAX (206) 746-6747

PROJECT: Asotin County LFG
LOCATION:
JOB NUMBER: 0494008
GEOLOGIST/ENGINEER: B. Dorn
DRILLER: DBM
DRILL RIG:
DRILLING METHOD: 26" bucket auger

HOLE/WELL #: LGW-1
DIAMETER: 26"
TOTAL DEPTH: 46' (53' of pipe)
DATE STARTED: Oct. 31, 1995 0910
DATE COMPLETED: Nov. 1, 1995 0900
SAMPLING DEVICE:
PAGE: 1 OF: 2

DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/ FOOT	USCS SYMBOL	DESCRIPTION



Began drilling at 9:10
≃7' of 3" casing above grade

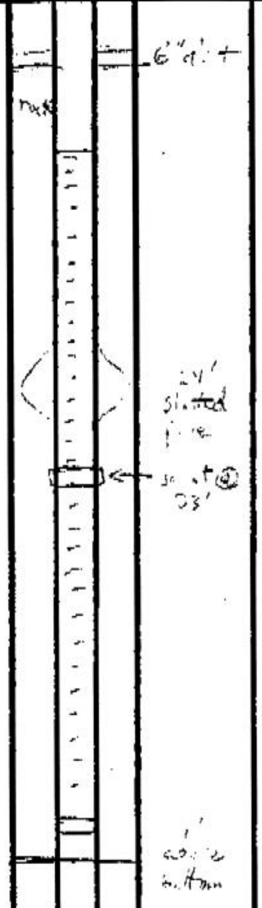
Native Soil w/ [illegible] gravel + cobbles
dry. med. brown

10' refuse
dry, grey, 50-75% soil
includes tire, wire, plastic
small quantity of yard waste
household refuse

(Paper dating from 1981)

BORING LOG

PROJECT: Asotin County Landfill
HOLE/WELL #: LCW-1
JOB NUMBER: CH94008
PAGE: 2 OF: 2



DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/ FOOT	USCS SYMBOL	DESCRIPTION
						house hold waste same yard waste dry
18						
20						
22						
24						
26						Darker grey house hold refuse
28						
30						
32						
34						
36						36' wood, og? and native soil, evergreen branches
38						38' yard waste grass clippings. (still green) Plastic + soil
40						
42						42' ~~paper~~, wood, plastic
44						44' hitting cobbles + native soil
46						46' native soil w/ gravel and cobbles. Stopped work at 2:00PM 10/31
						Casing lowered in @ 3:00PM 11/1

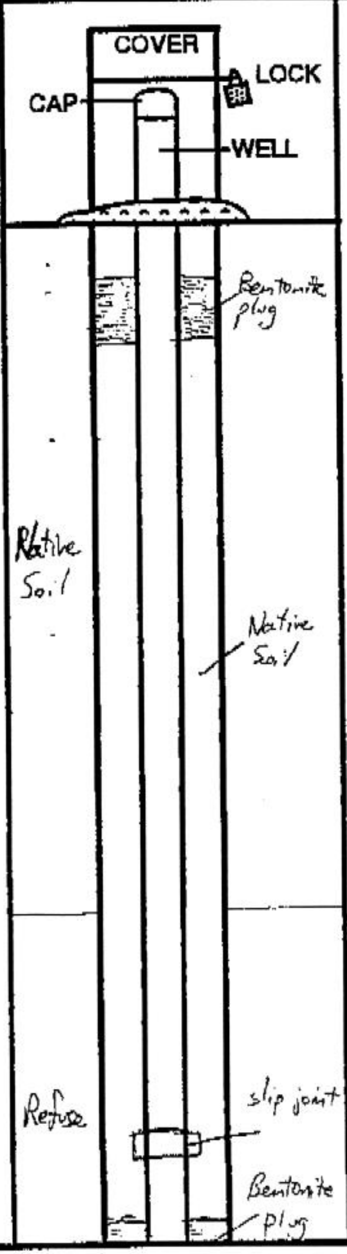
BORING LOG

SCS ENGINEERS
Environmental Consultants
2405 140th Ave NE
Suite 107
Bellevue, WA 98005

800-727-6393
FAX (206) 746-6747

PROJECT: Asotin County Landfill
LOCATION:
JOB NUMBER: 0494008
GEOLOGIST/ENGINEER: B. Doan
DRILLER: DBM
DRILL RIG:
DRILLING METHOD: Bucket Auger

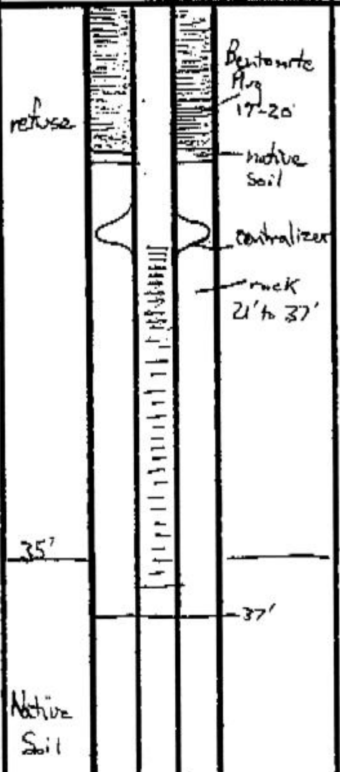
HOLE/WELL #: LGW-2
DIAMETER: 24"
TOTAL DEPTH: 37' (45' of pipe)
DATE STARTED: Nov. 7, 1995 1150
DATE COMPLETED: Nov. 7, 1995 1450
SAMPLING DEVICE:
PAGE: 1 OF: 2



DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/ FOOT	USCS SYMBOL	DESCRIPTION
						Well casing extends approx. 4' above grade Extended 5' 11-8-95 45' total
0						0-12' Native Soil
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						Slightly grey material + soil paper, tire, textiles, plastic
14						
15						greyish-brown soil, grey paper + clothes
16						
17						moist yard waste, paper, plastic, household refuse

BORING LOG

PROJECT: Asotin County Landfill
HOLE/WELL #: LGW-2
JOB NUMBER: 0494008
PAGE: 2 OF: 2



DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/ FOOT	USCS SYMBOL	DESCRIPTION
18						Dry, grey, soil and paper debris; plastic, household refuse.
20						
22						Wire, grey wood debris, paper plastic Dry to slightly moist
24						
26						Grey, moist paper, plastic, and yard waste (cedar boughs)
28						
30						DK grey, moist paper debris, yard waste, plastic, tires.
32						
34						
36						
38						

Predictions, Rock to 21
~~Bentonite~~
Soil to 20½
Bentonite to 17

BORING LOG

SCS ENGINEERS
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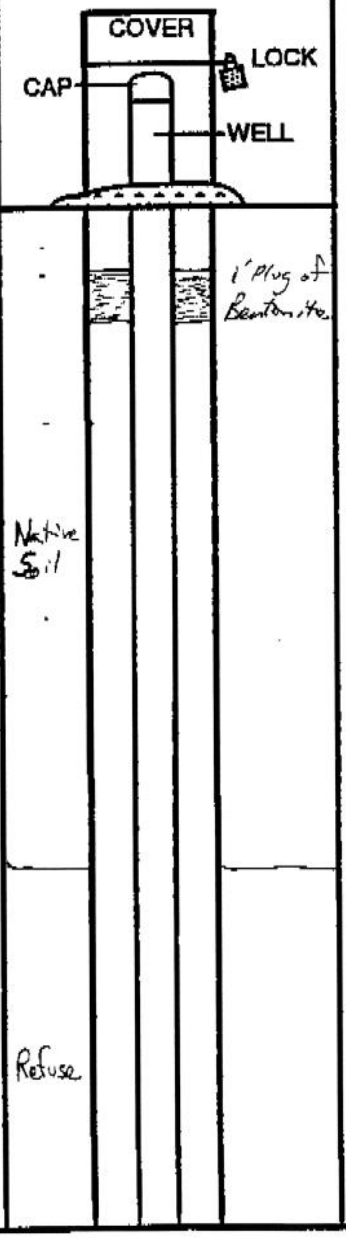
Suite 107
Bellevue, WA 98005

800-727-6393
FAX (206) 746-6747

PROJECT: Asotin County Landfill
LOCATION:
JOB NUMBER: 0494008
GEOLOGIST/ENGINEER: B. Doan
DRILLER: DBM
DRILL RIG:
DRILLING METHOD:

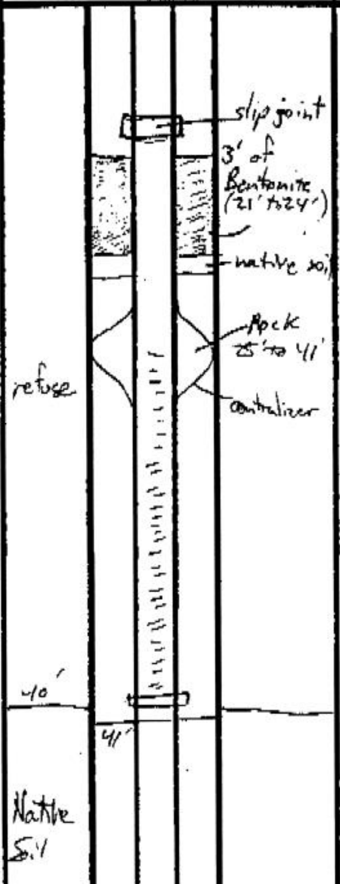
HOLE/WELL #: LGW-3
DIAMETER: ~~26"~~ 24"
TOTAL DEPTH: 41' (50' of pipe)
DATE STARTED: Nov. 7, 1995 0830 hrs
DATE COMPLETED: Nov. 7 1995 1145
SAMPLING DEVICE:
PAGE: 1 OF: 2

DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/ FOOT	USCS SYMBOL	DESCRIPTION
						Casing extends approx. 5½' above grade Extended 5' 11-8-95 to 50' total
0						0 - 11½' Native soil
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						Clothes, paper, grey material moist
13						
14						
15						
16						Paper, moist putrid material plastic
17						ND methane w/ Gastech meter

BORING LOG

PROJECT: Asotin County Landfill
HOLE/WELL #: LGW-3
JOB NUMBER: 0494008
PAGE: 2 OF: 2

DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/ FOOT	USCS SYMBOL	DESCRIPTION
18						Tire, grey soil (50%), foam rubber, paper, plastic
20						Grey, moist, leaves, paper wood debris
22						
24						
26						
28						
30						Tire, wood debris (dk grey), Paper, plastic
32						
34						Dk grey material, yard waste, paper, slightly moist
36						wood debris, grey soil, Paper
38						
40						40'. native soil
42						drilled to 41' - refused
						5% methane in bore hole when 35' was reached



BORING LOG

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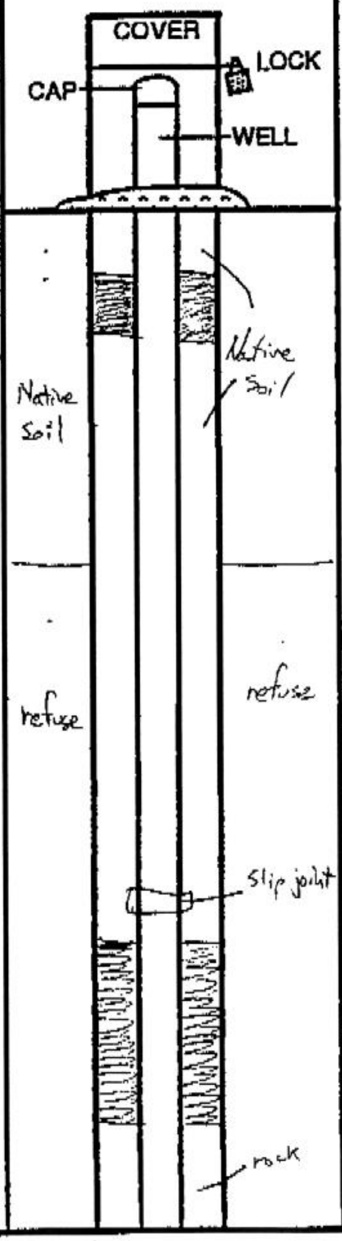
PROJECT: Asotin County Landfill
LOCATION:
JOB NUMBER: 0494008
GEOLOGIST/ENGINEER: B. Doan
DRILLER: DBM
DRILL RIG:
DRILLING METHOD:

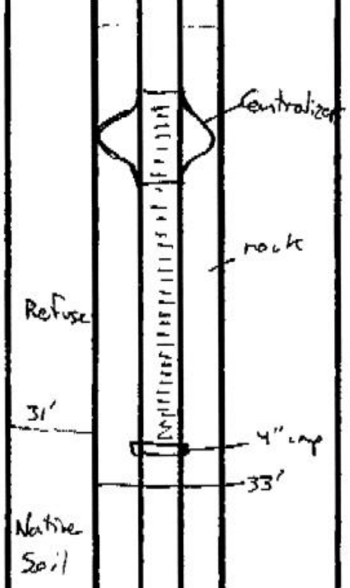
HOLE/WELL #: LGW-4
DIAMETER: 26"
TOTAL DEPTH: 33'
DATE STARTED: Nov. 6, 1995 1520 hrs
DATE COMPLETED: Nov. 7, 1995 0820 hrs
SAMPLING DEVICE: 40' pipe
PAGE: 1 OF: 2



DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/FOOT	USCS SYMBOL	DESCRIPTION
						Well Casing extends approx. 8' above grade
0						0-6' native soil
1						
2						
3						
4						
5						
6						
7						Soil, wood debris, paper paper and plastic.
8						
9						
10						greyish-brown soil, paper and plastic, clothing
11						moist paper, grass clippings tire
12						
13						
14						Grey/green slightly moist Yard waste (grass, branches) paper, plastic
15						
16						Paper, wood debris, slightly moist
17						

BORING LOG

PROJECT: Asotin County Landfill HOLE/WELL #: LGW-4
JOB NUMBER: 0484008 PAGE: 2 OF: 2

DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/ FOOT	USCS SYMBOL	DESCRIPTION
18						
20						Grey, paper, plastic
22						Dk grey, moist to slightly moist material
24						Books
26						Tire
28						
30						
32						31' native soil 1645hrs drilled to 33'
34						
						Nov. 7: drillers arrived at 0720 I Installed caps on LGW-7 and LGW-9 at 0740 Finished LGW-4 at 0820

BORING LOG

SCS ENGINEERS
Environmental Consultants
2405 140th Ave NE
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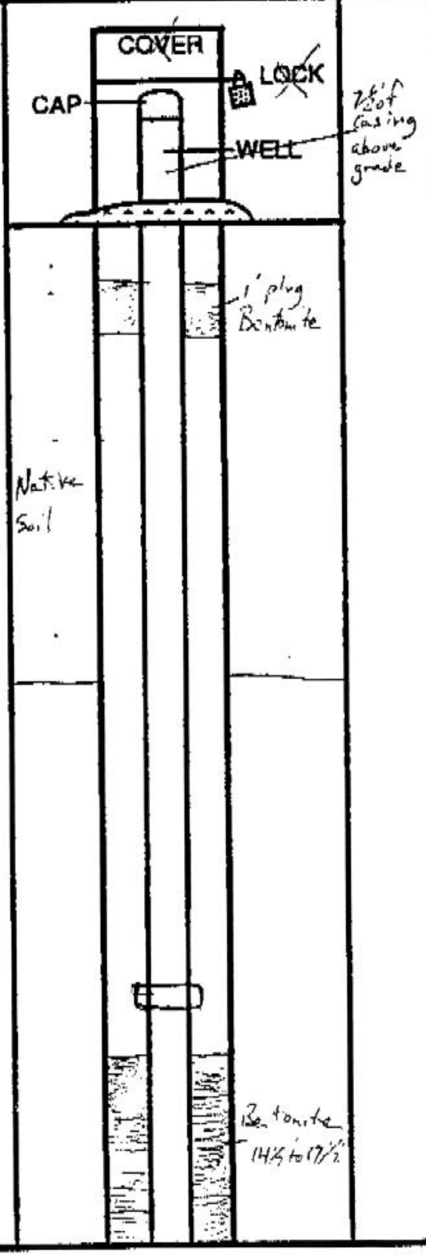
Bellevue, WA 98005
800-727-6393
FAX (206) 746-6747

PROJECT: Asotin County Landfill
LOCATION: LGW-5
JOB NUMBER: 0495008
GEOLOGIST/ENGINEER: B. Dean
DRILLER: DBM
DRILL RIG:
DRILLING METHOD: Bucket Auger

HOLE/WELL #: LGW-5
DIAMETER: 26"
TOTAL DEPTH: 33'
DATE STARTED: Nov. 6, 1995 1055
DATE COMPLETED: Nov. 6, 1995 1515
SAMPLING DEVICE: 40' of pipe
PAGE: 1 OF: 2

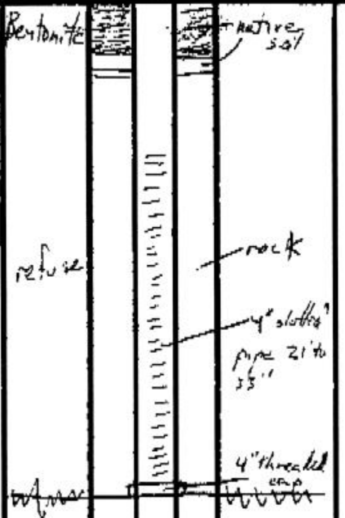
COMPLETION DETAIL



DEPTH (FEET)	SAMPLE	SAMPLE #	BLOW COUNTS/ FOOT	USCS SYMBOL	DESCRIPTION
					Well casing extends approx. 7½' above grade
0					0-8' Native Soil, dry
1					
2					
3					
4					
5					
6					
7					
8					Grey soil, textiles, dry
9					tire. paper wood debris
10					
11					11' cable hose, paper, green grass
12					plastic, dk. grey paper dry
13					wood Debris, grey paper dry
14					
15					brown/grey soil w/ wood debris and paper, dry
16					wire
17					brown wood debris, paper

BORING LOG

PROJECT: Asotin County Landfill
HOLE/WELL #: LGW-5
JOB NUMBER: 0494008
PAGE: 2 **OF:** 2



DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/ FOOT	USCS SYMBOL	DESCRIPTION
						brown wood debris, tires wire, dry
18						
20						several semi-truck tires wood debris, paper,
22						Dk. grey soil, moist, plastic, paper (waste oil?)
24						
26						
28						Brownish grey soil and wood debris
30						
32						
34						stopped drilling 1400 hrs. hole was collapsing at bottom and progress was not being made. 41' of well casing (fully extended) resting on bottom of bore hole.
36						

BORING LOG

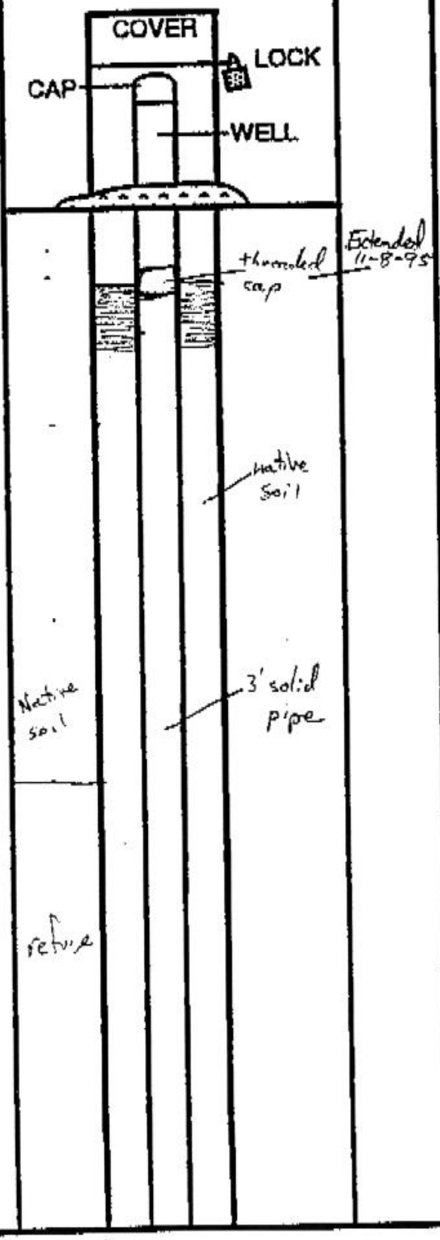
Steve woodbury

SCS ENGINEERS
Environmental Consultants
2405 140th Ave NE
Suite 107
Bellevue, WA 98005

800-727-6393
FAX (206) 746-6747

PROJECT: Asotin County Landfill Gas Wells
LOCATION:
JOB NUMBER: 0494008
GEOLOGIST/ENGINEER: B. Doan
DRILLER: DBM
DRILL RIG:
DRILLING METHOD:

HOLE/WELL #: LGW-6
DIAMETER: 26"
TOTAL DEPTH: 44.0' (50' of pipe)
DATE STARTED: Nov. 2, 1995 1020 hrs
DATE COMPLETED: Nov. 2, 1995 1515 hrs 40' of pipe
Nov. 8, 1995 0930 hrs Extended 10' to 8' above grade
SAMPLING DEVICE:
PAGE: 1 OF: 2

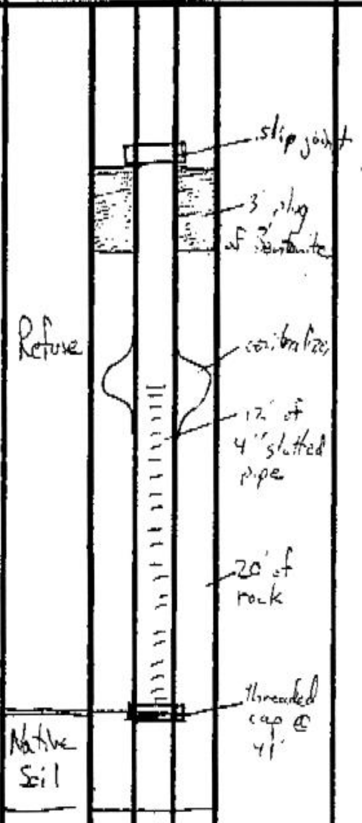


DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/FOOT	USCS SYMBOL	DESCRIPTION
						Well casing capped 1' below grade. Extended 10' (to 8' above grade) 11-8-95
0						0 - 10' Dry, brown, native soil
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						Med. brown-grey soil and refuse (plastic + paper)
12						
13						Green grass clippings, wood-debris, branches, plastic, paper
14						
15						
16						Grey-brown soil, wood debris plastic, paper alum. cans diaper
17						

BORING LOG

PROJECT: Asotin County Landfill Gas Wells HOLE/WELL #: LGW-6

JOB NUMBER: 0494008 PAGE: 2 OF: 2

DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/ FOOT	USCS SYMBOL	DESCRIPTION
18						Household refuse - textiles, paper plastic inner tube.
20						Tire small debris, grey, dry. paper, plastic (not much soil)
22						Mostly paper w/ occasional plastic + wire 1979)
24						
26						
28						slightly grey paper, plastic + green grass clippings.
30						30' - same material but greyer.
32						32' - green grass, dk. grey material carpet.
34						wire and upholstery
36						Plastic, paper, dk grey material
38						green grass clippings
40						~~40.5'~~ 41' native soil
42						
44						
						Total depth 44.0 ~~Rep~~ Well casing deployed to 41'
						Repaired drill rig 1200 to 1335 Nov. 2 (approx. 24' below grade)

BORING LOG

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Bellevue, WA 98005

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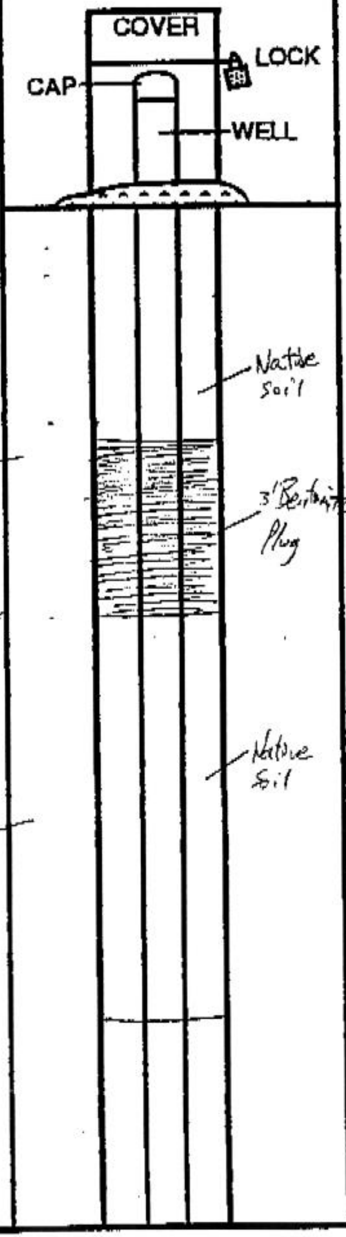
PROJECT: Asotin County Landfill Gas Wells
LOCATION:
JOB NUMBER: 0494008
GEOLOGIST/ENGINEER: B. Dean
DRILLER: DBM
DRILL RIG:
DRILLING METHOD: Bucket Auger

HOLE/WELL #: LGW-7(A)
DIAMETER: 26"
TOTAL DEPTH: 14'
DATE STARTED: Nov. 1, 1995 1525 hrs
DATE COMPLETED: Nov. 2, 1995 1000 hrs abandoned
SAMPLING DEVICE:
PAGE: 1 OF: 1



DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/ FOOT	USCS SYMBOL	DESCRIPTION
						No casing installed. This well was abandoned and drill crew moved 5' east.
0						Dry, med. brown, native soil w/ small amount of gravel.
1						
2						
3						
4	Native Soil					
5						
6						
7						7'-9' Household refuse; paper, textile, wire. Tire, yard waste (green grass)
8						
9						
10	refuse					
11						
12						
13						
14						14' wire + cable decided to move to 5' East of hole. Should begin drilling 11-2-95
15						
16						
17						

BORING LOG

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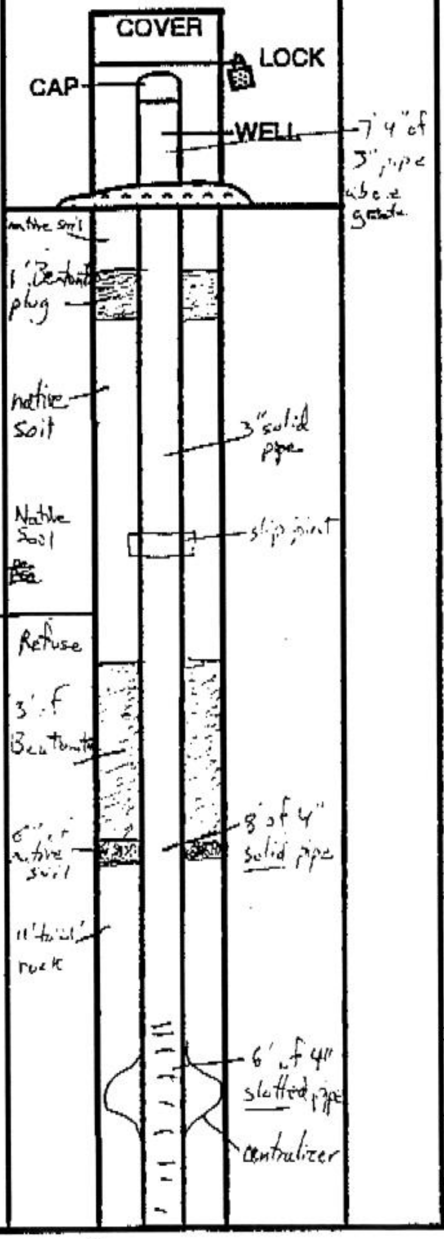
PROJECT: Asotin County Landfill Gas wells
LOCATION: on hub (not 5' west)
JOB NUMBER: 0194003
GEOLOGIST/ENGINEER: B. Dorn
DRILLER: DBH
DRILL RIG:
DRILLING METHOD: Bucket Auger

HOLE/WELL #: LGW-7 (B)
DIAMETER: 26"
TOTAL DEPTH: 21' 28' of pipe
DATE STARTED: Nov 2, 1995 0700
DATE COMPLETED: Nov. 2, 1995 0930 (move lateral 5' to the east)
SAMPLING DEVICE:
PAGE: 1 OF: 2

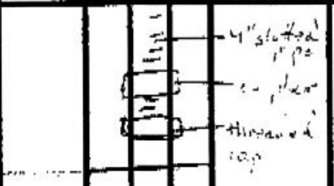


DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/FOOT	USCS SYMBOL	DESCRIPTION
						Arrived 0730. Driller had begun drilling 5' east of pieces (on hub) not 5' East of hub. Contractor will have to move lateral 5' east
0						
1						0-7' Native soil
2						
3						
4						
5						
6						
7						
8						7'-10'
9						75% soil, grey w/ paper and plastic
10						
11						Grey soil, yard waste textiles plastic paper
12						
13						
14						Wire and cable
15						Paper + plastic
16						
17						grey, gravelly soil

BORING LOG

PROJECT: Asotin County Landfill Gas Wells **HOLE/WELL #:** LGW-7

JOB NUMBER: 0194008 **PAGE:** 2 **OF:** 2

DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/ FOOT	USCS SYMBOL	DESCRIPTION
	refuse					Dry, grey soil, w/gravel
18						17'-19' Contains small bits of refuse (plastic, paper)
20	soil					
22						19-21' Dry, brown native soil w/ gravel + cobbles 0815
24						
26						
28						
30						Water pump was frozen and took about 15 min to clear

BORING LOG

SCS ENGINEERS
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800-727-6393
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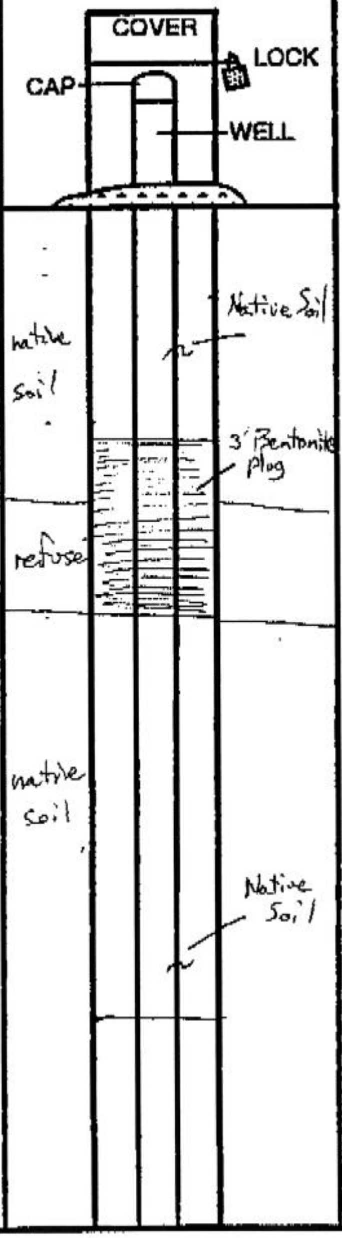
PROJECT: Asotin County Landfill Gas Wells
LOCATION:
JOB NUMBER: C494008
GEOLOGIST/ENGINEER: B. Doan
DRILLER: DBM
DRILL RIG:
DRILLING METHOD:

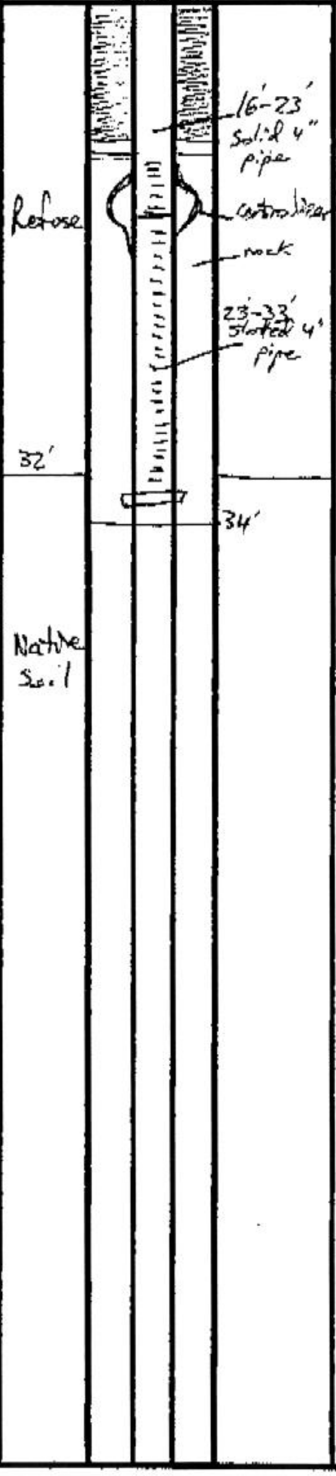
HOLE/WELL #: LGW-8-A
DIAMETER: 26"
TOTAL DEPTH:
DATE STARTED: Nov. 1, 1995 1330
DATE COMPLETED: Nov. 8, 1995 0930
SAMPLING DEVICE:
PAGE: 1 OF: 1



DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/FOOT	USCS SYMBOL	DESCRIPTION
0						
1						0-5' dry, med. brown native soil
2						
3						
4						
5						
6						5-7' plastic, paper, household refuse. Grey, dry.
7						
8						Soil, native, dry w/ gravel + cobbles
9						
10						
11						
12						Hole stopped at 14' at 1430 hrs.
13						Upon receiving instructions, moved to LGW-7 @ 1515 hrs.
14						
15						
16						
17						

BORING LOG

PROJECT: Asotin County Landfill HOLE/WELL #: LGW-8
JOB NUMBER: 0494008 PAGE: 2 OF: 2



DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/FOOT	USCS SYMBOL	DESCRIPTION
18						Wood debris, paper
20						DK. grey small bits of wood debris, paper, some plastic
22						
24						moist, dk grey paper bits, plastic, household refuse
26						
28						
30						Grey soil, slightly moist
32						
34						
36						Hit native soil at 32' Drilled to 34'. 1640hrs

Predictions

rock	soil	Bentonite
34' – 20½	½'	20' – 17'

casing
33' – 23' slotted 4" (2x5')
23' – 16' solid 4" (1x7')
16' – up solid 5" (5x5')
42' of casing

Tee will be 4'4" below grade

upper Bentonite seal from 6½' to 5½'

42' of pipe including above grade

BORING LOG

SCS ENGINEERS
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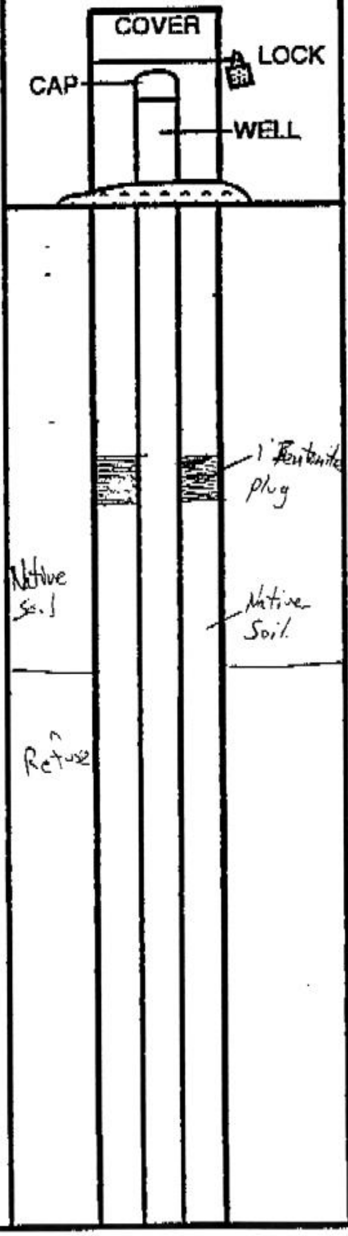
PROJECT:
LOCATION: Asotin County Landfill
JOB NUMBER: 0494008
GEOLOGIST/ENGINEER: B. Dean
DRILLER: BBM
DRILL RIG:
DRILLING METHOD: 26" bucket auger

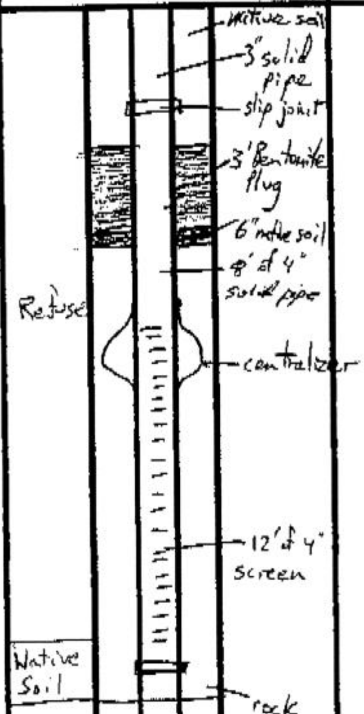
HOLE/WELL #: LGW-9
DIAMETER: 26"
TOTAL DEPTH: 40' (46' of pipe)
DATE STARTED: Nov. 1, 1995 0830
DATE COMPLETED: Nov. 1, 1995 1315
SAMPLING DEVICE:
PAGE: 1 OF: 2

DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/ FOOT	USCS SYMBOL	DESCRIPTION
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17						Extended 5' 11-8-95 to 7' above grade. 46' total 2' of 3" riser extending above grade. See note bottom of pg. 2. 0 - 8' Med brown, dry native soil w/ a small amount of gravel. ~~Med~~ Dark grey material and household refuse; paper, plastic and wood Dry. Dry, dk. grey wood debris (Paper dating from early 1970's) Grey, dry wood debris and plastic paper. All small debris

BORING LOG

PROJECT: Asotin Landfill Gas Wells HOLE/WELL #: LGW-9

JOB NUMBER: C494008 PAGE: 2 OF: 2

DEPTH (FEET)	SAMPLE	COMPLETION DETAIL	SAMPLE #	BLOW COUNTS/ FOOT	USCS SYMBOL	DESCRIPTION
						Grey, dry material approx. 50% soil.
18						Wood debris + small refuse
20						DK. Grey soil 18'-24'
22						
24						
26						Dry grey soil (25%) and unrecognizable household refuse
28						
30						
32						Tire, paper, green grass clippings plastic, soil
34						32'-37'
36						Dk grey soil and unrecognizable household refuse.
38						38' native soil and gravel
40						40' bottom of hole 1200
						Install well casing 1200-13
						Total installed height = 41' (two feet are above grade)
						Height above grade is deficient and will have to be adjusted for when Tee fitting is installed; more riser pipe will need to be added.

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SOIL BORING / WELL LOG

PAGE: 1 OF 4

BORING NO: **GP-LGW-10**
PROJECT NO: **331908.08.A2.03**
PROJECT NAME: Asotin County Regional Landfill Remedial Investigation
LOCATION: NE end of interior closed landfill
DRILLING CONTRACTOR: Budinger
TOC ELEVATION: N/A
GROUND ELEVATION: 1271.63
START DATE: 3/30/2009
END DATE: 4/3/2009
LOGGER: R. Greer
DRILLING EQUIPMENT: Mobile B-57 6 1/2" H.S.A., 3x18" SPT
BORING DIAMETER: 6.5-inches
TOTAL DEPTH: 75 ft
SWL: N/A

Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" (n)	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**	**Well Construction**
0					AUGER CUTTINGS: Sandy **SILT** w/glay and gravel, dry. Hard/rough drilling **(ML)**	START: 08:30 -Moderate/easy advancement	**ML**	
1								
2						AIR: NDs, O2: 20.9%		
3						Slow/rough drilling at 2.5 ft. bgs. Sandy silt w/ rounded gravels		
4								
5								
6						AIR: NDs, O2: 20.9%		
7								
8								
9						Transition to easier/ smoother drilling at 8.9 ft.		
10	SPT-1 (3" dia.)	9.5-11'	18/18	15 30 30 **(n=60)**	Gray sandy **SILT/CLAY** w/ 10-30% gravels, dry, 9.5-10 ft. Transition to borderline brown **sandy SILT/silty fine SAND**, micaceous, slightly moist to dry, very dense to hard, 20-50% fines **(ML, ML-SM)**		**ML** **ML-SM**	
11						Iron-stained w/ black nodules		**3/8" Bentonite Chips** **1" Schedule 80 PVC**
12						Transition to CLAY w/ trace fine sand and gravel		
13								
14								
15								
16						AIR: NDs, O2: 20.9%		
17								
18								
19								
20	SPT-2	19.5-20.3'	6/9	20 60/3" **(60/3")**	Silty **SAND** w/ trace gravel, brown, dry, very dense, angular basalt gravels **(SM)**		**SM**	
21						AIR: NDs, O2: 20.9%		
22					AUGER CUTTINGS: Transition to **CLAY** w/ trace sand & fine gravel, dark green/gray, slightly moist, hard (fill cover soil) **(CL)**		**CL**	
23						Slow advancement		

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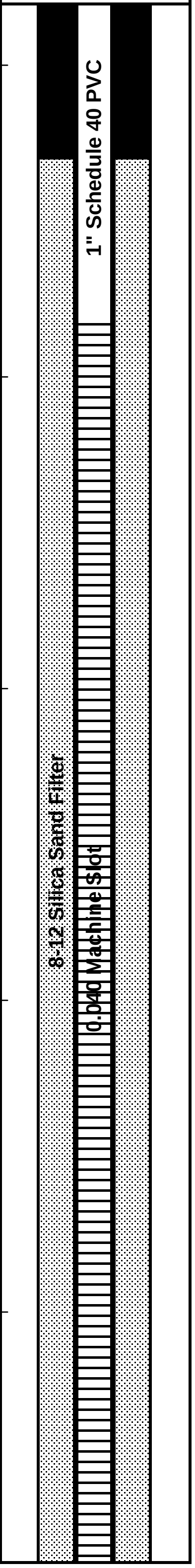
SOIL BORING / WELL LOG

BORING NO: **GP-LGW-10**

Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" (n)	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**
24							
25						AIR: NDs, O2: 20.9%	
26							
27							
28					**FILL COVER SOIL**		
29	**FILL COVER SOIL** **REFUSE MATERIAL**				AUGER CUTTINGS: Transition at 29 ft. to **REFUSE**: Intermixed MSW refuse w/ clay soil, dry. MSW cuttings consist of plastic, paper, metal scraps, & wood	Change in drill action; auger cuttings show MSW refuse	
30							
31							
32							
33						Hard drilling at 32.5 ft. Drillers trip out to clean off auger flights	
34						AIR: LEL: 2, CO: 1, O2: 20.6	
35					AUGER CUTTINGS: **REFUSE** w/ gray clay and sand.	AIR (over boring): LEL: Alarm (high %), O2: Alarm (low %), VOCs: 4.6 ppm, CO: 10ppm	
36							
37						AIR (12" over boring): LEL: 2, CO: 3, O2: 20.6%	
38							
39							**REFUSE**
40					AUGER CUTTINGS: **REFUSE** w/ dark gray clay and sand w/ trace gravel		
41							
42						AIR (breathing area): LEL:2, CO: 3, O2: 20.7%	
43							
44							
45					AUGER CUTTINGS: **REFUSE** w/ dark gray clay and sand w/ trace gravel	AIR: (breathing area): CO: 7 (probable rig exhaust), O2: 20.7%	
46							
47							
48						Advancement slows, drill chatter, hard material	

Well Construction



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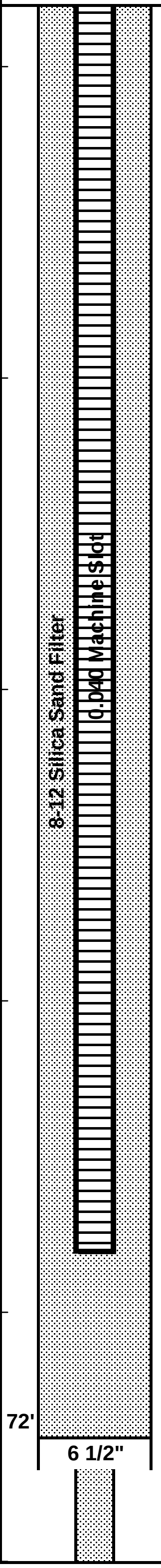
SOIL BORING / WELL LOG

PAGE: 3 OF 4

BORING NO: **GP-LGW-10**

Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" **(n)**	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**
49					AUGER CUTTINGS: **REFUSE** w/dark gray Clay and fine sand w/fine gravel	Very hard material	**REFUSE**
50						AIR (over boring-partially covered): LEL ALarm (high), O2: ALarm (low), CO: 14 ppm, VOCs: 2.4 ppm	
51							
52	SPT-3	52-53	10/14	20 50 50/2" **(100)**	**REFUSE**: Wood, plastic, other material w/ gray clay and sand, dense	No advancement or cuttings at 51.5 ft. Augers clogged; trip out. Drive SPT to investigate conditions	
53							
54							
55					AUGER CUTTINGS: **REFUSE** w/ gray clay w/ sand		
56							
57							
58						AIR (Beathing area): NDs, O2: 20.8%	
59					AUGER CUTTINGS: **REFUSE** Materials w/ gray clay w/ sand	Driller observes change in drilling action: Conditions slightly softer	
60							
61							
62							
63							
64					AUGER CUTTINGS: Metal and **REFUSE** in cuttings	AIR: LEL: 4, CO: 2, VOCs: 0.1, O2: 20.9%	
65							
66							
67							
68						AIR: NDs, O2: 20.9%	
69					AUGER CUTTINGS: **REFUSE** material with Gray clay and increasing sand	Slight change in drilling action	
70							
	REFUSE MATERIAL						
71	**NATIVE MATERIAL TRANSITION**					Hard drilling action	
72	SPT-4	72-73.5	4/10	15 20 50/5" **(70)**	Tan & brown poorly graded fine **SAND** w/ silt (20%), moist, dense **(SM)**	TD (drilling): 72 ft at 19:00, 3-30-09	**SM**
73							
73.5							

Well Construction



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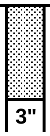
SOIL BORING / WELL LOG

PAGE: 4 OF 4

BORING NO: **GP-LGW-10**

Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" **(n)**	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**	**Well Construction**
73.5							**SM**	
74	SPT-5	73.5-75	18/18	36 50 84 **(134)**	Tan and brown poorly graded fine **SAND** w/ thin silt bedding (1/16 to 1/4-inch), moist, dense. Increasing **SILT** and clay at 74.5 ft. **(SM, ML)**		**ML**	
75						TD (3-inch SPT Sampling) to 75 ft		
76								
77								
78								
79								
80								
81								
82								
83								
84								
85								
86								
87								
88								
89								
90								
91								
92								
93								
94								
95								
96								
97								

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SOIL BORING / WELL LOG

PAGE: 1 OF 4

BORING NO: **GP-LGW-11**
PROJECT NO: **331908.08.A2.03**
PROJECT NAME: Asotin County Regional Landfill Remedial Investigation
LOCATION: North, central in Interior closed landfill
DRILLING CONTRACTOR: Budinger
TOC ELEVATION: N/A
GROUND ELEVATION: 1276.10
START DATE: 4/3/2009
END DATE: 4/8/2009
LOGGER: R. Greer
DRILLING EQUIPMENT: Mobile B-57 6 1/2" H.S.A., 3x18" SPT
BORING DIAMETER: 6.5-inches
TOTAL DEPTH: 78 ft
SWL: N/A

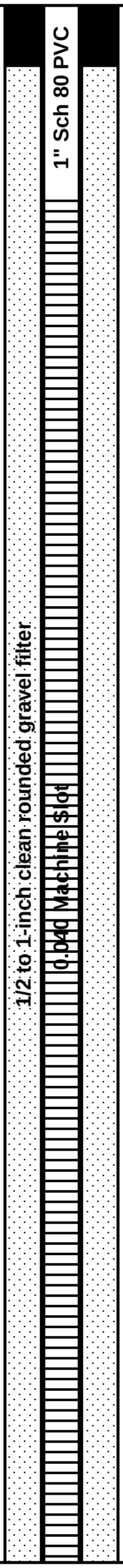
Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" **(n)**	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**	**Well Construction**
						START: 12:00		
1								
2					AUGER CUTTINGS: Moist, tan **SILT** with 30% gravel, round to sub-rounded, 1/2 - 1.5 in. dia.**(ML)**		**ML**	
3								
4								
5								
6								
7						Slow, steady drill advancement		
8								
9	SPT-1 (3" dia.)	9- 10.5	18/18	30 26 24 **(50)**	Brown **CLAY** w/ silt and trace rounded to sub-rounded gravel, moist, moderate density**(CL)**	AIR: NDs, O2: 20.9%	**CL**	
10								
11								**3/8" Bentonite Chips** **1" Schedule 80 PVC**
12						Less drill chatter		
13						Transitions between clayey and coarse material throughout		
14						AIR: NDs, O2: 20.9%		
15								
16								
17								
18								
19	SPT-2	19- 20	12/12	27 32 **(32)**	Brown **CLAY** with silt and trace, sub-rounded gravel with sand, moist, medium density. **(CL)** Transitions to brown **SILT** with clay and increasing sand @ 19.5 ft. **(ML)**		**CL** **ML**	
20								
21						Drilling becomes rough		
22						Drilling steady		
23						AIR: NDs, O2: 20.9%		

SOIL BORING / WELL LOG

CH2MHILL

BORING NO: **GP-LGW-11**

PAGE: 2 OF 4

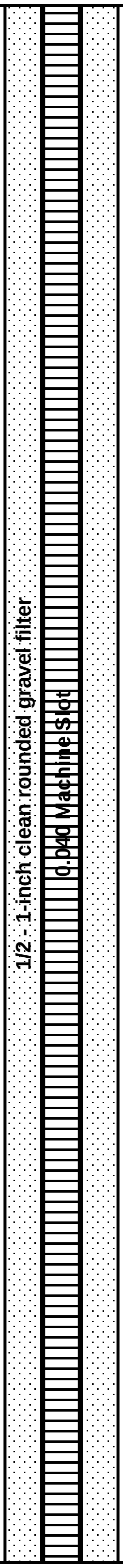
Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" (n)	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**	**Well Construction**
24	**FILL COVER SOIL**				AUGER CUTTINGS: Inceasing gray **CLAY** with trace fine gravel **(CL)**	Driller observes "sticky" conditions.	**CL**	
25	**REFUSE MATERIAL**				AUGER CUTTINGS: Transition to **REFUSE**, some plastic, wood/debris observed in cuttings.			
26						AIR: NDs, O2: 20.9%		
27								
28								
29						FINISH: 4-3-09		
30						RESUME: 4-6-09 AIR (Headspace): CO ALARM, O2: 20.9%, NDs		
31						Slow, steady drilling		
32						AIR (Breathing Area): CO: 2, O2 20.9%, NDs		
33					AUGER CUTTINGS: **REFUSE** (plastic, wood, metal) with gray clay and sand	Rough, slow drilling		
34						Trip out augers due to clogging		
35								
36							**REFUSE**	
37								
38					Collect SPT: **REFUSE** MATERIALS with clay and coarse sand some hard wood, very stiff			
39						AIR (Headspace): LEL: 7, VOCs: 9.7, O2: 20.8%		
40						AIR (Breathing Area): VOCs: 0.2, O2: 20.9%, NDs		
41								
42								
43					AUGER CUTTINGS: **REFUSE** w/ dark gray clay and sand w/ trace gravel	AIR (breathing area): NDs, O2: 20.9%		
44						Trip out augers due to clogging		
45					AUGER CUTTINGS: **REFUSE** w/ dark gray clay and sand w/ trace gravel			
46						Steady drill action		
47								
48								

CH2MHILL

SOIL BORING / WELL LOG

PAGE: 3 OF 4

BORING NO: **GP-LGW-11**

Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" (n)	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**	**Well Construction**
49					AUGER CUTTINGS: **REFUSE** w/dark gray clay and sand - Not a lot of cuttings conveying to the surface			
50						Rough drilling		
51								
52								
53								
54					AUGER CUTTINGS: **REFUSE** w/ dark gray clay and sand w/ fine gravel - Not a lot of cuttings conveying to the surface	AIR: CO: 3, O2: 20.9%, NDs		
55								
56						Slow steady drilling		
57								
58						AIR: CO: 2, O2: 20.9%, NDs		
59					Collect SPT: **REFUSE** MATERIALS with clay and coarse sand and fine gravel	FINISH: 4-6-09 RESUME 4-7-09		
60								
61					AUGER CUTTINGS: **REFUSE** w/ gray clay, sand and gravel	AIR: CO: 2, O2: 20.9%, NDs	**REFUSE**	
62						Steady, easier advancement		
63								
64					AUGER CUTTINGS: Observe possible increase in sand and decrease in refuse. Collect SPT: **REFUSE** w/ gray clay and sand			
65								
66						AIR: O2: 20.9%, NDs		
67						Driller observes possible change in conditions at 67 ft.		
68					Collect SPT: **REFUSE** w/ gray clay and sand. Transition to gray clay and sand, trace refuse at 69 ft.			
69						Driller observes hard gravelly drilling action		
70					Collect SPT: **REFUSE** (newspaper, plastic and glass) w/ gray clay and sand			
71								
72								
73						Slow steady advancement		

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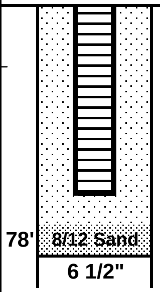
SOIL BORING / WELL LOG

PAGE: 4 OF 4

BORING NO: **GP-LGW-11**

Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" **(n)**	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**	**Well Construction**
74					Collect SPT: **REFUSE**: Paper and metal with gray clay and sand w/ gravel	AIR: O2: 20.9%, NDs	**REFUSE**	
75								
76								
77								
78					**REFUSAL**: Hard metal at 78 ft. - unable to advance; drag bit ground down 1/2-3/4"	Very hard - unable to advance, probably thick metal **TD: 78 ft. on 4-7-09**		
79								
80								
81								
82								
83								
84								
85								
86								
87								
88								
89								
90								
91								
92								
93								
94								
95								
96								
97								
98								

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SOIL BORING / WELL LOG

PAGE: 1 OF 2

BORING NO: **GP-LGW-12**
PROJECT NO: **331908.08.A2.03**
PROJECT NAME: Asotin County Regional Landfill Remedial Investigation
LOCATION: West-center end of interior closed landfill
DRILLING CONTRACTOR: Budinger
TOC ELEVATION: N/A
GROUND ELEVATION: 1279.00
START DATE: 4/8/2009
END DATE: 4/8/2009
LOGGER: R. Greer
DRILLING EQUIPMENT: Mobile B-57 6 1/2" H.S.A., 3x18" SPT
BORING DIAMETER: 6.5-inches
TOTAL DEPTH: 28 ft
SWL: N/A

Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" **(n)**	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**	**Well Construction** **(Well Not Installed)**
1								**3/8-inch Bentonite Chips Backfill**
2					AUGER CUTTINGS: Brown **SILT** w/ sub-rounded gravel, up to 2-inch dia. **(ML)**		**ML**	
3					AUGER CUTTINGS: Increasing gravel, sub-angular, 3/4 to 3-inch dia. **(GM)**	Gravelly drilling action	**GM**	
4								
5					AUGER CUTTINGS: Same as above **(GM)**		**GM**	
6						AIR: CO:1, O2: 20.9%, NDs Hard drilling, slow advancement		
7								
8								
9								
10	SPT-1 (3" dia.)	9.5- 11	14/18	12 20 21 **(41)**	Brown **SILT** with 20% sub-rounded to sub-angular gravel, some clay, trace sand **(ML)**	AIR: O2: 20.9%, NDs	**ML**	
11						Difficult Drilling - very gravelly		
12								
13								
14								
15					AUGER CUTTINGS: Transition from brown **SILT** to **CLAY**, w/ sand, decreasing gravel **(ML - CL)**	Easier advancement	**ML** **CL**	
16								
17						AIR: NDs, O2: 20.9%		
18								
19								
20	SPT-2	19.5- 20.3	13/18	12 25 24 **(49)**	Brown and tan **CLAY** w/ silt, moist, dense **(CL)** Transition to Dark gray **CLAY** & silt with sand. Possible refuse interface **(CL)**	Drilling becomes harder	**CL**	
21						AIR: NDs, O2: 20.9%		
22	**FILL COVER SOIL**				AUGER CUTTINGS: Dark gray **CLAY** with sand and silt, possible increase in moisture **(CL)**	Drilling becoming difficult	**CL**	
23	**REFUSE MATERIAL**				AUGER CUTTINGS: Dark gray CLAY & SAND w/ wood debris - inferred **REFUSE**	Scrap metal observed in cuttings AIR: NDs, O2: 20.9% Large chunk of metal in cuttings		

SOIL BORING / WELL LOG

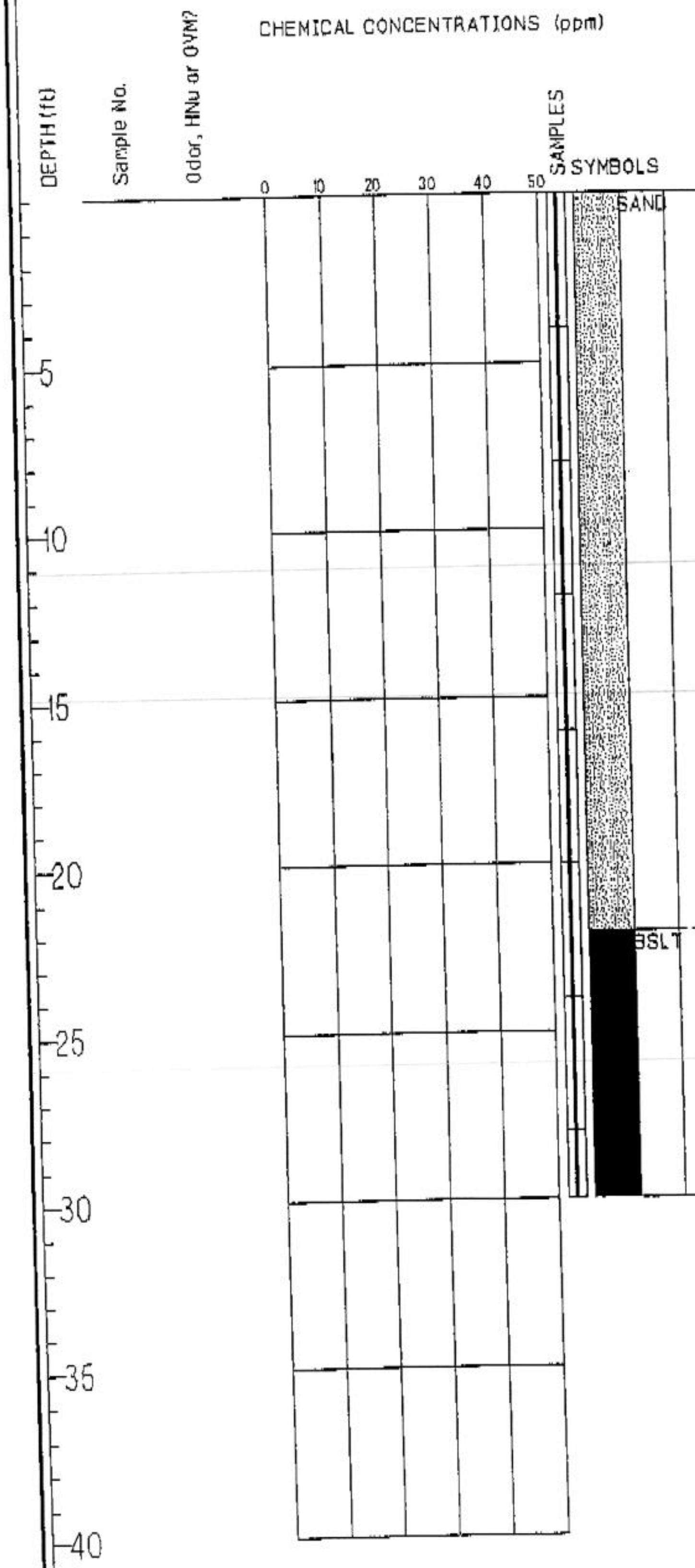
PAGE: 2 OF 2

BORING NO: **GP-LGW-12**

Depth (ft)	Sample ID	Interval (ft)	Recovery (in)	SPT blows per 6" **(n)**	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**	**Well Construction**
24							**REFUSE**	**3/8-inch Bentonite Chips Backfill**
25					AUGER CUTTINGS: **REFUSE** with gray clay w/ sand. Refuse: Wood, metal, copper tubing.	Hard Drilling/Very slow advancement		
26					AUGER CUTTINGS: **REFUSE**: Large scrap metal pieces in cuttings.			
27						Unable to advance		
28					**REFUSAL** @ 28 ft. BGS	**TD: 28 ft. 4-8-09**		**6 1/2"**
29								
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								

WELL GP-1 *(Page 1 of 1)*

CLIENT NAME Asotin County Landfill
DATE DRILLED 04/24/95
SURFACE ELEVATION NA
TOTAL DEPTH OF HOLE 30 Feet



MATERIALS DESCRIPTION

SILTY SAND with <5% clay, brown, moist.

SANDY SILT with <5% clay, brown, moist.

SANDY SILT with <5% clay, brown, moist.

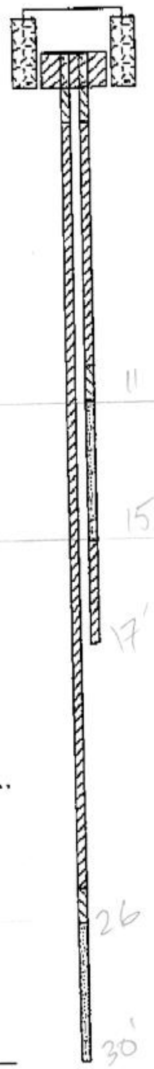
SANDY SILT with <5% clay, brown, moist.

SILTY SAND, medium to coarse grained, fine gravel, light tan, moist.

SILTY SAND with basalt gravel, brown, moist.

BASALT GRAVEL with silty sand, black, moist.

BASALT GRAVEL, black, moist.



TOTAL DEPTH LOGGED = 30'.

Gasprobe GP-1D installed to a depth of 30' with a boring diameter of 2" to 20' and 1" to 30'.

Gasprobe GP-1S installed to a depth of 15' with a boring diameter of 2".

Gasprobe diagram depicts view facing south.

Nested gasprobes spaced approximately 18" apart.

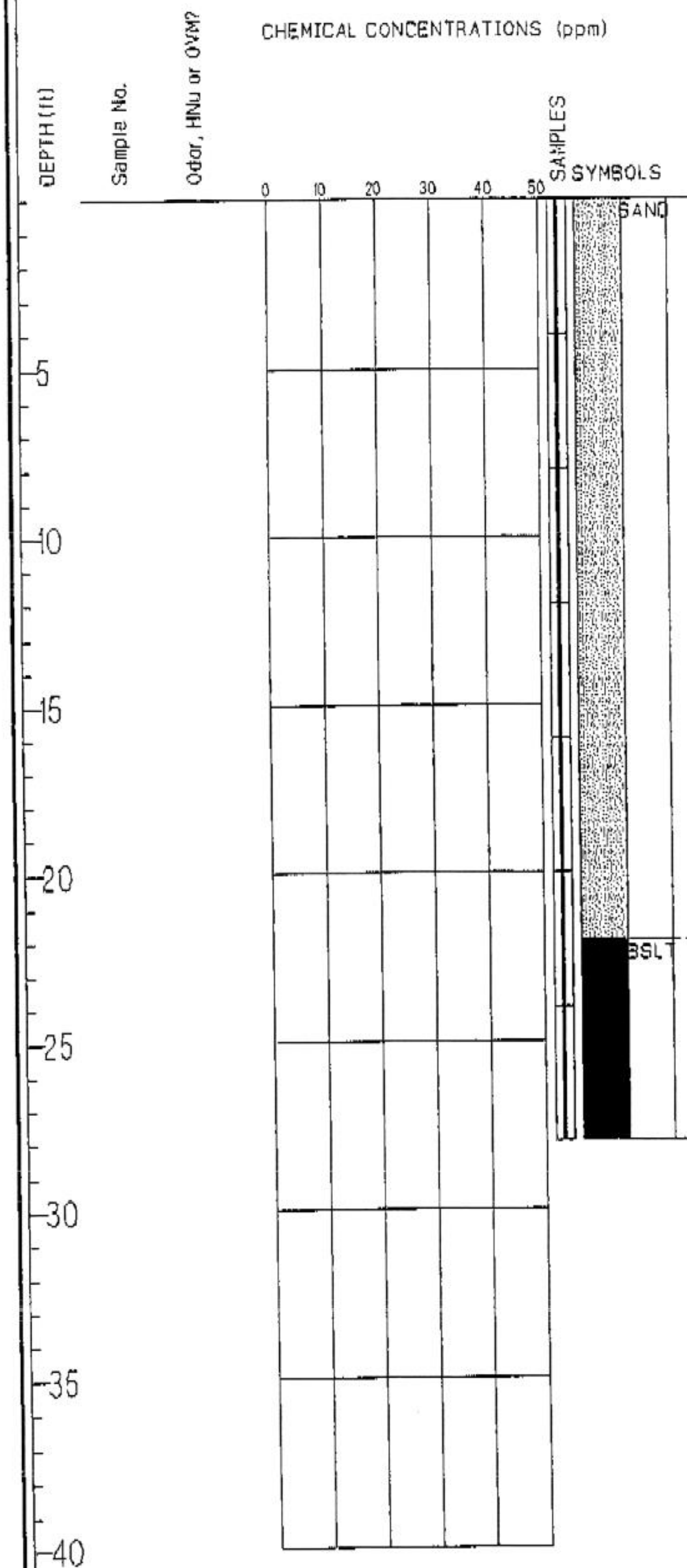
SCS Engineers

Solid and Hazardous Waste Consultants

JOB NUMBER: 0494008.01
LOCATION: Clarkston, Washington

WELL GP-2 *(Page 1 of 1)*

CLIENT NAME Asotin County Landfill
DATE DRILLED 04/25/95
SURFACE ELEVATION NA
TOTAL DEPTH OF HOLE 28 Feet



MATERIALS DESCRIPTION

SILTY SAND with <5% clay, brown, moist.

SANDY SILT with <5% clay, brown, moist.

SANDY SILT with <5% clay, brown, moist.

SANDY SILT with <5% clay, brown, moist.

SILTY SAND, medium to coarse grained, fine gravel, light tan, moist.

SILTY SAND with basalt gravel, brown, moist.

BASALT GRAVEL with silty sand, black, moist.

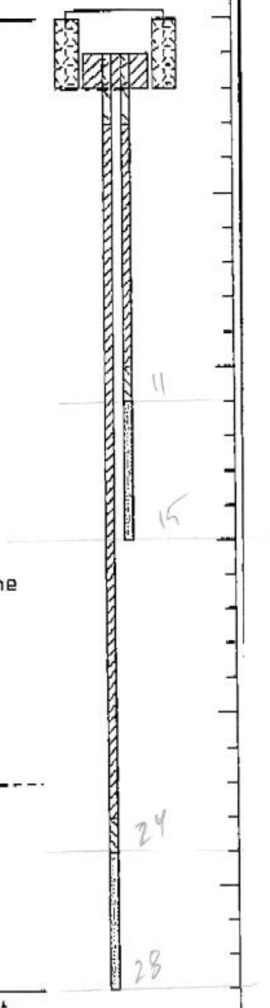
TOTAL DEPTH LOGGED = 28'. REFUSAL at 28'

Gasprobe GP-2D installed to a depth of 28' with a boring diameter of 2".

Gasprobe GP-2S installed to a depth of 15' with a boring diameter of 2".

Gasprobe diagram depicts view facing south.

Nested gasprobes spaced approximately 18" apart.

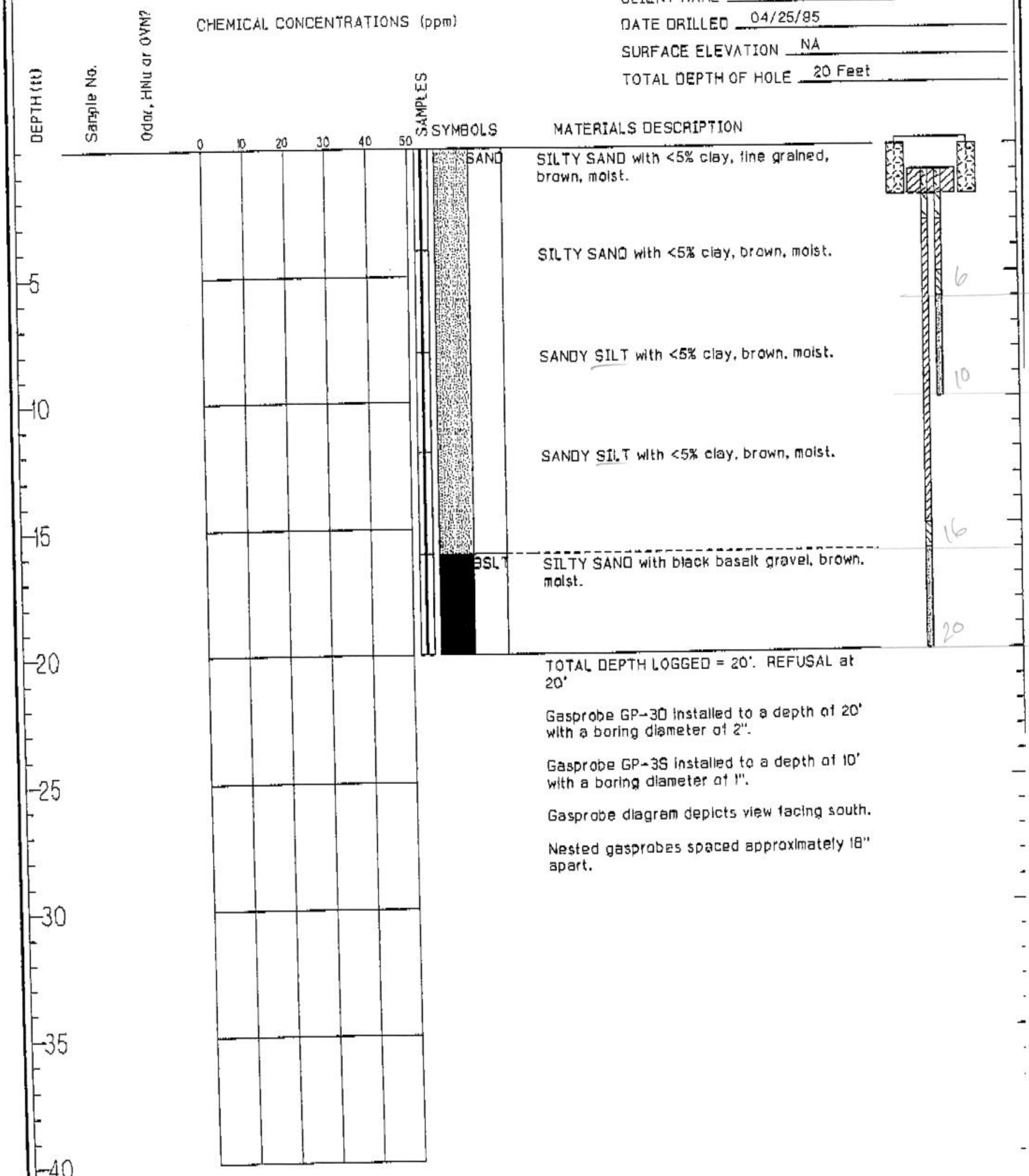


JOB NUMBER: 0494008.01
LOCATION: Clarkston, Washington

SCS Engineers
Solid and Hazardous Waste Consultants

WELL GP-3 *(Page 1 of 1)*

CLIENT NAME Asotin County Landfill
DATE DRILLED 04/25/95
SURFACE ELEVATION NA
TOTAL DEPTH OF HOLE 20 Feet



SILTY SAND with <5% clay, fine grained, brown, moist.

SILTY SAND with <5% clay, brown, moist.

SANDY SILT with <5% clay, brown, moist.

SANDY SILT with <5% clay, brown, moist.

SILTY SAND with black basalt gravel, brown, moist.

TOTAL DEPTH LOGGED = 20'. REFUSAL at 20'

Gasprobe GP-3D installed to a depth of 20' with a boring diameter of 2".

Gasprobe GP-3S installed to a depth of 10' with a boring diameter of 1".

Gasprobe diagram depicts view facing south.

Nested gasprobes spaced approximately 18" apart.

SCS Engineers

Solid and Hazardous Waste Consultants

JOB NUMBER: 0494008.01
LOCATION: Clarkston, Washington

WELL GP-4 *(Page 1 of 1)*

CLIENT NAME Asotin County Landfill
DATE DRILLED 04/28/95
SURFACE ELEVATION NA
TOTAL DEPTH OF HOLE 12 Feet

DEPTH (ft) | Sample No. | Odor, HNu or OVM? | CHEMICAL CONCENTRATIONS (ppm) 0 10 20 30 40 50 | SAMPLES | SYMBOLS | MATERIALS DESCRIPTION

SAND

SILTY SAND with <5% clay, fine grained, brown, moist.

SILTY SAND with <5% clay, brown, moist.

SANDY SILT with cobbles and <5% clay, brown, moist.

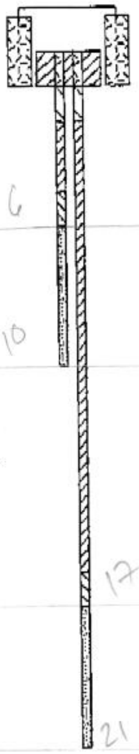
TOTAL DEPTH LOGGED = 12'. REFUSAL at 12'.

Gasprobe GP-4D installed to a depth of 21' with a boring diameter of 2" to 12' and 1' to 21'.

Gasprobe GP-4S installed to a depth of 10' with a boring diameter of 1".

Gasprobe diagram depicts view facing south.

Nested gasprobes space approximately 18" apart.



5
10
15
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25
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SCS Engineers
Solid and Hazardous Waste Consultants

JOB NUMBER: 0494008.01
LOCATION: Clarkston, Washington

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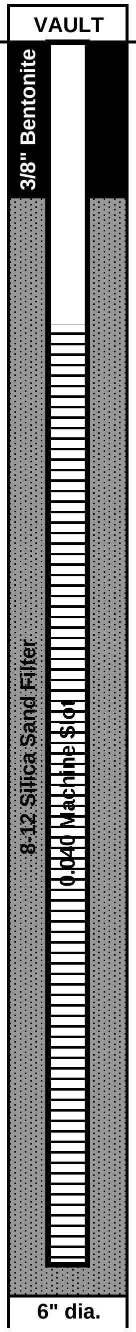
SOIL BORING / WELL LOG

PAGE: 1 OF 1

BORING NO: **GP-05**
PROJECT NO: **331908.08.A2.03**
PROJECT NAME: Asotin County Regional Landfill Remedial Investigation
LOCATION: Offsite, north of closed landfill, west of intersection of Evans Rd
DRILLING CONTRACTOR: Budinger
TOC ELEVATION: N/A
GROUND ELEVATION: 1,145.74
START DATE: 3/12/2009
END DATE: 3/12/2009
LOGGER: R. Greer
DRILLING EQUIPMENT: Mobile B-57 6" Air rotary w/downhole hammer
BORING DIAMETER: 6-inch
TOTAL DEPTH: 20 ft
SWL: N/A

Depth (ft)	Sample ID	Interval (ft)	Recovery (%)	SPT blows per 6"	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**
						Start flight: 11:35	
1							
2							
3							
4							
5	G-1	5-6	NA	NA	GRAB SAMPLE: CUTTINGS: brown **SILT** w/ fine, poorly graded sand, trace clay, trace sub-rounded gravel and mica **(ML)**	End flight: 11:38 Start flight: 11:43	**ML**
6							
7							
8	G-2	7.5-8	NA	NA	GRAB SAMPLE: CUTTINGS: Transition to weathered & fractured basalt/basaltic gravels, 3/8 to 1¼-inch dia. sub-angular fragments, decreasing silt **(inferred basalt)**		**(Inferred Basalt)**
9							
10						End flight: 11:50 Start flight: 11:55	
11	G-3	11-12	NA	NA	GRAB SAMPLE: CUTTINGS: Becoming light gray/blue cobbles with **GRAVEL**, decreasing basalt **(GP)**		**GP**
12							
13							
14	G-4	14-15	NA	NA	GRAB SAMPLE: CUTTINGS: Transition to brown **SILT**, w/ decreasing gravel **(ML)**	End flight: 12:03	**ML**
15	G-5	15-16	NA	NA	GRAB SAMPLE: CUTTINGS: Brown **SILT** with gravel, trace clay and sand, obesrved increasing moisture from cuttings **(ML)**	Start flight: 12:08	
16							
17							
18	G-6	18-19	NA	NA	GRAB SAMPLE: CUTTINGS: Increase **GRAVEL** with brown silt, sub-angular to sub-rounded **(GM)**	Driller obeserves gravel/rock formation drilling action @ 18 ft.	**GM**
19							
20						**TD at 20 ft. on 3-12-09**	
21							
22							
23							

Well Construction



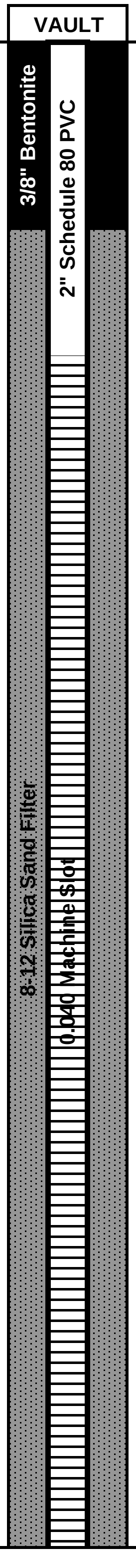
SOIL BORING / WELL LOG

PAGE: 1 OF 2

BORING NO: **GP-06**
PROJECT NO: **331908.08.A2.03**
PROJECT NAME: Asotin County Regional Landfill Remedial Investigation
LOCATION: Offsite, between north side of closed landfill and Peola Rd.
DRILLING CONTRACTOR: Budinger
TOC ELEVATION: N/A
GROUND ELEVATION: 1,160.92
START DATE: 3/11/2009
END DATE: 3/11/2009
LOGGER: R. Greer
DRILLING EQUIPMENT: Mobile B-57 6" Air rotary w/downhole hammer
BORING DIAMETER: 6-inch
TOTAL DEPTH: 30.5 ft
SWL: N/A

Depth (ft)	Sample ID	Interval (ft)	Recovery (%)	SPT blows per 6"	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**
						Start flight: 11:35	
1							
2							
3							
4							
5	G-1	4.5-5	NA	NA	GRAB SAMPLE: CUTTING: gray **GRAVEL**, angular to sub-angular, w/ trace brown silt, trace sand **(GP)**	End flight: 12:20 Start flight: 12:30	**GP**
6							
7	G-2	7-8	NA	NA	GRAB SAMPLE: CUTTINGS: **GRAVEL** and cobble fragments w/ brown silt **(GM)**	Drilling becomes difficult	**GM**
8							
9	G-3	9-10	NA	NA	GRAB SAMPLE: CUTTINGS: Brown **SILT** w/ fine trace gravel w/ trace fine sand **(ML)**		**ML**
10						End flight: 12:42 Start flight: 12:54	
11	G-4	10.5-11	NA	NA	GRAB SAMPLE: CUTTINGS: Increasing **GRAVEL** with cobbles, trace oxidation, possible increase in moisture **(GM)**		**GM**
12							
13	G-5	13-14	NA	NA	GRAB SAMPLE: CUTTINGS: Increasing rock/cobbles and **GRAVEL** w/ deceasing brown silt **(GP)**		**GP**
14							
15						End flight: 13:08 Start flight: 13:13	
16	G-6	16-17	NA	NA	GRAB SAMPLE: CUTTINGS: Transition back to brown **SILT** with decreasing gravel **(ML)**		**ML**
17							
18							
19	G-7	19-20	NA	NA	GRAB SAMPLE: CUTTINGS: Transition to sub-angular to sub-rounded **GRAVEL** and cobbles, decreasing silt, trace sand, some clay **(GP)**		**GP**
20						End flight: 13:26 Start flight: 13:34	
21	G-8	20.5-21	NA	NA	GRAB SAMPLE: CUTTINGS: **GRAVEL** transitioning back to brown **SILT** w/ decreasing sub-angular to sub rounded gravel, trace sand, some clay **(GM-ML)**		**GM** **ML**
22							
23							

Well Construction



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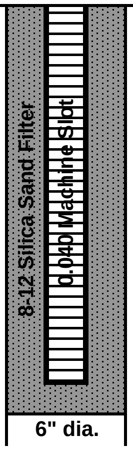
SOIL BORING / WELL LOG

PAGE: 2 OF 2

BORING NO: **GP-06**

Depth (ft)	Sample ID	Interval (ft)	Recovery (%)	SPT blows per 6"	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**	**Well Construction**
24								
25	G-9	25-26	NA	NA	GRAB SAMPLE: CUTTINGS: Brown **SILT** w/ sub-angular to sub-rounded gravel, trace sand, some clay **(ML)**	End flight: 13:45 Start flight: 13:52	**ML**	
26								
27								
28								
29	G-10	29-30	NA	NA	GRAB SAMPLE: CUTTINGS: Same As Above **(ML)**		**ML**	
30						**TD at 30.5 ft. on 3-11-09**		
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								

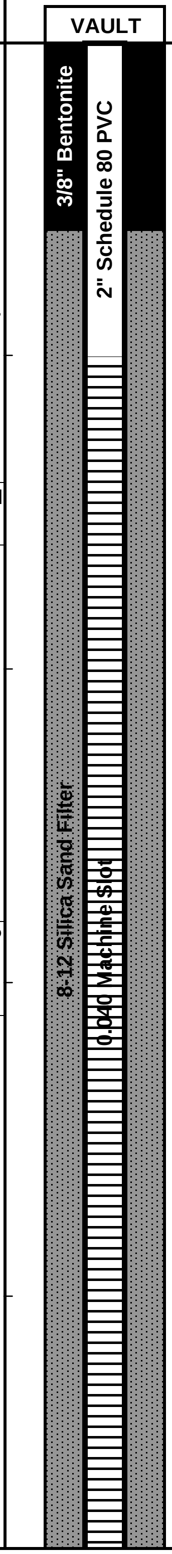
SOIL BORING / WELL LOG

PAGE: 1 OF 2

BORING NO: **GP-07**
PROJECT NO: **331908.08.A2.03**
PROJECT NAME: Asotin County Regional Landfill Remedial Investigation
LOCATION: Offsite, between north side of closed landfill and Peola Rd.
DRILLING CONTRACTOR: Budinger
TOC ELEVATION: N/A
GROUND ELEVATION: 1,191.56
START DATE: 3/11/2009
END DATE: 3/11/2009
LOGGER: R. Greer
DRILLING EQUIPMENT: Mobile B-57 6" Air rotary w/downhole hammer
BORING DIAMETER: 6-inch
TOTAL DEPTH: 30.5 ft
SWL: N/A

Depth (ft)	Sample ID	Interval (ft)	Recovery (%)	SPT blows per 6"	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**
						Start flight: 8:25	
1							
2							
3							
4	G-1	4-5	NA	NA	GRAB SAMPLE: CUTTINGS: Brown **SILT** w/ fine, poorly graded sand, trace gravel, moist **(ML)**		**ML**
5						End flight: 8:28 Start flight: 8:41	
6							
7						Increasing gravel observed in cuttings	**GM**
8						Decreasing gravel, possible basalt material	
9							
10						End flight: 8:45 Start flight: 8:52	**(Inferred Basalt)**
11							
12	G-2	12-13	NA	NA	GRAB SAMPLE: CUTTINGS: Dark gray/black angular to sub-angular, 1/4 to 3/4-inch dia. basalt and basaltic gravel, w/ decreasing brown silt **(Inferred Basalt)**		
13							
14	G-3	14-15	NA	NA	GRAB SAMPLE: CUTTINGS: Transition to Dark gray angular to sub-angular **GRAVEL** (1/2 to 1-inch dia.) and basalt fragments, w/ decreasing brown silt **(GP)**		**GP**
15						End flight: 8:58 Start flight: 9:06 Drilling becoming harder Driller observes competent material	
16					GRAB SAMPLE: CUTTINGS: Small, angular basalt cuttings - 1/8 to 3/8 ft. dia. w/ trace brown silt **(inferred basalt)**		
17							
18							
19							**(Inferred Basalt)**
20	G-4	20-21	NA	NA	GRAB SAMPLE: CUTTINGS: Same As Above **(inferred basalt)**		
21							
22							
23							

Well Construction

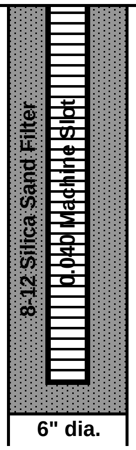


CH2MHILL

SOIL BORING / WELL LOG

PAGE: 2 OF 2

BORING NO: **GP-07**

Depth (ft)	Sample ID	Interval (ft)	Recovery (%)	SPT blows per 6"	**Soil Description** soil name, USCS group symbol, color, moisture, density or consistency, structure, mineralogy, grain size and grading	**Comments** drilling rate, drilling fluid loss, depth of casing, vapor tests, odor, other	**Soil Profile**	**Well Construction**
24							**(Inferred Basalt)**	
25	G-5	25-26	NA	NA	GRAB SAMPLE: CUTTINGS: Same As Above **(Inferred basalt)**			
26								
27								
28								
29	G-6	28.5-29	NA	NA	GRAB SAMPLE: CUTTINGS: Same As Above **(Inferred basalt)**			
30						**TD at 30.5 ft. on 3-11-09**		
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								

CH2MHILL

PROJECT NUMBER 343052.B2.04.02
BORING NUMBER GP- 8
SHEET 1 OF 3

SOIL BORING LOG

PROJECT : ACRL
LOCATION : CLARKSTON, WA
ELEVATION :
DRILLING CONTRACTOR :
DRILLING METHOD AND EQUIPMENT USED : MOBILE B-57 6 3/8" OD AIR ROTARY
WATER LEVELS :
START : 3-12-09 14:50
END :
LOGGER : RSG

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone	Above Hole
				14:50			
5				14:54 14:58	BROWN SAND W/ SILT, FINE, POORLY GRADED, MOIST. (SM) + CUTTING GRAB SAMPLE +		
						0.2	0.2
					DECREASING SAND, BECOMING SILT W/ ± SAND (ML)		
10				15:03 15:07			
					INCREASING GRAVEL - SUB ANGULAR ~ 1/2" DIA. W/ BROWN SILT (GM)		
15				15:11 15:15			
						0.1	0.1
					GRAVEL, SUB ANGULAR, POORLY GRADED W/ BROWN SILT, MOIST. (GM) INCREASING SILT, BECOMING ML W/ GRAVEL		
20				15:18 15:22			
						0.1	0.0
25				15:26	SAME AS ABOVE		
				15:34	SAME AS ABOVE		

CH2MHILL

PROJECT NUMBER 343052.B2.04.02
BORING NUMBER GP-8
SHEET 2 OF 3

SOIL BORING LOG

PROJECT : AC.R.L.
LOCATION : CLARKSTON, WA
ELEVATION :
DRILLING CONTRACTOR : BOINGER
DRILLING METHOD AND EQUIPMENT USED : MOBILE B-57 6 7/8" OD AIR ROTARY
WATER LEVELS :
START : 3/12/09 14:50
END :
LOGGER : RSG

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm):	Breathing Zone	Above Hole
				15:40	INCREASING SAND - VERY FINE SP			
					SILT BECOMING "CEMENTED", GRAVEL DIA DECREASING ~ 1/8 - 3/8" SUB ROUNDED TRANSITION TO MED BROWN SAND W/ SILT + DECREASING FINE, POORLY GRADED SUB-ANGULAR GRAVE @ 34.5' (SP-SM)		0.0	0.0
35				15:46 15:55	BECOMES SILT W/ F. SAND (ML) CEMENTED			
							0.2	0.0
40				16:02 16:07	SAME AS ABOVE			
					T. FINE GRAVEL INCREASING			
45				10:14 16:22	DECREASING FINE GRAVEL, INCREASING F SAND. (SM)			
				16:36 7:28	SUDDEN TRANSITION TO GRAY COARSE GRAVEL, WITH GRAY CEMENTED SILT.	DRILL RATE SLOWS DRAMATICALLY		
						47' END OF DAY. 3-12-09		
					DECREASING GRAVEL			
50				7:35 7:41	BECOMING GRAY SILT W/T. GRAVEL (ML) + CLAY		0.0	0.0
					INCREASING GRAVEL	DRILL RATE SLOWS		
					INCREASING [illegible], GRAY W/ GRAVEL FRAGMENTS			
55				8:09 8:14	INCREASING CLAY, TRACE GRAVEL			
					BROWN/TAN CLAY W/ SILT	BREAKDOWN @ 8:33 @ ~ 57' bgs		
					INCREASING GRAVEL - QUARTZ?			

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
343052.B2.04.02	4P-8	SHEET 3 OF 3

SOIL BORING LOG

PROJECT : ACRL
LOCATION : CLARKSTON, WA
ELEVATION :
DRILLING CONTRACTOR : BUDINGER
DRILLING METHOD AND EQUIPMENT USED : MOBILE B-57 6 5/8" AIR ROTARY
WATER LEVELS :
START : 3-12-09
END : 3-13-09 13:20
LOGGER : RSG

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone	Above Hole
				11:10	BECOMING BROWN CLAY W/ SOME SILT TRACE ROUNDED GRAVE ~1/2" DIA.		
65				11:45	SAME AS ABOVE	0.0	0.1
70				12:19 12:24	TRANSISTION TO GRAVEL - SUB ANGULAR TO ROUNDED, DECREASING CLAY. INCREASING CLAY & SILT	0.0	0.0
75				12:53 13:00	TRANSITIONS TO BROWN CEMENTED SILT W/SOME BROWN CLAY W/ GRAVE CUTTINGS ~ 40-50%. - ANGULAR - 1/4-1/2" DIA.		
				13:20	SAME AS ABOVE	TD 79.5' bgs	
80							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
343052	GP-9	SHEET 1 OF 2

SOIL BORING LOG

PROJECT : ASOTIN CNTY LANDFILL LOCATION : CLARKSTON, WA

ELEVATION : ~ 1170 DRILLING CONTRACTOR : BUDINGER

DRILLING METHOD AND EQUIPMENT USED : MOBILE B-57 HSA TO 17' REDRILL AIR ROTARY

WATER LEVELS : START : 3/9/09 13:00 END : LOGGER : RSG

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone	Above Hole
5		-	-				
10		-	-	13:22	* GRAB FROM CUTTINGS & (SM) TAN VERY FINE POORLY GRADED SAND W/ SILT, TRACE COARSE SAND/FINE GRAVEL, TRACE MICA.	0.2	0.4
15		-	-	13:29 13:32			
				13:40 13:58	*DRILLER OBS @ 16.5' bgs. CHANGE IN CONDITIONS, ABRUPT CHANGE, DRILL CHATTER	FINISH 3-9 - SWITCH TO A.R.	
					GRAB - BLACK, GRAY + TAN GRAVEL ANGULAR CUTTINGS W/ TAN/BROWN SILT	0.3	0,3
20							
					* GRAB SAME AS ABOVE	0.4	0.2
25				11:24			
					* DRILLER OBS + CUTTINGS* TRANSITION TO MEDIUM POORLY GRADED BROWN + TAN SAND, MOIST. TRACE GRAVEL.		
				11:30	SMOOTH · STEADY ADVANCEMENT		

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
343052.	GP-9	SHEET 2 OF 2

SOIL BORING LOG

PROJECT : Asotin Cnty Landfill LOCATION :

ELEVATION : DRILLING CONTRACTOR : Budinger

DRILLING METHOD AND EQUIPMENT USED : Mobile B-57 6" Air Rotary

WATER LEVELS : START : 3/9/09 13:00 END : 3/10/09 LOGGER : RSG

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone	Above Hole
				11:46	TRANSITION TO GRAVEL - GRAY GRAVEL CUTTINGS, 1/2 - 1 1/4" DIA, SUB-ANGULAR, AND ROUNDED		
						0.5	0.3
35				11:54 12:06			
					GRAVEL - AS ABOVE		
40				12:16		TD - 40' @ 12:16 3-10-09	

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
343052.B2.04.02	GP-10	SHEET 1 OF 2

SOIL BORING LOG

PROJECT : ASOTIN COUNTY REGIONAL LANDFILL LOCATION : CLARKSTON WA

ELEVATION : DRILLING CONTRACTOR : BUDINGER

DRILLING METHOD AND EQUIPMENT USED : MOBILE B-57 AIR ROTARY 6"

WATER LEVELS : START : 3/12/09 7:50 END : LOGGER : RSG

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone	Above Hole
				7:50			
5				7:54 7:58			
					GRAB VERY FINE BROWN POORLY GRADED SAND W/ SILT (SM) MOIST.	0.4	0.6
10				8:00 8:06			
					POSSIBLE INCREASING SILT		
15				8:10 8:14	SILT W/ F. POORLY GRADED SAND (ML) MOIST	0.0	0.0
					*DRILLER OBSERVATION- INCREASED COARSE MATERIAL		
20				8:18 8:24	OBSERVE SOME GRAVEL IN CUTTINGS - SUB ROUNDED, 1/2"-1" DIA, IN SILT BECOMES SUB-ANGULAR POORLY GRADED COARSE GRAVEL @ 19.5', 1/8-1 1/4" DIA W/ BROWN SILT	DRILLING RATE DECREASES - INCREASED "CHATTER"	
						0.0	0.0
					DECREASING SILT		
25				8:30			
				8:48			

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
343052.B2.04.02	GP-10	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : A CRL LOCATION : CLARKSTON, WA

ELEVATION : DRILLING CONTRACTOR : BUDINGER

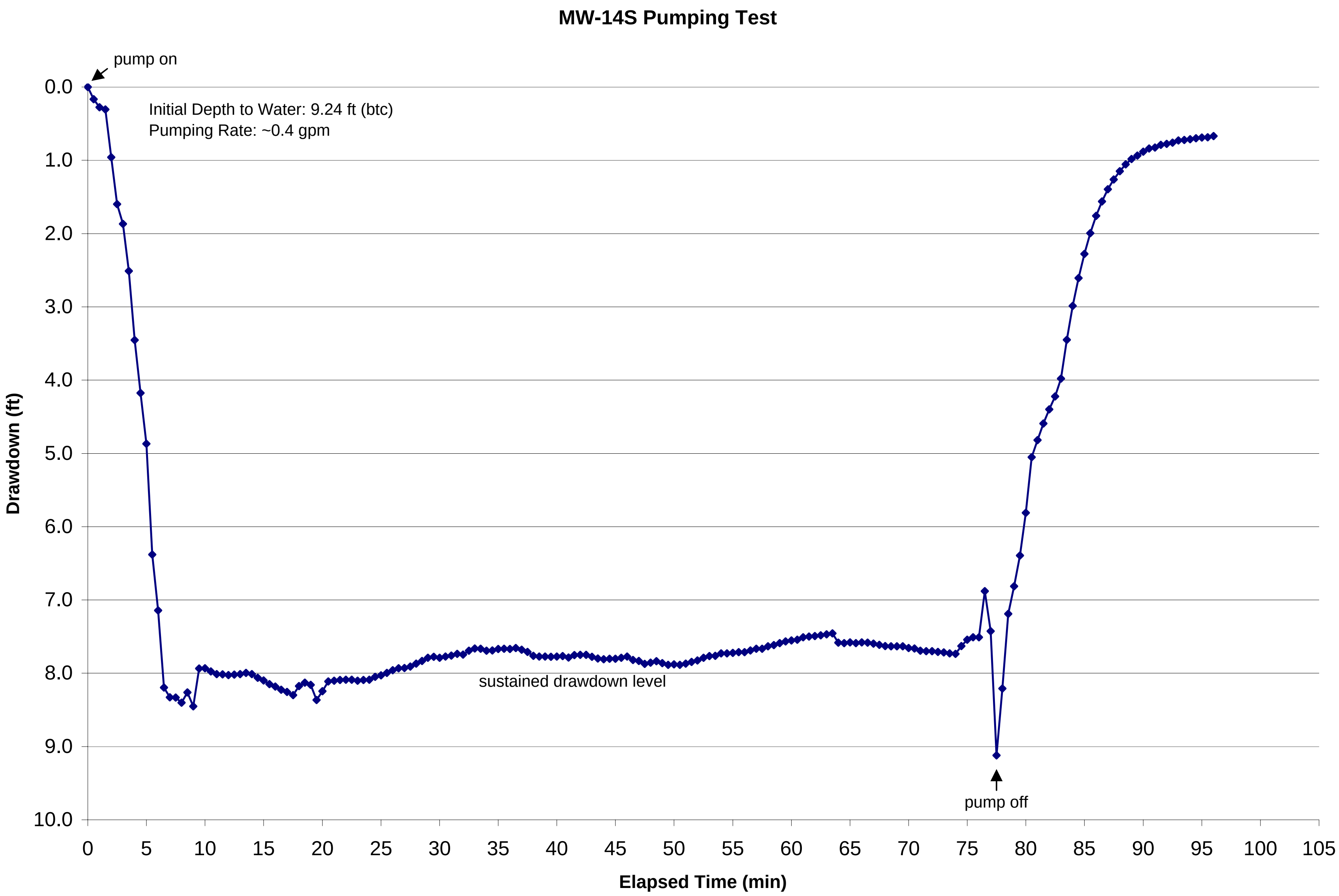
DRILLING METHOD AND EQUIPMENT USED : MOBILE B-57 AIR ROTARY 6" DIA

WATER LEVELS : START : 3-12-09 7:50 END : 3-12-09 9:15 LOGGER : RSG

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone	Above Hole
				8:52	WELL GRADED 1/8"-1" DIA. GRAVEL (QUARTZ??) WITH MEDIUM SAND - TAN, POORLY GRADED. (GW)	0.0	0.0
35				8:58 9:05			
					SAME AS ABOVE, INCREASING QUARTZ GRAVEL, DECREASING SAND		
40				9:15		TD - 40' bgs	

Appendix D

Remedial Investigation - Single Well Hydraulic Testing Data



MW-14S Pumping Test
pump on
Initial Depth to Water: 9.24 ft (btc)
Pumping Rate: ~0.4 gpm
sustained drawdown level
pump off
Drawdown (ft)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
Elapsed Time (min)
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
105

MW-14S Pumping Test Data

Serial Number : 1033493
Project: ACRL 331908.08.A2.03
DATE: 4-9-09
Data Log Interval: 30 seconds

Time	Temp (°C)	Estimated Flow (GPM)	Elapsed Time (min)	Drawdown (ft)	
14:21:47	16.9	0.424	0	0.000	test start
14:22:17	16.2	0.424	0.5	0.165	
14:22:47	15.7	0.424	1	0.276	
14:23:17	15.4	0.424	1.5	0.308	
14:23:47	15.1	0.424	2	0.960	
14:24:17	14.9	0.424	2.5	1.598	
14:24:47	14.7	0.424	3	1.869	
14:25:17	14.6	0.424	3.5	2.512	
14:25:47	14.4	0.424	4	3.454	
14:26:17	14.4	0.424	4.5	4.175	
14:26:47	14.3	0.424	5	4.869	
14:27:17	14.1	0.424	5.5	6.380	
14:27:47	14	0.424	6	7.142	
14:28:17	13.8	0.424	6.5	8.194	
14:28:47	13.6	0.424	7	8.327	
14:29:17	13.5	0.424	7.5	8.332	
14:29:47	13.5	0.424	8	8.401	
14:30:17	13.4	0.424	8.5	8.263	
14:30:47	13.4	0.424	9	8.451	
14:31:17	13.4	0.424	9.5	7.937	
14:31:47	13.4	0.424	10	7.932	
14:32:17	13.4	0.424	10.5	7.974	
14:32:47	13.3	0.424	11	8.011	
14:33:17	13.3	0.424	11.5	8.015	
14:33:47	13.3	0.424	12	8.024	
14:34:17	13.3	0.424	12.5	8.020	
14:34:47	13.3	0.424	13	8.011	
14:35:17	13.3	0.424	13.5	7.997	
14:35:47	13.3	0.424	14	8.011	
14:36:17	13.3	0.424	14.5	8.061	
14:36:47	13.3	0.424	15	8.098	
14:37:17	13.3	0.424	15.5	8.148	
14:37:47	13.3	0.424	16	8.180	
14:38:17	13.3	0.424	16.5	8.226	
14:38:47	13.3	0.424	17	8.254	
14:39:17	13.3	0.424	17.5	8.300	
14:39:47	13.3	0.424	18	8.176	
14:40:17	13.3	0.424	18.5	8.130	
14:40:47	13.4	0.424	19	8.157	
14:41:17	13.4	0.424	19.5	8.364	
14:41:47	13.4	0.424	20	8.245	
14:42:17	13.4	0.424	20.5	8.112	
14:42:47	13.4	0.424	21	8.102	
14:43:17	13.4	0.424	21.5	8.093	
14:43:47	13.4	0.424	22	8.089	
14:44:17	13.4	0.424	22.5	8.089	
14:44:47	13.4	0.424	23	8.102	
14:45:17	13.4	0.424	23.5	8.093	
14:45:47	13.4	0.424	24	8.089	

MW-14S Pumping Test Data

Serial Number : 1033493
Project: ACRL 331908.08.A2.03
DATE: 4-9-09
Data Log Interval: 30 seconds

Time	Temp (°C)	Estimated Flow (GPM)	Elapsed Time (min)	Drawdown (ft)
14:46:17	13.4	0.393	24.5	8.047
14:46:47	13.5	0.393	25	8.029
14:47:17	13.5	0.393	25.5	7.997
14:47:47	13.5	0.393	26	7.960
14:48:17	13.5	0.393	26.5	7.932
14:48:47	13.5	0.393	27	7.928
14:49:17	13.5	0.393	27.5	7.909
14:49:47	13.5	0.393	28	7.868
14:50:17	13.5	0.393	28.5	7.831
14:50:47	13.5	0.393	29	7.790
14:51:17	13.5	0.393	29.5	7.776
14:51:47	13.5	0.393	30	7.790
14:52:17	13.5	0.393	30.5	7.772
14:52:47	13.5	0.393	31	7.758
14:53:17	13.6	0.393	31.5	7.735
14:53:47	13.6	0.393	32	7.744
14:54:17	13.6	0.393	32.5	7.694
14:54:47	13.6	0.393	33	7.661
14:55:17	13.6	0.393	33.5	7.666
14:55:47	13.6	0.393	34	7.694
14:56:17	13.6	0.393	34.5	7.689
14:56:47	13.6	0.393	35	7.671
14:57:17	13.6	0.393	35.5	7.666
14:57:47	13.6	0.393	36	7.671
14:58:17	13.6	0.393	36.5	7.657
14:58:47	13.6	0.393	37	7.680
14:59:17	13.6	0.393	37.5	7.707
14:59:47	13.6	0.432	38	7.762
15:00:17	13.6	0.432	38.5	7.772
15:00:47	13.6	0.432	39	7.772
15:01:17	13.6	0.432	39.5	7.776
15:01:47	13.6	0.432	40	7.772
15:02:17	13.6	0.432	40.5	7.767
15:02:47	13.6	0.432	41	7.785
15:03:17	13.7	0.432	41.5	7.753
15:03:47	13.7	0.432	42	7.749
15:04:17	13.7	0.432	42.5	7.749
15:04:47	13.7	0.432	43	7.776
15:05:17	13.7	0.432	43.5	7.799
15:05:47	13.7	0.432	44	7.808
15:06:17	13.7	0.432	44.5	7.804
15:06:47	13.7	0.432	45	7.804
15:07:17	13.7	0.432	45.5	7.790
15:07:47	13.7	0.432	46	7.772
15:08:17	13.7	0.432	46.5	7.818
15:08:47	13.7	0.432	47	7.831
15:09:17	13.7	0.432	47.5	7.873
15:09:47	13.7	0.432	48	7.854
15:10:17	13.7	0.432	48.5	7.836

MW-14S Pumping Test Data

Serial Number : 1033493

Project: ACRL 331908.08.A2.03

DATE: 4-9-09

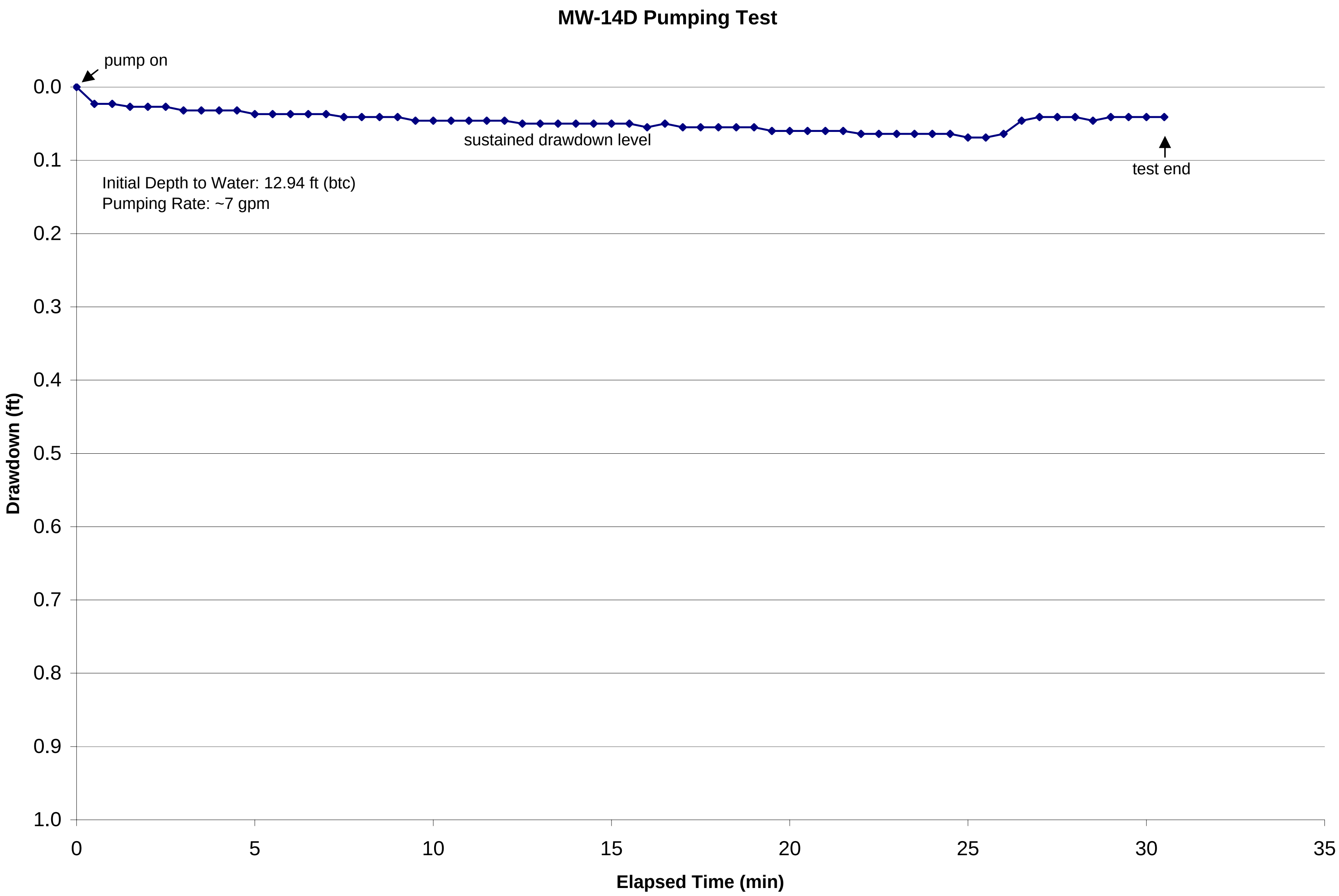
Data Log Interval: 30 seconds

Time	Temp (°C)	Estimated Flow (GPM)	Elapsed Time (min)	Drawdown (ft)
15:10:47	13.7	0.432	49	7.864
15:11:17	13.7	0.432	49.5	7.887
15:11:47	13.7	0.432	50	7.877
15:12:17	13.7	0.432	50.5	7.887
15:12:47	13.7	0.432	51	7.868
15:13:17	13.7	0.432	51.5	7.845
15:13:47	13.7		52	7.827
15:14:17	13.7		52.5	7.790
15:14:47	13.7		53	7.767
15:15:17	13.7		53.5	7.762
15:15:47	13.7		54	7.730
15:16:17	13.7		54.5	7.730
15:16:47	13.7		55	7.721
15:17:17	13.7		55.5	7.712
15:17:47	13.7		56	7.712
15:18:17	13.7		56.5	7.689
15:18:47	13.7		57	7.666
15:19:17	13.7	0.361	57.5	7.666
15:19:47	13.7	0.361	58	7.634
15:20:17	13.7	0.361	58.5	7.616
15:20:47	13.7	0.361	59	7.588
15:21:17	13.7	0.361	59.5	7.565
15:21:47	13.7	0.361	60	7.551
15:22:17	13.7	0.361	60.5	7.542
15:22:47	13.7	0.361	61	7.510
15:23:17	13.7	0.361	61.5	7.501
15:23:47	13.7	0.361	62	7.491
15:24:17	13.7	0.361	62.5	7.482
15:24:47	13.7	0.361	63	7.469
15:25:17	13.7	0.361	63.5	7.455
15:25:47	13.7	0.361	64	7.583
15:26:17	13.7	0.361	64.5	7.588
15:26:47	13.7	0.361	65	7.579
15:27:17	13.7	0.361	65.5	7.588
15:27:47	13.7	0.361	66	7.579
15:28:17	13.7	0.361	66.5	7.583
15:28:47	13.7	0.361	67	7.597
15:29:17	13.7	0.361	67.5	7.611
15:29:47	13.7	0.361	68	7.629
15:30:17	13.7	0.361	68.5	7.634
15:30:47	13.7	0.361	69	7.634
15:31:17	13.7	0.361	69.5	7.634
15:31:47	13.7	0.361	70	7.657
15:32:17	13.7	0.361	70.5	7.661
15:32:47	13.7	0.361	71	7.694
15:33:17	13.7	0.361	71.5	7.698
15:33:47	13.7	0.361	72	7.698
15:34:17	13.6	0.361	72.5	7.707
15:34:47	13.6	0.361	73	7.717

MW-14S Pumping Test Data

Serial Number : 1033493
Project: ACRL 331908.08.A2.03
DATE: 4-9-09
Data Log Interval: 30 seconds

Time	Temp (°C)	Estimated Flow (GPM)	Elapsed Time (min)	Drawdown (ft)	
15:35:17	13.6	0.361	73.5	7.730	
15:35:47	13.6	0.361	74	7.735	
15:36:17	13.6		74.5	7.629	
15:36:47	13.6		75	7.542	
15:37:17	13.6		75.5	7.510	
15:37:47	13.6		76	7.510	
15:38:17	13.6		76.5	6.881	
15:38:47	13.6		77	7.427	
15:39:17	13.6		77.5	9.122	
15:39:47	13.6		78	8.208	
15:40:17	13.6		78.5	7.188	
15:40:47	13.6		79	6.812	
15:41:17	13.6		79.5	6.394	
15:41:47	13.6		80	5.810	
15:42:17	13.6		80.5	5.053	
15:42:47	13.6		81	4.818	
15:43:17	13.6		81.5	4.593	
15:43:47	13.5		82	4.400	
15:44:17	13.5		82.5	4.221	
15:44:47	13.5		83	3.978	
15:45:17	13.5		83.5	3.449	
15:45:47	13.5		84	2.986	
15:46:17	13.5		84.5	2.609	
15:46:47	13.5		85	2.278	
15:47:17	13.5		85.5	1.993	
15:47:47	13.5		86	1.759	
15:48:17	13.5		86.5	1.562	
15:48:47	13.6		87	1.396	
15:49:17	13.6		87.5	1.263	
15:49:47	13.6		88	1.148	
15:50:17	13.6		88.5	1.056	
15:50:47	13.6		89	0.983	
15:51:17	13.6		89.5	0.937	
15:51:47	13.6		90	0.882	
15:52:17	13.6		90.5	0.840	
15:52:47	13.6		91	0.827	
15:53:17	13.6		91.5	0.790	
15:53:47	13.6		92	0.776	
15:54:17	13.7		92.5	0.758	
15:54:47	13.7		93	0.730	
15:55:17	13.7		93.5	0.721	
15:55:47	13.7		94	0.712	
15:56:17	13.7		94.5	0.698	
15:56:47	13.7		95	0.689	
15:57:17	13.7		95.5	0.684	
15:57:47	13.7		96	0.671	test end



MW-14D Pumping Test
pump on
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Drawdown (ft)
sustained drawdown level
test end
Initial Depth to Water: 12.94 ft (btc)
Pumping Rate: ~7 gpm
0
5
10
15
20
25
30
35
Elapsed Time (min)

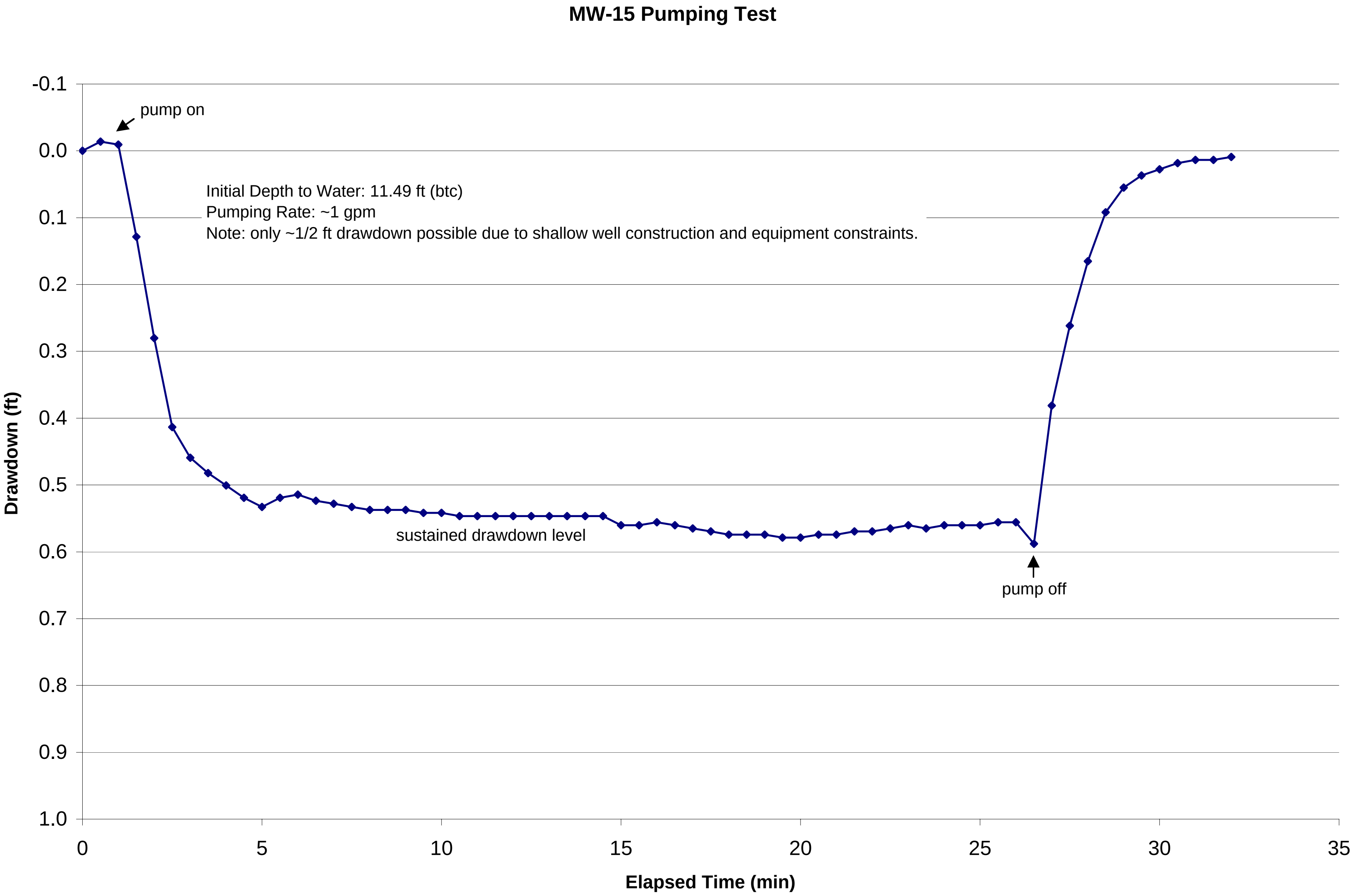
MW-14D Pumping Test Data
Serial Number : 1033493
Project: ACRL 331908.08.A2.03
DATE: 4-10-09
Data Log Interval: 30 seconds

Time	Temp (°C)	Estimated Flow (GPM)	Elapsed Time (min)	Drawdown (ft)	
9:39:59	14.9	6.9	0	0.000	test start
9:40:29	14.9	6.9	0.5	0.023	
9:40:59	14.9	6.9	1	0.023	
9:41:29	14.9	6.9	1.5	0.027	
9:41:59	14.9	6.9	2	0.027	
9:42:29	14.9	6.9	2.5	0.027	
9:42:59	14.9	6.9	3	0.032	
9:43:29	14.8	6.9	3.5	0.032	
9:43:59	14.8	6.9	4	0.032	
9:44:29	14.8	6.9	4.5	0.032	
9:44:59	14.8	6.9	5	0.037	
9:45:29	14.8	6.9	5.5	0.037	
9:45:59	14.8	6.9	6	0.037	
9:46:29	14.8	6.9	6.5	0.037	
9:46:59	14.8	6.9	7	0.037	
9:47:29	14.8	6.9	7.5	0.041	
9:47:59	14.8	6.9	8	0.041	
9:48:29	14.8	6.9	8.5	0.041	
9:48:59	14.8	6.9	9	0.041	
9:49:29	14.8	6.9	9.5	0.046	
9:49:59	14.8	6.9	10	0.046	
9:50:29	14.8	6.9	10.5	0.046	
9:50:59	14.8	6.9	11	0.046	
9:51:29	14.8	6.9	11.5	0.046	
9:51:59	14.8	6.9	12	0.046	
9:52:29	14.8	6.9	12.5	0.050	
9:52:59	14.8	6.9	13	0.050	
9:53:29	14.8	6.9	13.5	0.050	
9:53:59	14.8	6.9	14	0.050	
9:54:29	14.8	6.9	14.5	0.050	
9:54:59	14.8	6.9	15	0.050	
9:55:29	14.8	6.9	15.5	0.050	
9:55:59	14.8	6.9	16	0.055	
9:56:29	14.8	6.9	16.5	0.050	
9:56:59	14.8	6.9	17	0.055	
9:57:29	14.8	6.9	17.5	0.055	
9:57:59	14.8	6.9	18	0.055	
9:58:29	14.8	6.9	18.5	0.055	
9:58:59	14.8	6.9	19	0.055	
9:59:29	14.8	6.9	19.5	0.060	
9:59:59	14.8	6.9	20	0.060	
10:00:29	14.8	6.9	20.5	0.060	
10:00:59	14.8	6.9	21	0.060	
10:01:29	14.8	6.9	21.5	0.060	
10:01:59	14.8	6.9	22	0.064	
10:02:29	14.8	6.9	22.5	0.064	
10:02:59	14.8	6.9	23	0.064	
10:03:29	14.8	6.9	23.5	0.064	
10:03:59	14.8	6.9	24	0.064	

MW-14D Pumping Test Data

Serial Number : 1033493
Project: ACRL 331908.08.A2.03
DATE: 4-10-09
Data Log Interval: 30 seconds

Time	Temp (°C)	Estimated Flow (GPM)	Elapsed Time (min)	Drawdown (ft)	
10:04:29	14.8	6.9	24.5	0.064	
10:04:59	14.8	6.9	25	0.069	
10:05:29	14.8	6.9	25.5	0.069	
10:05:59	14.8	6.9	26	0.064	
10:06:29	14.8	6.9	26.5	0.046	
10:06:59	14.8	6.9	27	0.041	
10:07:29	14.8	6.9	27.5	0.041	
10:07:59	14.8	6.9	28	0.041	
10:08:29	14.8	6.9	28.5	0.046	
10:08:59	14.8	6.9	29	0.041	
10:09:29	14.8	6.9	29.5	0.041	
10:09:59	14.8	6.9	30	0.041	
10:10:29	14.8	6.9	30.5	0.041	test end


MW-15 Pumping Test
pump on
Initial Depth to Water: 11.49 ft (btc)
Pumping Rate: ~1 gpm
Note: only ~1/2 ft drawdown possible due to shallow well construction and equipment constraints.
sustained drawdown level
pump off
Drawdown (ft)
-0.1
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0
5
10
15
20
25
30
35
Elapsed Time (min)

MW-15 Pumping Test Data

Serial Number : 1033493

Project: ACRL 331908.08.A2.03

DATE: 4-9-09

Data Log Interval: 30 seconds

Time	Temp (°C)	Estimated Flow (GPM)	Elapsed Time (min)	Drawdown (ft)	
13:29:19	13.1		0	0.000	test start
13:29:49	13.1		0.5	-0.014	
13:30:19	13.2	0.96	1	-0.009	
13:30:49	13.2	0.96	1.5	0.129	
13:31:19	13.2	0.96	2	0.280	
13:31:49	13.2	0.96	2.5	0.413	
13:32:19	13.2	0.96	3	0.459	
13:32:49	13.2	0.96	3.5	0.482	
13:33:19	13.1	0.96	4	0.501	
13:33:49	13.1	0.96	4.5	0.519	
13:34:19	13.1	0.96	5	0.533	
13:34:49	13.1	0.96	5.5	0.519	
13:35:19	13.1	0.96	6	0.514	
13:35:49	13.0	0.96	6.5	0.524	
13:36:19	13.0	0.96	7	0.528	
13:36:49	13.0	0.96	7.5	0.533	
13:37:19	13.0	0.96	8	0.537	
13:37:49	13.0	0.96	8.5	0.537	
13:38:19	13.0	0.96	9	0.537	
13:38:49	13.0	0.96	9.5	0.542	
13:39:19	13.0	0.96	10	0.542	
13:39:49	13.0	0.96	10.5	0.547	
13:40:19	13.0	0.96	11	0.547	
13:40:49	13.0	0.96	11.5	0.547	
13:41:19	13.0	0.96	12	0.547	
13:41:49	13.0	0.96	12.5	0.547	
13:42:19	12.9	0.96	13	0.547	
13:42:49	12.9	0.96	13.5	0.547	
13:43:19	12.9	0.96	14	0.547	
13:43:49	12.9	0.96	14.5	0.547	
13:44:19	12.9	0.96	15	0.560	
13:44:49	12.9	0.96	15.5	0.560	
13:45:19	12.9	0.96	16	0.556	
13:45:49	12.9	0.96	16.5	0.560	
13:46:19	12.9	0.96	17	0.565	
13:46:49	12.9	0.96	17.5	0.570	
13:47:19	12.9	0.96	18	0.574	
13:47:49	12.9	0.96	18.5	0.574	
13:48:19	12.9	0.96	19	0.574	
13:48:49	12.9	0.96	19.5	0.579	
13:49:19	12.9	0.96	20	0.579	
13:49:49	12.9	0.96	20.5	0.574	
13:50:19	12.9	0.96	21	0.574	
13:50:49	12.9	0.96	21.5	0.570	
13:51:19	12.9	0.96	22	0.570	
13:51:49	12.9	0.96	22.5	0.565	
13:52:19	12.9	0.96	23	0.560	
13:52:49	12.9	0.96	23.5	0.565	
13:53:19	12.9	0.96	24	0.560	

MW-15 Pumping Test Data

Serial Number : 1033493
Project: ACRL 331908.08.A2.03
DATE: 4-9-09
Data Log Interval: 30 seconds

Time	Temp (°C)	Estimated Flow (GPM)	Elapsed Time (min)	Drawdown (ft)	
13:53:49	12.9	0.96	24.5	0.560	
13:54:19	12.9	0.96	25	0.560	
13:54:49	12.9	0.96	25.5	0.556	
13:55:19	12.9	0.96	26	0.556	
13:55:49	12.9	0.96	26.5	0.588	
13:56:19	12.9	0.96	27	0.381	
13:56:49	12.9	0.96	27.5	0.262	
13:57:19	12.9	0.96	28	0.165	
13:57:49	12.9	0.96	28.5	0.092	
13:58:19	12.9	0.96	29	0.055	
13:58:49	12.9	0.96	29.5	0.037	
13:59:19	12.9	0.96	30	0.027	
13:59:49	12.9	0.96	30.5	0.018	
14:00:19	12.9	0.96	31	0.014	
14:00:49	13.0	0.96	31.5	0.014	
14:01:19	13.0	0.96	32	0.009	test end

E – 1 Physical Properties Soil Testing Results (Budinger)
E - 2 Analytical Soil Testing Results (PACE)

Electronic Submittal Only

See DVD located in cover of this report

Appendix E
Remedial Investigation - Soils Testing Results: Physical Soil Properties (Budinger) and Analytical Testing (Pace Analytical)

Electronic Submittal Only

See DVD located in cover of this report

Pace Analytical
Seattle Laboratory

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Client: Asotin County Landfill
2901 6th Avenue
Clarkston, WA 99403

ATTN: Steve Becker

Project Name: **Monitoring Well (MW) Sampling**

SDG Number: **ACOU090401**

Date Received: **4/11/2009 1:00:00PM**

Date Reported: **05/04/2009**

Dear Steve Becker,

Enclosed are the analytical results for the sample(s) received by the laboratory on April 11, 2009. The results relate only to the samples included in this report. Unless otherwise instructed all samples with the exception of samples which are consumed during the analysis, such as microbiological samples, will be disposed of on or after June 9, 2009. This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

If you have any question concerning the report, please feel free to contact me.

Respectfully submitted,

Pace Analytical Services, Inc.

Hugh S. Prentice

Hugh S. Prentice

Pace Analytical Services, Inc.

Sample Summary

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Project:	Monitoring Well (MW) Sampling	SDG Number:	ACOU090401
Project Number:		Project Manager:	Steve Becker

Sample Identification:

Sample Description	Lab Sample ID	Collection Date/Time		Type
GP-LGW-10 (72.5-73.5)	ACOU090401-001	04/01/2009	08:45	Soil
Trip blank	ACOU090401-002	04/01/2009		Soil

Comments:

Samples were received without sample for total solids. VOA results reported "As Received".

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
Phone: (206)767-5060
Fax: (206)767-5063

Pace Analytical Services, Inc.

Test Request Summary

Project:	Monitoring Well (MW) Sampling	SDG Number:	ACOU090401
Pace Project No.:		Project Manager:	Steve Becker

Samples	Methods									
Client Sample ID	8260B [1]									
GP-LGW-10 (72.5-73.5)	**X**									
Trip blank	**X**									

Determinations:

[1] = 8260-3 VOAs Soil Full list

Project:	Monitoring Well (MW) Sampling	SDG Number:	ACOU090401
Project Number:		Project Manager:	Steve Becker

Client Sample ID:	**GP-LGW-10 (72.5-73.5)**	Matrix:	Soil
Collected On:	4/1/09 8:45	Lab Sample ID:	ACOU090401-001
Received On:	4/11/09 13:00		

Purgeable Organic Compounds by GC/MS

Methods (Preparation | Analysis): **5035 | 8260B**

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Acetone	**71**	ug/kg dry	1		10	Q40009	04/15/2009	04/15/2009	
Benzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Bromobenzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Bromochloromethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Bromodichloromethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Bromoform	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Bromomethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
2-Butanone	**25**	ug/kg dry	1		10	Q40009	04/15/2009	04/15/2009	
n-Butylbenzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
sec-Butylbenzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
tert-Butylbenzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Carbon disulfide	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Carbon tetrachloride	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Chlorobenzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Chloroethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Chloroform	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Chloromethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
2-Chlorotoluene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
4-Chlorotoluene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,2-Dibromo-3-chloropropane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Dibromochloromethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,2-Dibromoethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Dibromomethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,2-Dichlorobenzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,3-Dichlorobenzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,4-Dichlorobenzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Dichlorodifluoromethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,1-Dichloroethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,2-Dichloroethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,1-Dichloroethene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
trans-1,2-Dichloroethene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
cis-1,2-Dichloroethene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,2-Dichloropropane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,3-Dichloropropane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
2,2-Dichloropropane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,1-Dichloropropene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
cis-1,3-Dichloropropene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
trans-1,3-Dichloropropene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Ethylbenzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Hexachlorobutadiene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
2-Hexanone	ND	ug/kg dry	1		10	Q40009	04/15/2009	04/15/2009	
Isopropylbenzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
4-Isopropyltoluene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Methyl tert-butyl ether	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
4-Methyl-2-pentanone	ND	ug/kg dry	1		10	Q40009	04/15/2009	04/15/2009	
Methylene chloride	ND	ug/kg dry	1		10	Q40009	04/15/2009	04/15/2009	
Naphthalene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
n-Propylbenzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	

Pace Analytical Services, Inc.

Analytical Results

Project:	Monitoring Well (MW) Sampling	SDG Number:	ACOU090401
Project Number:		Project Manager:	Steve Becker

Client Sample ID:	**GP-LGW-10 (72.5-73.5)**	Matrix:	Soil
Collected On:	4/1/09 8:45	Lab Sample ID:	ACOU090401-001
Received On:	4/11/09 13:00		

Purgeable Organic Compounds by GC/MS Methods (Preparation | Analysis): **5035 | 8260B**

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Styrene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,1,1,2-Tetrachloroethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,1,2,2-Tetrachloroethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Tetrachloroethene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Toluene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,2,3-Trichlorobenzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,2,4-Trichlorobenzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,1,1-Trichloroethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,1,2-Trichloroethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Trichloroethene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Trichlorofluoromethane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,2,3-Trichloropropane	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,2,4-Trimethylbenzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
1,3,5-Trimethylbenzene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Vinyl chloride	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
m,p-Xylene	ND	ug/kg dry	1		6.2	Q40009	04/15/2009	04/15/2009	
o-Xylene	ND	ug/kg dry	1		3.1	Q40009	04/15/2009	04/15/2009	
Surrogates:									
4-Bromofluorobenzene	97	% Rec	1		82-121	Q40009	04/15/2009	04/15/2009	
Dibromofluoromethane	104	% Rec	1		85-120	Q40009	04/15/2009	04/15/2009	
1,2-Dichloroethane-d4	105	% Rec	1		77-127	Q40009	04/15/2009	04/15/2009	
Toluene-d8	97	% Rec	1		86-119	Q40009	04/15/2009	04/15/2009	

Project:	Monitoring Well (MW) Sampling	SDG Number:	ACOU090401
Project Number:		Project Manager:	Steve Becker

Client Sample ID:	**Trip blank**	Matrix:	Soil
Collected On:	4/1/09 0:00	Lab Sample ID:	ACOU090401-002
Received On:	4/11/09 13:00		

Purgeable Organic Compounds by GC/MS — Methods (Preparation | Analysis): **5035 | 8260B**

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Acetone	ND	ug/kg dry	1		10	Q40009	04/15/2009	04/15/2009	
Benzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Bromobenzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Bromochloromethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Bromodichloromethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Bromoform	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Bromomethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
2-Butanone	ND	ug/kg dry	1		10	Q40009	04/15/2009	04/15/2009	
n-Butylbenzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
sec-Butylbenzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
tert-Butylbenzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Carbon disulfide	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Carbon tetrachloride	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Chlorobenzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Chloroethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Chloroform	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Chloromethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
2-Chlorotoluene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
4-Chlorotoluene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,2-Dibromo-3-chloropropane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Dibromochloromethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,2-Dibromoethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Dibromomethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,2-Dichlorobenzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,3-Dichlorobenzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,4-Dichlorobenzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Dichlorodifluoromethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,1-Dichloroethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,2-Dichloroethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,1-Dichloroethene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
trans-1,2-Dichloroethene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
cis-1,2-Dichloroethene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,2-Dichloropropane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,3-Dichloropropane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
2,2-Dichloropropane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,1-Dichloropropene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
cis-1,3-Dichloropropene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
trans-1,3-Dichloropropene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Ethylbenzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Hexachlorobutadiene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
2-Hexanone	ND	ug/kg dry	1		10	Q40009	04/15/2009	04/15/2009	
Isopropylbenzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
4-Isopropyltoluene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Methyl tert-butyl ether	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
4-Methyl-2-pentanone	ND	ug/kg dry	1		10	Q40009	04/15/2009	04/15/2009	
Methylene chloride	ND	ug/kg dry	1		10	Q40009	04/15/2009	04/15/2009	
Naphthalene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
n-Propylbenzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	

Project:	Monitoring Well (MW) Sampling	SDG Number:	ACOU090401
Project Number:		Project Manager:	Steve Becker

Client Sample ID:	**Trip blank**	Matrix:	Soil
Collected On:	4/1/09 0:00	Lab Sample ID:	ACOU090401-002
Received On:	4/11/09 13:00		

Purgeable Organic Compounds by GC/MS Methods (Preparation | Analysis): **5035 | 8260B**

Analyte	Result	Units	DF	Detection Limit Threshold	Reporting Limit	QC Batch Group	Prepared	Analyzed	Qualifiers
Styrene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,1,1,2-Tetrachloroethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,1,2,2-Tetrachloroethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Tetrachloroethene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Toluene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,2,3-Trichlorobenzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,2,4-Trichlorobenzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,1,1-Trichloroethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,1,2-Trichloroethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Trichloroethene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Trichlorofluoromethane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,2,3-Trichloropropane	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,2,4-Trimethylbenzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
1,3,5-Trimethylbenzene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Vinyl chloride	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
m,p-Xylene	ND	ug/kg dry	1		6.0	Q40009	04/15/2009	04/15/2009	
o-Xylene	ND	ug/kg dry	1		3.0	Q40009	04/15/2009	04/15/2009	
Surrogates:									
4-Bromofluorobenzene	96	% Rec	1		82-121	Q40009	04/15/2009	04/15/2009	
Dibromofluoromethane	103	% Rec	1		85-120	Q40009	04/15/2009	04/15/2009	
1,2-Dichloroethane-d4	102	% Rec	1		77-127	Q40009	04/15/2009	04/15/2009	
Toluene-d8	97	% Rec	1		86-119	Q40009	04/15/2009	04/15/2009	

Pace Analytical Services, Inc.

Quality Control Results

Project:	Monitoring Well (MW) Sampling	SDG Number:	ACOU090401
Project Number:		Project Manager:	Steve Becker

QC Batch(es):	**Q40009**	Analysis Method:	**8260B**
QC Batch Method:	5035 (GCMS low)	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:	04/15/2009		

Blank: B041509MVOSB1

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Acetone	ND	ug/kg dry	1		10	
Benzene	ND	ug/kg dry	1		3	
Bromobenzene	ND	ug/kg dry	1		3	
Bromochloromethane	ND	ug/kg dry	1		3	
Bromodichloromethane	ND	ug/kg dry	1		3	
Bromoform	ND	ug/kg dry	1		3	
Bromomethane	ND	ug/kg dry	1		3	
2-Butanone	ND	ug/kg dry	1		10	
n-Butylbenzene	ND	ug/kg dry	1		3	
sec-Butylbenzene	ND	ug/kg dry	1		3	
tert-Butylbenzene	ND	ug/kg dry	1		3	
Carbon disulfide	ND	ug/kg dry	1		3	
Carbon tetrachloride	ND	ug/kg dry	1		3	
Chlorobenzene	ND	ug/kg dry	1		3	
Chloroethane	ND	ug/kg dry	1		3	
Chloroform	ND	ug/kg dry	1		3	
Chloromethane	ND	ug/kg dry	1		3	
2-Chlorotoluene	ND	ug/kg dry	1		3	
4-Chlorotoluene	ND	ug/kg dry	1		3	
1,2-Dibromo-3-chloropro	ND	ug/kg dry	1		3	
Dibromochloromethane	ND	ug/kg dry	1		3	
1,2-Dibromoethane	ND	ug/kg dry	1		3	
Dibromomethane	ND	ug/kg dry	1		3	
1,2-Dichlorobenzene	ND	ug/kg dry	1		3	
1,3-Dichlorobenzene	ND	ug/kg dry	1		3	
1,4-Dichlorobenzene	ND	ug/kg dry	1		3	
Dichlorodifluoromethane	ND	ug/kg dry	1		3	
1,1-Dichloroethane	ND	ug/kg dry	1		3	
1,2-Dichloroethane	ND	ug/kg dry	1		3	
1,1-Dichloroethene	ND	ug/kg dry	1		3	
trans-1,2-Dichloroethene	ND	ug/kg dry	1		3	
cis-1,2-Dichloroethene	ND	ug/kg dry	1		3	
1,2-Dichloropropane	ND	ug/kg dry	1		3	
1,3-Dichloropropane	ND	ug/kg dry	1		3	
2,2-Dichloropropane	ND	ug/kg dry	1		3	
1,1-Dichloropropene	ND	ug/kg dry	1		3	
cis-1,3-Dichloropropene	ND	ug/kg dry	1		3	
trans-1,3-Dichloropropene	ND	ug/kg dry	1		3	
Ethylbenzene	ND	ug/kg dry	1		3	
Hexachlorobutadiene	ND	ug/kg dry	1		3	
2-Hexanone	ND	ug/kg dry	1		10	
Isopropylbenzene	ND	ug/kg dry	1		3	
4-Isopropyltoluene	ND	ug/kg dry	1		3	
Methyl tert-butyl ether	ND	ug/kg dry	1		3	
4-Methyl-2-pentanone	ND	ug/kg dry	1		10	
Methylene chloride	ND	ug/kg dry	1		10	
Naphthalene	ND	ug/kg dry	1		3	
n-Propylbenzene	ND	ug/kg dry	1		3	

Pace Analytical Services, Inc.

Quality Control Results

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Project:	Monitoring Well (MW) Sampling	SDG Number:	ACOU090401
Project Number:		Project Manager:	Steve Becker

QC Batch(es):	**Q40009**	Analysis Method:	**8260B**
QC Batch Method:	5035 (GCMS low)	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:	04/15/2009		

Blank: B041509MVOSB1

Analyte	Blank Result	Units	DF	Detection Limit Threshold	Control Limit	Qualifiers
Styrene	ND	ug/kg dry	1		3	
1,1,1,2-Tetrachloroethane	ND	ug/kg dry	1		3	
1,1,2,2-Tetrachloroethane	ND	ug/kg dry	1		3	
Tetrachloroethene	ND	ug/kg dry	1		3	
Toluene	ND	ug/kg dry	1		3	
1,2,3-Trichlorobenzene	ND	ug/kg dry	1		3	
1,2,4-Trichlorobenzene	ND	ug/kg dry	1		3	
1,1,1-Trichloroethane	ND	ug/kg dry	1		3	
1,1,2-Trichloroethane	ND	ug/kg dry	1		3	
Trichloroethene	ND	ug/kg dry	1		3	
Trichlorofluoromethane	ND	ug/kg dry	1		3	
1,2,3-Trichloropropane	ND	ug/kg dry	1		3	
1,2,4-Trimethylbenzene	ND	ug/kg dry	1		3	
1,3,5-Trimethylbenzene	ND	ug/kg dry	1		3	
Vinyl chloride	ND	ug/kg dry	1		3	
m,p-Xylene	ND	ug/kg dry	1		6	
o-Xylene	ND	ug/kg dry	1		3	
Surrogates:				% Rec		
4-Bromofluorobenzene			1	94	82-121	
Dibromofluoromethane			1	106	85-120	
1,2-Dichloroethane-d4			1	109	77-127	
Toluene-d8			1	97	86-119	

LCS: S041509MVOSB1
LCS Duplicate: S041509MVOSB1D

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	Limits	RPD	RPD Limit	Qualifiers
Acetone	22	ug/kg dry	1	20.0	110	65-148			
	21			20.0	105	65-148	5	30	
Benzene	21	ug/kg dry	1	20.0	105	71-128			
	20			20.0	102	71-128	2	30	
Bromobenzene	21	ug/kg dry	1	20.0	103	69-124			
	21			20.0	103	69-124	0	30	
Bromochloromethane	21	ug/kg dry	1	20.0	104	73-122			
	20			20.0	101	73-122	3	30	
Bromodichloromethane	20	ug/kg dry	1	20.0	102	70-127			
	20			20.0	99	70-127	4	30	
Bromoform	22	ug/kg dry	1	20.0	108	74-118			
	22			20.0	109	74-118	0	30	
Bromomethane	19	ug/kg dry	1	20.0	96	52-146			
	19			20.0	95	52-146	2	30	
2-Butanone	22	ug/kg dry	1	20.0	111	70-150			
	22			20.0	108	70-150	2	30	
n-Butylbenzene	21	ug/kg dry	1	20.0	105	55-133			
	21			20.0	105	55-133	0	30	
sec-Butylbenzene	21	ug/kg dry	1	20.0	107	55-138			
	21			20.0	106	55-138	1	30	

Project:	Monitoring Well (MW) Sampling	SDG Number:	ACOU090401
Project Number:		Project Manager:	Steve Becker

QC Batch(es):	**Q40009**	Analysis Method:	**8260B**
QC Batch Method:	5035 (GCMS low)	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:	04/15/2009		

LCS: S041509MVOSB1
LCS Duplicate: S041509MVOSB1D

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	Limits	RPD	RPD Limit	Qualifiers
tert-Butylbenzene	21	ug/kg dry	1	20.0	103	54-133			
	20			20.0	102	54-133	1	30	
Carbon disulfide	16	ug/kg dry	1	20.0	80	47-123			
	16			20.0	79	47-123	2	30	
Carbon tetrachloride	20	ug/kg dry	1	20.0	101	46-155			
	20			20.0	100	46-155	1	30	
Chlorobenzene	20	ug/kg dry	1	20.0	99	67-119			
	20			20.0	102	67-119	2	30	
Chloroethane	20	ug/kg dry	1	20.0	100	57-141			
	20			20.0	98	57-141	2	30	
Chloroform	20	ug/kg dry	1	20.0	100	68-124			
	20			20.0	99	68-124	1	30	
Chloromethane	18	ug/kg dry	1	20.0	92	36-156			
	18			20.0	92	36-156	1	30	
2-Chlorotoluene	20	ug/kg dry	1	20.0	100	69-123			
	20			20.0	99	69-123	1	30	
4-Chlorotoluene	21	ug/kg dry	1	20.0	104	71-126			
	21			20.0	104	71-126	0	30	
1,2-Dibromo-3-chloropropan	23	ug/kg dry	1	20.0	115	56-141			
	23			20.0	114	56-141	1	30	
Dibromochloromethane	21	ug/kg dry	1	20.0	106	73-127			
	21			20.0	104	73-127	2	30	
1,2-Dibromoethane	21	ug/kg dry	1	20.0	106	78-118			
	21			20.0	103	78-118	3	30	
Dibromomethane	21	ug/kg dry	1	20.0	103	75-122			
	21			20.0	104	75-122	0	30	
1,2-Dichlorobenzene	21	ug/kg dry	1	20.0	103	71-119			
	21			20.0	103	71-119	0	30	
1,3-Dichlorobenzene	20	ug/kg dry	1	20.0	101	68-119			
	20			20.0	101	68-119	0	30	
1,4-Dichlorobenzene	20	ug/kg dry	1	20.0	102	64-119			
	20			20.0	102	64-119	0	30	
Dichlorodifluoromethane	17	ug/kg dry	1	20.0	86	22-143			
	17			20.0	87	22-143	2	30	
1,1-Dichloroethane	21	ug/kg dry	1	20.0	107	69-125			
	21			20.0	105	69-125	2	30	
1,2-Dichloroethane	21	ug/kg dry	1	20.0	104	73-128			
	20			20.0	102	73-128	2	30	
1,1-Dichloroethene	21	ug/kg dry	1	20.0	106	58-138			
	21			20.0	104	58-138	2	30	
trans-1,2-Dichloroethene	21	ug/kg dry	1	20.0	104	69-129			
	20			20.0	102	69-129	2	30	
cis-1,2-Dichloroethene	22	ug/kg dry	1	20.0	109	76-123			
	21			20.0	104	76-123	5	30	
1,2-Dichloropropane	20	ug/kg dry	1	20.0	100	76-118			
	20			20.0	100	76-118	1	30	

Project:	Monitoring Well (MW) Sampling	SDG Number:	ACOU090401
Project Number:		Project Manager:	Steve Becker

QC Batch(es):	**Q40009**	Analysis Method:	**8260B**
QC Batch Method:	5035 (GCMS low)	Analysis Description:	Purgeable Organic Compounds by GC/MS
Preparation Started:	04/15/2009		

LCS: S041509MVOSB1
LCS Duplicate: S041509MVOSB1D

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	Limits	RPD	RPD Limit	Qualifiers
1,3-Dichloropropane	21	ug/kg dry	1	20.0	107	78-115			
	20			20.0	102	78-115	4	30	
2,2-Dichloropropane	21	ug/kg dry	1	20.0	103	45-162			
	20			20.0	102	45-162	1	30	
1,1-Dichloropropene	22	ug/kg dry	1	20.0	111	68-142			
	22			20.0	108	68-142	3	30	
cis-1,3-Dichloropropene	22	ug/kg dry	1	20.0	110	88-144			
	22			20.0	108	88-144	2	30	
trans-1,3-Dichloropropene	20	ug/kg dry	1	20.0	99	69-122			
	20			20.0	98	69-122	1	30	
Ethylbenzene	21	ug/kg dry	1	20.0	103	70-126			
	21			20.0	104	70-126	1	30	
Hexachlorobutadiene	21	ug/kg dry	1	20.0	105	54-129			
	21			20.0	103	54-129	2	30	
2-Hexanone	23	ug/kg dry	1	20.0	114	70-148			
	22			20.0	109	70-148	5	30	
Isopropylbenzene	21	ug/kg dry	1	20.0	105	60-130			
	21			20.0	106	60-130	1	30	
4-Isopropyltoluene	22	ug/kg dry	1	20.0	110	57-139			
	22			20.0	109	57-139	1	30	
Methyl tert-butyl ether	23	ug/kg dry	1	20.0	113	83-132			
	22			20.0	112	83-132	1	30	
4-Methyl-2-pentanone	22	ug/kg dry	1	20.0	109	78-144			
	21			20.0	105	78-144	3	30	
Methylene chloride	21	ug/kg dry	1	20.0	107	60-131			
	21			20.0	107	60-131	0	30	
Naphthalene	24	ug/kg dry	1	20.0	121	62-137			
	23			20.0	117	62-137	3	30	
n-Propylbenzene	21	ug/kg dry	1	20.0	104	67-136			
	20			20.0	102	67-136	2	30	
Styrene	22	ug/kg dry	1	20.0	109	70-120			
	22			20.0	111	70-120	2	30	
1,1,1,2-Tetrachloroethane	20	ug/kg dry	1	20.0	100	60-130			
	20			20.0	102	60-130	2	30	
1,1,2,2-Tetrachloroethane	23	ug/kg dry	1	20.0	114	78-119			
	22			20.0	110	78-119	3	30	
Tetrachloroethene	20	ug/kg dry	1	20.0	100	52-141			
	20			20.0	99	52-141	1	30	
Toluene	20	ug/kg dry	1	20.0	100	64-126			
	20			20.0	100	64-126	0	30	
1,2,3-Trichlorobenzene	21	ug/kg dry	1	20.0	106	71-125			
	21			20.0	104	71-125	2	30	
1,2,4-Trichlorobenzene	22	ug/kg dry	1	20.0	112	58-133			
	22			20.0	109	58-133	2	30	
1,1,1-Trichloroethane	20	ug/kg dry	1	20.0	101	54-143			
	20			20.0	100	54-143	1	30	

Quality Control Results

Project: Monitoring Well (MW) Sampling
SDG Number: ACOU090401
Project Number:
Project Manager: Steve Becker

QC Batch(es): **Q40009**
Analysis Method: **8260B**
QC Batch Method: 5035 (GCMS low)
Analysis Description: Purgeable Organic Compounds by GC/MS
Preparation Started: 04/15/2009

LCS: S041509MVOSB1
LCS Duplicate: S041509MVOSB1D

Analyte	Blank Spike Result	Units	DF	Spike Conc.	% Rec	Limits	RPD	RPD Limit	Qualifiers
1,1,2-Trichloroethane	21	ug/kg dry	1	20.0	103	72-114			
	21			20.0	104	72-114	1	30	
Trichloroethene	20	ug/kg dry	1	20.0	102	59-136			
	20			20.0	99	59-136	2	30	
Trichlorofluoromethane	20	ug/kg dry	1	20.0	99	53-149			
	20			20.0	98	53-149	1	30	
1,2,3-Trichloropropane	22	ug/kg dry	1	20.0	110	70-121			
	21			20.0	104	70-121	6	30	
1,2,4-Trimethylbenzene	21	ug/kg dry	1	20.0	107	65-129			
	21			20.0	105	65-129	1	30	
1,3,5-Trimethylbenzene	21	ug/kg dry	1	20.0	105	60-132			
	21			20.0	103	60-132	1	30	
Vinyl chloride	19	ug/kg dry	1	20.0	96	51-148			
	19			20.0	93	51-148	3	30	
m,p-Xylene	42	ug/kg dry	1	40.0	104	72-126			
	42			40.0	105	72-126	1	30	
o-Xylene	21	ug/kg dry	1	20.0	103	64-122			
	21			20.0	103	64-122	0	30	
Surrogates:									
4-Bromofluorobenzene			1		96	82-121			
					97	82-121			
Dibromofluoromethane			1		99	85-120			
					98	85-120			
1,2-Dichloroethane-d4			1		98	77-127			
					97	77-127			
Toluene-d8			1		97	86-119			
					99	86-119			

Pace Analytical Services, Inc.
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Seattle, WA 98108
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Fax: (206)767-5063

Pace Analytical Services, Inc.

Notes and Definitions

SDG No: **ACOU090401**

Report Specific Notes:

ND	The analyte of interest was not detected, to the limit of detection indicated

Laboratory Reporting Conventions:

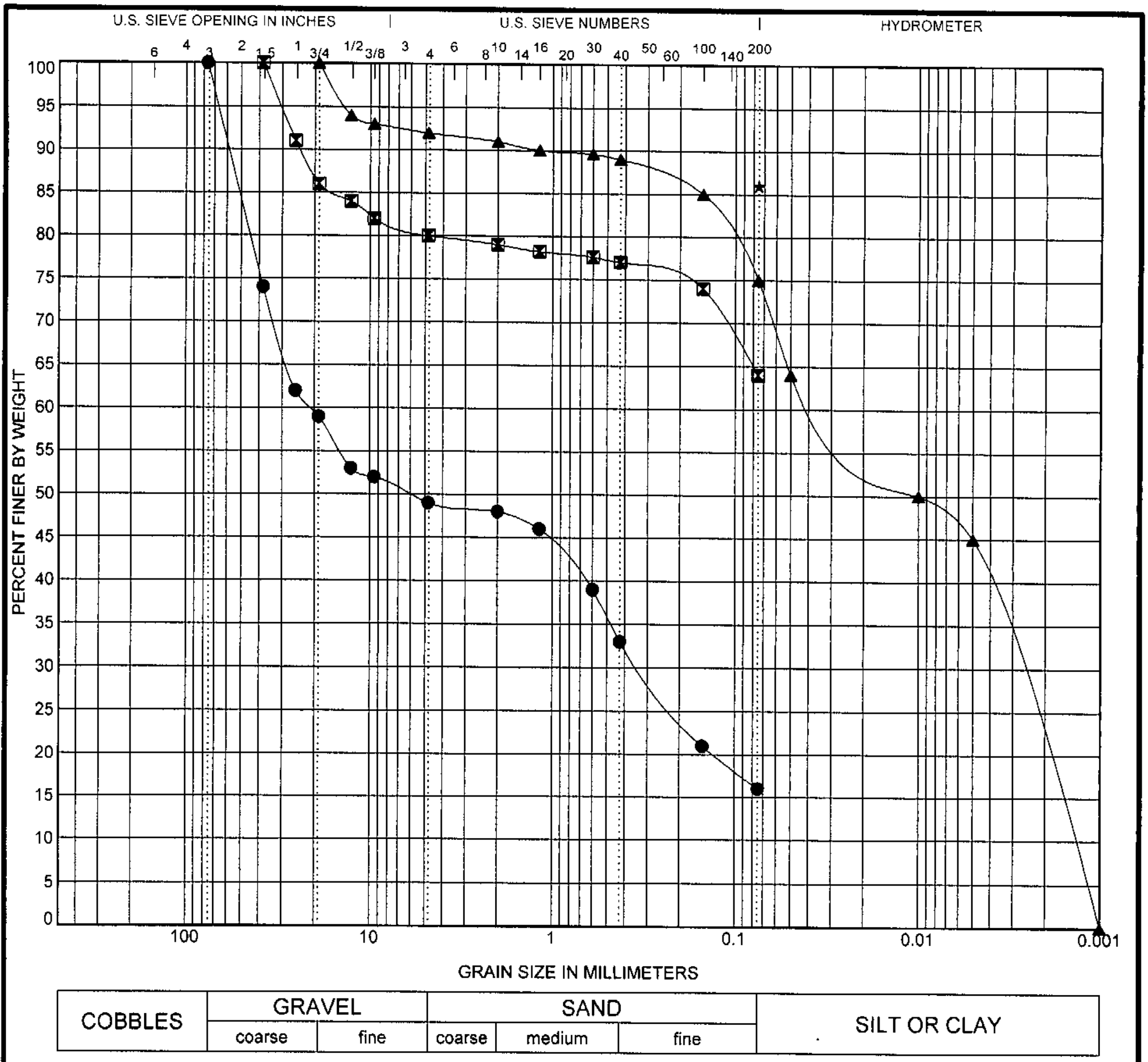
DF	Dilution factor
Detection Limit Threshold	The project or method defined limit that defines the lower bound for estimated results. This may be the MDL or IDL or a project-specified value.
MDL	The project or method defined limit that defines the lower bound for estimated results. This may be the MDL or IDL or a project-specified value. Detection Limit Thresholds are listed on the report only if the data has been evaluated below the Reporting Limit. Results between the Reporting Limit and the Detection Limit Threshold are reported as estimated results.
IDL	Instrument Detection Limit. IDLs are in instrument basis units. Reported results for samples are normalized appropriately using the preparation and analysis steps performed.
Reporting Limit	The minimum detection limit for reporting unqualified results under routine laboratory operating conditions. Typically this is the PQL but it may be a different concentration on a project-specific basis.
QC Batch Group	Quality Control Batch Group. The entity that links analytical results and supporting quality control results.
% Rec	Percent recovery.
Limits	The upper and lower control limits for spike recoveries.
RPD	Relative Percent Difference. The relative difference between duplicate results (matrix spike, blank spike, or sample duplicate) expressed as a percentage.
RPD Limit	The maximum RPD allowed for a set of duplicate measurements (see RPD).
Spike conc.	The measured concentration, in sample basis units, of a spiked sample.
PQL	Practical Quantitation Limit. The quantitation limit achievable by the laboratory under routine operating conditions. The PQL will be normalized for deviations from these conditions such as dilutions, dry weight adjustment, etc.
LCS	Laboratory Control Sample

Electronic Submittal Only

See DVD located in cover of this report

Table 1 ***LABORATORY SUMMARY***

		UNITS	Test Methods														
LABORATORY NUMBER				09-0159	09-0160	09-0161	09-0162	09-0163	09-0164	09-0165	09-0166	09-0167	09-0168	09-0169	09-0170	09-0171	09-0172
BORING NUMBER				GP-LGW-10	GP-LGW-10	GP-LGW-11	GP-LGW-11	GP-LGW-12	GP-LGW-12	MW-14D	MW-14D	MW-14D	MW-14D	MW-14D	MW-14D	MW-15	MW-15
DEPTH	TOP	ft		9.5	73.5	9.0	19.0	9.5	19.5	13.5	23.5	28.5	38.5	~58.5	75.5	19.0	34.0
	BOTTOM	ft		11.0	75.0	10.5	20.0	11.0	21.0	14.2	25.0	29.9	40.0		76.5	20.5	36.0
SAMPLE TYPE				SPT-1	SPT-5	SPT-1	SPT-2	SPT-1	SPT-2	SPT-3	SPT-5	SPT-6	SPT-8	G-12 (grab)	SPT-16	SPT-4	SPT-7
MOISTURE		%	ASTM D-2216	22.4	20.9	20.9	17.1	15.0	18.9	30.6	35.7	43.2	43.9	29.0	33.9	25.1	40.6
	3"		ASTM D-422							100							
S	1½"	%								74	100						
I	1"									62	91						
E	3/4" GRAVEL	P								59	86	100					100
V	1/2"	A								53	84	94					99
E	3/8"	S								52	82	93					98
	#4	S								49	80	92		100	100		94
S	#10	I								48	79	91		100-	100-		92
I	#16	N								46	78	90		99	100-		91
Z	#30 SAND	G								39	78	90		90	98		87
E	#40									33	77	89		71	96		85
	#100									21	74	85		24	87		83
	#200									16	64	75	86	13	80	64	81
	.05mm											64			71		
	.01mm SILT											50			56		
	.005mm											45			42		
	.001mm CLAY											0			12		



Specimen Identification			Classification	LL	PL	PI	Cc	Cu
●	**MW-14D**	**13.5**						
⊠	**MW-14D**	**23.5**						
▲	**MW-14D**	**28.5**					**0.19**	**22.08**
★	**MW-14D**	**38.5**						

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**MW-14D**	**13.5**	**76.2**	**20.931**	**0.328**		**50.4**	**33.0**	**16.0**	
⊠	**MW-14D**	**23.5**	**38**				**20.0**	**16.0**	**64.0**	
▲	**MW-14D**	**28.5**	**19**	**0.032**	**0.003**	**0.001**	**8.0**	**17.0**	**75.0**	
★	**MW-14D**	**38.5**	**0.075**				**0.0**	**0.0**	**86.0**	

Budinger
& Associates
3820 E. Broadway Ave.
Spokane, WA 99202

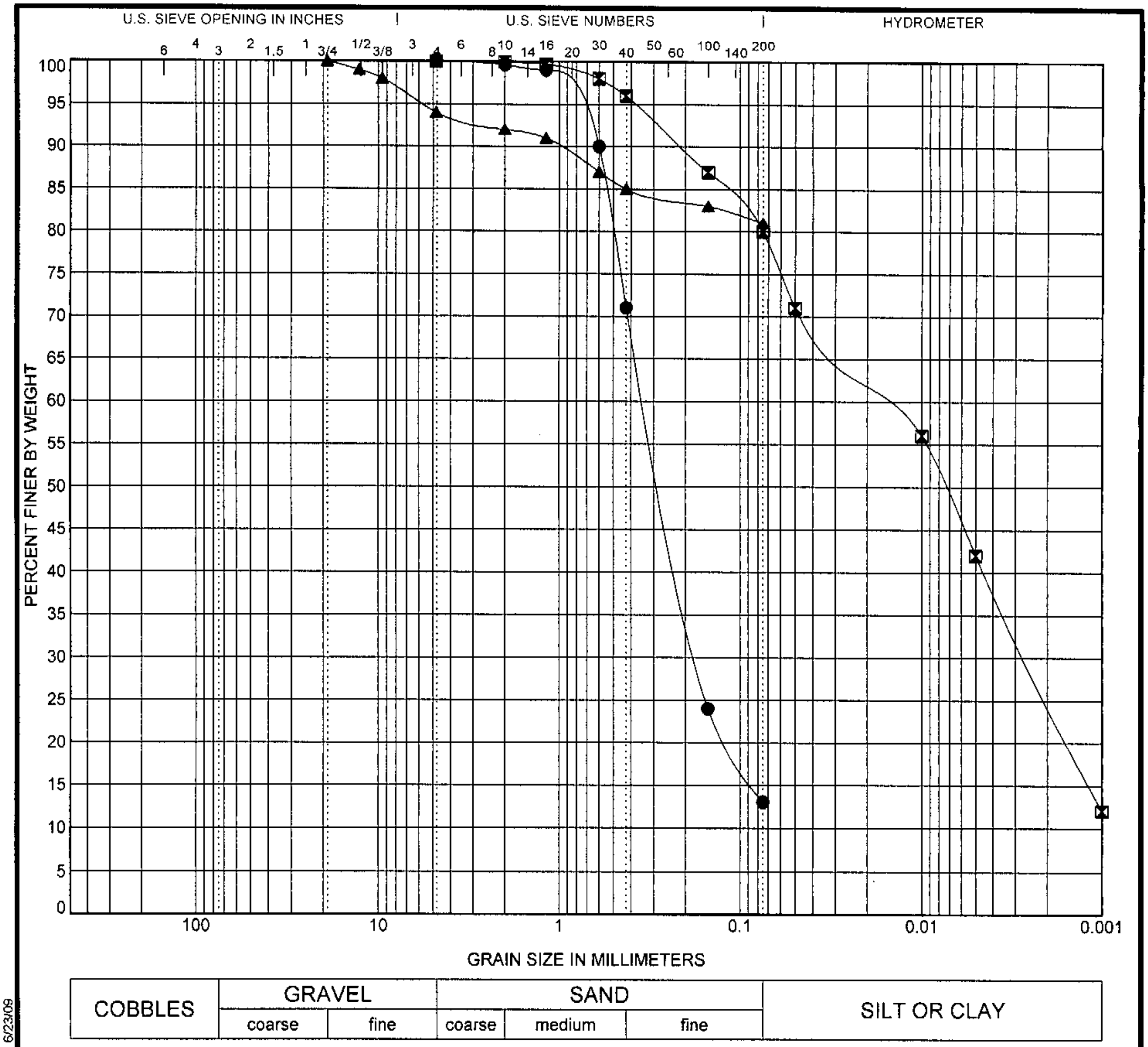
GRAIN SIZE DISTRIBUTION RESULTS

Project: Asotin County Regional Landfill

Location: Asotin, WA

Number: L09111

FIGURE



Specimen Identification			Classification	LL	PL	PI	Cc	Cu
●	**MW-14D**	**58.5**						
⊠	**MW-14D**	**75.5**						
▲	**MW-15**	**34.0**						

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**MW-14D**	**58.5**	**4.8**	**0.333**	**0.171**		**0.0**	**87.0**	**13.0**	
⊠	**MW-14D**	**75.5**	**4.8**	**0.015**	**0.003**		**0.0**	**20.0**	**80.0**	
▲	**MW-15**	**34.0**	**19**				**6.0**	**13.0**	**81.0**	

Budinger
& Associates
3820 E. Broadway Ave.
Spokane, WA 99202

GRAIN SIZE DISTRIBUTION RESULTS

Project: Asotin County Regional Landfill

Location: Asotin, WA

Number: L09111

FIGURE

AGGREGATE ANALYSIS

pub. April-2003

PROJECT Asotin County Regional Landfill
LOCATION ↗
SAMPLED BY Client
SAMPLE DATE
CHECKED BY: TB
DATE: 5/18/09
CLIENT CH2M Hill
JOB # L09111
SAMPLE # 7
BOR./ LOC. MW-14D
DEPTH 13.5-14.2
LAB # 09-0165

MOISTURE CONTENT

ASTM C566, AASHTO T255

Scale: 202
Oven: 277
By: TB

Fine Fraction

wet weight: 1063.8
W$_c$%: 30.6
dry weight: 814.4

Pan

wet weight:
dry weight:
W$_c$%:

TOTAL SAMPLE WEIGHT

Coarse:
Fine:
Total:

#200 WASH

ASTM C117, AASHTO T11

Scale: 202
Oven: 277
Sieve: 409
By: TB

Wet Weight Before Wash: 1063.8
Dry Weight Before Wash: 814.4
Dry Weight After Wash: 693.5
% Passing #200:

Original/Final Weight Comparison

Original Weight (grams)
Final Weight (grams)
Difference
% of Original Weight

SIEVE ANALYSIS

ASTM C136, AASHTO T27

Scale: Lab# Shaker: Lab# COARSE FRACTION Sieve Set: By:

SIEVE SIZE	CUMULATIVE WEIGHT	% RETAINED	% PASSING	DRAFT AMOUNT	SPECS
3"	0.0	0.0	100.0	100	
1½"	210.1	25.8	74.2	74	
1"	311.9	38.3	61.7	62	
3/4"	332.5	40.8	59.2	59	
½"	381.7	46.9	53.1	53	
3/8"	391.4	48.1	51.9	52	
PAN					

Scale: Lab# 316 Shaker: Lab# 316 FINE FRACTION Sieve Set: 12" By: SK

#4	414.1	50.8	49.2	49	
#10	427.3	52.5	47.5	48	
#16	442.3	54.3	45.7	46	
#30	496.8	61.0	39.0	39	
#40	542.1	66.6	33.4	33	
#100	644.1	79.1	20.9	21	
#200	685.2	84.1	15.9	16	
Pan					

FRACTURED FACES

ASTM D5821, WAQTC TM1

Scale: By:

SIEVE	SAMPLE WEIGHT (A)	FRACTURE WEIGHT (B)	QUESTION WEIGHT (C)	% FRACTURE ((B+C/2)/A)

SAND EQUIVALENT

ASTM D2419, AASHTO T176

Weighted Foot Assembly:
Shaker:
By:

SAMPLE	A	B	C	AVERAGE
CLAY				
SAND				
SAND EQUIVALENT				

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AGGREGATE ANALYSIS

pub. April-2003

PROJECT Asotin County Regional Landfill
LOCATION
CLIENT CH2M Hill
JOB # L09111

SAMPLED BY Client
SAMPLE DATE
CHECKED BY: TB
DATE: 5/18/09

SAMPLE # 8
BOR./LOC. MW-14D
DEPTH 23.5-25.0
LAB # 09-0166

MOISTURE CONTENT

Scale: 202
Oven: 277
ASTM C566, AASHTO T255
By: TB

Fine Fraction

wet weight: 934.1
dry weight: 688.4
W_c% 35.7

Pan

wet weight:
dry weight:
W_c%

TOTAL SAMPLE WEIGHT

Coarse:
Fine:
Total:

#200 WASH

Scale: 202
Oven: 277
ASTM C117, AASHTO T11
Sieve: 409
By: TB

Wet Weight Before Wash: 934.1
Dry Weight Before Wash: 688.4
Dry Weight After Wash: 275.0
% Passing #200:

Original/Final Weight Comparison

Original Weight (grams)
Final Weight (grams)
Difference
% of Original Weight

SIEVE ANALYSIS

ASTM C136, AASHTO T27

Scale: Lab# Shaker: Lab# COARSE FRACTION Sieve Set: By:

SIEVE SIZE	CUMULATIVE WEIGHT	% RETAINED	% PASSING	DRAFT AMOUNT	SPECS
3"					
1 1/2"	0.0	0.0	100.0	100	
1"	64.6	9.4	90.6	91	
3/4"	99.9	14.5	85.5	86	
1/2"	111.2	16.2	83.8	84	
3/8"	122.1	17.7	82.3	82	
PAN					

Scale: Lab# 394 Shaker: Lab# 361 FINE FRACTION Sieve Set: 12" By: SA

#4	135.3	19.7	80.3	80	
#10	145.8	21.2	78.8	79	
#16	150.4	21.8	78.2	78	
#30	154.3	22.4	77.6	78	
#40	156.4	22.7	77.3	77	
#100	178.0	25.9	74.1	74	
#200	249.3	36.2	63.8	64	

FRACTURED FACES

Scale:
ASTM D5821, WAQTC TM1
By:

SIEVE	SAMPLE WEIGHT (A)	FRACTURE WEIGHT (B)	QUESTION WEIGHT (C)	% FRACTURE ((B+C/2)/A)

SAND EQUIVALENT

Weighted Foot Assembly:
ASTM D2419, AASHTO T176
Shaker:
By:

SAMPLE	A	B	C	AVERAGE
CLAY				
SAND				
SAND EQUIVALENT				

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PARTICLE SIZE ANALYSIS

ASTM D422, AASHTO T88

pub. April-2003

PROJECT Asotin County Regional Landfill
SAMPLED BY client
SAMPLE # 9
LOCATION
SAMPLE DATE
BOR./LOC. MW-14D
CLIENT
CHECKED BY: TB
DEPTH 28.5' - 29.9'
JOB # 509111
DATE: 5/15/09
LAB # 09-0167

MOISTURE CONTENT

Scale: 202
Oven: 277
By: TB

Field Moist

Fine Fraction	wet	448.8
	dry	3133
	Wc%	43.2
Pan	wet	
	Wc%	
	dry	

TOTAL SAMPLE WEIGHT

Coarse:
Fine:
Total:

#200 WASH

Scale: 210
Oven: 277
Sieve: ~~210~~ 409
By: TB

Wet Weight Before Wash: 613.28
Dry Weight Before Wash: 544.7
Dry Weight After Wash: (hydro 18.76)
% Passing #200:

HYDROMETER

Scale: 210
Oven: 277
By: TB
tare 19.64

Sieve Size 10
Mc wet 39.94
Initial Wet 104.86
Mc Dry 37.69
Initial Dry 93.1
Mc % 12.6

SIEVE ANALYSIS

COARSE FRACTION

Scale: Lab#
Shaker: Lab#
Sieve Set:

SIEVE SIZE	D (mm)	CUMULATIVE WEIGHT	% RETAINED	% PASSING	DRAFT AMOUNT
3"	76.2				
1.5"	38.0				
1"	25.4	0	0	100	100
3/4"	19.0	33.06	6.1	93.9	94
1/2"	12.7	38.59	7.1	92.9	93
3/8"	9.5	41.20	7.6	92.4	92
#4	4.8	46.59	8.6	91.4	91
PAN	wet	dry			

FINE FRACTION

Scale: Lab# 202
Shaker: Lab# 361
Sieve Set: 12
By: TB

#10	2.0	49.44	9.1	90.9	91
#16	1.18	0.66	0.7	99.3	90
#30	0.6	1.44	1.5	98.5	90
#40	0.425	1.94	2.1	97.9	89
2032 #100	0.15	6.63	7.1	92.9	85
1805 #200	0.075	16.69	17.9	82.1	75
	PAN				

HYDROMETER ANALYSIS

Thermometer: 325
Hydrometer: 2
By: TB

Age/ Time 8:31	Temperature (°F)	Hydrometer Correction	Hydrometer Reading	K (constant)	L (eff. Depth)	D $(K^{*}(L/Time)^{1/2})$	Corrected Reading	%	Draft Amount
8:31½ 0.5	67	8	70	.013745	4.9	.0430	62	66.6	61
8:32 1	"	"	68	"	5.2	.0313	60	64.4	59
8:33 2	"	"	67	"	5.4	.0226	59	63.4	58
8:36 5	"	"	65	"	5.7	.0147	57	61.2	56
8:46 15	"	"	58	"	6.8	.0093	50	53.7	49
9:01 30	"	"	56	"	7.1	.0067	48	51.6	47
9:31 60	"	"	54	"	7.4	.0048	46	49.4	45
10:31 120	"	"	42	"	9.4	.0038	34	36.5	33
12:31 240	"	"	15	"	13.8	.0033	8	8.6	8
4:31 480 + 90	"	"	10	"	14.7	.0022	2	2.1	2
8:31 1440	"	"	8	"	15.0	.0014	0	0	0

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PARTICLE SIZE ANALYSIS

ASTM D422, AASHTO T88

pub. April-2003

PROJECT ASOTIN COUNTY REGIONAL LANDFILL
SAMPLED BY CLIENT
SAMPLE # 12
LOCATION
SAMPLE DATE
BOR./LOC. MW-14D
CLIENT
CHECKED BY: JB
DEPTH 75.5'-76.5'
JOB # L09111
DATE: 5/15/09
LAB # 09-0170

MOISTURE CONTENT

Scale: 202
Oven: 277
By: TT

Fine Fraction field moist
wet 437.9
dry 327.1
Wc% 33.9

Pan
wet
Wc%
dry

TOTAL SAMPLE WEIGHT

Coarse:
Fine:
Total:

#200 WASH

Scale:
Oven:
Sieve:
By:

Wet Weight Before Wash: 272.02
Dry Weight Before Wash:
Dry Weight After Wash: (hydro 10.37)
% Passing #200:

HYDROMETER

2H tare 28.19

Scale: 202
Oven: 277
By: TB

Sieve Size 10
Initial Wet 63.64
Initial Dry 48.3
M_c wet 52.08
M_c Dry 49.59
M_c % 31.7

SIEVE ANALYSIS

COARSE FRACTION

Scale: Lab#
Shaker: Lab#
Sieve Set:

SIEVE SIZE	D (mm)	CUMULATIVE WEIGHT	% RETAINED	% PASSING	DRAFT AMOUNT
3"	76.2				
1.5"	38.0				
1"	25.4				
3/4"	19.0				
1/2"	12.7				
3/8"	9.5				
#4	4.8	0	0	0	100
PAN	wet	dry			

FINE FRACTION

Scale: Lab# 202
Shaker: Lab# 361
Sieve Set: 12k
By: JB

#10	2.0	0.1	0.1	99.9	100-
#16	1.18	0.13	0.3	99.7	100-
#30	0.6	0.91	1.9	98.1	98
#40	0.425	1.95	4.0	96.0	96
28.19 #100	0.15	6.45	13.3	86.7	87
21.40 #200	0.075	9.80	20.2	79.8	80
	PAN				

HYDROMETER ANALYSIS

Thermometer: 325
Hydrometer: 2
By: TB

8:35 Age/ Time	Temperature (°F)	Hydrometer Correction	Hydrometer Reading	K (constant)	L (eff. Depth)	D (K* (L/Time)^½)	Corrected Reading	%	Draft Amount
8:35 ½ 0.5	67	8	43	.013745	9.2	.0589	35	72.5	73
8:36 1	"	"	41	"	9.6	.0426	33	68.3	68
8:37 2	"	"	40	"	9.7	.0327	32	66.3	66
8:40 5	"	"	38	"	10.1	.0195	30	62.1	62
8:50 15	"	"	36	"	10.4	.0114	28	57.9	58
9:05 30	"	"	34	"	10.7	.0082	26	53.8	54
9:35 60	"	"	30	"	11.4	.0060	22	45.5	46
10:35 120	"	"	27	"	11.9	.0043	19	39.3	39
12:35 240	"	"	24	"	12.4	.0031	16	33.1	33
4:35 480 +90	"	"	21	"	12.9	.0021	13	26.9	27
8:35 1440	"	"	14	"	14.0	.0014	6	12.4	12

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AGGREGATE ANALYSIS

pub. April-2003

PROJECT Asotin County Regional
LOCATION ↗ Landfill
CLIENT CH2M Hill
JOB # L09111

SAMPLED BY
SAMPLE DATE
CHECKED BY:
DATE:

SAMPLE # 10
BOR./LOC. MW 14 D
DEPTH 38.5-40
LAB # 09-0168

MOISTURE CONTENT

Scale: 202
Oven: 277
By: TB
ASTM C566, AASHTO T255

Fine Fraction

wet weight: 657.0
W$_c$% 43.9
dry weight: 456.7

Pan

wet weight:
dry weight:
W$_c$%

TOTAL SAMPLE WEIGHT

Coarse:
Fine:
Total:

#200 WASH

Scale: 202
Oven: 277
Sieve: 409
By: TB
ASTM C117, AASHTO T11

Wet Weight Before Wash: 657.0
Dry Weight Before Wash: 456.7
Dry Weight After Wash: 62.1
% Passing #200: 86.4

Original/Final Weight Comparison

Original Weight (grams)
Final Weight (grams)
Difference
% of Original Weight

SIEVE ANALYSIS

ASTM C136, AASHTO T27

Scale: Lab# Shaker: Lab# COARSE FRACTION Sieve Set: By:

SIEVE SIZE	CUMULATIVE WEIGHT	% RETAINED	% PASSING	DRAFT AMOUNT	SPECS
PAN					

Scale: Lab# Shaker: Lab# FINE FRACTION Sieve Set: By:

FRACTURED FACES

Scale: By:
ASTM D5821, WAQTC TM1

SIEVE	SAMPLE WEIGHT (A)	FRACTURE WEIGHT (B)	QUESTION WEIGHT (C)	% FRACTURE ((B+C/2)/A)

SAND EQUIVALENT

Weighted Foot Assembly:
Shaker:
By:
ASTM D2419, AASHTO T176

SAMPLE	A	B	C	AVERAGE
CLAY				
SAND				
SAND EQUIVALENT				

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AGGREGATE ANALYSIS

pub. April-2003

PROJECT Asotin County Regional
LOCATION ↗ Landfill
CLIENT CH2M Hill
JOB # L09111

SAMPLED BY
SAMPLE DATE
CHECKED BY: TB
DATE: 5/18/09

SAMPLE # 11
BOR./ LOC. MW-14D
DEPTH ≈ 58.5
LAB # 09-0169

MOISTURE CONTENT

Scale: 202
Oven: 277
ASTM C566, AASHTO T255
By: TB

Fine Fraction

wet weight: 939.6
W$_c$% 29.0
dry weight: 728.6

Pan

wet weight:
dry weight:
W$_c$%

TOTAL SAMPLE WEIGHT

Coarse:
Fine:
Total:

#200 WASH

Scale: 202
Oven: 277
ASTM C117, AASHTO T11
Sieve: 409
By: TB

Wet Weight Before Wash: 939.6
Dry Weight Before Wash: 728.6
Dry Weight After Wash: 650.6
% Passing #200:

Original/Final Weight Comparison

Original Weight (grams)
Final Weight (grams)
Difference
% of Original Weight

SIEVE ANALYSIS

ASTM C136, AASHTO T27

Scale: Lab# Shaker: Lab# COARSE FRACTION Sieve Set: By:

SIEVE SIZE	CUMULATIVE WEIGHT	% RETAINED	% PASSING	DRAFT AMOUNT	SPECS
3/4					
1/2					
PAN					

Scale: Lab# 396 Shaker: Lab# 361 FINE FRACTION Sieve Set: 12 By: TB

SIEVE SIZE	CUMULATIVE WEIGHT	% RETAINED	% PASSING	DRAFT AMOUNT	SPECS
3/8					
4	0	0	100	100	
10	2.6	0.4	99.6	100-	
16	7.5	1.0	99.0	99	
30	73.0	10.0	90.0	90	
40	212.5	29.2	70.8	71	
100	554.1	76.0	24.0	24	
200	632.5	86.8	13.2	13	

FRACTURED FACES

Scale:
ASTM D5821, WAQTC TM1
By:

SIEVE	SAMPLE WEIGHT (A)	FRACTURE WEIGHT (B)	QUESTION WEIGHT (C)	% FRACTURE ((B+C/2)/A)

SAND EQUIVALENT

Weighted Foot Assembly:
ASTM D2419, AASHTO T176
Shaker:
By:

SAMPLE	A	B	C	AVERAGE
CLAY				
SAND				
SAND EQUIVALENT				

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AGGREGATE ANALYSIS

pub. April-2003

PROJECT Asotin County Regional
LOCATION ↗ Landfill
CLIENT CH2M Hill
JOB # L09111

SAMPLED BY
SAMPLE DATE
CHECKED BY: TB
DATE: 5/18/09

SAMPLE # 13
BOR./LOC. MW-15
DEPTH 19.0-20.5
LAB # 09-0171

MOISTURE CONTENT

Scale: 202 Oven: 277 By: TB

ASTM C566, AASHTO T255

Fine Fraction

wet weight: 934.2 W

W$_c$%

dry weight: 746.9

Pan

wet weight: dry weight:

W$_c$%

TOTAL SAMPLE WEIGHT

Coarse:

Fine:

Total:

#200 WASH

Scale: 202 Oven: 277 Sieve: 409 By: TB

ASTM C117, AASHTO T11

Wet Weight Before Wash: 934.2

Dry Weight Before Wash: 746.9

Dry Weight After Wash: 371.6

% Passing #200:

Original/Final Weight Comparison

Original Weight (grams)

Final Weight (grams)

Difference

% of Original Weight

SIEVE ANALYSIS

ASTM C136, AASHTO T27

COARSE FRACTION — Scale: Lab# Shaker: Lab# Sieve Set: By:

SIEVE SIZE	CUMULATIVE WEIGHT	% RETAINED	% PASSING	DRAFT AMOUNT	SPECS
3"	0.0	0.0	100.0	100	
1½"	88.0	11.8	88.2	88	
1"	171.0	22.9	77.1	77	
¾"	182.4	24.4	75.6	76	
½"	203.6	27.3	72.7	73	
⅜"	209.6	28.1	71.9	72	
PAN					

FINE FRACTION — Scale: Lab# 340 Shaker: Lab# 361 Sieve Set: 12" By: SA

#4	219.4	29.4	70.6	71	
#10	230.5	30.9	69.1	69	
#16	234.3	31.4	68.6	69	
#30	238.9	32.0	68.0	68	
#40	242.0	32.4	67.6	68	
#100	266.7	35.7	64.3	64	
#200	346.4	46.4	53.6	54	
Pan	372.0				

FRACTURED FACES

Scale: By:

ASTM D5821, WAQTC TM1

SIEVE	SAMPLE WEIGHT (A)	FRACTURE WEIGHT (B)	QUESTION WEIGHT (C)	% FRACTURE ((B+C/2)/A)

SAND EQUIVALENT

Weighted Foot Assembly: Shaker: By:

ASTM D2419, AASHTO T176

SAMPLE	A	B	C	AVERAGE
CLAY				
SAND				
SAND EQUIVALENT				

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AGGREGATE ANALYSIS

pub. April-2003

PROJECT Asotin County Regional Landfill
LOCATION ↗
CLIENT CH2M Hill
JOB # L09111

SAMPLED BY
SAMPLE DATE
CHECKED BY:
DATE:

SAMPLE # 14
BOR./LOC. MW-15
DEPTH 34-36
LAB # 09-0172

Scale: 202
Oven: 277

MOISTURE CONTENT

ASTM C566, AASHTO T255

By: TB

Fine Fraction

wet weight: 1012.6
W

Wc% 40.6

dry weight: 720.0

Pan

wet weight:
dry weight:
Wc%

TOTAL SAMPLE WEIGHT

Coarse:
Fine:
Total:

Scale: 202
Oven: 277

#200 WASH

ASTM C117, AASHTO T11

Sieve: 409
By: TB

Wet Weight Before Wash: 1012.6
Dry Weight Before Wash: 720.0
Dry Weight After Wash: 136.8
% Passing #200:

Original/Final Weight Comparison

Original Weight (grams)
Final Weight (grams)
Difference
% of Original Weight

SIEVE ANALYSIS

ASTM C136, AASHTO T27

Scale: Lab# Shaker: Lab# COARSE FRACTION Sieve Set: By:

SIEVE SIZE	CUMULATIVE WEIGHT	% RETAINED	% PASSING	DRAFT AMOUNT	SPECS
3/4"	0	0	100	100	
1/2"	10.8	1.5	98.5	99	
PAN					

Scale: Lab# 396 Shaker: Lab# 361 FINE FRACTION Sieve Set: 12" By: TB

SIEVE SIZE	CUMULATIVE WEIGHT	% RETAINED	% PASSING	DRAFT AMOUNT	SPECS
3/8"	18.0	2.5	97.5	98	
#4	43.2	6.0	94.0	94	
#10	56.9	7.9	92.1	92	
#16	64.8	9.0	91.0	91	
#30	94.3	13.1	86.9	87	
#40	108.7	15.1	84.9	85	
#100	121.7	16.9	83.1	83	
#200	135.0	18.8	81.2	81	

Scale:

FRACTURED FACES

ASTM D5821, WAQTC TM1

By:

SIEVE	SAMPLE WEIGHT (A)	FRACTURE WEIGHT (B)	QUESTION WEIGHT (C)	% FRACTURE ((B+C/2)/A)

Weighted Foot Assembly:

SAND EQUIVALENT

ASTM D2419, AASHTO T176

Shaker:
By:

SAMPLE	A	B	C	AVERAGE
CLAY				
SAND				
SAND EQUIVALENT				

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Moisture Content

~~DENSITY OF CHUNK SAMPLES WITH PA~~RAFIN

Project: Asotin Co. Regional Landfill **Project #** L09111

oven: 277 **scale:** 202 **initals;** TB

LABORATORY #		~~08~~ 09-0163	09-0164	09-0160	09-0161	09-0162	09-0159	
PROJECT SAMPLE #		5	6	2	3	4	1	
MOISTURE CONTENT								
WET WEIGHT		814.5	675.5	818.6	405.0	667.2	685.1	
DRY WEIGHT		708.3	568.2	676.9	335.0	569.9	559.9	
MOISTURE CONTENT		15.0	18.9	20.9	20.9	17.1	224	
~~**WEIGHING OF CHUNK SAMPLE**~~								
WT OF CHUNK SAMPLE	E							
WT OF CHUNK WITH PARAFIN	F							
WT OF SUBMERGED PAR. CHUNK	G							
LABORATORY #								
PROJECT SAMPLE #								
MOISTURE CONTENT								
WET WEIGHT								
DRY WEIGHT								
MOISTURE CONTENT								
WEIGHING OF CHUNK SAMPLE								
WT OF CHUNK SAMPLE	E							
WT OF CHUNK WITH PARAFIN	F							
WT OF SUBMERGED PAR. CHUNK	G							

Caluculate the in place density (dry unit mass), D, of the soil as follows where

E = mass of soil sample in grams
F = mass of paraffin-coated sample in grams
G = mass of submerged paraffin-coated samples in grams
I = volume of paraffin in cubic centimeters
J = volume of paraffin coated soil sample in cubic centimeters
V = Volume of soil sample in cubic centimeters
D_p = density of paraffin in g/cc
D_m = density of water in g/cc
D_w = wet density of soil in g/cc
D = in place density of soil in lb/ft^3
w = moisture content of soil

$$I = \frac{F-E}{D_p}$$

$$J = \frac{F-G}{D_m} = \frac{H}{D_m}$$

$$V = J - I$$

$$D = \frac{(62.43)\,D_w}{1+\frac{w}{100}}$$

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F - 1 May 2009 Air Toxics ASTM D-1946 results
F - 2 May 2009 Air Toxics TO15 results
F - 3 July 2009 Air Toxics ASTM D-1946 results
F - 4 July 2009 Air Toxics TO15 results

Electronic Submittal Only

See DVD located in cover of this report

Appendix F
Remedial Investigation - Landfill Gas Analytical Results
(Air Toxics, LTD)

Air Toxics LTD.
Laboratory Services Since 1989

8/5/2009

Mr. Stephen Becker
Asotin County
2901 6th Avenue

Clarkston WA 99403

Project Name:
Project #:
Workorder #: 0907612B

Dear Mr. Stephen Becker

The following report includes the data for the above referenced project for sample(s) received on 7/28/2009 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner
Project Manager

WORK ORDER #: 0907612B

Work Order Summary

CLIENT:	Mr. Stephen Becker Asotin County 2901 6th Avenue Clarkston, WA 99403	**BILL TO:**	Mr. Stephen Becker Asotin County 2901 6th Avenue Clarkston, WA 99403
PHONE:	509-758-1965	**P.O. #**	
FAX:	509-758-1977	**PROJECT #**	
DATE RECEIVED:	07/28/2009	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	08/05/2009		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	GPLGW11072209	Modified ASTM D-1946	3.5 "Hg	5 psi
02A	GPLGW10072209	Modified ASTM D-1946	3.5 "Hg	5 psi
03A	LGW09072209	Modified ASTM D-1946	4.0 "Hg	5 psi
04A	LGW04072209	Modified ASTM D-1946	3.5 "Hg	5 psi
05A	Lab Blank	Modified ASTM D-1946	NA	NA
06A	LCS	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Linda L. Freeman

DATE: 08/05/09

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/08, Expiration date: 06/30/09
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

LABORATORY NARRATIVE
Modified ASTM D-1946
Asotin County
Workorder# 0907612B

Four 6 Liter Summa Canister samples were received on July 28, 2009. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***ASTM D-1946***	***ATL Modifications***
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A 3-point calibration curve is performed. Quantitation is based on a daily calibration standard which may or may not resemble the composition of the associated samples.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a >/= 95% accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections > 5 X's the RL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The samples in this work order were pressurized with Helium prior to sampling, per client request. Dilution factors have been adjusted accordingly.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.
File extensions may have been used on the data analysis sheets and indicates
as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Summary of Detected Compounds
MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

Client Sample ID: GPLGW11072209

Lab ID#: 0907612B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.19	2.3
Methane	0.00019	52
Carbon Dioxide	0.019	35

Client Sample ID: GPLGW10072209

Lab ID#: 0907612B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.19	0.64
Methane	0.00019	55
Carbon Dioxide	0.019	39

Client Sample ID: LGW09072209

Lab ID#: 0907612B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.19	2.7
Methane	0.00019	43
Carbon Dioxide	0.019	31

Client Sample ID: LGW04072209

Lab ID#: 0907612B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.19	2.8
Methane	0.00019	44
Carbon Dioxide	0.019	32

Client Sample ID: GPLGW11072209

Lab ID#: 0907612B-01A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9080323**	**Date of Collection: 7/22/09 2:55:00 PM**
Dil. Factor:	**1.87**	**Date of Analysis: 8/3/09 05:36 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.19	2.3
Methane	0.00019	52
Carbon Dioxide	0.019	35

Container Type: 6 Liter Summa Canister

Client Sample ID: GPLGW10072209

Lab ID#: 0907612B-02A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9080324**	**Date of Collection: 7/22/09 2:35:00 PM**
Dil. Factor:	**1.87**	**Date of Analysis: 8/3/09 05:59 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.19	0.64
Methane	0.00019	55
Carbon Dioxide	0.019	39

Container Type: 6 Liter Summa Canister

Client Sample ID: LGW09072209

Lab ID#: 0907612B-03A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9080325**	**Date of Collection:**	**7/22/09 3:45:00 PM**
Dil. Factor:	**1.91**	**Date of Analysis:**	**8/3/09 06:23 PM**

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.19	2.7
Methane	0.00019	43
Carbon Dioxide	0.019	31

Container Type: 6 Liter Summa Canister

Client Sample ID: LGW04072209

Lab ID#: 0907612B-04A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9080326**	**Date of Collection: 7/22/09 3:25:00 PM**
Dil. Factor:	**1.87**	**Date of Analysis: 8/3/09 07:30 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.19	2.8
Methane	0.00019	44
Carbon Dioxide	0.019	32

Container Type: 6 Liter Summa Canister

Client Sample ID: Lab Blank

Lab ID#: 0907612B-05A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9080304**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 8/3/09 09:37 AM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.10	Not Detected
Methane	0.00010	Not Detected
Carbon Dioxide	0.010	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 0907612B-06A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	9080328	**Date of Collection: NA**
Dil. Factor:	1.00	**Date of Analysis: 8/3/09 08:20 PM**

Compound	%Recovery
Oxygen	98
Methane	104
Carbon Dioxide	101

Container Type: NA - Not Applicable

Air Toxics LTD.
Laboratory Services Since 1989

6/3/2009

Mr. Stephen Becker
Asotin County
2901 6th Avenue

Clarkston WA 99403

Project Name:
Project #:
Workorder #: 0905548A

Dear Mr. Stephen Becker

The following report includes the data for the above referenced project for sample(s) received on 5/22/2009 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-14A are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for you air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buett

Kelly Buettner
Project Manager

WORK ORDER #: 0905548A

Work Order Summary

CLIENT:	Mr. Stephen Becker Asotin County 2901 6th Avenue Clarkston, WA 99403	**BILL TO:**	Mr. Stephen Becker Asotin County 2901 6th Avenue Clarkston, WA 99403
PHONE:	509-758-1965	**P.O. #**	
FAX:	509-758-1977	**PROJECT #**	
DATE RECEIVED:	05/22/2009	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	06/03/2009		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	051909GPLGW-10	Modified TO-14A	0.0 "Hg	5 psi
02A	051909GPLGW-11	Modified TO-14A	0.8 "Hg	5 psi
03A	051909LGW-04	Modified TO-14A	0.6 "Hg	5 psi
04A	051909LGW-08	Modified TO-14A	0.6 "Hg	5 psi
05A	051909GP-01D	Modified TO-14A	0.6 "Hg	5 psi
06A	051909GP-03S	Modified TO-14A	0.6 "Hg	5 psi
07A	051909GP-07	Modified TO-14A	1.2 "Hg	5 psi
08A	051909GP-06	Modified TO-14A	2.4 "Hg	5 psi
09A	051909GP-05	Modified TO-14A	1.4 "Hg	5 psi
10A	051909GP-FD	Modified TO-14A	2.4 "Hg	5 psi
10AA	051909GP-FD Lab Duplicate	Modified TO-14A	2.4 "Hg	5 psi
11A	Lab Blank	Modified TO-14A	NA	NA
11B	Lab Blank	Modified TO-14A	NA	NA
11C	Lab Blank	Modified TO-14A	NA	NA
12A	CCV	Modified TO-14A	NA	NA
12B	CCV	Modified TO-14A	NA	NA
12C	CCV	Modified TO-14A	NA	NA

Continued on next page

WORK ORDER #: 0905548A

Work Order Summary

CLIENT:
Mr. Stephen Becker
Asotin County
2901 6th Avenue
Clarkston, WA 99403

BILL TO:
Mr. Stephen Becker
Asotin County
2901 6th Avenue
Clarkston, WA 99403

PHONE: 509-758-1965

FAX: 509-758-1977

DATE RECEIVED: 05/22/2009

DATE COMPLETED: 06/03/2009

P.O. #

PROJECT #

CONTACT: Kelly Buettner

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
13A	LCS	Modified TO-14A	NA	NA
13B	LCS	Modified TO-14A	NA	NA
13C	LCS	Modified TO-14A	NA	NA

CERTIFIED BY: Linda L. Freeman

DATE: 06/03/09

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/08, Expiration date: 06/30/09
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

LABORATORY NARRATIVE
Modified TO-14A
Asotin County
Workorder# 0905548A

Ten 6 Liter Summa Canister samples were received on May 22, 2009. The laboratory performed analysis via modified EPA Method TO-14A using GC/MS in the full scan mode. The method involves concentrating up to 0.2 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	*TO-14A*	*ATL Modifications*
Daily CCV	+- 30% Difference	</= 30% Difference with two allowed out up to </=40%.; flag and narrate outliers
Initial Calibration criteria	RSD<30%	RSD</=30%, two compounds allowed up to 40%
BFB absolute abundance criteria	Within 10% of that from previous day	CCV internal standard area counts are compared to ICAL, corrective action for > 40% D
Blank acceptance criteria	<0.20 ppbv	<Reporting Limit
Moisture control	Nafion Dryer	Multisorbent trap
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The canisters in this work order were pressurized with Helium prior to sampling, per client request. Dilution factors have been adjusted accordingly.

All Quality Control Limit failures and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction no performed).

J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the reporting limit.
UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Summary of Detected Compounds
MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

Client Sample ID: 051909GPLGW-10

Lab ID#: 0905548A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	16	22	80	110
Vinyl Chloride	16	270	41	690
Chloroethane	16	450	42	1200
Ethanol	64	7800 E	120	15000 E
Acetone	64	11000 E	150	26000 E
2-Propanol	64	3500	160	8600
Carbon Disulfide	16	64	50	200
Methylene Chloride	16	260	56	890
Methyl tert-butyl ether	16	29	58	100
trans-1,2-Dichloroethene	16	28	64	110
Hexane	16	1800	57	6200
1,1-Dichloroethane	16	26	65	110
2-Butanone (Methyl Ethyl Ketone)	16	5000	47	15000
cis-1,2-Dichloroethene	16	2200	64	8600
Tetrahydrofuran	16	290	47	860
Cyclohexane	16	1200	55	4000
2,2,4-Trimethylpentane	16	510	75	2400
Benzene	16	260	51	830
Heptane	16	850	66	3500
Trichloroethene	16	200	86	1100
4-Methyl-2-pentanone	16	160	66	680
Toluene	16	5200	61	20000
Tetrachloroethene	16	400	110	2700
2-Hexanone	64	130	260	530
Ethyl Benzene	16	1100	70	4900
m,p-Xylene	16	2500	70	11000
o-Xylene	16	860	70	3700
Styrene	16	200	68	830
Propylbenzene	16	110	79	540
4-Ethyltoluene	16	350	79	1700
1,3,5-Trimethylbenzene	16	220	79	1100
1,2,4-Trimethylbenzene	16	510	79	2500
1,4-Dichlorobenzene	16	29	97	170

Client Sample ID: 051909GPLGW-11

Lab ID#: 0905548A-02A

Summary of Detected Compounds
MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

Client Sample ID: 051909GPLGW-11

Lab ID#: 0905548A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	33	220	160	1100
Vinyl Chloride	33	170	85	440
Chloroethane	33	39	88	100
Ethanol	130	2600	250	4800
Acetone	130	23000 E	320	54000 E
2-Propanol	130	1700	330	4200
Carbon Disulfide	33	79	100	250
Methylene Chloride	33	320	120	1100
trans-1,2-Dichloroethene	33	38	130	150
Hexane	33	700	120	2500
2-Butanone (Methyl Ethyl Ketone)	33	7800	98	23000
cis-1,2-Dichloroethene	33	5700	130	23000
Tetrahydrofuran	33	460	98	1400
Cyclohexane	33	940	110	3200
2,2,4-Trimethylpentane	33	420	160	2000
Benzene	33	420	110	1300
Heptane	33	1500	140	6200
Trichloroethene	33	170	180	910
Toluene	33	11000	120	42000
Tetrachloroethene	33	600	230	4000
2-Hexanone	130	700	550	2900
Ethyl Benzene	33	1500	140	6400
m,p-Xylene	33	2900	140	13000
o-Xylene	33	1000	140	4300
Styrene	33	140	140	600
Propylbenzene	33	100	160	490
4-Ethyltoluene	33	290	160	1400
1,3,5-Trimethylbenzene	33	220	160	1100
1,2,4-Trimethylbenzene	33	600	160	2900

Client Sample ID: 051909LGW-04

Lab ID#: 0905548A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	55	680	270	3400
Freon 114	55	100	380	730

Summary of Detected Compounds
MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

Client Sample ID: 051909LGW-04

Lab ID#: 0905548A-03A

Vinyl Chloride	55	5100	140	13000
Chloroethane	55	280	140	740
Freon 11	55	58	310	320
Ethanol	220	9000	410	17000
1,1-Dichloroethene	55	140	220	540
Acetone	220	1800	520	4300
2-Propanol	220	3000	540	7300
Methylene Chloride	55	820	190	2900
trans-1,2-Dichloroethene	55	75	220	300
Hexane	55	3000	190	10000
1,1-Dichloroethane	55	76	220	310
2-Butanone (Methyl Ethyl Ketone)	55	1200	160	3600
cis-1,2-Dichloroethene	55	8100	220	32000
Tetrahydrofuran	55	720	160	2100
Cyclohexane	55	2200	190	7700
2,2,4-Trimethylpentane	55	1400	260	6700
Benzene	55	600	180	1900
Heptane	55	3400	220	14000
Trichloroethene	55	470	300	2500
Toluene	55	14000	210	55000
Tetrachloroethene	55	1000	370	7200
Ethyl Benzene	55	1600	240	6900
m,p-Xylene	55	3600	240	16000
o-Xylene	55	1000	240	4500
Styrene	55	190	230	790
Cumene	55	290	270	1400
Propylbenzene	55	88	270	430
4-Ethyltoluene	55	310	270	1500
1,3,5-Trimethylbenzene	55	130	270	620
1,2,4-Trimethylbenzene	55	390	270	1900

Client Sample ID: 051909LGW-08

Lab ID#: 0905548A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	27	2200	140	11000
Freon 114	27	300	190	2100
Vinyl Chloride	27	5300	70	14000

Summary of Detected Compounds
MODIFIED EPA METHOD TO-14 GC/MS

Client Sample ID: 051909LGW-08

Lab ID#: 0905548A-04A

Chloroethane	27	280	72	730
Freon 11	27	110	150	620
Ethanol	110	81000 J	210	150000 J
1,1-Dichloroethene	27	97	110	380
Acetone	110	2700	260	6500
2-Propanol	110	6800	270	17000
Methylene Chloride	27	2100	95	7400
trans-1,2-Dichloroethene	27	250	110	990
Hexane	27	2200	97	7900
1,1-Dichloroethane	27	190	110	780
2-Butanone (Methyl Ethyl Ketone)	27	3400	81	10000
cis-1,2-Dichloroethene	27	12000	110	49000
Tetrahydrofuran	27	1500	81	4400
Cyclohexane	27	2300	94	7900
2,2,4-Trimethylpentane	27	1100	130	5400
Benzene	27	1000	88	3400
1,2-Dichloroethane	27	160	110	660
Heptane	27	3300	110	14000
Trichloroethene	27	4600	150	25000
1,2-Dichloropropane	27	300	130	1400
Toluene	27	18000	100	66000
Tetrachloroethene	27	7200	190	49000
Chlorobenzene	27	65	130	300
Ethyl Benzene	27	2200	120	9600
m,p-Xylene	27	4800	120	21000
o-Xylene	27	1400	120	6300
Styrene	27	270	120	1200
Cumene	27	190	130	920
Propylbenzene	27	170	130	820
4-Ethyltoluene	27	540	130	2600
1,3,5-Trimethylbenzene	27	220	130	1100
1,2,4-Trimethylbenzene	27	630	130	3100
1,4-Dichlorobenzene	27	120	160	690

Client Sample ID: 051909GP-01D

Lab ID#: 0905548A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)

Summary of Detected Compounds
MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

Client Sample ID: 051909GP-01D

Lab ID#: 0905548A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.82	56	4.1	280
Freon 114	0.82	8.2	5.8	58
Chloroethane	0.82	1.8	2.2	4.8
Freon 11	0.82	3.6	4.6	20
Acetone	3.3	45	7.8	110
Methylene Chloride	0.82	1.2	2.9	4.3
1,1-Dichloroethane	0.82	4.0	3.3	16
2-Butanone (Methyl Ethyl Ketone)	0.82	2.7	2.4	8.0
cis-1,2-Dichloroethene	0.82	1.2	3.3	4.9
1,1,1-Trichloroethane	0.82	0.84	4.5	4.6
Trichloroethene	0.82	2.4	4.4	13
Toluene	0.82	9.3	3.1	35
Tetrachloroethene	0.82	63	5.6	430
Ethyl Benzene	0.82	3.4	3.6	15
m,p-Xylene	0.82	8.8	3.6	38
o-Xylene	0.82	3.3	3.6	14
4-Ethyltoluene	0.82	2.4	4.0	12
1,3,5-Trimethylbenzene	0.82	1.2	4.0	6.1
1,2,4-Trimethylbenzene	0.82	5.1	4.0	25

Client Sample ID: 051909GP-03S

Lab ID#: 0905548A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.82	6.2	4.1	31
Freon 114	0.82	2.6	5.8	18
Acetone	3.3	27	7.8	63
2-Butanone (Methyl Ethyl Ketone)	0.82	2.6	2.4	7.6
Toluene	0.82	4.4	3.1	17
Tetrachloroethene	0.82	44	5.6	300
Ethyl Benzene	0.82	1.7	3.6	7.5
m,p-Xylene	0.82	4.2	3.6	18
o-Xylene	0.82	1.8	3.6	7.7
4-Ethyltoluene	0.82	1.2	4.0	6.0
1,2,4-Trimethylbenzene	0.82	2.6	4.0	13

Summary of Detected Compounds
MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

Client Sample ID: 051909GP-07

Lab ID#: 0905548A-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.84	200	4.2	990
Freon 114	0.84	24	5.9	170
Chloroethane	0.84	1.3	2.2	3.3
Freon 11	0.84	1.9	4.7	10
Acetone	3.4	27	8.0	65
Carbon Disulfide	0.84	7.3	2.6	23
1,1-Dichloroethane	0.84	3.4	3.4	14
2-Butanone (Methyl Ethyl Ketone)	0.84	2.0	2.5	5.8
Chloroform	0.84	0.88	4.1	4.3
Trichloroethene	0.84	13	4.5	69
Toluene	0.84	4.2	3.2	16
Tetrachloroethene	0.84	150	5.7	1000
Ethyl Benzene	0.84	1.7	3.7	7.2
m,p-Xylene	0.84	3.7	3.7	16
o-Xylene	0.84	2.0	3.7	8.7
Styrene	0.84	47	3.6	200
4-Ethyltoluene	0.84	0.94	4.2	4.6
1,2,4-Trimethylbenzene	0.84	1.8	4.2	8.8

Client Sample ID: 051909GP-06

Lab ID#: 0905548A-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	3.6	25	8.4	60
2-Butanone (Methyl Ethyl Ketone)	0.89	1.7	2.6	5.1
Toluene	0.89	2.5	3.4	9.5
Ethyl Benzene	0.89	1.1	3.9	4.8
m,p-Xylene	0.89	2.6	3.9	11
o-Xylene	0.89	1.1	3.9	4.8
Styrene	0.89	1.1	3.8	4.8
1,2,4-Trimethylbenzene	0.89	1.5	4.4	7.6

Client Sample ID: 051909GP-05

Lab ID#: 0905548A-09A

Summary of Detected Compounds

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

Client Sample ID: 051909GP-05

Lab ID#: 0905548A-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.86	68	4.2	340
Freon 114	0.86	6.3	6.0	44
Freon 11	0.86	2.8	4.8	16
Acetone	3.4	15	8.1	36
Toluene	0.86	1.8	3.2	7.0
Tetrachloroethene	0.86	130	5.8	850
Ethyl Benzene	0.86	0.85 J	3.7	3.7 J
m,p-Xylene	0.86	1.9	3.7	8.2
Styrene	0.86	1.3	3.6	5.7
1,2,4-Trimethylbenzene	0.86	1.2	4.2	5.9

Client Sample ID: 051909GP-FD

Lab ID#: 0905548A-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	3.6	26	8.4	61
Methylene Chloride	0.89	1.3	3.1	4.4
2-Butanone (Methyl Ethyl Ketone)	0.89	1.8	2.6	5.4
Toluene	0.89	10	3.4	40
Ethyl Benzene	0.89	1.2	3.9	5.4
m,p-Xylene	0.89	3.4	3.9	15
o-Xylene	0.89	1.2	3.9	5.3
Styrene	0.89	1.0	3.8	4.5
1,2,4-Trimethylbenzene	0.89	1.5	4.4	7.6

Client Sample ID: 051909GP-FD Lab Duplicate

Lab ID#: 0905548A-10AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	3.6	23	8.5	54
Methylene Chloride	0.90	1.4	3.1	4.8
2-Butanone (Methyl Ethyl Ketone)	0.90	1.9	2.6	5.5
Toluene	0.90	11	3.4	42
Ethyl Benzene	0.90	1.4	3.9	5.9
m,p-Xylene	0.90	3.6	3.9	16

Summary of Detected Compounds
MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

Client Sample ID: 051909GP-FD Lab Duplicate

Lab ID#: 0905548A-10AA

o-Xylene	0.90	1.3	3.9	5.5
Styrene	0.90	1.0	3.8	4.5
1,2,4-Trimethylbenzene	0.90	1.5	4.4	7.5

Client Sample ID: 051909GPLGW-10

Lab ID#: 0905548A-01A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053015**	**Date of Collection:**	**5/19/09 9:10:00 AM**
Dil. Factor:	**32.2**	**Date of Analysis:**	**5/30/09 05:50 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	16	22	80	110
Freon 114	16	Not Detected	110	Not Detected
Chloromethane	64	Not Detected	130	Not Detected
Vinyl Chloride	16	270	41	690
1,3-Butadiene	16	Not Detected	36	Not Detected
Bromomethane	16	Not Detected	62	Not Detected
Chloroethane	16	450	42	1200
Freon 11	16	Not Detected	90	Not Detected
Ethanol	64	7800 E	120	15000 E
Freon 113	16	Not Detected	120	Not Detected
1,1-Dichloroethene	16	Not Detected	64	Not Detected
Acetone	64	11000 E	150	26000 E
2-Propanol	64	3500	160	8600
Carbon Disulfide	16	64	50	200
3-Chloropropene	64	Not Detected	200	Not Detected
Methylene Chloride	16	260	56	890
Methyl tert-butyl ether	16	29	58	100
trans-1,2-Dichloroethene	16	28	64	110
Hexane	16	1800	57	6200
1,1-Dichloroethane	16	26	65	110
2-Butanone (Methyl Ethyl Ketone)	16	5000	47	15000
cis-1,2-Dichloroethene	16	2200	64	8600
Tetrahydrofuran	16	290	47	860
Chloroform	16	Not Detected	79	Not Detected
1,1,1-Trichloroethane	16	Not Detected	88	Not Detected
Cyclohexane	16	1200	55	4000
Carbon Tetrachloride	16	Not Detected	100	Not Detected
2,2,4-Trimethylpentane	16	510	75	2400
Benzene	16	260	51	830
1,2-Dichloroethane	16	Not Detected	65	Not Detected
Heptane	16	850	66	3500
Trichloroethene	16	200	86	1100
1,2-Dichloropropane	16	Not Detected	74	Not Detected
1,4-Dioxane	64	Not Detected	230	Not Detected
Bromodichloromethane	16	Not Detected	110	Not Detected
cis-1,3-Dichloropropene	16	Not Detected	73	Not Detected
4-Methyl-2-pentanone	16	160	66	680
Toluene	16	5200	61	20000
trans-1,3-Dichloropropene	16	Not Detected	73	Not Detected

Client Sample ID: 051909GPLGW-10

Lab ID#: 0905548A-01A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	t053015	**Date of Collection:**	5/19/09 9:10:00 AM
Dil. Factor:	32.2	**Date of Analysis:**	5/30/09 05:50 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2-Trichloroethane	16	Not Detected	88	Not Detected
Tetrachloroethene	16	400	110	2700
2-Hexanone	64	130	260	530
Dibromochloromethane	16	Not Detected	140	Not Detected
1,2-Dibromoethane (EDB)	16	Not Detected	120	Not Detected
Chlorobenzene	16	Not Detected	74	Not Detected
Ethyl Benzene	16	1100	70	4900
m,p-Xylene	16	2500	70	11000
o-Xylene	16	860	70	3700
Styrene	16	200	68	830
Bromoform	16	Not Detected	170	Not Detected
Cumene	16	Not Detected	79	Not Detected
1,1,2,2-Tetrachloroethane	16	Not Detected	110	Not Detected
Propylbenzene	16	110	79	540
4-Ethyltoluene	16	350	79	1700
1,3,5-Trimethylbenzene	16	220	79	1100
1,2,4-Trimethylbenzene	16	510	79	2500
1,3-Dichlorobenzene	16	Not Detected	97	Not Detected
1,4-Dichlorobenzene	16	29	97	170
alpha-Chlorotoluene	16	Not Detected	83	Not Detected
1,2-Dichlorobenzene	16	Not Detected	97	Not Detected
1,2,4-Trichlorobenzene	64	Not Detected	480	Not Detected
Hexachlorobutadiene	64	Not Detected	690	Not Detected

E = Exceeds instrument calibration range.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	109	70-130

Client Sample ID: 051909GPLGW-11

Lab ID#: 0905548A-02A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053016**	**Date of Collection:**	**5/19/09 9:35:00 AM**
Dil. Factor:	**66.8**	**Date of Analysis:**	**5/30/09 06:39 PM**

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
Freon 12	33	220	160	1100
Freon 114	33	Not Detected	230	Not Detected
Chloromethane	130	Not Detected	280	Not Detected
Vinyl Chloride	33	170	85	440
1,3-Butadiene	33	Not Detected	74	Not Detected
Bromomethane	33	Not Detected	130	Not Detected
Chloroethane	33	39	88	100
Freon 11	33	Not Detected	190	Not Detected
Ethanol	130	2600	250	4800
Freon 113	33	Not Detected	260	Not Detected
1,1-Dichloroethene	33	Not Detected	130	Not Detected
Acetone	130	23000 E	320	54000 E
2-Propanol	130	1700	330	4200
Carbon Disulfide	33	79	100	250
3-Chloropropene	130	Not Detected	420	Not Detected
Methylene Chloride	33	320	120	1100
Methyl tert-butyl ether	33	Not Detected	120	Not Detected
trans-1,2-Dichloroethene	33	38	130	150
Hexane	33	700	120	2500
1,1-Dichloroethane	33	Not Detected	140	Not Detected
2-Butanone (Methyl Ethyl Ketone)	33	7800	98	23000
cis-1,2-Dichloroethene	33	5700	130	23000
Tetrahydrofuran	33	460	98	1400
Chloroform	33	Not Detected	160	Not Detected
1,1,1-Trichloroethane	33	Not Detected	180	Not Detected
Cyclohexane	33	940	110	3200
Carbon Tetrachloride	33	Not Detected	210	Not Detected
2,2,4-Trimethylpentane	33	420	160	2000
Benzene	33	420	110	1300
1,2-Dichloroethane	33	Not Detected	140	Not Detected
Heptane	33	1500	140	6200
Trichloroethene	33	170	180	910
1,2-Dichloropropane	33	Not Detected	150	Not Detected
1,4-Dioxane	130	Not Detected	480	Not Detected
Bromodichloromethane	33	Not Detected	220	Not Detected
cis-1,3-Dichloropropene	33	Not Detected	150	Not Detected
4-Methyl-2-pentanone	33	Not Detected	140	Not Detected
Toluene	33	11000	120	42000
trans-1,3-Dichloropropene	33	Not Detected	150	Not Detected

Client Sample ID: 051909GPLGW-11

Lab ID#: 0905548A-02A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053016**	**Date of Collection: 5/19/09 9:35:00 AM**
Dil. Factor:	**66.8**	**Date of Analysis: 5/30/09 06:39 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2-Trichloroethane	33	Not Detected	180	Not Detected
Tetrachloroethene	33	600	230	4000
2-Hexanone	130	700	550	2900
Dibromochloromethane	33	Not Detected	280	Not Detected
1,2-Dibromoethane (EDB)	33	Not Detected	260	Not Detected
Chlorobenzene	33	Not Detected	150	Not Detected
Ethyl Benzene	33	1500	140	6400
m,p-Xylene	33	2900	140	13000
o-Xylene	33	1000	140	4300
Styrene	33	140	140	600
Bromoform	33	Not Detected	340	Not Detected
Cumene	33	Not Detected	160	Not Detected
1,1,2,2-Tetrachloroethane	33	Not Detected	230	Not Detected
Propylbenzene	33	100	160	490
4-Ethyltoluene	33	290	160	1400
1,3,5-Trimethylbenzene	33	220	160	1100
1,2,4-Trimethylbenzene	33	600	160	2900
1,3-Dichlorobenzene	33	Not Detected	200	Not Detected
1,4-Dichlorobenzene	33	Not Detected	200	Not Detected
alpha-Chlorotoluene	33	Not Detected	170	Not Detected
1,2-Dichlorobenzene	33	Not Detected	200	Not Detected
1,2,4-Trichlorobenzene	130	Not Detected	990	Not Detected
Hexachlorobutadiene	130	Not Detected	1400	Not Detected

E = Exceeds instrument calibration range.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	110	70-130

Client Sample ID: 051909LGW-04

Lab ID#: 0905548A-03A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053017**	**Date of Collection: 5/19/09 9:55:00 AM**
Dil. Factor:	**110**	**Date of Analysis: 5/30/09 07:16 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	55	680	270	3400
Freon 114	55	100	380	730
Chloromethane	220	Not Detected	450	Not Detected
Vinyl Chloride	55	5100	140	13000
1,3-Butadiene	55	Not Detected	120	Not Detected
Bromomethane	55	Not Detected	210	Not Detected
Chloroethane	55	280	140	740
Freon 11	55	58	310	320
Ethanol	220	9000	410	17000
Freon 113	55	Not Detected	420	Not Detected
1,1-Dichloroethene	55	140	220	540
Acetone	220	1800	520	4300
2-Propanol	220	3000	540	7300
Carbon Disulfide	55	Not Detected	170	Not Detected
3-Chloropropene	220	Not Detected	690	Not Detected
Methylene Chloride	55	820	190	2900
Methyl tert-butyl ether	55	Not Detected	200	Not Detected
trans-1,2-Dichloroethene	55	75	220	300
Hexane	55	3000	190	10000
1,1-Dichloroethane	55	76	220	310
2-Butanone (Methyl Ethyl Ketone)	55	1200	160	3600
cis-1,2-Dichloroethene	55	8100	220	32000
Tetrahydrofuran	55	720	160	2100
Chloroform	55	Not Detected	270	Not Detected
1,1,1-Trichloroethane	55	Not Detected	300	Not Detected
Cyclohexane	55	2200	190	7700
Carbon Tetrachloride	55	Not Detected	350	Not Detected
2,2,4-Trimethylpentane	55	1400	260	6700
Benzene	55	600	180	1900
1,2-Dichloroethane	55	Not Detected	220	Not Detected
Heptane	55	3400	220	14000
Trichloroethene	55	470	300	2500
1,2-Dichloropropane	55	Not Detected	250	Not Detected
1,4-Dioxane	220	Not Detected	790	Not Detected
Bromodichloromethane	55	Not Detected	370	Not Detected
cis-1,3-Dichloropropene	55	Not Detected	250	Not Detected
4-Methyl-2-pentanone	55	Not Detected	220	Not Detected
Toluene	55	14000	210	55000
trans-1,3-Dichloropropene	55	Not Detected	250	Not Detected

Client Sample ID: 051909LGW-04

Lab ID#: 0905548A-03A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053017**	**Date of Collection:**	**5/19/09 9:55:00 AM**
Dil. Factor:	**110**	**Date of Analysis:**	**5/30/09 07:16 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2-Trichloroethane	55	Not Detected	300	Not Detected
Tetrachloroethene	55	1000	370	7200
2-Hexanone	220	Not Detected	900	Not Detected
Dibromochloromethane	55	Not Detected	470	Not Detected
1,2-Dibromoethane (EDB)	55	Not Detected	420	Not Detected
Chlorobenzene	55	Not Detected	250	Not Detected
Ethyl Benzene	55	1600	240	6900
m,p-Xylene	55	3600	240	16000
o-Xylene	55	1000	240	4500
Styrene	55	190	230	790
Bromoform	55	Not Detected	570	Not Detected
Cumene	55	290	270	1400
1,1,2,2-Tetrachloroethane	55	Not Detected	380	Not Detected
Propylbenzene	55	88	270	430
4-Ethyltoluene	55	310	270	1500
1,3,5-Trimethylbenzene	55	130	270	620
1,2,4-Trimethylbenzene	55	390	270	1900
1,3-Dichlorobenzene	55	Not Detected	330	Not Detected
1,4-Dichlorobenzene	55	Not Detected	330	Not Detected
alpha-Chlorotoluene	55	Not Detected	280	Not Detected
1,2-Dichlorobenzene	55	Not Detected	330	Not Detected
1,2,4-Trichlorobenzene	220	Not Detected	1600	Not Detected
Hexachlorobutadiene	220	Not Detected	2300	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: 051909LGW-08

Lab ID#: 0905548A-04A

MODIFIED EPA METHOD TO-14 GC/MS

File Name:	**w052907**	**Date of Collection: 5/19/09 10:15:00 AM**
Dil. Factor:	**5.49**	**Date of Analysis: 5/29/09 01:34 PM**

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
Freon 12	27	2200	140	11000
Freon 114	27	300	190	2100
Chloromethane	110	Not Detected	230	Not Detected
Vinyl Chloride	27	5300	70	14000
1,3-Butadiene	27	Not Detected	61	Not Detected
Bromomethane	27	Not Detected	110	Not Detected
Chloroethane	27	280	72	730
Freon 11	27	110	150	620
Ethanol	110	81000 J	210	150000 J
Freon 113	27	Not Detected	210	Not Detected
1,1-Dichloroethene	27	97	110	380
Acetone	110	2700	260	6500
2-Propanol	110	6800	270	17000
Carbon Disulfide	27	Not Detected	85	Not Detected
3-Chloropropene	110	Not Detected	340	Not Detected
Methylene Chloride	27	2100	95	7400
Methyl tert-butyl ether	27	Not Detected	99	Not Detected
trans-1,2-Dichloroethene	27	250	110	990
Hexane	27	2200	97	7900
1,1-Dichloroethane	27	190	110	780
2-Butanone (Methyl Ethyl Ketone)	27	3400	81	10000
cis-1,2-Dichloroethene	27	12000	110	49000
Tetrahydrofuran	27	1500	81	4400
Chloroform	27	Not Detected	130	Not Detected
1,1,1-Trichloroethane	27	Not Detected	150	Not Detected
Cyclohexane	27	2300	94	7900
Carbon Tetrachloride	27	Not Detected	170	Not Detected
2,2,4-Trimethylpentane	27	1100	130	5400
Benzene	27	1000	88	3400
1,2-Dichloroethane	27	160	110	660
Heptane	27	3300	110	14000
Trichloroethene	27	4600	150	25000
1,2-Dichloropropane	27	300	130	1400
1,4-Dioxane	110	Not Detected	400	Not Detected
Bromodichloromethane	27	Not Detected	180	Not Detected
cis-1,3-Dichloropropene	27	Not Detected	120	Not Detected
4-Methyl-2-pentanone	27	Not Detected	110	Not Detected
Toluene	27	18000	100	66000
trans-1,3-Dichloropropene	27	Not Detected	120	Not Detected

Client Sample ID: 051909LGW-08

Lab ID#: 0905548A-04A

MODIFIED EPA METHOD TO-14 GC/MS

File Name:	w052907	**Date of Collection:**	5/19/09 10:15:00 AM
Dil. Factor:	5.49	**Date of Analysis:**	5/29/09 01:34 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2-Trichloroethane	27	Not Detected	150	Not Detected
Tetrachloroethene	27	7200	190	49000
2-Hexanone	110	Not Detected	450	Not Detected
Dibromochloromethane	27	Not Detected	230	Not Detected
1,2-Dibromoethane (EDB)	27	Not Detected	210	Not Detected
Chlorobenzene	27	65	130	300
Ethyl Benzene	27	2200	120	9600
m,p-Xylene	27	4800	120	21000
o-Xylene	27	1400	120	6300
Styrene	27	270	120	1200
Bromoform	27	Not Detected	280	Not Detected
Cumene	27	190	130	920
1,1,2,2-Tetrachloroethane	27	Not Detected	190	Not Detected
Propylbenzene	27	170	130	820
4-Ethyltoluene	27	540	130	2600
1,3,5-Trimethylbenzene	27	220	130	1100
1,2,4-Trimethylbenzene	27	630	130	3100
1,3-Dichlorobenzene	27	Not Detected	160	Not Detected
1,4-Dichlorobenzene	27	120	160	690
alpha-Chlorotoluene	27	Not Detected	140	Not Detected
1,2-Dichlorobenzene	27	Not Detected	160	Not Detected
1,2,4-Trichlorobenzene	110	Not Detected	810	Not Detected
Hexachlorobutadiene	110	Not Detected	1200	Not Detected

J = Estimated value due to bias in the CCV.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: 051909GP-01D

Lab ID#: 0905548A-05A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053018**	**Date of Collection: 5/19/09 10:45:00 AM**
Dil. Factor:	**1.65**	**Date of Analysis: 5/30/09 07:57 PM**

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
Freon 12	0.82	56	4.1	280
Freon 114	0.82	8.2	5.8	58
Chloromethane	3.3	Not Detected	6.8	Not Detected
Vinyl Chloride	0.82	Not Detected	2.1	Not Detected
1,3-Butadiene	0.82	Not Detected	1.8	Not Detected
Bromomethane	0.82	Not Detected	3.2	Not Detected
Chloroethane	0.82	1.8	2.2	4.8
Freon 11	0.82	3.6	4.6	20
Ethanol	3.3	Not Detected	6.2	Not Detected
Freon 113	0.82	Not Detected	6.3	Not Detected
1,1-Dichloroethene	0.82	Not Detected	3.3	Not Detected
Acetone	3.3	45	7.8	110
2-Propanol	3.3	Not Detected	8.1	Not Detected
Carbon Disulfide	0.82	Not Detected	2.6	Not Detected
3-Chloropropene	3.3	Not Detected	10	Not Detected
Methylene Chloride	0.82	1.2	2.9	4.3
Methyl tert-butyl ether	0.82	Not Detected	3.0	Not Detected
trans-1,2-Dichloroethene	0.82	Not Detected	3.3	Not Detected
Hexane	0.82	Not Detected	2.9	Not Detected
1,1-Dichloroethane	0.82	4.0	3.3	16
2-Butanone (Methyl Ethyl Ketone)	0.82	2.7	2.4	8.0
cis-1,2-Dichloroethene	0.82	1.2	3.3	4.9
Tetrahydrofuran	0.82	Not Detected	2.4	Not Detected
Chloroform	0.82	Not Detected	4.0	Not Detected
1,1,1-Trichloroethane	0.82	0.84	4.5	4.6
Cyclohexane	0.82	Not Detected	2.8	Not Detected
Carbon Tetrachloride	0.82	Not Detected	5.2	Not Detected
2,2,4-Trimethylpentane	0.82	Not Detected	3.8	Not Detected
Benzene	0.82	Not Detected	2.6	Not Detected
1,2-Dichloroethane	0.82	Not Detected	3.3	Not Detected
Heptane	0.82	Not Detected	3.4	Not Detected
Trichloroethene	0.82	2.4	4.4	13
1,2-Dichloropropane	0.82	Not Detected	3.8	Not Detected
1,4-Dioxane	3.3	Not Detected	12	Not Detected
Bromodichloromethane	0.82	Not Detected	5.5	Not Detected
cis-1,3-Dichloropropene	0.82	Not Detected	3.7	Not Detected
4-Methyl-2-pentanone	0.82	Not Detected	3.4	Not Detected
Toluene	0.82	9.3	3.1	35
trans-1,3-Dichloropropene	0.82	Not Detected	3.7	Not Detected

Client Sample ID: 051909GP-01D

Lab ID#: 0905548A-05A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053018**	**Date of Collection: 5/19/09 10:45:00 AM**
Dil. Factor:	**1.65**	**Date of Analysis: 5/30/09 07:57 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2-Trichloroethane	0.82	Not Detected	4.5	Not Detected
Tetrachloroethene	0.82	63	5.6	430
2-Hexanone	3.3	Not Detected	14	Not Detected
Dibromochloromethane	0.82	Not Detected	7.0	Not Detected
1,2-Dibromoethane (EDB)	0.82	Not Detected	6.3	Not Detected
Chlorobenzene	0.82	Not Detected	3.8	Not Detected
Ethyl Benzene	0.82	3.4	3.6	15
m,p-Xylene	0.82	8.8	3.6	38
o-Xylene	0.82	3.3	3.6	14
Styrene	0.82	Not Detected	3.5	Not Detected
Bromoform	0.82	Not Detected	8.5	Not Detected
Cumene	0.82	Not Detected	4.0	Not Detected
1,1,2,2-Tetrachloroethane	0.82	Not Detected	5.7	Not Detected
Propylbenzene	0.82	Not Detected	4.0	Not Detected
4-Ethyltoluene	0.82	2.4	4.0	12
1,3,5-Trimethylbenzene	0.82	1.2	4.0	6.1
1,2,4-Trimethylbenzene	0.82	5.1	4.0	25
1,3-Dichlorobenzene	0.82	Not Detected	5.0	Not Detected
1,4-Dichlorobenzene	0.82	Not Detected	5.0	Not Detected
alpha-Chlorotoluene	0.82	Not Detected	4.3	Not Detected
1,2-Dichlorobenzene	0.82	Not Detected	5.0	Not Detected
1,2,4-Trichlorobenzene	3.3	Not Detected	24	Not Detected
Hexachlorobutadiene	3.3	Not Detected	35	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: 051909GP-03S

Lab ID#: 0905548A-06A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053019**	**Date of Collection:**	**5/19/09 11:10:00 AM**
Dil. Factor:	**1.65**	**Date of Analysis:**	**5/30/09 08:34 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.82	6.2	4.1	31
Freon 114	0.82	2.6	5.8	18
Chloromethane	3.3	Not Detected	6.8	Not Detected
Vinyl Chloride	0.82	Not Detected	2.1	Not Detected
1,3-Butadiene	0.82	Not Detected	1.8	Not Detected
Bromomethane	0.82	Not Detected	3.2	Not Detected
Chloroethane	0.82	Not Detected	2.2	Not Detected
Freon 11	0.82	Not Detected	4.6	Not Detected
Ethanol	3.3	Not Detected	6.2	Not Detected
Freon 113	0.82	Not Detected	6.3	Not Detected
1,1-Dichloroethene	0.82	Not Detected	3.3	Not Detected
Acetone	3.3	27	7.8	63
2-Propanol	3.3	Not Detected	8.1	Not Detected
Carbon Disulfide	0.82	Not Detected	2.6	Not Detected
3-Chloropropene	3.3	Not Detected	10	Not Detected
Methylene Chloride	0.82	Not Detected	2.9	Not Detected
Methyl tert-butyl ether	0.82	Not Detected	3.0	Not Detected
trans-1,2-Dichloroethene	0.82	Not Detected	3.3	Not Detected
Hexane	0.82	Not Detected	2.9	Not Detected
1,1-Dichloroethane	0.82	Not Detected	3.3	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.82	2.6	2.4	7.6
cis-1,2-Dichloroethene	0.82	Not Detected	3.3	Not Detected
Tetrahydrofuran	0.82	Not Detected	2.4	Not Detected
Chloroform	0.82	Not Detected	4.0	Not Detected
1,1,1-Trichloroethane	0.82	Not Detected	4.5	Not Detected
Cyclohexane	0.82	Not Detected	2.8	Not Detected
Carbon Tetrachloride	0.82	Not Detected	5.2	Not Detected
2,2,4-Trimethylpentane	0.82	Not Detected	3.8	Not Detected
Benzene	0.82	Not Detected	2.6	Not Detected
1,2-Dichloroethane	0.82	Not Detected	3.3	Not Detected
Heptane	0.82	Not Detected	3.4	Not Detected
Trichloroethene	0.82	Not Detected	4.4	Not Detected
1,2-Dichloropropane	0.82	Not Detected	3.8	Not Detected
1,4-Dioxane	3.3	Not Detected	12	Not Detected
Bromodichloromethane	0.82	Not Detected	5.5	Not Detected
cis-1,3-Dichloropropene	0.82	Not Detected	3.7	Not Detected
4-Methyl-2-pentanone	0.82	Not Detected	3.4	Not Detected
Toluene	0.82	4.4	3.1	17
trans-1,3-Dichloropropene	0.82	Not Detected	3.7	Not Detected

Client Sample ID: 051909GP-03S

Lab ID#: 0905548A-06A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053019**	**Date of Collection: 5/19/09 11:10:00 AM**
Dil. Factor:	**1.65**	**Date of Analysis: 5/30/09 08:34 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2-Trichloroethane	0.82	Not Detected	4.5	Not Detected
Tetrachloroethene	0.82	44	5.6	300
2-Hexanone	3.3	Not Detected	14	Not Detected
Dibromochloromethane	0.82	Not Detected	7.0	Not Detected
1,2-Dibromoethane (EDB)	0.82	Not Detected	6.3	Not Detected
Chlorobenzene	0.82	Not Detected	3.8	Not Detected
Ethyl Benzene	0.82	1.7	3.6	7.5
m,p-Xylene	0.82	4.2	3.6	18
o-Xylene	0.82	1.8	3.6	7.7
Styrene	0.82	Not Detected	3.5	Not Detected
Bromoform	0.82	Not Detected	8.5	Not Detected
Cumene	0.82	Not Detected	4.0	Not Detected
1,1,2,2-Tetrachloroethane	0.82	Not Detected	5.7	Not Detected
Propylbenzene	0.82	Not Detected	4.0	Not Detected
4-Ethyltoluene	0.82	1.2	4.0	6.0
1,3,5-Trimethylbenzene	0.82	Not Detected	4.0	Not Detected
1,2,4-Trimethylbenzene	0.82	2.6	4.0	13
1,3-Dichlorobenzene	0.82	Not Detected	5.0	Not Detected
1,4-Dichlorobenzene	0.82	Not Detected	5.0	Not Detected
alpha-Chlorotoluene	0.82	Not Detected	4.3	Not Detected
1,2-Dichlorobenzene	0.82	Not Detected	5.0	Not Detected
1,2,4-Trichlorobenzene	3.3	Not Detected	24	Not Detected
Hexachlorobutadiene	3.3	Not Detected	35	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: 051909GP-07

Lab ID#: 0905548A-07A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053020**	**Date of Collection:**	**5/19/09 1:05:00 PM**
Dil. Factor:	**1.69**	**Date of Analysis:**	**5/30/09 09:12 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.84	200	4.2	990
Freon 114	0.84	24	5.9	170
Chloromethane	3.4	Not Detected	7.0	Not Detected
Vinyl Chloride	0.84	Not Detected	2.2	Not Detected
1,3-Butadiene	0.84	Not Detected	1.9	Not Detected
Bromomethane	0.84	Not Detected	3.3	Not Detected
Chloroethane	0.84	1.3	2.2	3.3
Freon 11	0.84	1.9	4.7	10
Ethanol	3.4	Not Detected	6.4	Not Detected
Freon 113	0.84	Not Detected	6.5	Not Detected
1,1-Dichloroethene	0.84	Not Detected	3.4	Not Detected
Acetone	3.4	27	8.0	65
2-Propanol	3.4	Not Detected	8.3	Not Detected
Carbon Disulfide	0.84	7.3	2.6	23
3-Chloropropene	3.4	Not Detected	10	Not Detected
Methylene Chloride	0.84	Not Detected	2.9	Not Detected
Methyl tert-butyl ether	0.84	Not Detected	3.0	Not Detected
trans-1,2-Dichloroethene	0.84	Not Detected	3.4	Not Detected
Hexane	0.84	Not Detected	3.0	Not Detected
1,1-Dichloroethane	0.84	3.4	3.4	14
2-Butanone (Methyl Ethyl Ketone)	0.84	2.0	2.5	5.8
cis-1,2-Dichloroethene	0.84	Not Detected	3.4	Not Detected
Tetrahydrofuran	0.84	Not Detected	2.5	Not Detected
Chloroform	0.84	0.88	4.1	4.3
1,1,1-Trichloroethane	0.84	Not Detected	4.6	Not Detected
Cyclohexane	0.84	Not Detected	2.9	Not Detected
Carbon Tetrachloride	0.84	Not Detected	5.3	Not Detected
2,2,4-Trimethylpentane	0.84	Not Detected	3.9	Not Detected
Benzene	0.84	Not Detected	2.7	Not Detected
1,2-Dichloroethane	0.84	Not Detected	3.4	Not Detected
Heptane	0.84	Not Detected	3.5	Not Detected
Trichloroethene	0.84	13	4.5	69
1,2-Dichloropropane	0.84	Not Detected	3.9	Not Detected
1,4-Dioxane	3.4	Not Detected	12	Not Detected
Bromodichloromethane	0.84	Not Detected	5.7	Not Detected
cis-1,3-Dichloropropene	0.84	Not Detected	3.8	Not Detected
4-Methyl-2-pentanone	0.84	Not Detected	3.5	Not Detected
Toluene	0.84	4.2	3.2	16
trans-1,3-Dichloropropene	0.84	Not Detected	3.8	Not Detected

Client Sample ID: 051909GP-07

Lab ID#: 0905548A-07A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053020**	**Date of Collection:**	**5/19/09 1:05:00 PM**
Dil. Factor:	**1.69**	**Date of Analysis:**	**5/30/09 09:12 PM**

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
1,1,2-Trichloroethane	0.84	Not Detected	4.6	Not Detected
Tetrachloroethene	0.84	150	5.7	1000
2-Hexanone	3.4	Not Detected	14	Not Detected
Dibromochloromethane	0.84	Not Detected	7.2	Not Detected
1,2-Dibromoethane (EDB)	0.84	Not Detected	6.5	Not Detected
Chlorobenzene	0.84	Not Detected	3.9	Not Detected
Ethyl Benzene	0.84	1.7	3.7	7.2
m,p-Xylene	0.84	3.7	3.7	16
o-Xylene	0.84	2.0	3.7	8.7
Styrene	0.84	47	3.6	200
Bromoform	0.84	Not Detected	8.7	Not Detected
Cumene	0.84	Not Detected	4.2	Not Detected
1,1,2,2-Tetrachloroethane	0.84	Not Detected	5.8	Not Detected
Propylbenzene	0.84	Not Detected	4.2	Not Detected
4-Ethyltoluene	0.84	0.94	4.2	4.6
1,3,5-Trimethylbenzene	0.84	Not Detected	4.2	Not Detected
1,2,4-Trimethylbenzene	0.84	1.8	4.2	8.8
1,3-Dichlorobenzene	0.84	Not Detected	5.1	Not Detected
1,4-Dichlorobenzene	0.84	Not Detected	5.1	Not Detected
alpha-Chlorotoluene	0.84	Not Detected	4.4	Not Detected
1,2-Dichlorobenzene	0.84	Not Detected	5.1	Not Detected
1,2,4-Trichlorobenzene	3.4	Not Detected	25	Not Detected
Hexachlorobutadiene	3.4	Not Detected	36	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: 051909GP-06

Lab ID#: 0905548A-08A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name: t053021 **Date of Collection:** 5/19/09 1:25:00 PM
Dil. Factor: 1.78 **Date of Analysis:** 5/30/09 09:58 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.89	Not Detected	4.4	Not Detected
Freon 114	0.89	Not Detected	6.2	Not Detected
Chloromethane	3.6	Not Detected	7.4	Not Detected
Vinyl Chloride	0.89	Not Detected	2.3	Not Detected
1,3-Butadiene	0.89	Not Detected	2.0	Not Detected
Bromomethane	0.89	Not Detected	3.4	Not Detected
Chloroethane	0.89	Not Detected	2.3	Not Detected
Freon 11	0.89	Not Detected	5.0	Not Detected
Ethanol	3.6	Not Detected	6.7	Not Detected
Freon 113	0.89	Not Detected	6.8	Not Detected
1,1-Dichloroethene	0.89	Not Detected	3.5	Not Detected
Acetone	3.6	25	8.4	60
2-Propanol	3.6	Not Detected	8.7	Not Detected
Carbon Disulfide	0.89	Not Detected	2.8	Not Detected
3-Chloropropene	3.6	Not Detected	11	Not Detected
Methylene Chloride	0.89	Not Detected	3.1	Not Detected
Methyl tert-butyl ether	0.89	Not Detected	3.2	Not Detected
trans-1,2-Dichloroethene	0.89	Not Detected	3.5	Not Detected
Hexane	0.89	Not Detected	3.1	Not Detected
1,1-Dichloroethane	0.89	Not Detected	3.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.89	1.7	2.6	5.1
cis-1,2-Dichloroethene	0.89	Not Detected	3.5	Not Detected
Tetrahydrofuran	0.89	Not Detected	2.6	Not Detected
Chloroform	0.89	Not Detected	4.3	Not Detected
1,1,1-Trichloroethane	0.89	Not Detected	4.8	Not Detected
Cyclohexane	0.89	Not Detected	3.1	Not Detected
Carbon Tetrachloride	0.89	Not Detected	5.6	Not Detected
2,2,4-Trimethylpentane	0.89	Not Detected	4.2	Not Detected
Benzene	0.89	Not Detected	2.8	Not Detected
1,2-Dichloroethane	0.89	Not Detected	3.6	Not Detected
Heptane	0.89	Not Detected	3.6	Not Detected
Trichloroethene	0.89	Not Detected	4.8	Not Detected
1,2-Dichloropropane	0.89	Not Detected	4.1	Not Detected
1,4-Dioxane	3.6	Not Detected	13	Not Detected
Bromodichloromethane	0.89	Not Detected	6.0	Not Detected
cis-1,3-Dichloropropene	0.89	Not Detected	4.0	Not Detected
4-Methyl-2-pentanone	0.89	Not Detected	3.6	Not Detected
Toluene	0.89	2.5	3.4	9.5
trans-1,3-Dichloropropene	0.89	Not Detected	4.0	Not Detected

Client Sample ID: 051909GP-06

Lab ID#: 0905548A-08A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053021**	**Date of Collection:**	**5/19/09 1:25:00 PM**
Dil. Factor:	**1.78**	**Date of Analysis:**	**5/30/09 09:58 PM**

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
1,1,2-Trichloroethane	0.89	Not Detected	4.8	Not Detected
Tetrachloroethene	0.89	Not Detected	6.0	Not Detected
2-Hexanone	3.6	Not Detected	14	Not Detected
Dibromochloromethane	0.89	Not Detected	7.6	Not Detected
1,2-Dibromoethane (EDB)	0.89	Not Detected	6.8	Not Detected
Chlorobenzene	0.89	Not Detected	4.1	Not Detected
Ethyl Benzene	0.89	1.1	3.9	4.8
m,p-Xylene	0.89	2.6	3.9	11
o-Xylene	0.89	1.1	3.9	4.8
Styrene	0.89	1.1	3.8	4.8
Bromoform	0.89	Not Detected	9.2	Not Detected
Cumene	0.89	Not Detected	4.4	Not Detected
1,1,2,2-Tetrachloroethane	0.89	Not Detected	6.1	Not Detected
Propylbenzene	0.89	Not Detected	4.4	Not Detected
4-Ethyltoluene	0.89	Not Detected	4.4	Not Detected
1,3,5-Trimethylbenzene	0.89	Not Detected	4.4	Not Detected
1,2,4-Trimethylbenzene	0.89	1.5	4.4	7.6
1,3-Dichlorobenzene	0.89	Not Detected	5.4	Not Detected
1,4-Dichlorobenzene	0.89	Not Detected	5.4	Not Detected
alpha-Chlorotoluene	0.89	Not Detected	4.6	Not Detected
1,2-Dichlorobenzene	0.89	Not Detected	5.4	Not Detected
1,2,4-Trichlorobenzene	3.6	Not Detected	26	Not Detected
Hexachlorobutadiene	3.6	Not Detected	38	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: 051909GP-05

Lab ID#: 0905548A-09A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053118**	**Date of Collection:**	**5/19/09 1:50:00 PM**
Dil. Factor:	**1.71**	**Date of Analysis:**	**5/31/09 09:48 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.86	68	4.2	340
Freon 114	0.86	6.3	6.0	44
Chloromethane	3.4	Not Detected	7.1	Not Detected
Vinyl Chloride	0.86	Not Detected	2.2	Not Detected
1,3-Butadiene	0.86	Not Detected	1.9	Not Detected
Bromomethane	0.86	Not Detected	3.3	Not Detected
Chloroethane	0.86	Not Detected	2.2	Not Detected
Freon 11	0.86	2.8	4.8	16
Ethanol	3.4	Not Detected	6.4	Not Detected
Freon 113	0.86	Not Detected	6.6	Not Detected
1,1-Dichloroethene	0.86	Not Detected	3.4	Not Detected
Acetone	3.4	15	8.1	36
2-Propanol	3.4	Not Detected	8.4	Not Detected
Carbon Disulfide	0.86	Not Detected	2.7	Not Detected
3-Chloropropene	3.4	Not Detected	11	Not Detected
Methylene Chloride	0.86	Not Detected	3.0	Not Detected
Methyl tert-butyl ether	0.86	Not Detected	3.1	Not Detected
trans-1,2-Dichloroethene	0.86	Not Detected	3.4	Not Detected
Hexane	0.86	Not Detected	3.0	Not Detected
1,1-Dichloroethane	0.86	Not Detected	3.5	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.86	Not Detected	2.5	Not Detected
cis-1,2-Dichloroethene	0.86	Not Detected	3.4	Not Detected
Tetrahydrofuran	0.86	Not Detected	2.5	Not Detected
Chloroform	0.86	Not Detected	4.2	Not Detected
1,1,1-Trichloroethane	0.86	Not Detected	4.7	Not Detected
Cyclohexane	0.86	Not Detected	2.9	Not Detected
Carbon Tetrachloride	0.86	Not Detected	5.4	Not Detected
2,2,4-Trimethylpentane	0.86	Not Detected	4.0	Not Detected
Benzene	0.86	Not Detected	2.7	Not Detected
1,2-Dichloroethane	0.86	Not Detected	3.5	Not Detected
Heptane	0.86	Not Detected	3.5	Not Detected
Trichloroethene	0.86	Not Detected	4.6	Not Detected
1,2-Dichloropropane	0.86	Not Detected	4.0	Not Detected
1,4-Dioxane	3.4	Not Detected	12	Not Detected
Bromodichloromethane	0.86	Not Detected	5.7	Not Detected
cis-1,3-Dichloropropene	0.86	Not Detected	3.9	Not Detected
4-Methyl-2-pentanone	0.86	Not Detected	3.5	Not Detected
Toluene	0.86	1.8	3.2	7.0
trans-1,3-Dichloropropene	0.86	Not Detected	3.9	Not Detected

Client Sample ID: 051909GP-05

Lab ID#: 0905548A-09A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053118**	**Date of Collection: 5/19/09 1:50:00 PM**
Dil. Factor:	**1.71**	**Date of Analysis: 5/31/09 09:48 PM**

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
1,1,2-Trichloroethane	0.86	Not Detected	4.7	Not Detected
Tetrachloroethene	0.86	130	5.8	850
2-Hexanone	3.4	Not Detected	14	Not Detected
Dibromochloromethane	0.86	Not Detected	7.3	Not Detected
1,2-Dibromoethane (EDB)	0.86	Not Detected	6.6	Not Detected
Chlorobenzene	0.86	Not Detected	3.9	Not Detected
Ethyl Benzene	0.86	0.85 J	3.7	3.7 J
m,p-Xylene	0.86	1.9	3.7	8.2
o-Xylene	0.86	Not Detected	3.7	Not Detected
Styrene	0.86	1.3	3.6	5.7
Bromoform	0.86	Not Detected	8.8	Not Detected
Cumene	0.86	Not Detected	4.2	Not Detected
1,1,2,2-Tetrachloroethane	0.86	Not Detected	5.9	Not Detected
Propylbenzene	0.86	Not Detected	4.2	Not Detected
4-Ethyltoluene	0.86	Not Detected	4.2	Not Detected
1,3,5-Trimethylbenzene	0.86	Not Detected	4.2	Not Detected
1,2,4-Trimethylbenzene	0.86	1.2	4.2	5.9
1,3-Dichlorobenzene	0.86	Not Detected	5.1	Not Detected
1,4-Dichlorobenzene	0.86	Not Detected	5.1	Not Detected
alpha-Chlorotoluene	0.86	Not Detected	4.4	Not Detected
1,2-Dichlorobenzene	0.86	Not Detected	5.1	Not Detected
1,2,4-Trichlorobenzene	3.4	Not Detected	25	Not Detected
Hexachlorobutadiene	3.4	Not Detected	36	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	99	70-130

Client Sample ID: 051909GP-FD

Lab ID#: 0905548A-10A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053106**	**Date of Collection: 5/19/09 2:15:00 PM**
Dil. Factor:	**1.78**	**Date of Analysis: 5/31/09 12:24 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.89	Not Detected	4.4	Not Detected
Freon 114	0.89	Not Detected	6.2	Not Detected
Chloromethane	3.6	Not Detected	7.4	Not Detected
Vinyl Chloride	0.89	Not Detected	2.3	Not Detected
1,3-Butadiene	0.89	Not Detected	2.0	Not Detected
Bromomethane	0.89	Not Detected	3.4	Not Detected
Chloroethane	0.89	Not Detected	2.3	Not Detected
Freon 11	0.89	Not Detected	5.0	Not Detected
Ethanol	3.6	Not Detected	6.7	Not Detected
Freon 113	0.89	Not Detected	6.8	Not Detected
1,1-Dichloroethene	0.89	Not Detected	3.5	Not Detected
Acetone	3.6	26	8.4	61
2-Propanol	3.6	Not Detected	8.7	Not Detected
Carbon Disulfide	0.89	Not Detected	2.8	Not Detected
3-Chloropropene	3.6	Not Detected	11	Not Detected
Methylene Chloride	0.89	1.3	3.1	4.4
Methyl tert-butyl ether	0.89	Not Detected	3.2	Not Detected
trans-1,2-Dichloroethene	0.89	Not Detected	3.5	Not Detected
Hexane	0.89	Not Detected	3.1	Not Detected
1,1-Dichloroethane	0.89	Not Detected	3.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.89	1.8	2.6	5.4
cis-1,2-Dichloroethene	0.89	Not Detected	3.5	Not Detected
Tetrahydrofuran	0.89	Not Detected	2.6	Not Detected
Chloroform	0.89	Not Detected	4.3	Not Detected
1,1,1-Trichloroethane	0.89	Not Detected	4.8	Not Detected
Cyclohexane	0.89	Not Detected	3.1	Not Detected
Carbon Tetrachloride	0.89	Not Detected	5.6	Not Detected
2,2,4-Trimethylpentane	0.89	Not Detected	4.2	Not Detected
Benzene	0.89	Not Detected	2.8	Not Detected
1,2-Dichloroethane	0.89	Not Detected	3.6	Not Detected
Heptane	0.89	Not Detected	3.6	Not Detected
Trichloroethene	0.89	Not Detected	4.8	Not Detected
1,2-Dichloropropane	0.89	Not Detected	4.1	Not Detected
1,4-Dioxane	3.6	Not Detected	13	Not Detected
Bromodichloromethane	0.89	Not Detected	6.0	Not Detected
cis-1,3-Dichloropropene	0.89	Not Detected	4.0	Not Detected
4-Methyl-2-pentanone	0.89	Not Detected	3.6	Not Detected
Toluene	0.89	10	3.4	40
trans-1,3-Dichloropropene	0.89	Not Detected	4.0	Not Detected

Client Sample ID: 051909GP-FD

Lab ID#: 0905548A-10A

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053106**	**Date of Collection: 5/19/09 2:15:00 PM**
Dil. Factor:	**1.78**	**Date of Analysis: 5/31/09 12:24 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2-Trichloroethane	0.89	Not Detected	4.8	Not Detected
Tetrachloroethene	0.89	Not Detected	6.0	Not Detected
2-Hexanone	3.6	Not Detected	14	Not Detected
Dibromochloromethane	0.89	Not Detected	7.6	Not Detected
1,2-Dibromoethane (EDB)	0.89	Not Detected	6.8	Not Detected
Chlorobenzene	0.89	Not Detected	4.1	Not Detected
Ethyl Benzene	0.89	1.2	3.9	5.4
m,p-Xylene	0.89	3.4	3.9	15
o-Xylene	0.89	1.2	3.9	5.3
Styrene	0.89	1.0	3.8	4.5
Bromoform	0.89	Not Detected	9.2	Not Detected
Cumene	0.89	Not Detected	4.4	Not Detected
1,1,2,2-Tetrachloroethane	0.89	Not Detected	6.1	Not Detected
Propylbenzene	0.89	Not Detected	4.4	Not Detected
4-Ethyltoluene	0.89	Not Detected	4.4	Not Detected
1,3,5-Trimethylbenzene	0.89	Not Detected	4.4	Not Detected
1,2,4-Trimethylbenzene	0.89	1.5	4.4	7.6
1,3-Dichlorobenzene	0.89	Not Detected	5.4	Not Detected
1,4-Dichlorobenzene	0.89	Not Detected	5.4	Not Detected
alpha-Chlorotoluene	0.89	Not Detected	4.6	Not Detected
1,2-Dichlorobenzene	0.89	Not Detected	5.4	Not Detected
1,2,4-Trichlorobenzene	3.6	Not Detected	26	Not Detected
Hexachlorobutadiene	3.6	Not Detected	38	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: 051909GP-FD Lab Duplicate

Lab ID#: 0905548A-10AA

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053117**	**Date of Collection:**	**5/19/09 2:15:00 PM**
Dil. Factor:	**1.79**	**Date of Analysis:**	**5/31/09 08:53 PM**

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
Freon 12	0.90	Not Detected	4.4	Not Detected
Freon 114	0.90	Not Detected	6.2	Not Detected
Chloromethane	3.6	Not Detected	7.4	Not Detected
Vinyl Chloride	0.90	Not Detected	2.3	Not Detected
1,3-Butadiene	0.90	Not Detected	2.0	Not Detected
Bromomethane	0.90	Not Detected	3.5	Not Detected
Chloroethane	0.90	Not Detected	2.4	Not Detected
Freon 11	0.90	Not Detected	5.0	Not Detected
Ethanol	3.6	Not Detected	6.7	Not Detected
Freon 113	0.90	Not Detected	6.8	Not Detected
1,1-Dichloroethene	0.90	Not Detected	3.5	Not Detected
Acetone	3.6	23	8.5	54
2-Propanol	3.6	Not Detected	8.8	Not Detected
Carbon Disulfide	0.90	Not Detected	2.8	Not Detected
3-Chloropropene	3.6	Not Detected	11	Not Detected
Methylene Chloride	0.90	1.4	3.1	4.8
Methyl tert-butyl ether	0.90	Not Detected	3.2	Not Detected
trans-1,2-Dichloroethene	0.90	Not Detected	3.5	Not Detected
Hexane	0.90	Not Detected	3.2	Not Detected
1,1-Dichloroethane	0.90	Not Detected	3.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.90	1.9	2.6	5.5
cis-1,2-Dichloroethene	0.90	Not Detected	3.5	Not Detected
Tetrahydrofuran	0.90	Not Detected	2.6	Not Detected
Chloroform	0.90	Not Detected	4.4	Not Detected
1,1,1-Trichloroethane	0.90	Not Detected	4.9	Not Detected
Cyclohexane	0.90	Not Detected	3.1	Not Detected
Carbon Tetrachloride	0.90	Not Detected	5.6	Not Detected
2,2,4-Trimethylpentane	0.90	Not Detected	4.2	Not Detected
Benzene	0.90	Not Detected	2.8	Not Detected
1,2-Dichloroethane	0.90	Not Detected	3.6	Not Detected
Heptane	0.90	Not Detected	3.7	Not Detected
Trichloroethene	0.90	Not Detected	4.8	Not Detected
1,2-Dichloropropane	0.90	Not Detected	4.1	Not Detected
1,4-Dioxane	3.6	Not Detected	13	Not Detected
Bromodichloromethane	0.90	Not Detected	6.0	Not Detected
cis-1,3-Dichloropropene	0.90	Not Detected	4.1	Not Detected
4-Methyl-2-pentanone	0.90	Not Detected	3.7	Not Detected
Toluene	0.90	11	3.4	42
trans-1,3-Dichloropropene	0.90	Not Detected	4.1	Not Detected

Client Sample ID: 051909GP-FD Lab Duplicate

Lab ID#: 0905548A-10AA

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053117**	**Date of Collection:**	**5/19/09 2:15:00 PM**
Dil. Factor:	**1.79**	**Date of Analysis:**	**5/31/09 08:53 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2-Trichloroethane	0.90	Not Detected	4.9	Not Detected
Tetrachloroethene	0.90	Not Detected	6.1	Not Detected
2-Hexanone	3.6	Not Detected	15	Not Detected
Dibromochloromethane	0.90	Not Detected	7.6	Not Detected
1,2-Dibromoethane (EDB)	0.90	Not Detected	6.9	Not Detected
Chlorobenzene	0.90	Not Detected	4.1	Not Detected
Ethyl Benzene	0.90	1.4	3.9	5.9
m,p-Xylene	0.90	3.6	3.9	16
o-Xylene	0.90	1.3	3.9	5.5
Styrene	0.90	1.0	3.8	4.5
Bromoform	0.90	Not Detected	9.2	Not Detected
Cumene	0.90	Not Detected	4.4	Not Detected
1,1,2,2-Tetrachloroethane	0.90	Not Detected	6.1	Not Detected
Propylbenzene	0.90	Not Detected	4.4	Not Detected
4-Ethyltoluene	0.90	Not Detected	4.4	Not Detected
1,3,5-Trimethylbenzene	0.90	Not Detected	4.4	Not Detected
1,2,4-Trimethylbenzene	0.90	1.5	4.4	7.5
1,3-Dichlorobenzene	0.90	Not Detected	5.4	Not Detected
1,4-Dichlorobenzene	0.90	Not Detected	5.4	Not Detected
alpha-Chlorotoluene	0.90	Not Detected	4.6	Not Detected
1,2-Dichlorobenzene	0.90	Not Detected	5.4	Not Detected
1,2,4-Trichlorobenzene	3.6	Not Detected	26	Not Detected
Hexachlorobutadiene	3.6	Not Detected	38	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: Lab Blank

Lab ID#: 0905548A-11A

MODIFIED EPA METHOD TO-14 GC/MS

File Name:	**w052906**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis:**	**5/29/09 12:18 PM**

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
Freon 12	5.0	Not Detected	25	Not Detected
Freon 114	5.0	Not Detected	35	Not Detected
Chloromethane	20	Not Detected	41	Not Detected
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,3-Butadiene	5.0	Not Detected	11	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	5.0	Not Detected	13	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	20	Not Detected	38	Not Detected
Freon 113	5.0	Not Detected	38	Not Detected
1,1-Dichloroethene	5.0	Not Detected	20	Not Detected
Acetone	20	Not Detected	48	Not Detected
2-Propanol	20	Not Detected	49	Not Detected
Carbon Disulfide	5.0	Not Detected	16	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Hexane	5.0	Not Detected	18	Not Detected
1,1-Dichloroethane	5.0	Not Detected	20	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.0	Not Detected	15	Not Detected
cis-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Tetrahydrofuran	5.0	Not Detected	15	Not Detected
Chloroform	5.0	Not Detected	24	Not Detected
1,1,1-Trichloroethane	5.0	Not Detected	27	Not Detected
Cyclohexane	5.0	Not Detected	17	Not Detected
Carbon Tetrachloride	5.0	Not Detected	31	Not Detected
2,2,4-Trimethylpentane	5.0	Not Detected	23	Not Detected
Benzene	5.0	Not Detected	16	Not Detected
1,2-Dichloroethane	5.0	Not Detected	20	Not Detected
Heptane	5.0	Not Detected	20	Not Detected
Trichloroethene	5.0	Not Detected	27	Not Detected
1,2-Dichloropropane	5.0	Not Detected	23	Not Detected
1,4-Dioxane	20	Not Detected	72	Not Detected
Bromodichloromethane	5.0	Not Detected	34	Not Detected
cis-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
4-Methyl-2-pentanone	5.0	Not Detected	20	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
trans-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 0905548A-11A

MODIFIED EPA METHOD TO-14 GC/MS

File Name:	**w052906**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis:**	**5/29/09 12:18 PM**

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
1,1,2-Trichloroethane	5.0	Not Detected	27	Not Detected
Tetrachloroethene	5.0	Not Detected	34	Not Detected
2-Hexanone	20	Not Detected	82	Not Detected
Dibromochloromethane	5.0	Not Detected	42	Not Detected
1,2-Dibromoethane (EDB)	5.0	Not Detected	38	Not Detected
Chlorobenzene	5.0	Not Detected	23	Not Detected
Ethyl Benzene	5.0	Not Detected	22	Not Detected
m,p-Xylene	5.0	Not Detected	22	Not Detected
o-Xylene	5.0	Not Detected	22	Not Detected
Styrene	5.0	Not Detected	21	Not Detected
Bromoform	5.0	Not Detected	52	Not Detected
Cumene	5.0	Not Detected	24	Not Detected
1,1,2,2-Tetrachloroethane	5.0	Not Detected	34	Not Detected
Propylbenzene	5.0	Not Detected	24	Not Detected
4-Ethyltoluene	5.0	Not Detected	24	Not Detected
1,3,5-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,2,4-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,3-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,4-Dichlorobenzene	5.0	Not Detected	30	Not Detected
alpha-Chlorotoluene	5.0	Not Detected	26	Not Detected
1,2-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,2,4-Trichlorobenzene	20	Not Detected	150	Not Detected
Hexachlorobutadiene	20	Not Detected	210	Not Detected

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: Lab Blank

Lab ID#: 0905548A-11B

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	t053005	**Date of Collection: NA**	
Dil. Factor:	1.00	**Date of Analysis:**	**5/30/09 11:15 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	2.0	Not Detected	4.1	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	2.0	Not Detected	4.8	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	0.50	Not Detected	1.7	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 0905548A-11B

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053005**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 5/30/09 11:15 AM**

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: Lab Blank

Lab ID#: 0905548A-11C

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	t053105	**Date of Collection:** NA	
Dil. Factor:	1.00	**Date of Analysis:** 5/31/09 11:32 AM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	2.0	Not Detected	4.1	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	2.0	Not Detected	4.8	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	0.50	Not Detected	1.7	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 0905548A-11C

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name: t053105 **Date of Collection:** NA
Dil. Factor: 1.00 **Date of Analysis:** 5/31/09 11:32 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: CCV

Lab ID#: 0905548A-12A

MODIFIED EPA METHOD TO-14 GC/MS

File Name:	w052902	**Date of Collection: NA**
Dil. Factor:	1.00	**Date of Analysis: 5/29/09 10:07 AM**

Compound	%Recovery
Freon 12	116
Freon 114	117
Chloromethane	114
Vinyl Chloride	97
1,3-Butadiene	95
Bromomethane	96
Chloroethane	111
Freon 11	122
Ethanol	134 Q
Freon 113	117
1,1-Dichloroethene	106
Acetone	104
2-Propanol	109
Carbon Disulfide	106
3-Chloropropene	100
Methylene Chloride	112
Methyl tert-butyl ether	96
trans-1,2-Dichloroethene	104
Hexane	104
1,1-Dichloroethane	105
2-Butanone (Methyl Ethyl Ketone)	100
cis-1,2-Dichloroethene	107
Tetrahydrofuran	110
Chloroform	108
1,1,1-Trichloroethane	112
Cyclohexane	100
Carbon Tetrachloride	118
2,2,4-Trimethylpentane	104
Benzene	104
1,2-Dichloroethane	111
Heptane	108
Trichloroethene	106
1,2-Dichloropropane	102
1,4-Dioxane	106
Bromodichloromethane	109
cis-1,3-Dichloropropene	102
4-Methyl-2-pentanone	94
Toluene	106
trans-1,3-Dichloropropene	103

Client Sample ID: CCV

Lab ID#: 0905548A-12A

MODIFIED EPA METHOD TO-14 GC/MS

File Name:	**w052902**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 5/29/09 10:07 AM**

Compound	%Recovery
1,1,2-Trichloroethane	107
Tetrachloroethene	119
2-Hexanone	98
Dibromochloromethane	114
1,2-Dibromoethane (EDB)	111
Chlorobenzene	109
Ethyl Benzene	109
m,p-Xylene	109
o-Xylene	108
Styrene	107
Bromoform	119
Cumene	110
1,1,2,2-Tetrachloroethane	104
Propylbenzene	106
4-Ethyltoluene	110
1,3,5-Trimethylbenzene	110
1,2,4-Trimethylbenzene	107
1,3-Dichlorobenzene	113
1,4-Dichlorobenzene	114
alpha-Chlorotoluene	105
1,2-Dichlorobenzene	114
1,2,4-Trichlorobenzene	103
Hexachlorobutadiene	99

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	104	70-130

Client Sample ID: CCV

Lab ID#: 0905548A-12B

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053002**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 5/30/09 08:07 AM**

Compound	%Recovery
Freon 12	98
Freon 114	87
Chloromethane	94
Vinyl Chloride	96
1,3-Butadiene	91
Bromomethane	104
Chloroethane	96
Freon 11	92
Ethanol	91
Freon 113	95
1,1-Dichloroethene	90
Acetone	106
2-Propanol	100
Carbon Disulfide	91
3-Chloropropene	96
Methylene Chloride	86
Methyl tert-butyl ether	103
trans-1,2-Dichloroethene	96
Hexane	100
1,1-Dichloroethane	96
2-Butanone (Methyl Ethyl Ketone)	99
cis-1,2-Dichloroethene	95
Tetrahydrofuran	96
Chloroform	100
1,1,1-Trichloroethane	98
Cyclohexane	91
Carbon Tetrachloride	101
2,2,4-Trimethylpentane	96
Benzene	92
1,2-Dichloroethane	103
Heptane	99
Trichloroethene	96
1,2-Dichloropropane	95
1,4-Dioxane	95
Bromodichloromethane	103
cis-1,3-Dichloropropene	105
4-Methyl-2-pentanone	106
Toluene	98
trans-1,3-Dichloropropene	110

Client Sample ID: CCV

Lab ID#: 0905548A-12B

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053002**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 5/30/09 08:07 AM**

Compound	%Recovery
1,1,2-Trichloroethane	96
Tetrachloroethene	96
2-Hexanone	95
Dibromochloromethane	103
1,2-Dibromoethane (EDB)	103
Chlorobenzene	96
Ethyl Benzene	98
m,p-Xylene	97
o-Xylene	94
Styrene	100
Bromoform	102
Cumene	96
1,1,2,2-Tetrachloroethane	90
Propylbenzene	95
4-Ethyltoluene	96
1,3,5-Trimethylbenzene	86
1,2,4-Trimethylbenzene	89
1,3-Dichlorobenzene	88
1,4-Dichlorobenzene	88
alpha-Chlorotoluene	97
1,2-Dichlorobenzene	90
1,2,4-Trichlorobenzene	102
Hexachlorobutadiene	98

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: CCV

Lab ID#: 0905548A-12C

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053103**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 5/31/09 09:45 AM**

Compound	%Recovery
Freon 12	99
Freon 114	102
Chloromethane	99
Vinyl Chloride	97
1,3-Butadiene	105
Bromomethane	100
Chloroethane	91
Freon 11	112
Ethanol	109
Freon 113	102
1,1-Dichloroethene	102
Acetone	108
2-Propanol	102
Carbon Disulfide	98
3-Chloropropene	94
Methylene Chloride	99
Methyl tert-butyl ether	106
trans-1,2-Dichloroethene	100
Hexane	105
1,1-Dichloroethane	106
2-Butanone (Methyl Ethyl Ketone)	107
cis-1,2-Dichloroethene	105
Tetrahydrofuran	102
Chloroform	107
1,1,1-Trichloroethane	114
Cyclohexane	107
Carbon Tetrachloride	116
2,2,4-Trimethylpentane	106
Benzene	108
1,2-Dichloroethane	116
Heptane	117
Trichloroethene	110
1,2-Dichloropropane	105
1,4-Dioxane	103
Bromodichloromethane	115
cis-1,3-Dichloropropene	110
4-Methyl-2-pentanone	117
Toluene	106
trans-1,3-Dichloropropene	111

Client Sample ID: CCV

Lab ID#: 0905548A-12C

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name: t053103 **Date of Collection:** NA
Dil. Factor: 1.00 **Date of Analysis:** 5/31/09 09:45 AM

Compound	%Recovery
1,1,2-Trichloroethane	104
Tetrachloroethene	111
2-Hexanone	99
Dibromochloromethane	113
1,2-Dibromoethane (EDB)	111
Chlorobenzene	105
Ethyl Benzene	109
m,p-Xylene	109
o-Xylene	111
Styrene	111
Bromoform	118
Cumene	110
1,1,2,2-Tetrachloroethane	105
Propylbenzene	108
4-Ethyltoluene	115
1,3,5-Trimethylbenzene	105
1,2,4-Trimethylbenzene	108
1,3-Dichlorobenzene	104
1,4-Dichlorobenzene	105
alpha-Chlorotoluene	102
1,2-Dichlorobenzene	102
1,2,4-Trichlorobenzene	100
Hexachlorobutadiene	103

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	108	70-130

Client Sample ID: LCS

Lab ID#: 0905548A-13A

MODIFIED EPA METHOD TO-14 GC/MS

File Name:	**w052904**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 5/29/09 11:25 AM**

Compound	**%Recovery**
Freon 12	113
Freon 114	121
Chloromethane	112
Vinyl Chloride	104
1,3-Butadiene	105
Bromomethane	108
Chloroethane	107
Freon 11	125
Ethanol	88
Freon 113	121
1,1-Dichloroethene	109
Acetone	104
2-Propanol	118
Carbon Disulfide	100
3-Chloropropene	93
Methylene Chloride	114
Methyl tert-butyl ether	107
trans-1,2-Dichloroethene	99
Hexane	98
1,1-Dichloroethane	107
2-Butanone (Methyl Ethyl Ketone)	96
cis-1,2-Dichloroethene	96
Tetrahydrofuran	101
Chloroform	110
1,1,1-Trichloroethane	118
Cyclohexane	93
Carbon Tetrachloride	119
2,2,4-Trimethylpentane	97
Benzene	107
1,2-Dichloroethane	115
Heptane	97
Trichloroethene	112
1,2-Dichloropropane	105
1,4-Dioxane	97
Bromodichloromethane	104
cis-1,3-Dichloropropene	110
4-Methyl-2-pentanone	93
Toluene	111
trans-1,3-Dichloropropene	110

Client Sample ID: LCS

Lab ID#: 0905548A-13A

MODIFIED EPA METHOD TO-14 GC/MS

File Name: w052904
Dil. Factor: 1.00
Date of Collection: NA
Date of Analysis: 5/29/09 11:25 AM

Compound	%Recovery
1,1,2-Trichloroethane	110
Tetrachloroethene	122
2-Hexanone	95
Dibromochloromethane	108
1,2-Dibromoethane (EDB)	116
Chlorobenzene	112
Ethyl Benzene	114
m,p-Xylene	113
o-Xylene	114
Styrene	117
Bromoform	116
Cumene	117
1,1,2,2-Tetrachloroethane	110
Propylbenzene	102
4-Ethyltoluene	107
1,3,5-Trimethylbenzene	116
1,2,4-Trimethylbenzene	117
1,3-Dichlorobenzene	122
1,4-Dichlorobenzene	124
alpha-Chlorotoluene	122
1,2-Dichlorobenzene	123
1,2,4-Trichlorobenzene	103
Hexachlorobutadiene	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: LCS

Lab ID#: 0905548A-13B

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053003**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 5/30/09 08:44 AM**

Compound	%Recovery
Freon 12	80
Freon 114	70
Chloromethane	80
Vinyl Chloride	80
1,3-Butadiene	77
Bromomethane	84
Chloroethane	80
Freon 11	80
Ethanol	56 Q
Freon 113	89
1,1-Dichloroethene	88
Acetone	94
2-Propanol	92
Carbon Disulfide	77
3-Chloropropene	81
Methylene Chloride	80
Methyl tert-butyl ether	89
trans-1,2-Dichloroethene	82
Hexane	89
1,1-Dichloroethane	88
2-Butanone (Methyl Ethyl Ketone)	85
cis-1,2-Dichloroethene	82
Tetrahydrofuran	84
Chloroform	89
1,1,1-Trichloroethane	87
Cyclohexane	80
Carbon Tetrachloride	89
2,2,4-Trimethylpentane	85
Benzene	82
1,2-Dichloroethane	93
Heptane	91
Trichloroethene	85
1,2-Dichloropropane	84
1,4-Dioxane	83
Bromodichloromethane	92
cis-1,3-Dichloropropene	91
4-Methyl-2-pentanone	100
Toluene	89
trans-1,3-Dichloropropene	95

Client Sample ID: LCS

Lab ID#: 0905548A-13B

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053003**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 5/30/09 08:44 AM**

Compound	%Recovery
1,1,2-Trichloroethane	84
Tetrachloroethene	87
2-Hexanone	88
Dibromochloromethane	92
1,2-Dibromoethane (EDB)	88
Chlorobenzene	82
Ethyl Benzene	84
m,p-Xylene	84
o-Xylene	82
Styrene	87
Bromoform	91
Cumene	86
1,1,2,2-Tetrachloroethane	77
Propylbenzene	83
4-Ethyltoluene	84
1,3,5-Trimethylbenzene	76
1,2,4-Trimethylbenzene	79
1,3-Dichlorobenzene	77
1,4-Dichlorobenzene	77
alpha-Chlorotoluene	87
1,2-Dichlorobenzene	79
1,2,4-Trichlorobenzene	85
Hexachlorobutadiene	83

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	105	70-130

Client Sample ID: LCS

Lab ID#: 0905548A-13C

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053104**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 5/31/09 10:28 AM**

Compound	%Recovery
Freon 12	82
Freon 114	82
Chloromethane	83
Vinyl Chloride	81
1,3-Butadiene	86
Bromomethane	86
Chloroethane	79
Freon 11	89
Ethanol	64
Freon 113	95
1,1-Dichloroethene	95
Acetone	97
2-Propanol	93
Carbon Disulfide	84
3-Chloropropene	84
Methylene Chloride	91
Methyl tert-butyl ether	93
trans-1,2-Dichloroethene	87
Hexane	91
1,1-Dichloroethane	92
2-Butanone (Methyl Ethyl Ketone)	89
cis-1,2-Dichloroethene	88
Tetrahydrofuran	86
Chloroform	93
1,1,1-Trichloroethane	96
Cyclohexane	89
Carbon Tetrachloride	98
2,2,4-Trimethylpentane	90
Benzene	89
1,2-Dichloroethane	98
Heptane	96
Trichloroethene	91
1,2-Dichloropropane	89
1,4-Dioxane	87
Bromodichloromethane	97
cis-1,3-Dichloropropene	94
4-Methyl-2-pentanone	101
Toluene	95
trans-1,3-Dichloropropene	93

Client Sample ID: LCS

Lab ID#: 0905548A-13C

MODIFIED EPA METHOD TO-14A GC/MS FULL SCAN

File Name:	**t053104**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 5/31/09 10:28 AM**

Compound	%Recovery
1,1,2-Trichloroethane	87
Tetrachloroethene	92
2-Hexanone	86
Dibromochloromethane	95
1,2-Dibromoethane (EDB)	90
Chlorobenzene	87
Ethyl Benzene	90
m,p-Xylene	90
o-Xylene	91
Styrene	93
Bromoform	98
Cumene	95
1,1,2,2-Tetrachloroethane	89
Propylbenzene	95
4-Ethyltoluene	98
1,3,5-Trimethylbenzene	90
1,2,4-Trimethylbenzene	90
1,3-Dichlorobenzene	88
1,4-Dichlorobenzene	87
alpha-Chlorotoluene	90
1,2-Dichlorobenzene	85
1,2,4-Trichlorobenzene	82
Hexachlorobutadiene	83

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	109	70-130

Air Toxics LTD.
Laboratory Services Since 1989

5/29/2009
Mr. Stephen Becker
Asotin County
2901 6th Avenue

Clarkston WA 99403

Project Name:
Project #:
Workorder #: 0905548B

Dear Mr. Stephen Becker

The following report includes the data for the above referenced project for sample(s) received on 5/22/2009 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for you air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner
Project Manager

WORK ORDER #: 0905548B

Work Order Summary

CLIENT:
Mr. Stephen Becker
Asotin County
2901 6th Avenue
Clarkston, WA 99403

BILL TO:
Mr. Stephen Becker
Asotin County
2901 6th Avenue
Clarkston, WA 99403

PHONE: 509-758-1965

FAX: 509-758-1977

DATE RECEIVED: 05/22/2009

DATE COMPLETED: 05/29/2009

P.O. #

PROJECT #

CONTACT: Kelly Buettner

FRACTION #	**NAME**	**TEST**	**RECEIPT VAC./PRES.**	**FINAL PRESSURE**
01A	051909GPLGW-10	Modified ASTM D-1946	0.0 "Hg	5 psi
01AA	051909GPLGW-10 Lab Duplicate	Modified ASTM D-1946	0.0 "Hg	5 psi
02A	051909GPLGW-11	Modified ASTM D-1946	0.8 "Hg	5 psi
03A	051909LGW-04	Modified ASTM D-1946	0.6 "Hg	5 psi
04A	051909LGW-08	Modified ASTM D-1946	0.6 "Hg	5 psi
05A	051909GP-01D	Modified ASTM D-1946	0.6 "Hg	5 psi
06A	051909GP-03S	Modified ASTM D-1946	0.6 "Hg	5 psi
07A	051909GP-07	Modified ASTM D-1946	1.2 "Hg	5 psi
08A	051909GP-06	Modified ASTM D-1946	2.4 "Hg	5 psi
09A	051909GP-05	Modified ASTM D-1946	1.4 "Hg	5 psi
10A	051909GP-FD	Modified ASTM D-1946	2.4 "Hg	5 psi
11A	Lab Blank	Modified ASTM D-1946	NA	NA
12A	LCS	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Linda L. Freeman

Laboratory Director

DATE: 05/29/09

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/08, Expiration date: 06/30/09
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

LABORATORY NARRATIVE
Modified ASTM D-1946
Asotin County
Workorder# 0905548B

Ten 6 Liter Summa Canister samples were received on May 22, 2009. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***ASTM D-1946***	***ATL Modifications***
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A 3-point calibration curve is performed. Quantitation is based on a daily calibration standard which may or may not resemble the composition of the associated samples.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a >/= 95% accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections > 5 X's the RL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.
File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Summary of Detected Compounds
MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

Client Sample ID: 051909GPLGW-10

Lab ID#: 0905548B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	16
Methane	0.00016	13
Carbon Dioxide	0.016	10

Client Sample ID: 051909GPLGW-10 Lab Duplicate

Lab ID#: 0905548B-01AA

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	16
Methane	0.00016	13
Carbon Dioxide	0.016	9.9

Client Sample ID: 051909GPLGW-11

Lab ID#: 0905548B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.17	18
Methane	0.00017	6.3
Carbon Dioxide	0.017	5.7

Client Sample ID: 051909LGW-04

Lab ID#: 0905548B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	2.5
Methane	0.00016	49
Carbon Dioxide	0.016	33

Client Sample ID: 051909LGW-08

Lab ID#: 0905548B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	2.9
Methane	0.00016	18

Summary of Detected Compounds
MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

Client Sample ID: 051909LGW-08

Lab ID#: 0905548B-04A

Carbon Dioxide	0.016	22

Client Sample ID: 051909GP-01D

Lab ID#: 0905548B-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	20
Methane	0.00016	0.30
Carbon Dioxide	0.016	1.1

Client Sample ID: 051909GP-03S

Lab ID#: 0905548B-06A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	18
Carbon Dioxide	0.016	2.6

Client Sample ID: 051909GP-07

Lab ID#: 0905548B-07A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.17	19
Carbon Dioxide	0.017	1.1

Client Sample ID: 051909GP-06

Lab ID#: 0905548B-08A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.18	18
Carbon Dioxide	0.018	0.84

Client Sample ID: 051909GP-05

Lab ID#: 0905548B-09A

Compound	Rpt. Limit (%)	Amount (%)

Summary of Detected Compounds
MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

Client Sample ID: 051909GP-05

Lab ID#: 0905548B-09A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.17	21
Carbon Dioxide	0.017	0.70

Client Sample ID: 051909GP-FD

Lab ID#: 0905548B-10A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.18	18
Carbon Dioxide	0.018	0.82

Client Sample ID: 051909GPLGW-10

Lab ID#: 0905548B-01A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9052705**	**Date of Collection: 5/19/09 9:10:00 AM**
Dil. Factor:	**1.61**	**Date of Analysis: 5/27/09 09:54 AM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.16	16
Methane	0.00016	13
Carbon Dioxide	0.016	10

Container Type: 6 Liter Summa Canister

Client Sample ID: 051909GPLGW-10 Lab Duplicate

Lab ID#: 0905548B-01AA

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9052706**	**Date of Collection: 5/19/09 9:10:00 AM**
Dil. Factor:	**1.61**	**Date of Analysis: 5/27/09 10:16 AM**

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	16
Methane	0.00016	13
Carbon Dioxide	0.016	9.9

Container Type: 6 Liter Summa Canister

Client Sample ID: 051909GPLGW-11

Lab ID#: 0905548B-02A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9052707**	**Date of Collection:**	**5/19/09 9:35:00 AM**
Dil. Factor:	**1.66**	**Date of Analysis:**	**5/27/09 10:54 AM**

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.17	18
Methane	0.00017	6.3
Carbon Dioxide	0.017	5.7

Container Type: 6 Liter Summa Canister

Client Sample ID: 051909LGW-04

Lab ID#: 0905548B-03A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9052708**	**Date of Collection: 5/19/09 9:55:00 AM**
Dil. Factor:	**1.65**	**Date of Analysis: 5/27/09 11:16 AM**

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	2.5
Methane	0.00016	49
Carbon Dioxide	0.016	33

Container Type: 6 Liter Summa Canister

Client Sample ID: 051909LGW-08

Lab ID#: 0905548B-04A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9052709**	**Date of Collection: 5/19/09 10:15:00 AM**
Dil. Factor:	**1.65**	**Date of Analysis: 5/27/09 11:46 AM**

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	2.9
Methane	0.00016	18
Carbon Dioxide	0.016	22

Container Type: 6 Liter Summa Canister

Client Sample ID: 051909GP-01D

Lab ID#: 0905548B-05A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9052710**	**Date of Collection: 5/19/09 10:45:00 AM**
Dil. Factor:	**1.65**	**Date of Analysis: 5/27/09 12:09 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.16	20
Methane	0.00016	0.30
Carbon Dioxide	0.016	1.1

Container Type: 6 Liter Summa Canister

Client Sample ID: 051909GP-03S

Lab ID#: 0905548B-06A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9052711**	**Date of Collection:**	**5/19/09 11:10:00 AM**
Dil. Factor:	**1.65**	**Date of Analysis:**	**5/27/09 01:29 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.16	18
Methane	0.00016	Not Detected
Carbon Dioxide	0.016	2.6

Container Type: 6 Liter Summa Canister

Client Sample ID: 051909GP-07

Lab ID#: 0905548B-07A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9052712**	**Date of Collection: 5/19/09 1:05:00 PM**
Dil. Factor:	**1.69**	**Date of Analysis: 5/27/09 01:58 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.17	19
Methane	0.00017	Not Detected
Carbon Dioxide	0.017	1.1

Container Type: 6 Liter Summa Canister

Client Sample ID: 051909GP-06

Lab ID#: 0905548B-08A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9052713**	**Date of Collection:**	**5/19/09 1:25:00 PM**
Dil. Factor:	**1.78**	**Date of Analysis:**	**5/27/09 02:32 PM**

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.18	18
Methane	0.00018	Not Detected
Carbon Dioxide	0.018	0.84

Container Type: 6 Liter Summa Canister

Client Sample ID: 051909GP-05

Lab ID#: 0905548B-09A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9052714**	**Date of Collection: 5/19/09 1:50:00 PM**
Dil. Factor:	**1.70**	**Date of Analysis: 5/27/09 02:55 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.17	21
Methane	0.00017	Not Detected
Carbon Dioxide	0.017	0.70

Container Type: 6 Liter Summa Canister

Client Sample ID: 051909GP-FD

Lab ID#: 0905548B-10A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9052715**	**Date of Collection: 5/19/09 2:15:00 PM**
Dil. Factor:	**1.78**	**Date of Analysis: 5/27/09 03:19 PM**

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.18	18
Methane	0.00018	Not Detected
Carbon Dioxide	0.018	0.82

Container Type: 6 Liter Summa Canister

Client Sample ID: Lab Blank

Lab ID#: 0905548B-11A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	**9052704**	**Date of Collection:**	**NA**
Dil. Factor:	**1.00**	**Date of Analysis:**	**5/27/09 09:29 AM**

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Methane	0.00010	Not Detected
Carbon Dioxide	0.010	Not Detected

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 0905548B-12A

MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946

File Name:	9052726	**Date of Collection: NA**
Dil. Factor:	1.00	**Date of Analysis: 5/27/09 09:25 PM**

Compound	%Recovery
Oxygen	100
Methane	102
Carbon Dioxide	100

Container Type: NA - Not Applicable

Air Toxics LTD.
Laboratory Services Since 1989

8/11/2009

Mr. Stephen Becker
Asotin County
2901 6th Avenue

Clarkston WA 99403

Project Name:
Project #:
Workorder #: 0907612A

Dear Mr. Stephen Becker

The following report includes the data for the above referenced project for sample(s) received on 7/28/2009 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner
Project Manager

@Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 0907612A

Work Order Summary

CLIENT: Mr. Stephen Becker
Asotin County
2901 6th Avenue
Clarkston, WA 99403

BILL TO: Mr. Stephen Becker
Asotin County
2901 6th Avenue
Clarkston, WA 99403

PHONE: 509-758-1965

FAX: 509-758-1977

DATE RECEIVED: 07/28/2009

DATE COMPLETED: 08/11/2009

P.O. #

PROJECT #

CONTACT: Kelly Buettner

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	GPLGW11072209	Modified TO-15	3.5 "Hg	5 psi
02A	GPLGW10072209	Modified TO-15	3.5 "Hg	5 psi
03A	LGW09072209	Modified TO-15	4.0 "Hg	5 psi
04A	LGW04072209	Modified TO-15	3.5 "Hg	5 psi
05A	Lab Blank	Modified TO-15	NA	NA
06A	CCV	Modified TO-15	NA	NA
07A	LCS	Modified TO-15	NA	NA

CERTIFIED BY: Linda L. Freeman

DATE: 08/11/09

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/08, Expiration date: 06/30/09
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

LABORATORY NARRATIVE
Modified TO-15
Asotin County
Workorder# 0907612A

Four 6 Liter Summa Canister samples were received on July 28, 2009. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	*TO-15*	*ATL Modifications*
Daily CCV	</= 30% Difference	</= 30% Difference; Compounds exceeding this criterion and associated data are flagged and narrated.
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The canisters in this work order were pressurized with Helium prior to sampling, per client request. Dilution factors have been adjusted accordingly.

All Quality Control Limit failures and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction no performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the reporting limit.
UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: GPLGW11072209

Lab ID#: 0907612A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	62	510	310	2500
Chloromethane	250	400	520	830
Vinyl Chloride	62	1400	160	3500
Chloroethane	62	190	160	510
Freon 11	62	140	350	770
1,1-Dichloroethene	62	80	250	320
Acetone	250	15000	590	35000
2-Propanol	250	6300	610	16000
Carbon Disulfide	62	150	190	460
Methylene Chloride	62	370	220	1300
trans-1,2-Dichloroethene	62	160	250	640
Hexane	62	4500	220	16000
2-Butanone (Methyl Ethyl Ketone)	62	5900	180	17000
cis-1,2-Dichloroethene	62	11000	250	44000
Tetrahydrofuran	62	480	180	1400
Cyclohexane	62	4200	220	14000
2,2,4-Trimethylpentane	62	1200	290	5700
Benzene	62	810	200	2600
Heptane	62	6100	260	25000
Trichloroethene	62	290	340	1500
Toluene	62	14000	240	54000
Tetrachloroethene	62	680	420	4600
2-Hexanone	250	280	1000	1100
Ethyl Benzene	62	1500	270	6700
m,p-Xylene	62	2700	270	12000
o-Xylene	62	870	270	3800
Styrene	62	100	270	440
Cumene	62	280	310	1400
Propylbenzene	62	83	310	410
4-Ethyltoluene	62	220	310	1100
1,3,5-Trimethylbenzene	62	140	310	660
1,2,4-Trimethylbenzene	62	430	310	2100

Client Sample ID: GPLGW10072209

Lab ID#: 0907612A-02A

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: GPLGW10072209

Lab ID#: 0907612A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	37	150	180	750
Chloromethane	150	390	310	800
Vinyl Chloride	37	1200	96	3100
Chloroethane	37	1600	99	4200
Ethanol	150	590	280	1100
1,1-Dichloroethene	37	66	150	260
Acetone	150	8900	360	21000
2-Propanol	150	2900	370	7000
Carbon Disulfide	37	49	120	150
Methylene Chloride	37	320	130	1100
trans-1,2-Dichloroethene	37	100	150	420
Hexane	37	6700	130	24000
1,1-Dichloroethane	37	63	150	260
2-Butanone (Methyl Ethyl Ketone)	37	4500	110	13000
cis-1,2-Dichloroethene	37	4900	150	19000
Tetrahydrofuran	37	340	110	990
Cyclohexane	37	4000	130	14000
2,2,4-Trimethylpentane	37	1600	170	7600
Benzene	37	550	120	1800
Heptane	37	3400	150	14000
Trichloroethene	37	460	200	2500
Toluene	37	9300	140	35000
Tetrachloroethene	37	650	250	4400
2-Hexanone	150	180	610	760
Ethyl Benzene	37	1600	160	7200
m,p-Xylene	37	3500	160	15000
o-Xylene	37	990	160	4300
Styrene	37	160	160	670
Cumene	37	340	180	1600
Propylbenzene	37	110	180	550
4-Ethyltoluene	37	370	180	1800
1,3,5-Trimethylbenzene	37	150	180	760
1,2,4-Trimethylbenzene	37	440	180	2200

Client Sample ID: LGW09072209

Lab ID#: 0907612A-03A

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: LGW09072209

Lab ID#: 0907612A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	38	520	190	2600
Freon 114	38	100	270	710
Vinyl Chloride	38	3500	98	9100
Chloroethane	38	190	100	510
Freon 11	38	98	210	550
Ethanol	150	930	290	1700
1,1-Dichloroethene	38	61	150	240
Acetone	150	2500	360	5900
2-Propanol	150	830	380	2000
Methylene Chloride	38	410	130	1400
trans-1,2-Dichloroethene	38	63	150	250
Hexane	38	2700	130	9600
1,1-Dichloroethane	38	40	150	160
2-Butanone (Methyl Ethyl Ketone)	38	1300	110	3800
cis-1,2-Dichloroethene	38	4400	150	18000
Tetrahydrofuran	38	620	110	1800
Cyclohexane	38	2000	130	6800
2,2,4-Trimethylpentane	38	900	180	4200
Benzene	38	450	120	1400
Heptane	38	2500	160	10000
Trichloroethene	38	590	200	3200
4-Methyl-2-pentanone	38	110	160	440
Toluene	38	9200	140	35000
Tetrachloroethene	38	1600	260	11000
Chlorobenzene	38	40	180	180
Ethyl Benzene	38	2200	160	9500
m,p-Xylene	38	4900	160	21000
o-Xylene	38	1400	160	6300
Styrene	38	190	160	830
Cumene	38	340	190	1700
Propylbenzene	38	190	190	950
4-Ethyltoluene	38	630	190	3100
1,3,5-Trimethylbenzene	38	260	190	1300
1,2,4-Trimethylbenzene	38	740	190	3600
1,4-Dichlorobenzene	38	220	230	1300

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: LGW04072209

Lab ID#: 0907612A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	37	570	180	2800
Freon 114	37	87	260	610
Vinyl Chloride	37	7800	96	20000
Chloroethane	37	210	99	550
Freon 11	37	38	210	210
Ethanol	150	4900	280	9300
1,1-Dichloroethene	37	110	150	430
Acetone	150	1600	360	3900
2-Propanol	150	2600	370	6400
Methylene Chloride	37	460	130	1600
trans-1,2-Dichloroethene	37	67	150	260
Hexane	37	2600	130	9200
1,1-Dichloroethane	37	50	150	200
2-Butanone (Methyl Ethyl Ketone)	37	1100	110	3100
cis-1,2-Dichloroethene	37	7200	150	28000
Tetrahydrofuran	37	650	110	1900
Cyclohexane	37	2100	130	7300
2,2,4-Trimethylpentane	37	990	170	4600
Benzene	37	530	120	1700
Heptane	37	2900	150	12000
Trichloroethene	37	280	200	1500
4-Methyl-2-pentanone	37	120	150	490
Toluene	37	10000	140	38000
Tetrachloroethene	37	730	250	5000
Ethyl Benzene	37	1400	160	6000
m,p-Xylene	37	3100	160	14000
o-Xylene	37	850	160	3700
Styrene	37	130	160	550
Cumene	37	240	180	1200
Propylbenzene	37	95	180	470
4-Ethyltoluene	37	380	180	1900
1,3,5-Trimethylbenzene	37	160	180	760
1,2,4-Trimethylbenzene	37	500	180	2400
1,4-Dichlorobenzene	37	60	220	360

Client Sample ID: GPLGW11072209

Lab ID#: 0907612A-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	7080817	**Date of Collection: 7/22/09 2:55:00 PM**
Dil. Factor:	125	**Date of Analysis: 8/8/09 07:02 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	62	510	310	2500
Freon 114	62	Not Detected	440	Not Detected
Chloromethane	250	400	520	830
Vinyl Chloride	62	1400	160	3500
1,3-Butadiene	62	Not Detected	140	Not Detected
Bromomethane	62	Not Detected	240	Not Detected
Chloroethane	62	190	160	510
Freon 11	62	140	350	770
Ethanol	250	Not Detected	470	Not Detected
Freon 113	62	Not Detected	480	Not Detected
1,1-Dichloroethene	62	80	250	320
Acetone	250	15000	590	35000
2-Propanol	250	6300	610	16000
Carbon Disulfide	62	150	190	460
3-Chloropropene	250	Not Detected	780	Not Detected
Methylene Chloride	62	370	220	1300
Methyl tert-butyl ether	62	Not Detected	220	Not Detected
trans-1,2-Dichloroethene	62	160	250	640
Hexane	62	4500	220	16000
1,1-Dichloroethane	62	Not Detected	250	Not Detected
2-Butanone (Methyl Ethyl Ketone)	62	5900	180	17000
cis-1,2-Dichloroethene	62	11000	250	44000
Tetrahydrofuran	62	480	180	1400
Chloroform	62	Not Detected	300	Not Detected
1,1,1-Trichloroethane	62	Not Detected	340	Not Detected
Cyclohexane	62	4200	220	14000
Carbon Tetrachloride	62	Not Detected	390	Not Detected
2,2,4-Trimethylpentane	62	1200	290	5700
Benzene	62	810	200	2600
1,2-Dichloroethane	62	Not Detected	250	Not Detected
Heptane	62	6100	260	25000
Trichloroethene	62	290	340	1500
1,2-Dichloropropane	62	Not Detected	290	Not Detected
1,4-Dioxane	250	Not Detected	900	Not Detected
Bromodichloromethane	62	Not Detected	420	Not Detected
cis-1,3-Dichloropropene	62	Not Detected	280	Not Detected
4-Methyl-2-pentanone	62	Not Detected	260	Not Detected
Toluene	62	14000	240	54000
trans-1,3-Dichloropropene	62	Not Detected	280	Not Detected

Client Sample ID: GPLGW11072209

Lab ID#: 0907612A-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**7080817**	**Date of Collection:**	**7/22/09 2:55:00 PM**
Dil. Factor:	**125**	**Date of Analysis:**	**8/8/09 07:02 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2-Trichloroethane	62	Not Detected	340	Not Detected
Tetrachloroethene	62	680	420	4600
2-Hexanone	250	280	1000	1100
Dibromochloromethane	62	Not Detected	530	Not Detected
1,2-Dibromoethane (EDB)	62	Not Detected	480	Not Detected
Chlorobenzene	62	Not Detected	290	Not Detected
Ethyl Benzene	62	1500	270	6700
m,p-Xylene	62	2700	270	12000
o-Xylene	62	870	270	3800
Styrene	62	100	270	440
Bromoform	62	Not Detected	650	Not Detected
Cumene	62	280	310	1400
1,1,2,2-Tetrachloroethane	62	Not Detected	430	Not Detected
Propylbenzene	62	83	310	410
4-Ethyltoluene	62	220	310	1100
1,3,5-Trimethylbenzene	62	140	310	660
1,2,4-Trimethylbenzene	62	430	310	2100
1,3-Dichlorobenzene	62	Not Detected	380	Not Detected
1,4-Dichlorobenzene	62	Not Detected	380	Not Detected
alpha-Chlorotoluene	62	Not Detected	320	Not Detected
1,2-Dichlorobenzene	62	Not Detected	380	Not Detected
1,2,4-Trichlorobenzene	250	Not Detected U J	1800	Not Detected U J
Hexachlorobutadiene	250	Not Detected	2700	Not Detected

UJ = Non-detected compound associated with low bias in the CCV

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	97	70-130

Client Sample ID: GPLGW10072209

Lab ID#: 0907612A-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**7080818**	**Date of Collection:**	**7/22/09 2:35:00 PM**
Dil. Factor:	**74.8**	**Date of Analysis:**	**8/8/09 07:56 PM**

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
Freon 12	37	150	180	750
Freon 114	37	Not Detected	260	Not Detected
Chloromethane	150	390	310	800
Vinyl Chloride	37	1200	96	3100
1,3-Butadiene	37	Not Detected	83	Not Detected
Bromomethane	37	Not Detected	140	Not Detected
Chloroethane	37	1600	99	4200
Freon 11	37	Not Detected	210	Not Detected
Ethanol	150	590	280	1100
Freon 113	37	Not Detected	290	Not Detected
1,1-Dichloroethene	37	66	150	260
Acetone	150	8900	360	21000
2-Propanol	150	2900	370	7000
Carbon Disulfide	37	49	120	150
3-Chloropropene	150	Not Detected	470	Not Detected
Methylene Chloride	37	320	130	1100
Methyl tert-butyl ether	37	Not Detected	130	Not Detected
trans-1,2-Dichloroethene	37	100	150	420
Hexane	37	6700	130	24000
1,1-Dichloroethane	37	63	150	260
2-Butanone (Methyl Ethyl Ketone)	37	4500	110	13000
cis-1,2-Dichloroethene	37	4900	150	19000
Tetrahydrofuran	37	340	110	990
Chloroform	37	Not Detected	180	Not Detected
1,1,1-Trichloroethane	37	Not Detected	200	Not Detected
Cyclohexane	37	4000	130	14000
Carbon Tetrachloride	37	Not Detected	240	Not Detected
2,2,4-Trimethylpentane	37	1600	170	7600
Benzene	37	550	120	1800
1,2-Dichloroethane	37	Not Detected	150	Not Detected
Heptane	37	3400	150	14000
Trichloroethene	37	460	200	2500
1,2-Dichloropropane	37	Not Detected	170	Not Detected
1,4-Dioxane	150	Not Detected	540	Not Detected
Bromodichloromethane	37	Not Detected	250	Not Detected
cis-1,3-Dichloropropene	37	Not Detected	170	Not Detected
4-Methyl-2-pentanone	37	Not Detected	150	Not Detected
Toluene	37	9300	140	35000
trans-1,3-Dichloropropene	37	Not Detected	170	Not Detected

Client Sample ID: GPLGW10072209

Lab ID#: 0907612A-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**7080818**	**Date of Collection:**	**7/22/09 2:35:00 PM**
Dil. Factor:	**74.8**	**Date of Analysis:**	**8/8/09 07:56 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2-Trichloroethane	37	Not Detected	200	Not Detected
Tetrachloroethene	37	650	250	4400
2-Hexanone	150	180	610	760
Dibromochloromethane	37	Not Detected	320	Not Detected
1,2-Dibromoethane (EDB)	37	Not Detected	290	Not Detected
Chlorobenzene	37	Not Detected	170	Not Detected
Ethyl Benzene	37	1600	160	7200
m,p-Xylene	37	3500	160	15000
o-Xylene	37	990	160	4300
Styrene	37	160	160	670
Bromoform	37	Not Detected	390	Not Detected
Cumene	37	340	180	1600
1,1,2,2-Tetrachloroethane	37	Not Detected	260	Not Detected
Propylbenzene	37	110	180	550
4-Ethyltoluene	37	370	180	1800
1,3,5-Trimethylbenzene	37	150	180	760
1,2,4-Trimethylbenzene	37	440	180	2200
1,3-Dichlorobenzene	37	Not Detected	220	Not Detected
1,4-Dichlorobenzene	37	Not Detected	220	Not Detected
alpha-Chlorotoluene	37	Not Detected	190	Not Detected
1,2-Dichlorobenzene	37	Not Detected	220	Not Detected
1,2,4-Trichlorobenzene	150	Not Detected U J	1100	Not Detected U J
Hexachlorobutadiene	150	Not Detected	1600	Not Detected

UJ = Non-detected compound associated with low bias in the CCV

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: LGW09072209

Lab ID#: 0907612A-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**7080819**	**Date of Collection:**	**7/22/09 3:45:00 PM**
Dil. Factor:	**76.4**	**Date of Analysis:**	**8/8/09 08:45 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	38	520	190	2600
Freon 114	38	100	270	710
Chloromethane	150	Not Detected	320	Not Detected
Vinyl Chloride	38	3500	98	9100
1,3-Butadiene	38	Not Detected	84	Not Detected
Bromomethane	38	Not Detected	150	Not Detected
Chloroethane	38	190	100	510
Freon 11	38	98	210	550
Ethanol	150	930	290	1700
Freon 113	38	Not Detected	290	Not Detected
1,1-Dichloroethene	38	61	150	240
Acetone	150	2500	360	5900
2-Propanol	150	830	380	2000
Carbon Disulfide	38	Not Detected	120	Not Detected
3-Chloropropene	150	Not Detected	480	Not Detected
Methylene Chloride	38	410	130	1400
Methyl tert-butyl ether	38	Not Detected	140	Not Detected
trans-1,2-Dichloroethene	38	63	150	250
Hexane	38	2700	130	9600
1,1-Dichloroethane	38	40	150	160
2-Butanone (Methyl Ethyl Ketone)	38	1300	110	3800
cis-1,2-Dichloroethene	38	4400	150	18000
Tetrahydrofuran	38	620	110	1800
Chloroform	38	Not Detected	190	Not Detected
1,1,1-Trichloroethane	38	Not Detected	210	Not Detected
Cyclohexane	38	2000	130	6800
Carbon Tetrachloride	38	Not Detected	240	Not Detected
2,2,4-Trimethylpentane	38	900	180	4200
Benzene	38	450	120	1400
1,2-Dichloroethane	38	Not Detected	150	Not Detected
Heptane	38	2500	160	10000
Trichloroethene	38	590	200	3200
1,2-Dichloropropane	38	Not Detected	180	Not Detected
1,4-Dioxane	150	Not Detected	550	Not Detected
Bromodichloromethane	38	Not Detected	260	Not Detected
cis-1,3-Dichloropropene	38	Not Detected	170	Not Detected
4-Methyl-2-pentanone	38	110	160	440
Toluene	38	9200	140	35000
trans-1,3-Dichloropropene	38	Not Detected	170	Not Detected

Client Sample ID: LGW09072209

Lab ID#: 0907612A-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**7080819**	**Date of Collection:**	**7/22/09 3:45:00 PM**
Dil. Factor:	**76.4**	**Date of Analysis:**	**8/8/09 08:45 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2-Trichloroethane	38	Not Detected	210	Not Detected
Tetrachloroethene	38	1600	260	11000
2-Hexanone	150	Not Detected	620	Not Detected
Dibromochloromethane	38	Not Detected	320	Not Detected
1,2-Dibromoethane (EDB)	38	Not Detected	290	Not Detected
Chlorobenzene	38	40	180	180
Ethyl Benzene	38	2200	160	9500
m,p-Xylene	38	4900	160	21000
o-Xylene	38	1400	160	6300
Styrene	38	190	160	830
Bromoform	38	Not Detected	390	Not Detected
Cumene	38	340	190	1700
1,1,2,2-Tetrachloroethane	38	Not Detected	260	Not Detected
Propylbenzene	38	190	190	950
4-Ethyltoluene	38	630	190	3100
1,3,5-Trimethylbenzene	38	260	190	1300
1,2,4-Trimethylbenzene	38	740	190	3600
1,3-Dichlorobenzene	38	Not Detected	230	Not Detected
1,4-Dichlorobenzene	38	220	230	1300
alpha-Chlorotoluene	38	Not Detected	200	Not Detected
1,2-Dichlorobenzene	38	Not Detected	230	Not Detected
1,2,4-Trichlorobenzene	150	Not Detected U J	1100	Not Detected U J
Hexachlorobutadiene	150	Not Detected	1600	Not Detected

UJ = Non-detected compound associated with low bias in the CCV

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	94	70-130

Client Sample ID: LGW04072209

Lab ID#: 0907612A-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**7080820**	**Date of Collection:**	**7/22/09 3:25:00 PM**
Dil. Factor:	**74.8**	**Date of Analysis:**	**8/8/09 09:33 PM**

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
Freon 12	37	570	180	2800
Freon 114	37	87	260	610
Chloromethane	150	Not Detected	310	Not Detected
Vinyl Chloride	37	7800	96	20000
1,3-Butadiene	37	Not Detected	83	Not Detected
Bromomethane	37	Not Detected	140	Not Detected
Chloroethane	37	210	99	550
Freon 11	37	38	210	210
Ethanol	150	4900	280	9300
Freon 113	37	Not Detected	290	Not Detected
1,1-Dichloroethene	37	110	150	430
Acetone	150	1600	360	3900
2-Propanol	150	2600	370	6400
Carbon Disulfide	37	Not Detected	120	Not Detected
3-Chloropropene	150	Not Detected	470	Not Detected
Methylene Chloride	37	460	130	1600
Methyl tert-butyl ether	37	Not Detected	130	Not Detected
trans-1,2-Dichloroethene	37	67	150	260
Hexane	37	2600	130	9200
1,1-Dichloroethane	37	50	150	200
2-Butanone (Methyl Ethyl Ketone)	37	1100	110	3100
cis-1,2-Dichloroethene	37	7200	150	28000
Tetrahydrofuran	37	650	110	1900
Chloroform	37	Not Detected	180	Not Detected
1,1,1-Trichloroethane	37	Not Detected	200	Not Detected
Cyclohexane	37	2100	130	7300
Carbon Tetrachloride	37	Not Detected	240	Not Detected
2,2,4-Trimethylpentane	37	990	170	4600
Benzene	37	530	120	1700
1,2-Dichloroethane	37	Not Detected	150	Not Detected
Heptane	37	2900	150	12000
Trichloroethene	37	280	200	1500
1,2-Dichloropropane	37	Not Detected	170	Not Detected
1,4-Dioxane	150	Not Detected	540	Not Detected
Bromodichloromethane	37	Not Detected	250	Not Detected
cis-1,3-Dichloropropene	37	Not Detected	170	Not Detected
4-Methyl-2-pentanone	37	120	150	490
Toluene	37	10000	140	38000
trans-1,3-Dichloropropene	37	Not Detected	170	Not Detected

Client Sample ID: LGW04072209

Lab ID#: 0907612A-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**7080820**	**Date of Collection:**	**7/22/09 3:25:00 PM**
Dil. Factor:	**74.8**	**Date of Analysis:**	**8/8/09 09:33 PM**

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
1,1,2-Trichloroethane	37	Not Detected	200	Not Detected
Tetrachloroethene	37	730	250	5000
2-Hexanone	150	Not Detected	610	Not Detected
Dibromochloromethane	37	Not Detected	320	Not Detected
1,2-Dibromoethane (EDB)	37	Not Detected	290	Not Detected
Chlorobenzene	37	Not Detected	170	Not Detected
Ethyl Benzene	37	1400	160	6000
m,p-Xylene	37	3100	160	14000
o-Xylene	37	850	160	3700
Styrene	37	130	160	550
Bromoform	37	Not Detected	390	Not Detected
Cumene	37	240	180	1200
1,1,2,2-Tetrachloroethane	37	Not Detected	260	Not Detected
Propylbenzene	37	95	180	470
4-Ethyltoluene	37	380	180	1900
1,3,5-Trimethylbenzene	37	160	180	760
1,2,4-Trimethylbenzene	37	500	180	2400
1,3-Dichlorobenzene	37	Not Detected	220	Not Detected
1,4-Dichlorobenzene	37	60	220	360
alpha-Chlorotoluene	37	Not Detected	190	Not Detected
1,2-Dichlorobenzene	37	Not Detected	220	Not Detected
1,2,4-Trichlorobenzene	150	Not Detected U J	1100	Not Detected U J
Hexachlorobutadiene	150	Not Detected	1600	Not Detected

UJ = Non-detected compound associated with low bias in the CCV

Container Type: 6 Liter Summa Canister

Surrogates	**%Recovery**	**Method Limits**
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	104	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: Lab Blank

Lab ID#: 0907612A-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**7080805**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis:**	**8/8/09 09:44 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	2.0	Not Detected	4.1	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	2.0	Not Detected	4.8	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	0.50	Not Detected	1.7	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 0907612A-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**7080805**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 8/8/09 09:44 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected U J	15	Not Detected U J
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected

UJ = Non-detected compound associated with low bias in the CCV

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	107	70-130
4-Bromofluorobenzene	95	70-130

Client Sample ID: CCV

Lab ID#: 0907612A-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**7080802**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 8/8/09 07:36 AM**

Compound	**%Recovery**
Freon 12	116
Freon 114	117
Chloromethane	114
Vinyl Chloride	114
1,3-Butadiene	107
Bromomethane	115
Chloroethane	107
Freon 11	114
Ethanol	120
Freon 113	112
1,1-Dichloroethene	117
Acetone	114
2-Propanol	119
Carbon Disulfide	112
3-Chloropropene	110
Methylene Chloride	116
Methyl tert-butyl ether	122
trans-1,2-Dichloroethene	109
Hexane	111
1,1-Dichloroethane	115
2-Butanone (Methyl Ethyl Ketone)	121
cis-1,2-Dichloroethene	117
Tetrahydrofuran	119
Chloroform	114
1,1,1-Trichloroethane	116
Cyclohexane	113
Carbon Tetrachloride	115
2,2,4-Trimethylpentane	117
Benzene	112
1,2-Dichloroethane	118
Heptane	114
Trichloroethene	114
1,2-Dichloropropane	114
1,4-Dioxane	110
Bromodichloromethane	117
cis-1,3-Dichloropropene	118
4-Methyl-2-pentanone	125
Toluene	115
trans-1,3-Dichloropropene	121

Client Sample ID: CCV

Lab ID#: 0907612A-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**7080802**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 8/8/09 07:36 AM**

Compound	%Recovery
1,1,2-Trichloroethane	109
Tetrachloroethene	109
2-Hexanone	113
Dibromochloromethane	117
1,2-Dibromoethane (EDB)	112
Chlorobenzene	109
Ethyl Benzene	111
m,p-Xylene	112
o-Xylene	112
Styrene	114
Bromoform	117
Cumene	111
1,1,2,2-Tetrachloroethane	108
Propylbenzene	113
4-Ethyltoluene	112
1,3,5-Trimethylbenzene	106
1,2,4-Trimethylbenzene	105
1,3-Dichlorobenzene	106
1,4-Dichlorobenzene	106
alpha-Chlorotoluene	119
1,2-Dichlorobenzene	103
1,2,4-Trichlorobenzene	66 Q
Hexachlorobutadiene	71

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	101	70-130

Client Sample ID: LCS

Lab ID#: 0907612A-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**7080803**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 8/8/09 08:25 AM**

Compound	%Recovery
Freon 12	113
Freon 114	113
Chloromethane	111
Vinyl Chloride	111
1,3-Butadiene	100
Bromomethane	124
Chloroethane	105
Freon 11	113
Ethanol	71
Freon 113	124
1,1-Dichloroethene	129
Acetone	111
2-Propanol	121
Carbon Disulfide	110
3-Chloropropene	111
Methylene Chloride	123
Methyl tert-butyl ether	121
trans-1,2-Dichloroethene	107
Hexane	110
1,1-Dichloroethane	118
2-Butanone (Methyl Ethyl Ketone)	118
cis-1,2-Dichloroethene	128
Tetrahydrofuran	116
Chloroform	116
1,1,1-Trichloroethane	116
Cyclohexane	112
Carbon Tetrachloride	116
2,2,4-Trimethylpentane	115
Benzene	112
1,2-Dichloroethane	119
Heptane	114
Trichloroethene	114
1,2-Dichloropropane	112
1,4-Dioxane	107
Bromodichloromethane	119
cis-1,3-Dichloropropene	118
4-Methyl-2-pentanone	123
Toluene	119
trans-1,3-Dichloropropene	117

Client Sample ID: LCS

Lab ID#: 0907612A-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**7080803**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 8/8/09 08:25 AM**

Compound	%Recovery
1,1,2-Trichloroethane	106
Tetrachloroethene	107
2-Hexanone	108
Dibromochloromethane	115
1,2-Dibromoethane (EDB)	106
Chlorobenzene	106
Ethyl Benzene	107
m,p-Xylene	107
o-Xylene	108
Styrene	110
Bromoform	115
Cumene	110
1,1,2,2-Tetrachloroethane	103
Propylbenzene	110
4-Ethyltoluene	107
1,3,5-Trimethylbenzene	100
1,2,4-Trimethylbenzene	99
1,3-Dichlorobenzene	98
1,4-Dichlorobenzene	98
alpha-Chlorotoluene	115
1,2-Dichlorobenzene	94
1,2,4-Trichlorobenzene	57 Q
Hexachlorobutadiene	63 Q

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	102	70-130

Appendix G
Landfill Gas Equilibrium Calculations

VOC Gas Phase / Aqueous Phase Equilibrium Calculations

		VOC Gas Phase Concentration	VOC Molecular Weight	VOC Gas Phase Concentration	R (Ideal Gas Law Constant)	T (Temp.)	P (partial pressure of gas) P = nRT/V	Henry's Law Constant	Predicted Groundwater Concentration at Equilibrium	
Gas Well	VOC	ug/m3	g/mol	mol/L	(atm*L)/(mol*K)	°C	atm	mol/(L*atm)	mol/L	ug/L
GP-5	PCE	850	165.83	5.126E-09	0.082055	16	1.216E-07	0.05	6.081E-09	**1.01**
GP-5	TCE	ND	-	-	-	-	-	-	-	**-**
GP-LGW-11	PCE	4000	165.83	2.412E-08	0.082055	16	5.723E-07	0.05	2.862E-08	**4.75**
GP-LGW-11	TCE	910	131.40	6.925E-09	0.082055	16	1.643E-07	0.11	1.807E-08	**2.37**
LGW-8	PCE	49000	165.83	2.955E-07	0.082055	16	7.011E-06	0.05	3.505E-07	**58.13**
LGW-8	TCE	25000	131.40	1.903E-07	0.082055	16	4.514E-06	0.11	4.966E-07	**65.25**

Notes:

Enter data in blue cells only. All other cells are constants or calculated values

PCE: tetrachloroethene

PCE mol.wt: 165.83 g/mol

PCE Henry's Law Constant: 0.05 mol/(L*atm) - average from Sander, 1999

TCE: trichloroethene

TCE mol.wt: 131.40 g/mol

TCE Henry's Law Constant: 0.11 mol/(L*atm) - average from Sander, 1999

ND = none detected

Equilibrium Estimates for VOC Gas Phase and Groundwater Concentrations

Method Overview

The calculations shown in the following attachments were made to predict the extent to which landfill gas may contribute to PCE and TCE concentrations in groundwater near the closed landfill.

PCE and TCE gas concentrations measured in May 2009 were evaluated from three gas wells: GP-5 (a perimeter gas monitoring probe north of the closed landfill), GP-LGW-11 (a gas probe in the approximate center of the closed landfill), and LGW-8 (a landfill gas extraction well within the southwest portion of the closed landfill). These gas wells were selected to represent a range of PCE and TCE gas concentrations. PCE concentrations ranged from 850 ug/m^3 in GP-5 to 49,000 ug/m^3 in LGW-8. TCE concentrations ranged from non-detect in GP-5 to 25,000 ug/m^3 in LGW-8.

As shown in the following calculations and tables, the measured gas concentrations were converted to partial pressures using the Ideal Gas Law:

$$P = nRT/V$$

where:
P = partial pressure of gas
V = gas volume
n = number of moles
R = ideal gas constant
T = temperature

The partial pressures were then used to estimate aqueous phase VOC concentrations in groundwater using Henry's Law:

$$c_{aq} = K_H * p_{gas}$$

where:
c_{aq} = predicted aqueous phase concentration (at equilibrium)
K_H = Henry's constant (average values from Sander, 1999)
p_{gas} = partial pressure of gas

The aqueous phase concentration (c_{aq}) is the predicted relative contribution of landfill gas to VOC concentrations in groundwater.

These calculations are presented as rough estimates of the extent to which landfill gas in the vadose zone may contribute to VOC concentrations in groundwater, with the understanding that assumptions of equilibrium conditions are influenced by active landfill gas extraction at the closed landfill and other complexities in the subsurface environment.

Results Summary

The "Predicted Groundwater Concentration at Equilibrium" estimates shown in the following table reflect the predicted VOC groundwater concentrations if landfill gas were the sole source of this contamination. Predicted PCE groundwater concentrations range from 1 ug/L near GP-5 to 58 ug/L near LGW-8. Predicted TCE groundwater concentrations range from <1 ug/L near GP-5 to 65 ug/L near LGW-8. These concentrations are within or below the range PCE and TCE concentrations measured in groundwater near the closed landfill, indicating that landfill gas could be a major contributor to PCE and TCE in groundwater at the site.

VOC Gas Phase / Aqueous Phase Equilibrium Calculations - ACRL

$$mol\_wt := \frac{165.83g}{mol}$$

molecular weight of VOC: PCE

$$c_{gas} := \frac{850ug}{m^3}$$

gas concentration (ug/m^3) -- GP-5

$$c_{gas.conv} := c_{gas} \cdot \frac{m^3}{1000L} \cdot \frac{g}{10^6 ug} \cdot \frac{1}{mol\_wt}$$

gas concentration (moles/L)

$$c_{gas.conv} = 5.126 \times 10^{-9} \cdot \frac{mol}{L}$$

$$P \cdot V = n \cdot R \cdot T$$

Ideal Gas Law

$$P = \frac{n \cdot R \cdot T}{V}$$

gas law rearranged for pressure

$$n := c_{gas.conv} \cdot 1L$$

number of moles (from above)

$$n = 5.126 \times 10^{-9} mol$$

$$V := 1L$$

volume (from molarity above)

$$R := 0.082055 \frac{atm \cdot L}{mol \cdot K}$$

ideal gas law constant

$$T := 16\,°C$$

groundwater temperature

$$T = 289.15\,K$$

$$P := \frac{n \cdot R \cdot T}{V} \qquad P = 0.012\,Pa \qquad P = 1.216 \times 10^{-7} \cdot atm$$

partial pressure of PCE gas

$$P = 0.012\,Pa \qquad P = 1.216 \times 10^{-7} \cdot atm$$

$$K_H = \frac{c_{aq}}{p_{gas}}$$

Henry's Law

$$K_H := 5 \cdot 10^{-2} \frac{mol}{L \cdot atm}$$

Henry's constant: PCE

$$p_{gas} := P \qquad p_{gas} = 1.216 \times 10^{-7} \cdot atm$$

PCE partial pressure (from above)

$$c_{aq} := K_H \cdot p_{gas}$$

Henry's Law rearranged for aqueous phase concentration

$$c_{aq} = 6.081 \times 10^{-9} \cdot \frac{mol}{L}$$

predicted concentration in groundwater at equilibrium (moles/L)

$$c_{aq} \cdot mol\_wt = 1.008 \cdot \frac{ug}{L}$$

predicted concentration in groundwater at equilibrium (ug/L)

Appendix H

Landfill Gas Data Evaluations

Landau
Associates
Environmental and Geotechnical Services

RECEIVED
AUG 15 2000
DEPARTMENT OF ECOLOGY
EASTERN REGIONAL OFFICE

August 14, 2000

Mr. Wayne Kraft
State of Washington Department of Ecology
4601 North Monroe, Suite 202
Spokane, Washington 99205

**RE: EVALUATION OF VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER
DELANO LANDFILL
GRAND COULEE, WASHINGTON**

Dear Mr. Kraft:

Landau Associates is submitting the attached memorandum on behalf of the Regional Board of Mayors, which summarizes the recent evaluation of potential source mechanisms for the volatile organic compounds (VOCs) detected in groundwater collected from monitoring wells at the Delano Landfill. The memorandum was prepared by GeoSyntec Consultants (GeoSyntec) with assistance and review from Landau Associates. The memorandum summarizes the results of work initiated by GeoSyntec in 1999 to evaluate whether landfill gas migration followed by gas/groundwater contact is a likely mechanism for the groundwater impacts, or if the impacts are more likely related to landfill leachate contacting groundwater. The evaluation included review of:

- Lysimeter data - Analytical-chemical data for a water sample from a lysimeter in the landfill refuse that was collected in November 1999;
- Groundwater inorganic parameters - Anion and cation data available from quarterly groundwater monitoring data at the site from December 1992 through November 1999;
- Groundwater organic parameters - Groundwater analytical results for VOCs and semivolatile organic compounds available from groundwater monitoring at the site from December 1992 through November 1999;
- Headspace gas data - Concentrations of major constituents of the headspace gas of impacted monitoring wells were measured by GeoSyntec in November 1999.

The comparison of the available chemical data for site groundwater with the data for the leachate sample from the lysimeter indicates differences that suggest that leachate is likely not the primary mechanism for the VOC impacts to groundwater. The evaluation suggests that landfill gas to groundwater contact is the more likely mechanism for the impacts. In addition, evaluation of the groundwater and leachate data, along with the well headspace gas data, suggests that the gas/groundwater

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Edmonds Portland Spokane Tacoma

contact is likely occurring outside of the wells and at the gas/water interface within the geological formation.

If you have any questions you may reach me at (509) 327-9737.

LANDAU ASSOCIATES, INC.

By:

Craig Schwyn, R.G.
Associate Hydrogeologist

TLS/CCS/djn
No. 587001.15
Enclosure

cc: Mayor Halsey
Tim Syverson

GeoSyntec Consultants

2100 Main Street, Suite 150
Huntington Beach, California 92648 • USA
Tel. (714) 969-0800 • Fax (714) 969-0820

RECEIVED
AUG 15 2000
DEPARTMENT OF ECOLOGY
EASTERN REGIONAL OFFICE

MEMORANDUM

TO: Tim Syverson, Landau & Associates

FROM: Henry B. Kerfoot, Senior Chemist

DATE: June 30, 2000

SUBJECT: Delano Landfill VOC Detections

INTRODUCTION

Volatile organic compounds (VOCs) have been detected in groundwater samples from wells MW -1, MW -2, and MW-3b at the Delano Landfill. Well locations are shown on the site plan in Figure 1. Because the constituents detected were VOCs and no other constituent detections (e.g., dissolved solids) have accompanied those VOC detections, landfill gas (LFG) migration followed by gas/groundwater contact is suspected as the cause of the detections. GeoSyntec Consultants (GeoSyntec) has used existing data and obtained additional data to evaluate the situation at the site. In this memo, we present an evaluation of that data.

Four specific types of data collected at the Delano Landfill are discussed herein. These discussions refer to historical groundwater data and November 1999 groundwater and headspace gas data. The four types of data discussed in this memorandum are:

- Lysimeter data - Analytical-chemical data for a water sample from a lysimeter in the refuse was obtained in November 1999;

Regional Offices:
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- Groundwater inorganic parameters – Anion and cation data are available from quarterly groundwater monitoring data collected at the site from December 1992 through November 1999;

- Groundwater organic parameters - Groundwater analytical results for VOCs and semi-volatile organic compounds are available from groundwater monitoring data collected at the site from December 1992 through November 1999;

- Headspace gas data – Concentrations of major constituents of the headspace gas of impacted monitoring wells were measured by GeoSyntec in November 1999.

Figure 1 shows the sampling locations referred to in this document. The data are discussed below.

LYSIMETER DATA

In November 1999, a water sample was obtained from a lysimeter within the refuse. The lysimeter location is shown on the site plan in Figure 1. The sample was analyzed for volatile organic compounds, semi-volatile organic compounds, metals, and anions and cations. Because the lysimeter sample was comprised of free pore water from within the refuse, it may be reasonably assumed to represent the chemistry of site leachate. Therefore, the analytical data for this sample provides insight into leachate chemistry at the site. In this document we use the concentrations of various parameters in the lysimeter sample to identify parameters that can be a measure of leachate impacts on groundwater samples. Compositional data for the lysimeter sample recovered in November 1999 is presented in Table 1

INORGANIC WATER QUALITY PARAMETERS

It is possible to differentiate between VOCs present in groundwater samples due to landfill gas effects and VOCs present in groundwater due to leachate effects through evaluation of concentrations of inorganic ions present in leachate. (Kerfoot, 1996a). Because most inorganic ions do not migrate in the gas phase, an increase in the concentration in groundwater of a leachate-associated inorganic ion that accompanies VOC detections suggests leachate impacts on groundwater. Conversely, a lack of an increase in the concentration of the inorganic ion accompanying increased VOC concentrations indicates landfill gas, rather than leachate, as the cause of the VOC detections in groundwater.

In order to use ions in leachate as indicators of leachate impacts, the ions should be stable towards changes in redox potential (E_h). Of the parameters for which data are available for the site, sodium, bicarbonate and chloride meet these conditions.

Chloride and sodium are associated solely with leachate, since they cannot be transported with landfill gas. Bicarbonate is present in leachate but can also be formed when carbon dioxide dissolves in water. Since landfill gas is approximately 45% carbon dioxide, it therefore can be a source of bicarbonate in groundwater. Thus, while bicarbonate can be an indicator of landfill impacts, it is not a good means to distinguish between landfill gas and leachate impacts on groundwater. Chloride and sodium concentrations, on the other hand, are good parameters to discriminate between leachate and landfill gas impacts on groundwater.

The lysimeter sample had a sodium concentration of 1,580 mg/L and a chloride concentration of 1,900 mg/L. These concentrations suggest that leachate impacting groundwater would increase sodium and chloride concentrations of the impacted sample above background concentrations. Indeed, a groundwater sample that is 1% leachate should show an increase in the sodium concentration of 16 mg/L and an increase in the chloride concentration of 19 mg/L.

In order to evaluate whether leachate or landfill gas is the cause of VOC detections in groundwater at the site, sodium and chloride concentrations for November 1999 groundwater samples were compared to both the background concentrations of these constituents (as discussed above) and to the VOC concentrations for Wells MW-1, MW-2, and MW-3b. For leachate impacts on groundwater, increased groundwater VOC concentrations should be accompanied by an increase in sodium and chloride concentrations. Table 2 lists this data and Figure 2 shows a graph of the data for November 1999.

From Figure 2, it can be seen that the sodium and chloride concentrations are essentially the same as the background levels and are constant over a 10-fold increase in VOC concentration. The consistency with background levels and the lack of increased sodium and chloride concentrations with increasing VOC concentrations is not consistent with effects of a high-sodium or high-chloride liquid (e.g., leachate or septic tanks) and clearly indicates that LFG is the source of the groundwater impacts.

Another way to evaluate the inorganic ion data is to consider a time series plot. Data for chloride are available for all three wells from December 1991 through November 1999, while sodium data are available for all three wells for the period from 1998 – 1999 (with one sample in 1995 for well MW-1.) Figure 3 shows the chloride and sodium concentrations in Wells MW-1, WM-2, and MW-3b over time. (An anomalous July 1999 MW-1 chloride concentration of 210 mg/L is omitted). From the graph, it can be seen that the data are relatively stable over the six-year period, with the MW-3b chloride data between 14.5 and 20 mg/L and the MW-1 chloride concentrations between 18 and 21 mg/L. Although available for a shorter period of time, the sodium data supports the chloride data in indicating a lack of discernable leachate impacts of these constituents. Because leachate concentrations are of the order of 50 times the concentrations shown in Figure 3, the consistency of the chloride and sodium concentrations over time in all three wells does not suggest leachate impacts, but is consistent with landfill gas impacts.

In summary, increases in the inorganic parameters associated with leachate (and not with landfill gas) are not observed in the groundwater data from the impacted wells. The chloride and sodium concentrations do not show increases expected for leachate impacts, either over time or with increased VOC concentrations. This behavior is not consistent with leachate impacts on groundwater but is consistent with LFG impacts.

ORGANIC CONSTITUENTS

The major VOCs in the lysimeter sample were acetone (10,000 mg/L) and 2-butanone (methyl ethyl ketone or MEK; 27,000 μg/L). These compounds have relatively low Henry's constants. For that reason, they would not be efficiently transported in the gas phase because of their high water-solubility. For comparison, their Henry's constants are 2.06×10^{-5} Atm m^3/mol and 2.76×10^{-5} Atm m^3/mol, while the Henry's constant for PCE (the major VOC detected in groundwater samples) is 2.6×10^{-2} Atm m^3/mol, or approximately 1,000 times higher. The Henry's constants of the VOCs in the lysimeter sample indicate that acetone and 2-butanone will not significantly partition from the aqueous phase into the gas phase. For that reason, acetone and 2-butanone represent good organic indicators of leachate (as opposed to gas) impacts on groundwater.

In addition to the VOCs acetone and 2-butanone, the lysimeter sample contained 3,000 μg/L phenol, 16,000 μg/L 4-methylphenol and 14,000 μg/L benzoic acid. Given the high solubility of these semi-volatile organic compounds and their concentrations in leachate, they also represent good potential indicators of leachate impacts on groundwater.

Neither acetone nor 2-butanone has been detected in the groundwater samples with VOC detections. This is not consistent with leachate impacts on those samples but is consistent with LFG effects. In addition, no phenol, 4-methylphenol, benzoic acid, or other semi-volatile organic compounds have been detected in impacted groundwater samples. If leachate were the source of the VOCs detected in the groundwater samples, these constituents would be expected to be present in the groundwater samples as well as the VOCs. The fact that they are not suggests a source other than leachate for the VOCs detected in the groundwater samples. This is inconsistent with leachate impacts and consistent with landfill gas as the source of the groundwater VOCs.

In summary, none of the semi-volatile organic compounds or highly water-soluble VOCs detected in a lysimeter sample of pore water from within the refuse at the site have been detected in groundwater samples that show VOCs. This is not consistent with leachate impacts on groundwater but is consistent with LFG impacts.

HEADSPACE GAS DATA

General

The concentrations of constituents in the headspace gas of monitoring wells can be useful in evaluation of LFG effects on groundwater. The headspace gas concentrations can help in evaluation of whether significant advective (pressure-driven) LFG flow into the well is taking place. When significant advective LFG flow into the well occurs, the well can be acting as a vent for the LFG. In that circumstance, groundwater impacts may be limited to the groundwater within the well, rather than within the entire aquifer. Such LFG effects on groundwater have been called 'in-well effects' (Kerfoot, 1996b).

In a November 1999 GeoSyntec field survey, headspace gas concentrations of methane, carbon dioxide, oxygen, and nitrogen in monitoring wells were evaluated. GeoSyntec used a GEM gas-monitoring meter to measure methane, carbon dioxide, oxygen and nitrogen concentrations in the headspace gas of wells MW-1, MW-2 and MW-3b. Table 3 lists the methane, carbon dioxide, oxygen and nitrogen concentrations recorded by GeoSyntec in sampling the well headspace gases. Appendix A provides a copy of the field notes where the readings from the instrument were recorded. Nitrogen concentrations were obtained as the difference between 100% and the sum of the methane, carbon dioxide and oxygen concentrations.

These headspace gas concentrations can provide insight into the dynamics affecting the gas in the well headspace. Because landfill gas is approximately 55% methane and 45% carbon dioxide, they are good indicators of landfill gas. The sum of the methane and carbon dioxide concentrations can be a rough measure of the magnitude of LFG effects. Advective flow of LFG into the well will dilute the nitrogen concentration from the atmospheric level of 79%. Consumption of oxygen due to degradation of methane to carbon dioxide can decrease oxygen concentrations beyond the amount of dilution due to flow of landfill gas into the well (as indicated by the nitrogen data). The relative concentrations of carbon dioxide and methane can provide insight into the residence time during migration (i.e., velocity or distance traveled), since methane degradation will increase the carbon dioxide/methane ratio from approximately 0.8 to higher values as the gas migrates.

Thus, several data-interpretation tools are available to evaluate well headspace-gas concentrations as indicators of LFG effects on groundwater. Methane and carbon dioxide concentrations in the headspace gas are indicators of the presence of LFG in the well headspace. Nitrogen concentrations significantly below 79% suggest advective landfill gas flow into the well. Oxygen concentrations depleted from 21% by more than the amount consistent with dilution of nitrogen by LFG suggest consumption of oxygen during the degradation of methane, indicative of a slow LFG migration velocity and/or large migration distance.

MW-3b

The Well MW-3b headspace contained 12% carbon dioxide and 0.2% methane for a total of 12.2%. The headspace gas contained 77.6% nitrogen, within experimental error of the atmospheric value 79%. This data is consistent with minimal advective flow of LFG into the well and LFG entering the well by diffusion through the vadose zone. The lack of advective, or pressure-driven, LFG transport into the well headspace is consistent with a significant distance between the well and the LFG source or with low LFG pressure at the source. The oxygen concentration was 10.0%, decreased from 21% by an amount very close to the 12% carbon dioxide. This suggests that the oxygen depletion is due to consumption of oxygen in methane degradation in the surrounding vadose zone. The methane/carbon dioxide ratio is 0.017, consistent with a large degree of methane degradation. The data suggests that significant LFG concentrations exist in the vadose zone near the perforated portion of the well, but that the LFG has undergone degradation.

MW-2

The headspace gas of Well MW-2 had a methane concentration of 0.3% and a carbon dioxide concentration of 4.4%, for a total of 4.7% and a ratio of 0.077, consistent with degraded LFG. This implies a significant residence time for the LFG during transport to the well. The nitrogen concentration was 80.4%, consistent with no advective LFG flow into the well. The oxygen concentration was approximately 15%, decreased from the atmospheric level of 21%. Similar to Well MW-3b, the elevated methane and carbon dioxide concentrations and depleted oxygen concentrations suggest that landfill gas is present in the vadose zone near the perforated portion of the well. However, the flow of LFG into the MW-2 area appears to be less than for MW-3b, since the total methane and carbon dioxide concentration is lower.

MW-1

The headspace gas concentrations in Well MW-1 showed a methane concentration of 0.3% and a carbon dioxide concentration of 3.8% for a total of 4.1% and a ratio of 0.078, consistent with significant methane degradation. That ratio implies a long residence time in transport to the well. The nitrogen concentration was consistent with the atmospheric level of 79%, indicative of no advective gas flow into the well, so that LFG present was due to diffusion. This is essentially the same result as for MW-2.

Summary

·In summary, all three wells show impacts from landfill gas, based on the headspace gas data. The gas in the headspace of all three wells has a composition consistent with highly degraded landfill gas. This is consistent with a relatively long residence time for the gas, suggesting either a long travel distance or a low travel velocity. For MW-3b, the gas data suggest that there may be a minimal amount of advective LFG flow into the well, while for MW-2 and MW-1 advective flow is ruled out. From these results, it does not appear that gas/water partitioning of VOCs within the well is the process responsible for the VOC detections in groundwater samples (i.e., the "in-well" process is ruled out).

CONCLUSIONS

Four different data sources have been evaluated to establish whether landfill gas or leachate is responsible for VOC detections in groundwater samples from the Delano Landfill. Results suggest that:

- Delano Landfill leachate, as represented by the November 1999 lysimeter sample, has sodium and chloride concentrations of approximately 45 and 55 times background, respectively. Therefore, sodium and chloride concentrations can be good indicators of leachate impacts on groundwater. Concentrations of sodium and chloride in groundwater samples from MW-1, MW-2, and MW-3b are consistent with background (upgradient) concentrations and do not show increases with increasing VOC concentrations. Because sodium and chloride are good leachate indicators, this suggests no role for leachate in the VOC detections.

- Concentrations of sodium and chloride in groundwater samples from MW-1, MW-2, and MW-3b do not show the same trend of increases over the time that is associated with the VOC detections. This is not consistent with a leachate source of VOCs but is consistent with LFG as the source of the VOC detections.

- Delano Landfill leachate, as represented by the November 1999 lysimeter sample, has 3,000 to 16,000 µg/L of semi-volatile organic compounds. Thus, groundwater concentrations of these parameters would be indicative of leachate impacts on groundwater. No semi-volatile organic compounds have been detected in VOC-impacted groundwater samples. This is not consistent with leachate impacts, but is consistent with landfill gas as the source of the detected VOCs.

- Landfill gas has affected the headspace gas in Wells MW-1, MW-2, and MW-3b. The landfill gas that has impacted the wells has undergone degradation during transport, suggesting a significant transport distance or time.

- The landfill gas in MW-1 and MW-2 has been transported into the well by diffusion and not by pressure-driven (advective) flow. Some small amount of advective flow may be affecting well MW-3b. Due to the lack of significant advective gas flow into the wells, landfill gas/groundwater contact within the well is likely not the only mechanism responsible for transfer of VOCs from the gas phase into the groundwater.

- Because the extent of gas/groundwater contact taking place within the wells is minimal, the wells are not indicated to play a major role in venting of the gas. Partitioning of VOCs from the gas phase into the water is likely occurring outside of the well and at the gas/water interface within the underlying geological formation.

RECOMMENDATION

Because gas/water transfer of VOCs is indicated to be occurring outside the impacted wells, corrective actions focused solely on the impacted wells are not likely to be successful. Measures to eliminate the LFG transport, such as decreasing the gas pressure within the refuse, should be applied. An initial cost-effective measure would be installation of a passive landfill-gas control system. If the passive gas control system is not effective at controlling gas impacts on groundwater, an active system may be required.

Placing a gas-tight barrier layer final cover on the waste unit without providing some type of gas control system may very well exacerbate groundwater impacts rather than improve the situation. Furthermore, because the groundwater impacts do not appear to be leachate related, a barrier-layer type of cover does not appear to be needed for infiltration control. Therefore, we strongly recommend that an evapotranspirative type of soil cover be considered when closing this portion of the landfill.

REFERENCES

Kerfoot, H.B., 1996a "Effects of Landfill Gas on Groundwater", Chapter 3.5 In: Christensen, T.H., Cossu, R.; Stegmann, R. (eds), **Landfilling of Waste: Biogas**, E &F. Spon:New York, p. 163 - 185, 1996.

Kerfoot, H.B., 1996b. "How Landfill Gas Causes RCRA Compliance Problems", *Environmental Solutions,* August, 1996.

Please call us with any questions you may have on this or related matters.

* * * * *

TABLES

**Table 1. DELANO LANDFILL, GRAND COULEE, WASHINGTON
GROUNDWATER MONITORING RESULTS: NOVEMBER 1999**

Analysis		MW-1	MW-2	MW-3	Lysimeter	Units
Volatile Organics:						
SW8260	Acetone	**ND**	**ND**	**ND**	**10000**	ug/L
SW8260	2-Butanone	**ND**	**ND**	**ND**	**27000**	ug/L
SW8260	1,1,1-Trichloroethane	**ND**	**1.9**	**1.9**	ND	ug/L
SW8260	1,1-Dichloroethane	**ND**	**1.3**	**0.8**	ND	ug/L
SW8260	Chloroform	**0.3**	**0.2**	**ND**	ND	ug/L
SW8260	cis-1,2-Dichloroethene	**ND**	**0.5**	**0.2**	ND	ug/L
SW8260	Tetrachloroethene	**1.4**	**7.4**	**11**	ND	ug/L
SW8260	Trichloroethene	**ND**	**0.9**	**0.8**	ND	ug/L
SW8260	Trichlorofluoromethane	**ND**	**1.3**	**1.3**	ND	ug/L
	Total	**1.7**	**13.5**	**16**		
Semivolatile Organics:						
SW8270	Phenol	ND	ND	ND	**2900**	ug/L
SW8270	Phenol				**3000**	ug/L
SW8270	Phenol	ND	ND	ND	**3400**	ug/L
SW8270	4-Methylphenol	ND	ND	ND	**12000**	ug/L
SW8270	4-Methylphenol				**13000**	ug/L
SW8270	4-Methylphenol	ND	ND	ND	**16000**	ug/L
SW8270	Benzoic Acid	ND	ND	ND	**14000**	ug/L
SW8270	Benzoic Acid	ND	ND	ND	**14000**	ug/L
SW8270	Benzoic Acid	ND	ND	ND	**14000**	ug/L

[a] Dilution used for lysimeter sample

Table 1. (Cont'd) DELANO LANDFILL, GRAND COULEE, WASHINGTON GROUNDWATER MONITORING RESULTS: NOVEMBER 1999

Analysis		MW-1	MW-2	MW-3	Lysimeter	Units
Total Metals:						
7060	Arsenic	ND	ND	0.001	0.03	mg/L
6010	Barium	0.078	0.089	0.082	1.27	mg/L
6010	Calcium	55.8	152	116	3090	mg/L
6010	Chromium	0.018	0.009	ND	ND	mg/L
6010	Copper	0.003	0.002	ND	ND	mg/L
6010	Iron	0.23	0.44	0.1	757	mg/L
6010	Magnesium	34.8	80.5	71.4	1460	mg/L
6010	Manganese	0.012	0.009	ND	90	mg/L
6010	Nickel	0.01	ND	ND	0.1	mg/L
6010	Potassium	7.5	11.6	9.4	106	mg/L
6010	Sodium	36.7	36.1	40.5	1580	mg/L
6010	Thallium	ND	ND	ND	0.7	mg/L
6010	Vanadium	0.004	0.005	0.005	0.07	mg/L
6010	Zinc	0.008	0.007	ND	0.13	mg/L
Conventional Parameters:						
EPA 150.1	pH	6.36	6.59	7.21	5.94	std units
SM 2320	Alkalinity	260	590	530	6600	mg/L CaCO3
SM 2320	Carbonate (Alkalinity)	ND	ND	ND	ND	
SM 2320	Bicarbonate (Alkalinity)	260	590	530	6600	mg/L CaCO3
EPA 120.1	Conductivity	630	1200	1100	13000	umhos/cm
EPA 160.1	Total Dissolved Solids	400	820	710	21000	mg/L
EPA 325.2	Chloride	18	28	16	1900	mg/L

Table 1. (Cont'd) DELANO LANDFILL, GRAND COULEE, WASHINGTON GROUNDWATER MONITORING RESULTS: NOVEMBER 1999

Analysis		**MW-1**	**MW-2**	**MW-3**	**Lysimeter**	**Units**
EPA 353.2	Nitrate + Nitrite (NO2+NO3)	**5.8**	**5.8**	**3.4**	**ND**	mg-N/L
EPA 375.2	Sulfate	**68**	**150**	**120**	**560**	mg/L
EPA 415.1	Total Organic Carbon	**ND**	**ND**	**ND**	**9500**	mg/L

Table 2. Groundwater Concentrations of Chloride, Bicarbonate, and VOCs in November 1999

Well	Total VOCs (µg/L)	Sodium (mg/L)	Chloride (mg/L)
MW-1	1.7	36.7	18
MW-2	13.5	36.1	28
MW-3b	16	40.5	16

Table 3. Headspace Gas Concentrations

Well	Methane (% v:v)	Carbon Dioxide (% v:v)	Oxygen (% v:v)	Nitrogen (% v:v)
MW-1	0.3	3.8	15.2	80.7
MW-2	0.3	4.4	14.6	80.1
MW-3b	0.2	12	10.4	77.4

FIGURES

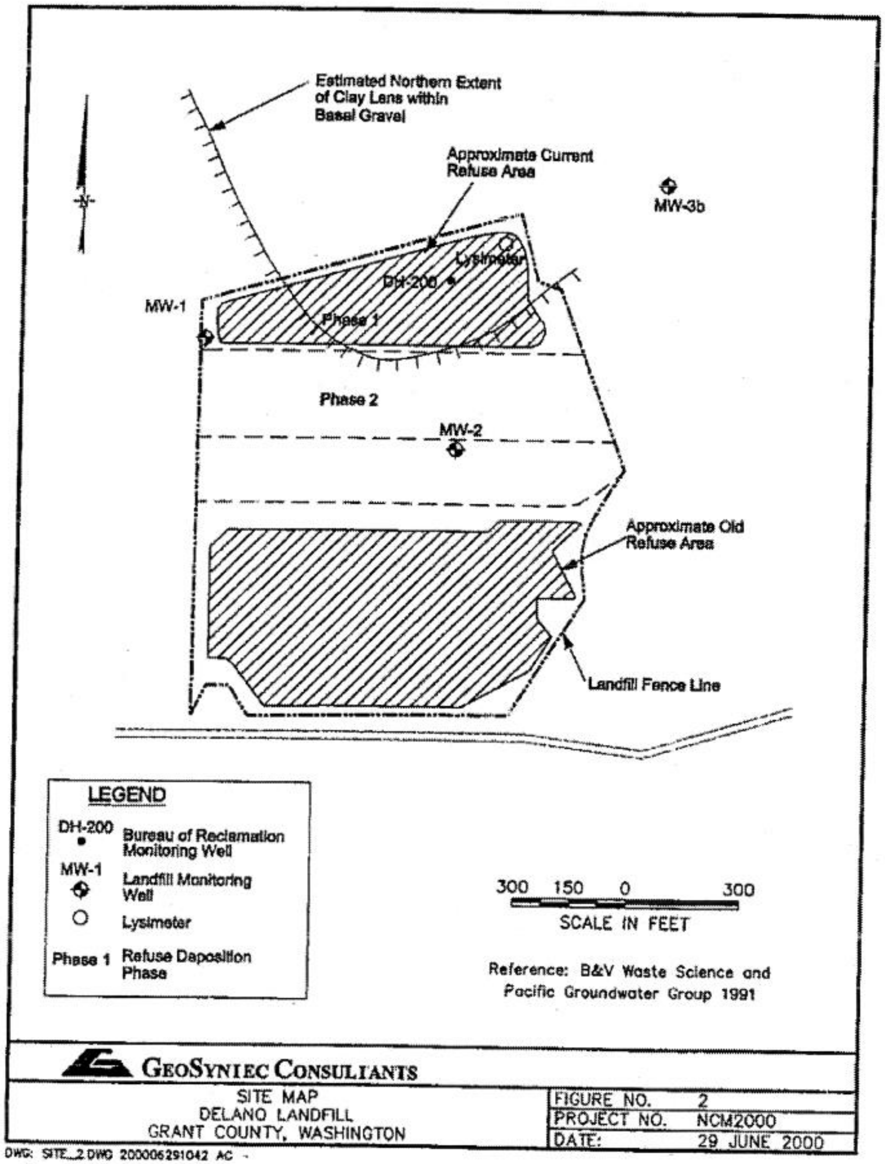


Figure 1. Site Map

Figure 2. Chloride and Sodium Changes with Total VOCs

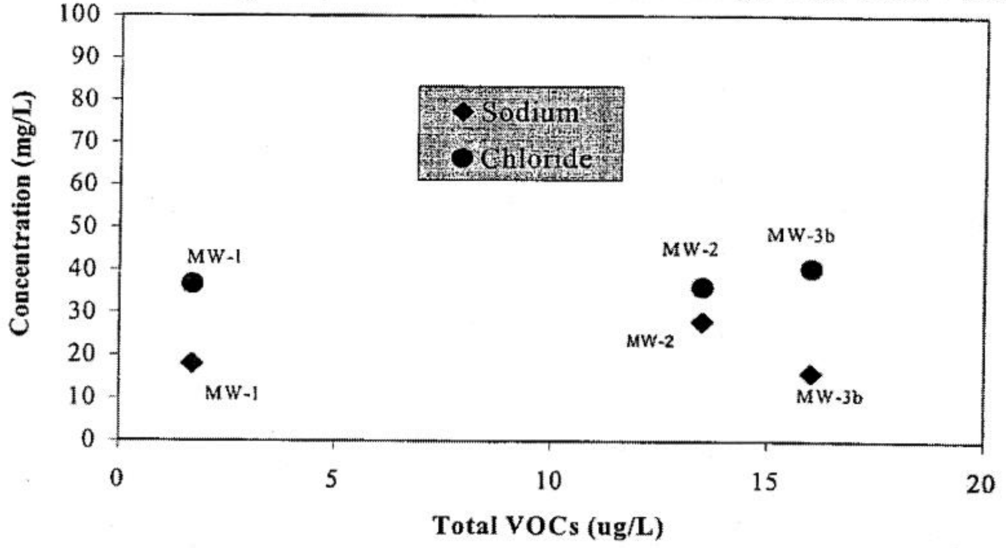
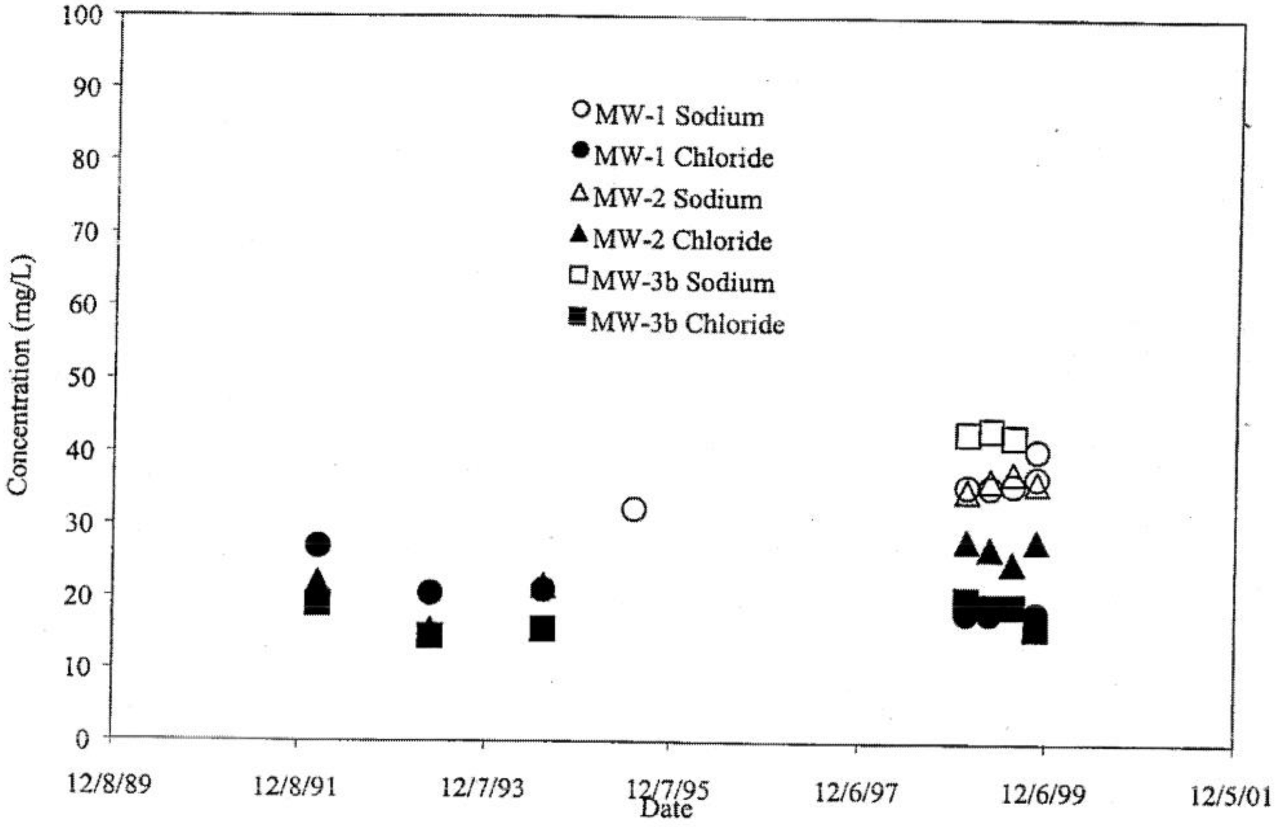
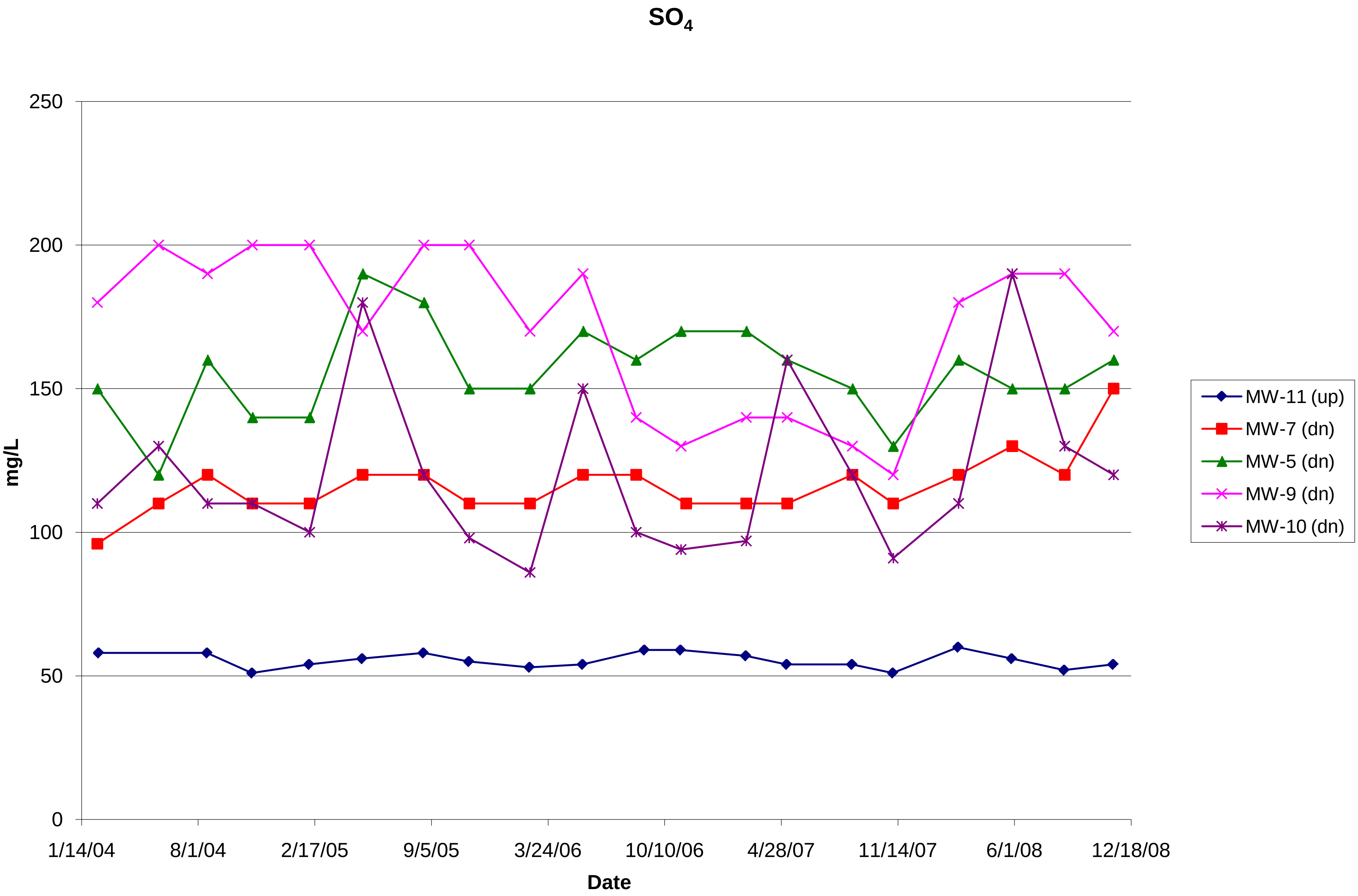
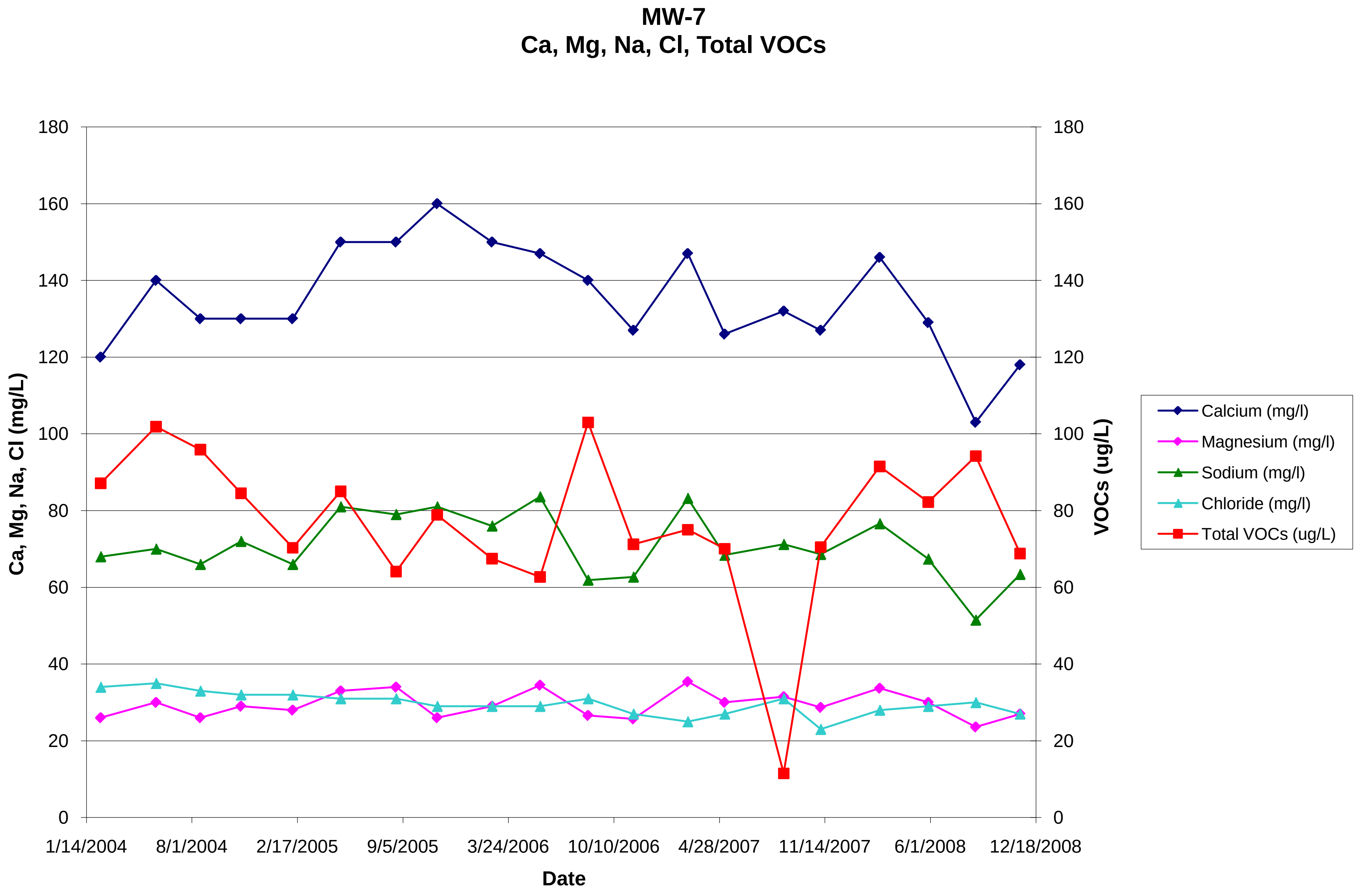


Figure 3. Chloride and Sodium Concentrations over Time




SO$_4$
250
200
150
100
50
0
mg/L
1/14/04
8/1/04
2/17/05
9/5/05
3/24/06
10/10/06
4/28/07
11/14/07
6/1/08
12/18/08
Date
MW-11 (up)
MW-7 (dn)
MW-5 (dn)
MW-9 (dn)
MW-10 (dn)



MW-7
Ca, Mg, Na, Cl, Total VOCs

Landfill Gas Effect Analysis
Groundwater Quality Data - Upgradient vs. Downgradient Relative Percent Difference (RPD)
Asotin County Regional Landfill

		Upgradient	**Downgradient**								**WAC 173-200**	
Chem group	**Analyte**	**MW-11**	**MW-07**	RPD	**MW-05**	RPD	**MW-09**	RPD	**MW-10**	RPD	**Criteria**	**Units**
Major Ions	Calcium, Dissolved	54.9	118	73%	102	60%	85	43%	69.8	24%	--	mg/L
Major Ions	Magnesium, Dissolved	14.4	27	61%	31.2	74%	30.4	71%	21.7	40%	--	mg/L
Gen. Chem.	Alkalinity, Total	190	440	79%	440	79%	340	57%	350	59%	--	mg/L
Metals (Diss.)	Manganese	0.0013	0.0017	27%	0.0016	21%	0.0016	21%	0.0014	7%	0.05	mg/L
Major Ions	Iron	0.119	0.491	122%	0.425	113%	0.348	98%	0.302	87%	0.30	mg/L
Major Ions	Sodium, Dissolved	84.7	63.4	-29%	74.4	-13%	93.7	10%	77.9	-8%	--	mg/L
Major Ions	Chloride	28	27	-4%	53	62%	72	88%	45	47%	250	mg/L
Major Ions	Sulfate	54	150	94%	160	99%	170	104%	120	76%	250	mg/L
VOCs	Dichlorodifluoromethane	*0.5*	8.3	177%	1.7	109%	1.1	75%	1.2	82%	--	µg/L
VOCs	Tetrachloroethene (PCE)	*0.5*	11	183%	15	187%	4.8	162%	3.9	155%	0.8	µg/L
VOCs	Trichloroethene (TCE)	*0.5*	*0.5*	0%	2.0	120%	1.7	109%	*0.5*	0%	3.0	µg/L
VOCs	Trichlorofluoromethane	*0.5*	49	196%	*0.5*	0%	*0.5*	0%	*0.5*	0%	--	µg/L
	Total VOCs	*2*	68.8	189%	19.2	162%	8.1	121%	6.1	101%		µg/L
Major Ions	Potassium, Dissolved	9.4	3.54	-91%	7.11	-28%	6.63	-35%	6.26	-40%	--	µg/L
Gen. Chem.	Total Dissolved Solids	380	667	55%	701	59%	675	56%	556	38%	500	µg/L

<u>Notes</u>

Groundwater quality data from November 2008.

Inferred hydraulic designation for each monitoring well: upgradient vs. downgradient.

Inorganic Ion Evaluation

As described in Landau, 2000 and Kerfoot, et al., 2004, the relative contribution of landfill gas to VOCs in groundwater can be assessed by evaluating the concentrations of inorganic ions upgradient and downgradient of the contamination source. Since most inorganic ions do not migrate in the gas phase, if inorganic ions associated with leachate are found to increase along with elevated VOCs in groundwater, leachate may be implicated as a primary source of VOCs in groundwater. Alternatively, if inorganic ions associated with leachate are not found to increase along with elevated VOCs in groundwater, landfill gas may be implicated as a primary source of VOCs in groundwater.

Method Overview

For this analysis, groundwater concentrations for two groups of inorganic ions were evaluated: [Na, Cl, SO_4] and [Ca, Mg, HCO_3, Mn, Fe]. All of these ions are commonly present in leachate from municipal waste landfills, and if elevated concentrations of most or all of these ions are found in downgradient wells, this is consistent with leachate impacts to groundwater. Landfill gas may also increase concentrations of [Ca, Mg, HCO3, Fe, and/or Mn], but landfill gas is not expected to increase concentrations of [Na, Cl, or SO_4].

Groundwater concentrations of these inorganic ions and total VOCs were evaluated from one upgradient well (MW-11) and four downgradient wells (MW-07, -05, -09, and -10) as follows:

1) Inter-well data comparisons of background vs. compliance well data for [Na, Cl, SO4] vs. [Ca, Mg, HCO_3, Mn] and VOCs

2) Intra-well correlations of VOCs vs. [Na, Cl, SO_4] and [Ca, Mg, HCO_3, Mn]

For inter-well comparisons, if Ca, Mg, HCO_3, Fe and/or Mn concentrations are elevated in compliance wells, but Na, Cl, and/or SO_4 concentrations are not, leachate impacts to groundwater in general (not just VOCs) are indicated to be minimal relative to landfill gas impacts.

For intra-well evaluations, if VOC concentrations are correlated with Ca, Mg, HCO_3, and/or Mn concentrations but not Na, Cl, and/or SO_4, landfill gas impacts to groundwater are implicated for VOCs in particular.

Results Summary

Relative Percent Difference Calculations for Upgradient vs. Downgradient Wells

The November 2008 inorganic ion and VOC concentrations in groundwater were compared in the upgradient well MW-11 to the downgradient wells MW-07, -05, -09, and -10. In general, the calculated relative percent differences (RPDs) in upgradient vs. downgradient wells do suggest an "LFG effect," i.e., that landfill gas is contributing to VOCs in groundwater. The Ca and Mg RPDs are generally elevated relative to Na and Cl concentrations, especially for the upgradient well MW-11 vs. the downgradient well MW-7 (where the highest total VOCs are observed). An LFG effect is also indicted in the other downgradient wells with respect to Na but not Cl.

Time-Series Plots

The time series plots for 5 years of groundwater monitoring at ACRL revealed the following:

1) The Ca, Mg, alkalinity, and Fe concentrations were consistently elevated in the downgradient wells relative to the upgradient well MW-11 and were generally highest in MW-7, where the highest total VOCs are observed. This is consistent with an LFG effect.

2) The Na concentrations were not elevated in the downgradient wells relative to the upgradient well MW-11 in Nov 2008. This is consistent with an LFG effect; however, the Na concentration spiked in Nov 2008 in MW-11. In 17 of the 18 earlier sampling rounds, the Na concentrations were greater in all downgradient wells, although the MW-07 Na concentrations were relatively close (second highest) to the MW-11 concentrations. Overall, this somewhat weakens the case for an LFG effect.

3) The Cl concentrations were nearly the same in MW-11 and MW-7, but Cl was elevated in the other downgradient wells. This is consistent with an LFG effect for MW-7 but less so for the other downgradient wells.

4) No temporal correlations are apparent for VOCs vs. Ca, Mg, Na, or Cl. If changes in VOC concentrations had correlated with Ca and Mg (but not with Na and Cl), this would strength the case for an LFG effect.

In general, these evaluations indicate an LFG effect for MW-7 (where the highest total VOCs are observed in groundwater), given its elevated Mg, Ca, alkalinity, Fe, and VOC concentrations, its lowest Na and Cl concentrations among the downgradient wells, and Na and Cl concentrations relatively close to the upgradient well MW-11.

Ground Water Monitoring&Remediation

Geochemical Changes in Ground Water Due to Landfill Gas Effects

by Henry B. Kerfoot, John A. Baker, and David M. Burt

Abstract

Concentrations of dissolved inorganic constituents commonly monitored in ground waters at landfills were evaluated during and after a period of landfill gas effects on the ground water. Landfill gas can potentially act as an acid or as a reducing agent (Lewis base) due to its carbon dioxide and methane content, respectively. Ground water data from a single landfill gas-affected well were used to evaluate the correlation of the total volatile organic compound (VOC) concentration (as a general measure of landfill gas effects) with bicarbonate alkalinity, ammonia, calcium, iron, magnesium, manganese, sodium, chloride, and sulfate concentrations. Bicarbonate alkalinity, calcium, and magnesium concentrations were correlated with total VOC concentrations. The correlation with calcium and magnesium concentrations is attributed to increased dissolution of carbonate minerals by carbonic acid from the landfill gas carbon dioxide. Total manganese concentrations also increased with increasing VOC content. This is attributed to reduction of manganese (IV) in aquifer minerals by methane in the landfill gas. No detectable iron was observed during the landfill gas effects or after successful corrective action, suggesting that the redox potential of the ground water was not sufficiently low to reduce iron (III) minerals. There was no correlation observed between total VOC concentrations and chloride, sodium, or sulfate concentrations, and there were insufficient ammonia detections to evaluate. The observed effects of landfill gas are expected to depend on the particular mineralogy and ground water quality of a site. These results and basic chemical principles, however, suggest that landfill gas effects on ground water could cause an increase in bicarbonate alkalinity, calcium, and magnesium concentrations, without increases in sodium or chloride concentrations at many sites. Because municipal solid waste landfill leachate is typically characterized by concentrations of chloride and sodium that are significantly elevated relative to background ground water concentrations, landfill gas effects on ground water could potentially be differentiated from leachate effects by a lack of increases in sodium or chloride concentrations accompanying VOC detections

Introduction

Ground water monitoring at landfills is a requirement of U.S. federal and state regulations intended to protect ground water. A typical detection-monitoring program uses the ground water chemistry of samples collected from downgradient ground water monitoring wells to determine if a release from the facility has occurred. Typically, the concentrations of specific indicator parameters from the downgradient wells are statistically compared to background concentrations represented by either data from upgradient wells or by historical data from the same well (Davis and McNichols 1994; Gibbons 1994). Exceedances of statistical criteria can lead to either verification sampling or additional evaluation to characterize the nature and extent of the effects on ground water.

Volatile organic compounds (VOCs) have been commonly used as parameters for detection monitoring at municipal solid waste (MSW) facilities because of their high mobility relative to other organic compounds, and the frequency of their presence in MSW leachate (Plumb 1991). Detection of VOCs in ground water samples can, however, result from landfill gas contact with the ground water as well as from landfill water (e.g., leachate) (Kerfoot 1994; Baker and O'Sadnick 1994; Kerfoot 1996, Baker 1998; Kraemer et al. 1998).

Evaluation of concentrations of low-volatility constituents can be used to differentiate between landfill gas and leachate as the source of VOCs detected in ground water samples (Kerfoot 1996). If the leachate concentration of a low-volatility parameter is high relative to the background ground water concentration, an increase in the ground water concentration of that constituent can suggest leachate effects on ground water, rather than gas effects, because the constituent is not sufficiently volatile to be transported in the gas phase. Landfill gas effects, however, could also change the ground water concentration of dissolved constituents through geochemical processes. This could cause such a constituent to be an unreliable indicator of leachate effects on ground water. Potential landfill gas effects on ground water chemistry fall into two general categories. The first category contains effects due to acid-base reactions, where acidity and alkalinity changes are involved. The second includes effects due to oxidation-reduction processes, where moieties are oxidized or reduced.

In this paper, we evaluate concentrations of common inorganic constituents in ground water samples that have been affected by landfill gas (and not landfill water, i.e., leachate) (Kerfoot 1996; Los Angeles Regional Water Quality Control Board 1994) during both the period of those effects and after a successful corrective action to ameliorate them. Ground water concentrations of other constituents associated with leachate and commonly monitored at landfills were evaluated. The parameters evaluated include calcium, magnesium, sodium, iron, manganese, ammonia, bicarbonate alkalinity, chloride, and sulfate. Possible correlations between these common inorganic parameters and landfill gas impacts were evaluated. In addition, the geochemical processes responsible for some of the observed changes were evaluated.

The evaluation in this paper is for data from a single landfill gas-affected well. The data are limited to this single landfill gas-affected well for several reasons. First, the well used had the highest VOC concentrations, so that samples from it would be generally expected to be the ones most affected by landfill gas and to show the greatest geochemical effects from landfill gas. In addition, by limiting the comparison to a single well, the effects of spatial variability in the geochemical composition of the ground water on the evaluation are minimized and not mistakenly attributed to landfill gas/ground water interactions. Finally, because of the potential typical spatial variability of the VOC identities and concentrations in landfill gas, comparisons between more than one well could result in variations in ground water VOC impacts related to differences in the gas phase VOC concentration rather than the degree of landfill gas effects on the ground water. A relatively stable gas phase VOC composition at a fixed location would allow the sum of the ground water VOC concentrations (total VOCs) to be used as an approximate measure of the magnitude of landfill gas effects on the ground water samples evaluated. This hypothesis to total VOC concentration as a measure of landfill gas effects can be tested by evaluating whether a correlation between alkalinity and total VOC concentration exists, as it would if the total VOC concentration were a measure of the magnitude of landfill gas effects.

Background

Landfill gas from MSW facilities is generally composed of methane and carbon dioxide, with minor amounts of nitrogen and oxygen from atmospheric intrusion and leakage. In addition, VOCs can be present at concentrations of up to the order of tens of parts per million by volume. The location, specific waste composition, and climate at a landfill can influence the composition of the landfill gas due to effects of water on biogas generation rates, partitioning of VOCs into pore water (leachate), and other factors. Landfill gas composition can be affected by the nature of the waste accepted, which can be related to the age of the landfill. In addition, the maturity or degree of decomposition of the waste can affect the potential sources of volatile constituents present. In general, MSW landfills generate biogas of a composition of ~55% by volume methane and ~45% by volume carbon dioxide (Kjeldsen 1996).

The most water soluble major constituent of MSW landfill gas is carbon dioxide. Carbon dioxide can partition from the gas phase into ground water due to its Henry's law constant of 0.047 L-atm/mole and form carbonic acid (Butler 1982). This can affect the inorganic chemistry of the ground water. Kerfoot (1996) has calculated that landfill gas carbon dioxide could result in a pH of 4.7 in the absence of buffering by aquifer solids; however, carbonic acid can react with carbonate minerals in the aquifer to buffer pH changes. For calcite ($CaCO_3$), this reaction is

$$H_2CO_3(aq) + CaCO_3(s) = Ca^{++}(aq) + 2\ HCO_3^-(aq) \quad (1)$$

The addition of carbon dioxide to ground water would not change the alkalinity of water in the absence of interactions with aquifer solids (Butler 1982). Bicarbonate alkalinity is equal to the difference between the bicarbonate and H^+ molar concentrations. For each bicarbonate formed by dissociation of carbonic acid, one H^+ is also formed, leaving the bicarbonate alkalinity unchanged if there are no carbonic acid buffering reactions involving aquifer solids. Buffering reactions like Equation 1 can, however, increase the alkalinity of the ground water. Because of this, the expected effect of landfill gas on ground water chemistry can be not only an increase in alkalinity, but also an increase in calcium and magnesium concentration from carbonate mineral dissolution.

Methane (CH_4) is the other major constituent of typical landfill gas. Methane has the potential to act as a reducing agent, or electron donor in Lewis acid-base parlance, chemically reducing species and thereby potentially dissolving metal ions from aquifer solids. Such an action could potentially reduce a species containing a metal with a redox-sensitive aqueous solubility, such as reaction with pyrolusite to produce soluble manganese (II) from insoluble manganese (IV):

$$\begin{aligned} 4\ MnO_2(s) + CH_4(aq) + 8\ H^+ &= 4\ Mn^{++}(aq) \\ &+ CO_2(aq) + 6\ H_2O \end{aligned} \quad (2)$$

The process described by Equation 2 could result in an increase in dissolved manganese concentration in ground water. At a lower redox potential, such reactions could also apply to iron-containing minerals, especially iron oxides and oxyhydroxides such a $Fe_2O_2(s)$ and FeOOH, producing soluble iron (II) from iron (III), or other minerals containing metals with redox-sensitive solubility, potentially increasing the concentrations of those metals in ground water samples.

Site Description

The site has been described elsewhere (Kerfoot and Mayer 1995). Ground water occurs in the vicinity of the site at depths of 180 to 290 feet below land surface. Ground water levels are greatly influenced by spreading grounds upgradient of the site, where water is artificially recharged seasonally Figure 1 shows the location of the waste, the ground water flow direction, and the location of the ground water monitoring well that is the subject of this paper Ground water levels beneath the site can fluctuate up to 60 feet, largely due to the artificial discharge The saturated zone and unsaturated zone in the vicinity of the site are comprised of cobbles, according to boring logs. The site is in a basin that receives alluvial materials from several different nearby geologic areas

VOCs and increased alkalinity have been detected in ground water samples from wells that are upgradient, downgradient, and crossgradient from the facility (Figure 1). Wells at the site have been monitored for VOCs on a routine basis since 1989 Since that time, the frequency of VOC detections has ranged from sporadic to consistent, depending upon the well, until as late as 1995, following corrective action in 1992. The maximum concentration of VOCs for any given year is typically in the second- or third-quarter sample Due to the seasonal nature of artificial recharge, these dates approximately correlate with the highest ground water elevations in each year.

Landfill gas migration has been previously determined to be the source of the VOC detections at the facility (Kerfoot and Mayer 1995). The single well (16F) evaluated in this study was located directly downgradient of the waste mass (Figure 1). Well 16F was selected for evaluation because it showed the highest VOC concentrations A single-well evaluation was undertaken to eliminate potentially confounding effects of spatial variability on the data Landfill gas was demonstrated to be the source of VOC detections for all of the wells with VOC detections (Los Angeles Regional Water Quality Control Board 1994) Figure 2 shows a picture from a downhole video camera in the well evaluated in this paper The picture was taken during the period of landfill gas impacts on the ground water. Bubbles of gas can be seen traveling upward in the well

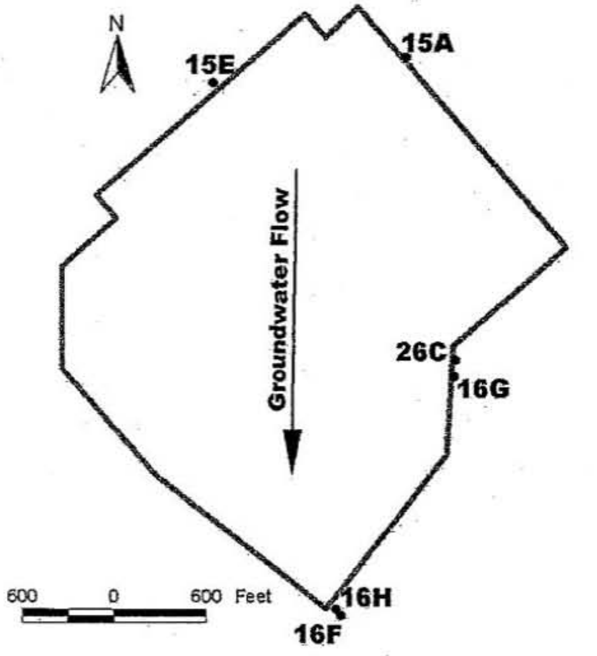


Figure 1. Site map showing general direction of ground water flow.

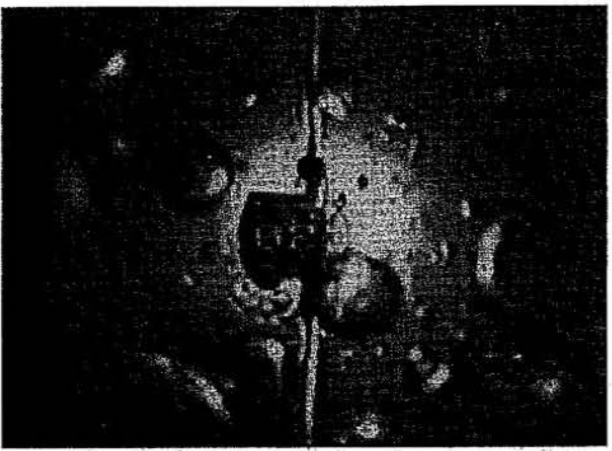


Figure 2. Downhole photograph showing bubbles traveling up well casing.

Results and Discussion

Figure 3 shows the total VOC concentration in ground water samples from an affected well over time The date of corrective action (upgrades to the gas collection system) is also indicated on the plot as well. These data show that the corrective action of upgrading the gas collection system decreased VOC concentrations in samples from well 16F The other affected wells showed similar results. Such behavior has been noted to confirm landfill gas as the cause of VOC detections (Baker and O'Sadnick 1994). Figure 4 shows a plot of total VOCs and alkalinity for ground water samples from well 16F through the period of landfill gas effects and the corrective action. From the plot, a correlation between alkalinity and total VOCs is evident ($R^2 = 0\ 69$, n = 22, significant at > 99% confidence), suggesting that landfill gas effects on ground water result in an increase in alkalinity. This is an expected consequence of landfill gas effects on ground water (Kerfoot 1996). It should be noted, however, that ground water alkalinity increases would also be expected from leachate impacts on ground water

The relationship between the concentrations of calcium and magnesium and the total VOC concentration in samples from well 16F was also evaluated. Figure 5 shows a plot of the dissolved calcium and magnesium concentrations as a function of the total VOC concentration The two alkaline earth cation concentrations correlate with the total VOC concentrations, with $R^2 = 0\ 68$ for calcium (n = 27; statistically significant above 99%) and $R^2 = 0\ 70$ for magnesium (n = 27; statistically significant above 99%) This is consistent with the reaction of carbonic acid from landfill gas CO_2 with calcium or magnesium compounds The concentrations of several commonly monitored constituents were evaluated in landfill gas-affected ground water samples and in ground water samples not affected by landfill gas (as indicated by total VOC concentrations), and compared to VOC concentrations Figure 6 shows the concentrations of chloride, sodium, and sulfate as a function of total VOC concentrations for waters from a single monitoring well. There is no

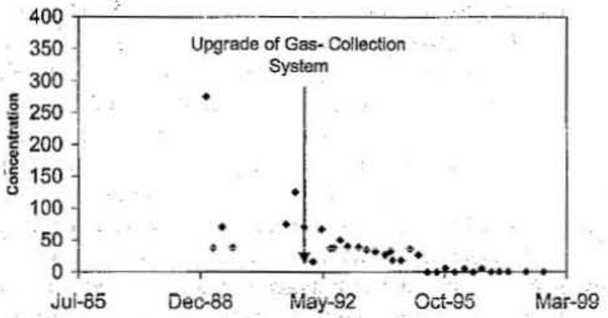


Figure 3. Total VOC concentrations over time. The date of upgrades to the gas-collection system is also shown.

increasing trend in the ground water concentrations of these nonvolatile inorganic constituents with increasing VOC concentration. Such behavior is consistent with predictions of landfill gas effects on ground water, indicating that sodium and chloride concentrations can be used to differentiate between landfill gas and landfill leachate as the cause of VOC detections (Kerfoot 1996).

Iron and manganese concentrations in ground water were also assessed. These two metals are common leachate constituents and could potentially be proposed as indicators of leachate effects on ground water samples. These ions are not volatile, so that they would not be transported with landfill gas. Both, however, have aqueous solubilities that are sensitive to redox potential, so that landfill gas could potentially reduce iron (III) or manganese (IV) from aquifer or vadose zone solids to form the soluble iron (II) or manganese (II) ions, increasing their concentrations in ground water samples. No detectable concentrations of dissolved iron were observed during or after landfill gas effects on ground water, but detectable manganese concentrations were observed. A plot of manganese concentrations as a function of total VOC concentrations (Figure 7) shows an increasing trend in total manganese concentrations with increasing total VOC concentrations ($R^2 = 0.73$, n = 18, with nondetects entered as 0; $R^2 = 0.84$ with nondetects as one half the detection limit; both statistically significant at above 99% confidence). This suggests that landfill gas can cause reduction of manganese from minerals and result in detectable dissolved concentrations in ground water. The trend in the plot appears to intercept the x axis at a nonzero total VOC concentration. This suggests that there is a threshold of landfill gas effect on the ground water before manganese is reduced. This could be due to a minimum concentration of methane needed to produce a suitably low ground water redox potential to reduce the manganese (IV) minerals, kinetic limitations on reduction of manganese (IV), or both. The first of these two potential explanations could arise from a requirement for satisfaction of electron demands from oxidizing agents (electron acceptors) other than manganese (IV) before manganese is reduced to the soluble manganese (II) ion. Such oxidizing agents would include molecular oxygen and nitrate ion, if they were present. The measurable amount of total manganese in comparison with the below-detection concentration of iron indicates that the redox potential was not low enough at this site to reduce iron in iron oxides. Greater amounts of landfill gas or longer exposure times could possibly generate low enough redox potentials to produce detectable dissolved iron.

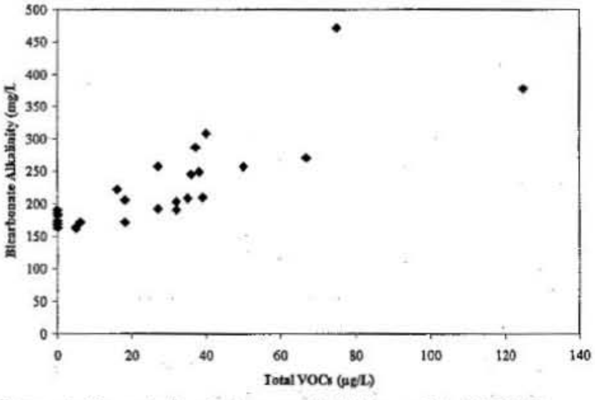


Figure 4. Correlation between alkalinity and total VOC concentration.

The manganese data evaluated were for total (unfiltered) manganese, rather than filtered samples, and that could potentially raise issues regarding the appropriateness of such a practice. Such a concern would be based on the fact that the reaction of methane with manganese minerals as described in Equation 2 produces dissolved manganese, and the data were for total, as opposed to dissolved, manganese. The observed increases in total manganese demonstrate the input of manganese into the ground water in suspended or dissolved form and their correlation with total VOCs and alkalinity links those inputs with landfill gas effects. Thus, whether the manganese data reflect dissolved or suspended manganese, the correlation shows a nexus between landfill gas effects and (total) manganese concentrations.

Ammonia is a volatile species that can be formed under methanogenic conditions in landfills. For that reason, ammonia (as nitrogen) concentrations in ground water samples were considered. Only three detections of ammonia nitrogen (of 16 analyses) were recorded, with a detection limit of 0.02 mg/L, and no trends related to VOC concentrations or alkalinity were evident. This also indicates that the reducing conditions generated by the methane in the landfill gas were enough to reduce manganese, but not enough to generate ammonia.

Calcium and magnesium are typically present at concentrations above background ground water concentrations in landfill leachate. Because they are not volatile, they would not be transported in the gas phase and are potential indicators of leachate effects on ground water. Figure 5 shows that concentrations of both calcium and magnesium increase with increasing total VOC concentrations. The coefficients of determination for calcium and magnesium are $R^2 = 0.56$ (n = 20) and $R^2 = 0.66$ (n = 18), respectively. Both correlations are statistically significant at a confidence level of 99%. These results suggest that landfill gas effects on ground water can increase concentrations of calcium and magnesium. This is consistent with the discussion earlier of reactions of carbonic acid with calcium minerals. Such minerals are known to be present in the vicinity of the site, although we do not have specific data on their concentrations in aquifer materials. Tuchfeld et al. (1998) presented results of geochemical modeling that suggested calcium and magnesium

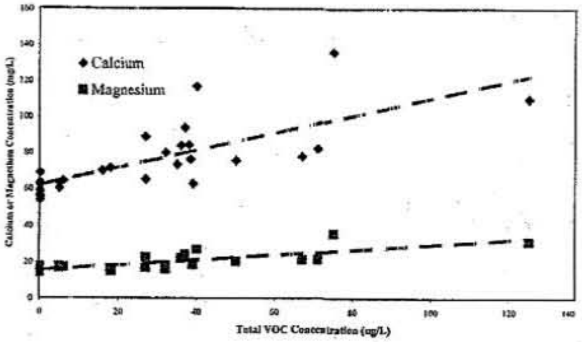


Figure 5. Correlations between calcium and magnesium concentrations, and total VOC concentration.

concentrations would decrease with landfill gas (or leachate) effects on ground water in "carbonate ground water" with 384 mg/L calcium and 7.9 mg/L magnesium, and would increase in "noncarbonate ground water" with 28 mg/L calcium and 5.9 mg/L magnesium. Background ground water calcium concentrations for this study were between those two values, at ~57 and ~16 mg/L, respectively. Magnesium concentrations were higher than either of the values they cited. Results from geochemical modeling using the Geochemists Workbench® (Bethke 1996) and background ground water concentrations from this site suggest that landfill gas can dissolve calcite and dolomite due to the acidity of the carbon dioxide. An amount of ~0.004 moles of carbon dioxide dissolved per liter of ground water could accomplish the same changes in calcium and magnesium concentrations and pH observed in the ground water samples at this site.

To evaluate the relative magnitudes of the roles of calcium and magnesium in buffering the carbonic acid formed from landfill gas CO_2, we performed a linear regression on the calcium and magnesium concentrations (in mEq/L) as a function of the bicarbonate alkalinity (in mEq/L). Units of mEq/L were used to allow evaluation on a molar basis of the relative importance of calcium and magnesium and to ascertain that these two cations are responsible for essentially all of the buffering (indicated by a sum of their slopes of 1.0). Figure 8 shows a plot of the bicarbonate alkalinity, and calcium and magnesium data for ground water samples for the same well. For calcium, the regression slope was 0.65 (coefficient of determination [R^2] = 0.85), while the regression slope for magnesium was 0.28 ($R^2 = 0.76$). Both correlations are statistically significant at a confidence level of 99%. Based on the stoichiometry of the buffering reaction shown in Equation 1, the slope of a plot of alkalinity (in mEq/L) as a function of the calcium or magnesium concentration (in mEq/L) should be equal to the fraction of the buffering caused by dissolution of particular carbonate minerals. The slope (in mEq/L per mEq/L) is a measure of the fraction of buffering reactions involving compounds of the cation in question. These results are consistent with 28% of the buffering of carbonic acid being due to magnesium-containing minerals and 65% attributable to calcium-containing minerals. This buffering by calcium and magnesium minerals indicates that landfill gas effects on ground water can produce temporary hardness in ground water.

Based on the results of this work, landfill gas effects on ground water chemistry can cause changes that would be apparent in typical trilinear diagrams. While leachate effects would be expected to cause data to shift along a mixing line toward the leachate composition, landfill gas effects would be expected to cause a shift along a pseudo-mixing line directly toward 100% mEq/L bicarbonate + carbonate in the anion plot, with decreasing %mEq chloride and sulfate. In a cation trilinear plot, whereas leachate effects would be expected to result in a shift along a mixing line towards the leachate composition, landfill gas effects would be expected to cause a shift along a pseudo-mixing line directly toward a point with coordinates corresponding to the percent of buffering by calcium and magnesium minerals.

Conclusions

Based on the ground water data evaluated in this paper, landfill gas effects on common water quality parameters at the MSW landfill studied included increased bicarbonate alkalinity, increased calcium and magnesium concentrations, and increased manganese concentrations. The increases in alkalinity, calcium, and magnesium are related to the carbon dioxide in landfill gas, specifically the buffering of the added carbonic acid by dissolution of calcium and magnesium carbonate minerals. The manganese concentration increase is attributed to the ability of methane present in landfill gas to reduce manganese (IV) to soluble manganese (II). Both of these effects are dependent on the geologic materials present in the subsurface, so that these results may not be directly applicable to other sites. No changes in the concentrations of chloride, sodium, or surfate ions accompanying landfill gas effects on ground water were observed. Because of the low probability of geologic sources of these ions in saturated zone materials, sodium and chloride are anticipated to show this behavior at other sites where landfill gas affects ground water.

The results of this paper could potentially be the basis for an effective means of evaluating whether landfill gas is the source of VOC detections at landfill facilities using common monitoring parameters. Routine inorganic water quality parameters in ground water samples were affected by a landfill gas source in a manner distinctly different from that observed from landfill leachate impacts. The differences suggest a strategy for the use of more common geochemical parameters

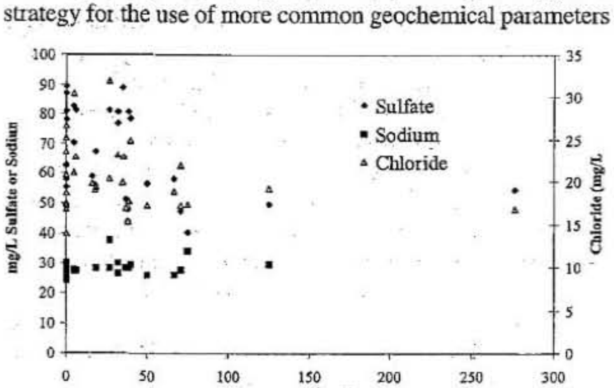


Figure 6. Sulfate, sodium, and chloride concentrations, and total VOC concentrations: No relationship is apparent.

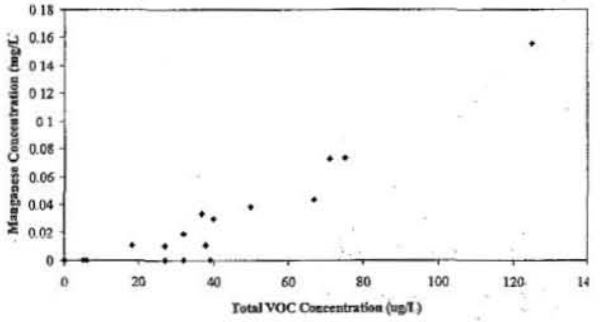


Figure 7. Correlation between manganese concentration and total VOC concentration.

than have previously been used to evaluate whether landfill gas is responsible for VOC detections in ground water samples. If leachate at a site has concentrations of chloride, sodium, or total dissolved solids that are sufficiently elevated relative to background concentrations, those parameters could be effectively used to differentiate landfill gas effects from those due to liquid releases, since landfill gas effects would be expected not to increase these parameters, based on these results. The results presented also show, at this site, that landfill gas impacts on ground water resulted in increases in calcium, magnesium, and manganese concentrations, common nonvolatile leachate constituents. Further work is required to evaluate landfill gas effects on these and other common water quality parameters in ground water samples at other sites with differing aquifer and vadose zone materials.

Acknowledgments

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Editor's Note: The use of brand names in peer-reviewed papers is for identification purposes only and does not constitute endorsement by the authors, their employers, or the National Ground Water Association.

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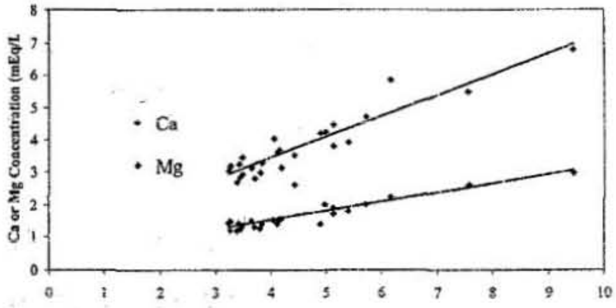

Figure 8. Plot showing molar calcium and magnesium contributions to buffering of carbonic acid from landfill gas, carbon dioxide.

Biographical Sketches

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David M. Burt *is Senior Director, Groundwater Protection for Waste Management Inc., Houston, Texas (dburt@wm.com), where he is responsible for all ground water and related media issues. He holds a B.S. in geology from the University of Colorado, and an M.S. in geology and geophysics from California State University, Long Beach. He has been active in waste disposal-related ground water management and monitoring programs since 1989. His research interests include landfill behavior as it influences leachate and ground water quality.*

I - 1 Groundwater Data Review
I - 2 Groundwater Analytical Data EDD (PACE)

Partial Electronic Submittal Only

See DVD located in cover of this report

Appendix I

Remedial Investigation – Groundwater Quality Assessment/Quality Control (QA/QC) Review and Groundwater Analytical Results (Pace Analytical)

I - 1

Groundwater Data Review

Quality Assurance/Quality Control (QA/QC) Data Review for Asotin County Landfill, Groundwater Samples Collected from May to October, 2009

TO:	Steve Becker/Asotin County Regional Landfill Craig Sauer/CH2M HILL
COPIES:	Appendix I of RI/RS Report
FROM:	Wendi Gale/Critigen
DATE:	February 19, 2010

Introduction

This memorandum summarizes the results of a quality assurance (QA) and quality control (QC) data review associated with the analysis of groundwater samples collected monthly from Asotin County Regional Landfill (ACRL) from May 2009 through October 2009. Groundwater sampling specific to the RI/FS effort in 2009 was performed in accordance with the project-specific *Sampling and Analysis Plan (SAP), Asotin County Regional Landfill, Asotin County, Washington (*CH2M HILL, 2009). In accordance with the SAP, groundwater samples were analyzed for volatile organic compounds (VOCs), dissolved metals, total organic carbon (TOC), silica, and general chemical parameters. Samples were analyzed by Pace Analytical Services located in Seattle, Washington.

This QA review includes groundwater results from 3 wells installed specifically for the RI/FS, including MW-14S, MW-14D, and MW-15. This QA review does not include groundwater data from wells MW-01, MW-03, MW-04, MW-05, MW-06, MW-07, MW-09, MW-10, and MW-11 which have been reviewed separately as described in the *2009 Annual and 4th Quarter Groundwater Monitoring Report* (CH2M HILL, 2010).

The intent of the QA/QC data review is to assess the appropriate use or "useability" of the analytical data based on the QA/QC data submitted. The purpose of the groundwater data review was to assess the "useability" of data within the context of the project-specific data quality objectives (DQOs) as described in the SAP (noted above). The data review was performed in accordance with EPA Contract Laboratory Program (CLP) *National Functional Guidelines for Low Concentration Organic Data Review* (USEPA, 2001) and the EPA CLP *National Functional Guidelines for Inorganic Data Review* (USEPA, 2004). When applicable, sample results or data that exceed criteria require data qualification as appropriate.

The usability review focuses on criteria for the following QA/QC parameters and their overall effect on the data:

- Proper handling and sample receipt conditions (chain-of-custody procedures)
- Holding times
- Method blanks
- Surrogate spike recovery

- Precision and Accuracy (laboratory control samples and matrix spike/spike duplicates)
- Field QA/QC (trip blanks and equipment blanks)

Analytical Methods

The analytical method used for each parameter, and the number and type of samples analyzed are presented in Table 1.

Table 1
Summary of Analyses

Parameter	Analysis Method	No. of Field Samples	No. of Field Duplicates	No. of Trip Blanks
VOCs	EPA 8260B	3 (May-2009) 7 (June-2009) 7 (Jul-2009) 3 (Aug-2009) 3 (Sep-2009) 3 (Oct-2009)	1 (May-2009) 1 (June-2009) 1 (Jul-2009) 1 (Aug-2009) 1 (Sep-2009) 1 (Oct-2009)	1 (May-2009) 1 (June-2009) 1 (Jul-2009) 1 (Aug-2009) 1 (Sep-2009) 1 (Oct-2009)
Dissolved Metals	EPA 6020	3 (May-2009) 3 (June-2009) 3 (Jul-2009) 3 (Aug-2009) 3 (Sep-2009) 3 (Oct-2009)	1 (May-2009) 1 (June-2009) 1 (Jul-2009) 1 (Aug-2009) 1 (Sep-2009) 1 (Oct-2009)	
TOC	SM 5310C	3 (May-2009) 3 (June-2009) 3 (Jul-2009) 3 (Aug-2009) 3 (Sep-2009) 3 (Oct-2009)	1 (May-2009) 1 (June-2009) 1 (Jul-2009) 1 (Aug-2009) 1 (Sep-2009) 1 (Oct-2009)	
Dissolved Silica	SM 9390	3 (May-2009) 3 (June-2009) 3 (Jul-2009)	1 (May-2009) 1 (June-2009) 1 (Jul-2009)	
General chemical parameters[1]		3 (May-2009) 3 (June-2009) 3 (Jul-2009) 3 (Aug-2009) 3 (Sep-2009)[2] 3 (Oct-2009)	1 (May-2009) 1 (June-2009) 1 (Jul-2009) 1 (Aug-2009) 1 (Sep-2009)[2] 1 (Oct-2009)	

Notes:
1. Alkalinity, ammonia, chloride, nitrate, sulfate, and total dissolved solids.
2. Only nitrate was reported in analytical batch 251915 in September 2009.

Holding Time Compliance

Except for the instances noted below, all groundwater samples were extracted and analyzed within their respective holding time requirements, therefore meeting QC acceptance criteria.

- September 2009 (SDGs 251915 and 252191): Nitrate for groundwater samples MW-14S, MW-15, FD-1, and FD1092809 was analyzed outside the 2-day holding time criteria. The positive nitrate results for these samples were qualified as estimates and flagged with a "J".

The chain-of-custody forms did not indicate the temperature of the coolers at the time of receipt, therefore it could not be determined if coolers were received by the laboratory at an acceptable temperature as recommended by EPA.

Method Blanks

Method blanks monitor contamination that may be introduced during analysis.

A method blank was analyzed with each analytical batch, therefore meeting frequency QC acceptance criteria. Except for the instances noted below, all method blanks were contamination-free, therefore meeting QC acceptance criteria.

<u>May 2009</u>

- The method blank analyzed on June 25, 2009 (SDG 251283) was reported with detectable concentrations of dissolved iron (55.8 µg/L). The dissolved iron results for samples MW-15 and FD1 were qualified as nondetects and flagged with a "U".
- The method blank analyzed on June 2, 2009 (SDG 251294) was reported with detectable concentrations of acetone (5 µg/L). Acetone was not detected in the associated samples, therefore no sample results required qualification based on method blank contamination.

<u>June 2009</u>

- The method blank analyzed on July 27, 2009 (SDG ACOU090602) was reported with detectable concentrations of dissolved silica (0.14 mg/L). All dissolved silica results for the associated samples were reported greater than five times the method blank concentration, therefore no sample results required qualification based on method blank contamination.

<u>July 2009</u>

- The method blank analyzed on August 5, 2009 (SDG 251689) was reported with detectable concentrations of dissolved manganese (0.51 µg/L), dissolved nickel (2.4 µg/L), and dissolved tin (3.4 µg/L). All dissolved manganese results for the associated samples were reported greater than five times the method blank concentration, therefore no sample results required qualification based on method blank contamination. The dissolved nickel results for samples MW-14S, MW-14D, and FD1 were qualified as nondetects and flagged with a "U". The dissolved tin results for samples MW-14S and MW-15 were qualified as nondetects and flagged with a "U".
- The method blank analyzed on July 27, 2009 (SDG ACOU090701) was reported with detectable concentrations of dissolved silica (0.14 mg/L). All dissolved silica results for the associated samples were reported greater than five times the method blank concentration, therefore sample results required qualification based on method blank contamination.

<u>August 2009</u>

- The method blank analyzed on August 28, 2009 (SDG 251902) was reported with detectable concentrations of acetone (5.6 µg/L). Acetone was not detected in the associated samples, therefore no sample results required qualification based on method blank contamination.

<u>September 2009</u>

- The method blank analyzed on October 13, 2009 (SDG 252191) was reported with detectable concentrations of dissolved tin (0.29 µg/L). Dissolved tin was not detected in the associated samples, therefore no sample results required qualification based on method blank contamination.

<u>October 2009</u>

- The method blank analyzed on November 4, 2009 (SDG 252410) was reported with detectable concentrations of dissolved manganese (1.5 µg/L) and dissolved tin (0.12 µg/L). The dissolved manganese results for samples MW-14S, MW-14D, MW-15, and FD1 were qualified as nondetects and flagged with a "U". The dissolved tin result for sample MW-14D was qualified as a nondetect and flagged with a "U".
- The method blank analyzed on November 4, 2009 (SDG 252410) was reported with detectable concentrations of naphthalene (3.3 µg/L). Naphthalene was not detected in the associated samples, therefore no sample results required qualification based on method blank contamination.

Surrogate Spike Recovery

Surrogate compounds are organic compounds which are similar to the analytes of interest in chemical composition, extraction, and chromatography, but are not likely to be found in environmental samples. Every sample and blank analyzed for organic parameters is spiked prior to extraction or analysis with surrogate compounds that are representative of the analysis. All surrogate spike recoveries were within the laboratory-established control limits, therefore meeting QC acceptance criteria.

Method blank results, surrogate spike recoveries, laboratory control sample (LCS), and matrix spike/matrix spike duplicate (MS/MSD) results were provided for all analyses. The Level II laboratory reports do not provide QC summary information for initial calibration verification (ICV) and continuing calibration verification (CCV), therefore calibration verification could not be evaluated.

Laboratory Control Samples and Matrix Spike/Matrix Spike Duplicates

Precision and accuracy of laboratory performance are evaluated by the analysis of laboratory control samples (LCS), matrix spike (MS), and matrix spike duplicates (MSDs). LCS and MS/MSDs should be analyzed at a frequency of five percent or once per analytical batch, whichever is more frequent. LCS and MS/MSD recoveries and relative percent difference (RPD) results should be within laboratory-established control limits to meet precision and accuracy QC acceptance criteria. Organic sample results cannot be qualified using LCS or MS/MSD data alone, but can be used in conjunction with other QC criteria to determine the precision and accuracy of individual samples.

LCS and MS/MSDs were reported with every analytical batch and analytical method, therefore meeting frequency QC acceptance criteria.

The following MS/MSD recoveries were reported outside the QC control limits for laboratory precision and accuracy for samples analyzed during 2009:

<u>May 2009, SDG 251283</u>

- The MS recoveries for dissolved calcium (126%) and dissolved sodium (126%) were reported above the laboratory-established control limits. The MSD recovery for dissolved magnesium (72%) was reported below the laboratory-established control limits. The dissolved calcium, dissolved sodium, and dissolved magnesium concentrations in the associated samples were greater than four times the spike concentration, therefore no further qualification was required based on MS/MSD recoveries.
- The MS/MSD recoveries for dissolved silver (43%/47%) were reported below the laboratory-established control limits. The nondetect dissolved silver results for samples MW-15 and FD1 were qualified as estimates and flagged with an "NDJ" based on MS/MSD recoveries.

<u>May 2009, SDG 251294</u>

- The MS/MSD recoveries for dissolved calcium (410%/363%) were reported above the laboratory-established control limits. The dissolved calcium concentrations in the associated samples were greater than four times the spike concentration, therefore no further qualification was required based on MS/MSD recoveries.
- The MS/MSD recoveries for dissolved silver (21%/26%) and dissolved zinc (73%/61%) were reported below the laboratory-established control limits. The dissolved silver and dissolved zinc results for samples MW-14S, MW-14D, and FD2 were qualified as estimates and flagged with a "J" for positive results or an "NDJ" for nondetect results based on MS/MSD recoveries.

<u>June 2009, SDG 251534</u>

- The MS/MSD recoveries for dissolved calcium (206%/-17%) were reported outside the laboratory- established control limits. The dissolved calcium concentrations in the associated samples were greater than four times the spike concentration, therefore no further qualification was required based on MS/MSD recoveries.

<u>July 2009, SDG 251689</u>

- The LCS recovery for dissolved silver (127%) was reported above the laboratory-established control limits. Dissolved silver was not detected in the associated samples, therefore no sample results required qualification based on LCS recoveries.
- The MS recoveries for dissolved magnesium (22%) and dissolved potassium (74%), and the MS/MSD recoveries for dissolved calcium (-51%/71%) and dissolved sodium (-455%/-362%) were reported outside the laboratory-established control limits. The dissolved magnesium, dissolved potassium, dissolved calcium, and dissolved sodium concentrations in the associated samples were greater than four times the spike concentration, therefore no further qualification was required based on MS/MSD recoveries.

July 2009, SDG ACOU090701

- The MS/MSD recoveries for dissolved silica (140%/152%) were reported above the laboratory-established control limits. Positive dissolved silica results for samples MW-14S, MW-14D, MW-15, and FD1 were qualified as estimates and flagged with a "J" based on the MS/MSD recoveries.

August 2009, SDGs 251902 and 251915

- The MS recoveries in QC sample 668942 for dissolved calcium (-317%), dissolved magnesium (-160%), dissolved potassium (30%), and dissolved sodium (-489%) were reported outside the laboratory-established control limits. The dissolved calcium, dissolved magnesium, dissolved potassium, and dissolved sodium concentrations in the associated samples were greater than four times the spike concentration, therefore no further qualification was required based on MS recoveries.
- The MS/MSD recoveries in QC samples 668943 and 668944 for dissolved calcium (-1288%/-958%), dissolved magnesium (-262%/-309%), and dissolved sodium (-859%/-966%) were reported outside the laboratory-established control limits. The dissolved calcium, dissolved magnesium, and dissolved sodium concentrations in the associated samples were greater than four times the spike concentration, therefore no further qualification was required based on MS/MSD recoveries.
- The MSD recovery for dissolved potassium (69%) was reported below the laboratory-established control limits. The dissolved potassium results for samples MW-14S, MW-14D, MW-15, FD1, and FD2 were qualified as estimates and flagged with a "J" based on the MSD recovery.

September 2009, SDG 252191

- The MS/MSD recoveries for dissolved calcium (562%/440%), dissolved magnesium 223%/204%), and dissolved sodium (409%/513%) were reported above the laboratory-established control limits. The dissolved calcium, dissolved magnesium, and dissolved sodium concentrations in the associated samples were greater than four times the spike concentration, therefore no further qualification was required based on MS/MSD recoveries.
- The MS/MSD recoveries for dissolved silver (32%/35%) were reported below the laboratory-established control limits. The nondetect dissolved silver results for samples MW-14S, MW-14D, MW-15, and FD1 were qualified as estimates and flagged with an "NDJ" based on MS/MSD recoveries.
- The MS/MSD recoveries for nitrate (70%/71%) were reported below the laboratory-established control limits. The nitrate result for sample MW-14D was qualified as an estimate and flagged with a "J" based on the MSD recovery. The nitrate result for sample FD1092809 was previously qualified based on holding time exceedance, therefore no further qualification was required based on MS/MSD recoveries.

October 2009, SDG 252410

- The MS recovery for dissolved antimony (133%), and the MS/MSD recovery for dissolved zinc (143%/137%) were reported above the laboratory-established control limits. Dissolved antimony and dissolved zinc were not detected in the associated samples, therefore no sample results required qualification based on MS/MSD recoveries.
- The MS recoveries for dissolved calcium (655%), dissolved magnesium (204%), dissolved sodium (265%) were reported above the laboratory-established control limits. The dissolved calcium, dissolved magnesium, and dissolved sodium concentrations in the associated samples were greater than four times the spike concentration, therefore no further qualification was required based on MS recoveries.
- The MS recovery for dissolved silver (32%) and the MS/MSD recoveries for dissolved barium (153%/144%) were reported outside the laboratory-established control limits. The nondetect dissolved silver results for samples MW-14S, MW-14D, MW-15, and FD1 were qualified as estimates and flagged with an "NDJ" based on MS recoveries. The dissolved barium results for samples MW-14S, MW-14D, MW-15, and FD1 were qualified as estimates and flagged with a "J" based on the MS/MSD recoveries.

Field QA/QC

Trip Blanks

Trip blanks are used primarily to indicate possible contamination that may occur during packaging, shipping, and handling. Equipment blanks are used primarily to indicate possible contamination that may occur in sampling equipment.

A trip blank sample was shipped with all groundwater samples submitted for VOC analysis. Except for the instance noted below, no detectable concentrations of target analytes were present in the trip blank samples.

- Carbon disulfide (1.5 μg/L) was detected in the trip blank sample collected on September 10, 2009 (SDG 251915). Carbon disulfide was not detected in any of the associated field samples, therefore sample qualification was not required based on the trip blank contamination.

Equipment blanks

Equipment blanks are used primarily to indicate possible contamination that may occur in sampling equipment.

No detectable concentrations of target analytes were present in the equipment blank samples.

Electronic Submittal Only

See DVD located in cover of this report

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	GENCHEM	Alkalinity, Total	363	mg/L	363	mg/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	GENCHEM	Ammonia-Nitrogen	0.63	mg/L	0.63	mg/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	GENCHEM	Total Dissolved Solids	722	mg/L	722	mg/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	GENCHEM	Total Organic Carbon	1	mg/L	1.0	mg/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	INORG	Chloride	69.4	mg/L	69.4	mg/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	INORG	Nitrate as N	2.5	mg/L	2.5	mg/L	
MW-14D	MW-14D	05/28/09	ACOU090601-005	Water	2009_2nd Qtr	INORG	Silica as SiO2, Dissolved	71	mg/L	71	mg/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	INORG	Sulfate	192	mg/L	192	mg/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Antimony, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Arsenic, Dissolved	0.0019	mg/L	1.9	ug/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Barium, Dissolved	0.11	mg/L	110	ug/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Beryllium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Cadmium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Calcium, Dissolved	119	mg/L	119000	ug/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Chromium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Cobalt, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Copper, Dissolved	0.002	mg/L	2.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Iron, Dissolved	0.108	mg/L	108	ug/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Lead, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Magnesium, Dissolved	40.3	mg/L	40300	ug/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Manganese, Dissolved	0.0115	mg/L	11.5	ug/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Nickel, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Potassium, Dissolved	11.2	mg/L	11200	ug/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Selenium, Dissolved	0.0022	mg/L	2.2	ug/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Silver, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Sodium, Dissolved	91.4	mg/L	91400	ug/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Thallium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Tin, Dissolved	0.01	mg/L	10.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Vanadium, Dissolved	0.0266	mg/L	26.6	ug/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	MET_DISS	Zinc, Dissolved	0.01	mg/L	10.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,1,1-Trichloroethane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,1,2-Trichloroethane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,1-Dichloroethane	1.8	ug/l	1.8	ug/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,1-Dichloroethene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,1-Dichloropropene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,2,3-Trichlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,2,3-Trichloropropane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,2,4-Trichlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,2,4-Trimethylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,2-Dibromo3chloropropane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,2-Dibromoethane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,2-Dichlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,2-Dichloroethane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,2-Dichloroethene (Total)	2.0	ug/l	2.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,2-Dichloropropane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,3,5-Trimethylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,3-Dichlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,3-Dichloropropane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	1,4-Dichlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	2,2-Dichloropropane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	2-Butanone (MEK)	5.0	ug/l	5.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	2-Chlorotoluene	1.0	ug/l	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	2-Hexanone	5.0	ug/l	5.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	4-Chlorotoluene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	4-Methyl-2-Pentanone	5.0	ug/l	5.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Acetone	5.0	ug/l	5.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Benzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Bromobenzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Bromochloromethane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Bromodichloromethane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Bromoform	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Bromomethane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Carbon disulfide	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Carbon tetrachloride	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Chlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Chloroethane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Chloroform	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Chloromethane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	cis-1,2-Dichloroethene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	cis-1,3-Dichloropropene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Dibromochloromethane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Dibromomethane	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Dichlorodifluoromethane	49.1	ug/l	49.1	ug/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Ethylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Hexachlorobutadiene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Isopropylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	m,p-Xylene	2.0	ug/l	2.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Methylene chloride	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Methyl-tert-butyl ether	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Naphthalene	1.0	ug/l	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	n-Butylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	n-Propylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	o-Xylene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	p-Isopropyltoluene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	sec-Butylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Styrene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	tert-Butylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Tetrachloroethene	14.2	ug/l	14.2	ug/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Toluene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	trans-1,2-Dichloroethene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	trans-1,3-Dichloropropene	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Trichloroethene	6.6	ug/l	6.6	ug/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Trichlorofluoromethane	4.0	ug/l	4.0	ug/L	
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Vinyl chloride	1.0	ug/l	1.0	ug/L	U
MW-14D	MW-14D	05/28/09	251294005	Water	2009_2nd Qtr	VOC	Xylenes, Total	3.0	ug/l	3.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	GENCHEM	Alkalinity, Total	411	mg/L	411	mg/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	GENCHEM	Ammonia-Nitrogen	0.77	mg/L	0.77	mg/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	GENCHEM	Total Dissolved Solids	729	mg/L	729	mg/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	GENCHEM	Total Organic Carbon	1.0	mg/L	1.0	mg/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	INORG	Chloride	60.6	mg/L	60.6	mg/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	INORG	Nitrate as N	12.7	mg/L	12.7	mg/L	
MW-14D	MW-14D	06/29/09	ACOU090602-002	Water	2009_06	INORG	Silica as SiO2, Dissolved	49	mg/L	49	mg/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	INORG	Sulfate	163	mg/L	163	mg/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Antimony, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Arsenic, Dissolved	0.0026	mg/L	2.6	ug/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Barium, Dissolved	0.105	mg/L	105	ug/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Beryllium, Dissolved	0.001	mg/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Cadmium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Calcium, Dissolved	110	mg/L	110000	ug/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Chromium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Cobalt, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Copper, Dissolved	0.002	mg/L	2.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Iron, Dissolved	0.89	mg/L	890	ug/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Lead, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Magnesium, Dissolved	37.8	mg/L	37800	ug/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Manganese, Dissolved	0.0091	mg/L	9.1	ug/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Nickel, Dissolved	0.0015	mg/L	1.5	ug/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Potassium, Dissolved	9.9	mg/L	9900	ug/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Selenium, Dissolved	0.0036	mg/L	3.6	ug/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Silver, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Sodium, Dissolved	85.2	mg/L	85200	ug/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Thallium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Tin, Dissolved	0.01	mg/L	10.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Vanadium, Dissolved	0.0244	mg/L	24.4	ug/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	MET_DISS	Zinc, Dissolved	0.01	mg/L	10.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,1,1-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,1,2-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,1-Dichloroethane	1.4	ug/L	1.4	ug/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,1-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,1-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,2,3-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,2,3-Trichloropropane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,2,4-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,2,4-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,2-Dibromo3chloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,2-Dibromoethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,2-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,2-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,2-Dichloroethene (Total)	2.0	ug/L	2.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,3,5-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,3-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,3-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	1,4-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	2,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	2-Butanone (MEK)	5.0	ug/L	5.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	2-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	2-Hexanone	5.0	ug/L	5.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	4-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	4-Methyl-2-pentanone	5.0	ug/L	5.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Acetone	5.0	ug/L	5.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Benzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Bromobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Bromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Bromodichloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Bromoform	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Bromomethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Carbon disulfide	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Carbon tetrachloride	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Chlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Chloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Chloroform	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Chloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	cis-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	cis-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Dibromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Dibromomethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Dichlorodifluoromethane	24.7	ug/L	24.7	ug/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Ethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Hexachlorobutadiene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Isopropylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	m,p-Xylene	2.0	ug/L	2.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Methylene chloride	4.0	ug/L	4.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Methyl-tert-butyl ether	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Naphthalene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	n-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	n-Propylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	o-Xylene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	p-Isopropyltoluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	sec-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Styrene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	tert-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Tetrachloroethene	12.9	ug/L	12.9	ug/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Toluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	trans-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	trans-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Trichloroethene	5.2	ug/L	5.2	ug/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Trichlorofluoromethane	1.7	ug/L	1.7	ug/L	
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Vinyl chloride	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	06/29/09	251534002	Water	2009_06	VOC	Xylenes, Total	3.0	ug/L	3.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	GENCHEM	Alkalinity, Total	327	mg/L	327	mg/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	GENCHEM	Ammonia-Nitrogen	0.43	mg/L	0.43	mg/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	GENCHEM	Total Dissolved Solids	734	mg/L	734	mg/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	GENCHEM	Total Organic Carbon	1.0	mg/L	1.0	mg/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	INORG	Chloride	52.7	mg/L	52.7	mg/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	INORG	Nitrate as N	1.9	mg/L	1.9	mg/L	
MW-14D	MW-14D	07/22/09	ACOU090701-002	Water	2009_07	INORG	Silica as SiO2, Dissolved	51	mg/L	51	mg/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	INORG	Sulfate	149	mg/L	149	mg/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Antimony, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Arsenic, Dissolved	0.0028	mg/L	2.8	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Barium, Dissolved	0.11	mg/L	110	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Beryllium, Dissolved	0.0002	mg/L	0.20	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Cadmium, Dissolved	0.00008	mg/L	0.080	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Calcium, Dissolved	109	mg/L	109000	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Chromium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Cobalt, Dissolved	0.00058	mg/L	0.58	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Copper, Dissolved	0.0008	mg/L	0.80	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Iron, Dissolved	0.05	mg/L	50.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Lead, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Magnesium, Dissolved	37.4	mg/L	37400	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Manganese, Dissolved	0.0067	mg/L	6.7	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Nickel, Dissolved	0.00056	mg/L	0.56	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Potassium, Dissolved	10.7	mg/L	10700	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Selenium, Dissolved	0.0046	mg/L	4.6	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Silver, Dissolved	0.0005	mg/L	0.50	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Sodium, Dissolved	97	mg/L	97000	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Thallium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Tin, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Vanadium, Dissolved	0.0233	mg/L	23.3	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	MET_DISS	Zinc, Dissolved	0.005	mg/L	5.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,1,1-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,1,2-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,1-Dichloroethane	1.7	ug/L	1.7	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,1-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,1-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,2,3-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,2,3-Trichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,2,4-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,2,4-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,2-Dibromo3chloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,2-Dibromoethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,2-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,2-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,2-Dichloroethene (Total)	2.0	ug/L	2.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,3,5-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,3-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,3-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	1,4-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	2,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	2-Butanone (MEK)	5.0	ug/L	5.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	2-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	2-Hexanone	5.0	ug/L	5.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	4-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	4-Methyl-2-pentanone	5.0	ug/L	5.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Acetone	5.0	ug/L	5.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Benzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Bromobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Bromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Bromodichloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Bromoform	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Bromomethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Carbon disulfide	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Carbon tetrachloride	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Chlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Chloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Chloroform	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Chloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	cis-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	cis-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Dibromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Dibromomethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Dichlorodifluoromethane	30.4	ug/L	30.4	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Ethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Hexachlorobutadiene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Isopropylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	m,p-Xylene	2.0	ug/L	2.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Methylene chloride	4.0	ug/L	4.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Methyl-tert-butyl ether	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Naphthalene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	n-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	n-Propylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	o-Xylene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	p-Isopropyltoluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	sec-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Styrene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	tert-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Tetrachloroethene	17.8	ug/L	17.8	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Toluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	trans-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	trans-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Trichloroethene	6.7	ug/L	6.7	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Trichlorofluoromethane	1.8	ug/L	1.8	ug/L	
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Vinyl chloride	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D	07/22/09	251689002	Water	2009_07	VOC	Xylenes, Total	3.0	ug/L	3.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	GENCHEM	Alkalinity, Total	365	mg/L	365	mg/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	GENCHEM	Ammonia-Nitrogen	0.40	mg/L	0.40	mg/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	GENCHEM	Total Dissolved Solids	716	mg/L	716	mg/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	GENCHEM	Total Organic Carbon	1.0	mg/L	1.0	mg/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	INORG	Chloride	53.0	mg/L	53.0	mg/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	INORG	Sulfate	163	mg/L	163	mg/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Antimony, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Arsenic, Dissolved	0.0028	mg/L	2.8	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Barium, Dissolved	0.11	mg/L	110	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Beryllium, Dissolved	0.0002	mg/L	0.20	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Cadmium, Dissolved	0.00008	mg/L	0.080	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Calcium, Dissolved	107	mg/L	107000	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Chromium, Dissolved	0.0016	mg/L	1.6	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Cobalt, Dissolved	0.00053	mg/L	0.53	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Copper, Dissolved	0.00083	mg/L	0.83	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Iron, Dissolved	0.05	mg/L	50.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Lead, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Magnesium, Dissolved	39.5	mg/L	39500	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Manganese, Dissolved	0.0049	mg/L	4.9	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Nickel, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Potassium, Dissolved	9.08	mg/L	9080	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Selenium, Dissolved	0.0039	mg/L	3.9	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Silver, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Sodium, Dissolved	88.3	mg/L	88300	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Thallium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Tin, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Vanadium, Dissolved	0.0213	mg/L	21.3	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	MET_DISS	Zinc, Dissolved	0.005	mg/L	5.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,1,1-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,1,2-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,1-Dichloroethane	1.5	ug/L	1.5	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,1-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,1-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,2,3-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,2,3-Trichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,2,4-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,2,4-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,2-Dibromo3chloropropane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,2-Dibromoethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,2-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,2-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,2-Dichloroethene (Total)	2.0	ug/L	2.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,3,5-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,3-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,3-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	1,4-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	2,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	2-Butanone (MEK)	5.0	ug/L	5.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	2-Chlorotoluene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	2-Hexanone	5.0	ug/L	5.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	4-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	4-Methyl-2-pentanone	5.0	ug/L	5.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Acetone	5.0	ug/L	5.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Benzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Bromobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Bromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Bromodichloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Bromoform	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Bromomethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Carbon disulfide	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Carbon tetrachloride	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Chlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Chloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Chloroform	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Chloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	cis-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	cis-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Dibromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Dibromomethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Dichlorodifluoromethane	29.7	ug/L	29.7	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Ethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Hexachlorobutadiene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Isopropylbenzene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	m,p-Xylene	2.0	ug/L	2.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Methylene chloride	4.0	ug/L	4.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Methyl-tert-butyl ether	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Naphthalene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	n-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	n-Propylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	o-Xylene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	p-Isopropyltoluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	sec-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Styrene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	tert-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Tetrachloroethene	12.9	ug/L	12.9	ug/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Toluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	trans-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	trans-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Trichloroethene	6.4	ug/L	6.4	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Trichlorofluoromethane	2.1	ug/L	2.1	ug/L	
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Vinyl chloride	1.0	ug/L	1.0	ug/L	U
MW-14D	MW-14D081910	08/19/09	251915006	Water	2009_08	VOC	Xylenes, Total	3.0	ug/L	3.0	ug/L	U
MW-14D	MW-14d	09/10/09	251915015	Water	2009_08	INORG	Nitrate as N	2.4	mg/L	2.4	mg/L	
MW-14D	MW14D092809	09/28/09	252191003	Water	2009_09	GENCHEM	Alkalinity, Total as CaCO3	346	mg/L	346	mg/L	
MW-14D	MW14D092809	09/28/09	252191003	Water	2009_09	GENCHEM	Nitrogen, Ammonia	0.45	mg/L	0.45	mg/L	
MW-14D	MW14D092809	09/28/09	252191003	Water	2009_09	GENCHEM	Total Dissolved Solids	714	mg/L	714	mg/L	
MW-14D	MW14D092809	09/28/09	252191003	Water	2009_09	GENCHEM	Total Organic Carbon	1.0	mg/L	1.0	mg/L	U
MW-14D	MW14D092809	09/28/09	252191003	Water	2009_09	INORG	Chloride	60.7	mg/L	60.7	mg/L	
MW-14D	MW14D092809	09/28/09	252191003	Water	2009_09	INORG	Nitrate as N	2.0	mg/L	2.0	mg/L	
MW-14D	MW14D092809	09/28/09	252191003	Water	2009_09	INORG	Sulfate	175	mg/L	175	mg/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Antimony, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Arsenic, Dissolved	0.0025	mg/L	2.5	ug/L	
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Barium, Dissolved	0.109	mg/L	109	ug/L	
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Beryllium, Dissolved	0.0002	mg/L	0.20	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Cadmium, Dissolved	0.00008	mg/L	0.080	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Calcium, Dissolved	102	mg/L	102000	ug/L	
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Chromium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Cobalt, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Copper, Dissolved	0.00093	mg/L	0.93	ug/L	
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Iron, Dissolved	0.05	mg/L	50.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Lead, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Magnesium, Dissolved	37.6	mg/L	37600	ug/L	
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Manganese, Dissolved	0.0054	mg/L	5.4	ug/L	
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Nickel, Dissolved	0.00057	mg/L	0.57	ug/L	
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Potassium, Dissolved	9.49	mg/L	9490	ug/L	
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Selenium, Dissolved	0.0037	mg/L	3.7	ug/L	
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Silver, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Sodium, Dissolved	81.8	mg/L	81800	ug/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Thallium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Tin, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Vanadium, Dissolved	0.0239	mg/L	23.9	ug/L	
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	MET_DISS	Zinc, Dissolved	0.005	mg/L	5.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,1,1-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,1,2-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,1-Dichloroethane	1.6	ug/L	1.6	ug/L	
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,1-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,1-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,2,3-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,2,3-Trichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,2,4-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,2,4-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,2-Dibromo-3-chloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,2-Dibromoethane (EDB)	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,2-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,2-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,2-Dichloroethene (Total)	2.0	ug/L	2.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,3,5-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,3-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,3-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	1,4-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	2,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	2-Butanone (MEK)	5.0	ug/L	5.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	2-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	2-Hexanone	5.0	ug/L	5.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	4-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	4-Methyl-2-pentanone (MIBK)	5.0	ug/L	5.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Acetone	5.0	ug/L	5.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Benzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Bromobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Bromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Bromodichloromethane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Bromoform	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Bromomethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Carbon disulfide	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Carbon tetrachloride	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Chlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Chloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Chloroform	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Chloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	cis-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	cis-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Dibromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Dibromomethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Dichlorodifluoromethane	34.2	ug/L	34.2	ug/L	
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Ethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Hexachloro-1,3-butadiene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Isopropylbenzene (Cumene)	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	m&p-Xylene	2.0	ug/L	2.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Methylene chloride	4.0	ug/L	4.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Methyl-tert-butyl ether	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Naphthalene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	n-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	n-Propylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	o-Xylene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	p-Isopropyltoluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	sec-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Styrene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	tert-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Tetrachloroethene	18.6	ug/L	18.6	ug/L	
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Toluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	trans-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	trans-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Trichloroethene	6.3	ug/L	6.3	ug/L	
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Trichlorofluoromethane	2.0	ug/L	2.0	ug/L	
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Vinyl chloride	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D09 2809	09/28/09	252191003	Water	2009_09	VOC	Xylene (Total)	3.0	ug/L	3.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	GENCHEM	Alkalinity, Total as CaCO3	337	mg/L	337	mg/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	GENCHEM	Nitrogen, Ammonia	0.34	mg/L	0.34	mg/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	GENCHEM	Total Dissolved Solids	731	mg/L	731	mg/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	GENCHEM	Total Organic Carbon	1.0	mg/L	1.0	mg/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	INORG	Chloride	59.2	mg/L	59.2	mg/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	INORG	Nitrate as N	2.5	mg/L	2.5	mg/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	INORG	Sulfate	195	mg/L	195	mg/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Antimony, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Arsenic, Dissolved	0.0021	mg/L	2.1	ug/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Barium, Dissolved	0.108	mg/L	108	ug/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Beryllium, Dissolved	0.0002	mg/L	0.20	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Cadmium, Dissolved	0.00008	mg/L	0.080	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Calcium, Dissolved	106	mg/L	106000	ug/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Chromium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Cobalt, Dissolved	0.00084	mg/L	0.84	ug/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Copper, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Iron, Dissolved	0.05	mg/L	50.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Lead, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Magnesium, Dissolved	37.2	mg/L	37200	ug/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Manganese, Dissolved	0.0057	mg/L	5.7	ug/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Nickel, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Potassium, Dissolved	9.04	mg/L	9040	ug/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Selenium, Dissolved	0.0022	mg/L	2.2	ug/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Silver, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Sodium, Dissolved	82.8	mg/L	82800	ug/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Thallium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Tin, Dissolved	0.00011	mg/L	0.11	ug/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Vanadium, Dissolved	0.0253	mg/L	25.3	ug/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	MET_DISS	Zinc, Dissolved	0.005	mg/L	5.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	1,1,1-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	1,1,2-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	1,1-Dichloroethane	1.5	ug/L	1.5	ug/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	1,1-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	1,1-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	1,2,3-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	1,2,3-Trichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	1,2,4-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	1,2,4-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	1,2-Dibromo-3-chloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	1,2-Dibromoethane (EDB)	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	1,2-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	1,2-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	1,2-Dichloroethene (Total)	2.0	ug/L	2.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	1,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	1,3,5-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	1,3-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	1,3-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	1,4-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	2,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	2-Butanone (MEK)	5.0	ug/L	5.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	2-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	2-Hexanone	5.0	ug/L	5.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	4-Chlorotoluene	1.0	ug/L	1.0	ug/L	U

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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	4-Methyl-2-pentanone (MIBK)	5.0	ug/L	5.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Acetone	5.0	ug/L	5.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Benzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Bromobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Bromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Bromodichloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Bromoform	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Bromomethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Carbon disulfide	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Carbon tetrachloride	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Chlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Chloroethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Chloroform	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Chloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	cis-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	cis-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Dibromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Dibromomethane	1.0	ug/L	1.0	ug/L	U

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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	Dichlorodifluoromethane	28.3	ug/L	28.3	ug/L	
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	Ethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	Hexachloro-1,3-butadiene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	Isopropylbenzene (Cumene)	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	m&p-Xylene	2.0	ug/L	2.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	Methylene chloride	4.0	ug/L	4.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	Methyl-tert-butyl ether	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	Naphthalene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	n-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	n-Propylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	o-Xylene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	p-Isopropyltoluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	sec-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	Styrene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	tert-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	Tetrachloroethene	14.8	ug/L	14.8	ug/L	
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	Toluene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D10 2909	10/29/09	252410003	Water	2009_10	VOC	trans-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U

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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	trans-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Trichloroethene	5.6	ug/L	5.6	ug/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Trichlorofluoromethane	1.8	ug/L	1.8	ug/L	
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Vinyl chloride	1.0	ug/L	1.0	ug/L	U
MW-14D	MW14D102909	10/29/09	252410003	Water	2009_10	VOC	Xylene (Total)	3.0	ug/L	3.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	GENCHEM	Alkalinity, Total	292	mg/L	292	mg/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	GENCHEM	Ammonia-Nitrogen	0.05	mg/L	0.050	mg/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	GENCHEM	Total Dissolved Solids	644	mg/L	644	mg/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	GENCHEM	Total Organic Carbon	1.2	mg/L	1.2	mg/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	INORG	Chloride	39	mg/L	39.0	mg/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	INORG	Nitrate as N	14.8	mg/L	14.8	mg/L	
MW-14S	MW-14S	05/28/09	ACOU090601-004	Water	2009_2nd Qtr	INORG	Silica as SiO2, Dissolved	56	mg/L	56	mg/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	INORG	Sulfate	145	mg/L	145	mg/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Antimony, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Arsenic, Dissolved	0.0015	mg/L	1.5	ug/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Barium, Dissolved	0.132	mg/L	132	ug/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Beryllium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Cadmium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Calcium, Dissolved	118	mg/L	118000	ug/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Chromium, Dissolved	0.0021	mg/L	2.1	ug/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Cobalt, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Copper, Dissolved	0.002	mg/L	2.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Iron, Dissolved	0.115	mg/L	115	ug/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Lead, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Magnesium, Dissolved	28.9	mg/L	28900	ug/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Manganese, Dissolved	0.0264	mg/L	26.4	ug/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Nickel, Dissolved	0.0012	mg/L	1.2	ug/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Potassium, Dissolved	1.36	mg/L	1360	ug/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Selenium, Dissolved	0.0026	mg/L	2.6	ug/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Silver, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Sodium, Dissolved	62	mg/L	62000	ug/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Thallium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Tin, Dissolved	0.01	mg/L	10.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Vanadium, Dissolved	0.0324	mg/L	32.4	ug/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	MET_DISS	Zinc, Dissolved	0.01	mg/L	10.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,1,1-Trichloroethane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,1,2-Trichloroethane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,1-Dichloroethane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,1-Dichloroethene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,1-Dichloropropene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,2,3-Trichlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,2,3-Trichloropropane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,2,4-Trichlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,2,4-Trimethylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,2-Dibromo3chloropropane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,2-Dibromoethane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,2-Dichlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,2-Dichloroethane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,2-Dichloroethene (Total)	2.0	ug/l	2.0	ug/L	U

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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,2-Dichloropropane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,3,5-Trimethylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,3-Dichlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,3-Dichloropropane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	1,4-Dichlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	2,2-Dichloropropane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	2-Butanone (MEK)	5.0	ug/l	5.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	2-Chlorotoluene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	2-Hexanone	5.0	ug/l	5.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	4-Chlorotoluene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	4-Methyl-2-Pentanone	5.0	ug/l	5.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Acetone	5.0	ug/l	5.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Benzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Bromobenzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Bromochloromethane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Bromodichloromethane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Bromoform	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Bromomethane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Carbon disulfide	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Carbon tetrachloride	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Chlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Chloroethane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Chloroform	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Chloromethane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	cis-1,2-Dichloroethene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	cis-1,3-Dichloropropene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Dibromochloromethane	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Dibromomethane	1.0	ug/l	1.0	ug/L	U

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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Dichlorodifluoromethane	4.0	ug/l	4.0	ug/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Ethylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Hexachlorobutadiene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Isopropylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	m,p-Xylene	2.0	ug/l	2.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Methylene chloride	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Methyl-tert-butyl ether	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Naphthalene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	n-Butylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	n-Propylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	o-Xylene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	p-Isopropyltoluene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	sec-Butylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Styrene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	tert-Butylbenzene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Tetrachloroethene	1.3	ug/l	1.3	ug/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Toluene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	trans-1,2-Dichloroethene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	trans-1,3-Dichloropropene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Trichloroethene	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Trichlorofluoromethane	6.4	ug/l	6.4	ug/L	
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Vinyl chloride	1.0	ug/l	1.0	ug/L	U
MW-14S	MW-14S	05/28/09	251294004	Water	2009_2nd Qtr	VOC	Xylenes, Total	3.0	ug/l	3.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	GENCHEM	Alkalinity, Total	346	mg/L	346	mg/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	GENCHEM	Ammonia-Nitrogen	0.15	mg/L	0.15	mg/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	GENCHEM	Total Dissolved Solids	642	mg/L	642	mg/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	GENCHEM	Total Organic Carbon	1.6	mg/L	1.6	mg/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	INORG	Chloride	36.0	mg/L	36.0	mg/L	

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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	INORG	Nitrate as N	12.7	mg/L	12.7	mg/L	
MW-14S	MW-14S	06/29/09	ACOU090602-003	Water	2009_06	INORG	Silica as SiO2, Dissolved	47	mg/L	47	mg/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	INORG	Sulfate	115	mg/L	115	mg/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Antimony, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Arsenic, Dissolved	0.0019	mg/L	1.9	ug/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Barium, Dissolved	0.127	mg/L	127	ug/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Beryllium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Cadmium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Calcium, Dissolved	117	mg/L	117000	ug/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Chromium, Dissolved	0.002	mg/L	2.0	ug/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Cobalt, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Copper, Dissolved	0.002	mg/L	2.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Iron, Dissolved	0.92	mg/L	920	ug/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Lead, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Magnesium, Dissolved	27.4	mg/L	27400	ug/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Manganese, Dissolved	0.0128	mg/L	12.8	ug/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Nickel, Dissolved	0.0017	mg/L	1.7	ug/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Potassium, Dissolved	1.19	mg/L	1190	ug/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Selenium, Dissolved	0.0038	mg/L	3.8	ug/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Silver, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Sodium, Dissolved	56.8	mg/L	56800	ug/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Thallium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Tin, Dissolved	0.01	mg/L	10.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Vanadium, Dissolved	0.031	mg/L	31.0	ug/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	MET_DISS	Zinc, Dissolved	0.01	mg/L	10.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,1,1-Trichloroethane	1.0	ug/L	1.0	ug/L	U

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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,1,2-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,1-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,1-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,1-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,2,3-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,2,3-Trichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,2,4-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,2,4-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,2-Dibromo3chloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,2-Dibromoethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,2-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,2-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,2-Dichloroethene (Total)	2.0	ug/L	2.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,3,5-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,3-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,3-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	1,4-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	2,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	2-Butanone (MEK)	5.0	ug/L	5.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	2-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	2-Hexanone	5.0	ug/L	5.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	4-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	4-Methyl-2-pentanone	5.0	ug/L	5.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Acetone	5.0	ug/L	5.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Benzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Bromobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Bromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Bromodichloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Bromoform	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Bromomethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Carbon disulfide	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Carbon tetrachloride	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Chlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Chloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Chloroform	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Chloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	cis-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	cis-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Dibromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Dibromomethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Dichlorodifluoromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Ethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Hexachlorobutadiene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Isopropylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	m,p-Xylene	2.0	ug/L	2.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Methylene chloride	4.0	ug/L	4.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Methyl-tert-butyl ether	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Naphthalene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	n-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	n-Propylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	o-Xylene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	p-Isopropyltoluene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	sec-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Styrene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	tert-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Tetrachloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Toluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	trans-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	trans-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Trichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Trichlorofluoromethane	3.1	ug/L	3.1	ug/L	
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Vinyl chloride	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	06/29/09	251534003	Water	2009_06	VOC	Xylenes, Total	3.0	ug/L	3.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	GENCHEM	Alkalinity, Total	337	mg/L	337	mg/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	GENCHEM	Ammonia-Nitrogen	0.050	mg/L	0.050	mg/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	GENCHEM	Total Dissolved Solids	655	mg/L	655	mg/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	GENCHEM	Total Organic Carbon	1.6	mg/L	1.6	mg/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	INORG	Chloride	34.3	mg/L	34.3	mg/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	INORG	Nitrate as N	13.8	mg/L	13.8	mg/L	
MW-14S	MW-14S	07/22/09	ACOU090701-003	Water	2009_07	INORG	Silica as SiO2, Dissolved	48	mg/L	48	mg/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	INORG	Sulfate	105	mg/L	105	mg/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Antimony, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Arsenic, Dissolved	0.0022	mg/L	2.2	ug/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Barium, Dissolved	0.144	mg/L	144	ug/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Beryllium, Dissolved	0.0002	mg/L	0.20	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Cadmium, Dissolved	0.00008	mg/L	0.080	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Calcium, Dissolved	115	mg/L	115000	ug/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Chromium, Dissolved	0.002	mg/L	2.0	ug/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Cobalt, Dissolved	0.0011	mg/L	1.1	ug/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Copper, Dissolved	0.00086	mg/L	0.86	ug/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Iron, Dissolved	0.05	mg/L	50.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Lead, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Magnesium, Dissolved	27	mg/L	27000	ug/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Manganese, Dissolved	0.0094	mg/L	9.4	ug/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Nickel, Dissolved	0.00054	mg/L	0.54	ug/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Potassium, Dissolved	1.07	mg/L	1070	ug/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Selenium, Dissolved	0.0049	mg/L	4.9	ug/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Silver, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Sodium, Dissolved	66.6	mg/L	66600	ug/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Thallium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Tin, Dissolved	0.0109	mg/L	10.9	ug/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Vanadium, Dissolved	0.0319	mg/L	31.9	ug/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	MET_DISS	Zinc, Dissolved	0.005	mg/L	5.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,1,1-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,1,2-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,1-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,1-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,1-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,2,3-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,2,3-Trichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,2,4-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,2,4-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,2-Dibromo3chloropropane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,2-Dibromoethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,2-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,2-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,2-Dichloroethene (Total)	2.0	ug/L	2.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,3,5-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,3-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,3-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	1,4-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	2,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	2-Butanone (MEK)	5.0	ug/L	5.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	2-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	2-Hexanone	5.0	ug/L	5.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	4-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	4-Methyl-2-pentanone	5.0	ug/L	5.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Acetone	5.0	ug/L	5.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Benzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Bromobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Bromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Bromodichloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Bromoform	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Bromomethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Carbon disulfide	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Carbon tetrachloride	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Chlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Chloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Chloroform	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Chloromethane	1.0	ug/L	1.0	ug/L	U

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Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	cis-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	cis-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Dibromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Dibromomethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Dichlorodifluoromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Ethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Hexachlorobutadiene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Isopropylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	m,p-Xylene	2.0	ug/L	2.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Methylene chloride	4.0	ug/L	4.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Methyl-tert-butyl ether	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Naphthalene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	n-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	n-Propylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	o-Xylene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	p-Isopropyltoluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	sec-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Styrene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	tert-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Tetrachloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Toluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	trans-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	trans-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Trichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Trichlorofluoromethane	4.3	ug/L	4.3	ug/L	
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Vinyl chloride	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S	07/22/09	251689003	Water	2009_07	VOC	Xylenes, Total	3.0	ug/L	3.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	GENCHEM	Alkalinity, Total	309	mg/L	309	mg/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	GENCHEM	Ammonia-Nitrogen	0.050	mg/L	0.050	mg/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	GENCHEM	Total Dissolved Solids	658	mg/L	658	mg/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	GENCHEM	Total Organic Carbon	1.6	mg/L	1.6	mg/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	INORG	Chloride	34.6	mg/L	34.6	mg/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	INORG	Sulfate	124	mg/L	124	mg/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Antimony, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Arsenic, Dissolved	0.0022	mg/L	2.2	ug/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Barium, Dissolved	0.14	mg/L	140	ug/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Beryllium, Dissolved	0.0002	mg/L	0.20	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Cadmium, Dissolved	0.00008	mg/L	0.080	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Calcium, Dissolved	108	mg/L	108000	ug/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Chromium, Dissolved	0.0022	mg/L	2.2	ug/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Cobalt, Dissolved	0.00052	mg/L	0.52	ug/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Copper, Dissolved	0.00088	mg/L	0.88	ug/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Iron, Dissolved	0.05	mg/L	50.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Lead, Dissolved	0.00036	mg/L	0.36	ug/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Magnesium, Dissolved	28	mg/L	28000	ug/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Manganese, Dissolved	0.0046	mg/L	4.6	ug/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Nickel, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Potassium, Dissolved	0.921	mg/L	921	ug/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Selenium, Dissolved	0.0041	mg/L	4.1	ug/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Silver, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Sodium, Dissolved	59.7	mg/L	59700	ug/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Thallium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Tin, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Vanadium, Dissolved	0.0293	mg/L	29.3	ug/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	MET_DISS	Zinc, Dissolved	0.005	mg/L	5.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,1,1-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,1,2-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,1-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,1-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,1-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,2,3-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,2,3-Trichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,2,4-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,2,4-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,2-Dibromo3chloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,2-Dibromoethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,2-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,2-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,2-Dichloroethene (Total)	2.0	ug/L	2.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,3,5-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,3-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,3-Dichloropropane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	1,4-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	2,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	2-Butanone (MEK)	5.0	ug/L	5.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	2-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	2-Hexanone	5.0	ug/L	5.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	4-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	4-Methyl-2-pentanone	5.0	ug/L	5.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Acetone	5.0	ug/L	5.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Benzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Bromobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Bromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Bromodichloromethane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Bromoform	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Bromomethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Carbon disulfide	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Carbon tetrachloride	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Chlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Chloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Chloroform	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Chloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	cis-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	cis-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Dibromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Dibromomethane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Dichlorodifluoromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Ethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Hexachlorobutadiene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Isopropylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	m,p-Xylene	2.0	ug/L	2.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Methylene chloride	4.0	ug/L	4.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Methyl-tert-butyl ether	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Naphthalene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	n-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	n-Propylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	o-Xylene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	p-Isopropyltoluene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	sec-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Styrene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	tert-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Tetrachloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Toluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	trans-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	trans-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Trichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Trichlorofluoromethane	4.5	ug/L	4.5	ug/L	
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Vinyl chloride	1.0	ug/L	1.0	ug/L	U
MW-14S	MW-14S081909	08/19/09	251915005	Water	2009_08	VOC	Xylenes, Total	3.0	ug/L	3.0	ug/L	U
MW-14S	MW-14S	09/10/09	251915014	Water	2009_08	INORG	Nitrate as N	16.0	mg/L	16.0	mg/L	
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	GENCHEM	Alkalinity, Total as CaCO3	304	mg/L	304	mg/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standarized)*	UNITS (Standarized)	RESULT	UNITS	QUALIFIER
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	GENCHEM	Nitrogen, Ammonia	0.050	mg/L	0.050	mg/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	GENCHEM	Nitrogen, Nitrate	16.1	mg/L	16.1	mg/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	GENCHEM	Total Dissolved Solids	659	mg/L	659	mg/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	GENCHEM	Total Organic Carbon	1.7	mg/L	1.7	mg/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	INORG	Chloride	39.2	mg/L	39.2	mg/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	INORG	Sulfate	179	mg/L	179	mg/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Antimony, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Arsenic, Dissolved	0.0021	mg/L	2.1	ug/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Barium, Dissolved	0.143	mg/L	143	ug/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Beryllium, Dissolved	0.0002	mg/L	0.20	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Cadmium, Dissolved	0.00008	mg/L	0.080	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Calcium, Dissolved	105	mg/L	105000	ug/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Chromium, Dissolved	0.0022	mg/L	2.2	ug/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Cobalt, Dissolved	0.00093	mg/L	0.93	ug/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Copper, Dissolved	0.0015	mg/L	1.5	ug/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Iron, Dissolved	0.05	mg/L	50.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Lead, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Magnesium, Dissolved	26.3	mg/L	26300	ug/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Manganese, Dissolved	0.0035	mg/L	3.5	ug/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Nickel, Dissolved	0.00061	mg/L	0.61	ug/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Potassium, Dissolved	1.22	mg/L	1220	ug/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Selenium, Dissolved	0.004	mg/L	4.0	ug/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Silver, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Sodium, Dissolved	56.7	mg/L	56700	ug/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Thallium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Tin, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Vanadium, Dissolved	0.0353	mg/L	35.3	ug/L	
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	MET_DISS	Zinc, Dissolved	0.005	mg/L	5.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,1,1-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,1,2-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,1-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,1-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,1-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,2,3-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,2,3-Trichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,2,4-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,2,4-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,2-Dibromo-3-chloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,2-Dibromoethane (EDB)	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,2-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,2-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,2-Dichloroethene (Total)	2.0	ug/L	2.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,3,5-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,3-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,3-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	1,4-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	2,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	2-Butanone (MEK)	5.0	ug/L	5.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	2-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	2-Hexanone	5.0	ug/L	5.0	ug/L	U
MW-14S	MW14S09 2809	09/28/09	252191002	Water	2009_09	VOC	4-Chlorotoluene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	4-Methyl-2-pentanone (MIBK)	5.0	ug/L	5.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Acetone	6.5	ug/L	6.5	ug/L	
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Benzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Bromobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Bromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Bromodichloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Bromoform	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Bromomethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Carbon disulfide	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Carbon tetrachloride	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Chlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Chloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Chloroform	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Chloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	cis-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	cis-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Dibromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Dibromomethane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Dichlorodifluoromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Ethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Hexachloro-1,3-butadiene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Isopropylbenzene (Cumene)	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	m&p-Xylene	2.0	ug/L	2.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Methylene chloride	4.0	ug/L	4.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Methyl-tert-butyl ether	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Naphthalene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	n-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	n-Propylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	o-Xylene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	p-Isopropyltoluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	sec-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Styrene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	tert-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Tetrachloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Toluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	trans-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	trans-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Trichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Trichlorofluoromethane	4.8	ug/L	4.8	ug/L	
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Vinyl chloride	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S092809	09/28/09	252191002	Water	2009_09	VOC	Xylene (Total)	3.0	ug/L	3.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	GENCHEM	Alkalinity, Total as CaCO3	280	mg/L	280	mg/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	GENCHEM	Nitrogen, Ammonia	0.10	mg/L	0.10	mg/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	GENCHEM	Total Dissolved Solids	673	mg/L	673	mg/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	GENCHEM	Total Organic Carbon	1.6	mg/L	1.6	mg/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	INORG	Chloride	39.8	mg/L	39.8	mg/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	INORG	Nitrate as N	16.4	mg/L	16.4	mg/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	INORG	Sulfate	134	mg/L	134	mg/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Antimony, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Arsenic, Dissolved	0.0018	mg/L	1.8	ug/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Barium, Dissolved	0.14	mg/L	140	ug/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Beryllium, Dissolved	0.0002	mg/L	0.20	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Cadmium, Dissolved	0.00008	mg/L	0.080	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Calcium, Dissolved	113	mg/L	113000	ug/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Chromium, Dissolved	0.0023	mg/L	2.3	ug/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Cobalt, Dissolved	0.00074	mg/L	0.74	ug/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Copper, Dissolved	0.0014	mg/L	1.4	ug/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Iron, Dissolved	0.05	mg/L	50.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Lead, Dissolved	0.00036	mg/L	0.36	ug/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Magnesium, Dissolved	27.4	mg/L	27400	ug/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Manganese, Dissolved	0.0034	mg/L	3.4	ug/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Nickel, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Potassium, Dissolved	1.2	mg/L	1200	ug/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Selenium, Dissolved	0.0026	mg/L	2.6	ug/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Silver, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Sodium, Dissolved	59.4	mg/L	59400	ug/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Thallium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Tin, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Vanadium, Dissolved	0.0372	mg/L	37.2	ug/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	MET_DISS	Zinc, Dissolved	0.005	mg/L	5.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,1,1-Trichloroethane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,1,2-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,1-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,1-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,1-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,2,3-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,2,3-Trichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,2,4-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,2,4-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,2-Dibromo-3-chloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,2-Dibromoethane (EDB)	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,2-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,2-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,2-Dichloroethene (Total)	2.0	ug/L	2.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,3,5-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,3-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,3-Dichloropropane	1.0	ug/L	1.0	ug/L	U

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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	1,4-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	2,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	2-Butanone (MEK)	5.0	ug/L	5.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	2-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	2-Hexanone	5.0	ug/L	5.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	4-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	4-Methyl-2-pentanone (MIBK)	5.0	ug/L	5.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Acetone	5.0	ug/L	5.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Benzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Bromobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Bromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Bromodichloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Bromoform	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Bromomethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Carbon disulfide	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Carbon tetrachloride	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Chlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Chloroethane	1.0	ug/L	1.0	ug/L	U

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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Chloroform	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Chloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	cis-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	cis-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Dibromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Dibromomethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Dichlorodifluoromethane	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Ethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Hexachloro-1,3-butadiene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Isopropylbenzene (Cumene)	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	m&p-Xylene	2.0	ug/L	2.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Methylene chloride	4.0	ug/L	4.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Methyl-tert-butyl ether	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Naphthalene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	n-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	n-Propylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	o-Xylene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	p-Isopropyltoluene	1.0	ug/L	1.0	ug/L	U

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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	sec-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Styrene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	tert-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Tetrachloroethene	2.8	ug/L	2.8	ug/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Toluene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	trans-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	trans-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Trichloroethene	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Trichlorofluoromethane	4.3	ug/L	4.3	ug/L	
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Vinyl chloride	1.0	ug/L	1.0	ug/L	U
MW-14S	MW14S102909	10/29/09	252410002	Water	2009_10	VOC	Xylene (Total)	3.0	ug/L	3.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	GENCHEM	Alkalinity, Total	318	mg/L	318	mg/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	GENCHEM	Ammonia-Nitrogen	0.05	mg/L	0.050	mg/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	GENCHEM	Total Dissolved Solids	645	mg/L	645	mg/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	GENCHEM	Total Organic Carbon	1	mg/L	1.0	mg/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	INORG	Chloride	60.8	mg/L	60.8	mg/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	INORG	Nitrate as N	10.5	mg/L	10.5	mg/L	
MW-15	MW-15	05/27/09	ACOU090501-007	Water	2009_2nd Qtr	INORG	Silica as SiO2, Dissolved	65	mg/l	65	mg/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	INORG	Sulfate	129	mg/L	129	mg/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Antimony, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Arsenic, Dissolved	0.0022	mg/L	2.2	ug/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Barium, Dissolved	0.0859	mg/L	85.9	ug/L	

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MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Beryllium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Cadmium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Calcium, Dissolved	94.4	mg/L	94400	ug/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Chromium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Cobalt, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Copper, Dissolved	0.002	mg/L	2.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Iron, Dissolved	0.103	mg/L	103	ug/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Lead, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Magnesium, Dissolved	34.9	mg/L	34900	ug/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Manganese, Dissolved	0.011	mg/L	11.0	ug/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Nickel, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Potassium, Dissolved	7.69	mg/L	7690	ug/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Selenium, Dissolved	0.0017	mg/L	1.7	ug/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Silver, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Sodium, Dissolved	77.9	mg/L	77900	ug/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Thallium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Tin, Dissolved	0.01	mg/L	10.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Vanadium, Dissolved	0.0286	mg/L	28.6	ug/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	MET_DISS	Zinc, Dissolved	0.01	mg/L	10.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,1,1-Trichloroethane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,1,2-Trichloroethane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,1-Dichloroethane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,1-Dichloroethene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,1-Dichloropropene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,2,3-Trichlorobenzene	1.0	ug/l	1.0	ug/L	U

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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,2,3-Trichloropropane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,2,4-Trichlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,2,4-Trimethylbenzene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,2-Dibromo3chloropropane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,2-Dibromoethane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,2-Dichlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,2-Dichloroethane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,2-Dichloroethene (Total)	2.0	ug/l	2.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,2-Dichloropropane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,3,5-Trimethylbenzene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,3-Dichlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,3-Dichloropropane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	1,4-Dichlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	2,2-Dichloropropane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	2-Butanone (MEK)	5.0	ug/l	5.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	2-Chlorotoluene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	2-Hexanone	5.0	ug/l	5.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	4-Chlorotoluene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	4-Methyl-2-Pentanone	5.0	ug/l	5.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Acetone	5.0	ug/l	5.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Benzene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Bromobenzene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Bromochloromethane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Bromodichloromethane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Bromoform	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Bromomethane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Carbon disulfide	1.0	ug/l	1.0	ug/L	U

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STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Carbon tetrachloride	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Chlorobenzene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Chloroethane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Chloroform	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Chloromethane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	cis-1,2-Dichloroethene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	cis-1,3-Dichloropropene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Dibromochloromethane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Dibromomethane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Dichlorodifluoromethane	3.3	ug/l	3.3	ug/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Ethylbenzene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Hexachlorobutadiene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Isopropylbenzene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	m,p-Xylene	2.0	ug/l	2.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Methylene chloride	4.0	ug/l	4.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Methyl-tert-butyl ether	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Naphthalene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	n-Butylbenzene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	n-Propylbenzene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	o-Xylene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	p-Isopropyltoluene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	sec-Butylbenzene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Styrene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	tert-Butylbenzene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Tetrachloroethene	5.4	ug/l	5.4	ug/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Toluene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	trans-1,2-Dichloroethene	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	trans-1,3-Dichloropropene	1.0	ug/l	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Trichloroethene	2.2	ug/l	2.2	ug/L	
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Trichlorofluoromethane	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Vinyl chloride	1.0	ug/l	1.0	ug/L	U
MW-15	MW-15	05/27/09	251283007	Water	2009_2nd Qtr	VOC	Xylenes, Total	3.0	ug/l	3.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	GENCHEM	Alkalinity, Total	348	mg/L	348	mg/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	GENCHEM	Ammonia-Nitrogen	0.23	mg/L	0.23	mg/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	GENCHEM	Total Dissolved Solids	640	mg/L	640	mg/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	GENCHEM	Total Organic Carbon	1.5	mg/L	1.5	mg/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	INORG	Chloride	52.4	mg/L	52.4	mg/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	INORG	Nitrate as N	8.3	mg/L	8.3	mg/L	
MW-15	MW-15	06/29/09	ACOU090602-001	Water	2009_06	INORG	Silica as SiO2, Dissolved	49	mg/L	49	mg/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	INORG	Sulfate	98.2	mg/L	98.2	mg/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Antimony, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Arsenic, Dissolved	0.0027	mg/L	2.7	ug/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Barium, Dissolved	0.087	mg/L	87.0	ug/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Beryllium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Cadmium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Calcium, Dissolved	87	mg/L	87000	ug/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Chromium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Cobalt, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Copper, Dissolved	0.002	mg/L	2.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Iron, Dissolved	0.787	mg/L	787	ug/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Lead, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Magnesium, Dissolved	33.7	mg/L	33700	ug/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Manganese, Dissolved	0.0056	mg/L	5.6	ug/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Nickel, Dissolved	0.0014	mg/L	1.4	ug/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Potassium, Dissolved	7.08	mg/L	7080	ug/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Selenium, Dissolved	0.0043	mg/L	4.3	ug/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Silver, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Sodium, Dissolved	73.9	mg/L	73900	ug/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Thallium, Dissolved	0.001	mg/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Tin, Dissolved	0.01	mg/L	10.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Vanadium, Dissolved	0.0276	mg/L	27.6	ug/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	MET_DISS	Zinc, Dissolved	0.01	mg/L	10.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,1,1-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,1,2-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,1-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,1-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,1-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,2,3-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,2,3-Trichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,2,4-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,2,4-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,2-Dibromo3chloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,2-Dibromoethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,2-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,2-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,2-Dichloroethene (Total)	2.0	ug/L	2.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,3,5-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,3-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,3-Dichloropropane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	1,4-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	2,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	2-Butanone (MEK)	5.0	ug/L	5.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	2-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	2-Hexanone	5.0	ug/L	5.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	4-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	4-Methyl-2-pentanone	5.0	ug/L	5.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Acetone	5.0	ug/L	5.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Benzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Bromobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Bromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Bromodichloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Bromoform	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Bromomethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Carbon disulfide	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Carbon tetrachloride	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Chlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Chloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Chloroform	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Chloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	cis-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	cis-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Dibromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Dibromomethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Dichlorodifluoromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Ethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Hexachlorobutadiene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Isopropylbenzene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	m,p-Xylene	2.0	ug/L	2.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Methylene chloride	4.0	ug/L	4.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Methyl-tert-butyl ether	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Naphthalene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	n-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	n-Propylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	o-Xylene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	p-Isopropyltoluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	sec-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Styrene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	tert-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Tetrachloroethene	4.7	ug/L	4.7	ug/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Toluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	trans-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	trans-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Trichloroethene	1.7	ug/L	1.7	ug/L	
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Trichlorofluoromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Vinyl chloride	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	06/29/09	251534001	Water	2009_06	VOC	Xylenes, Total	3.0	ug/L	3.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	GENCHEM	Alkalinity, Total	318	mg/L	318	mg/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	GENCHEM	Ammonia-Nitrogen	0.050	mg/L	0.050	mg/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	GENCHEM	Total Dissolved Solids	649	mg/L	649	mg/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	GENCHEM	Total Organic Carbon	1.5	mg/L	1.5	mg/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	INORG	Chloride	54.0	mg/L	54.0	mg/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	INORG	Nitrate as N	7.1	mg/L	7.1	mg/L	
MW-15	MW-15	07/22/09	ACOU090701-001	Water	2009_07	INORG	Silica as SiO2, Dissolved	50	mg/L	50	mg/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	INORG	Sulfate	97.4	mg/L	97.4	mg/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Antimony, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Arsenic, Dissolved	0.0027	mg/L	2.7	ug/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Barium, Dissolved	0.0927	mg/L	92.7	ug/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Beryllium, Dissolved	0.0002	mg/L	0.20	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Cadmium, Dissolved	0.00008	mg/L	0.080	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Calcium, Dissolved	93.4	mg/L	93400	ug/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Chromium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Cobalt, Dissolved	0.0012	mg/L	1.2	ug/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Copper, Dissolved	0.00087	mg/L	0.87	ug/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Iron, Dissolved	0.05	mg/L	50.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Lead, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Magnesium, Dissolved	31.9	mg/L	31900	ug/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Manganese, Dissolved	0.0165	mg/L	16.5	ug/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Nickel, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Potassium, Dissolved	7.44	mg/L	7440	ug/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Selenium, Dissolved	0.0044	mg/L	4.4	ug/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Silver, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Sodium, Dissolved	81	mg/L	81000	ug/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Thallium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Tin, Dissolved	0.0023	mg/L	2.3	ug/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Vanadium, Dissolved	0.0258	mg/L	25.8	ug/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	MET_DISS	Zinc, Dissolved	0.005	mg/L	5.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,1,1-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,1,2-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,1-Dichloroethane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,1-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,1-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,2,3-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,2,3-Trichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,2,4-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,2,4-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,2-Dibromo3chloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,2-Dibromoethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,2-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,2-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,2-Dichloroethene (Total)	2.0	ug/L	2.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,3,5-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,3-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,3-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	1,4-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	2,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	2-Butanone (MEK)	5.0	ug/L	5.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	2-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	2-Hexanone	5.0	ug/L	5.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	4-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	4-Methyl-2-pentanone	5.0	ug/L	5.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Acetone	5.0	ug/L	5.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Benzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Bromobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Bromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Bromodichloromethane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Bromoform	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Bromomethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Carbon disulfide	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Carbon tetrachloride	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Chlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Chloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Chloroform	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Chloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	cis-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	cis-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Dibromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Dibromomethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Dichlorodifluoromethane	1.1	ug/L	1.1	ug/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Ethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Hexachlorobutadiene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Isopropylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	m,p-Xylene	2.0	ug/L	2.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Methylene chloride	4.0	ug/L	4.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Methyl-tert-butyl ether	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Naphthalene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	n-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	n-Propylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	o-Xylene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	p-Isopropyltoluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	sec-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Styrene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	tert-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Tetrachloroethene	4.5	ug/L	4.5	ug/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Toluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	trans-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	trans-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Trichloroethene	1.7	ug/L	1.7	ug/L	
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Trichlorofluoromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Vinyl chloride	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15	07/22/09	251689001	Water	2009_07	VOC	Xylenes, Total	3.0	ug/L	3.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	GENCHEM	Alkalinity, Total	318	mg/L	318	mg/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	GENCHEM	Ammonia-Nitrogen	0.050	mg/L	0.050	mg/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	GENCHEM	Total Dissolved Solids	638	mg/L	638	mg/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	GENCHEM	Total Organic Carbon	1.6	mg/L	1.6	mg/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	INORG	Chloride	54.1	mg/L	54.1	mg/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	INORG	Sulfate	110	mg/L	110	mg/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Antimony, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Arsenic, Dissolved	0.0027	mg/L	2.7	ug/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Barium, Dissolved	0.0937	mg/L	93.7	ug/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Beryllium, Dissolved	0.0002	mg/L	0.20	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Cadmium, Dissolved	0.00008	mg/L	0.080	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Calcium, Dissolved	92.4	mg/L	92400	ug/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Chromium, Dissolved	0.0011	mg/L	1.1	ug/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Cobalt, Dissolved	0.00093	mg/L	0.93	ug/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Copper, Dissolved	0.00097	mg/L	0.97	ug/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Iron, Dissolved	0.05	mg/L	50.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Lead, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Magnesium, Dissolved	34.9	mg/L	34900	ug/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Manganese, Dissolved	0.0047	mg/L	4.7	ug/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Nickel, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Potassium, Dissolved	6.8	mg/L	6800	ug/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Selenium, Dissolved	0.0037	mg/L	3.7	ug/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Silver, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Sodium, Dissolved	78.1	mg/L	78100	ug/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Thallium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Tin, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Vanadium, Dissolved	0.0236	mg/L	23.6	ug/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	MET_DISS	Zinc, Dissolved	0.005	mg/L	5.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,1,1-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,1,2-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,1-Dichloroethane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,1-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,1-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,2,3-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,2,3-Trichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,2,4-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,2,4-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,2-Dibromo3chloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,2-Dibromoethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,2-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,2-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,2-Dichloroethene (Total)	2.0	ug/L	2.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,3,5-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,3-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,3-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	1,4-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	2,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	2-Butanone (MEK)	5.0	ug/L	5.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	2-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	2-Hexanone	5.0	ug/L	5.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	4-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	4-Methyl-2-pentanone	5.0	ug/L	5.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Acetone	5.0	ug/L	5.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Benzene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Bromobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Bromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Bromodichloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Bromoform	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Bromomethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Carbon disulfide	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Carbon tetrachloride	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Chlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Chloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Chloroform	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Chloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	cis-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	cis-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Dibromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Dibromomethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Dichlorodifluoromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Ethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Hexachlorobutadiene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Isopropylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	m,p-Xylene	2.0	ug/L	2.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Methylene chloride	4.0	ug/L	4.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Methyl-tert-butyl ether	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Naphthalene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	n-Butylbenzene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	n-Propylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	o-Xylene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	p-Isopropyltoluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	sec-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Styrene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	tert-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Tetrachloroethene	3.6	ug/L	3.6	ug/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Toluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	trans-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	trans-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Trichloroethene	1.7	ug/L	1.7	ug/L	
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Trichlorofluoromethane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Vinyl chloride	1.0	ug/L	1.0	ug/L	U
MW-15	MW-15081909	08/19/09	251915007	Water	2009_08	VOC	Xylenes, Total	3.0	ug/L	3.0	ug/L	U
MW-15	MW-15	09/10/09	251915016	Water	2009_08	INORG	Nitrate as N	9.6	mg/L	9.6	mg/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	GENCHEM	Alkalinity, Total as CaCO3	285	mg/L	285	mg/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	GENCHEM	Nitrogen, Ammonia	0.050	mg/L	0.050	mg/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	GENCHEM	Nitrogen, Nitrate	9.3	mg/L	9.3	mg/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	GENCHEM	Total Dissolved Solids	636	mg/L	636	mg/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	GENCHEM	Total Organic Carbon	2.1	mg/L	2.1	mg/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	INORG	Chloride	59.8	mg/L	59.8	mg/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	INORG	Sulfate	119	mg/L	119	mg/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Antimony, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Arsenic, Dissolved	0.0025	mg/L	2.5	ug/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Barium, Dissolved	0.0964	mg/L	96.4	ug/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Beryllium, Dissolved	0.0002	mg/L	0.20	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Cadmium, Dissolved	0.00008	mg/L	0.080	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Calcium, Dissolved	92.6	mg/L	92600	ug/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Chromium, Dissolved	0.00056	mg/L	0.56	ug/L	

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Cobalt, Dissolved	0.00097	mg/L	0.97	ug/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Copper, Dissolved	0.0012	mg/L	1.2	ug/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Iron, Dissolved	0.05	mg/L	50.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Lead, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Magnesium, Dissolved	33.8	mg/L	33800	ug/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Manganese, Dissolved	0.0046	mg/L	4.6	ug/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Nickel, Dissolved	0.0011	mg/L	1.1	ug/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Potassium, Dissolved	7.4	mg/L	7400	ug/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Selenium, Dissolved	0.0038	mg/L	3.8	ug/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Silver, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Sodium, Dissolved	73.3	mg/L	73300	ug/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Thallium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Tin, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Vanadium, Dissolved	0.0275	mg/L	27.5	ug/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	MET_DISS	Zinc, Dissolved	0.005	mg/L	5.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,1,1-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,1,2-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,1-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,1-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,1-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,2,3-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,2,3-Trichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,2,4-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,2,4-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,2-Dibromo-3-chloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,2-Dibromoethane (EDB)	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,2-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,2-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,2-Dichloroethene (Total)	2.0	ug/L	2.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,3,5-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,3-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,3-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	1,4-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	2,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	2-Butanone (MEK)	5.0	ug/L	5.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	2-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	2-Hexanone	5.0	ug/L	5.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	4-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	4-Methyl-2-pentanone (MIBK)	5.0	ug/L	5.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Acetone	7.9	ug/L	7.9	ug/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Benzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Bromobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Bromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Bromodichloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Bromoform	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Bromomethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Carbon disulfide	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Carbon tetrachloride	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Chlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Chloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Chloroform	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Chloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	cis-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	cis-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Dibromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Dibromomethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Dichlorodifluoromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Ethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Hexachloro-1,3-butadiene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Isopropylbenzene (Cumene)	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	m&p-Xylene	2.0	ug/L	2.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Methylene chloride	4.0	ug/L	4.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Methyl-tert-butyl ether	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Naphthalene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	n-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	n-Propylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	o-Xylene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	p-Isopropyltoluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	sec-Butylbenzene	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Styrene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	tert-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Tetrachloroethene	4.5	ug/L	4.5	ug/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Toluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	trans-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	trans-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Trichloroethene	1.9	ug/L	1.9	ug/L	
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Trichlorofluoromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Vinyl chloride	1.0	ug/L	1.0	ug/L	U
MW-15	MW15092809	09/28/09	252191001	Water	2009_09	VOC	Xylene (Total)	3.0	ug/L	3.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	GENCHEM	Alkalinity, Total as CaCO3	290	mg/L	290	mg/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	GENCHEM	Nitrogen, Ammonia	0.10	mg/L	0.10	mg/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	GENCHEM	Total Dissolved Solids	638	mg/L	638	mg/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	GENCHEM	Total Organic Carbon	1.6	mg/L	1.6	mg/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	INORG	Chloride	62.2	mg/L	62.2	mg/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	INORG	Nitrate as N	8.6	mg/L	8.6	mg/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	INORG	Sulfate	127	mg/L	127	mg/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Antimony, Dissolved	0.0005	mg/L	0.50	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Arsenic, Dissolved	0.0019	mg/L	1.9	ug/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Barium, Dissolved	0.0914	mg/L	91.4	ug/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Beryllium, Dissolved	0.0002	mg/L	0.20	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Cadmium, Dissolved	0.00008	mg/L	0.080	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Calcium, Dissolved	96.6	mg/L	96600	ug/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Chromium, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Cobalt, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Copper, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Iron, Dissolved	0.05	mg/L	50.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Lead, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Magnesium, Dissolved	32.7	mg/L	32700	ug/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Manganese, Dissolved	0.0028	mg/L	2.8	ug/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Nickel, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Potassium, Dissolved	6.69	mg/L	6690	ug/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Selenium, Dissolved	0.0017	mg/L	1.7	ug/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Silver, Dissolved	0.0005	mg/L	0.50	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Sodium, Dissolved	72.8	mg/L	72800	ug/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Thallium, Dissolved	0.0005	mg/L	0.50	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Tin, Dissolved	0.0001	mg/L	0.10	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Vanadium, Dissolved	0.0271	mg/L	27.1	ug/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	MET_DISS	Zinc, Dissolved	0.005	mg/L	5.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,1,1,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,1,1-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,1,2-Trichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,1-Dichloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,1-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,1-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,2,3-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,2,3-Trichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,2,4-Trichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,2,4-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,2-Dibromo-3-chloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,2-Dibromoethane (EDB)	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,2-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,2-Dichloroethane	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,2-Dichloroethene (Total)	2.0	ug/L	2.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,3,5-Trimethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,3-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,3-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	1,4-Dichlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	2,2-Dichloropropane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	2-Butanone (MEK)	5.0	ug/L	5.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	2-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	2-Hexanone	5.0	ug/L	5.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	4-Chlorotoluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	4-Methyl-2-pentanone (MIBK)	5.0	ug/L	5.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Acetone	5.0	ug/L	5.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Benzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Bromobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Bromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Bromodichloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Bromoform	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Bromomethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Carbon disulfide	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Carbon tetrachloride	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Chlorobenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Chloroethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Chloroform	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Chloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	cis-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	cis-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Dibromochloromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Dibromomethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Dichlorodifluoromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Ethylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Hexachloro-1,3-butadiene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Isopropylbenzene (Cumene)	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	m&p-Xylene	2.0	ug/L	2.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Methylene chloride	4.0	ug/L	4.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Methyl-tert-butyl ether	1.0	ug/L	1.0	ug/L	U

Analytical Results for Samples Taken From MW-14D, MW-14S, and MW-15 From May thru October, 2009
Asotin County Landfill

STATION	SAMPLE NAME	Date	LABSAMPID	MATRIX	EVENT	CLASS	ANALYTE	RESULT (Standardized)*	UNITS (Standardized)	RESULT	UNITS	QUALIFIER
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Naphthalene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	n-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	n-Propylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	o-Xylene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	p-Isopropyltoluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	sec-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Styrene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	tert-Butylbenzene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Tetrachloroethene	7.2	ug/L	7.2	ug/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Toluene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	trans-1,2-Dichloroethene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	trans-1,3-Dichloropropene	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Trichloroethene	1.8	ug/L	1.8	ug/L	
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Trichlorofluoromethane	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Vinyl chloride	1.0	ug/L	1.0	ug/L	U
MW-15	MW15102909	10/29/09	252410001	Water	2009_10	VOC	Xylene (Total)	3.0	ug/L	3.0	ug/L	U

Note:

lts converted from ug/L to mg/L to match historical data units.

are shown in units reported by lab.

- J - 1 Geologic Map
- J - 2 Cross Section
- J - 3 Regional Recharge and Discharge Areas

Partial Electronic Submittal Only

See DVD located in cover of this report

Appendix J

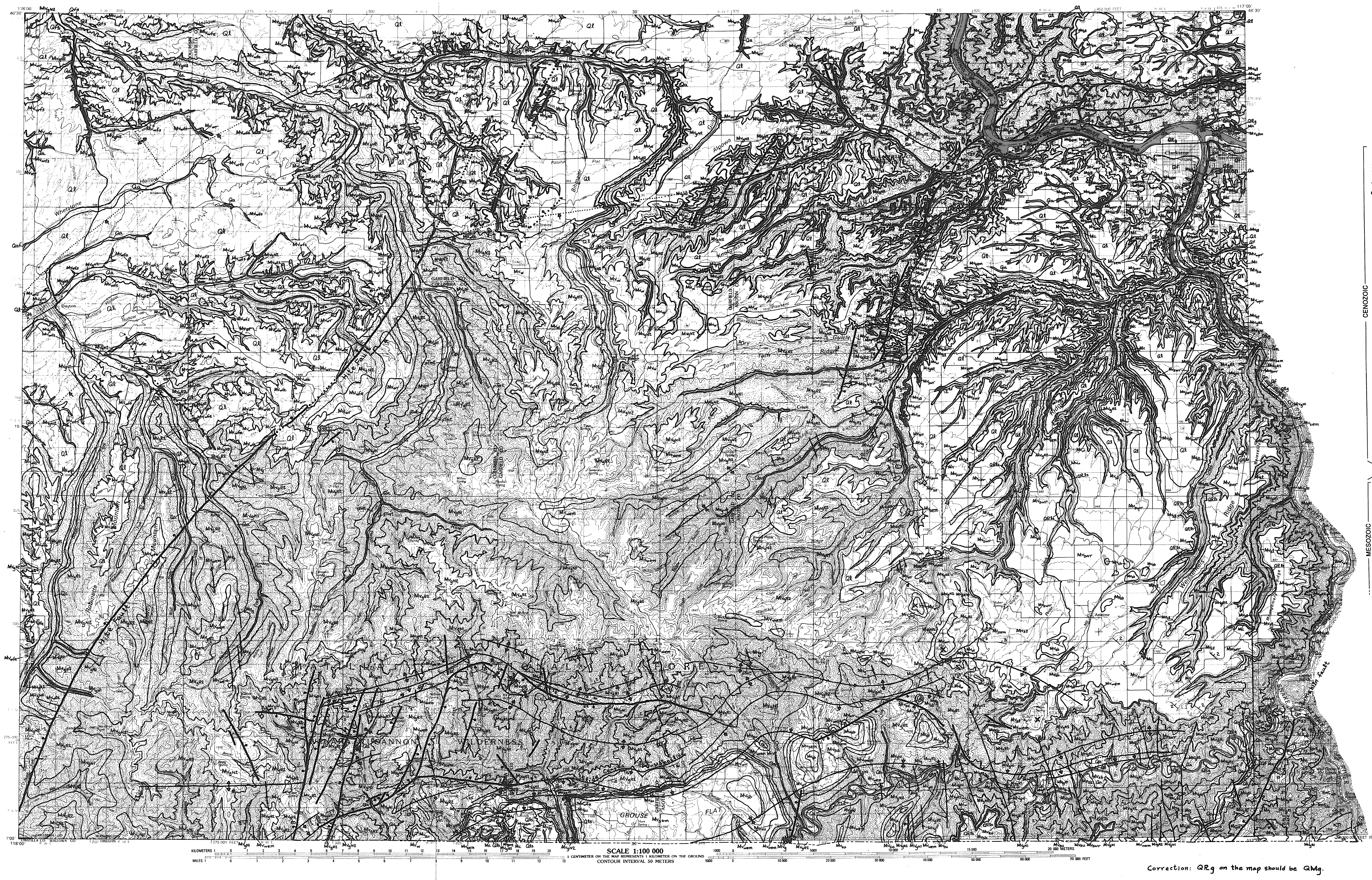
Regional Geologic Map, Regional Generalized Geologic Cross-Section, and Regional Recharge and Discharge Areas, Plates 1, 2 and 3

Partial Electronic Submittal Only

See DVD located in cover of this report

WASHINGTON DIVISION OF GEOLOGY AND EARTH RESOURCES
Raymond Lasmanis, State Geologist

Plate 1
OPEN FILE REPORT 93-4
GEOLOGIC MAP OF THE CLARKSTON 1:100,000 QUADRANGLE, WASHINGTON–IDAHO,
AND THE WASHINGTON PORTION OF THE OROFINO 1:100,000 QUADRANGLE

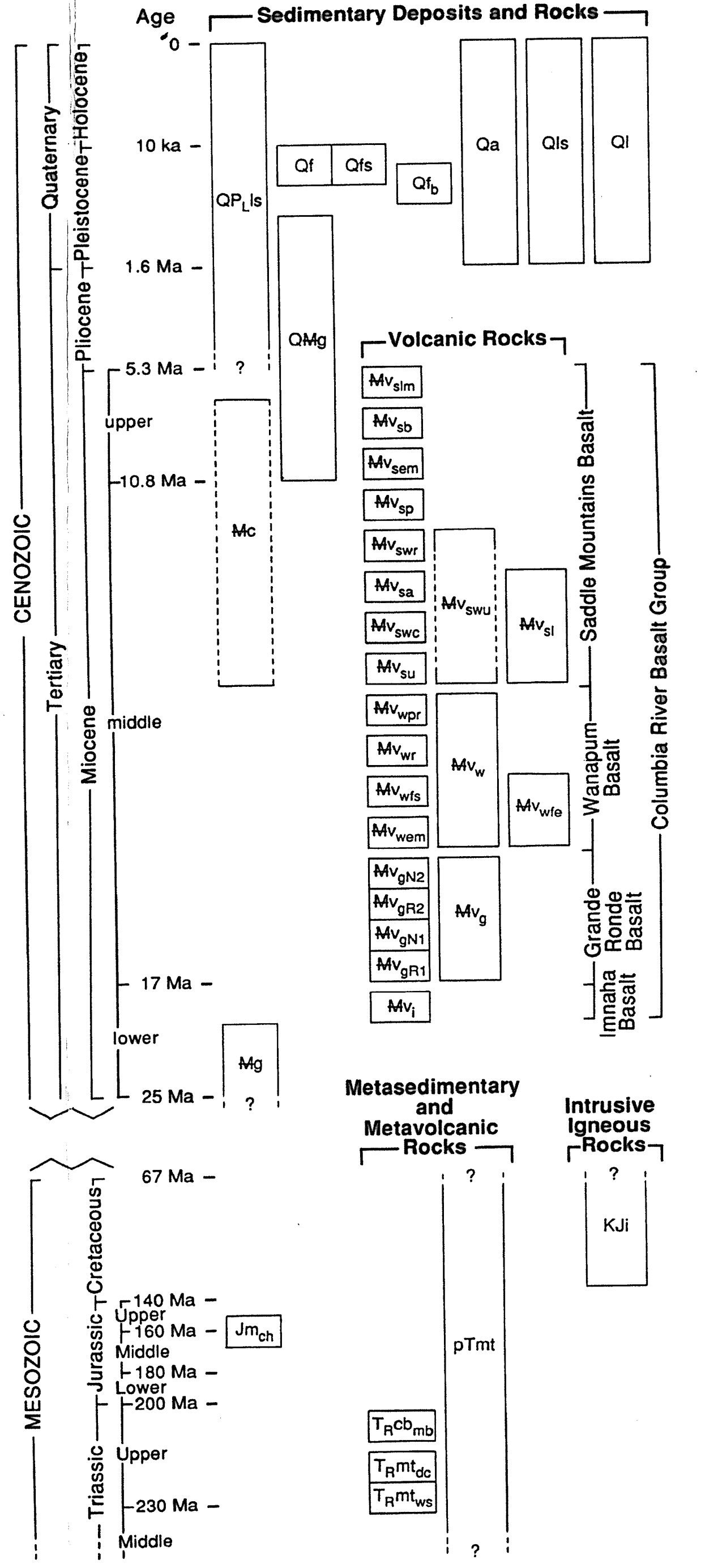


Correction: QRg on the map should be QMg.

GEOLOGIC MAP OF THE CLARKSTON 1:100,000 QUADRANGLE, WASHINGTON–IDAHO AND THE WASHINGTON PORTION OF THE OROFINO 1:100,000 QUADRANGLE

Compiled by
J. ERIC SCHUSTER
December 1993

Correlation Diagram



GEOLOGIC UNITS

Sedimentary Deposits and Rocks

Quaternary Sedimentary Deposits

Qa	Alluvium (Holocene to Pleistocene)
Qls	Mass-wasting deposits (Holocene to Pleistocene)
Ql	Loess (Holocene to Pliocene)
Qf	Outburst flood deposits, undivided (Pleistocene)
Qfs	Outburst flood deposits, silt and sand
Qf_b	Bonneville flood deposits (Pleistocene)

Quaternary-Tertiary Sedimentary Deposits

QP_Lls	Mass-wasting deposits (Holocene to Pliocene)
QMg	Gravel (Pleistocene to Miocene)

Tertiary Sedimentary Deposits

Mc	Continental sedimentary deposits (upper and middle Miocene)
Mg	Gravel (lower Miocene)

Mesozoic Sedimentary Rocks

Jm_{ch}	Marine sedimentary rocks (upper Middle to lower Upper Jurassic) Coon Hollow Formation

Tertiary Volcanic Rocks

Columbia River Basalt Group

Saddle Mountains Basalt

Mv_{slm}	Lower Monumental Member (upper Miocene)
Mv_{sb}	Buford Member (upper Miocene)
Mv_{sem}	Elephant Mountain Member (upper Miocene)
Mv_{sp}	Pomona Member (middle Miocene)
Mv_{swr}	Weissenfels Ridge Member (middle Miocene)
Mv_{sa}	Asotin Member (middle Miocene)
Mv_{swc}	Wilbur Creek Member (middle Miocene)
Mv_{su}	Umatilla Member (middle Miocene)
Mv_{swu}	Wilbur Creek and Umatilla Members, undivided (middle Miocene)
Mv_{sl}	Saddle Mountains Basalt, lower (middle Miocene) Includes Asotin and lower members

Wanapum Basalt

Mv_{wpr}	Priest Rapids Member (middle Miocene)
Mv_{wr}	Roza Member (middle Miocene)
Mv_{wfs}	Frenchman Springs Member (middle Miocene)
Mv_{wem}	Eckler Mountain Member (middle Miocene)
Mv_{wfe}	Frenchman Springs and Eckler Mountain Members, undivided (middle Miocene)
Mv_w	Wanapum Basalt, undivided (middle Miocene)

Grande Ronde Basalt (middle Miocene)

Mv_{gN2}	Upper flows of normal magnetic polarity
Mv_{gR2}	Upper flows of reversed magnetic polarity
Mv_{gN1}	Lower flows of normal magnetic polarity
Mv_{gR1}	Lower flows of reversed magnetic polarity
Mv_g	Grande Ronde Basalt, undivided. Symbol used only for feeder dikes that have not been identified to magnetostratigraphic unit level

Imnaha Basalt

Mv_i	Imnaha Basalt (lower Miocene)

Mesozoic Intrusive Igneous Rocks

KJi	Intrusive rocks, undivided (Cretaceous to Jurassic)

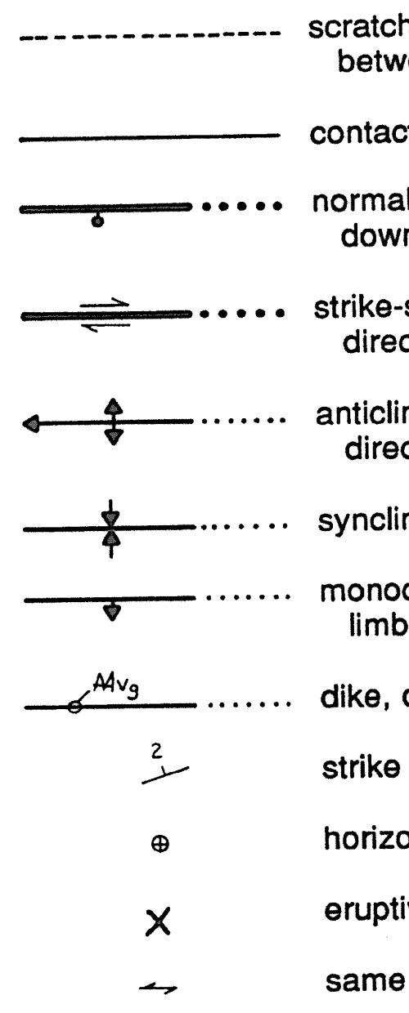
Mesozoic Metasedimentary and Metavolcanic Rocks

T_Rcb_{mb}	Metacarbonate (Upper Triassic) Martin Bridge Limestone
T_Rmt_{dc}	Metasedimentary and metavolcanic rocks, undivided (Upper Triassic) Doyle Creek Formation
T_Rmt_{ws}	Metasedimentary and metavolcanic rocks, undivided (Middle to Upper Triassic) Wild Sheep Creek Formation

Pre-Tertiary Metasedimentary and Metavolcanic Rocks

pTmt	Metasedimentary and metavolcanic rocks, undivided (pre-Tertiary)

EXPLANATION



scratch boundary - indicates unreconciled differences between source maps

contact

normal fault, dotted where concealed, bar and ball on downthrown side

strike-slip fault, dotted where concealed, arrows show direction of movement

anticline, dotted where concealed, showing plunge direction

syncline, dotted where concealed

monocline, dotted where concealed, arrow on steeper limb

dike, dotted where concealed

strike and dip of inclined beds

horizontal beds

eruptive center

same geologic unit

WASHINGTON STATE DEPARTMENT OF
Natural Resources
Jennifer M. Belcher - Commissioner of Public Lands
Kaleen Cottingham - Supervisor

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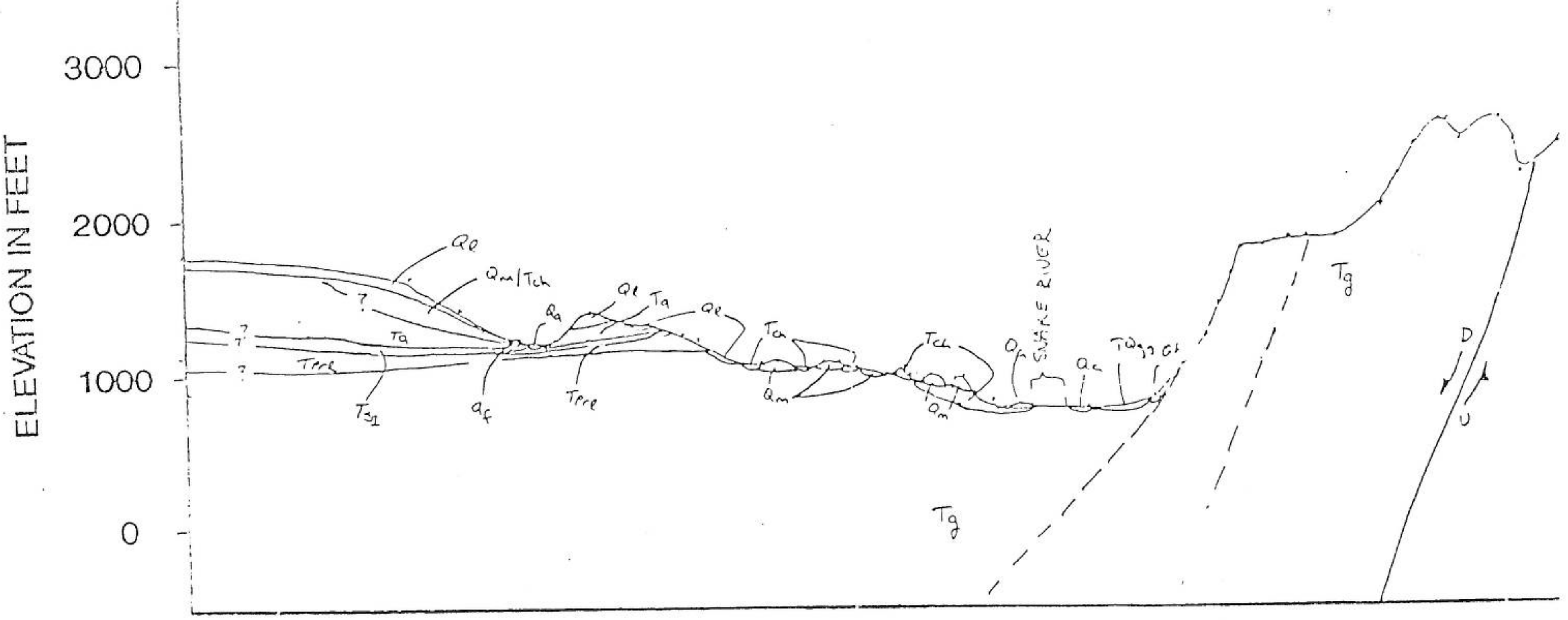
Cross Section



HORIZONTAL SCALE 1:48,000
VERTICAL SCALE 1:12,000

NOTE: SEE PLATE 2 FOR EXPLANATION OF GEOLOGIC UNITS AND SYMBOLS.

REFERENCE: GEOLOGIC MAP OF THE CLARKSTON 15 MINUTE QUADRANGLE, WA

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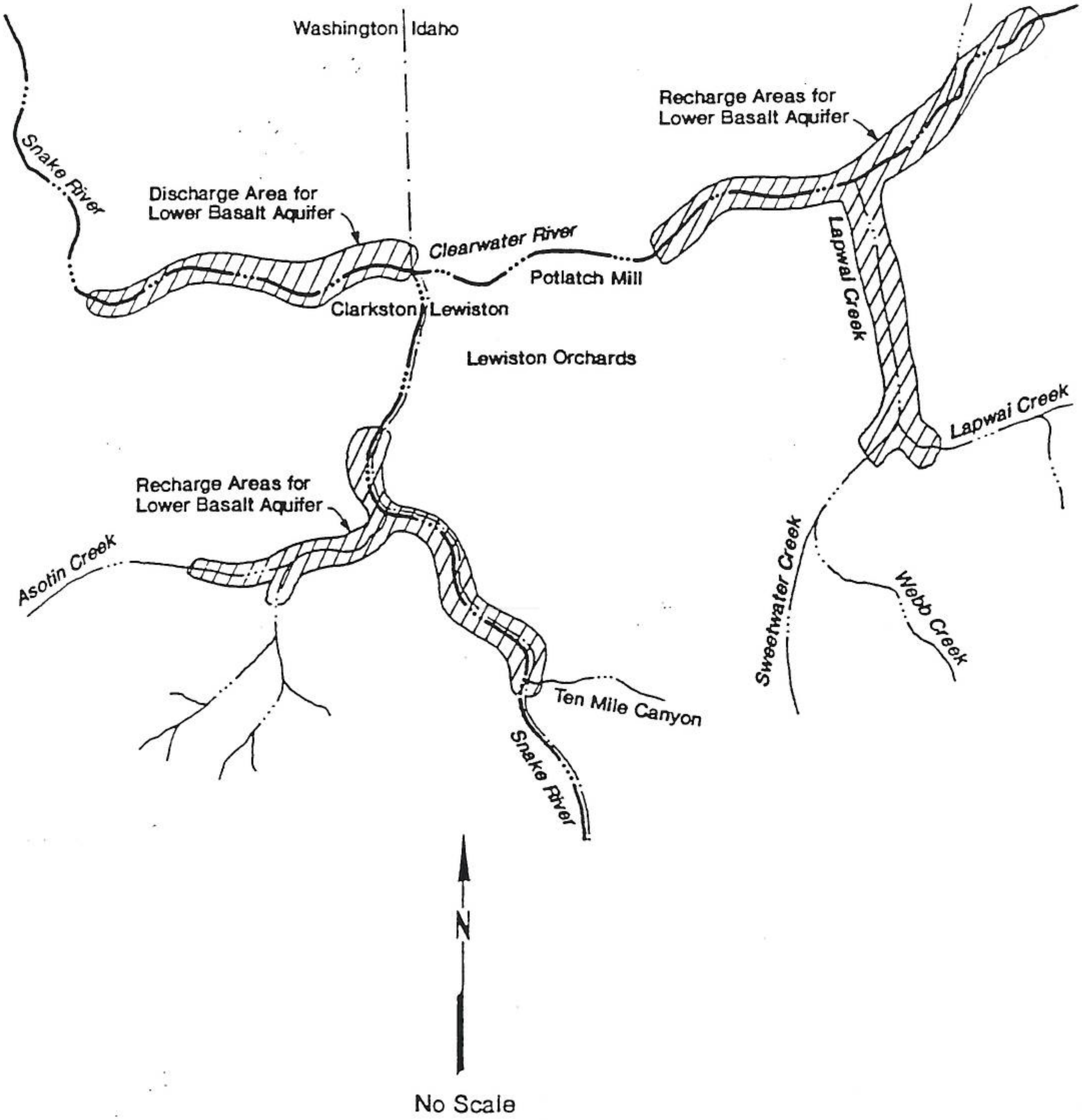
Regional Recharge and Discharge Areas



ASOTIN COUNTY

LOCATION OF AREAS OF RIVER–AQUIFER INTERCONNECTION (COHEN, 1979)

K - 1 Residential Well Inventory
K - 2 Well Inventory Map
K - 3 Residential Well Sampling Results
K - 4 Residential Well Sampling Analytical Data

Partial Electronic Submittal Only

See DVD located in cover of this report

Appendix K
Residential Well Inventory & Related Residential Water Quality Testing Results

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Residential Well Inventory

Appendix K (Table K1)

Residential Well Inventory and Sampling Summary

Asotin County Regional Landfill

Record ID[a]	Sample ID	Well Address	Access/Sample Request Letter Submitted	township		range		section	qtr section	qtr-qtr section	well depth (ft)	well diameter (in)	well completion date	county
NA	**RW-01**	**964 Ingram Rd. (record not found in database)**	**Yes**	**11**	**N**	**45**	**E**	**25**	**NE**	**NW**	**unknown**	**unknown**	**unknown**	**ASOTIN**
1	-	2040 Evans Rd, Clarkston (see notes)	Yes	11	N	45	E	25			240	8	7/9/1993	ASOTIN
1	-	1200 Evans Rd, Clarkston	Yes	11	N	45	E	25			375	8	7/24/1993	ASOTIN
2	**RW-05**	**Lot 3 Amity Lane, Clarkston**	**Yes**	**11**	**N**	**45**	**E**	**35**	**NE**	**SE**	**405**	**8**	**4/30/2007**	**ASOTIN**
3	-	Amnity Lane	Yes	11	N	45	E	35	NE	SE	900	8	7/20/2007	ASOTIN
4	**RW-06**	**1505 Amnity Lane, Clarkston**	**Yes**	**11**	**N**	**45**	**E**	**35**	**NE**	**SE**	**765**	**8**	**10/16/2007**	**ASOTIN**
5	-	Lot 9, Sparrow Hawk Addition, Peola Rd, Clarkston	No	11	N	45	E	35	NE	SW	320	8	10/17/2007	ASOTIN
6	**RW-07**	**Amnity Lane, Lot 8, Clarkston**	**Yes**	**11**	**N**	**45**	**E**	**35**	**NW**	**SE**	**380**	**6**	**3/14/2007**	**ASOTIN**
7	**RW-08**	**Amnity Lane**	**Yes**	**11**	**N**	**45**	**E**	**35**	**SE**	**NE**	**850**	**8**	**7/23/2007**	**ASOTIN**
8	**RW-04**	**1166 Amity Lane, Clarkston**	**Yes**	**11**	**N**	**45**	**E**	**35**	**SE**	**NE**	**955**	**8**	**10/8/2007**	**ASOTIN**
9	-	1 mile Peola Rd from Clarkston	No	11	N	45	E	35	SE	SW	330	8	7/28/1999	ASOTIN
10	**RW-03**	**720 Amity Lane, Clarkston**	**Yes**	**11**	**N**	**45**	**E**	**35**	**SE**	**SW**	**950**	**8**	**10/10/2006**	**ASOTIN**
11	-	Lot 18, Sparrow Hawk Development, Peola Rd, Clarkston	No	11	N	45	E	35	SW	NW	340	8	7/26/2006	ASOTIN
12	-	2 mi W of Clarkston, Peola Rd	No	11	N	45	E	35	SW	SE	960	6	3/21/2005	ASOTIN
13	**RW-09**	**2465 Linda Vista, Clarkston**	**Yes**	**11**	**N**	**45**	**E**	**36**	**NE**	**NE**	**430**	**8**	**9/9/1992**	**ASOTIN**
14	**RW-02**	**Lawrence Dr, Peola Estates, Clarkston**	**Yes**	**11**	**N**	**45**	**E**	**36**	**SW**	**SW**	**175**	**6**	**3/11/2005**	**ASOTIN**
15	-	Lot 5, Asotin Co.	No	11	N	46	E	19	SE	SE	110	6	3/4/1988	ASOTIN
16	-	Asotin Co. (Asotin Co. PUD Well No. 5 - See App. L)	No	11	N	46	E	30			1330	30		ASOTIN
18	-	2338 Florence Lane, Clarkston	No	11	N	46	E	30	SW	NW	400	8	12/11/2000	ASOTIN
19	-	Asotin Co.	No	11	N	46	E	31	NW	NW	399	6	4/9/1999	ASOTIN
20	-	Clarkston	No	11	N	46	E	31	SE	NW	381	8	8/31/1992	ASOTIN
21	-	1000' E & 1150' N from the S1/4 corner of Sec. 31	No	11	N	46	E	31	SW	SE	500	8	4/13/1987	ASOTIN

Notes:

a Arbitrary record ID; well records obtained via Ecology's Well Log database, http://apps.ecy.wa.gov/welllog/; search area included all of Sections 23, 24, 25, 26, 35, and 36 of T11N, R45E; and Sections 19, 30, and 31 of T11N, R46E.

Bold-blue font indicates access/permission granted and a water quality sample was obtained December 2009; residential water quality samples designated as RW-01 through RW-09.

Record ID's and Sample ID's (when applicable) shown on map (next page).

Record NA and Sample ID RW-01 not found from Ecology's database; this location was identified based on field reconaissance.

Property owner of Record ID #1 at Well Address 2040 Evans Rd (intersection of Evans and Ben Johnson) indicated their water is from Asotin County PUD; owner indicated a residential well is not on their property.

Accuracy of information in Ecology's database/records (and logs) not verified and used as-is.

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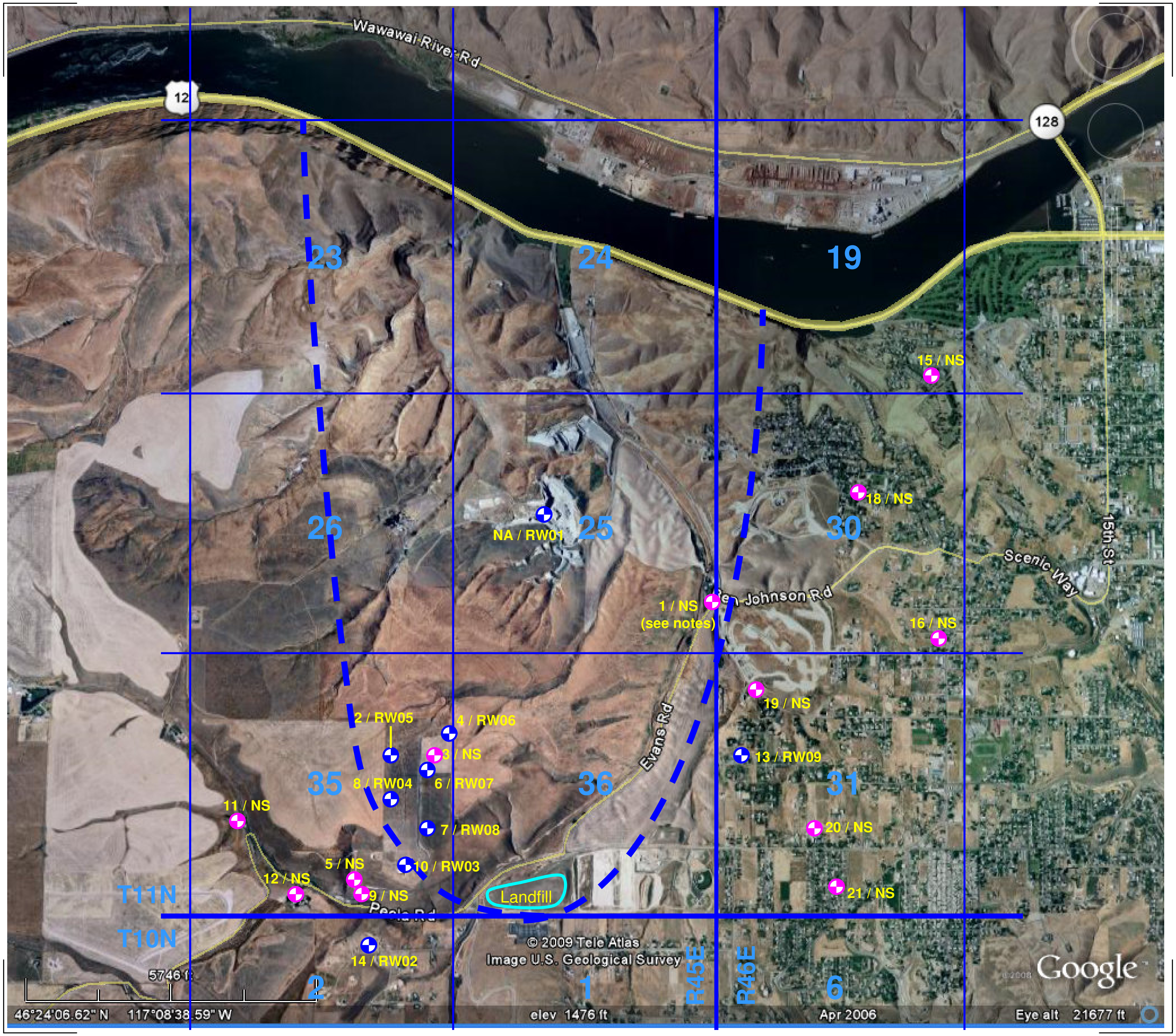
Well Inventory Map



Legend

Closed Landfill

Inferred area of interest downgradient of Closed Landfill

Residential well identified from inventory – water quality grab sample collected 12/22/09

Residential well identified from inventory (NS = not sampled)

Approximate Township, Range, and Section lines.

Notes:

1) Well ID's include the Record ID and Sample ID (if sampled); reference the well inventory table for details.

2) Location of sampled residential wells from Asotin County field reconnaissance and survey.

3) Property owner at intersection of Evans and Ben Johnson Road (Record 1 – NS) communicated their water supply is obtained from Asotin County PUD. Owner communicated they do not own or withdraw water form a water-supply well on their property.

Residential Water Well Inventory Map
Asotin County Regional Landfill
December 2009

Map Source: Base air photo obtained from Google Earth; Township, Section, and Range designations from USGS 7.5' Topographic Map, Clarkston, WA, 1971

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Residential Well Sampling Results

Appendix K, Table K-1

Residential Well Sampling VOC Results

Asotin County Regional Landfill

		Well									WAC
ANALYTE	Unit	RW01	RW02	RW03	RW04	RW05	RW06	RW07	RW08	RW09	173-200 Criteria
Tetrachloroethene (PCE)	**ug/L**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**0.8**
Trichloroethene (TCE)	**ug/L**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**3**
1,1-Dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	1
Acetone	ug/L	<5	<5	<5	<5	<5	43.9	<5	<5	<5	-
Dichlorodifluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	-
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	-

Notes:

RW = residential well

Residential wells sampled 12/22/09

VOCs shown above correspond to the 6 VOCs found in ACRL groundwater

No other VOCs were found in the residential wells, except RW06, in which the following VOCs were found:

2-Butanone (MEK)	31.8	ug/L
2-Hexanone	5.2	ug/L
4-Methyl-2-pentanone (MIBK)	5.5	ug/L
Acetone	43.9	ug/L

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CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1,2-Tetrachloroethane	630-20-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1-Trichloroethane	71-55-6	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2,2-Tetrachloroethane	79-34-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2-Trichloroethane	79-00-5	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethane	75-34-3	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethene	75-35-4	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloropropene	563-58-6	FALSE	FALSE	ND	0.094	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichlorobenzene	87-61-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichloropropane	96-18-4	FALSE	FALSE	ND	0.37	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trichlorobenzene	120-82-1	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trimethylbenzene	95-63-6	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromo-3-chloropropane	96-12-8	FALSE	FALSE	ND	0.38	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromoethane (EDB)	106-93-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichlorobenzene	95-50-1	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethane	107-06-2	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethene (Total)	540-59-0	FALSE	FALSE	ND	0.5	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloropropane	78-87-5	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3,5-Trimethylbenzene	108-67-8	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichlorobenzene	541-73-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichloropropane	142-28-9	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,4-Dichlorobenzene	106-46-7	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2,2-Dichloropropane	594-20-7	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Butanone (MEK)	78-93-3	FALSE	FALSE	ND	0.52	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Chlorotoluene	95-49-8	FALSE	FALSE	ND	0.098	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Hexanone	591-78-6	FALSE	FALSE	ND	0.57	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Chlorotoluene	106-43-4	FALSE	FALSE	ND	0.13	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Methyl-2-pentanone (MIBK)	108-10-1	FALSE	FALSE	ND	0.32	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acetone	67-64-1	FALSE	FALSE	ND	0.75	5.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acrylonitrile	107-13-1	FALSE	FALSE	ND	0.41	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Benzene	71-43-2	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromobenzene	108-86-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromochloromethane	74-97-5	FALSE	FALSE	ND	0.34	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromodichloromethane	75-27-4	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromoform	75-25-2	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromomethane	74-83-9	FALSE	FALSE	ND	0.072	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon disulfide	75-15-0	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon tetrachloride	56-23-5	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chlorobenzene	108-90-7	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroethane	75-00-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroform	67-66-3	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloromethane	74-87-3	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,2-Dichloroethene	156-59-2	FALSE	FALSE	ND	0.32	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,3-Dichloropropene	0061-01-5	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromochloromethane	124-48-1	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromomethane	74-95-3	FALSE	FALSE	ND	0.18	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dichlorodifluoromethane	75-71-8	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Ethylbenzene	100-41-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Hexachloro-1,3-butadiene	87-68-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Iodomethane	74-88-4	FALSE	FALSE	ND	0.26	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Isopropylbenzene (Cumene)	98-82-8	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	m&p-Xylene	1330-20-7	FALSE	FALSE	ND	0.27	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methylene chloride	75-09-2	FALSE	FALSE	ND	0.26	4.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methyl-tert-butyl ether	1634-04-4	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Naphthalene	91-20-3	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Butylbenzene	104-51-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Propylbenzene	103-65-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	o-Xylene	95-47-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	p-Isopropyltoluene	99-87-6	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	sec-Butylbenzene	135-98-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Styrene	100-42-5	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	tert-Butylbenzene	98-06-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Tetrachloroethene	127-18-4	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Toluene	108-88-3	FALSE	FALSE	ND	0.21	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,2-Dichloroethene	156-60-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,3-Dichloropropene	0061-02-	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,4-Dichloro-2-butene	110-57-6	FALSE	FALSE	ND	0.84	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichloroethene	79-01-6	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichlorofluoromethane	75-69-4	FALSE	FALSE	ND	0.24	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl acetate	108-05-4	FALSE	FALSE	ND	0.53	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl chloride	75-01-4	FALSE	FALSE	ND	0.05	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW01122209	252716001	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Xylene (Total)	1330-20-7	FALSE	FALSE	ND	0.42	3.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1,2-Tetrachloroethane	630-20-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1-Trichloroethane	71-55-6	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2,2-Tetrachloroethane	79-34-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2-Trichloroethane	79-00-5	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethane	75-34-3	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethene	75-35-4	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloropropene	563-58-6	FALSE	FALSE	ND	0.094	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichlorobenzene	87-61-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichloropropane	96-18-4	FALSE	FALSE	ND	0.37	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trichlorobenzene	120-82-1	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trimethylbenzene	95-63-6	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromo-3-chloropropane	96-12-8	FALSE	FALSE	ND	0.38	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromoethane (EDB)	106-93-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichlorobenzene	95-50-1	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethane	107-06-2	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethene (Total)	540-59-0	FALSE	FALSE	ND	0.5	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloropropane	78-87-5	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3,5-Trimethylbenzene	108-67-8	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichlorobenzene	541-73-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichloropropane	142-28-9	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,4-Dichlorobenzene	106-46-7	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2,2-Dichloropropane	594-20-7	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Butanone (MEK)	78-93-3	FALSE	FALSE	ND	0.52	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Chlorotoluene	95-49-8	FALSE	FALSE	ND	0.098	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Hexanone	591-78-6	FALSE	FALSE	ND	0.57	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Chlorotoluene	106-43-4	FALSE	FALSE	ND	0.13	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Methyl-2-pentanone (MIBK)	108-10-1	FALSE	FALSE	ND	0.32	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acetone	67-64-1	FALSE	FALSE	ND	0.75	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acrylonitrile	107-13-1	FALSE	FALSE	ND	0.41	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Benzene	71-43-2	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromobenzene	108-86-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromochloromethane	74-97-5	FALSE	FALSE	ND	0.34	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromodichloromethane	75-27-4	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromoform	75-25-2	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromomethane	74-83-9	FALSE	FALSE	ND	0.072	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon disulfide	75-15-0	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon tetrachloride	56-23-5	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chlorobenzene	108-90-7	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroethane	75-00-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroform	67-66-3	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloromethane	74-87-3	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,2-Dichloroethene	156-59-2	FALSE	FALSE	ND	0.32	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,3-Dichloropropene	0061-01-	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromochloromethane	124-48-1	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromomethane	74-95-3	FALSE	FALSE	ND	0.18	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dichlorodifluoromethane	75-71-8	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Ethylbenzene	100-41-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Hexachloro-1,3-butadiene	87-68-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Iodomethane	74-88-4	FALSE	FALSE	ND	0.26	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Isopropylbenzene (Cumene)	98-82-8	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	m&p-Xylene	1330-20-7	FALSE	FALSE	ND	0.27	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methylene chloride	75-09-2	FALSE	FALSE	ND	0.26	4.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methyl-tert-butyl ether	1634-04-4	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Naphthalene	91-20-3	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Butylbenzene	104-51-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Propylbenzene	103-65-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	o-Xylene	95-47-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	p-Isopropyltoluene	99-87-6	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	sec-Butylbenzene	135-98-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Styrene	100-42-5	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	tert-Butylbenzene	98-06-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Tetrachloroethene	127-18-4	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Toluene	108-88-3	FALSE	FALSE	ND	0.21	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,2-Dichloroethene	156-60-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,3-Dichloropropene	0061-02-	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,4-Dichloro-2-butene	110-57-6	FALSE	FALSE	ND	0.84	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichloroethene	79-01-6	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichlorofluoromethane	75-69-4	FALSE	FALSE	ND	0.24	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl acetate	108-05-4	FALSE	FALSE	ND	0.53	5.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl chloride	75-01-4	FALSE	FALSE	ND	0.05	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW02122209	252716002	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Xylene (Total)	1330-20-7	FALSE	FALSE	ND	0.42	3.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1,2-Tetrachloroethane	630-20-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1-Trichloroethane	71-55-6	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2,2-Tetrachloroethane	79-34-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2-Trichloroethane	79-00-5	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethane	75-34-3	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethene	75-35-4	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloropropene	563-58-6	FALSE	FALSE	ND	0.094	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichlorobenzene	87-61-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichloropropane	96-18-4	FALSE	FALSE	ND	0.37	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trichlorobenzene	120-82-1	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trimethylbenzene	95-63-6	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromo-3-chloropropane	96-12-8	FALSE	FALSE	ND	0.38	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromoethane (EDB)	106-93-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichlorobenzene	95-50-1	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethane	107-06-2	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethene (Total)	540-59-0	FALSE	FALSE	ND	0.5	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloropropane	78-87-5	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3,5-Trimethylbenzene	108-67-8	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichlorobenzene	541-73-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichloropropane	142-28-9	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,4-Dichlorobenzene	106-46-7	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2,2-Dichloropropane	594-20-7	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Butanone (MEK)	78-93-3	FALSE	FALSE	ND	0.52	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Chlorotoluene	95-49-8	FALSE	FALSE	ND	0.098	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Hexanone	591-78-6	FALSE	FALSE	ND	0.57	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Chlorotoluene	106-43-4	FALSE	FALSE	ND	0.13	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Methyl-2-pentanone (MIBK)	108-10-1	FALSE	FALSE	ND	0.32	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acetone	67-64-1	FALSE	FALSE	ND	0.75	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acrylonitrile	107-13-1	FALSE	FALSE	ND	0.41	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Benzene	71-43-2	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromobenzene	108-86-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromochloromethane	74-97-5	FALSE	FALSE	ND	0.34	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromodichloromethane	75-27-4	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromoform	75-25-2	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromomethane	74-83-9	FALSE	FALSE	ND	0.072	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon disulfide	75-15-0	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon tetrachloride	56-23-5	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chlorobenzene	108-90-7	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroethane	75-00-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroform	67-66-3	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloromethane	74-87-3	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,2-Dichloroethene	156-59-2	FALSE	FALSE	ND	0.32	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,3-Dichloropropene	0061-01-	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromochloromethane	124-48-1	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromomethane	74-95-3	FALSE	FALSE	ND	0.18	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dichlorodifluoromethane	75-71-8	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Ethylbenzene	100-41-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Hexachloro-1,3-butadiene	87-68-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Iodomethane	74-88-4	FALSE	FALSE	ND	0.26	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Isopropylbenzene (Cumene)	98-82-8	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	m&p-Xylene	1330-20-7	FALSE	FALSE	ND	0.27	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methylene chloride	75-09-2	FALSE	FALSE	ND	0.26	4.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methyl-tert-butyl ether	1634-04-4	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Naphthalene	91-20-3	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Butylbenzene	104-51-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Propylbenzene	103-65-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	o-Xylene	95-47-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	p-Isopropyltoluene	99-87-6	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	sec-Butylbenzene	135-98-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Styrene	100-42-5	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	tert-Butylbenzene	98-06-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Tetrachloroethene	127-18-4	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Toluene	108-88-3	FALSE	FALSE	ND	0.21	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,2-Dichloroethene	156-60-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,3-Dichloropropene	0061-02-	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,4-Dichloro-2-butene	110-57-6	FALSE	FALSE	ND	0.84	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichloroethene	79-01-6	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichlorofluoromethane	75-69-4	FALSE	FALSE	ND	0.24	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl acetate	108-05-4	FALSE	FALSE	ND	0.53	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl chloride	75-01-4	FALSE	FALSE	ND	0.05	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW03122209	252716003	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Xylene (Total)	1330-20-7	FALSE	FALSE	ND	0.42	3.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1,2-Tetrachloroethane	630-20-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1-Trichloroethane	71-55-6	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2,2-Tetrachloroethane	79-34-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2-Trichloroethane	79-00-5	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethane	75-34-3	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethene	75-35-4	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloropropene	563-58-6	FALSE	FALSE	ND	0.094	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichlorobenzene	87-61-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichloropropane	96-18-4	FALSE	FALSE	ND	0.37	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trichlorobenzene	120-82-1	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trimethylbenzene	95-63-6	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromo-3-chloropropane	96-12-8	FALSE	FALSE	ND	0.38	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromoethane (EDB)	106-93-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichlorobenzene	95-50-1	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethane	107-06-2	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethene (Total)	540-59-0	FALSE	FALSE	ND	0.5	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloropropane	78-87-5	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3,5-Trimethylbenzene	108-67-8	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichlorobenzene	541-73-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichloropropane	142-28-9	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,4-Dichlorobenzene	106-46-7	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2,2-Dichloropropane	594-20-7	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Butanone (MEK)	78-93-3	FALSE	FALSE	ND	0.52	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Chlorotoluene	95-49-8	FALSE	FALSE	ND	0.098	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Hexanone	591-78-6	FALSE	FALSE	ND	0.57	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Chlorotoluene	106-43-4	FALSE	FALSE	ND	0.13	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Methyl-2-pentanone (MIBK)	108-10-1	FALSE	FALSE	ND	0.32	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acetone	67-64-1	FALSE	FALSE	ND	0.75	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acrylonitrile	107-13-1	FALSE	FALSE	ND	0.41	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Benzene	71-43-2	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromobenzene	108-86-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromochloromethane	74-97-5	FALSE	FALSE	ND	0.34	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromodichloromethane	75-27-4	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromoform	75-25-2	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromomethane	74-83-9	FALSE	FALSE	ND	0.072	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon disulfide	75-15-0	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon tetrachloride	56-23-5	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chlorobenzene	108-90-7	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroethane	75-00-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroform	67-66-3	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloromethane	74-87-3	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,2-Dichloroethene	156-59-2	FALSE	FALSE	ND	0.32	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,3-Dichloropropene	0061-01-5	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromochloromethane	124-48-1	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromomethane	74-95-3	FALSE	FALSE	ND	0.18	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dichlorodifluoromethane	75-71-8	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Ethylbenzene	100-41-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Hexachloro-1,3-butadiene	87-68-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Iodomethane	74-88-4	FALSE	FALSE	ND	0.26	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Isopropylbenzene (Cumene)	98-82-8	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	m&p-Xylene	1330-20-7	FALSE	FALSE	ND	0.27	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methylene chloride	75-09-2	FALSE	FALSE	ND	0.26	4.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methyl-tert-butyl ether	1634-04-4	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Naphthalene	91-20-3	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3,5-Trimethylbenzene	108-67-8	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichlorobenzene	541-73-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichloropropane	142-28-9	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,4-Dichlorobenzene	106-46-7	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2,2-Dichloropropane	594-20-7	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Butanone (MEK)	78-93-3	FALSE	FALSE	ND	0.52	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Chlorotoluene	95-49-8	FALSE	FALSE	ND	0.098	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Hexanone	591-78-6	FALSE	FALSE	ND	0.57	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Chlorotoluene	106-43-4	FALSE	FALSE	ND	0.13	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Methyl-2-pentanone (MIBK)	108-10-1	FALSE	FALSE	ND	0.32	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acetone	67-64-1	FALSE	FALSE	ND	0.75	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acrylonitrile	107-13-1	FALSE	FALSE	ND	0.41	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Benzene	71-43-2	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromobenzene	108-86-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromochloromethane	74-97-5	FALSE	FALSE	ND	0.34	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromodichloromethane	75-27-4	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromoform	75-25-2	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromomethane	74-83-9	FALSE	FALSE	ND	0.072	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon disulfide	75-15-0	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon tetrachloride	56-23-5	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chlorobenzene	108-90-7	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroethane	75-00-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroform	67-66-3	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloromethane	74-87-3	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,2-Dichloroethene	156-59-2	FALSE	FALSE	ND	0.32	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,3-Dichloropropene	0061-01-5	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromochloromethane	124-48-1	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromomethane	74-95-3	FALSE	FALSE	ND	0.18	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dichlorodifluoromethane	75-71-8	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Ethylbenzene	100-41-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Hexachloro-1,3-butadiene	87-68-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Iodomethane	74-88-4	FALSE	FALSE	ND	0.26	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Isopropylbenzene (Cumene)	98-82-8	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	m&p-Xylene	1330-20-7	FALSE	FALSE	ND	0.27	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methylene chloride	75-09-2	FALSE	FALSE	ND	0.26	4.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methyl-tert-butyl ether	1634-04-4	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Naphthalene	91-20-3	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Butylbenzene	104-51-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Propylbenzene	103-65-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	o-Xylene	95-47-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Butylbenzene	104-51-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U

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CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Propylbenzene	103-65-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	o-Xylene	95-47-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	p-Isopropyltoluene	99-87-6	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	sec-Butylbenzene	135-98-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Styrene	100-42-5	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	tert-Butylbenzene	98-06-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Tetrachloroethene	127-18-4	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Toluene	108-88-3	FALSE	FALSE	ND	0.21	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,2-Dichloroethene	156-60-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,3-Dichloropropene	0061-02-	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,4-Dichloro-2-butene	110-57-6	FALSE	FALSE	ND	0.84	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichloroethene	79-01-6	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichlorofluoromethane	75-69-4	FALSE	FALSE	ND	0.24	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl acetate	108-05-4	FALSE	FALSE	ND	0.53	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl chloride	75-01-4	FALSE	FALSE	ND	0.05	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW04122209	252716004	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Xylene (Total)	1330-20-7	FALSE	FALSE	ND	0.42	3.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1,2-Tetrachloroethane	630-20-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1-Trichloroethane	71-55-6	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2,2-Tetrachloroethane	79-34-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2-Trichloroethane	79-00-5	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethane	75-34-3	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethene	75-35-4	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloropropene	563-58-6	FALSE	FALSE	ND	0.094	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichlorobenzene	87-61-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichloropropane	96-18-4	FALSE	FALSE	ND	0.37	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trichlorobenzene	120-82-1	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trimethylbenzene	95-63-6	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromo-3-chloropropane	96-12-8	FALSE	FALSE	ND	0.38	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromoethane (EDB)	106-93-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichlorobenzene	95-50-1	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethane	107-06-2	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethene (Total)	540-59-0	FALSE	FALSE	ND	0.5	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloropropane	78-87-5	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	p-Isopropyltoluene	99-87-6	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	sec-Butylbenzene	135-98-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Styrene	100-42-5	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	tert-Butylbenzene	98-06-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Tetrachloroethene	127-18-4	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Toluene	108-88-3	FALSE	FALSE	ND	0.21	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acrylonitrile	107-13-1	FALSE	FALSE	ND	0.41	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Benzene	71-43-2	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromobenzene	108-86-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromochloromethane	74-97-5	FALSE	FALSE	ND	0.34	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromodichloromethane	75-27-4	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromoform	75-25-2	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromomethane	74-83-9	FALSE	FALSE	ND	0.072	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon disulfide	75-15-0	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon tetrachloride	56-23-5	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chlorobenzene	108-90-7	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroethane	75-00-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroform	67-66-3	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloromethane	74-87-3	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,2-Dichloroethene	156-59-2	FALSE	FALSE	ND	0.32	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,3-Dichloropropene	0061-01-5	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromochloromethane	124-48-1	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromomethane	74-95-3	FALSE	FALSE	ND	0.18	1.0	ug/L	FALSE	Wet	1	ATH	U

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CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dichlorodifluoromethane	75-71-8	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Ethylbenzene	100-41-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Hexachloro-1,3-butadiene	87-68-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Iodomethane	74-88-4	FALSE	FALSE	ND	0.26	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Isopropylbenzene (Cumene)	98-82-8	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	m&p-Xylene	1330-20-7	FALSE	FALSE	ND	0.27	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methylene chloride	75-09-2	FALSE	FALSE	ND	0.26	4.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methyl-tert-butyl ether	1634-04-4	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Naphthalene	91-20-3	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Butylbenzene	104-51-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Propylbenzene	103-65-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	o-Xylene	95-47-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	p-Isopropyltoluene	99-87-6	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	sec-Butylbenzene	135-98-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Styrene	100-42-5	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	tert-Butylbenzene	98-06-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Tetrachloroethene	127-18-4	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Toluene	108-88-3	FALSE	FALSE	ND	0.21	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,2-Dichloroethene	156-60-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,3-Dichloropropene	0061-02-	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,4-Dichloro-2-butene	110-57-6	FALSE	FALSE	ND	0.84	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichloroethene	79-01-6	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichlorofluoromethane	75-69-4	FALSE	FALSE	ND	0.24	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,2-Dichloroethene	156-60-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,3-Dichloropropene	0061-02-	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,4-Dichloro-2-butene	110-57-6	FALSE	FALSE	ND	0.84	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichloroethene	79-01-6	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichlorofluoromethane	75-69-4	FALSE	FALSE	ND	0.24	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl acetate	108-05-4	FALSE	FALSE	ND	0.53	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl chloride	75-01-4	FALSE	FALSE	ND	0.05	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW05122209	252716005	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Xylene (Total)	1330-20-7	FALSE	FALSE	ND	0.42	3.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1,2-Tetrachloroethane	630-20-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1-Trichloroethane	71-55-6	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2,2-Tetrachloroethane	79-34-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2-Trichloroethane	79-00-5	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethane	75-34-3	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethene	75-35-4	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloropropene	563-58-6	FALSE	FALSE	ND	0.094	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichlorobenzene	87-61-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichloropropane	96-18-4	FALSE	FALSE	ND	0.37	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trichlorobenzene	120-82-1	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trimethylbenzene	95-63-6	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromo-3-chloropropane	96-12-8	FALSE	FALSE	ND	0.38	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromoethane (EDB)	106-93-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichlorobenzene	95-50-1	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethane	107-06-2	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethene (Total)	540-59-0	FALSE	FALSE	ND	0.5	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloropropane	78-87-5	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3,5-Trimethylbenzene	108-67-8	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichlorobenzene	541-73-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichloropropane	142-28-9	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,4-Dichlorobenzene	106-46-7	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2,2-Dichloropropane	594-20-7	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Butanone (MEK)	78-93-3	FALSE	FALSE	31.8	0.52	5.0	ug/L	FALSE	Wet	1	ATH	
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Chlorotoluene	95-49-8	FALSE	FALSE	ND	0.098	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Hexanone	591-78-6	FALSE	FALSE	5.2	0.57	5.0	ug/L	FALSE	Wet	1	ATH	

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Chlorotoluene	106-43-4	FALSE	FALSE	ND	0.13	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Methyl-2-pentanone (MIBK)	108-10-1	FALSE	FALSE	5.5	0.32	5.0	ug/L	FALSE	Wet	1	ATH	
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acetone	67-64-1	FALSE	FALSE	43.9	0.75	5.0	ug/L	FALSE	Wet	1	ATH	
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acrylonitrile	107-13-1	FALSE	FALSE	ND	0.41	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Benzene	71-43-2	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromobenzene	108-86-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromochloromethane	74-97-5	FALSE	FALSE	ND	0.34	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromodichloromethane	75-27-4	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromoform	75-25-2	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromomethane	74-83-9	FALSE	FALSE	ND	0.072	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon disulfide	75-15-0	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon tetrachloride	56-23-5	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chlorobenzene	108-90-7	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroethane	75-00-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroform	67-66-3	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloromethane	74-87-3	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,2-Dichloroethene	156-59-2	FALSE	FALSE	ND	0.32	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,3-Dichloropropene	0061-01-5	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromochloromethane	124-48-1	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromomethane	74-95-3	FALSE	FALSE	ND	0.18	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dichlorodifluoromethane	75-71-8	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Ethylbenzene	100-41-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Hexachloro-1,3-butadiene	87-68-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Iodomethane	74-88-4	FALSE	FALSE	ND	0.26	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Isopropylbenzene (Cumene)	98-82-8	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	m&p-Xylene	1330-20-7	FALSE	FALSE	ND	0.27	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methylene chloride	75-09-2	FALSE	FALSE	ND	0.26	4.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methyl-tert-butyl ether	1634-04-4	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Naphthalene	91-20-3	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Butylbenzene	104-51-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Propylbenzene	103-65-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	o-Xylene	95-47-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	p-Isopropyltoluene	99-87-6	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	sec-Butylbenzene	135-98-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Styrene	100-42-5	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	tert-Butylbenzene	98-06-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Tetrachloroethene	127-18-4	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Toluene	108-88-3	FALSE	FALSE	ND	0.21	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,2-Dichloroethene	156-60-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,3-Dichloropropene	0061-02-	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,4-Dichloro-2-butene	110-57-6	FALSE	FALSE	ND	0.84	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichloroethene	79-01-6	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichlorofluoromethane	75-69-4	FALSE	FALSE	ND	0.24	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl acetate	108-05-4	FALSE	FALSE	ND	0.53	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl chloride	75-01-4	FALSE	FALSE	ND	0.05	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW06122209	252716006	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Xylene (Total)	1330-20-7	FALSE	FALSE	ND	0.42	3.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1,2-Tetrachloroethane	630-20-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1-Trichloroethane	71-55-6	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2,2-Tetrachloroethane	79-34-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2-Trichloroethane	79-00-5	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethane	75-34-3	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethene	75-35-4	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloropropene	563-58-6	FALSE	FALSE	ND	0.094	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichlorobenzene	87-61-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichloropropane	96-18-4	FALSE	FALSE	ND	0.37	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trichlorobenzene	120-82-1	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trimethylbenzene	95-63-6	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromo-3-chloropropane	96-12-8	FALSE	FALSE	ND	0.38	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromoethane (EDB)	106-93-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichlorobenzene	95-50-1	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethane	107-06-2	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethene (Total)	540-59-0	FALSE	FALSE	ND	0.5	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloropropane	78-87-5	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3,5-Trimethylbenzene	108-67-8	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichlorobenzene	541-73-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichloropropane	142-28-9	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,4-Dichlorobenzene	106-46-7	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2,2-Dichloropropane	594-20-7	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Butanone (MEK)	78-93-3	FALSE	FALSE	ND	0.52	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Chlorotoluene	95-49-8	FALSE	FALSE	ND	0.098	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Hexanone	591-78-6	FALSE	FALSE	ND	0.57	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Chlorotoluene	106-43-4	FALSE	FALSE	ND	0.13	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Methyl-2-pentanone (MIBK)	108-10-1	FALSE	FALSE	ND	0.32	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acetone	67-64-1	FALSE	FALSE	ND	0.75	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,2-Dichloroethene	156-60-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,3-Dichloropropene	0061-02-	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,4-Dichloro-2-butene	110-57-6	FALSE	FALSE	ND	0.84	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichloroethene	79-01-6	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichlorofluoromethane	75-69-4	FALSE	FALSE	ND	0.24	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl acetate	108-05-4	FALSE	FALSE	ND	0.53	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl chloride	75-01-4	FALSE	FALSE	ND	0.05	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW07122209	252716007	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Xylene (Total)	1330-20-7	FALSE	FALSE	ND	0.42	3.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1,2-Tetrachloroethane	630-20-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1-Trichloroethane	71-55-6	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2,2-Tetrachloroethane	79-34-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2-Trichloroethane	79-00-5	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethane	75-34-3	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethene	75-35-4	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloropropene	563-58-6	FALSE	FALSE	ND	0.094	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichlorobenzene	87-61-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichloropropane	96-18-4	FALSE	FALSE	ND	0.37	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trichlorobenzene	120-82-1	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trimethylbenzene	95-63-6	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromo-3-chloropropane	96-12-8	FALSE	FALSE	ND	0.38	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromoethane (EDB)	106-93-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichlorobenzene	95-50-1	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethane	107-06-2	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethene (Total)	540-59-0	FALSE	FALSE	ND	0.5	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloropropane	78-87-5	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3,5-Trimethylbenzene	108-67-8	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichlorobenzene	541-73-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichloropropane	142-28-9	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,4-Dichlorobenzene	106-46-7	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2,2-Dichloropropane	594-20-7	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Butanone (MEK)	78-93-3	FALSE	FALSE	ND	0.52	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Chlorotoluene	95-49-8	FALSE	FALSE	ND	0.098	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Hexanone	591-78-6	FALSE	FALSE	ND	0.57	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Chlorotoluene	106-43-4	FALSE	FALSE	ND	0.13	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Methyl-2-pentanone (MIBK)	108-10-1	FALSE	FALSE	ND	0.32	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acetone	67-64-1	FALSE	FALSE	ND	0.75	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acrylonitrile	107-13-1	FALSE	FALSE	ND	0.41	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Benzene	71-43-2	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromobenzene	108-86-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromochloromethane	74-97-5	FALSE	FALSE	ND	0.34	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromodichloromethane	75-27-4	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromoform	75-25-2	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromomethane	74-83-9	FALSE	FALSE	ND	0.072	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon disulfide	75-15-0	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon tetrachloride	56-23-5	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chlorobenzene	108-90-7	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroethane	75-00-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroform	67-66-3	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloromethane	74-87-3	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,2-Dichloroethene	156-59-2	FALSE	FALSE	ND	0.32	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,3-Dichloropropene	0061-01-5	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromochloromethane	124-48-1	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromomethane	74-95-3	FALSE	FALSE	ND	0.18	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dichlorodifluoromethane	75-71-8	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Ethylbenzene	100-41-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Hexachloro-1,3-butadiene	87-68-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Iodomethane	74-88-4	FALSE	FALSE	ND	0.26	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Isopropylbenzene (Cumene)	98-82-8	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	m&p-Xylene	1330-20-7	FALSE	FALSE	ND	0.27	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methylene chloride	75-09-2	FALSE	FALSE	ND	0.26	4.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methyl-tert-butyl ether	1634-04-4	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Naphthalene	91-20-3	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Butylbenzene	104-51-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Propylbenzene	103-65-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	o-Xylene	95-47-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	p-Isopropyltoluene	99-87-6	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U

EDD___Level_WA___SAMPDATA

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	sec-Butylbenzene	135-98-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Styrene	100-42-5	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	tert-Butylbenzene	98-06-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Tetrachloroethene	127-18-4	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Toluene	108-88-3	FALSE	FALSE	ND	0.21	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,2-Dichloroethene	156-60-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,3-Dichloropropene	0061-02-	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,4-Dichloro-2-butene	110-57-6	FALSE	FALSE	ND	0.84	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichloroethene	79-01-6	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichlorofluoromethane	75-69-4	FALSE	FALSE	ND	0.24	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl acetate	108-05-4	FALSE	FALSE	ND	0.53	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl chloride	75-01-4	FALSE	FALSE	ND	0.05	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW08122209	252716008	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Xylene (Total)	1330-20-7	FALSE	FALSE	ND	0.42	3.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1,2-Tetrachloroethane	630-20-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1-Trichloroethane	71-55-6	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2,2-Tetrachloroethane	79-34-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2-Trichloroethane	79-00-5	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethane	75-34-3	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethene	75-35-4	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloropropene	563-58-6	FALSE	FALSE	ND	0.094	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichlorobenzene	87-61-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichloropropane	96-18-4	FALSE	FALSE	ND	0.37	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trichlorobenzene	120-82-1	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trimethylbenzene	95-63-6	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromo-3-chloropropane	96-12-8	FALSE	FALSE	ND	0.38	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromoethane (EDB)	106-93-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichlorobenzene	95-50-1	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethane	107-06-2	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethene (Total)	540-59-0	FALSE	FALSE	ND	0.5	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloropropane	78-87-5	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3,5-Trimethylbenzene	108-67-8	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichlorobenzene	541-73-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichloropropane	142-28-9	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,4-Dichlorobenzene	106-46-7	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2,2-Dichloropropane	594-20-7	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Butanone (MEK)	78-93-3	FALSE	FALSE	ND	0.52	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Chlorotoluene	95-49-8	FALSE	FALSE	ND	0.098	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Hexanone	591-78-6	FALSE	FALSE	ND	0.57	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Chlorotoluene	106-43-4	FALSE	FALSE	ND	0.13	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Methyl-2-pentanone (MIBK)	108-10-1	FALSE	FALSE	ND	0.32	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acetone	67-64-1	FALSE	FALSE	ND	0.75	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acrylonitrile	107-13-1	FALSE	FALSE	ND	0.41	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Benzene	71-43-2	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromobenzene	108-86-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromochloromethane	74-97-5	FALSE	FALSE	ND	0.34	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromodichloromethane	75-27-4	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromoform	75-25-2	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromomethane	74-83-9	FALSE	FALSE	ND	0.072	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon disulfide	75-15-0	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon tetrachloride	56-23-5	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chlorobenzene	108-90-7	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroethane	75-00-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroform	67-66-3	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloromethane	74-87-3	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,2-Dichloroethene	156-59-2	FALSE	FALSE	ND	0.32	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,3-Dichloropropene	0061-01-5	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromochloromethane	124-48-1	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromomethane	74-95-3	FALSE	FALSE	ND	0.18	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dichlorodifluoromethane	75-71-8	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Ethylbenzene	100-41-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Hexachloro-1,3-butadiene	87-68-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Iodomethane	74-88-4	FALSE	FALSE	ND	0.26	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Isopropylbenzene (Cumene)	98-82-8	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	m&p-Xylene	1330-20-7	FALSE	FALSE	ND	0.27	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methylene chloride	75-09-2	FALSE	FALSE	ND	0.26	4.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methyl-tert-butyl ether	1634-04-4	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Naphthalene	91-20-3	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Butylbenzene	104-51-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Propylbenzene	103-65-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	o-Xylene	95-47-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	p-Isopropyltoluene	99-87-6	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	sec-Butylbenzene	135-98-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Styrene	100-42-5	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	tert-Butylbenzene	98-06-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Tetrachloroethene	127-18-4	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Toluene	108-88-3	FALSE	FALSE	ND	0.21	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl acetate	108-05-4	FALSE	FALSE	ND	0.53	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl chloride	75-01-4	FALSE	FALSE	ND	0.05	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	RW09122209	252716009	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Xylene (Total)	1330-20-7	FALSE	FALSE	ND	0.42	3.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1,2-Tetrachloroethane	630-20-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,1-Trichloroethane	71-55-6	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2,2-Tetrachloroethane	79-34-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1,2-Trichloroethane	79-00-5	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethane	75-34-3	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloroethene	75-35-4	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,1-Dichloropropene	563-58-6	FALSE	FALSE	ND	0.094	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichlorobenzene	87-61-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,3-Trichloropropane	96-18-4	FALSE	FALSE	ND	0.37	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trichlorobenzene	120-82-1	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2,4-Trimethylbenzene	95-63-6	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromo-3-chloropropane	96-12-8	FALSE	FALSE	ND	0.38	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dibromoethane (EDB)	106-93-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichlorobenzene	95-50-1	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethane	107-06-2	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloroethene (Total)	540-59-0	FALSE	FALSE	ND	0.5	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,2-Dichloropropane	78-87-5	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3,5-Trimethylbenzene	108-67-8	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichlorobenzene	541-73-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,3-Dichloropropane	142-28-9	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	1,4-Dichlorobenzene	106-46-7	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2,2-Dichloropropane	594-20-7	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Butanone (MEK)	78-93-3	FALSE	FALSE	ND	0.52	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Chlorotoluene	95-49-8	FALSE	FALSE	ND	0.098	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	2-Hexanone	591-78-6	FALSE	FALSE	ND	0.57	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Chlorotoluene	106-43-4	FALSE	FALSE	ND	0.13	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	4-Methyl-2-pentanone (MIBK)	108-10-1	FALSE	FALSE	ND	0.32	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acetone	67-64-1	FALSE	FALSE	ND	0.75	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Acrylonitrile	107-13-1	FALSE	FALSE	ND	0.41	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Benzene	71-43-2	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromobenzene	108-86-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromochloromethane	74-97-5	FALSE	FALSE	ND	0.34	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromodichloromethane	75-27-4	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromoform	75-25-2	FALSE	FALSE	ND	0.23	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Bromomethane	74-83-9	FALSE	FALSE	ND	0.072	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon disulfide	75-15-0	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Carbon tetrachloride	56-23-5	FALSE	FALSE	ND	0.25	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chlorobenzene	108-90-7	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroethane	75-00-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloroform	67-66-3	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Chloromethane	74-87-3	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,2-Dichloroethene	156-59-2	FALSE	FALSE	ND	0.32	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	cis-1,3-Dichloropropene	0061-01-5	FALSE	FALSE	ND	0.086	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromochloromethane	124-48-1	FALSE	FALSE	ND	0.12	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dibromomethane	74-95-3	FALSE	FALSE	ND	0.18	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Dichlorodifluoromethane	75-71-8	FALSE	FALSE	ND	0.19	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Ethylbenzene	100-41-4	FALSE	FALSE	ND	0.2	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Hexachloro-1,3-butadiene	87-68-3	FALSE	FALSE	ND	0.27	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Iodomethane	74-88-4	FALSE	FALSE	ND	0.26	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Isopropylbenzene (Cumene)	98-82-8	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	m&p-Xylene	1330-20-7	FALSE	FALSE	ND	0.27	2.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methylene chloride	75-09-2	FALSE	FALSE	ND	0.26	4.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Methyl-tert-butyl ether	1634-04-4	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Naphthalene	91-20-3	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Butylbenzene	104-51-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	n-Propylbenzene	103-65-1	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	o-Xylene	95-47-6	FALSE	FALSE	ND	0.15	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	p-Isopropyltoluene	99-87-6	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	sec-Butylbenzene	135-98-8	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Styrene	100-42-5	FALSE	FALSE	ND	0.074	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	tert-Butylbenzene	98-06-6	FALSE	FALSE	ND	0.11	1.0	ug/L	FALSE	Wet	1	ATH	U

EDD___Level_WA___SAMPDATA

CLIENT	PROJECT	PROJECTNUM	LABNAME	SAMPLENAME	LABSAMPID	MATRIX	RPTMATRIX	SAMPDATE	PREPDATE	ANADATE	BATCH	METHODCODE	METHODNAME	PREPNAME	ANALYTE	CASNUMBER	SURROGATE	TIC	RESULT	DL	RL	UNITS	RPTo MDL	BASIS	DILUTION	Analyst	LNOTE
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Tetrachloroethene	127-18-4	FALSE	FALSE	ND	0.1	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Toluene	108-88-3	FALSE	FALSE	ND	0.21	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,2-Dichloroethene	156-60-5	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,3-Dichloropropene	0061-02-	FALSE	FALSE	ND	0.16	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	trans-1,4-Dichloro-2-butene	110-57-6	FALSE	FALSE	ND	0.84	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichloroethene	79-01-6	FALSE	FALSE	ND	0.22	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Trichlorofluoromethane	75-69-4	FALSE	FALSE	ND	0.24	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl acetate	108-05-4	FALSE	FALSE	ND	0.53	5.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Vinyl chloride	75-01-4	FALSE	FALSE	ND	0.05	1.0	ug/L	FALSE	Wet	1	ATH	U
Asotin County Landfill	Asotin County Landfill	252716	Pace Analytical	Trip Blank	252716010	Water	Water	12/22/2009	12/29/2009	12/29/2009	5255	8260 W10ML	EPA 8260	EPA 5030B	Xylene (Total)	1330-20-7	FALSE	FALSE	ND	0.42	3.0	ug/L	FALSE	Wet	1	ATH	U

Sample Condition Upon Receipt

Pace Analytical

Client Name: Asotin County Project # 252716

Optional
Proj. Due Date:
Proj. Name:

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other ______

Tracking #: WA 981 9-04

Custody Seal on Cooler/Box Present: ☐ yes ☐ no Seals intact: ☑ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other ______

Thermometer Used Horiba 132013 Type of Ice: [✓ Wet] Blue None ☑ Samples on ice, cooling process has begun

Cooler Temperature 2.9°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: NJ 12/23/09

Comments:

Chain of Custody Present:	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11.
Sample Labels match COC:	☑Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: Water				
All containers needing preservation have been checked.	☐Yes	☑No	☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☐N/A	
exceptions: [✓ VOA], coliform, TOC, O&G, WI-DRO (water)	☐Yes	☐No		Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☑No	☐N/A	15.
Trip Blank Present:	☑Yes	☐No	☐N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if purchased):______				

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: ______ Date/Time: ______

Comments/ Resolution: ______

Project Manager Review: 12-23-09 Date: ______

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

F-ALLC003rev.3, 11September2006

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www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1306167

Section A
Required Client Information:

Company: Asotin County
Address: 2901 6th Ave
Clarkston, WA 99403
Email To: acrl@clarkston.com
Phone: 509-758-9230
Fax:
Requested Due Date/TAT: Normal

Section B
Required Project Information:

Report To: Steve Becker
Copy To: Craig.Sauer@CH2M.com
Purchase Order No.:
Project Name: Asotin County Landfill
Project Number:

Section C
Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Jennifer Gross
Pace Profile #: Residential Well VOA sampling

REGULATORY AGENCY

☐ NPDES ☒ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER ______

Site Location STATE: WA

252716

Section D
Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	TIME	COMPOSITE END/GRAB DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	VOA's 8260B	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	RW01122209	WT	G	12/22/09	8:33				3				3						X		
2	RW02122209	WT	G	12/22/09	8:47				3				3						X		
3	RW03122209	WT	G	12/22/09	9:00				3				3						X		
4	RW04122209	WT	G	12/22/09	9:10				3				3						X		
5	RW05122209	WT	G	12/22/09	9:21				3				3						X		
6	RW06122209	WT	G	12/22/09	9:32				3				3						X		
7	RW07122209	WT	G	12/22/09	9:41				3				3						X		
8	RW08122209	WT	G	12/22/09	9:49				3				3						X		
9	RW09122209	WT	G	12/22/09	10:08				3				3						X		
10	Temp Blank								1												
11	Trip Blank								3				3						X		
12																					

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Matt Lynch / ACRL	12-22-09	12:00	Jyothi Swamy	10/23/09	10:35	2.9	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Matt Lynch
SIGNATURE of SAMPLER: Matt Lynch
DATE Signed (MM/DD/YY): 12/22/09

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
(206)767-5060

January 04, 2010

Steve Becker
Asotin County Landfill
2901 6th Ave
Clarkston, WA 99403

RE: Project: Asotin County Landfill
Pace Project No.: 252716

Dear Steve Becker:

Enclosed are the analytical results for sample(s) received by the laboratory on December 23, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Jenni Gross

Jennifer Gross

jennifer.gross@pacelabs.com
Project Manager

Enclosures

cc: Craig Sauer, CH2M Hill

CERTIFICATIONS

Project:	Asotin County Landfill
Pace Project No.:	252716

Washington Certification IDs

940 South Harney Street Seattle, WA 98108
Washington Certification #: C1229
Oregon Certification #: WA200007
Alaska CS Certification #: UST-025
California Certification #: 01153CA
Alaska Drinking Water Micro Certification #: WA01230
Alaska Drinking Water VOC Certification #: WA01-09
Florida/NELAP Certification #: E87617

SAMPLE SUMMARY

Project: Asotin County Landfill
Pace Project No.: 252716

Lab ID	Sample ID	Matrix	Date Collected	Date Received
252716001	**RW01122209**	Water	12/22/09 08:33	12/23/09 10:35
252716002	**RW02122209**	Water	12/22/09 08:47	12/23/09 10:35
252716003	**RW03122209**	Water	12/22/09 09:00	12/23/09 10:35
252716004	**RW04122209**	Water	12/22/09 09:10	12/23/09 10:35
252716005	**RW05122209**	Water	12/22/09 09:21	12/23/09 10:35
252716006	**RW06122209**	Water	12/22/09 09:32	12/23/09 10:35
252716007	**RW07122209**	Water	12/22/09 09:41	12/23/09 10:35
252716008	**RW08122209**	Water	12/22/09 09:49	12/23/09 10:35
252716009	**RW09122209**	Water	12/22/09 10:08	12/23/09 10:35
252716010	**Trip Blank**	Water	12/22/09 08:33	12/23/09 10:35

SAMPLE ANALYTE COUNT

Project: Asotin County Landfill
Pace Project No.: 252716

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
252716001	**RW01122209**	EPA 5030B/8260	ATH	75	PASI-S
252716002	**RW02122209**	EPA 5030B/8260	ATH	75	PASI-S
252716003	**RW03122209**	EPA 5030B/8260	ATH	75	PASI-S
252716004	**RW04122209**	EPA 5030B/8260	ATH	75	PASI-S
252716005	**RW05122209**	EPA 5030B/8260	ATH	75	PASI-S
252716006	**RW06122209**	EPA 5030B/8260	ATH	75	PASI-S
252716007	**RW07122209**	EPA 5030B/8260	ATH	75	PASI-S
252716008	**RW08122209**	EPA 5030B/8260	ATH	75	PASI-S
252716009	**RW09122209**	EPA 5030B/8260	ATH	75	PASI-S
252716010	**Trip Blank**	EPA 5030B/8260	ATH	75	PASI-S

PROJECT NARRATIVE

Project: Asotin County Landfill
Pace Project No.: 252716

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Asotin County Landfill
Date: January 04, 2010

General Information:
10 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

QC Batch: MSV/1836

B-: Analyte detected in method blank but was not detected in the associated samples.

- BLANK (Lab ID: 18095)
  - Naphthalene

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: MSV/1836

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- LCS (Lab ID: 18096)
  - 1,1-Dichloroethane
  - Chloromethane
  - Dichlorodifluoromethane
  - Trichloroethene
  - Vinyl acetate
  - cis-1,2-Dichloroethene
- LCSD (Lab ID: 18097)
  - 1,1-Dichloroethane
  - Chloromethane
  - Dichlorodifluoromethane
  - Trichloroethene
  - cis-1,2-Dichloroethene

PROJECT NARRATIVE

Project: Asotin County Landfill
Pace Project No.: 252716

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Asotin County Landfill
Date: January 04, 2010

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Batch Comments:

LCS/LCSD were performed in lieu of an MS/MSD due to insufficient sample volume provided.
- QC Batch: MSV / 1836

Analyte Comments:

QC Batch: MSV/1836

1n: This sample was evaluated to the MDL.
- BLANK (Lab ID: 18095)
  - 4-Bromofluorobenzene (S)

This data package has been reviewed for quality and completeness and is approved for release.

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW01122209 **Lab ID: 252716001** Collected: 12/22/09 08:33 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 12:29	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		12/29/09 12:29	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 12:29	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/29/09 12:29	79-00-5	
1,1-Dichloroethane	ND	ug/L	1.0	1		12/29/09 12:29	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		12/29/09 12:29	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/29/09 12:29	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 12:29	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/29/09 12:29	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 12:29	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 12:29	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	1		12/29/09 12:29	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/09 12:29	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 12:29	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/29/09 12:29	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		12/29/09 12:29	540-59-0	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 12:29	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 12:29	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 12:29	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/29/09 12:29	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 12:29	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 12:29	594-20-7	
2-Butanone (MEK)	ND	ug/L	5.0	1		12/29/09 12:29	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 12:29	95-49-8	
2-Hexanone	ND	ug/L	5.0	1		12/29/09 12:29	591-78-6	
4-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 12:29	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/29/09 12:29	108-10-1	
Acetone	ND	ug/L	5.0	1		12/29/09 12:29	67-64-1	
Acrylonitrile	ND	ug/L	5.0	1		12/29/09 12:29	107-13-1	
Benzene	ND	ug/L	1.0	1		12/29/09 12:29	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/29/09 12:29	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/29/09 12:29	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/29/09 12:29	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/29/09 12:29	75-25-2	
Bromomethane	ND	ug/L	1.0	1		12/29/09 12:29	74-83-9	
Carbon disulfide	ND	ug/L	1.0	1		12/29/09 12:29	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		12/29/09 12:29	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/29/09 12:29	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/29/09 12:29	75-00-3	
Chloroform	ND	ug/L	1.0	1		12/29/09 12:29	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/29/09 12:29	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		12/29/09 12:29	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		12/29/09 12:29	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/09 12:29	75-71-8	
Ethylbenzene	ND	ug/L	1.0	1		12/29/09 12:29	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		12/29/09 12:29	87-68-3	
Iodomethane	ND	ug/L	5.0	1		12/29/09 12:29	74-88-4	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW01122209 **Lab ID: 252716001** Collected: 12/22/09 08:33 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/09 12:29	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/29/09 12:29	1634-04-4	
Methylene chloride	ND	ug/L	4.0	1		12/29/09 12:29	75-09-2	
Naphthalene	ND	ug/L	1.0	1		12/29/09 12:29	91-20-3	
Styrene	ND	ug/L	1.0	1		12/29/09 12:29	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		12/29/09 12:29	127-18-4	
Toluene	ND	ug/L	1.0	1		12/29/09 12:29	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		12/29/09 12:29	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/29/09 12:29	75-69-4	
Vinyl acetate	ND	ug/L	5.0	1		12/29/09 12:29	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/29/09 12:29	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		12/29/09 12:29	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 12:29	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 12:29	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		12/29/09 12:29	1330-20-7	
n-Butylbenzene	ND	ug/L	1.0	1		12/29/09 12:29	104-51-8	
n-Propylbenzene	ND	ug/L	1.0	1		12/29/09 12:29	103-65-1	
o-Xylene	ND	ug/L	1.0	1		12/29/09 12:29	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/29/09 12:29	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		12/29/09 12:29	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		12/29/09 12:29	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 12:29	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 12:29	10061-02-6	
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1		12/29/09 12:29	110-57-6	
4-Bromofluorobenzene (S)	91	%	80-120	1		12/29/09 12:29	460-00-4	
Dibromofluoromethane (S)	94	%	80-122	1		12/29/09 12:29	1868-53-7	
1,2-Dichloroethane-d4 (S)	84	%	80-124	1		12/29/09 12:29	17060-07-0	
Toluene-d8 (S)	92	%	80-123	1		12/29/09 12:29	2037-26-5	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW02122209 **Lab ID: 252716002** Collected: 12/22/09 08:47 Received: 12/23/09 10:35 Matrix: Water

8260 MSV Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 12:52	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		12/29/09 12:52	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 12:52	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/29/09 12:52	79-00-5	
1,1-Dichloroethane	ND	ug/L	1.0	1		12/29/09 12:52	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		12/29/09 12:52	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/29/09 12:52	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 12:52	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/29/09 12:52	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 12:52	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 12:52	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	1		12/29/09 12:52	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/09 12:52	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 12:52	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/29/09 12:52	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		12/29/09 12:52	540-59-0	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 12:52	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 12:52	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 12:52	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/29/09 12:52	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 12:52	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 12:52	594-20-7	
2-Butanone (MEK)	ND	ug/L	5.0	1		12/29/09 12:52	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 12:52	95-49-8	
2-Hexanone	ND	ug/L	5.0	1		12/29/09 12:52	591-78-6	
4-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 12:52	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/29/09 12:52	108-10-1	
Acetone	ND	ug/L	5.0	1		12/29/09 12:52	67-64-1	
Acrylonitrile	ND	ug/L	5.0	1		12/29/09 12:52	107-13-1	
Benzene	ND	ug/L	1.0	1		12/29/09 12:52	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/29/09 12:52	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/29/09 12:52	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/29/09 12:52	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/29/09 12:52	75-25-2	
Bromomethane	ND	ug/L	1.0	1		12/29/09 12:52	74-83-9	
Carbon disulfide	ND	ug/L	1.0	1		12/29/09 12:52	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		12/29/09 12:52	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/29/09 12:52	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/29/09 12:52	75-00-3	
Chloroform	ND	ug/L	1.0	1		12/29/09 12:52	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/29/09 12:52	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		12/29/09 12:52	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		12/29/09 12:52	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/09 12:52	75-71-8	
Ethylbenzene	ND	ug/L	1.0	1		12/29/09 12:52	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		12/29/09 12:52	87-68-3	
Iodomethane	ND	ug/L	5.0	1		12/29/09 12:52	74-88-4	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW02122209 **Lab ID: 252716002** Collected: 12/22/09 08:47 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/09 12:52	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/29/09 12:52	1634-04-4	
Methylene chloride	ND	ug/L	4.0	1		12/29/09 12:52	75-09-2	
Naphthalene	ND	ug/L	1.0	1		12/29/09 12:52	91-20-3	
Styrene	ND	ug/L	1.0	1		12/29/09 12:52	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		12/29/09 12:52	127-18-4	
Toluene	ND	ug/L	1.0	1		12/29/09 12:52	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		12/29/09 12:52	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/29/09 12:52	75-69-4	
Vinyl acetate	ND	ug/L	5.0	1		12/29/09 12:52	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/29/09 12:52	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		12/29/09 12:52	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 12:52	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 12:52	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		12/29/09 12:52	1330-20-7	
n-Butylbenzene	ND	ug/L	1.0	1		12/29/09 12:52	104-51-8	
n-Propylbenzene	ND	ug/L	1.0	1		12/29/09 12:52	103-65-1	
o-Xylene	ND	ug/L	1.0	1		12/29/09 12:52	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/29/09 12:52	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		12/29/09 12:52	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		12/29/09 12:52	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 12:52	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 12:52	10061-02-6	
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1		12/29/09 12:52	110-57-6	
4-Bromofluorobenzene (S)	92	%	80-120	1		12/29/09 12:52	460-00-4	
Dibromofluoromethane (S)	94	%	80-122	1		12/29/09 12:52	1868-53-7	
1,2-Dichloroethane-d4 (S)	84	%	80-124	1		12/29/09 12:52	17060-07-0	
Toluene-d8 (S)	91	%	80-123	1		12/29/09 12:52	2037-26-5	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW03122209 **Lab ID: 252716003** Collected: 12/22/09 09:00 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 13:14	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		12/29/09 13:14	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 13:14	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/29/09 13:14	79-00-5	
1,1-Dichloroethane	ND	ug/L	1.0	1		12/29/09 13:14	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		12/29/09 13:14	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/29/09 13:14	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 13:14	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/29/09 13:14	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 13:14	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 13:14	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	1		12/29/09 13:14	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/09 13:14	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 13:14	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/29/09 13:14	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		12/29/09 13:14	540-59-0	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 13:14	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 13:14	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 13:14	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/29/09 13:14	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 13:14	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 13:14	594-20-7	
2-Butanone (MEK)	ND	ug/L	5.0	1		12/29/09 13:14	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 13:14	95-49-8	
2-Hexanone	ND	ug/L	5.0	1		12/29/09 13:14	591-78-6	
4-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 13:14	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/29/09 13:14	108-10-1	
Acetone	ND	ug/L	5.0	1		12/29/09 13:14	67-64-1	
Acrylonitrile	ND	ug/L	5.0	1		12/29/09 13:14	107-13-1	
Benzene	ND	ug/L	1.0	1		12/29/09 13:14	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/29/09 13:14	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/29/09 13:14	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/29/09 13:14	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/29/09 13:14	75-25-2	
Bromomethane	ND	ug/L	1.0	1		12/29/09 13:14	74-83-9	
Carbon disulfide	ND	ug/L	1.0	1		12/29/09 13:14	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		12/29/09 13:14	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/29/09 13:14	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/29/09 13:14	75-00-3	
Chloroform	ND	ug/L	1.0	1		12/29/09 13:14	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/29/09 13:14	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		12/29/09 13:14	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		12/29/09 13:14	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/09 13:14	75-71-8	
Ethylbenzene	ND	ug/L	1.0	1		12/29/09 13:14	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		12/29/09 13:14	87-68-3	
Iodomethane	ND	ug/L	5.0	1		12/29/09 13:14	74-88-4	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW03122209 **Lab ID: 252716003** Collected: 12/22/09 09:00 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/09 13:14	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/29/09 13:14	1634-04-4	
Methylene chloride	ND	ug/L	4.0	1		12/29/09 13:14	75-09-2	
Naphthalene	ND	ug/L	1.0	1		12/29/09 13:14	91-20-3	
Styrene	ND	ug/L	1.0	1		12/29/09 13:14	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		12/29/09 13:14	127-18-4	
Toluene	ND	ug/L	1.0	1		12/29/09 13:14	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		12/29/09 13:14	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/29/09 13:14	75-69-4	
Vinyl acetate	ND	ug/L	5.0	1		12/29/09 13:14	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/29/09 13:14	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		12/29/09 13:14	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 13:14	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 13:14	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		12/29/09 13:14	1330-20-7	
n-Butylbenzene	ND	ug/L	1.0	1		12/29/09 13:14	104-51-8	
n-Propylbenzene	ND	ug/L	1.0	1		12/29/09 13:14	103-65-1	
o-Xylene	ND	ug/L	1.0	1		12/29/09 13:14	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/29/09 13:14	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		12/29/09 13:14	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		12/29/09 13:14	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 13:14	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 13:14	10061-02-6	
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1		12/29/09 13:14	110-57-6	
4-Bromofluorobenzene (S)	92	%	80-120	1		12/29/09 13:14	460-00-4	
Dibromofluoromethane (S)	96	%	80-122	1		12/29/09 13:14	1868-53-7	
1,2-Dichloroethane-d4 (S)	85	%	80-124	1		12/29/09 13:14	17060-07-0	
Toluene-d8 (S)	91	%	80-123	1		12/29/09 13:14	2037-26-5	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW04122209 **Lab ID: 252716004** Collected: 12/22/09 09:10 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 13:37	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		12/29/09 13:37	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 13:37	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/29/09 13:37	79-00-5	
1,1-Dichloroethane	ND	ug/L	1.0	1		12/29/09 13:37	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		12/29/09 13:37	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/29/09 13:37	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 13:37	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/29/09 13:37	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 13:37	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 13:37	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	1		12/29/09 13:37	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/09 13:37	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 13:37	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/29/09 13:37	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		12/29/09 13:37	540-59-0	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 13:37	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 13:37	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 13:37	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/29/09 13:37	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 13:37	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 13:37	594-20-7	
2-Butanone (MEK)	ND	ug/L	5.0	1		12/29/09 13:37	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 13:37	95-49-8	
2-Hexanone	ND	ug/L	5.0	1		12/29/09 13:37	591-78-6	
4-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 13:37	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/29/09 13:37	108-10-1	
Acetone	ND	ug/L	5.0	1		12/29/09 13:37	67-64-1	
Acrylonitrile	ND	ug/L	5.0	1		12/29/09 13:37	107-13-1	
Benzene	ND	ug/L	1.0	1		12/29/09 13:37	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/29/09 13:37	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/29/09 13:37	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/29/09 13:37	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/29/09 13:37	75-25-2	
Bromomethane	ND	ug/L	1.0	1		12/29/09 13:37	74-83-9	
Carbon disulfide	ND	ug/L	1.0	1		12/29/09 13:37	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		12/29/09 13:37	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/29/09 13:37	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/29/09 13:37	75-00-3	
Chloroform	ND	ug/L	1.0	1		12/29/09 13:37	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/29/09 13:37	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		12/29/09 13:37	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		12/29/09 13:37	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/09 13:37	75-71-8	
Ethylbenzene	ND	ug/L	1.0	1		12/29/09 13:37	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		12/29/09 13:37	87-68-3	
Iodomethane	ND	ug/L	5.0	1		12/29/09 13:37	74-88-4	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW04122209 **Lab ID: 252716004** Collected: 12/22/09 09:10 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/09 13:37	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/29/09 13:37	1634-04-4	
Methylene chloride	ND	ug/L	4.0	1		12/29/09 13:37	75-09-2	
Naphthalene	ND	ug/L	1.0	1		12/29/09 13:37	91-20-3	
Styrene	ND	ug/L	1.0	1		12/29/09 13:37	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		12/29/09 13:37	127-18-4	
Toluene	ND	ug/L	1.0	1		12/29/09 13:37	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		12/29/09 13:37	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/29/09 13:37	75-69-4	
Vinyl acetate	ND	ug/L	5.0	1		12/29/09 13:37	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/29/09 13:37	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		12/29/09 13:37	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 13:37	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 13:37	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		12/29/09 13:37	1330-20-7	
n-Butylbenzene	ND	ug/L	1.0	1		12/29/09 13:37	104-51-8	
n-Propylbenzene	ND	ug/L	1.0	1		12/29/09 13:37	103-65-1	
o-Xylene	ND	ug/L	1.0	1		12/29/09 13:37	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/29/09 13:37	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		12/29/09 13:37	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		12/29/09 13:37	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 13:37	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 13:37	10061-02-6	
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1		12/29/09 13:37	110-57-6	
4-Bromofluorobenzene (S)	93	%	80-120	1		12/29/09 13:37	460-00-4	
Dibromofluoromethane (S)	95	%	80-122	1		12/29/09 13:37	1868-53-7	
1,2-Dichloroethane-d4 (S)	85	%	80-124	1		12/29/09 13:37	17060-07-0	
Toluene-d8 (S)	92	%	80-123	1		12/29/09 13:37	2037-26-5	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW05122209 **Lab ID: 252716005** Collected: 12/22/09 09:21 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 14:00	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		12/29/09 14:00	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 14:00	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/29/09 14:00	79-00-5	
1,1-Dichloroethane	ND	ug/L	1.0	1		12/29/09 14:00	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		12/29/09 14:00	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/29/09 14:00	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 14:00	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/29/09 14:00	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 14:00	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 14:00	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	1		12/29/09 14:00	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/09 14:00	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 14:00	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/29/09 14:00	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		12/29/09 14:00	540-59-0	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 14:00	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 14:00	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 14:00	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/29/09 14:00	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 14:00	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 14:00	594-20-7	
2-Butanone (MEK)	ND	ug/L	5.0	1		12/29/09 14:00	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 14:00	95-49-8	
2-Hexanone	ND	ug/L	5.0	1		12/29/09 14:00	591-78-6	
4-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 14:00	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/29/09 14:00	108-10-1	
Acetone	ND	ug/L	5.0	1		12/29/09 14:00	67-64-1	
Acrylonitrile	ND	ug/L	5.0	1		12/29/09 14:00	107-13-1	
Benzene	ND	ug/L	1.0	1		12/29/09 14:00	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/29/09 14:00	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/29/09 14:00	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/29/09 14:00	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/29/09 14:00	75-25-2	
Bromomethane	ND	ug/L	1.0	1		12/29/09 14:00	74-83-9	
Carbon disulfide	ND	ug/L	1.0	1		12/29/09 14:00	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		12/29/09 14:00	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/29/09 14:00	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/29/09 14:00	75-00-3	
Chloroform	ND	ug/L	1.0	1		12/29/09 14:00	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/29/09 14:00	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		12/29/09 14:00	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		12/29/09 14:00	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/09 14:00	75-71-8	
Ethylbenzene	ND	ug/L	1.0	1		12/29/09 14:00	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		12/29/09 14:00	87-68-3	
Iodomethane	ND	ug/L	5.0	1		12/29/09 14:00	74-88-4	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW05122209 **Lab ID: 252716005** Collected: 12/22/09 09:21 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/09 14:00	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/29/09 14:00	1634-04-4	
Methylene chloride	ND	ug/L	4.0	1		12/29/09 14:00	75-09-2	
Naphthalene	ND	ug/L	1.0	1		12/29/09 14:00	91-20-3	
Styrene	ND	ug/L	1.0	1		12/29/09 14:00	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		12/29/09 14:00	127-18-4	
Toluene	ND	ug/L	1.0	1		12/29/09 14:00	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		12/29/09 14:00	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/29/09 14:00	75-69-4	
Vinyl acetate	ND	ug/L	5.0	1		12/29/09 14:00	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/29/09 14:00	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		12/29/09 14:00	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 14:00	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 14:00	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		12/29/09 14:00	1330-20-7	
n-Butylbenzene	ND	ug/L	1.0	1		12/29/09 14:00	104-51-8	
n-Propylbenzene	ND	ug/L	1.0	1		12/29/09 14:00	103-65-1	
o-Xylene	ND	ug/L	1.0	1		12/29/09 14:00	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/29/09 14:00	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		12/29/09 14:00	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		12/29/09 14:00	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 14:00	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 14:00	10061-02-6	
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1		12/29/09 14:00	110-57-6	
4-Bromofluorobenzene (S)	91	%	80-120	1		12/29/09 14:00	460-00-4	
Dibromofluoromethane (S)	96	%	80-122	1		12/29/09 14:00	1868-53-7	
1,2-Dichloroethane-d4 (S)	87	%	80-124	1		12/29/09 14:00	17060-07-0	
Toluene-d8 (S)	91	%	80-123	1		12/29/09 14:00	2037-26-5	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW06122209 **Lab ID: 252716006** Collected: 12/22/09 09:32 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 14:22	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		12/29/09 14:22	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 14:22	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/29/09 14:22	79-00-5	
1,1-Dichloroethane	ND	ug/L	1.0	1		12/29/09 14:22	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		12/29/09 14:22	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/29/09 14:22	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 14:22	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/29/09 14:22	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 14:22	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 14:22	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	1		12/29/09 14:22	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/09 14:22	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 14:22	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/29/09 14:22	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		12/29/09 14:22	540-59-0	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 14:22	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 14:22	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 14:22	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/29/09 14:22	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 14:22	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 14:22	594-20-7	
2-Butanone (MEK)	**31.8**	ug/L	5.0	1		12/29/09 14:22	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 14:22	95-49-8	
2-Hexanone	**5.2**	ug/L	5.0	1		12/29/09 14:22	591-78-6	
4-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 14:22	106-43-4	
4-Methyl-2-pentanone (MIBK)	**5.5**	ug/L	5.0	1		12/29/09 14:22	108-10-1	
Acetone	**43.9**	ug/L	5.0	1		12/29/09 14:22	67-64-1	
Acrylonitrile	ND	ug/L	5.0	1		12/29/09 14:22	107-13-1	
Benzene	ND	ug/L	1.0	1		12/29/09 14:22	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/29/09 14:22	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/29/09 14:22	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/29/09 14:22	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/29/09 14:22	75-25-2	
Bromomethane	ND	ug/L	1.0	1		12/29/09 14:22	74-83-9	
Carbon disulfide	ND	ug/L	1.0	1		12/29/09 14:22	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		12/29/09 14:22	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/29/09 14:22	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/29/09 14:22	75-00-3	
Chloroform	ND	ug/L	1.0	1		12/29/09 14:22	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/29/09 14:22	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		12/29/09 14:22	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		12/29/09 14:22	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/09 14:22	75-71-8	
Ethylbenzene	ND	ug/L	1.0	1		12/29/09 14:22	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		12/29/09 14:22	87-68-3	
Iodomethane	ND	ug/L	5.0	1		12/29/09 14:22	74-88-4	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW06122209 **Lab ID: 252716006** Collected: 12/22/09 09:32 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/09 14:22	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/29/09 14:22	1634-04-4	
Methylene chloride	ND	ug/L	4.0	1		12/29/09 14:22	75-09-2	
Naphthalene	ND	ug/L	1.0	1		12/29/09 14:22	91-20-3	
Styrene	ND	ug/L	1.0	1		12/29/09 14:22	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		12/29/09 14:22	127-18-4	
Toluene	ND	ug/L	1.0	1		12/29/09 14:22	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		12/29/09 14:22	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/29/09 14:22	75-69-4	
Vinyl acetate	ND	ug/L	5.0	1		12/29/09 14:22	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/29/09 14:22	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		12/29/09 14:22	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 14:22	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 14:22	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		12/29/09 14:22	1330-20-7	
n-Butylbenzene	ND	ug/L	1.0	1		12/29/09 14:22	104-51-8	
n-Propylbenzene	ND	ug/L	1.0	1		12/29/09 14:22	103-65-1	
o-Xylene	ND	ug/L	1.0	1		12/29/09 14:22	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/29/09 14:22	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		12/29/09 14:22	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		12/29/09 14:22	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 14:22	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 14:22	10061-02-6	
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1		12/29/09 14:22	110-57-6	
4-Bromofluorobenzene (S)	93	%	80-120	1		12/29/09 14:22	460-00-4	
Dibromofluoromethane (S)	104	%	80-122	1		12/29/09 14:22	1868-53-7	
1,2-Dichloroethane-d4 (S)	90	%	80-124	1		12/29/09 14:22	17060-07-0	
Toluene-d8 (S)	91	%	80-123	1		12/29/09 14:22	2037-26-5	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW07122209 **Lab ID: 252716007** Collected: 12/22/09 09:41 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 14:45	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		12/29/09 14:45	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 14:45	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/29/09 14:45	79-00-5	
1,1-Dichloroethane	ND	ug/L	1.0	1		12/29/09 14:45	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		12/29/09 14:45	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/29/09 14:45	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 14:45	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/29/09 14:45	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 14:45	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 14:45	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	1		12/29/09 14:45	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/09 14:45	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 14:45	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/29/09 14:45	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		12/29/09 14:45	540-59-0	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 14:45	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 14:45	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 14:45	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/29/09 14:45	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 14:45	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 14:45	594-20-7	
2-Butanone (MEK)	ND	ug/L	5.0	1		12/29/09 14:45	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 14:45	95-49-8	
2-Hexanone	ND	ug/L	5.0	1		12/29/09 14:45	591-78-6	
4-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 14:45	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/29/09 14:45	108-10-1	
Acetone	ND	ug/L	5.0	1		12/29/09 14:45	67-64-1	
Acrylonitrile	ND	ug/L	5.0	1		12/29/09 14:45	107-13-1	
Benzene	ND	ug/L	1.0	1		12/29/09 14:45	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/29/09 14:45	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/29/09 14:45	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/29/09 14:45	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/29/09 14:45	75-25-2	
Bromomethane	ND	ug/L	1.0	1		12/29/09 14:45	74-83-9	
Carbon disulfide	ND	ug/L	1.0	1		12/29/09 14:45	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		12/29/09 14:45	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/29/09 14:45	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/29/09 14:45	75-00-3	
Chloroform	ND	ug/L	1.0	1		12/29/09 14:45	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/29/09 14:45	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		12/29/09 14:45	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		12/29/09 14:45	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/09 14:45	75-71-8	
Ethylbenzene	ND	ug/L	1.0	1		12/29/09 14:45	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		12/29/09 14:45	87-68-3	
Iodomethane	ND	ug/L	5.0	1		12/29/09 14:45	74-88-4	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW07122209 **Lab ID: 252716007** Collected: 12/22/09 09:41 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/09 14:45	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/29/09 14:45	1634-04-4	
Methylene chloride	ND	ug/L	4.0	1		12/29/09 14:45	75-09-2	
Naphthalene	ND	ug/L	1.0	1		12/29/09 14:45	91-20-3	
Styrene	ND	ug/L	1.0	1		12/29/09 14:45	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		12/29/09 14:45	127-18-4	
Toluene	ND	ug/L	1.0	1		12/29/09 14:45	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		12/29/09 14:45	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/29/09 14:45	75-69-4	
Vinyl acetate	ND	ug/L	5.0	1		12/29/09 14:45	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/29/09 14:45	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		12/29/09 14:45	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 14:45	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 14:45	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		12/29/09 14:45	1330-20-7	
n-Butylbenzene	ND	ug/L	1.0	1		12/29/09 14:45	104-51-8	
n-Propylbenzene	ND	ug/L	1.0	1		12/29/09 14:45	103-65-1	
o-Xylene	ND	ug/L	1.0	1		12/29/09 14:45	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/29/09 14:45	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		12/29/09 14:45	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		12/29/09 14:45	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 14:45	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 14:45	10061-02-6	
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1		12/29/09 14:45	110-57-6	
4-Bromofluorobenzene (S)	91	%	80-120	1		12/29/09 14:45	460-00-4	
Dibromofluoromethane (S)	96	%	80-122	1		12/29/09 14:45	1868-53-7	
1,2-Dichloroethane-d4 (S)	85	%	80-124	1		12/29/09 14:45	17060-07-0	
Toluene-d8 (S)	91	%	80-123	1		12/29/09 14:45	2037-26-5	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW08122209 **Lab ID: 252716008** Collected: 12/22/09 09:49 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 15:08	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		12/29/09 15:08	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 15:08	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/29/09 15:08	79-00-5	
1,1-Dichloroethane	ND	ug/L	1.0	1		12/29/09 15:08	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		12/29/09 15:08	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/29/09 15:08	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 15:08	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/29/09 15:08	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 15:08	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 15:08	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	1		12/29/09 15:08	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/09 15:08	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 15:08	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/29/09 15:08	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		12/29/09 15:08	540-59-0	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 15:08	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 15:08	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 15:08	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/29/09 15:08	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 15:08	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 15:08	594-20-7	
2-Butanone (MEK)	ND	ug/L	5.0	1		12/29/09 15:08	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 15:08	95-49-8	
2-Hexanone	ND	ug/L	5.0	1		12/29/09 15:08	591-78-6	
4-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 15:08	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/29/09 15:08	108-10-1	
Acetone	ND	ug/L	5.0	1		12/29/09 15:08	67-64-1	
Acrylonitrile	ND	ug/L	5.0	1		12/29/09 15:08	107-13-1	
Benzene	ND	ug/L	1.0	1		12/29/09 15:08	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/29/09 15:08	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/29/09 15:08	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/29/09 15:08	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/29/09 15:08	75-25-2	
Bromomethane	ND	ug/L	1.0	1		12/29/09 15:08	74-83-9	
Carbon disulfide	ND	ug/L	1.0	1		12/29/09 15:08	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		12/29/09 15:08	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/29/09 15:08	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/29/09 15:08	75-00-3	
Chloroform	ND	ug/L	1.0	1		12/29/09 15:08	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/29/09 15:08	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		12/29/09 15:08	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		12/29/09 15:08	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/09 15:08	75-71-8	
Ethylbenzene	ND	ug/L	1.0	1		12/29/09 15:08	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		12/29/09 15:08	87-68-3	
Iodomethane	ND	ug/L	5.0	1		12/29/09 15:08	74-88-4	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW08122209 **Lab ID: 252716008** Collected: 12/22/09 09:49 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/09 15:08	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/29/09 15:08	1634-04-4	
Methylene chloride	ND	ug/L	4.0	1		12/29/09 15:08	75-09-2	
Naphthalene	ND	ug/L	1.0	1		12/29/09 15:08	91-20-3	
Styrene	ND	ug/L	1.0	1		12/29/09 15:08	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		12/29/09 15:08	127-18-4	
Toluene	ND	ug/L	1.0	1		12/29/09 15:08	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		12/29/09 15:08	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/29/09 15:08	75-69-4	
Vinyl acetate	ND	ug/L	5.0	1		12/29/09 15:08	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/29/09 15:08	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		12/29/09 15:08	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 15:08	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 15:08	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		12/29/09 15:08	1330-20-7	
n-Butylbenzene	ND	ug/L	1.0	1		12/29/09 15:08	104-51-8	
n-Propylbenzene	ND	ug/L	1.0	1		12/29/09 15:08	103-65-1	
o-Xylene	ND	ug/L	1.0	1		12/29/09 15:08	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/29/09 15:08	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		12/29/09 15:08	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		12/29/09 15:08	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 15:08	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 15:08	10061-02-6	
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1		12/29/09 15:08	110-57-6	
4-Bromofluorobenzene (S)	91	%	80-120	1		12/29/09 15:08	460-00-4	
Dibromofluoromethane (S)	96	%	80-122	1		12/29/09 15:08	1868-53-7	
1,2-Dichloroethane-d4 (S)	83	%	80-124	1		12/29/09 15:08	17060-07-0	
Toluene-d8 (S)	90	%	80-123	1		12/29/09 15:08	2037-26-5	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW09122209 **Lab ID: 252716009** Collected: 12/22/09 10:08 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 15:30	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		12/29/09 15:30	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 15:30	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/29/09 15:30	79-00-5	
1,1-Dichloroethane	ND	ug/L	1.0	1		12/29/09 15:30	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		12/29/09 15:30	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/29/09 15:30	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 15:30	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/29/09 15:30	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 15:30	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 15:30	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	1		12/29/09 15:30	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/09 15:30	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 15:30	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/29/09 15:30	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		12/29/09 15:30	540-59-0	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 15:30	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 15:30	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 15:30	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/29/09 15:30	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 15:30	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 15:30	594-20-7	
2-Butanone (MEK)	ND	ug/L	5.0	1		12/29/09 15:30	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 15:30	95-49-8	
2-Hexanone	ND	ug/L	5.0	1		12/29/09 15:30	591-78-6	
4-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 15:30	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/29/09 15:30	108-10-1	
Acetone	ND	ug/L	5.0	1		12/29/09 15:30	67-64-1	
Acrylonitrile	ND	ug/L	5.0	1		12/29/09 15:30	107-13-1	
Benzene	ND	ug/L	1.0	1		12/29/09 15:30	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/29/09 15:30	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/29/09 15:30	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/29/09 15:30	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/29/09 15:30	75-25-2	
Bromomethane	ND	ug/L	1.0	1		12/29/09 15:30	74-83-9	
Carbon disulfide	ND	ug/L	1.0	1		12/29/09 15:30	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		12/29/09 15:30	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/29/09 15:30	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/29/09 15:30	75-00-3	
Chloroform	ND	ug/L	1.0	1		12/29/09 15:30	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/29/09 15:30	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		12/29/09 15:30	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		12/29/09 15:30	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/09 15:30	75-71-8	
Ethylbenzene	ND	ug/L	1.0	1		12/29/09 15:30	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		12/29/09 15:30	87-68-3	
Iodomethane	ND	ug/L	5.0	1		12/29/09 15:30	74-88-4	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: RW09122209 **Lab ID: 252716009** Collected: 12/22/09 10:08 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/09 15:30	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/29/09 15:30	1634-04-4	
Methylene chloride	ND	ug/L	4.0	1		12/29/09 15:30	75-09-2	
Naphthalene	ND	ug/L	1.0	1		12/29/09 15:30	91-20-3	
Styrene	ND	ug/L	1.0	1		12/29/09 15:30	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		12/29/09 15:30	127-18-4	
Toluene	ND	ug/L	1.0	1		12/29/09 15:30	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		12/29/09 15:30	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/29/09 15:30	75-69-4	
Vinyl acetate	ND	ug/L	5.0	1		12/29/09 15:30	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/29/09 15:30	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		12/29/09 15:30	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 15:30	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 15:30	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		12/29/09 15:30	1330-20-7	
n-Butylbenzene	ND	ug/L	1.0	1		12/29/09 15:30	104-51-8	
n-Propylbenzene	ND	ug/L	1.0	1		12/29/09 15:30	103-65-1	
o-Xylene	ND	ug/L	1.0	1		12/29/09 15:30	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/29/09 15:30	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		12/29/09 15:30	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		12/29/09 15:30	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 15:30	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 15:30	10061-02-6	
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1		12/29/09 15:30	110-57-6	
4-Bromofluorobenzene (S)	92	%	80-120	1		12/29/09 15:30	460-00-4	
Dibromofluoromethane (S)	98	%	80-122	1		12/29/09 15:30	1868-53-7	
1,2-Dichloroethane-d4 (S)	84	%	80-124	1		12/29/09 15:30	17060-07-0	
Toluene-d8 (S)	91	%	80-123	1		12/29/09 15:30	2037-26-5	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: Trip Blank **Lab ID: 252716010** Collected: 12/22/09 08:33 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 16:38	630-20-6	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		12/29/09 16:38	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/29/09 16:38	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/29/09 16:38	79-00-5	
1,1-Dichloroethane	ND	ug/L	1.0	1		12/29/09 16:38	75-34-3	
1,1-Dichloroethene	ND	ug/L	1.0	1		12/29/09 16:38	75-35-4	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/29/09 16:38	563-58-6	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 16:38	87-61-6	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/29/09 16:38	96-18-4	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/29/09 16:38	120-82-1	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 16:38	95-63-6	
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	1		12/29/09 16:38	96-12-8	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/09 16:38	106-93-4	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 16:38	95-50-1	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/29/09 16:38	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2.0	1		12/29/09 16:38	540-59-0	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 16:38	78-87-5	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		12/29/09 16:38	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 16:38	541-73-1	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/29/09 16:38	142-28-9	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/29/09 16:38	106-46-7	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/29/09 16:38	594-20-7	
2-Butanone (MEK)	ND	ug/L	5.0	1		12/29/09 16:38	78-93-3	
2-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 16:38	95-49-8	
2-Hexanone	ND	ug/L	5.0	1		12/29/09 16:38	591-78-6	
4-Chlorotoluene	ND	ug/L	1.0	1		12/29/09 16:38	106-43-4	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/29/09 16:38	108-10-1	
Acetone	ND	ug/L	5.0	1		12/29/09 16:38	67-64-1	
Acrylonitrile	ND	ug/L	5.0	1		12/29/09 16:38	107-13-1	
Benzene	ND	ug/L	1.0	1		12/29/09 16:38	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/29/09 16:38	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/29/09 16:38	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/29/09 16:38	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/29/09 16:38	75-25-2	
Bromomethane	ND	ug/L	1.0	1		12/29/09 16:38	74-83-9	
Carbon disulfide	ND	ug/L	1.0	1		12/29/09 16:38	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		12/29/09 16:38	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/29/09 16:38	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/29/09 16:38	75-00-3	
Chloroform	ND	ug/L	1.0	1		12/29/09 16:38	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/29/09 16:38	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	1		12/29/09 16:38	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		12/29/09 16:38	74-95-3	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/09 16:38	75-71-8	
Ethylbenzene	ND	ug/L	1.0	1		12/29/09 16:38	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		12/29/09 16:38	87-68-3	
Iodomethane	ND	ug/L	5.0	1		12/29/09 16:38	74-88-4	

ANALYTICAL RESULTS

Project: Asotin County Landfill
Pace Project No.: 252716

Sample: Trip Blank **Lab ID: 252716010** Collected: 12/22/09 08:33 Received: 12/23/09 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/09 16:38	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/29/09 16:38	1634-04-4	
Methylene chloride	ND	ug/L	4.0	1		12/29/09 16:38	75-09-2	
Naphthalene	ND	ug/L	1.0	1		12/29/09 16:38	91-20-3	
Styrene	ND	ug/L	1.0	1		12/29/09 16:38	100-42-5	
Tetrachloroethene	ND	ug/L	1.0	1		12/29/09 16:38	127-18-4	
Toluene	ND	ug/L	1.0	1		12/29/09 16:38	108-88-3	
Trichloroethene	ND	ug/L	1.0	1		12/29/09 16:38	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/29/09 16:38	75-69-4	
Vinyl acetate	ND	ug/L	5.0	1		12/29/09 16:38	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/29/09 16:38	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		12/29/09 16:38	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 16:38	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 16:38	10061-01-5	
m&p-Xylene	ND	ug/L	2.0	1		12/29/09 16:38	1330-20-7	
n-Butylbenzene	ND	ug/L	1.0	1		12/29/09 16:38	104-51-8	
n-Propylbenzene	ND	ug/L	1.0	1		12/29/09 16:38	103-65-1	
o-Xylene	ND	ug/L	1.0	1		12/29/09 16:38	95-47-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/29/09 16:38	99-87-6	
sec-Butylbenzene	ND	ug/L	1.0	1		12/29/09 16:38	135-98-8	
tert-Butylbenzene	ND	ug/L	1.0	1		12/29/09 16:38	98-06-6	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/09 16:38	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/29/09 16:38	10061-02-6	
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1		12/29/09 16:38	110-57-6	
4-Bromofluorobenzene (S)	92	%	80-120	1		12/29/09 16:38	460-00-4	
Dibromofluoromethane (S)	97	%	80-122	1		12/29/09 16:38	1868-53-7	
1,2-Dichloroethane-d4 (S)	82	%	80-124	1		12/29/09 16:38	17060-07-0	
Toluene-d8 (S)	92	%	80-123	1		12/29/09 16:38	2037-26-5	

QUALITY CONTROL DATA

Project: Asotin County Landfill
Pace Project No.: 252716

QC Batch: MSV/1836
Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 252716001, 252716002, 252716003, 252716004, 252716005, 252716006, 252716007, 252716008, 252716009, 252716010

METHOD BLANK: 18095
Matrix: Water
Associated Lab Samples: 252716001, 252716002, 252716003, 252716004, 252716005, 252716006, 252716007, 252716008, 252716009, 252716010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	12/29/09 11:56	
1,1,1-Trichloroethane	ug/L	ND	1.0	12/29/09 11:56	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/29/09 11:56	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/29/09 11:56	
1,1-Dichloroethane	ug/L	ND	1.0	12/29/09 11:56	
1,1-Dichloroethene	ug/L	ND	1.0	12/29/09 11:56	
1,1-Dichloropropene	ug/L	ND	1.0	12/29/09 11:56	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	12/29/09 11:56	
1,2,3-Trichloropropane	ug/L	ND	1.0	12/29/09 11:56	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	12/29/09 11:56	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	12/29/09 11:56	
1,2-Dibromo-3-chloropropane	ug/L	ND	1.0	12/29/09 11:56	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/29/09 11:56	
1,2-Dichlorobenzene	ug/L	ND	1.0	12/29/09 11:56	
1,2-Dichloroethane	ug/L	ND	1.0	12/29/09 11:56	
1,2-Dichloroethene (Total)	ug/L	ND	2.0	12/29/09 11:56	
1,2-Dichloropropane	ug/L	ND	1.0	12/29/09 11:56	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	12/29/09 11:56	
1,3-Dichlorobenzene	ug/L	ND	1.0	12/29/09 11:56	
1,3-Dichloropropane	ug/L	ND	1.0	12/29/09 11:56	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/29/09 11:56	
2,2-Dichloropropane	ug/L	ND	1.0	12/29/09 11:56	
2-Butanone (MEK)	ug/L	ND	5.0	12/29/09 11:56	
2-Chlorotoluene	ug/L	ND	1.0	12/29/09 11:56	
2-Hexanone	ug/L	ND	5.0	12/29/09 11:56	
4-Chlorotoluene	ug/L	ND	1.0	12/29/09 11:56	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	12/29/09 11:56	
Acetone	ug/L	ND	5.0	12/29/09 11:56	
Acrylonitrile	ug/L	ND	5.0	12/29/09 11:56	
Benzene	ug/L	ND	1.0	12/29/09 11:56	
Bromobenzene	ug/L	ND	1.0	12/29/09 11:56	
Bromochloromethane	ug/L	ND	1.0	12/29/09 11:56	
Bromodichloromethane	ug/L	ND	1.0	12/29/09 11:56	
Bromoform	ug/L	ND	1.0	12/29/09 11:56	
Bromomethane	ug/L	ND	1.0	12/29/09 11:56	
Carbon disulfide	ug/L	ND	1.0	12/29/09 11:56	
Carbon tetrachloride	ug/L	ND	1.0	12/29/09 11:56	
Chlorobenzene	ug/L	ND	1.0	12/29/09 11:56	
Chloroethane	ug/L	ND	1.0	12/29/09 11:56	
Chloroform	ug/L	ND	1.0	12/29/09 11:56	
Chloromethane	ug/L	ND	1.0	12/29/09 11:56	

QUALITY CONTROL DATA

Project: Asotin County Landfill
Pace Project No.: 252716

METHOD BLANK: 18095 Matrix: Water

Associated Lab Samples: 252716001, 252716002, 252716003, 252716004, 252716005, 252716006, 252716007, 252716008, 252716009, 252716010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/29/09 11:56	
cis-1,3-Dichloropropene	ug/L	ND	1.0	12/29/09 11:56	
Dibromochloromethane	ug/L	ND	1.0	12/29/09 11:56	
Dibromomethane	ug/L	ND	1.0	12/29/09 11:56	
Dichlorodifluoromethane	ug/L	ND	1.0	12/29/09 11:56	
Ethylbenzene	ug/L	ND	1.0	12/29/09 11:56	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	12/29/09 11:56	
Iodomethane	ug/L	ND	5.0	12/29/09 11:56	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	12/29/09 11:56	
m&p-Xylene	ug/L	ND	2.0	12/29/09 11:56	
Methyl-tert-butyl ether	ug/L	ND	1.0	12/29/09 11:56	
Methylene chloride	ug/L	ND	4.0	12/29/09 11:56	
n-Butylbenzene	ug/L	ND	1.0	12/29/09 11:56	
n-Propylbenzene	ug/L	ND	1.0	12/29/09 11:56	
Naphthalene	ug/L	1.0	1.0	12/29/09 11:56	B-
o-Xylene	ug/L	ND	1.0	12/29/09 11:56	
p-Isopropyltoluene	ug/L	ND	1.0	12/29/09 11:56	
sec-Butylbenzene	ug/L	ND	1.0	12/29/09 11:56	
Styrene	ug/L	ND	1.0	12/29/09 11:56	
tert-Butylbenzene	ug/L	ND	1.0	12/29/09 11:56	
Tetrachloroethene	ug/L	ND	1.0	12/29/09 11:56	
Toluene	ug/L	ND	1.0	12/29/09 11:56	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/29/09 11:56	
trans-1,3-Dichloropropene	ug/L	ND	1.0	12/29/09 11:56	
trans-1,4-Dichloro-2-butene	ug/L	ND	5.0	12/29/09 11:56	
Trichloroethene	ug/L	ND	1.0	12/29/09 11:56	
Trichlorofluoromethane	ug/L	ND	1.0	12/29/09 11:56	
Vinyl acetate	ug/L	ND	5.0	12/29/09 11:56	
Vinyl chloride	ug/L	ND	1.0	12/29/09 11:56	
Xylene (Total)	ug/L	ND	3.0	12/29/09 11:56	
1,2-Dichloroethane-d4 (S)	%	87	80-124	12/29/09 11:56	
4-Bromofluorobenzene (S)	%	92	80-120	12/29/09 11:56	1n
Dibromofluoromethane (S)	%	95	80-122	12/29/09 11:56	
Toluene-d8 (S)	%	90	80-123	12/29/09 11:56	

LABORATORY CONTROL SAMPLE & LCSD: 18096 18097

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	20.8	20.0	104	100	73-126	4	30	
1,1,1-Trichloroethane	ug/L	20	24.3	24.2	122	121	69-135	.7	30	
1,1,2,2-Tetrachloroethane	ug/L	20	21.0	19.2	105	96	69-123	9	30	
1,1,2-Trichloroethane	ug/L	20	21.7	20.2	108	101	76-114	7	30	
1,1-Dichloroethane	ug/L	20	26.2	25.8	131	129	74-124	1	30	L3
1,1-Dichloroethene	ug/L	20	24.6	24.7	123	124	69-139	.5	30	

QUALITY CONTROL DATA

Project: Asotin County Landfill
Pace Project No.: 252716

LABORATORY CONTROL SAMPLE & LCSD: 18096 18097

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1-Dichloropropene	ug/L	20	25.6	26.0	128	130	77-134	1	30	
1,2,3-Trichlorobenzene	ug/L	20	22.4	21.4	112	107	63-136	5	30	
1,2,3-Trichloropropane	ug/L	20	18.3	17.0	92	85	66-118	8	30	
1,2,4-Trichlorobenzene	ug/L	20	23.2	22.2	116	111	68-129	4	30	
1,2,4-Trimethylbenzene	ug/L	20	19.9	19.5	100	97	72-126	2	30	
1,2-Dibromo-3-chloropropane	ug/L	20	19.7	17.9	98	89	64-124	9	30	
1,2-Dibromoethane (EDB)	ug/L	20	23.2	21.1	116	106	78-117	9	30	
1,2-Dichlorobenzene	ug/L	20	20.4	19.5	102	97	74-118	5	30	
1,2-Dichloroethane	ug/L	20	22.6	21.4	113	107	73-127	5	30	
1,2-Dichloroethene (Total)	ug/L	40	50.5	49.9	126	125	60-140	1	30	
1,2-Dichloropropane	ug/L	20	22.9	22.3	115	112	72-126	3	30	
1,3,5-Trimethylbenzene	ug/L	20	19.9	19.8	99	99	68-129	.3	30	
1,3-Dichlorobenzene	ug/L	20	21.2	20.7	106	104	73-119	2	30	
1,3-Dichloropropane	ug/L	20	22.0	20.3	110	102	74-119	8	30	
1,4-Dichlorobenzene	ug/L	20	20.4	19.5	102	97	73-115	4	30	
2,2-Dichloropropane	ug/L	20	24.9	25.3	124	127	46-157	2	30	
2-Butanone (MEK)	ug/L	20	24.0	24.3	120	122	65-138	1	30	
2-Chlorotoluene	ug/L	20	19.5	19.3	97	96	68-122	1	30	
2-Hexanone	ug/L	20	21.1	19.6	106	98	60-135	8	30	
4-Chlorotoluene	ug/L	20	21.3	20.9	107	104	70-122	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	20	22.6	21.2	113	106	70-135	6	30	
Acetone	ug/L	20	21.3	23.7	106	118	58-146	11	30	
Acrylonitrile	ug/L	20	24.1	21.8	120	109	77-142	10	30	
Benzene	ug/L	20	24.3	24.0	121	120	75-124	1	30	
Bromobenzene	ug/L	20	20.7	19.6	104	98	74-116	5	30	
Bromochloromethane	ug/L	20	24.6	23.4	123	117	75-128	5	30	
Bromodichloromethane	ug/L	20	22.6	22.2	113	111	77-126	2	30	
Bromoform	ug/L	20	22.4	20.7	112	103	61-131	8	30	
Bromomethane	ug/L	20	19.2	19.0	96	95	58-139	1	30	
Carbon disulfide	ug/L	20	20.8	21.0	104	105	39-122	1	30	
Carbon tetrachloride	ug/L	20	25.4	25.4	127	127	67-136	.4	30	
Chlorobenzene	ug/L	20	21.7	20.8	109	104	78-115	4	30	
Chloroethane	ug/L	20	19.2	19.5	96	97	58-137	1	30	
Chloroform	ug/L	20	24.0	23.3	120	116	75-124	3	30	
Chloromethane	ug/L	20	27.4	27.4	137	137	50-129	.2	30	L3
cis-1,2-Dichloroethene	ug/L	20	27.5	27.0	138	135	78-126	2	30	L3
cis-1,3-Dichloropropene	ug/L	20	24.3	23.2	121	116	78-159	5	30	
Dibromochloromethane	ug/L	20	21.7	20.6	109	103	81-125	5	30	
Dibromomethane	ug/L	20	24.6	23.0	123	115	75-124	7	30	
Dichlorodifluoromethane	ug/L	20	31.7	30.9	158	154	30-140	3	30	L3
Ethylbenzene	ug/L	20	20.5	20.0	103	100	76-124	3	30	
Hexachloro-1,3-butadiene	ug/L	20	21.9	22.2	109	111	55-132	1	30	
Iodomethane	ug/L	20	17.8	17.9	89	89	62-127	.7	30	
Isopropylbenzene (Cumene)	ug/L	20	21.9	21.4	109	107	73-127	2	30	
m&p-Xylene	ug/L	40	39.5	39.1	99	98	75-124	1	30	
Methyl-tert-butyl ether	ug/L	20	22.5	21.4	113	107	72-130	5	30	
Methylene chloride	ug/L	20	21.8	21.2	109	106	69-124	3	30	
n-Butylbenzene	ug/L	20	20.4	20.1	102	100	65-131	1	30	

QUALITY CONTROL DATA

Project: Asotin County Landfill
Pace Project No.: 252716

LABORATORY CONTROL SAMPLE & LCSD: 18096 18097

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
n-Propylbenzene	ug/L	20	19.8	19.7	99	98	69-129	.4	30	
Naphthalene	ug/L	20	22.2	21.1	111	105	69-135	5	30	
o-Xylene	ug/L	20	21.4	20.7	107	103	76-121	4	30	
p-Isopropyltoluene	ug/L	20	21.2	20.9	106	104	69-133	2	30	
sec-Butylbenzene	ug/L	20	22.4	22.2	112	111	67-132	1	30	
Styrene	ug/L	20	21.2	20.5	106	102	76-121	4	30	
tert-Butylbenzene	ug/L	20	21.3	21.1	106	105	66-132	1	30	
Tetrachloroethene	ug/L	20	24.7	24.3	123	122	70-127	2	30	
Toluene	ug/L	20	20.1	19.8	101	99	75-124	2	30	
trans-1,2-Dichloroethene	ug/L	20	22.9	23.0	115	115	72-129	.2	30	
trans-1,3-Dichloropropene	ug/L	20	20.8	19.5	104	98	69-122	6	30	
trans-1,4-Dichloro-2-butene	ug/L	20	18.9	17.1	94	86	51-150	10	30	
Trichloroethene	ug/L	20	25.5	25.5	128	127	78-124	.4	30	L3
Trichlorofluoromethane	ug/L	20	19.5	18.8	98	94	60-147	4	30	
Vinyl acetate	ug/L	20	24.0	22.1	120	110	41-118	8	30	L3
Vinyl chloride	ug/L	20	23.6	23.3	118	116	56-136	1	30	
Xylene (Total)	ug/L	60	61.0	59.8	102	100	76-123	2	30	
1,2-Dichloroethane-d4 (S)	%				88	89	80-124			
4-Bromofluorobenzene (S)	%				91	93	80-120			
Dibromofluoromethane (S)	%				102	103	80-122			
Toluene-d8 (S)	%				88	88	80-123			

QUALIFIERS

Project:	Asotin County Landfill
Pace Project No.:	252716

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-S	Pace Analytical Services - Seattle

BATCH QUALIFIERS

Batch: MSV/1836

[1]	LCS/LCSD were performed in lieu of an MS/MSD due to insufficient sample volume provided.

ANALYTE QUALIFIERS

1n	This sample was evaluated to the MDL.
B-	Analyte detected in method blank but was not detected in the associated samples.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Asotin County Landfill
Pace Project No.: 252716

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
252716001	**RW01122209**	EPA 5030B/8260	MSV/1836		
252716002	**RW02122209**	EPA 5030B/8260	MSV/1836		
252716003	**RW03122209**	EPA 5030B/8260	MSV/1836		
252716004	**RW04122209**	EPA 5030B/8260	MSV/1836		
252716005	**RW05122209**	EPA 5030B/8260	MSV/1836		
252716006	**RW06122209**	EPA 5030B/8260	MSV/1836		
252716007	**RW07122209**	EPA 5030B/8260	MSV/1836		
252716008	**RW08122209**	EPA 5030B/8260	MSV/1836		
252716009	**RW09122209**	EPA 5030B/8260	MSV/1836		
252716010	**Trip Blank**	EPA 5030B/8260	MSV/1836		

L - 1 **Asotin PUD 2008 Groundwater Quality Report**
L - 2 **PUD Municipal Well Map**
L - 3 **PUD Municipal Sampling Results**

Appendix L
Municipal Water Quality Sampling Program and Testing Results

2008 ANNUAL

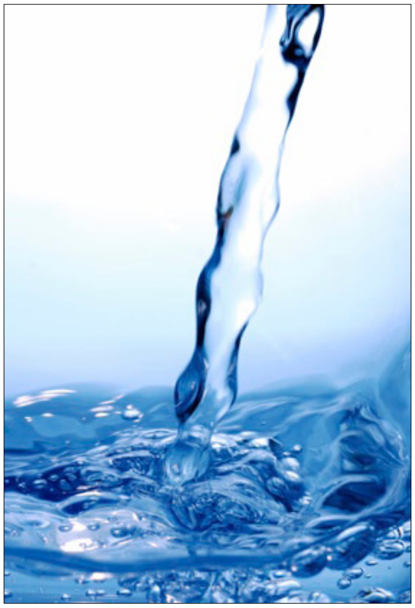
WATER QUALITY REPORT

FOR CUSTOMERS OF ASOTIN COUNTY PUD — JUNE 2009

YOUR WATER IS SAFE TO DRINK!

ASOTIN COUNTY PUD is pleased to report that your drinking water safely complies with state and federal drinking water quality standards. This annual report summarizes the key findings of the Asotin PUD water quality testing program which demonstrates our commitment to a clean, safe and reliable supply of drinking water.

All information contained in this report has been collected and reported in accordance with water quality standards established by the United States Environmental Protection Agency (EPA) and the Washington State Department of Health (DOH). This report provides you with details about where your water comes from, what's in it, and how safe it is.



HOW DO WE KNOW YOUR WATER IS SAFE TO DRINK?

At the Asotin PUD, ensuring the safety of your water is the most important thing we do. The PUD collects water samples weekly for bacteriological testing from various points throughout the water system. The number of samples taken depends on the size of the population served by the water system. Bacteria are microbial substances that are naturally present in the environment and those produced by humans and animals. **All of the bacteriological water samples taken in 2008 met state and federal drinking water standards.**

In addition, state and federal regulatory agencies require testing for inorganic substances, disinfection by products and man-made compounds such as pesticides and petroleum additives. All samples collected are submitted to Washington State certified independent laboratories for analysis. Of the multitude of state and federal regulated water quality contaminants tested over the past 3 years only a few showed detectable levels and each was below the EPA mandated Maximum Contaminant Level (MCL). The table inside provides the results from water quality testing.

WHERE DOES YOUR WATER COME FROM?

The PUD relies on groundwater from the Lewiston Basin Aquifer to supply water to your home. This deep aquifer spans the Lewiston-Clarkston valley forming at the Craig and Blue Mountains extending to the base of the Lewiston-Clarkston hill and east to west from Lapwai, Idaho to the base of Alpowa Grade located in Asotin County, Washington.

Water is pumped from the aquifer by PUD wells into approximately 125 miles of distribution line and delivered to your home ready for use on demand.

This on-demand system operates based upon the level of our seven water storage reservoirs, which have the capacity of 9.88 million gallons. When a reservoir reaches a certain level our automated control system tells the pump to run and water begins to flow.

When water is pumped from the aquifer by a PUD well, chlorine is added as a disinfectant to ensure that the water is free of harmful microorganisms. The PUD has a system in place to generate chlorine on-site at four of seven primary water supply

In 1989, the PUD was instrumental in obtaining Sole or Principal Source Aquifer designation as provided for in the Safe Drinking Water Act of 1974.

This designation protects the aquifer from potential contamination by mandating that the EPA review any federal projects that would compromise the aquifer.

WHO REGULATES WATER QUALITY?

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material and can pick up substances from the presence of animals or from human activity.

To ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes limits on the amount of certain substances in water provided by public water systems. U.S. Food and Drug Administration (FDA) regulations establish limits for substances in bottled water.

Drinking water, including bottled water may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline. **(800-426-4791)**

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons — such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants— can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA and/or Center for Disease Control (CDC) guidelines on appropriate means to lessen risk of infection by cryptosporidium and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline at **(800-426-4791)**

Contaminants that may be present in source water include:	**Possible source**
Microbial contaminants such as viruses and bacteria	Sewage treatment plants, septic systems, agricultural livestock operations, and wildlife
Inorganic contaminants such as salts and metals	Naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming
Pesticides and herbicides	A variety of sources such as agriculture, storm water runoff, and residential uses
Organic chemical contaminants, including synthetic and volatile organics	By-products of industrial processes and petroleum production; can be from gas stations, urban storm water runoff, septic systems
Radioactive contaminants	Naturally occurring or the result of oil and gas production and mining activities

ANNUAL WATER QUALITY REPORT for the YEAR 2008

Listed in the table below are the compounds that were detected in the PUD drinking water supply.

Definitions of Terms Used

Disinfection Byproducts: Trihalomethanes (TTHMs) form as by-products of the chlorination process that is used to kill or inactivate disease-causing microbes. Haloacetic Acids (HAA) are disinfection by-products monitored to determine compliance with EPA 's Disinfection By-products Rule.

EPA Allowable Limit or **Maximum Contaminant Level (MCL):** The highest level of contaminant allowed in drinking water.

EPA Ideal Goal or **Maximum Contaminant Level Goal (MCLG):** The level of contaminant in drinking water below which there is no known or expected health risk.

Levels in PUD Water: The highest level of compound detected in the PUD water supply. **ND** = No detection of substance.

Year Tested: Indicates the most recent year that a compound was tested. The state requires certain contaminants to be monitored less than once per year because concentrations do not vary significantly from year to year. Testing occurs between Jan. 1 and Dec. 31st.

Source of Compound: The common source of the compounds detected.

Complies?: A "**Yes**" indicates that the range detected is within EPA allowable limits. A "No" would require an **Action Level (AL)**, the concentration of a contaminant which, if exceeded, triggers treatment or other requirements a water system must follow.

- **Parts Per Million/Parts Per Billion (PPM/PPB):** These units describe the levels of detected contaminants.
- **Picocuries per liter (pCi/L):** This is a measure of radiation for radionuclide testing.

Inorganic Substances	**EPA Allowable Limit (MCL)**	**EPA Ideal Goal (MCLG)**	**Levels in PUD Water**	**Year Tested**	**Source**	**Complies?**
Nitrate (ppm)	10.0	10.0	0.6	2008	Erosion of natural & man-made deposits	Yes
Fluoride (ppm)	4.0	4.0	.9	2006	Erosion of natural deposits	Yes
Arsenic (ppb)	10.0	0	3.0	2006	Erosion of natural deposits	Yes
Radionuclides						
Beta/photon emitters (pCi/L)	50.0	no goal established	12.9	2003	Decay of natural & man-made deposits	Yes
Alpha emitters (pCi/L)	15.0	no goal established	1.8	2003	Erosion of natural deposits	Yes
Disinfection Byprod-						
Total Trihalomethanes (TTHMs) (ppb) *	80.0	no goal established	2.94	2008	By-product of chlorination	Yes
Haloacetic Acids (HAA) (ppb) *	60.0	no goal established	ND	2008	By-product of chlorination	Yes
Chlorine Residual (ppm)	4.0	4.0	.95	Range <u>Detected</u> .85—1.20	Measure of disinfectant added to water	Yes

	EPA Allowable Limit (MCL) (AL)	**EPA Ideal Goal (MCLG)**	**Homes Exceeding the AL**	**Year Tested**	**Source**	**Complies?**
Lead (ppb)	15.0	0	None	2008	Corrosion of household plumbing	Yes
Copper (ppm)	1.3	1.3	None	2008	Corrosion of household plumbing	Yes

ASOTIN COUNTY PUD —ANNUAL WATER QUALITY REPORT for the YEAR 2008

CUSTOMER PARTICIPATION ENCOURAGED

ASOTIN COUNTY PUD is a consumer-owned public utility. We welcome your views and encourage your participation in the decision-making process. The Board of Commissioners meet at 5:30 pm on the second and fourth Tuesday of each month at the PUD office located at 1500 Scenic Way, Clarkston, WA.

PUD
PUBLIC UTILITY DISTRICT
ASOTIN COUNTY

Commissioners

Gary Hicks, President
Don Nuxoll, Vice-President
Judy Ridge, Secretary

Manager
Tim Simpson

509-758-1010
Monday through Friday
7:30 AM to 4:30 PM
Staff on-call 24 hours a day

PO Box 605
1500 Scenic Way
Clarkston, WA 99403-0605

We are THE source of Water Quality information for Asotin County PUD Customers

We would be happy to answer any questions you may have regarding this WATER QUALITY REPORT Call us at 509-758-1010.

You can visit the PUD on the web at:
www.asotinpud.org

PUD
PUBLIC UTILITY DISTRICT
ASOTIN COUNTY
PO Box 605, Clarkston, WA 99403-0605

Important information about your Drinking Water!

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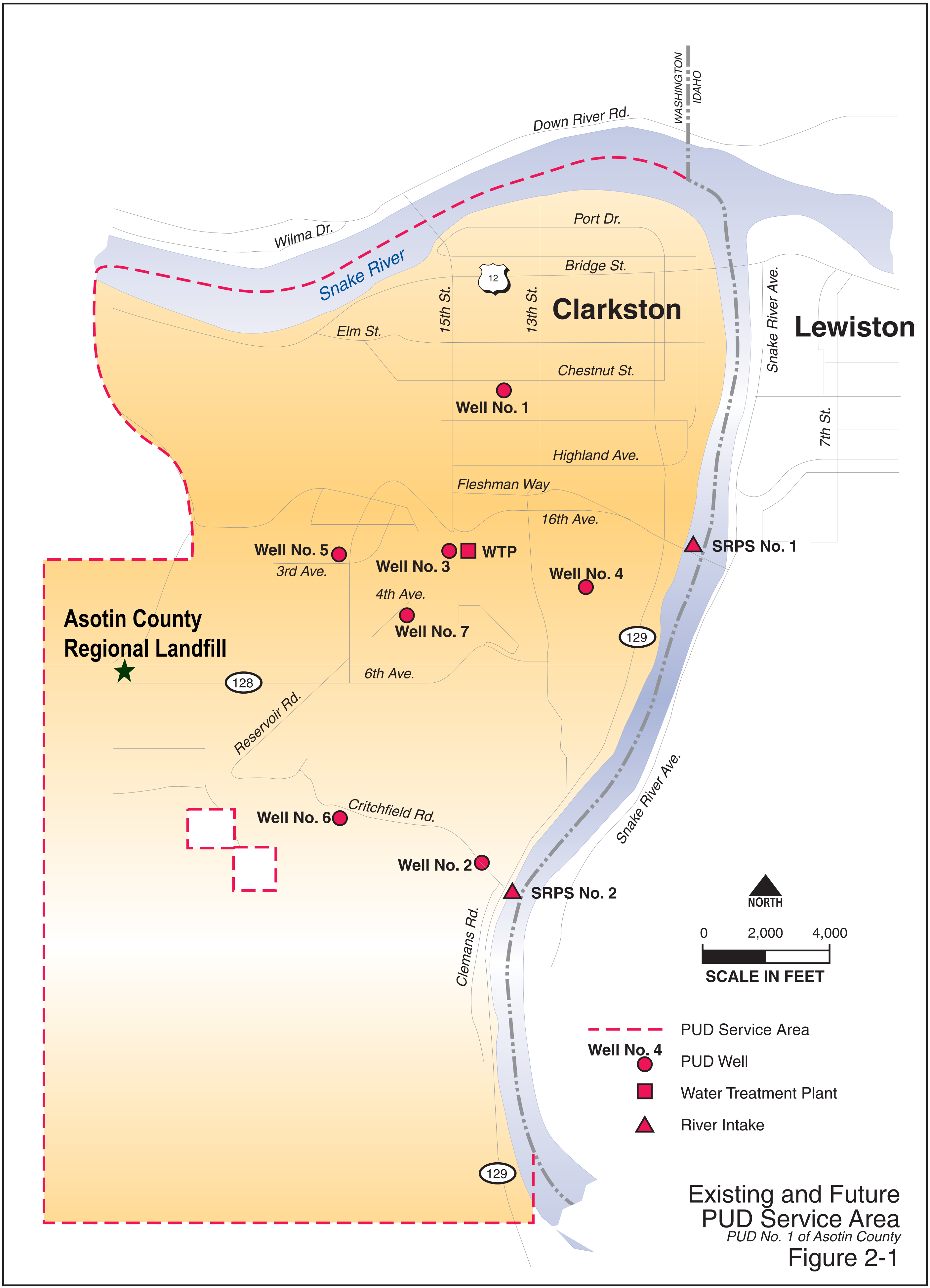
L - 2

PUD Municipal Well Map



Existing and Future
PUD Service Area
PUD No. 1 of Asotin County
Figure 2-1

WB012006005BOI

L - 3

PUD Municipal Sampling Results

ASOTIN COUNTY PUD CHEMICAL ANALYSIS RESULTS
EPA Regulated Contaminants

VOLATILE ORGANIC CHEMICALS	ug/L	WELL 1	WELL 2	WELL 3	WELL 5	WELL 6	WELL 7	UNDER MCL
VINYL CHLORIDE	2.0	ND	ND	ND	ND	ND	ND	YES
1, 1-DICHLOROETHYLENE	7.0	ND	ND	ND	ND	ND	ND	YES
1, 1, 1-TRICHLOROETHANE	200.0	ND	ND	ND	ND	ND	ND	YES
CARBON TETRACHLORIDE	5.0	ND	ND	ND	ND	ND	ND	YES
BENZENE	5.0	ND	ND	ND	ND	ND	ND	YES
1, 2-DICHLORETHANE	5.0	ND	ND	ND	ND	ND	ND	YES
TRICHLOROETHYLENE	5.0	ND	ND	ND	ND	ND	ND	YES
1, 4-DICHLOROBENZENE	75.0	ND	ND	ND	ND	ND	ND	YES
DICHLOROMETHANE	5.0	ND	ND	ND	ND	ND	ND	YES
TRANS 1, 2-DICHLOROETHYLENE	100.0	ND	ND	ND	ND	ND	ND	YES
CIS-1,2-DICHLOROETHYLENE	70.0	ND	ND	ND	ND	ND	ND	YES
1, 2 DICHLOROETHYLENE	5.0	ND	ND	ND	ND	ND	ND	YES
1, 2 DICHLOROPROPANE	5.0	ND	ND	ND	ND	ND	ND	YES
TOLUENE	1000.0	ND	ND	ND	ND	ND	ND	YES
1, 1, 2-TRICHLOROETHANE	5.0	ND	ND	ND	ND	ND	ND	YES
TETRACHLOROETHYLENE	5.0	ND	ND	ND	ND	ND	ND	YES
CHLOROBENZENE	100.0	ND	ND	ND	ND	ND	ND	YES
ETHYLBENZENE	700.0	ND	ND	ND	ND	ND	ND	YES
STYRENE	100.0	ND	ND	ND	ND	ND	ND	YES
1, 2-DICHLOROBENZENE	600.0	ND	ND	ND	ND	ND	ND	YES
1, 2, 4-TRICHLOROBENZENE	70.0	ND	ND	ND	ND	ND	ND	YES
TOTAL XYLENES	10000.0	ND	ND	ND	ND	ND	ND	YES
m/p XYLENES (MCL for TOTAL)	none	ND	ND	ND	ND	ND	ND	NA
o-XYLENES (MCL for TOTAL)	none	ND	ND	ND	ND	ND	ND	NA

Notes:
Table provided by the Asotin County Public Utility District (PUD)
Water samples collected July 2006 (the most recent available VOC data)
The 2 VOCs of primary concern at ACRL (trichloroethene and tetrachloroethene) highlighted above. Results for the other VOCs found in ACRL groundwater (1,1-dichloroethane, dichlorodifluoromethane, trichlorofluoromethane) not provided by Asotin Co. PUD

M-1 **Summary of Disproportionate Cost Analysis**
M-2 **Supplemental Remedial Investigation – Cost Assumptions**
M-3 **FS Alternative 1 – No Additional Action - Cost Assumptions**
M-4 **FS Alternative 2 – Source Removal via Landfill Gas Extraction – Cost Assumptions**
M-5 **FS Alternative 3 – Source Control via Groundwater Pump & Treat System – Cost Assumptions**

Appendix M
Feasibility Study—Disproportionate Cost Analysis Assumptions

M-1

Summary of Disproportionate Cost Analysis

Feasibility Study - Summary of Disproportionate Cost Analysis Assumptions per WAC 173-340-360.
Asotin County Regional Landfill

Description	Cost Type	Cost Frequency	Subtotal Costs ($)	Cost Type	Total Cost ($)	Comments:
Interim-Action #1:						
Supplemental Remedial Investigation: characterize the extent of groundwater contamination in areas further downgradient from landfill.	Capital Improvements	Once	$89,000 $34,000	Construction Engineering (design, well oversight, data report)	**$123,000**	Supplemental RI performed to assess extent of groundwater contamination, assess human health concerns, and supports any alternative selected. Assumes 4 new monitoring wells in areas downgradient in preferential flow zone. Includes 1 round of water quality testing and data summary report.
Alternative 1: No Additional Action						
No Additional Action: monitoring and institutional controls	Operation, Maintenance, Monitoring	Annually	$69,000 $21,000	County O&M Engineering (reporting)	**$90,000**	Assumes annual groundwater and landfill gas monitoring per Ch. 173-351 WAC, routine operation & maintenance, and institutional controls performed by County.
Alternative 2: Source Removal & Treatment, Institutional Controls, Containment						
Interim-Action #2: Landfill Gas Extraction Pilot-Test: assess landfill gas extraction performance via existing system in support of Alternative 2 as preferred long-term cleanup action and to support long-term treatement design.	Capital Improvements	Once	$60,000 $75,000	Construction Engineering (design & performance monitoring)	$135,000	Assumes a short-duration (6-8 week) pilot study from existing landfill gas system. Existing system includes 9 interior landfill gas wells as shown in Figure 2-3 (LFG-1 through LFG-9). Pilot-study assumes landfill gas is vented directly to atmosphere without treatment; long-term system includes landfill gas treatment.
Long-Term Landfill Gas Extraction & Treatment System: installation of supplemetnal interior and perimeter landfill gas extraction wells and construction of treatment system.	Capital Improvements	Once	$284,000 $286,000 $268,000	Construction (installation of supplemental landfill gas wells) Construction (construction of landfill gas treatment system) Engineering (oversight for well install and long-term system design/startup)	$838,000	Long-term landfill gas treatement system cost estimate assumes supplemental interior landfill gas wells are needed to compliment and optimize the existing extraction well network. Supplemental interior landfill gas extraction well costs assume 3 new interior landfill gas wells installed/screened within the waste trench material in western portion of landfill; and, 2 new landfill gas wells installed/screened in native soils below waste trench. Design depths illustrated Appendix M sheets and are based on subsurface conditions discussed in Section 5. Long-term treatment system incudes structure, piping, extraction-system (blower), and granular activated carbon (GAC) unit.
Long-Term Landfill Gas Extraction System Operations & Maintenance:	Operation, Maintenance, Monitoring	Annually	$90,000 $60,000	Alt 1 - County O&M Alt 2 - County O&M	$150,000	Assumes annual operation and maintenance of Alternative 2 (long-term landfill gas treatment system) and the baseline Alternative 1 (routine monitoring and institutional controls). Performed by County.
Alternative 2 Total Cost - Assumes Capital Improvements and 1 Year of O&M for Alt 1 and Alt 2:					**$1,123,000**	
Alternative 3: Groundwater Control & Treatment, Institutional Controls, Containment						
Groundwater Extraction Pilot Test: installation of extraction wells and performing pumping tests to assess site hydraulics for design and optimization of long-term groundwater pump and treatment system.	Capital Improvements	Once	$70,000 $68,000 $98,000	Construction (pilot study - install 2 new groundwater extraction wells) Construction (pilot-study groundwater pumping tests) Engineering (oversight for well install and pumping tests)	$236,000	Pilot-study cost estimate assumes installation of 2 new extraction wells completed in the preferential flow zones respectively near MW-14D and MW-05/05A. Pilot-study assumes two groundwater pumping tests performed to assess site-hydraulics and evaluate long-term groundwater extraction system design. Cost estimate for pilot-study assumes discharge water will be conveyed to on-site sewer which is routed to the Clarkston wastewater treatment system.
Long-Term Groundwater Pump and Treat System: assumes installation of long-term extraction system (new wells) and groundwater pump and treatment system.	Capital Improvements	Once	$638,000 $630,000 $495,000	Construction (installation of groundwater extraction wells) Construction (construction of treatment system) Engineering (oversight, design, and system startup)	$1,763,000	Long-term groundwater pump & treatment system cost estimate assumes 2 additional high-yield wells (4 total; including 2 installed during pilot-study) and 20 supplemental low-yield extraction wells to hydraulically contain and extract groundwater that would be conveyed to the long-term treatment system. Conceptual-level well locations, spacing, and extraction rate based on conceptual site model (as discussed in Section 5). Long-term groundwater pump & treatment system includes extraction wells, conveyance pipes, treatment structure, air-stripper, and GAC unit designed to treat an estimated 50 to 150 gpm (combined sustained rate) with groundwater concentrations in the range of 5 to 20 ppb (TCE).
Long-Term Groundwater Pump and Treat System Operations and Maintenance:	Operation, Maintenance, Monitoring	Annually	$90,000 $98,000	Alt 1 - County O&M Alt 3 - County O&M	$188,000	Assumes annual operation and maintenance of Alternative 3 (long-term groundwater pump & treat system) and the baseline Alternative 1 (routine monitoring and institutional controls). Performed by County.
Alternative 3 Total Cost - Assumes Capital Improvements and 1 Year of O&M for Alt. 1 and Alt. 3:					**$2,187,000**	

Notes:

1. See separately in Appendix M the conceptual design sketches and detailed cost assumption worksheets for supporting information.
2. Annual operation & maintenance (O&M) for Alt. 2 includes both Alt. 1 and Alt. 2 costs; similarly the annual O&M for Alt 3 includes the Alt. 1 and Alt 3 costs.
3. Costs and benefits compared are both quantitative and qualitative; cost assumptions also include best use of professional judgment [WAC 173-340-360(3)(e)(ii)(C)]

M-2

Supplemental Remedial Investigation – Cost Assumptions

Interim-Action #1: Supplemental Remedial Investigation

Item No.	Description	Unit	Estimated Quantity	Unit Price ($)	Extended Price ($)	Comments/Assumptions:
CONSTRUCTION SERVICES:						
1	Mobilization to/from site	LS	1	$1,200	$1,200	Based on Spokane area contractor mobilization fees
2	Drilling and Monitoring Well Installation	LF	470	$120	$56,400	8-inch borehole; air-rotary; standard 2-inch diam. resource protection mon well
3	Monitoring Well Construction Materials	EA	4	$1,700	$6,800	2-inch Sch. 40 PVC; 10-slot PVC screen; concrete mon & steel stickup
4	Management of Investigative Derived Waste	EA	4	$250	$1,000	Soils/drill cuttings disposed of into active cells; purge water routed to on-site sewer.
5	Bonds, Insurance, H&S, Cleanup, Closeout	5%	--	--	$3,220	
CONSTRUCTION SUBTOTAL:					**$68,620**	
6	Contingency	20%	--	--	$13,724	
7	Sales Tax (labor and materials)	7.50%	--	--	$6,176	
CONSTRUCTION TOTAL:					**$88,520**	
ENGINEERING SERVICES:						
1	Engineering Design	20%	--	--	$17,704	Assume 20% of construction total
2	Engineering/Contractor Oversight	DAYS	12	$1,150	$13,800	Assume 60ft/day and 1 day each for well install (12 days).
3	Laboratory Testing (Soils and water)	LS	1	$1,800	$1,800	Assumes physical properties soils testing & water-quality sampling & analysis.
ENGINEERING SERVICES TOTAL:					**$33,304**	
CONSTRUCTION AND ENGINEERING TOTAL:					**$121,824**	**Capital Cost**

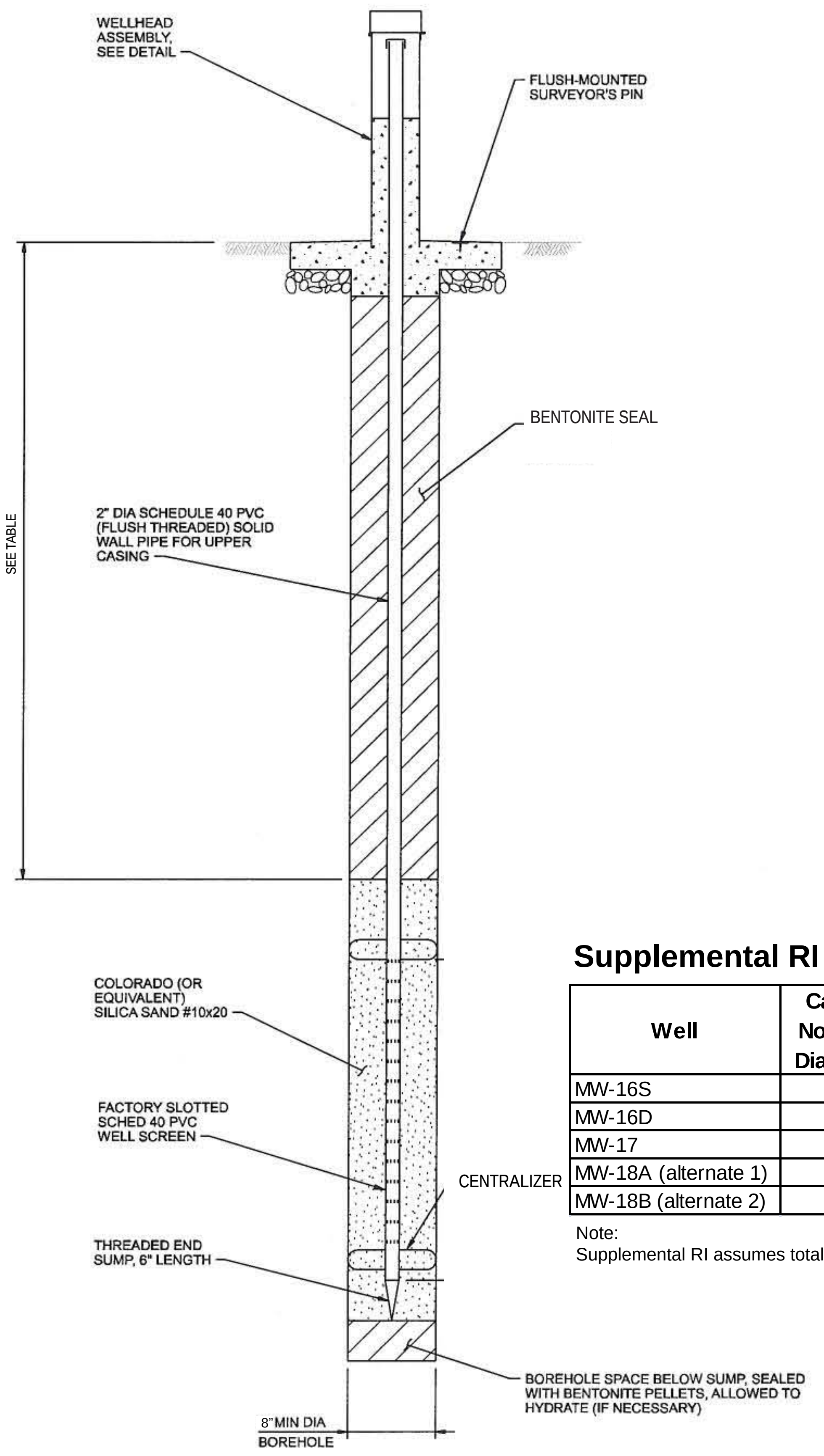
Notes and Assumptions:

- See separately the design schematic and construction detail summary for supplemental RI (included in Appendix M).
- General locations in preferential flow zone downgradient near Dry Creek. Drilling & testing sequence: MW-16D (deep), MW-16S (shallow), MW-17, and then contingency MW-18 "MW-ALT-A or MW-ALT-B".
- Drilled via air-rotary casing advance system with 8-inch diameter temporary casing.
- Lithology characterized via SPT's every 5-ft increment at depths below saturation; grab-samples collected in unsat. zone.
- Wells completed as WAC 173-160 Resource Protection Monitoring Wells (2-inch diam sch. 40 casing & factory-slotted screen; 10-ft screen adjacent to water-bearing zone of interest).
- Approach will include drilling & lithologic characterization, well development and hydraulic evaluation, and then 24-hour rush-turnaround-time water-quality sampling.
- Footage estimates as follows: [total drilling estimated at 470 LF described below]

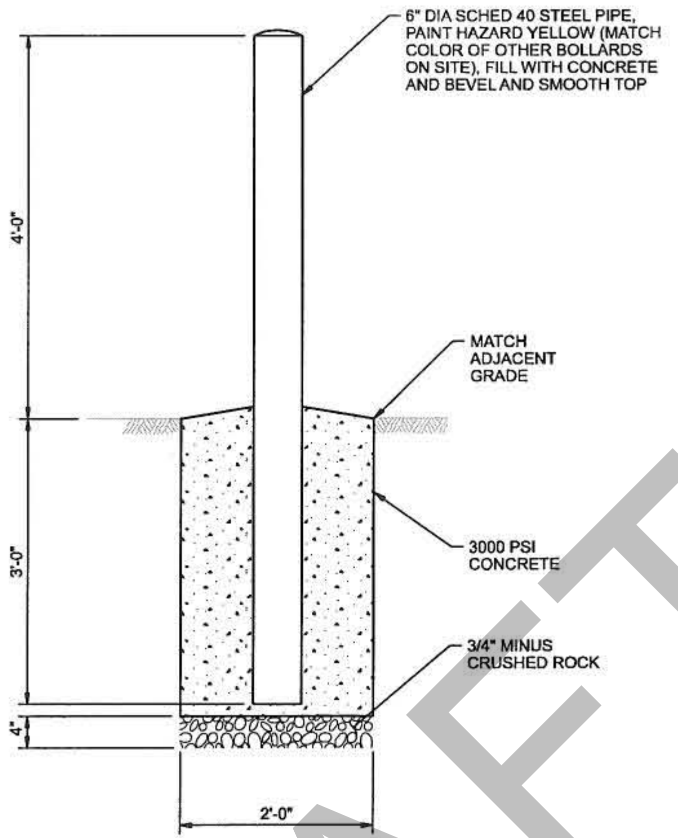
Locations (see map):	**Est. FT**	**Drilling Objectives:**
MW-16D:	75	Drilled to identify lithlogy and lower-confining zone conditions (i.e. presense, absence of clay; top of basalt if clay not present).
MW-16S:	25	Drilled to sample "first-water" conditions similar to MW-07 and MW-14S.
MW-17	300	Drilled to characterize lighology, ascertain hydralics and preferential flow-theory, identify lower-confing zone conditions.
*MW-18 ("ALT-A")	70	If conc. at MW-16S AND D are low-level; drill ALT-A location as deep installation.
*MW-18 ("ALT-B")	70	If conc. at MW-16S AND -16D are elevated: drill ALT-B location to characterize lithology and water quality in areas further downgradient.

* Denotes contingent location based on water-quality sampling results; only install 1 of these 2 "alt" locations.

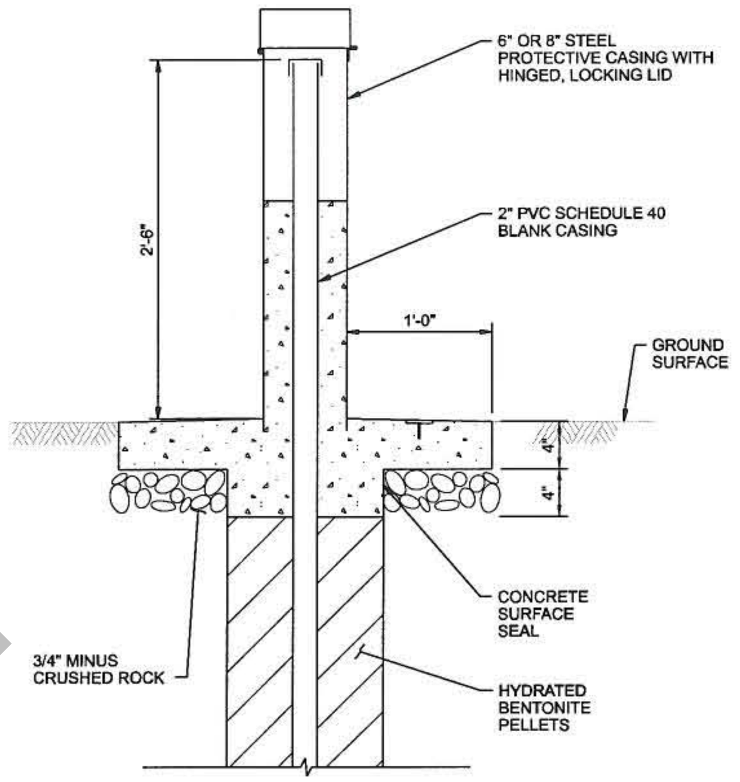
- Schedule: assume 60 ft/day at 470 ft total plus 1 day each for install = 12 days.



TYPICAL GROUNDWATER MONITORING WELL DESIGN



PROTECTIVE BOLLARD
NTS



WELLHEAD ASSEMBLY
NTS

Supplemental RI Costing Assumptions Detail

Well	Casing Nominal Diam (in)	Borehole Depth (ft bgs)	Borehole Diam. (in)	Casing Type	Casing Length (ft)	Screen Length (ft)	Screen Slot (in)	Comment
MW-16S	2	25	Min. 8	Sch.40PVC	15	10	0.01	Completed First-Water
MW-16D	2	75	Min. 8	Sch.40PVC	65	10	0.01	Completed at Base of Gravel Unit (if applicable)
MW-17	2	300	Min. 8	Sch.40PVC	280	20	0.01	Completed First-Water
MW-18A (alternate 1)	2	70	Min. 8	Sch.40PVC	60	10	0.01	Alt 1: Completed at Base of Gravel Unit (companion of MW-15)
MW-18B (alternate 2)	2	70	Min. 8	Sch.40PVC	60	10	0.01	Alt 2. Completed First-Water (pending field findings)

Note:
Supplemental RI assumes total of 4 wells; only one of MW-18A/B assumed.

SUPPLEMENTAL RI COSTING ASSUMPTIONS
TYPICAL GROUNDWATER MONITORING WELL
Asotin County Regional Landfill
Asotin County, Washington

FILENAME: GPGW c04.DGN PLOT DATE: 2/3/2009

M-3

FS Alternative 1 – No Additional Action - Cost Assumptions

Alternative 1 - No Additional Action. Monitoring, Institutional Controls, and Containment

Monitoring, Institutional Controls, and Containment

Item No.	Description	Unit	Estimated Quantity	Unit Price ($)	Extended Price ($)	Comments/Assumptions:
OPERATIONS, MAINTENANCE, MONITORING: (performed BY COUNTY)						
1	Operations and Maintenance	YR	1	$10,000	$10,000	Closed landfill O&M; fence, cap, institutional controls, cover inspections, LFG system, etc.
2	Monitoring & Reporting (gw and gas labor)	YR	1	$24,000	$24,000	12 wells per WAC 173-351-430/440 Reqts, and LFG Monitoring 2X/year
3	Monitoring & Reporting (lab fees)	YR	1	$35,000	$35,000	Includes lab testing fees and shipping/handling.
OPERATIONS AND MAINTENANCE TOTAL:					**$69,000**	
ENGINEERING SERVICES:						
1	Engineering/Hydrogeologic Services	30%	--	--	$20,700	Annual groundwater data management and reporting assistance
ENGINEERING SERVICES TOTAL:					**$20,700**	
OPERATIONS/MAINTENANCE AND ENGINEERING TOTAL:					**$89,700**	**Annual O&M Costs to County**

Notes and Assumptions:

- Laboratory testing and reporting fees based on 2009 costs.

M-4

FS Alternative 2 – Source Removal via Landfill Gas Extraction – Cost Assumptions

Alternative 2 - Source Removal, Institutional Controls, and Containment.

Interim-Action #2: Pilot Study via Existing Landfill Gas Extraction Wells

Item No.	Description	Unit	Estimated Quantity	Unit Price ($)	Extended Price ($)	Comments/Assumptions:
CONSTRUCTION AND ENGINEERING						
CONSTRUCTION SERVICES:						
1	Mobilization to/from site	5%	--	--	$1,575	5% of contractor's work items except for blower rental
2	Bonds, Insurance, H&S, Cleanup, Closeout	5%	--	--	$1,575	5% of contractor's work items except for blower rental
3	Submittals, layout drawings, procurement	LS	1	$5,000	$5,000	
4	Pre-Engineered Skid-Mounted Blower (rental)	WK	6	$500	$3,000	10 HP Blower; estimate (may choose to buy)
5	Equipment Pad	LS	1	$2,500	$2,500	Earthwork, pad area prep, gravel, and reinforced concrete pad
6	P-Trap/Sump Drain w/ valve	LS	1	$7,500	$7,500	HDPE P-Trap and 48-inch Diam Manhole
7	Valves	EA	2	$2,500	$5,000	10" valve on existing header and new tee
8	Header Pipe Extension/Fittings/Sampling Ports	LS	1	$5,000	$5,000	Route piping from existing header with tee to pilot test blower unit
9	Temporary Stack Assembly	LS	1	$3,500	$3,500	Build and secure stack assembly
10	Electrical Feeder/Utility Power Supply	LS	1	$8,000	$8,000	Power company utility connection (will service future treatment bldg too)
Construction Subtotal					**$42,650**	
11	Contingency	30%	--	--	$12,795	
12	Sales Tax (labor and materials)	7.50%	--	--	$4,158	
CONSTRUCTION TOTAL:					**$59,603**	
Engineering Services						
1	Engineering/Design/Coordination	30%	--	--	$17,881	Design/Build-type level drawings (specs on drawings)
2	System Commissioning/Startup/Field Services	HRS	100	$130	$13,000	Assumes coordination for startup and 1 week oversight
3	Weekly Testing/Monitoring/Coordination	HRS	140	$130	$18,200	Assumes weekly visists during 6-week operation
4	Testing Supplies/Consumables/Lab Testing	LS	1	$5,000	$5,000	Sampling & lab fees for system performance
5	Reporting	HRS	24	$130	$3,120	
Engineering Services Subtotal					**$57,201**	
6	Contingency	30%			$17,160	
ENGINEERING SERVICES TOTAL:					**$74,361**	
CONSTRUCTION AND ENGINEERING TOTAL:					**$133,965**	**Capital Costs**

Notes and Assumptions:

- Pilot study assumes extraction of landfill gas via existing landfill gas system; gas vented directly to atmosphere for 6-week duration.

Alternative 2 - Source Removal, Institutional Controls, and Containment.

Installation of Supplemental Long-Term Landfill Gas Extraction Wells

Item No.	Description	Unit	Estimated Quantity	Unit Price ($)	Extended Price ($)	Comments/Assumptions:
CONSTRUCTION AND ENGINEERING						
CONSTRUCTION SERVICES:						
1	Mobilization to/from site	LS	1	$20,000	$20,000	Quote from drilling contractor via bucket-auger
2	Bonds, Insurance, H&S, Cleanup, Closeout	5%	--	--	$8,475	5% of bid items except for mobilization
3	Submittals, layout drawings, procurement	LS	1	$5,000	$5,000	
4	Drilling and Landfill Gas Extraction Well Installation	LF	430	$150	$64,500	Quote from drilling contractor via bucket-auger (36-inch borehole)
5	Management of Investigative Derived Waste	EA	5	$200	$1,000	Soils/refuse disposed of into active cell area (lined waste unit)
6	Extraction Well Surface Completions/Monitoring Assembly	EA	5	$8,000	$40,000	Wellhead, concrete pad, pipe support casing, etc.
7	10-inch LFG Header/Manifold Pipe	LF	800	$50	$40,000	Use pilot-study tie-in and condensate trap; extension to wells
8	6-inch LFG Lateral Pipes	LF	800	$30	$24,000	Laterals from header/manifold to wellheads.
Construction Subtotal					**$202,975**	
9	Contingency	30%	--	--	$60,893	
10	Sales Tax (labor and materials)	7.50%	--	--	$19,790	
CONSTRUCTION TOTAL:					**$283,658**	
Engineering Services						
1	Engineering Design/SDC/Sub Procurement	25%	--	--	$70,914	Assume 25% of construction total
2	Engineering/Contractor Oversight	HRS	120	$130	$15,600	Assumes 2 days per location plus 2 days contingency (12 days total); 10 hrs per day
3	Reporting	HRS	40	$130	$5,200	Documentation of installation detail
Engineering Services Subtotal					**$91,714**	
4	Contingency	30%			$27,514	
ENGINEERING SERVICES TOTAL:					**$119,229**	
CONSTRUCTION AND ENGINEERING TOTAL:					**$402,886**	**Capital Costs**

Notes:

- See separately the design schematic and construction detail summary for long-term landfill gas extraction wells (included in Appendix M).
- Long-term estimate assumes total of 5 new landfill gas extraction wells installed in western portion of closed landfill (3 screened in refuse/trenches; 2 screened deeper in native soils below trenches/refuse).
- Engineer/hydrogeologist staff on-site to observe conditions and verify completion objectives.
- Design assumes bucket-auger drilling of 36-inch borehole and 12-inch diam Sch. 80 PVC casing and screen assembly.

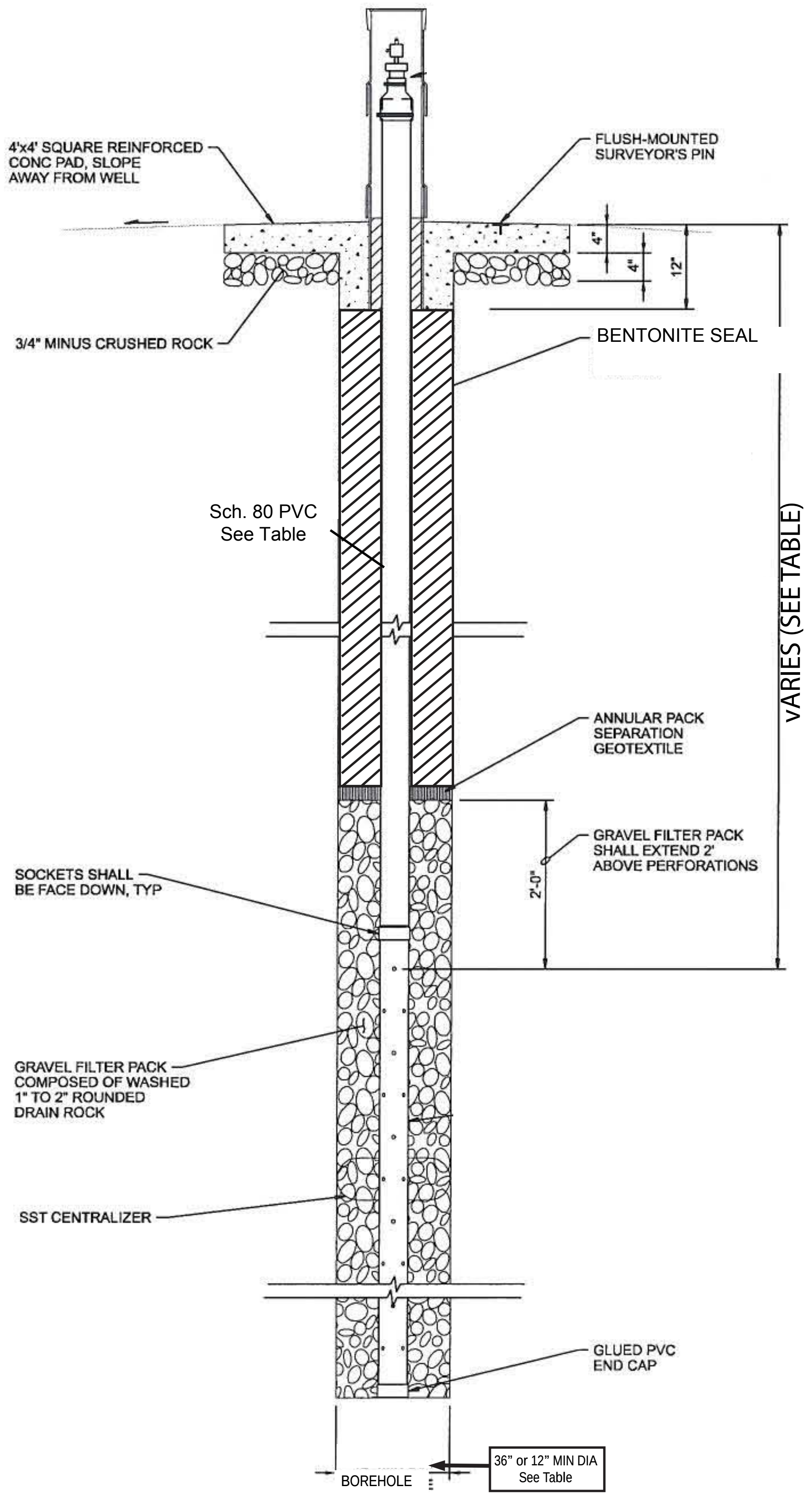
Alternative 2 - Source Removal, Institutional Controls, and Containment.

Installation of Long-Term Landfill Gas Treatment System (Building, GAC Unit, Utilities)

Item No.	Description	Unit	Estimated Quantity	Unit Price ($)	Extended Price ($)	Comments/Assumptions:
CONSTRUCTION AND ENGINEERING						
CONSTRUCTION SERVICES:						
1	Mobilization to/from site	10%	--	--	$16,000	Mobilization fee for contractor to construct LFG Treatment System Building
2	Bonds, Insurance, H&S, Cleanup, Closeout	5%	--	--	$8,000	5% of bid items except for mobilization
3	Submittals, layout drawings, procurement	LS	1	$5,000	$5,000	
4	LFG Treatment System Building	SF	500	$200	$100,000	Includes foundation, structure and utilities (HVAC, plumbing; size roughly 20x25 ft)
5	Pre-Engineered GAC Unit (includes all related parts)	LS	1	$25,000	$25,000	Assumes roughly $2000/HP at 10HP system with ~30% contingency for delivery
6	Instrumentation and Controls/Electrical Systems	LS	1	$25,000	$25,000	
7	Utilities Connections/Miscellaneous	LS	1	$10,000	$10,000	
8	Mechanical, plumbing, fire protection.	20%	--	--	$32,000	Assumes 20% of items 4, 5, 6, and 7.
Construction Subtotal					**$221,000**	
9	Contingency	20%	--	--	$44,200	
10	Sales Tax (labor and materials)	7.50%	--	--	$19,890	
CONSTRUCTION TOTAL:					**$285,090**	
ENGINEERING SERVICES:						
1	Engineering Design/SDC	25%	--	--	$71,273	Assume 25% of construction total.
2	System Commissioning/Startup	HRS	200	$130	$26,000	
3	Reporting/Closeout	HRS	50	$130	$6,500	
4	Operations and Maintenance Plan	HRS	80	$130	$10,400	
Engineering Services Subtotal					**$114,173**	
5	Contingency	30%			$34,252	
ENGINEERING SERVICES TOTAL:					**$148,424**	
OPERATIONS AND MAINTENANCE: (ANNUAL O&M PERFORMED BY COUNTY)						
1	Equipment replace/repairs	MO	12	$500	$6,000	Miscellaneous maintenance and troubleshooting
2	Electrical	MO	12	$500	$6,000	Monthly electrical fees for operating extraction & treatment system
3	Carbon Media Replacement (GAC swap)	LBS/YR	2000	$5	$10,000	Swap out carbon media 1/year
4	Performance Monitoring (influent/effluent air lab fee)	QRTLY	4	$1,000	$4,000	Assume Quarterly Sampling by County
5	Reporting/Consulting	HRS	150	$130	$19,500	Annual reporting reviews, consulting, etc.
OPERATIONS AND MAINTENANCE SUBTOTAL: (ANNUAL O&M PERFORMED BY COUNTY)					**$45,500**	
6	Contingency	30%	--	--	$13,650	
OPERATIONS AND MAINTENANCE TOTAL:					**$59,150**	**O&M Costs (for COUNTY) Annually**
CONSTRUCTION AND ENGINEERING SERVICES TOTAL:					**$433,514**	**Capital Costs for Long-Term LFG Extraction and Treatment System**

Notes and Assumptions:

- Approximate location of long-term landfill gas treatment system assumed in central/interior portion of closed landfill.



TYPICAL LANDFILL GAS EXTRACTION WELL

ATL. 2 - LANDFULL GAS EXTRACTION WELL CONSTRUCTION DETAIL

LWG	Casing Nominal Diam (in)	Top Elev. (ft msl)	Bott. Elev. (ft msl)	Borehole Depth (ft bgs)	Borehole Diam. (in)	Casing Type	Casing Length	Perf. Length (ft)	Comment
LGW-13	12	1270	1200	70	36	Sch.80PVC	70	40	Screened in Refuse/Trench
LGW-14	12	1270	1200	70	36	Sch.80PVC	70	40	Screened in Refuse/Trench
LWG-15	12	1270	1200	70	36	Sch.80PVC	70	40	Screened in Refuse/Trench
LGW-16	6	1270	1160	110	12	Sch.80PVC	110	30	Screened in Native Soil Below Refuse
LGW-17	6	1270	1160	110	12	Sch.80PVC	110	30	Screened in Native Soil Below Refuse

ALTERNATIVE 2 COSTING ASSUMPTIONS
TYPICAL INTERIOR LANDFILL GAS EXTRACTION WELL
Asotin County Regional Landfill
Asotin County, Washington

M-5

FS Alternative 3 – Source Control via Groundwater Pump & Treat System – Cost Assumptions

Alternative 3 - Groundwater Control and Treatment, Institutional Controls, and Containment.

Pilot Study - Drilling and Installation of 2 Groundwater Extraction Wells to Conduct Pumping Tests.

Item No.	Description	Unit	Estimated Quantity	Unit Price ($)	Extended Price ($)	Comments/Assumptions:
CONSTRUCTION AND ENGINEERING						
CONSTRUCTION SERVICES:						
1	Mobilization to/from site	LS	1	$10,000	$10,000	
2	Bonds, Insurance, H&S, Cleanup, Closeout	5%	--	--	$1,875	
3	Drilling and Extraction Well Installation	LF	200	$150	$30,000	12-inch diam. borehole; depth est. at 130 and 70 ft bgs
4	Extraction Well Construction Materials	EA	2	$3,500	$7,000	8-inch diam. Sch. 80 PVC casing and compatible screen; 10 ft, 30 slot.
5	Management of Investigative Derived Waste	EA	2	$250	$500	Soils/drill cuttings disposed of into active cells; purge water routed to on-site sewer.
CONSTRUCTION SUBTOTAL:					**$49,375**	
5	Contingency	30%	--	--	$14,813	
6	Sales Tax (labor and materials)	7.50%	--	--	$4,814	
CONSTRUCTION TOTAL:					**$69,002**	
ENGINEERING SERVICES:						
1	Engineering Design/Procurement	30%	--	--	$20,700	Assume 30% of construction total
2	Engineering/Contractor Oversight	HRS	100	$130	$13,000	Assume 50ft/day drilling plus 2 days each for installation (10 days total)
3	Engineering/Documentation of Installation	HRS	32	$130	$4,160	
Engineering Services Subtotal					**$37,860**	
3	Contingency	30%			$11,358	
ENGINEERING SERVICES TOTAL:					**$49,219**	
CONSTRUCTION AND ENGINEERING TOTAL:					**$118,220**	**Capital Costs**

Notes and Assumptions:

- Pilot-study assumes 2 new groundwater extraction wells installed in higher-conductivity paleochannel respectively near existing nested well pairs MW-14S/D and MW-05/05A.
- See separately the design schematic and construction detail summary for pilot-study extraction wells (included in Appendix M).
- Engineer/hydrogeologist staff on-site to observe subsurface conditions and verify extraction well completion objectives.
- Survey to be performed by Asotin County and not included above.

Alternative 3 - Groundwater Control and Treatment, Institutional Controls, and Containment.

Pilot Study - Groundwater Pumping Tests Conducted at 2 Locations

Item No.	Description	Unit	Estimated Quantity	Unit Price ($)	Extended Price ($)	Comments/Assumptions:
CONSTRUCTION AND ENGINEERING						
CONSTRUCTION SERVICES:						
1	Mobilization to/from site	LS	1	$10,000	$10,000	Contractor Mobe to/from site at 2 site locations
2	Bonds, Insurance, H&S, Cleanup, Closeout	5%	--	--	$1,840	
3	Test setup: install temporary pump, flow meter, discharge pipe	EA	2	$10,000	$20,000	Pumps compatible with 8-inch diam. casing and flows of 50 to 250 gpm
4	Conduct step-rate pumping test & recovery	EA	2	$2,100	$4,200	Two step-rate tests; each test 1 day/12 hrs; contractor est. $175/hr.
5	Conduct constant-rate, 24-hr pumping test & recovery	EA	2	$6,300	$12,600	Two const. rate tests; each test 3 days/36 hrs; contractor est. $175/hr.
CONSTRUCTION SUBTOTAL:					**$48,640**	
6	Contingency	30%	--	--	$14,592	
7	Sales Tax (labor and materials)	7.50%	--	--	$4,742	
CONSTRUCTION TOTAL:					**$67,974**	
ENGINEERING SERVICES:						
1	Engineering Design/SDC (pre-test design & instrumentation)	20%	--	--	$13,595	Assume 20% of construction total; transducers & setup.
2	Engineering/Contractor Oversight	HRS	100	$130	$13,000	Assumes 1 day setup, 1 day step test, and 3 days contstant rate.
3	Engineering/Hydrogeologic Evaluations (post-test evaluation)	HRS	80	$130	$10,400	Assume 30% to evaluate data and design long-term system
Engineering Services Subtotal					**$36,995**	
4	Contingency	30%			$11,098	
ENGINEERING SERVICES TOTAL:					**$48,093**	
CONSTRUCTION AND ENGINEERING TOTAL:					**$116,068**	**Capital Costs**

Notes and Assumptions:

- Assumes contractor will manage discharge water and route to on-site sewer during Pilot-Test Study (no treatment system required for Pilot Study).
- Engineering/hydrogeologic support staff on-site to observe test, instrument nearby monitoring wells, and verify test parameters and measurements.
- Surveying to be performed by Asotin County and not included above.

Alternative 3 - Groundwater Control and Treatment, Institutional Controls, and Containment.

Long-Term Groundwater Pump & Treat System - Supplemental Drilling and Extraction Well Installation.

Item No.	Description	Unit	Estimated Quantity	Unit Price ($)	Extended Price ($)	Comments/Assumptions:
CONSTRUCTION AND ENGINEERING						
CONSTRUCTION SERVICES:						
1	Mobilization to/from site	LS	1	$5,000	$5,000	
2	Bonds, Insurance, H&S, Cleanup, Closeout	5%	--	--	$21,230	
3	Submittals, layout drawings, procurement	LS	1	$5,000	$5,000	
4	Drilling (12-inch borehole) and Extraction Well Installation (6-inch diam. casing)	LF	160	$150	$24,000	12-inch borehole; depth 90 ft bgs; two additional locations near MW-10 and MW-04.
5	Management of Investigative Derived Waste (IDW)	EA	22	$200	$4,400	Soils/drill cuttings disposed of into active cells; purge water to on-site sewer.
6	Extraction Well Construction Materials (6-inch diam. wells; Sch.80PVC)	EA	2	$4,000	$8,000	6-inch diam. Sch. 80 PVC casing & factory-slot screen; 10 or 20 ft length, 30-slot.
7	Extraction Well Pumps, Piping, Electrical (submersible pumps for 6-inch diam. wells)	EA	4	$3,500	$14,000	Assumed long-term rate of 50-150 gpm per well; Grunfos-type, est. from GEOTECH.
8	Conveyance pipe for high-yield wells (assume 1500 ft; 6-inch diam. HDPE)	LF	1500	$30	$45,000	Main-line conveys discharge to treatment plan (peak flows up to 200gpm)
9	Drilling (8-inch borehole) and Extraction Well Installation (4-inch diam. casing)	LF	1235	$120	$148,200	Estimated 20 wells installed along downgradient toe; well spacing assumes 100 ft apart.
10	Extraction Well Construction Materials (4-inch diam. wells; Sch.80PVC)	EA	20	$1,700	$34,000	4-inch diam PVC Sch 80 casing; continuous 10ft screen, 10 or 20 slot.
11	Extraction Well Pumps, Piping, Electrical (low-yield submersibles for 4-inch wells)	EA	20	$2,000	$40,000	Assumed long-term rate of 0.5-20 gpm per well; Grunfos-type, est. from GEOTECH.
12	Conveyance line for low-yield wells (assume 1500 ft; 2" HDPE)	LF	1000	$35	$35,000	Connects low-yield discharge to nearby main-line; assume 50ft/location.
13	Monitoring Vaults, sampling ports	EA	24	$3,000	$72,000	Wellhead monitoring vaults, sampling ports, valves, etc.
CONSTRUCTION SUBTOTAL:					**$455,830**	
14	Contingency	30%	--	--	$136,749	
15	Sales Tax (labor and materials)	7.50%	--	--	$44,443	
CONSTRUCTION TOTAL:					**$637,022**	
ENGINEERING SERVICES:						
1	Engineering Design	20%	--	--	$127,404	Assume 20% of construction total
2	Engineering/Contractor Oversight	DAYS	30	$1,150	$34,500	Assumes 50 ft/day plus half-day each for install (30 days oversight)
Engineering Services Subtotal					**$161,904**	
3	Contingency	30%			$48,571	
ENGINEERING SERVICES TOTAL:					**$210,476**	
CONSTRUCTION AND ENGINEERING TOTAL:					**$847,498**	**Capital Costs**

Notes and Assumptions:

- See separately the design schematic and construction detail summary for long-term extraction wells (included in Appendix M).
- Long term design assumes 2 types of extraction wells: (1) relatively high-yield wells in preferential flow zones (6-inch diam. casing), and (2) low yield wells in uppermost portion of saturated unit (4-inch diam. casing).
- Hydraulic evaluations suggest radial influence in high-yield zones up to 400 ft; and in low-yield zones up to 30 ft. Well spacing for long-term design assumed 100 ft spacing (to be refined from pilot test).
- Based on hydraulic evaluations; a total of 20 low-yield wells and 4 high-yield wells are assumed for hydaulic control for the long-term extraction system (note; 2 of the high-yield wells installed during pilot study).
- Extent of paleochannel and related site hydraulics and boudary effects for long-term extraction design uncertain at this time; pilot-test results would be used to refine long-term extraction rate & design.
- Surveying to be performed by Asotin County and not included.

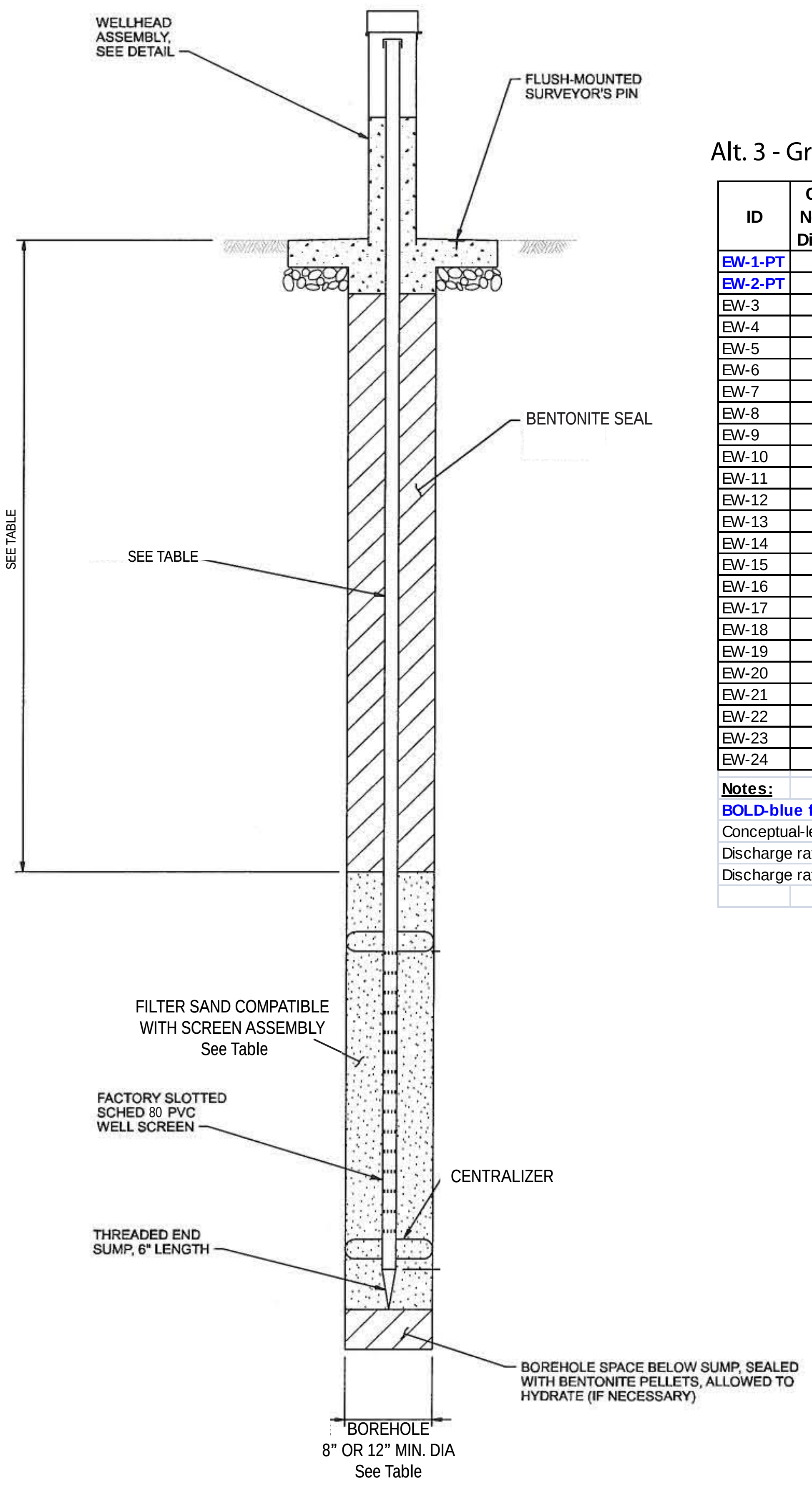
Alternative 3 - Groundwater Control and Treatment, Institutional Controls, and Containment.

Long-Term Groundwater Pump & Treat System - Building, Air-Stripper, GAC Unit, and Utilities

Item No.	Description	Unit	Estimated Quantity	Unit Price ($)	Extended Price ($)	Comments/Assumptions:
CONSTRUCTION AND ENGINEERING						
CONSTRUCTION SERVICES:						
1	Mobilization to/from site	10%	--	--	$33,000	Contractor construction mobilization fee for structure.
2	Bonds, Insurance, H&S, Cleanup, Closeout	5%	--	--	$16,500	
3	Submittals, layout drawings, procurement	LS	1	$5,000	$5,000	
4	Treatment System Building & Concrete Pad	SF	1000	$200	$200,000	Includes foundation, structure and utilities (HVAC, plumbing; size roughly 20x30 ft)
5	Pre-Engineered Air Stripper (includes all related parts)	LS	1	$30,000	$30,000	Design for peak flows of up to 200 gpm (total); quote from Branch Environmental
6	Pre-Engineered GAC Unit (includes all related parts)	LS	1	$15,000	$15,000	Design GAC Unit influent conc. up to 20 ppb; quote pending from Branch Env.
7	Instrumentation and Controls/Electrical Systems	LS	1	$35,000	$35,000	Control Panels, I&C, etc.
8	Utilities Connections/Miscellaneous	LS	1	$50,000	$50,000	Includes surge tank, pumps, water lines, air lines, blower
9	Mechanical, plumbing, and fire protection	20%	--	--	$66,000	Assumes 20% of items 4, 5, 6, 7, and 8.
CONSTRUCTION SUBTOTAL:					**$450,500**	
10	Contingency	30%	--	--	$135,150	
11	Sales Tax (labor and materials)	7.50%	--	--	$43,924	
CONSTRUCTION TOTAL:					**$629,574**	
ENGINEERING SERVICES - CAPITAL COSTS:						
1	Engineering Design	25%	--	--	$157,393	Assume 25% of construction total.
2	Regulatory Support for Discharged Water	HRS	40	$130	$5,200	Regulatory support for NPDES discharge permit/modification
3	System Commissioning/Startup	HRS	250	$130	$32,500	
4	Reporting/Closeout	HRS	80	$130	$10,400	
5	Operations and Maintenance Plan	HRS	100	$130	$13,000	
Engineering Services Subtotal					**$218,493**	
6	Contingency	30%			$65,548	
ENGINEERING SERVICES TOTAL:					**$284,041**	
OPERATIONS AND MAINTENANCE: (ANNUAL O&M PERFORMED BY COUNTY)						
1	Equipment replacement/repairs	MO	12	$1,200	$14,400	Miscellaneous maintenance and troubleshooting
2	Electrical	MO	12	$1,600	$19,200	Monthly electrical fees for extraction & treatment system
3	Carbon Media Replacement (GAC swap)	LBS/YR	2000	$5	$10,000	Swap out carbon media 1/year
4	Performance Monitoring (influent/effluent air & gw lab fee)	YR	4	$3,000	$12,000	Assume Quarterly Sampling
5	Reporting/Consulting	HRS	150	$130	$19,500	
OPERATIONS AND MAINTENANCE SUBTOTAL: (ANNUAL O&M PERFORMED BY COUNTY)					**$75,100**	
6	Contingency	30%	--	--	$22,530	
OPERATIONS AND MAINTENANCE TOTAL:					**$97,630**	**O&M Costs (for COUNTY) Annually**
CONSTRUCTION AND ENGINEERING SERVICES TOTAL:					**$913,615**	**Capital Costs for GW Extraction and Treatment System**

Notes and Assumptions:

- Location of long-term landfill gas treatment system assumed in central portion of closed landfill interior.
- Surveying to be performed by Asotin County and not included.



TYPICAL GROUNDWATER EXTRACTION WELL DESIGN

Alt. 3 - Groundwater Pump & Treat System - Extraction Well Construction Detail Summary

ID	Casing Nominal Diam (in)	Borehole Diam. (in)	Top Elev. (ft msl)	Bott. Elev. (ft msl)	Borehole Depth (ft bgs)	Casing Type	Casing Length (ft)	Screen Length (ft)	Screen Slot (in)	Max. Design Discharge (gpm)	Comment
EW-1-PT	**8**	**12**	**1120**	**1045**	**75**	**Sch.80PVC**	**60**	**15**	**0.03**	**250**	**Screened base of Gravel-Unit in clean sand - 150 ft away from MW-14D**
EW-2-PT	**6**	**12**	**1175**	**1070**	**105**	**Sch.80PVC**	**75**	**30**	**0.02**	**200**	**Screened upper portin of Gravel Unit in sand - south of MW-05/05A**
EW-3	6	12	1190	1100	90	Sch.80PVC	70	20	0.02	150	Screened upper portion of Gravel Unit in sand - near GP-7.
EW-4	6	12	1160	1090	70	Sch.80PVC	50	20	0.02	150	Screened mid to upper portion of Gravel Unit in sand - east of GP-6.
EW-5	4	8	1190	1100	90	Sch.80PVC	80	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-6	4	8	1190	1100	90	Sch.80PVC	80	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-7	4	8	1190	1100	90	Sch.80PVC	80	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-8	4	8	1180	1100	80	Sch.80PVC	70	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-9	4	8	1180	1100	80	Sch.80PVC	70	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-10	4	8	1175	1100	75	Sch.80PVC	65	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-11	4	8	1175	1100	75	Sch.80PVC	65	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-12	4	8	1160	1100	60	Sch.80PVC	50	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-13	4	8	1160	1100	60	Sch.80PVC	50	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-14	4	8	1160	1100	60	Sch.80PVC	50	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-15	4	8	1160	1100	60	Sch.80PVC	50	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-16	4	8	1160	1100	60	Sch.80PVC	50	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-17	4	8	1160	1100	60	Sch.80PVC	50	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-18	4	8	1160	1100	60	Sch.80PVC	50	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-19	4	8	1145	1100	45	Sch.80PVC	35	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-20	4	8	1145	1100	45	Sch.80PVC	35	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-21	4	8	1145	1100	45	Sch.80PVC	35	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-22	4	8	1155	1100	55	Sch.80PVC	45	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-23	4	8	1125	1100	25	Sch.80PVC	15	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.
EW-24	4	8	1120	1100	20	Sch.80PVC	10	10	0.01	0.5 to 25	Screened in upper portion of Gravel Unit in silty GRAVEL.

Notes:

BOLD-blue font indicates extraction wells for short-term pilot study; remaining wells assumed for conceptual-level long-term groundwater pump and treat system.

Conceptual-level design based on access considerations and current understanding of groundwater flow conditions as presented in Section 5.

Discharge rate for high-yield wells assumes range of 50-200 gpm based hydraulic conductivity in preferential flow zones; however, sustainable long-term flow rate unknown due to potential hydraulic boundary effects.

Discharge rate for low-yield wells assumes range of 0.5-20 gpm based hydraulic conductivity in low-yield zones; well spacing of low-yield wells assumed at 100 ft for conceptual cost evaluations.

ALTERNATIVE 3 COSTING ASSUMPTIONS
TYPICAL GROUNDWATER EXTRACTION WELL
Asotin County Regional Landfill
Asotin County, Washington