Installation Restoration Program
Final Basewide Groundwater Assessment
Technical Memorandum

143rd Combat Communications Squadron
Seattle Air National Guard Station
Washington Air National Guard
Seattle, Washington

September 2001

Air National Guard
Andrews AFB, Maryland

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September 2001

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LIST OF ACRONYMS/ABBREVIATIONS

Acronym/ Abbreviation	Definition
AGE	Aerospace Ground Equipment
amsl	Above mean sea level
ANG	Air National Guard
ANGS	Air National Guard Station
ARAR	Applicable or relevant and appropriate requirement
BGA	Basewide Groundwater Assessment
bgs	Below ground surface
CCSQ	Combat Communications Squadron
cis-1,2-DCE	cis-1,2-Dichloroethene
COPC	Contaminant of Potential Concern
CPT	Cone penetrometer testing
DNAPL	Dense non-aqueous phase liquid
ERM	Environmental Resources Management
FS	Feasibility Study
IDW	Investigation-derived waste
IRP	Installation Restoration Program
µg/l	Micrograms per liter
MCL	Maximum Contaminant Level
MTCA	Model Toxics Control Act
NGVD	National Geodetic Vertical Datum
NPL	National Priorities List
OpTech	Operational Technologies Corporation
PA	Preliminary Assessment
PA/SI	Preliminary Assessment/Site Inspection
PCE	Tetrachloroethene
PSG	Project screening goal
QA/QC	Quality assurance/quality control
QC	Quality control
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
TCE	Trichloroethene
TPH	Total petroleum hydrocarbons
U.S.	United States
USEPA	United States Environmental Protection Agency
UST	Underground storage tank
VOC	Volatile organic compound
WAC	Washington Administrative Code

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EXECUTIVE SUMMARY

A Basewide Groundwater Assessment (BGA) was conducted between August 2000 and February 2001 at the Seattle Air National Guard Station (Seattle ANGS), 6736 Ellis Avenue South, Seattle, Washington. Environmental investigations were initiated at this site in 1993 as part of the Air National Guard's Installation Restoration Program. The BGA is the most recent of these investigations. During previous investigations, the chlorinated volatile organic compounds (VOCs) tetrachloroethene (PCE) and trichloroethene (TCE) were detected in groundwater beneath the Station. Some of the PCE and TCE detections exceeded the Washington State Model Toxics Control Act Method A Cleanup Level of 5.0 micrograms per liter.

The BGA was conducted to augment the previous investigations by further assessing the hydrogeologic conditions and groundwater contamination at the Seattle ANGS. The overall objective of the BGA was to evaluate whether the chlorinated VOCs detected in groundwater are site-related or whether they likely migrated under the Station from off-site sources. This objective was achieved by:

- Reviewing available records concerning potential contaminated sites in the vicinity of the Seattle ANGS and hazardous materials use/disposal at the Station and surrounding properties;
- Further characterizing the hydrogeologic conditions at the Station and evaluating whether man-made structures, historical events, or hydrologic conditions may have influenced groundwater flow beneath the Station in the past;
- Investigating the possibility that groundwater flow reversals or other transport mechanisms may have caused dissolved VOCs beneath a site immediately south of the Seattle ANGS (Boeing Area 3-360) to migrate under the Station; and
- Characterizing the vertical extent of groundwater contamination beneath the southern portion of the Station and assessing whether residual dense non-aqueous phase liquid may exist in this area.

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The BGA project consisted of the following specific tasks:

- A search for public records or other information on known or suspected contaminated sites in the vicinity of the Seattle ANGS, past hazardous materials use and disposal at the Seattle ANGS and Boeing Area 3-360, and the location and maintenance histories of underground sewer and water pipelines in the area;
- Vertical lithologic profiling and discrete-depth groundwater sampling at 24 locations in the southern portion of the Station;
- Vadose zone pore water sampling at 12 locations in the southern portion of the Station;
- Installation and sampling of three 40-foot-deep groundwater monitoring wells in the southern portion of the Station;
- Continuous water level monitoring in eight groundwater monitoring wells; and
- A topographic survey of the Station.

The BGA findings suggest that the PCE detected in groundwater in the northern portion of the Seattle ANGS may originate from the former Georgetown Cleaners site approximately 300 feet north of the Station, although there is no documented evidence of a release at this site. The BGA findings also suggest that the presence of TCE in groundwater in the southern portion of the Station is likely the result of past minor releases or incidental spills that occurred during historical Station operations. Accordingly, further action is recommended to address the potential human health and ecological risks associated with the dissolved TCE.

In recent years, in situ chemical oxidation has proven to be an effective and relatively low-cost technology for destroying chlorinated VOCs in groundwater. Based on past experience at similar sites, it is anticipated that in situ chemical oxidation could reduce TCE concentrations at the Seattle ANGS to acceptable risk levels in less than 1 year. Accordingly, treatability testing of this technology is recommended, to assess site-specific applicability and provide design data for a potential full-scale cleanup program.

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SECTION 1.0

INTRODUCTION

This Technical Memorandum summarizes the objectives, scope, and results of the Basewide Groundwater Assessment (BGA) conducted between August 2000 and February 2001 at the Seattle Air National Guard Station (Seattle ANGS), 6736 Ellis Avenue South, Seattle, Washington. The BGA was part of the Air National Guard (ANG) Installation Restoration Program (IRP). Environmental Resources Management (ERM) performed the work under National Guard Bureau Contract DAHA90-94-0014, in accordance with the *Final Basewide Groundwater Assessment Work Plan* (ERM 2000a). The Air National Guard Installation Restoration Program Branch provided technical and project management oversight of the work.

1.1 Background

The Seattle ANGS occupies approximately 7.5 acres of land near the northern end of Boeing Field (King County International Airport; Figure 1-1). A two-part Remedial Investigation (RI) and Feasibility Study (FS) was conducted at the Station between 1996 and 1999 (ERM 1999a, 1999b). The chlorinated volatile organic compounds (VOCs) tetrachloroethene (PCE) and trichloroethene (TCE) were detected above the Washington State Model Toxics Control Act (MTCA) Method A Cleanup Level of 5.0 micrograms per liter (µg/l) in shallow groundwater beneath the northern and southern portions of the Station, respectively. Other contaminants investigated in soil and groundwater during the RI generally were either not detected, were detected below applicable regulatory levels, or were consistent with area or regional background concentrations.

The locations of groundwater monitoring wells at the Seattle ANGS are shown in Figure 1-2. Unconfined groundwater occurs at a depth of 8 to 10 feet below ground surface (bgs) at the Station, and generally flows toward the south-southwest (ERM 1999a). During groundwater monitoring from September 1996 through May 2000, PCE was detected three separate times above the MTCA Method A Cleanup Level in samples collected from background (upgradient) well BS-004PZ and one time in a sample collected from background well MW-1. The highest PCE concentration detected was

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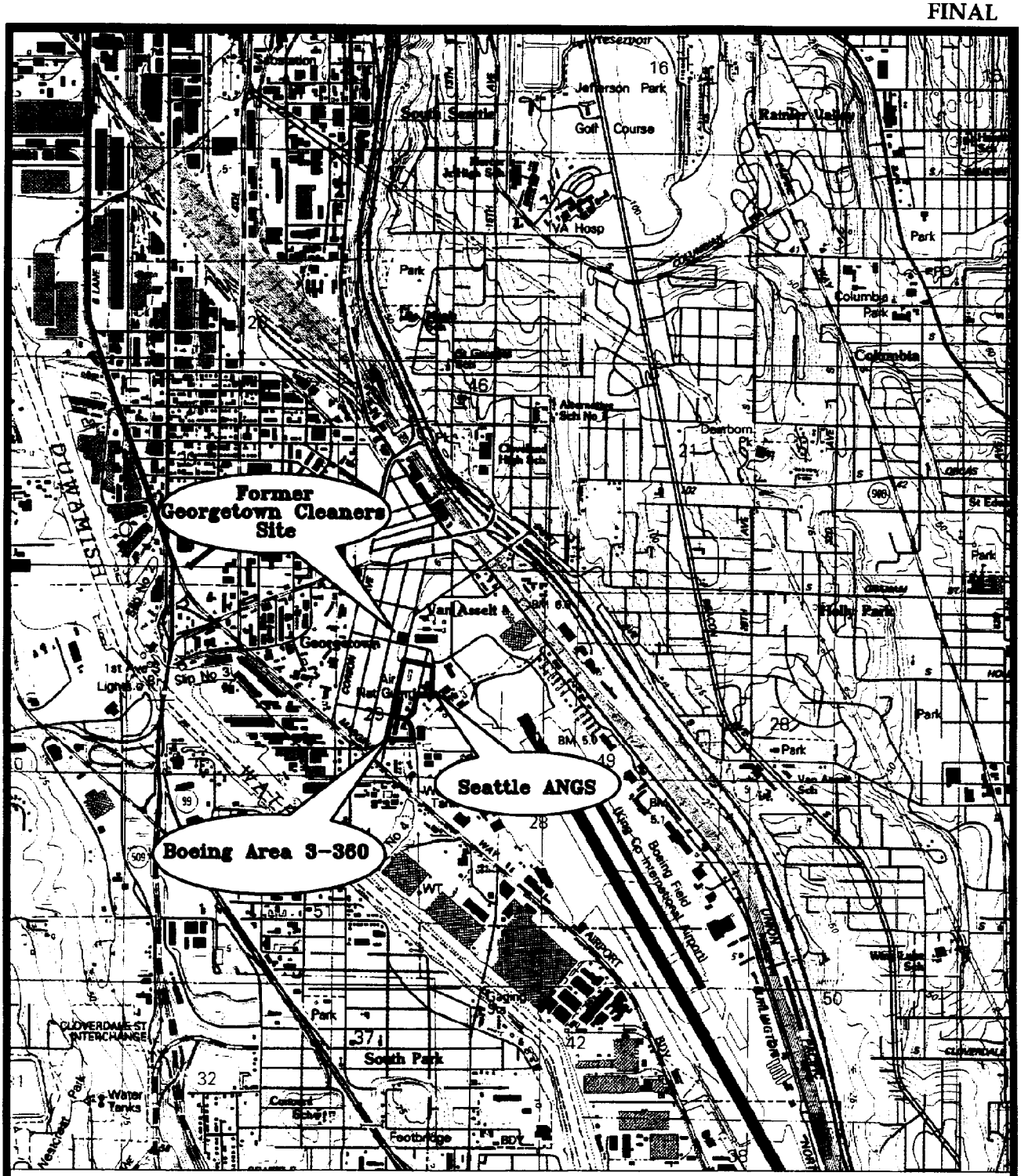

From USGS 7.5 Minute Topographic Map Series. Seattle South, Washington

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LOCATION MAP OF SEATTLE
AIR NATIONAL GUARD STATION
SEATTLE, WASHINGTON
143rd CCSQ, Seattle ANGS
Seattle, Washington

FIGURE 1-1

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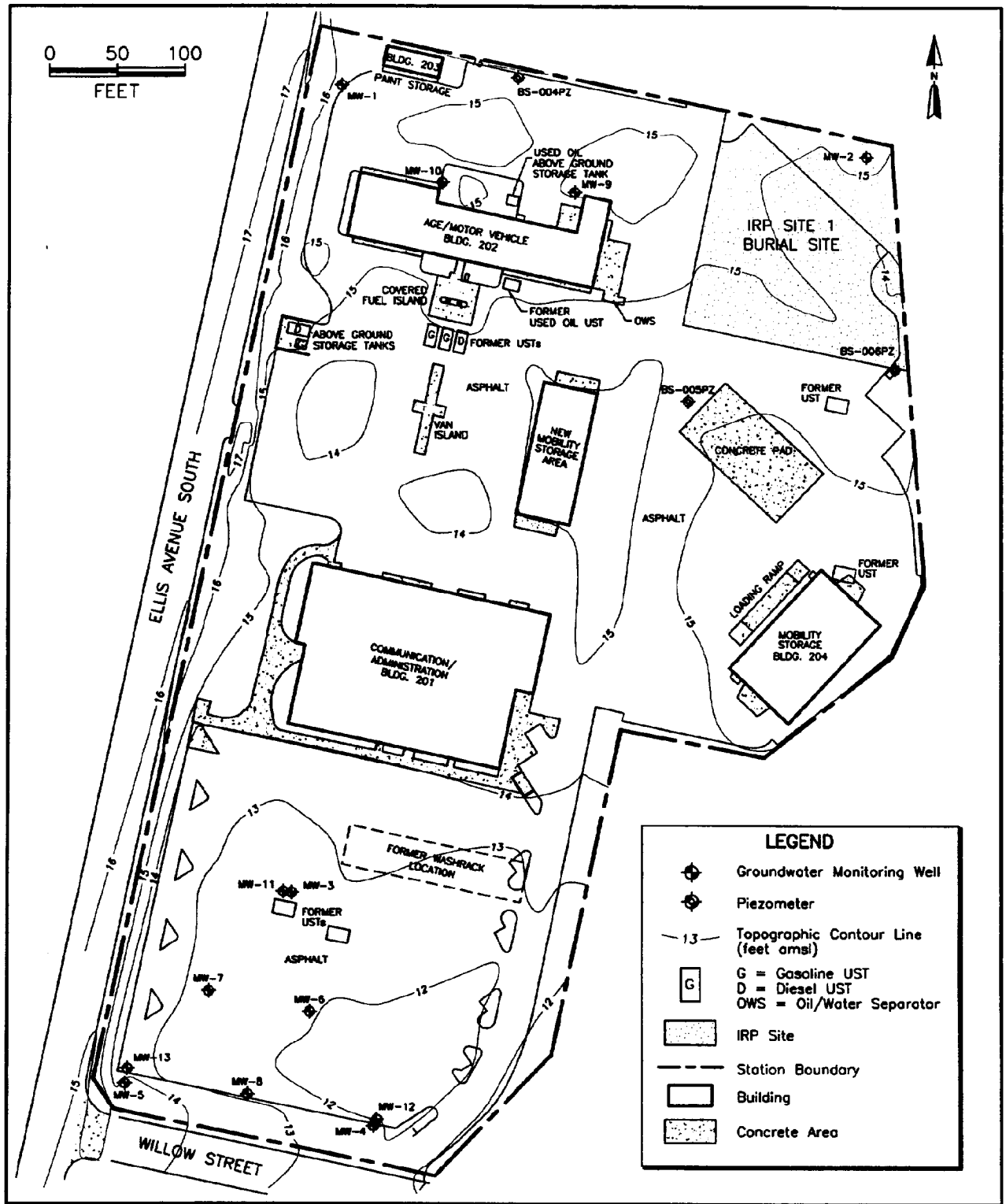

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SITE MAP

143rd CCSQ, SEATTLE ANGS
SEATTLE, WASHINGTON

FIGURE 1-2

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17 µg/l. TCE was detected above the MTCA Method A Cleanup Level four separate times in samples collected from well MW-8 and one time in a sample collected from well MW-6; the highest concentration detected was 83 µg/l. TCE was also detected above the MTCA Method A Cleanup Level in three direct-push groundwater samples collected from three locations in the southern portion of the Station, at concentrations ranging from 10 to 25 µg/l (ERM 1999a).

1.2 Potential Sources of Contamination

Interviews with site workers indicate that chlorinated solvents may have been used at the Seattle ANGS in the 1970s and 1980s. In particular, workers recalled using solvents in a paint shop that existed in the southern portion of the Station prior to 1984. However, despite extensive field-screening, soil vapor sampling, and soil sampling during the RI, no on-site source areas of chlorinated VOCs were identified. The sparse detections, relatively low concentrations, and diffuse distribution of PCE and TCE in groundwater make it difficult to determine the source of the contamination.

The former Georgetown Cleaners site (Figure 1-1) has been identified as a possible source of the dissolved PCE detected beneath the northern portion of the Station (ERM 2000a). Although there is no documented evidence of a release at this site, PCE is commonly used in dry-cleaning operations, and the site is directly upgradient of the Seattle ANGS. The Boeing Area 3-360 site immediately south of the Station was identified as a possible source of the dissolved TCE detected beneath the southern portion of the Station; TCE concentrations up to 1,300 µg/l have been observed in monitoring wells at this site (ERM 1999a). However, the Boeing Area 3-360 site is hydraulically downgradient of the Seattle ANGS. Consequently, a transport mechanism that could explain the upgradient migration of dissolved TCE under the Seattle ANGS is not readily apparent. There are no other sites with known chlorinated VOC contamination in the immediate vicinity of the Seattle ANGS (ERM 2000a).

1.3 Basewide Groundwater Assessment Objectives and Scope

The BGA was conducted to augment the RI by further assessing the hydrogeologic conditions and groundwater contamination at the Seattle ANGS. The overall objective of the BGA project was to evaluate whether the chlorinated VOCs detected in groundwater are site-related or whether they

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likely migrated under the Station from off-site sources. This objective was achieved by:

- Reviewing available records concerning potential contaminated sites in the vicinity of the Seattle ANGS and hazardous materials use/disposal at the Station and surrounding properties;

- Further characterizing the hydrogeologic conditions at the Station and evaluating whether man-made structures, historical events, or hydrologic conditions may have influenced groundwater flow beneath the Station in the past;

- Investigating the possibility that groundwater flow reversals or other transport mechanisms may have caused dissolved VOCs beneath the Boeing Area 3-360 site to migrate under the Seattle ANGS; and

- Characterizing the vertical extent of groundwater contamination beneath the southern portion of the Station and assessing whether residual dense non-aqueous phase liquid (DNAPL) may exist in this area.

These general scope items were accomplished by performing the following specific tasks:

- A search for public records on known or suspected contaminated sites in the vicinity of the Seattle ANGS. Information also was obtained regarding past hazardous materials use and disposal at the Seattle ANGS and the Boeing Area 3-360 site. In addition, local utility providers were contacted regarding the location and maintenance histories of underground sewer and water pipelines in the area. The information was reviewed to identify potential sources of the PCE and TCE detected in groundwater at the Station, as well as possible preferential transport pathways and/or hydraulic controls that may influence groundwater flow and contaminant migration.

- Vertical lithologic profiling and discrete-depth groundwater sampling at 24 locations in the southern portion of the Station. The purpose of this task was to characterize the vertical extent of dissolved VOCs, investigate possible stratigraphic controls on contaminant migration, and look for evidence of residual DNAPL below the water table.

- Vadose zone pore water sampling at 12 locations in the southern portion of the Station. The purpose of this task was to look for evidence of residual DNAPL or dissolved- or vapor-phase transport in the vadose zone (i.e., above the water table).

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- Installation and sampling of three 40-foot-deep groundwater monitoring wells in the southern portion of the Station. The purpose of this task was to evaluate dissolved VOC concentrations and groundwater flow directions at depth within the saturated zone (i.e., below 20 feet bgs, which is the maximum depth of monitoring wells installed previously at the site).

- Continuous water level monitoring in eight groundwater monitoring wells. Pressure transducers and data loggers were installed in three wells in the northern portion of the Station and five wells in the southern portion of the Station, to investigate short- and long-term groundwater response to rainfall events, seasonal precipitation patterns, and other hydraulic inputs.

- A topographic survey of the Station, including surface elevation contours and site boundaries, surface drainage features, and the locations of other features such as utility lines, buildings, storage tanks, and monitoring wells.

Section 2.0 of this report describes the physical setting of the Seattle ANGS and provides a summary of the site history, previous IRP investigations, and the nature and extent of contamination. Section 3.0 describes the BGA field program. Section 4.0 presents the BGA findings. Conclusions and recommendations are presented in Sections 5.0 and 6.0, respectively. References cited in this report are listed in Section 7.0.

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SECTION 2.0

SITE DESCRIPTION

This section describes the topography, land use, site facilities, and history of the Seattle ANGS. A summary of previous investigations and the nature and extent of contamination is also provided. More detailed site information, including descriptions of site geology, hydrogeology, and sensitive receptors/critical habitats, is presented in the Phase II RI Report (ERM 1999a) and the BGA Work Plan (ERM 2000a).

2.1 Site Location and Topography

The Seattle ANGS is located at 6736 Ellis Avenue South in Seattle, Washington (Figure 1-1). The Station serves as the headquarters of the 143rd Combat Communications Squadron (CCSQ), which provides mobile communication equipment and support for airports and airfields. The Station occupies approximately 7.5 acres of land near the northern end of Boeing Field. The Duwamish Waterway, a major industrial corridor in South Seattle, is approximately 2,000 feet southwest of the Station. The United States Environmental Protection Agency (USEPA) proposed the Lower Duwamish Waterway to the National Priorities List (NPL) of Superfund hazardous waste sites in the 1 December 2000 *Federal Register*.

A site plan of the Seattle ANGS is shown in Figure 1-2. The site is relatively flat and level; the surface elevation is approximately 14 feet above mean sea level (amsl). With the exception of landscaped grass planters around the perimeter of the Station, the ground surface is entirely covered by buildings and pavement. The Station is surrounded by a 6-foot-high chain link fence, and is accessed through a gate at the southeastern corner of the site.

2.2 Land Use

The Seattle ANGS property and surrounding properties immediately to the north, east, and south are zoned for industrial use. Properties along the eastern side of Ellis Avenue South have historically been used for industrial and commercial purposes. The area directly west of the Station is residential.

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2.3 Site Facilities

There are five buildings on the property (Figure 1-2): the Communications/Administration Building (Building 201), the Aerospace Ground Equipment (AGE)/Motor Vehicle Maintenance Building (Building 202), the Paint Storage Building (Building 203), the Mobility Storage Building (Building 204), and the New Mobility Storage Building. Other site features include aboveground gasoline, diesel, and used oil storage tanks, a fuel island, a van island, a vehicle/equipment washrack, and an oil/water separator. The Station previously had a washrack in the southern portion of the site, as well as several underground storage tanks (USTs). The former washrack and USTs were removed in the 1980s and 1990s prior to the RI.

2.4 Site History

The Seattle ANGS site was developed during World War II by the War Department, and was used by the United States (U.S.) Army Air Corps as an "Aircraft Factory School" from 1943 until 1948. The Aircraft Factory School trained Army Air Corps mechanics in the maintenance and repair of Boeing B-17 and B-27 bombers. In 1948, the U.S. Government gave the property to King County as surplus property. The property was subsequently leased to the U.S. Air Force, which licenses the site to the Washington ANG. The squadron stationed at the site went through several name changes and mission assignments over the years; it acquired its current name, the 143rd CCSQ, in 1988.

The Seattle ANGS property initially comprised 17 acres and included 15 buildings. The Station was reduced to its current size of 7.5 acres in 1948. In the mid-1980s the Station underwent substantial remodeling. As part of this remodeling, a building in the southern portion of the site that contained a paint shop and a battery shop was demolished.

Solid wastes generated from the 1950s through 1968 at the Station were reportedly either burned and/or buried in the northeastern corner of the site, or disposed of off site. Wastes generated during this period included radio tubes, solvents, used motor oils, kerosene, batteries, brake fluid, spray paints, and paint thinners/removers. Presently, hazardous wastes are collected and disposed of by a licensed contractor, or are managed through the Defense Reutilization and Marketing Office at Fort Lewis, Washington.

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2.5 Previous Investigations

Environmental conditions at the Seattle ANGS were assessed during three previous IRP investigations:

- A Preliminary Assessment (PA), conducted in December 1993 (ANG 1993);
- A Preliminary Assessment/Site Inspection (PA/SI), conducted in 1994 (OpTech 1995); and
- A two-part RI, conducted between 1996 and 1999 (ERM 1998, 1999a).

These investigations are described further below. In addition to the above investigations, groundwater monitoring was performed from September 1996 through May 2000. The results of the most recent monitoring event, including a cumulative summary of analytical testing results, are presented in the *Final Fourth Quarter 1999-2000 Groundwater Monitoring Report* (ERM 2000b). A preliminary FS outlining remedial options for chlorinated VOCs in groundwater was also prepared (ERM 1999b).

2.5.1 Preliminary Assessment

The objective of the PA was to research and characterize the historical use, handling, and disposal of hazardous substances at the Seattle ANGS. The PA consisted of a records search and interviews with Station workers. It was during the PA that the past practice of burying and/or burning solid wastes in the northeastern corner of the site was identified. This area of the site was designated as an area of concern warranting further investigation.

2.5.2 Preliminary Assessment/Site Inspection

The objective of the PA/SI was to further research the handling and disposal of hazardous substances at the Station and determine whether soil or groundwater contamination was present in the area of concern identified during the PA. An initial assessment of the environmental setting of the Station (e.g., hydrogeology, sensitive receptors/critical habitats) also was conducted. Field activities included a soil vapor survey, geophysical surveys (ground-penetrating radar and magnetometer), the collection of soil samples from three soil borings and one monitoring well boring, and the installation and sampling of three groundwater monitoring wells. Constituents detected at concentrations above MTCA Cleanup Levels and/or site-specific

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background concentrations included total petroleum hydrocarbons (TPH) in soil, gross alpha and gross beta radiation in soil and groundwater, and metals in groundwater. As a result of the PA/SI investigation, an area approximately 175 feet long by 175 feet wide in the northeastern corner of the Station was designated as IRP Site 1 - Burial Site (the IRP site; Figure 1-2).

2.5.3 Remedial Investigation

The objective of the RI was to characterize the nature and extent of contamination at the Station and evaluate risks to human health and the environment. The RI was completed in two phases. Phase I, conducted in 1996 and 1997, included the collection and laboratory analysis of 22 direct-push groundwater samples, 10 surface soil samples, 2 storm sewer catch basin samples, and subsurface soil samples from 11 soil borings. In addition to the laboratory analyses, soil samples collected during the Phase I RI were field-screened for organic vapors and TPH. The Phase I RI also included the installation and sampling of five additional groundwater monitoring wells, and aquifer testing to estimate the hydraulic conductivity of site soils.

The Phase II RI, conducted in 1998 and 1999, included soil vapor sampling at 40 locations, direct-push soil and groundwater sampling at 20 locations, and the installation and sampling of five additional groundwater monitoring wells.

Numeric project screening goals (PSGs) were developed during the RI for use in identifying contaminants of potential concern (COPCs) in soil and groundwater. The PSGs were derived from Federal and State chemical-specific applicable or relevant and appropriate requirements (ARARs). Dissolved PCE, TCE, and benzene were detected in shallow groundwater at concentrations above PSGs. Other constituents investigated in soil and groundwater (semivolatile organic compounds, TPH, radionuclides, and metals) were either not detected, were detected at concentrations below PSGs, or were consistent with area or regional background concentrations. The TCE detected in groundwater beneath the southern portion of the Station is the only COPC considered to pose a potential risk to human health or the environment, due to its persistence at concentrations above the MTCA Method A Cleanup Level (ERM 1999a).

2.6 Nature and Extent of Contamination

This section summarizes the nature and extent of the VOC contamination in groundwater at the Seattle ANGS. The discussion is based on the results of

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sampling conducted during the RI and groundwater monitoring. Historical detections of VOCs above PSGs (TCE, PCE, and benzene) are depicted in Figure 2-1. The PSG for TCE, PCE, and benzene is 5.0 μg/l, which is the MTCA Method A Cleanup Level for these compounds.

TCE was detected in groundwater samples collected from six direct-push borings and five monitoring wells in the southern portion of the Station. The concentrations in direct-push samples ranged from 1.0 to 25 μg/l; the concentrations in monitoring well samples ranged from 1.19 to 83 μg/l.

From a regulatory perspective, the direct-push sample results are considered screening-level data. The groundwater samples collected from monitoring wells, on the other hand, provide definitive data for characterizing groundwater conditions. TCE was detected at concentrations above the MTCA Method A Cleanup Level in four of eight groundwater samples collected from well MW-8 and in one of eight samples collected from well MW-6. The TCE concentrations in these samples ranged from 5.7 to 83 μg/l.

As part of the RI, the potential human health risk associated with the TCE in groundwater was evaluated based on the conservative assumption that the reasonable maximum exposure scenario is the use of site groundwater as drinking water. Using default exposure assumptions contained in the MTCA Cleanup Regulation (Chapter 173-340 Washington Administrative Code [WAC]), the calculated excess cancer risk associated with the maximum observed TCE concentration (83 μg/l) is 2.09×10^{-5} (ERM 1999a). This value is approximately 20 times greater than the Washington State acceptable risk level of 1×10^{-6} for individual carcinogenic substances. However, this is a "worst-case" risk estimate because the maximum TCE concentration was used, and shallow groundwater in the vicinity of the Seattle ANGS is not used for drinking water. Residents and businesses in this area are served by the City of Seattle public water supply, which is obtained from surface water sources in the Cascade Mountains.

An on-site source area of the TCE detected in groundwater was not identified during the RI. Of 27 soil samples analyzed for VOCs, only one contained TCE. The TCE concentration reported in this sample (0.17 milligrams per kilogram) was below the MTCA Method A Cleanup Level of 0.5 milligrams per kilogram. Furthermore, this soil sample was collected at the depth of the water table in the boring for monitoring well MW-3, and thus may have contained TCE-impacted groundwater (TCE was detected at 17 μg/l in a direct-push groundwater sample collected at this location). Chlorinated VOCs were not detected in the other RI soil samples.

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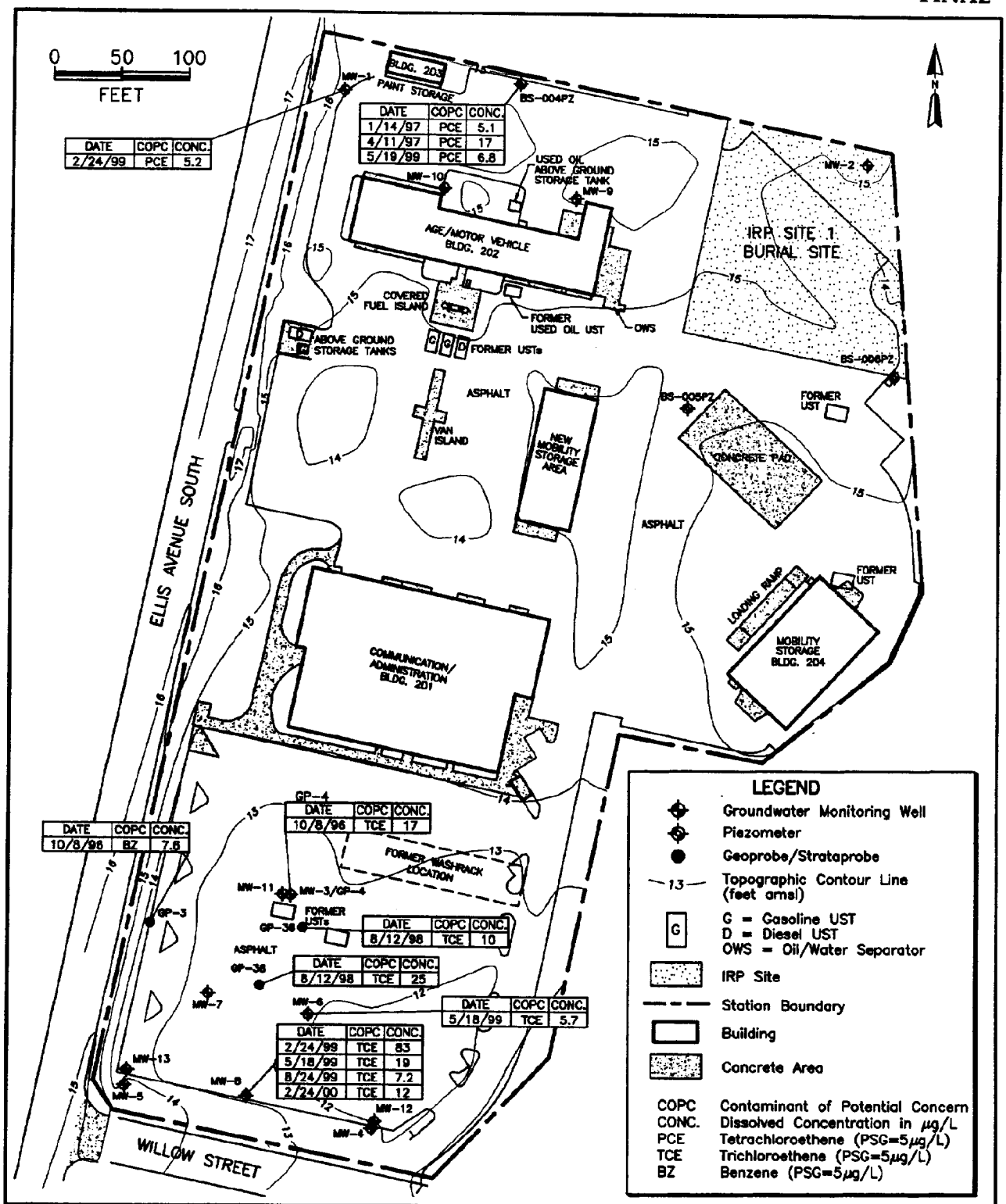

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DETECTIONS OF COPCs ABOVE PROJECT SCREENING GOALS IN GROUNDWATER

143rd CCSQ, SEATTLE ANGS
SEATTLE, WASHINGTON

FIGURE 2-1

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PCE was detected at concentrations above the MTCA Method A Cleanup Level in 3 of 12 groundwater samples collected from background well BS-004PZ and in 1 of 13 samples collected from background well MW-1. Three of these samples had PCE concentrations of 5.1 to 6.8 µg/l; the concentration in the fourth sample was 17 µg/l. Sixteen samples collected from these wells between 1996 and 2000 contained no detectable PCE. Accordingly, the PCE is not considered to pose a risk to human health or the environment.

An on-site source area of the PCE detected in groundwater was not identified during the RI. As discussed in the BGA Work Plan (ERM 2000a), a business known as Georgetown Cleaners was listed at 6525 Ellis Avenue South in the 1983 and 1985 editions of the Seattle Polk directory. This site is approximately 300 feet north of the Seattle ANGS (Figure 1-1). The dissolved PCE detected in the northern portion of the Station may be related to this site, as PCE is a common chemical used in dry cleaning, and the site is directly upgradient of the Seattle ANGS. However, no records concerning this site were found in Washington Department of Ecology files.

Benzene was detected at a concentration of 7.6 µg/l in one direct-push groundwater sample collected in 1996 (Figure 2-1). Benzene was not detected in the monitoring wells during the groundwater monitoring program.

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SECTION 3.0

FIELD PROGRAM

This section describes the BGA field program. As noted previously, the TCE detected in groundwater in the southern portion of the Seattle ANGS is the only COPC considered to pose a potential risk to human health or the environment. A records search and groundwater modeling performed during development of the BGA Work Plan led to the hypothesis that the TCE may have originated from a release at the Boeing Area 3-360 site immediately south (downgradient) of the Station (ERM 2000a). As detailed in the Work Plan, this hypothesis is only plausible if heavy rainfall causes local groundwater mounding to occur beneath the Boeing site. An important objective of the field program was to further investigate this possibility. Another important objective of the field program was to investigate the possibility that a previously undetected on-site source of chlorinated VOCs exists, in the form of residual DNAPL in soils above or below the water table.

3.1 Summary

The BGA field program consisted of the following tasks (note that the records search described in Section 1.3 was completed during preparation of the BGA Work Plan, and thus was not part of the field program):

- Vertical lithologic profiling and discrete-depth groundwater sampling at 24 locations in the southern portion of the Station;
- Vadose zone pore water sampling at 12 locations in the southern portion of the Station;
- Installation and sampling of three 40-foot-deep groundwater monitoring wells in the southern portion of the Station;
- Continuous water level monitoring in eight groundwater monitoring wells; and
- A topographic survey of the Station.

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Each of these tasks is described further in the subsections that follow. The BGA boring and sampling locations are shown in Figure 3-1.

3.2 Deviations from the Work Plan

There were two deviations from the BGA Work Plan:

- Several boring locations and target groundwater sampling depths were adjusted slightly from those specified in the Work Plan. The boring locations were adjusted based on site restrictions and underground utility locations. The target groundwater sampling depths were adjusted based on the results of the lithologic profiling conducted during the BGA.
- Two of the three new monitoring wells were developed 5 to 6 days after the wells were installed rather than within 48 hours of well completion, due to scheduling constraints related to a holiday weekend.

3.3 Lithologic Profiling and Discrete-Depth Groundwater Sampling

Electric cone penetrometer testing (CPT) and direct-push groundwater sampling were completed at 24 locations in the southern portion of the Station between 8 August and 13 September 2000 (locations BGA-1 through BGA-24; Figure 3-1). The purpose of this task was to identify possible stratigraphic controls on contaminant migration, characterize the vertical extent of chlorinated VOCs in groundwater, and look for evidence of residual DNAPL below the water table.

CPT is a direct-push, remote sensing technology used in geotechnical and environmental investigations to provide detailed information about subsurface soil properties. As the CPT probe is advanced through the soil column, a continuous log of compressional ("tip") and shear ("sleeve") resistance is generated. These parameters are related to soil types through an empirical correlation. The CPT logs can thus be used to characterize lithology and microstratigraphy in the immediate vicinity of each boring. A number of laboratory experiments and case studies have shown that the migration of free-phase DNAPLs in the subsurface is controlled largely by lithology and microstratigraphy (Pankow and Cherry 1996).

The CPT and direct-push groundwater borings were installed by Northwest Cone Exploration, Inc., and Cascade Drilling, Inc., respectively. ERM supervised the work, labeled and packaged the samples, and recorded field

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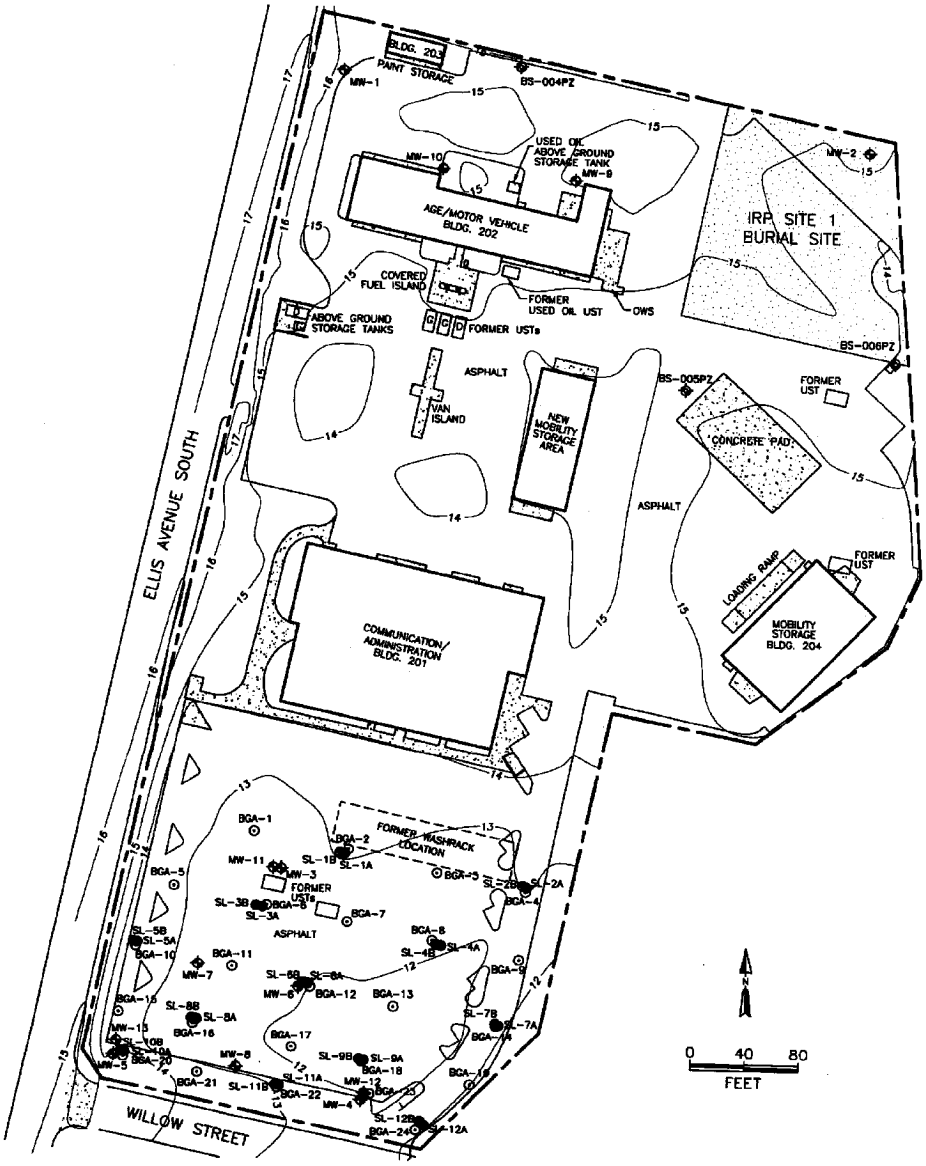

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BASEWIDE GROUNDWATER ASSESSMENT BORING AND SAMPLING LOCATIONS

143rd CCSQ, SEATTLE ANGS
SEATTLE, WASHINGTON

FIGURE 3-1

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3-3

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notes. The CPT borings were completed first. After the CPT logs were reviewed, discrete-depth groundwater sampling was performed in an adjacent boring at each location. The odd-numbered CPT/groundwater borings were advanced to a depth of approximately 30 feet bgs; the even-numbered borings were advanced to approximately 40 feet bgs.

In general, seven groundwater samples were collected from each shallow boring and eight samples were collected from each deep boring. The approximate sampling depths were 10, 12.5, 15, 17.5, 20, 25, 30, and 40 feet bgs. The actual target sampling depths in each boring were adjusted as necessary to coincide with the top of apparent fine-grained intervals (i.e., silt, clay) identified on the CPT logs. This was done to increase the chances of detecting residual DNAPL, if present. (Free-phase DNAPL is denser than water and thus tends to migrate downward through the saturated zone, collecting in "pools" or "blobs" above fine-grained/low-permeability layers; Pankow and Cherry 1996.)

The CPT/groundwater borings were abandoned by filling the holes with bentonite. Borings installed in paved areas were also patched with concrete.

The groundwater samples were analyzed for chlorinated VOCs using USEPA Method 8260. The sample analyses were performed by North Creek Analytical, Inc. in Bothell, Washington. North Creek Analytical is certified by the American Association for Laboratory Accreditation to perform environmental sample analyses per USEPA methods. Field methods for CPT and direct-push groundwater sampling, including equipment decontamination and field quality assurance/quality control (QA/QC) procedures, are described further in the BGA Work Plan (ERM 2000a). CPT logs are contained in Appendix A. Laboratory analytical reports are included in Appendix C, and data review/validation reports are contained in Appendix D.

3.4 Vadose Zone Pore Water Sampling

Twelve suction lysimeter pairs were installed and sampled in the southern portion of the Station between 31 August and 15 September 2000 (locations SL-1A/B through SL-12A/B; Figure 3-1). The purpose of this task was to look for evidence of residual DNAPL or dissolved- or vapor-phase contaminant transport in the vadose zone (i.e., above the water table).

The suction lysimeters were installed by Cascade Drilling, Inc. using solid-stem auger drilling methods. ERM supervised the work, prepared borehole

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logs, collected samples, and recorded field notes. Two lysimeters were installed in adjacent boreholes at each location, at depths of approximately 6 feet and 8 feet bgs. The goal was to sample pore water in the capillary fringe or just above the capillary fringe, as this is where evidence of vadose-zone transport and/or residual DNAPL would most likely be found, if present. Each lysimeter was completed at grade with a traffic-rated steel well monument set in concrete. The lysimeters completed at 6 feet bgs were identified with an "A" suffix (e.g., SL-1A); the lysimeters completed at 8 feet bgs were identified with a "B" suffix. One pore water sample was collected from each lysimeter, with the exception of two lysimeters (SL-11A and SL-12A) that did not produce water.

The pore water samples were analyzed for chlorinated VOCs using USEPA Method 8260. The sample analyses were performed by North Creek Analytical, Inc. in Bothell, Washington. Field methods for suction lysimeter installation and sampling, including equipment decontamination and field QA/QC procedures, are described further in the BGA Work Plan (ERM 2000a). Borehole logs and construction diagrams for the suction lysimeters are contained in Appendix B. Laboratory analytical reports are included in Appendix C, and data review/validation reports are contained in Appendix D.

3.5 Monitoring Well Installation and Sampling

Three new groundwater monitoring wells were installed in the southern portion of the Station on 30 and 31 August 2000 (wells MW-11, MW-12, and MW-13; Figure 3-1). The new wells are 40 feet deep and are screened from 30 to 40 feet bgs. The wells were installed next to existing shallow wells MW-3, MW-4, and MW-5, which are screened from 10 to 20 feet bgs. The purpose of this task was to evaluate groundwater quality and flow directions at depth.

The monitoring wells were installed by Cascade Drilling, Inc. using hollow-stem auger drilling methods. ERM supervised the work, prepared borehole logs, developed the wells and collected samples, and recorded field notes. Continuous soil samples were collected from the borehole for MW-12 to obtain a complete lithologic log for comparison with the CPT logs. Soil samples were collected at 5-foot intervals from the other two boreholes for lithologic logging. None of the soil samples were submitted for laboratory analysis.

Each monitoring well was completed at grade with a traffic-rated steel well monument set in concrete. The monitoring wells were developed on 1 and 5

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September 2000 using a submersible pump. The wells were developed by surging the screened interval and purging the well until the visual clarity of the purge water stabilized. At a minimum, the amount of potable water added during drilling to control sand heave was purged from each well.

The new wells were sampled twice, on 6 September and 13 October 2000. A bladder pump and low-flow sampling methods were used to collect the samples. The groundwater samples were analyzed for chlorinated VOCs using USEPA Method 8260. The sample analyses were performed by North Creek Analytical, Inc. in Bothell, Washington.

Field methods for monitoring well installation and sampling, including equipment decontamination and field QA/QC procedures, are described further in the BGA Work Plan (ERM 2000a). Borehole logs and construction diagrams for the new monitoring wells are contained in Appendix B. Laboratory analytical reports are included in Appendix C, and data review/validation reports are contained in Appendix D.

3.6 Water Level Monitoring

Continuous water level monitoring was performed in three wells in the northern portion of the Station and five wells in the southern portion of the Station. Pressure transducers and data loggers were installed in April 2000 in wells MW-3, MW-4, MW-5, MW-6, MW-8, MW-9, MW-10, and BS-004PZ. The purpose of this task was to investigate short- and long-term groundwater response to rainfall events, seasonal precipitation patterns, and other potential hydraulic inputs (e.g., transient releases from broken or leaking sewer/water pipelines), and to evaluate the effects of these inputs on contaminant migration both on and off site. Of particular interest was the possibility that groundwater mounding may occur beneath the Boeing Area 3-360 site during heavy rainfall, potentially causing dissolved VOCs beneath the Boeing site to spread northward under the Seattle ANGS.

The data loggers were programmed to record water levels in the monitoring wells every 6 hours. The water level data were periodically downloaded to a laptop computer. The data loggers were calibrated against manual water level measurements when the loggers were first installed. The calibration of each data logger was subsequently checked and adjusted as necessary each time data were downloaded. Manual water level measurements recorded during the BGA are included in Appendix E.

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3.7 Topographic Survey

A topographic survey of the Seattle ANGS was completed in January 2001 by Barghausen Consulting Engineers, Inc. The survey included surface elevation contours, site boundaries, and buildings, as well as utilities and other site improvements. The locations and elevations of the CPT/groundwater borings, suction lysimeters, and new monitoring wells also were surveyed. The planned horizontal and vertical accuracy of the survey was ±0.1 feet and ±0.01 feet, respectively. A copy of the topographic survey is contained in Appendix F.

3.8 Investigation-Derived Waste Management

Investigation-derived waste (IDW) generated during field activities included drill cuttings, purge water, decontamination water, and disposable field supplies (e.g., paper and plastic). The drill cuttings and water were contained in segregated 55-gallon drums and temporarily stored on site in a central staging area. The waste paper and plastic were disposed of with regular Station trash. The IDW drums were marked with a description of the drum contents and the accumulation date.

Based on the analytical results for water samples collected during the BGA and soil samples collected during the RI, the IDW was classified as non-hazardous/non-dangerous waste per waste designation criteria contained in Federal Resource Conservation and Recovery Act (RCRA) Regulations and Washington State Dangerous Waste Regulations (Chapter 173-303 WAC). Upon approval from the King County Wastewater Division, the drummed purge water and decontamination water was discharged to the sanitary sewer through the Station's oil/water separator. The drums containing drill cuttings were disposed of off site by a licensed waste hauler.

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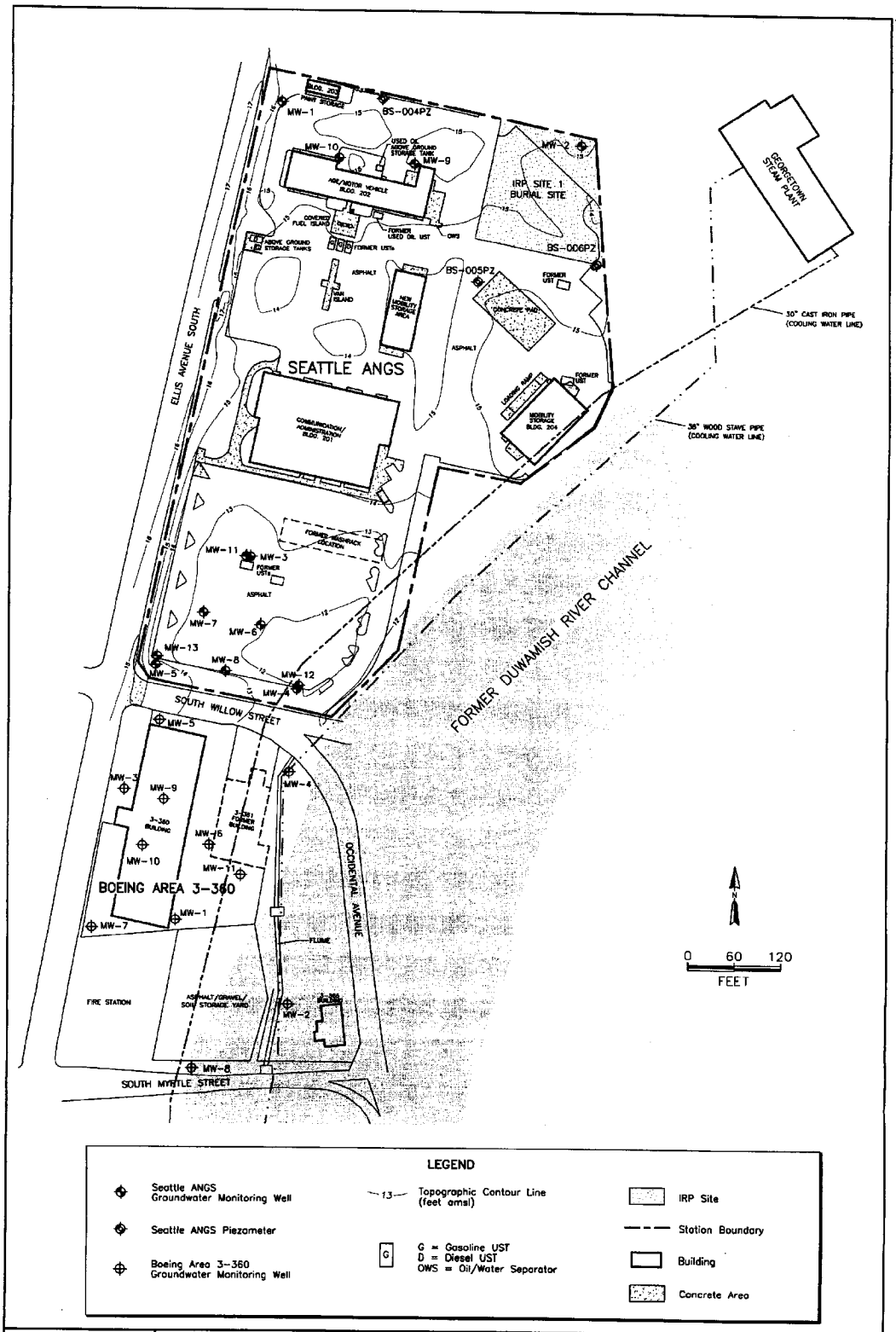

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LOCATION OF GEORGETOWN STEAM PLANT, FORMER COOLING WATER LINES, AND FORMER DUWAMISH RIVER CHANNEL

143rd CCSQ, SEATTLE ANGS
SEATTLE, WASHINGTON

FIGURE 4-1

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SECTION 4.0

INVESTIGATION FINDINGS

This section presents the results of the BGA field program. The results of the records search performed during development of the BGA Work Plan are detailed in the Work Plan (ERM 2000a). Results of the records search that are relevant to the field program design and conclusions of the BGA have been incorporated in this report.

4.1 Site Physical Features

Physical features of the Seattle ANGS investigated during the BGA include surface topography and drainage structures, underground utilities, and subsurface soil types/stratigraphy. These features were investigated by reviewing available records and contacting utility providers regarding the location and condition of underground utilities, completing a topographic survey of the Station, and installing CPT borings and drilled borings for monitoring wells and suction lysimeters. The results are described below.

4.1.1 Surface Topography and Drainage

The surface topography and drainage structures at the Station were characterized by completing a topographic survey of the site. A copy of the topographic survey drawing is contained in Appendix F.

The Station property is relatively flat. Surface elevations in the southern half of the Station are in the range of 12 to 13 feet amsl; elevations in the northern half of the Station are in the range of 14 to 15 feet amsl. Note that these elevations are referenced to the National Geodetic Vertical Datum (NGVD) of 1929, whereas the elevations shown on the topographic survey drawing are referenced to the City of Seattle vertical datum. Previous surveys of monitoring well locations used NGVD 1929 as the vertical datum. (As noted on the topographic survey drawing, the City of Seattle vertical datum is 5.96 feet higher than NGVD 1929.)

The majority of the site is covered by buildings and asphalt/concrete pavement. Raised planters containing landscaped grass, shrubs, and trees

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exist around the perimeter of the Station. Paved areas are sloped locally to direct surface water runoff to a series of catch basins tied to the storm drain system. There are no natural or engineered surface water impoundments at the site.

4.1.2 Underground Utilities

The locations and condition of underground utilities were assessed through the topographic survey and correspondence with local utility providers.

The utilities servicing the Seattle ANGS are typical of those found at light industrial sites (i.e., water, power, gas, telephone, sanitary sewer, and storm sewer). The locations of the buried lines do not provide any indication of the potential source area(s) of the contaminants detected in groundwater. There is no evidence from previous groundwater sampling that the underground utilities act as preferential pathways for contaminant transport.

The following utility providers were contacted regarding the location and condition of underground utilities in the vicinity of the Seattle ANGS and the Boeing Area 3-360 site: King County Drainage and Wastewater Division, King County Surface Water Management Unit, Seattle Public Utilities, Metro, and Seattle City Light. These agencies had no records of pipe ruptures, leaks, or other defects in water or sewer trunk lines beneath Ellis Avenue South and adjoining streets. There also were no records of maintenance or repairs to side sewers or water service connections in the vicinity of the Station.

One underground utility was identified as having the potential to influence groundwater flow and/or contaminant migration between the Boeing Area 3-360 site and the Seattle ANGS due to its relatively large size and its presence beneath both sites. The subject utility consists of two former cooling water supply lines for the historic Georgetown Steam Plant. This former coal-fired power plant, which is approximately 200 feet east of the northeast corner of the Station, is owned by Seattle City Light. The plant was built in 1906 and operated until approximately 1979. Information regarding the cooling water lines was obtained from Seattle City Light.

When the Georgetown Steam Plant was first built, it was situated on the west bank of the meandering Duwamish River, and it obtained cooling water directly from the river through a short piping run. In approximately 1912, the meanders of the Duwamish River in this area were filled and the river channel was straightened to allow for industrial development. The 30- and 36-inch-diameter cooling water lines were installed during and shortly after this time, and carried water from a pumphouse on the Duwamish Waterway

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to the steam plant. Figure 4-1 shows the location of the former cooling water lines and the former Duwamish River channel relative to the Seattle ANGS and the Boeing Area 3-360 site. After circulating through the steam plant, spent cooling water was discharged to the Duwamish Waterway via an open-box, concrete flume that followed the same route as the cooling water lines.

Construction drawings of the former cooling water lines indicate that they were installed at a depth of approximately 8 feet bgs, which is the approximate depth of the water table at the Seattle ANGS. The 30-inch line is made of cast iron, and the 36-inch line is made of wood staves (narrow strips of wood placed edge to edge, similar to a wooden barrel). Drawings showing details of the piping trenches are not available.

Historical TCE detections in groundwater at the Seattle ANGS and Boeing Area 3-360 appear to be aligned in the same general orientation as the former cooling water supply lines. Based on this alignment, it was hypothesized in the BGA Work Plan that the cooling water lines may have played a role in producing the observed distribution of TCE. As noted in Sections 4.3 and 5.0 however, the BGA findings did not support this hypothesis.

4.1.3 Soils and Stratigraphy

During the RI and earlier investigations, the near-surface geology at the Seattle ANGS was characterized through drilling and direct-push soil sampling. These previous investigations indicated that two main stratigraphic units exist across most of the site: a silty sand unit present from the surface to a depth of approximately 8 feet bgs, and a well-sorted, fine-grained sand unit present from approximately 8 feet bgs to at least 21 feet bgs. The silty sand unit is consistent with descriptions of the fill material that was used throughout the Duwamish River Valley during development in the 1910s. The fine-grained sand unit is interpreted as river alluvium deposited by the Duwamish River. Within these two main units are numerous finer-grained intervals consisting of silts and clays.

During the BGA, soils and stratigraphy were investigated by installing 24 CPT borings in the southern portion of the Station and logging soils encountered in the borings for wells MW-11, MW-12, and MW-13. The objective of this lithologic profiling was to identify layers or lenses of fine-grained soil that may act as low-permeability barriers to the downward migration of DNAPL, if present at the Station. If present, DNAPL would most likely exist as isolated droplets or pools in soil directly above

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low-permeability layers. Thus, the CPT results were used to select the final target sampling depths at each direct-push groundwater sampling location.

The CPT logs indicate that subsurface soils consist predominantly of clean to silty sand, with intervals of sandy silt to clay. The finer-grained intervals range from 0.5 to 4 feet thick, and do not appear to be laterally continuous based on the dissimilarity of the logs for many borings installed in close proximity to each other. This interpretation of the CPT logs is consistent with the results of previous investigations. There is no evidence of stratigraphic anomalies that might serve as preferential contaminant transport pathways.

The accuracy of the soil types inferred from the CPT logs was checked by comparing the borehole logs for wells MW-12 and MW-13 against the CPT logs for borings BGA-23 and BGA-20. Wells MW-12 and MW-13 were installed approximately 5 feet and 15 feet, respectively, from CPT borings BGA-23 and BGA-20. (Note that the CPT logs in Appendix A are labeled with a "CPT" rather than a "BGA" identifier.) The soil descriptions for wells MW-12 and MW-13 (Appendix B) generally agree with the CPT logs, although the CPT logs slightly overestimate grain sizes for some of the finer-grained intervals.

4.2 Groundwater Elevations and Flow Directions

In-well data loggers were installed in wells MW-3, MW-4, MW-5, MW-6, MW-8, MW-9, MW-10, and BS-004PZ in April 2000. The data loggers were programmed to record water levels every six hours. The wells were also gauged manually each time water levels were downloaded from the data loggers. Additionally, water levels in the three new deep wells (MW-11, MW-12, and MW-13) were measured in September and October 2000 prior to sampling these wells. Manual water level measurements are provided in Appendix E.

The raw data recorded by the data loggers are plotted in Figure 4-2. Daily and monthly precipitation data for Boeing Field are also shown in Figure 4-2. It is apparent from this figure that the data loggers did not function properly for most of the monitoring period. This was not discovered until December 2000 due to vendor hardware and software problems that prevented extracting and viewing the data. The data loggers used for this investigation (In-Situ, Inc. miniTROLL™) were the vendor's latest model. Based on the problems ERM experienced, it would appear that this model was not

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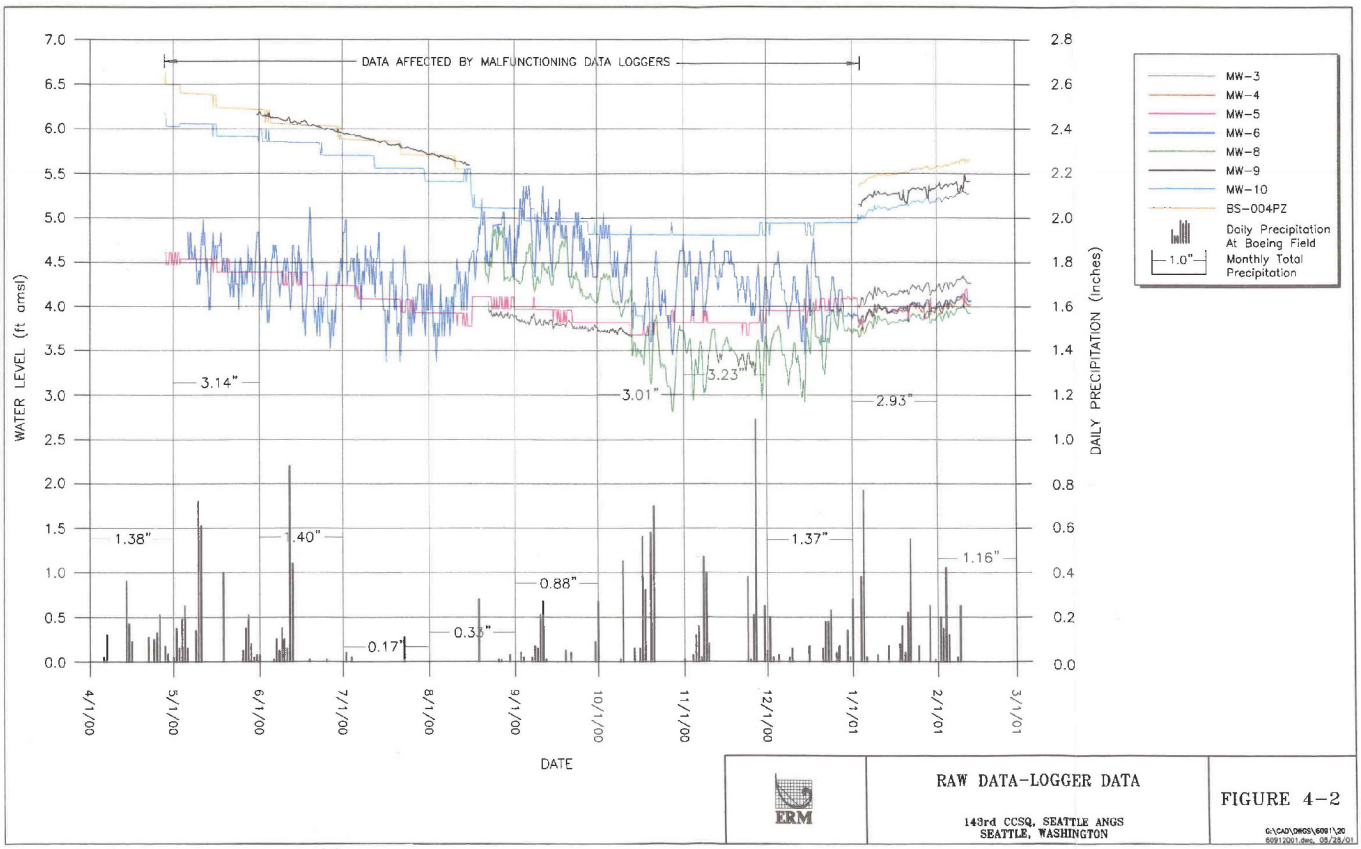

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RAW DATA-LOGGER DATA

143rd CCSQ, SEATTLE ANGS
SEATTLE, WASHINGTON

FIGURE 4-2

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sufficiently field-tested prior to its release for sale. The defective data loggers were replaced with a different, field-proven model in January 2001. Water level monitoring with the new in-well data loggers will be continued through 2001.

The data in Figure 4-2 were "smoothed" using a polynomial regression algorithm. The "smoothed" data are shown in Figure 4-3. Due to the equipment problems noted above, the water level data prior to January 2001 are considered unreliable. Additionally, the smoothed data shown for wells MW-6 and MW-8 in January and February 2001 do not accurately reflect true water levels in these wells, as can be seen by comparing Figures 4-2 and 4-3. This is an artifact of the regression method, caused by the large amplitude variations in these data sets prior to January 2001.

Although the absolute water levels recorded by the data loggers prior to January 2001 are unreliable, the data for wells MW-5 and MW-10 suggest that the water table dropped approximately 0.5 to 1 foot from May through October 2000. The data also suggest that water levels began to rise again in November 2000. Seasonal water table fluctuations of the order of 1 to 2 feet are common at the Station. Groundwater elevations are typically highest during the wet season and lowest during the dry season (ERM 1999a).

Precipitation during the monitoring period was approximately 70 percent of normal. There were no extreme rainfall events, as can be seen from the precipitation data plotted in Figure 4-2. Accordingly, it is unlikely that there were any significant changes in groundwater flow direction during the monitoring period. Potentiometric surface maps were prepared from manual water level measurements taken in August 2000, October 2000, January 2001, and February 2001 (Figures 4-4 through 4-7). The inferred groundwater flow direction during each of these months was toward the south-southwest, with an average hydraulic gradient of approximately 0.002 feet per foot. This flow direction is consistent with previous groundwater monitoring results, indicating that if significant changes in groundwater flow direction occur at the Station, they are both infrequent and short-lived.

Measured water levels in wells MW-11, MW-12, and MW-13 in September and October 2000 were used to evaluate the groundwater flow direction at depth within the saturated zone (i.e., 30 to 40 feet bgs). A potentiometric surface map prepared from the September 2000 data is shown in Figure 4-8; the potentiometric surface for October 2000 is similar. The groundwater flow direction inferred from these maps is toward the south-southwest, with an average hydraulic gradient of approximately 0.002 feet per foot. This is consistent with the flow direction and gradient determined from the

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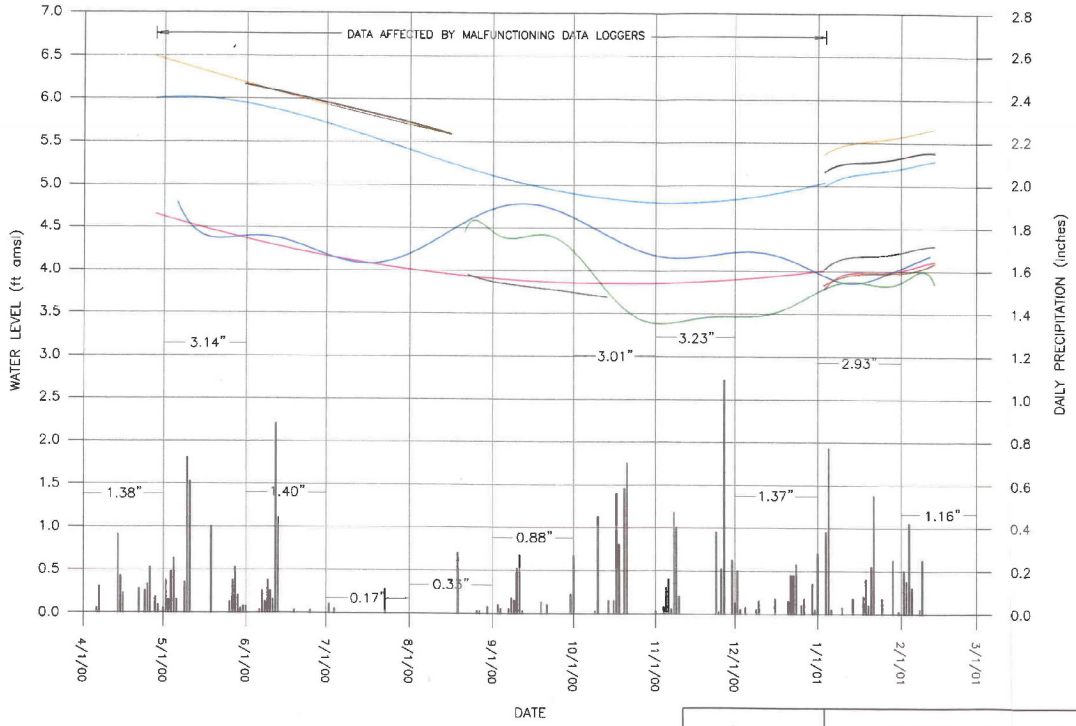

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SMOOTHED DATA-LOGGER DATA

143rd CCSQ, SEATTLE ANGS
SEATTLE, WASHINGTON

FIGURE 4-3

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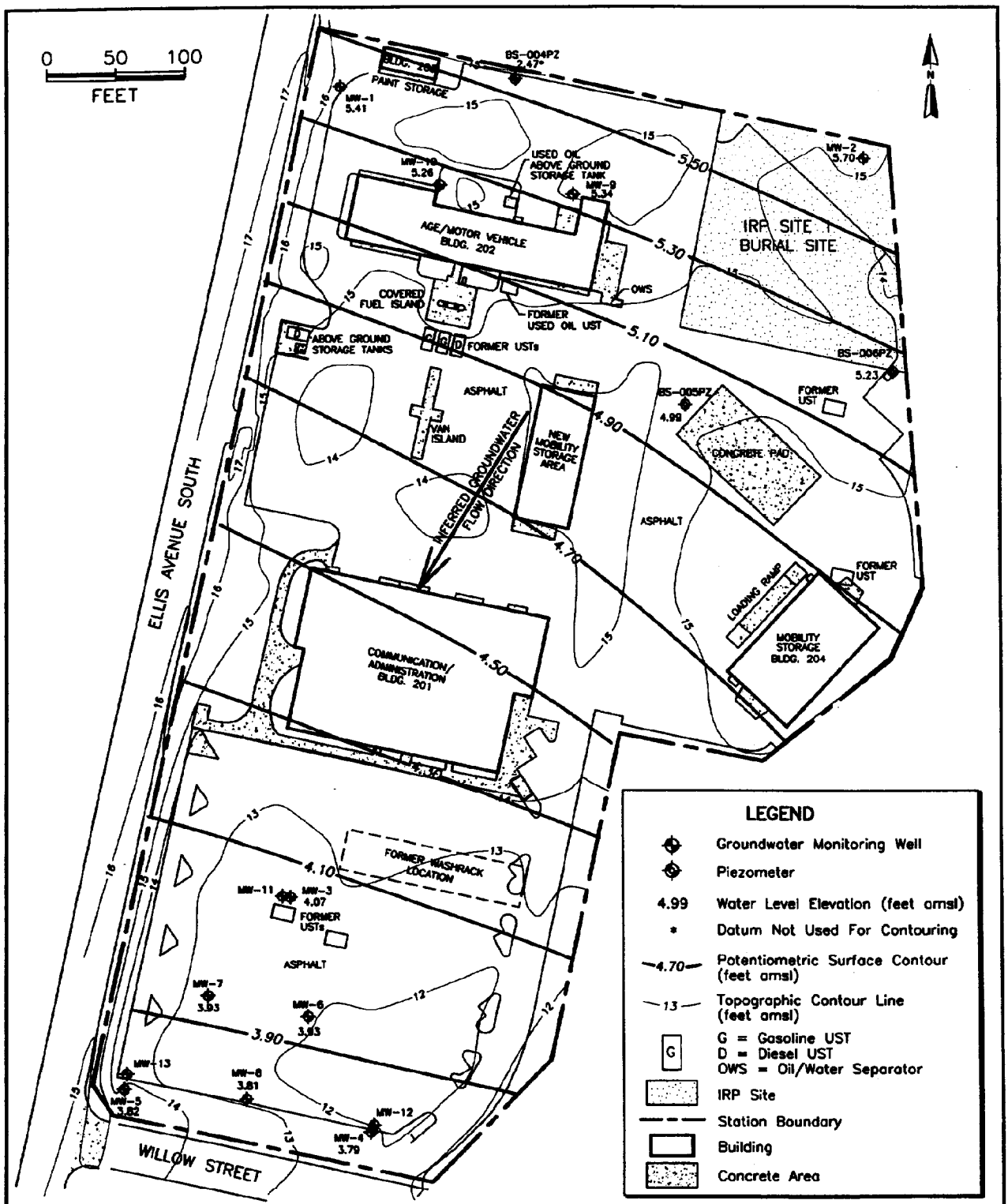

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POTENTIOMETRIC SURFACE MAP
16 AUGUST 2000

143rd CCSQ, SEATTLE ANGS
SEATTLE, WASHINGTON

FIGURE 4-4

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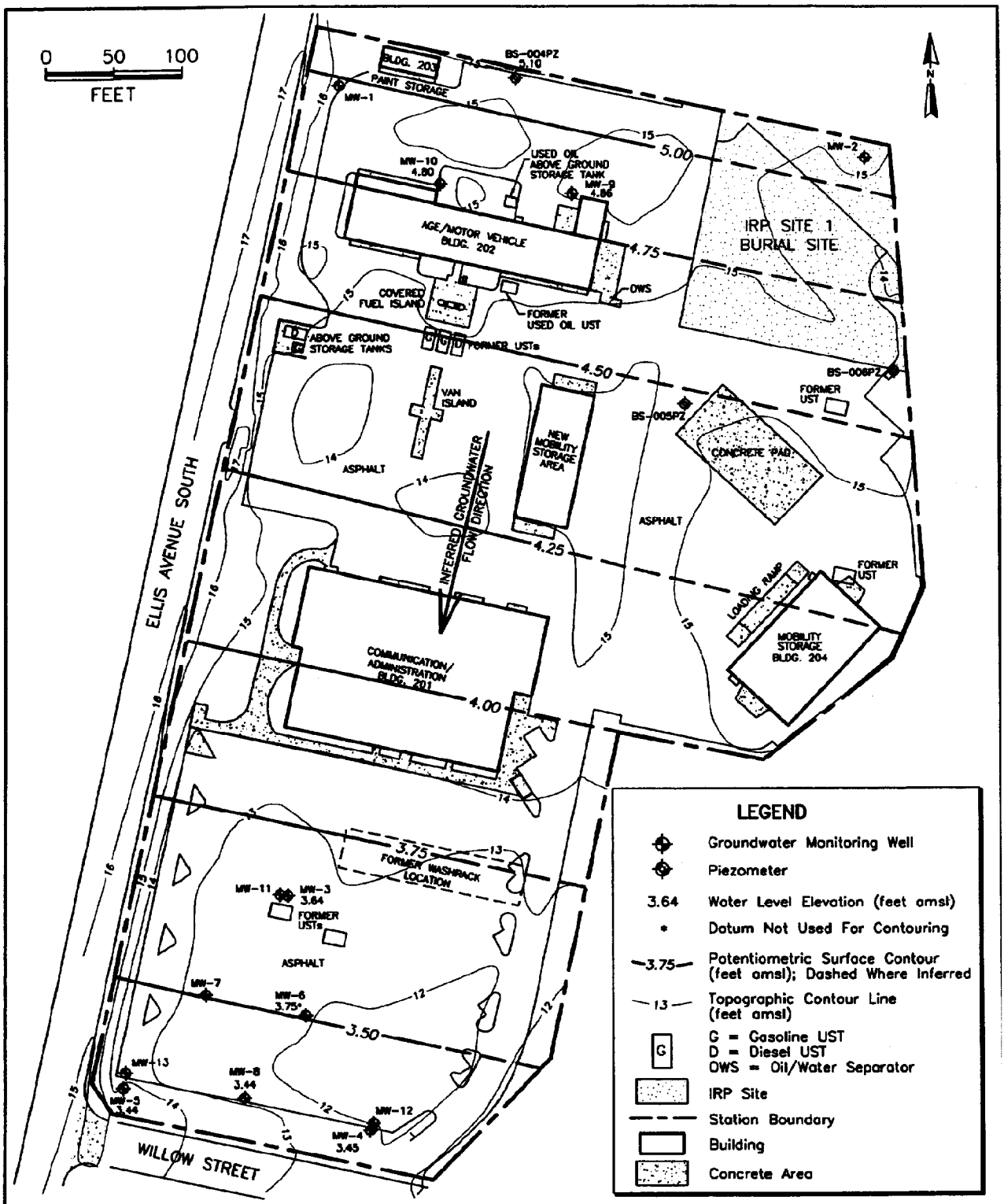

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POTENTIOMETRIC SURFACE MAP
13 OCTOBER 2000

143rd CCSQ, SEATTLE ANGS
SEATTLE, WASHINGTON

FIGURE 4-5

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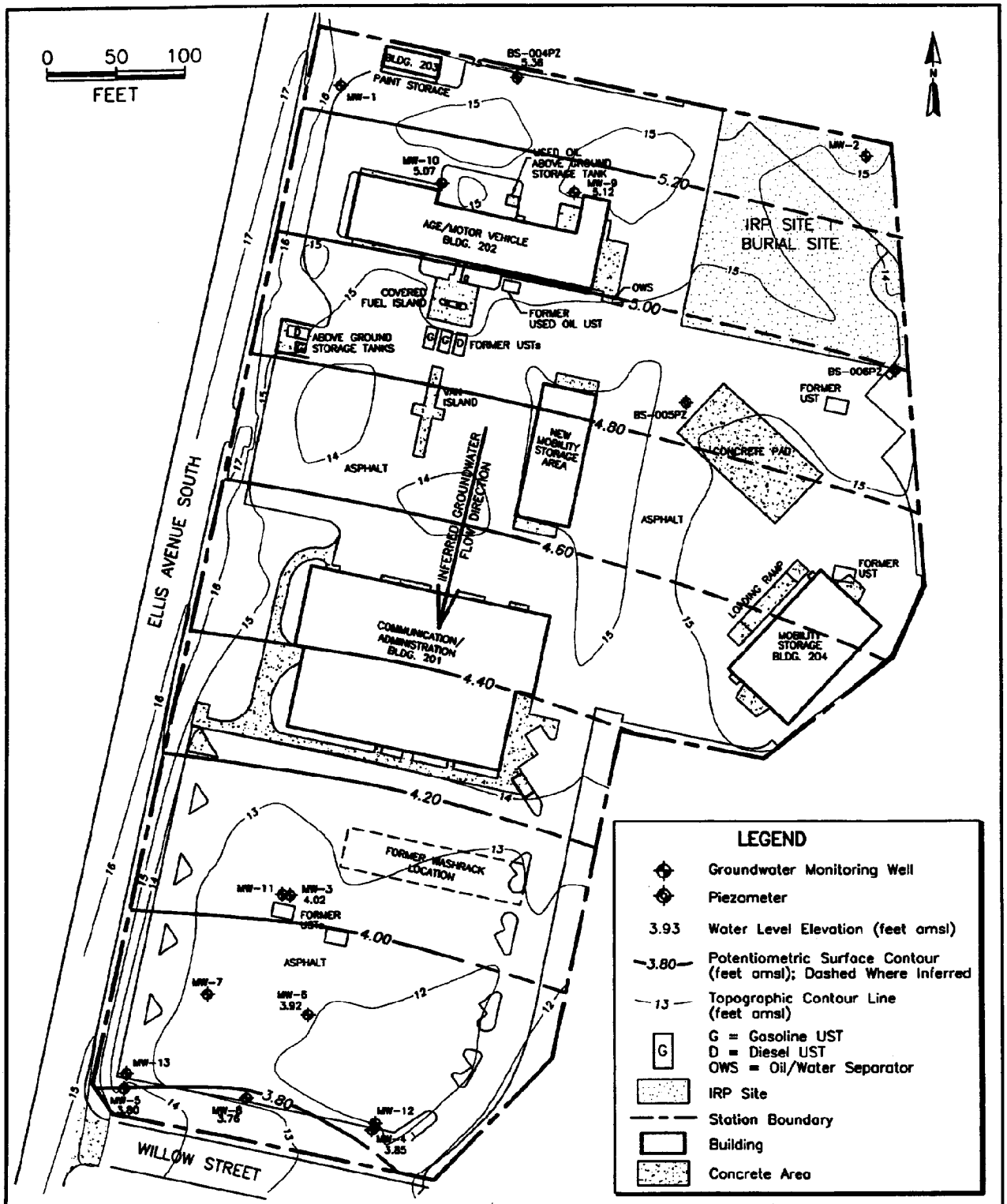

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POTENTIOMETRIC SURFACE MAP
3 JANUARY 2001

143rd CCSQ, SEATTLE ANGS
SEATTLE, WASHINGTON

FIGURE 4-6

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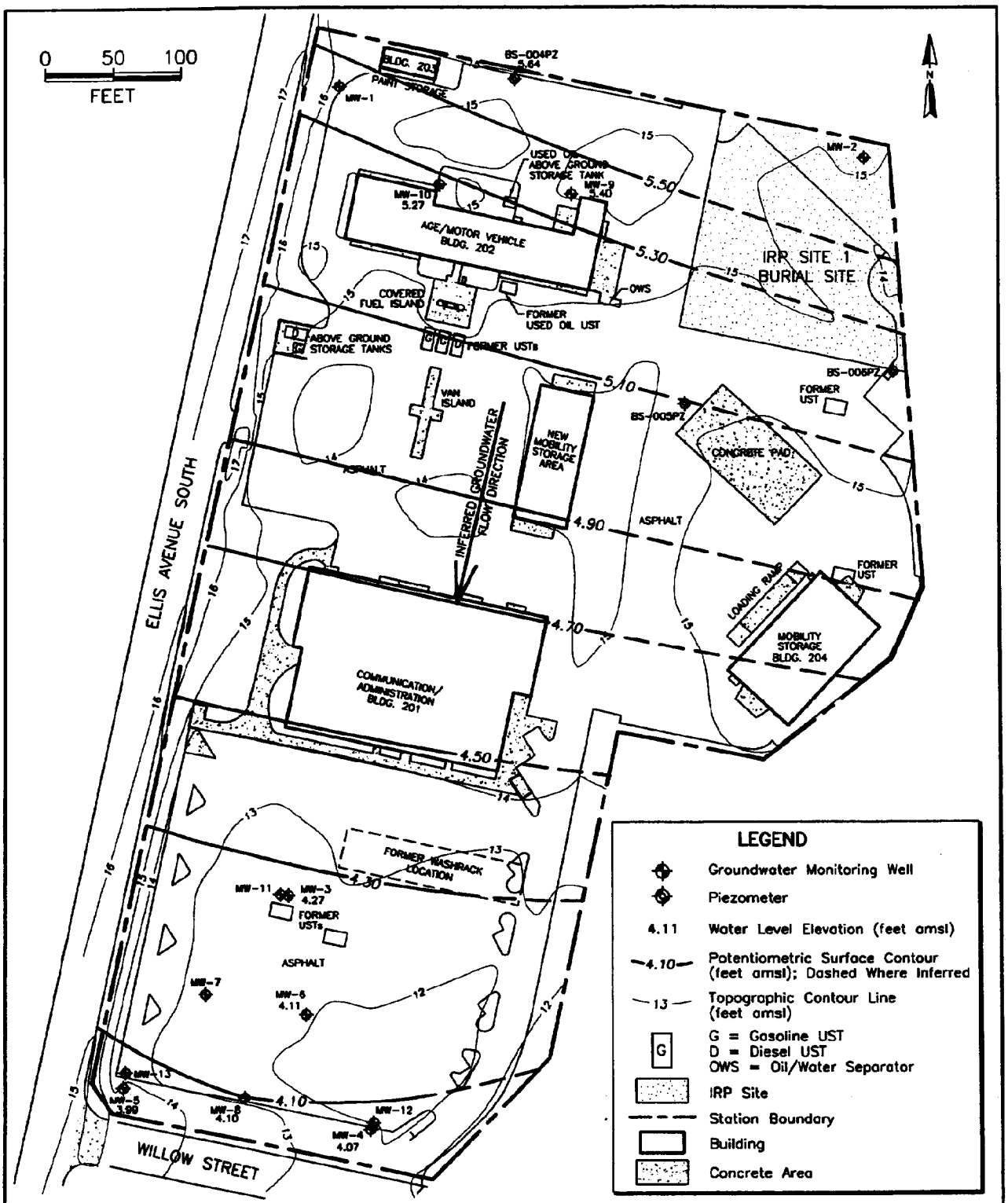

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POTENTIOMETRIC SURFACE MAP
13 FEBRUARY 2001

143rd CCSQ, SEATTLE ANGS
SEATTLE, WASHINGTON

FIGURE 4-7

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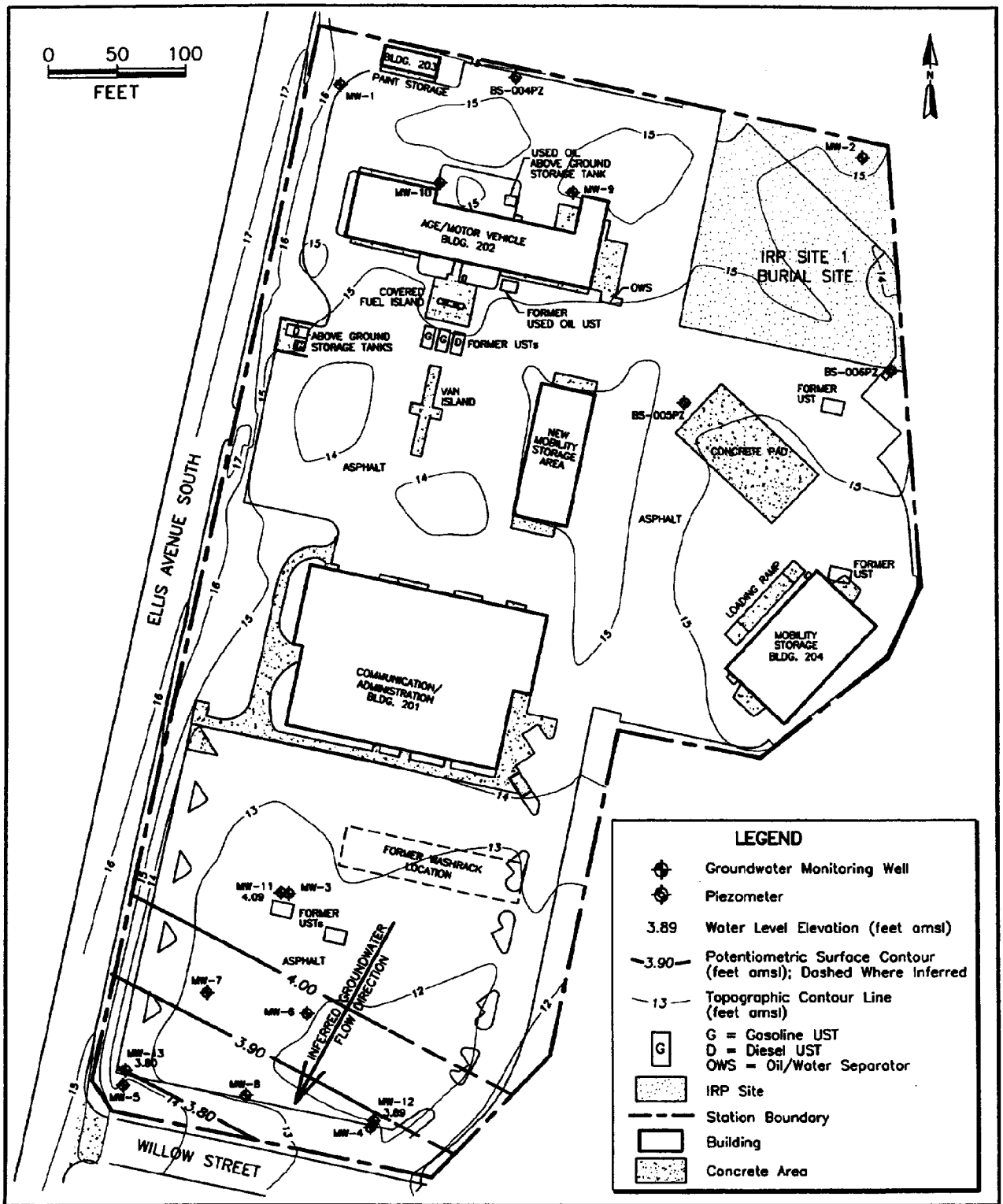

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POTENTIOMETRIC SURFACE MAP
2 SEPTEMBER 2000

143rd CCSQ, SEATTLE ANGS
SEATTLE, WASHINGTON

FIGURE 4-8

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60913110.dwg, 03/30/01

shallower monitoring wells, indicating that groundwater flow in the saturated zone is uniform to a depth of at least 40 feet bgs.

4.3 Sampling Results

The results of the groundwater and pore water sampling are presented in Table 4-1. No contaminants were detected in monitoring wells MW-11, MW-12, or MW-13. Compounds detected in the direct-push groundwater samples and pore water samples were as follows:

Compound	Number of Locations Detected	Depths Detected (feet bgs)	Concentrations Detected (µg/l)	Project Screening Goal[a]	Number of Locations with Detections > PSG
Tetrachloroethene (PCE)	2	10 - 12.5	1.87 - 3.79	5.0	0
Trichloroethene (TCE)	13	6 - 40	1.05 - 49.7	5.0	9
cis-1,2-Dichloroethene	15	8 - 30	1.00 - 23.3	70[b]	0
trans-1,2-Dichloroethene	1	10	1.05	100[b]	0
Vinyl chloride	1	12.5	2.11	0.2	1
Methylene chloride	1	17.5	12.4	5.0	1

Note: Duplicate sample detections are not listed.
[a] PSGs correspond to MTCA Method A Groundwater Cleanup Levels, except as noted.
[b] Federal Safe Drinking Water Act - Maximum Contaminant Level

TCE and cis-1,2-dichloroethene (cis-1,2-DCE) were the most prevalent compounds detected. These two compounds were detected at over half of the 24 locations sampled, at concentrations up to 49.7 µg/l and 23.3 µg/l, respectively. Cis-1,2-DCE is produced by the degradation of TCE. The other four compounds were detected at only one or two locations each. Compounds detected above PSGs include TCE, vinyl chloride, and methylene chloride. As discussed in Appendix D, the methylene chloride detection is a suspected laboratory artifact. No evidence of DNAPL was observed during the field investigation.

The results for groundwater, pore water, and field quality control (QC) blank samples are discussed separately below. Laboratory analytical reports are included in Appendix C. Data review/validation reports are contained in Appendix D.

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TABLE 4-1

Volatile Organic Compounds Detected in Groundwater and Pore Water Samples
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Location*	Date	Depth (feet bgs)	Tetrachloroethene (µg/l)	Trichloroethene (µg/l)	cis-1,2-Dichloroethene (µg/l)	trans-1,2-Dichloroethene (µg/l)	Vinyl Chloride (µg/l)	Methylene Chloride (µg/l)
MW-11	9/6/00	35	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		35 (dup)	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
	10/13/00	35						
MW-12	9/6/00	35	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
	10/13/00	35	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
MW-13	9/6/00	35	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
	10/13/00	35	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-1	9/7/00	10	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		12.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		15	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		25	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		30	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-1A	9/14/00	6	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-1B	9/14/00	8	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-2	9/7/00	10	<1.00	5.47	<1.00	<1.00	<0.500	<5.00
		12.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		15	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		25	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		32	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		40	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00

KCSlip4 43466
SEA409996

TABLE 4-1

Volatile Organic Compounds Detected in Groundwater and Pore Water Samples
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Location*	Date	Depth (feet bgs)	Tetrachloroethene (µg/l)	Trichloroethene (µg/l)	cis-1,2-Dichloroethene (µg/l)	trans-1,2-Dichloroethene (µg/l)	Vinyl Chloride (µg/l)	Methylene Chloride (µg/l)
BGA-3	9/7/00	10	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		12.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		15	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		20 (dup)	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		23	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		30	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		30 (dup)	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-2A	9/14/00	6	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-2B	9/14/00	8	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-4	9/8/00	10	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		12.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		15	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		22	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		26	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		34	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		39	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		39 (dup)	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-5	9/8/00	10	NS	NS	NS	NS	NS	NS
		12.5	**3.79**	**4.14**	<1.00	<1.00	<0.500	<5.00
		15	<1.00	**1.49**	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		25	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		30	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00

KCSlip4 43467
SEA409997

TABLE 4-1

Volatile Organic Compounds Detected in Groundwater and Pore Water Samples
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Location*	Date	Depth (feet bgs)	Tetrachloroethene (µg/l)	Trichloroethene (µg/l)	cis-1,2-Dichloroethene (µg/l)	trans-1,2-Dichloroethene (µg/l)	Vinyl Chloride (µg/l)	Methylene Chloride (µg/l)
SL-3A	9/14/00	6	<1.00	**1.20**	<1.00	<1.00	<0.500	<5.00
SL-3B	9/14/00	8	<1.00	**21.4**	**2.73**	<1.00	<0.500	<5.00
BGA-6	9/8/00	10	<1.00	**49.7**	**23.3**	<1.00	<0.500	<5.00
		12.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		15	<1.00	**1.13**	<1.00	<1.00	<0.500	<5.00
		15 (dup)	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	**2.24**	<1.00	<1.00	<0.500	<5.00
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		27	<1.00	**2.68**	<1.00	<1.00	<0.500	<5.00
		33	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		40	<1.00	**1.73**	<1.00	<1.00	<0.500	<5.00
BGA-7	9/8/00	10	<1.00	**5.19**	**4.22**	<1.00	<0.500	<5.00
		12.5	<1.00	**7.60**	**7.48**	<1.00	**2.11**	<5.00
		15	<1.00	<1.00	**1.05**	<1.00	<0.500	<5.00
		15 (dup)	<1.00	<1.00	**1.10**	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		23	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		26	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		30	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-4A	9/14/00	6	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-4B	9/14/00	8	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-8	9/8/00	10	**1.87**	**1.65**	**1.18**	<1.00	<0.500	<5.00
		12.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		15	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		17.5 (dup)	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		28	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		31	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		37	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00

KCSlip4 43468
SEA409998

TABLE 4-1

Volatile Organic Compounds Detected in Groundwater and Pore Water Samples
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Location*	Date	Depth (feet bgs)	Tetrachloroethene (µg/l)	Trichloroethene (µg/l)	cis-1,2-Dichloroethene (µg/l)	trans-1,2-Dichloroethene (µg/l)	Vinyl Chloride (µg/l)	Methylene Chloride (µg/l)
BGA-9	9/8/00	10	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		12.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		12.5 (dup)	<1.00	<1.00	<1.00	<1.00	<0.500	**9.58**
		15	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	<1.00	<1.00	<0.500	**12.4**
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		26	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		30	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-5A	9/14/00	6	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-5B	9/14/00	8	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-10	9/8/00	10	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		12.5	<1.00	<1.00	**1.64**	<1.00	<0.500	<5.00
		15	<1.00	<1.00	**4.69**	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	**2.95**	<1.00	<0.500	<5.00
		20	<1.00	<1.00	**3.82**	<1.00	<0.500	<5.00
		24	<1.00	<1.00	**1.79**	<1.00	<0.500	<5.00
		31	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		40	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-11	9/12/00	10	<1.00	**47.7**	**16.9**	**1.05**	<0.500	<5.00
		12.5	<1.00	**1.60**	<1.00	<1.00	<0.500	<5.00
		15	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		25	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		29	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		29 (dup)	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00

KCSlip4 43469
SEA409999

TABLE 4-1
Volatile Organic Compounds Detected in Groundwater and Pore Water Samples
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Location*	Date	Depth (feet bgs)	Tetrachloroethene (µg/l)	Trichloroethene (µg/l)	cis-1,2-Dichlorobethene (µg/l)	trans-1,2-Dichloroethene (µg/l)	Vinyl Chloride (µg/l)	Methylene Chloride (µg/l)
SL-6A	9/14/00	6	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-6B	9/14/00	8	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		8 (dup)	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-12	9/12/00	10	<1.00	**33.2**	**11.1**	<1.00	<0.500	<5.00
		12.5	<1.00	**13.3**	**3.42**	<1.00	<0.500	<5.00
		15	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		20 (dup)	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		25	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		34	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		40	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-13	9/12/00	10	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		12.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		15	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		15 (dup)	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		24	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		30	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-7A	9/15/00	6	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-7B	9/14/00	8	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-14	9/12/00	10	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		12.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		15	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	**1.05**	<1.00	<0.500	<5.00
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		27	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		34	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		40	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00

KCSlip4 43470
SEA410000

TABLE 4-1

Volatile Organic Compounds Detected in Groundwater and Pore Water Samples
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Location*	Date	Depth (feet bgs)	Tetrachloroethene (µg/l)	Trichloroethene (µg/l)	cis-1,2-Dichloroethene (µg/l)	trans-1,2-Dichloroethene (µg/l)	Vinyl Chloride (µg/l)	Methylene Chloride (µg/l)
BGA-15	9/12/00	10	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		12.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		15	<1.00	<1.00	**2.03**	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	**3.57**	<1.00	<0.500	<5.00
		17.5 (dup)	<1.00	<1.00	**3.87**	<1.00	<0.500	<5.00
		22	<1.00	<1.00	**2.60**	<1.00	<0.500	<5.00
		25	<1.00	<1.00	**2.30**	<1.00	<0.500	<5.00
		30	<1.00	<1.00	**1.17**	<1.00	<0.500	<5.00
SL-8A	9/14/00	6	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-8B	9/14/00	8	<1.00	**10.2**	**1.03**	<1.00	<0.500	<5.00
BGA-16	9/12/00	10	<1.00	**20.6**	**8.93**	<1.00	<0.500	<5.00
		12.5	<1.00	**1.64**	<1.00	<1.00	<0.500	<5.00
		15	<1.00	**2.14**	**9.55**	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	**1.38**	<1.00	<0.500	<5.00
		23	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		27	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		31	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		31 (dup)	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		39	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-17	9/12/00	10	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		12.5	<1.00	**48.2**	**8.85**	<1.00	<0.500	<5.00
		15	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		28	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		32	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00

KCSlip4 43471
SEA410001

TABLE 4-1

Volatile Organic Compounds Detected in Groundwater and Pore Water Samples
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Location*	Date	Depth (feet bgs)	Tetrachloroethene (µg/l)	Trichloroethene (µg/l)	cis-1,2-Dichloroethene (µg/l)	trans-1,2-Dichloroethene (µg/l)	Vinyl Chloride (µg/l)	Methylene Chloride (µg/l)
SL-9A	9/14/00	6	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-9B	9/14/00	8	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-18	9/13/00	10	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		12.5	<1.00	2.70	1.69	<1.00	<0.500	<5.00
		12.5 (dup)	<1.00	**2.64**	**1.63**	<1.00	<0.500	<5.00
		15	<1.00	**2.95**	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	**1.22**	<1.00	<1.00	<0.500	<5.00
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		26	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		30	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		37	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-19	9/12/00	10	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		12	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		12 (dup)	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		15	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	**1.00**	<1.00	<0.500	<5.00
		22	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		26	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		30	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-10A	9/14/00	6	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-10B	9/14/00	8	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-20	9/13/00	10	NS	NS	NS	NS	NS	NS
		12.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		15	<1.00	<1.00	**3.63**	<1.00	<0.500	<5.00
		15 (dup)	<1.00	<1.00	**3.58**	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	**4.82**	<1.00	<0.500	<5.00
		20	<1.00	<1.00	**4.84**	<1.00	<0.500	<5.00
		25	<1.00	<1.00	**3.18**	<1.00	<0.500	<5.00
		25 (dup)	<1.00	<1.00	**3.20**	<1.00	<0.500	<5.00
		30	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		40	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00

KCSlip4 43472
SEA410002

TABLE 4-1

Volatile Organic Compounds Detected in Groundwater and Pore Water Samples
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Location*	Date	Depth (feet bgs)	Tetrachloroethene (µg/l)	Trichloroethene (µg/l)	cis-1,2-Dichloroethene (µg/l)	trans-1,2-Dichloroethene (µg/l)	Vinyl Chloride (µg/l)	Methylene Chloride (µg/l)
BGA-21	9/13/00	10	NS	NS	NS	NS	NS	NS
		12.5	<1.00	**29.1**	**8.86**	<1.00	<0.500	<5.00
		15	<1.00	**3.70**	**1.16**	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	**1.87**	<1.00	<0.500	<5.00
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		25	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		30	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
SL-11A	NA	6	NS	NS	NS	NS	NS	NS
SL-11B	9/14/00	8	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-22	9/13/00	10	NS	NS	NS	NS	NS	NS
		12.5	<1.00	**16.6**	**3.40**	<1.00	<0.500	<5.00
		15	<1.00	**5.03**	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	**1.05**	<1.00	<1.00	<0.500	<5.00
		23	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		27	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		30	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		39	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-23	9/13/00	10	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		12.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		15	<1.00	**2.36**	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	**1.60**	<1.00	<1.00	<0.500	<5.00
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		25	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		30	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		30 (dup)	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00

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TABLE 4-1
Volatile Organic Compounds Detected in Groundwater and Pore Water Samples
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Location*	Date	Depth (feet bgs)	Tetrachloroethene (µg/l)	Trichloroethene (µg/l)	cis-1,2-Dichloroethene (µg/l)	trans-1,2-Dichloroethene (µg/l)	Vinyl Chloride (µg/l)	Methylene Chloride (µg/l)
SL-12A	NA	6	NS	NS	NS	NS	NS	NS
SL-12B	9/14/00	8	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
BGA-24	9/13/00	10	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		12.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		15	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		15 (dup)	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		17.5	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		20	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		27	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		34	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
		40	<1.00	<1.00	<1.00	<1.00	<0.500	<5.00
Project Screening Goal			5.0	5.0	70	100	0.2	5.0

Notes:

NA = Not applicable

NS = No sample recovered

dup = Duplicate sample

Shaded values exceed project screening goals.

Data qualifiers applied during the data review/validation process (Appendix D) are not shown in this table.

* Location Identifiers:

BGA - Direct-push boring (groundwater sampling location)

MW - Monitoring well (groundwater sampling location)

SL - Suction lysimeter (pore water sampling location)

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4.3.1 Groundwater

TCE was detected above the MTCA Method A Cleanup Level of 5.0 µg/l at nine direct-push boring locations. The highest concentration detected was 49.7 µg/l, in the sample collected from 10 feet bgs in boring BGA-6. This concentration is at least 200 times less than the dissolved concentrations that would be expected if DNAPL were present (Pankow and Cherry 1996).

Most of the TCE detections occurred in the upper 5 feet of the saturated zone (i.e., between 10 and 15 feet bgs). Figure 4-9 shows the maximum TCE concentrations detected in this depth interval. None of the TCE detections below 15 feet bgs exceeded the MTCA Method A Cleanup Level. There appears to be no spatial correlation between the diffuse distribution of TCE depicted in Figure 4-9 and any of the known underground utilities at the Station, including the former cooling water supply lines for the Georgetown Steam Plant.

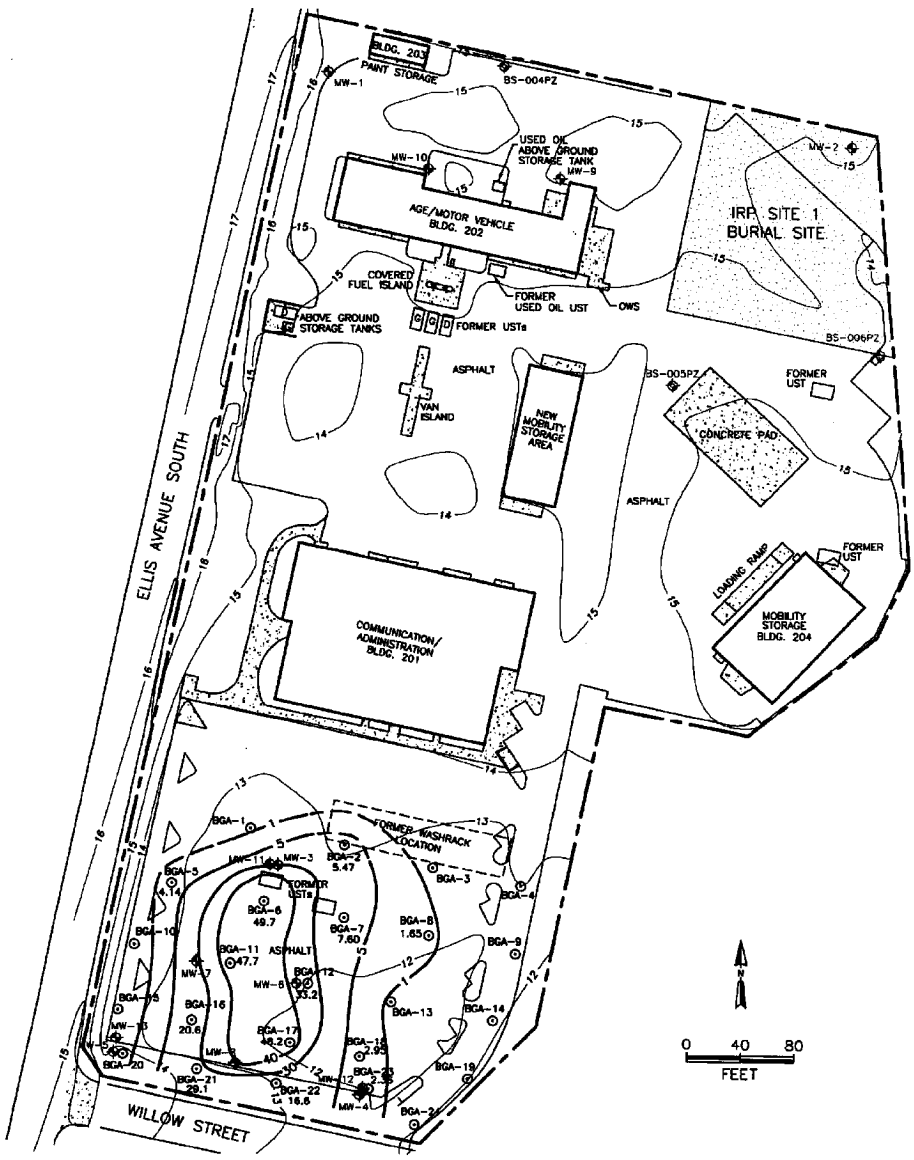
TCE was detected in one direct-push sample collected from a depth of 40 feet bgs, at a concentration of 1.73 µg/l (boring BGA-6; Table 4-1). Cis-1,2-DCE was detected in one sample collected from a depth of 30 feet bgs, at a concentration of 1.17 µg/l (boring BGA-15). No other samples collected below 27 feet bgs contained measurable concentrations of VOCs, including the samples collected from wells MW-11, MW-12, and MW-13.

Vinyl chloride and methylene chloride were each detected at one location. Vinyl chloride was detected at 2.11 µg/l (10 times the MTCA Method A Cleanup Level) in the sample collected from 12.5 feet bgs in boring BGA-7. Methylene chloride was detected at 12.4 µg/l (2.5 times the MTCA Method A Cleanup Level) in the sample collected from 17.5 feet bgs in boring BGA-9. None of the other detected compounds exceeded MTCA Method A Cleanup Levels or Federal Maximum Contaminant Levels (MCLs).

4.3.2 Vadose Zone Pore Water

Chlorinated VOCs were detected in three pore water samples:

- The sample collected from location SL-3A (6 feet bgs) contained TCE at a concentration of 1.20 µg/l;
- The sample collected from location SL-3B (8 feet bgs) contained TCE and cis-1,2-DCE at concentrations of 21.4 µg/l and 2.73 µg/l, respectively; and



LEGEND

- Groundwater Monitoring Well
- Piezometer
- CPT/Direct-push Groundwater Boring
- 20.6 TCE Concentration in micrograms per liter (µg/L)
- 5 TCE Concentration Contour (µg/L); Dashed Where Inferred
- 13 Topographic Contour Line (feet amsl)
- G = Gasoline UST; D = Diesel UST; OWS = Oil/Water Separator
- IRP Site
- Station Boundary
- Building
- Concrete Area

ERM

OBSERVED EXTENT OF TRICHLOROETHENE IN GROUNDWATER, 10-15 FEET BGS – SEPTEMBER 2000

143rd CCSQ, SEATTLE ANGS
SEATTLE, WASHINGTON

FIGURE 4-9

G:\CAD\DWGS\60911\31 60913111.dwg, 03/29/01

FINAL

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- The sample collected from location SL-8B (8 feet bgs) contained TCE and cis-1,2-DCE at concentrations of 10.2 µg/l and 1.03 µg/l, respectively.

These detections likely reflect elevated concentrations of TCE and cis-1,2-DCE in the capillary fringe directly above areas of elevated groundwater concentrations. None of the detected concentrations are indicative of residual DNAPL. The sparse detections and relatively low concentrations of chlorinated VOCs in the pore water samples, combined with the previous lack of significant VOC detections in soil vapor samples (ERM 1999a), indicate that capillary flow and vapor migration in the vadose zone are not important contaminant transport mechanisms at the Station.

4.3.3 Field Quality Control Blanks

Quality control blank samples collected during the BGA field program included 19 equipment rinsate blanks, 10 trip blanks, and 2 field blanks. Bromodichloromethane, a common residual byproduct of the drinking water chlorination process, was detected at a concentration of 1.73 µg/l in the field blank prepared from Station tap water. No other analytes were detected in the field QC blanks.

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SECTION 5.0

CONCLUSIONS

The conclusions of the BGA project are summarized as follows:

- The predominant groundwater flow direction beneath the Seattle ANGS is toward the south-southwest. This flow direction is uniform to a depth of at least 40 feet bgs. Cumulative water level monitoring data suggest that if significant changes in groundwater flow direction occur at the Station, they are both infrequent and short-lived, and have little effect on contaminant migration. The southerly groundwater flow direction most likely reflects an area-wide flow pattern driven by recharge in the uplands northeast of the Station and discharge to the Duwamish Waterway southwest of the Station.

- There are no surface water impoundments at the Seattle ANGS, nor do there appear to be any such impoundments on adjacent properties based on field observations. Consequently, groundwater flow in the vicinity of the Station is unlikely to be significantly influenced by local surface water infiltration.

- There is no evidence that existing underground utilities have either acted as a source of contamination or influenced the migration of contaminants at the Station.

- There is no evidence that dissolved- or vapor-phase contaminant transport has occurred in the vadose zone. The primary transport mechanism for the dissolved VOCs observed in groundwater appears to be advection (i.e., transport via bulk groundwater flow).

- The dissolved TCE in groundwater beneath the southern portion of the Station is generally limited to the upper 5 feet of the saturated zone (i.e., 10 to 15 feet bgs). There were no VOCs detected above MTCA Method A Cleanup Levels or Federal MCLs at depths below 15 feet bgs. There also was no evidence of residual DNAPL detected at the Station.

- The TCE in shallow groundwater beneath the Seattle ANGS likely did not originate from a release at the Boeing Area 3-360 site. Evidence supporting this conclusion includes: (1) the considerable distance north of

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the southern Station boundary that TCE was detected - approximately 200 feet, compared to the maximum of 50 to 100 feet predicted by groundwater modeling (ERM 2000a); and (2) the lack of the expected TCE concentration gradient. (If the TCE source were on the Boeing site, dissolved concentrations should be the highest close to the southern Station boundary and should decrease to the north; this does not match the observed TCE distribution.)

- The TCE detected in groundwater beneath the Boeing Area 3-360 site likely did not originate from a release at the Seattle ANGS. Evidence supporting this conclusion includes the significantly higher dissolved concentrations detected at the Boeing site compared to those detected at the ANG site (typically an order of magnitude higher, and as much as 1,300 μg/l). Additional evidence is provided by the apparent temporal stability of the Boeing TCE plume, which is inconsistent with the concept of a mobile, "detached plume" originating from the Seattle ANGS.

- Although no definitive evidence exists, the simplest explanation for the observed distribution of TCE in groundwater at the Seattle ANGS is that the contamination was caused by minor releases or incidental spills during historical Station operations. These releases most likely would have occurred prior to the significant Station remodel in the mid-1980s. The lack of TCE and other VOC detections in soil during the RI may indicate that adsorbed-phase TCE and associated degradation products (e.g., cis-1,2-DCE, vinyl chloride) have decreased to non-detectable levels as a result of soil leaching and/or other natural attenuation processes. It is also possible that contaminated soil was removed during site demolition and remodeling activities.

- PCE has not been detected frequently enough or at high enough concentrations in groundwater to pose an unacceptable risk to human health or the environment. Detections of this compound have primarily been limited to monitoring wells along or near the northern (upgradient) Station boundary. A possible source of this contamination is the former Georgetown Cleaners site, which is approximately 300 feet north and directly upgradient of the Seattle ANGS.

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SECTION 6.0

RECOMMENDATIONS

The BGA findings suggest that the presence of TCE in groundwater beneath the Seattle ANGS is most likely the result of past minor releases or incidental spills that occurred during historical Station operations. Accordingly, further action is recommended to address the potential human health and ecological risks associated with the dissolved TCE.

Several remedial options for reducing potential TCE-related risks were identified in the Phase II FS Report (ERM 1999b). These options included institutional controls (e.g., deed restrictions on groundwater use), monitored natural attenuation, groundwater extraction and treatment, and in situ treatment via air sparging or co-metabolic bioremediation. Another groundwater remediation technology that has recently proven to be effective in treating chlorinated VOCs is in situ chemical oxidation. Common oxidants that have been used to destroy dissolved VOCs include ozone, potassium permanganate, and sodium permanganate. Cleanup results at sites where this technology has been implemented indicate that it compares favorably with other technologies in terms of effectiveness, implementability, and cost. Past experience at sites similar to the Seattle ANGS indicates that in situ chemical oxidation could reduce TCE concentrations at the Station to acceptable risk-based levels within 1 year.

Based on the results of the BGA, the Phase II FS Report (ERM 1999b) should be revised to reflect the new data and to include in situ chemical oxidation as a potential remedial alternative. The FS should also be expanded to include detailed and comparative analyses of the remedial alternatives, and a Proposed Plan to remedy the contamination.

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SECTION 7.0

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ERM. 1999b. *Installation Restoration Program Final Phase II Feasibility Study Report, 143rd Combat Communications Squadron, Seattle Air National Guard Station.* August 1999.

ERM. 2000a. *Installation Restoration Program Final Basewide Groundwater Assessment Work Plan, 143rd Combat Communications Squadron, Seattle Air National Guard Station.* August 2000.

ERM. 2000b. *Installation Restoration Program Final Fourth Quarter 1999-2000 Groundwater Monitoring Report, 143rd Combat Communications Squadron, Seattle Air National Guard Station.* September 2000.

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Appendix A

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SEA410012

APPENDIX A

CONE PENETROMETER TESTING LOGS

Explanation of Cone Penetration Test Data Plots

Qt This plot shows the cone (tip) resistance as a function of depth. The cone resistance is the resistance to penetration developed by the cone of the penetrometer tip as the penetrometer is pushed through soil. In general, higher values of cone resistance correspond to relatively coarser-grained soils (i.e., sands and gravelly sands), whereas lower values of cone resistance correspond to relatively finer-grained soils (i.e., silts and clays).

Fr. Ratio This plot shows the ratio of friction resistance to cone resistance as a function of depth. The friction resistance is the resistance to penetration developed by the friction sleeve of the penetrometer tip as the penetrometer is pushed through soil. In general, coarser-grained soils generate lower frictional resistance and higher cone resistance than finer-grained soils. Consequently, lower values of the friction ratio generally correspond to relatively coarser-grained soils (i.e., sands and gravelly sands), whereas higher values of the friction ratio generally correspond to relatively finer-grained soils (i.e., silts and clays).

PWP This plot shows the pore water pressure generated in the soil near the penetrometer tip as a function of depth. In general, higher pore water pressures can be generated in finer-grained soils (i.e., silts and clays) than in coarser-grained soils.

Ic This plot shows the dimensionless soil classification (grain size) correlation index (Jefferies and Davies 1991) as a function of depth. The empirical correlation is based on the cone resistance and friction resistance, which are measured directly by the penetrometer. This data plot is commonly used for interpreting subsurface stratigraphy using the classification criteria shown.

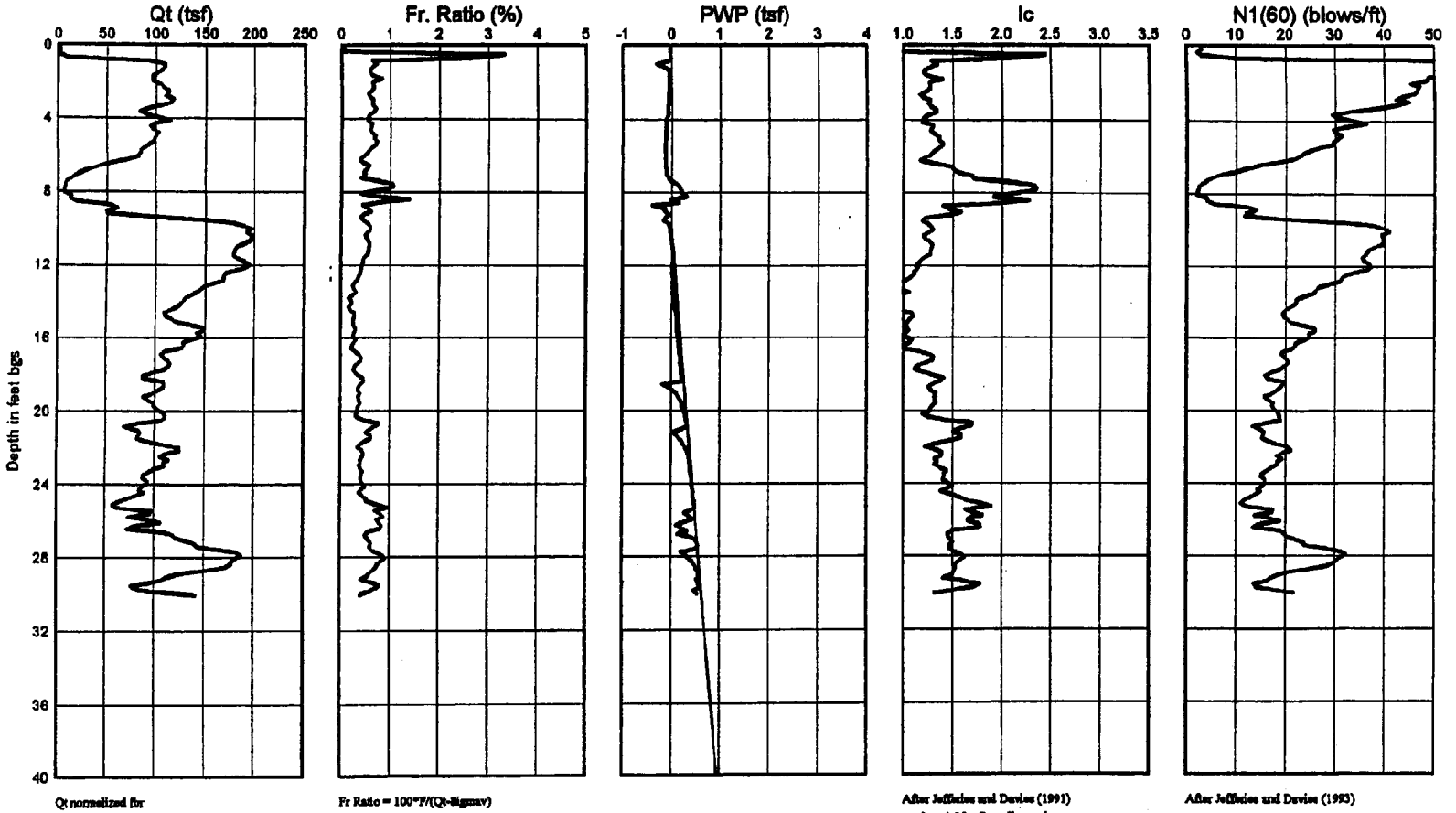
N1(60) This plot shows the predicted Standard Penetration Test (SPT) results (number of hammer blows per foot of penetration, based on an energy ratio of 60 percent) for subsurface soils as a function of depth. The SPT estimates are based on an empirical correlation of CPT data developed by Jefferies and Davies (1993). In general, dense or hard soils result in higher blow counts than loose or soft soils.

Cone Penetration Test - CPT-01

Test Date : Aug 08, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-sigmav)
Gamma = 110.1 pcf

After Jefferies and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jefferies and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

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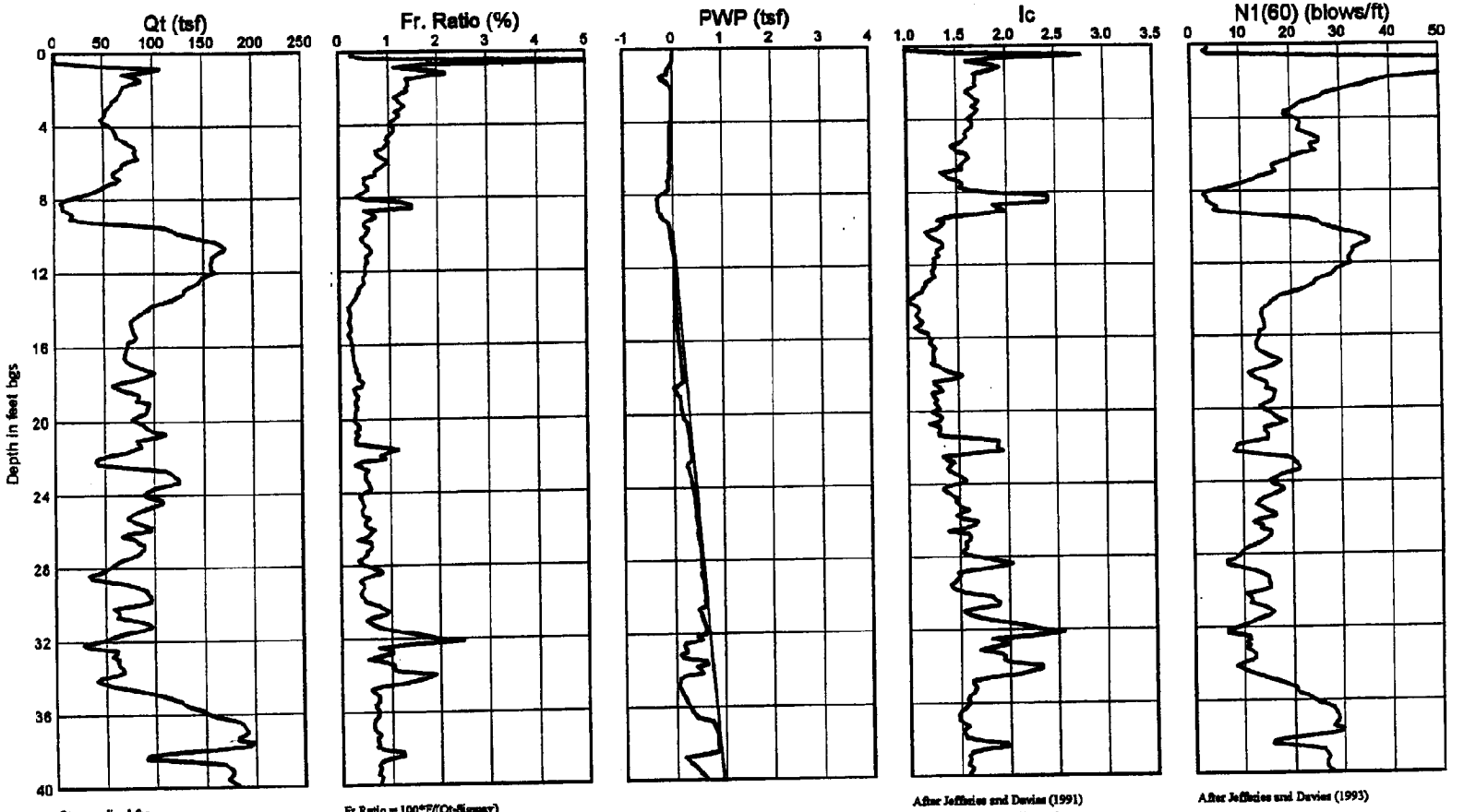
Cone Penetration Test - CPT-02

Test Date : Aug 11, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jefferies and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jefferies and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

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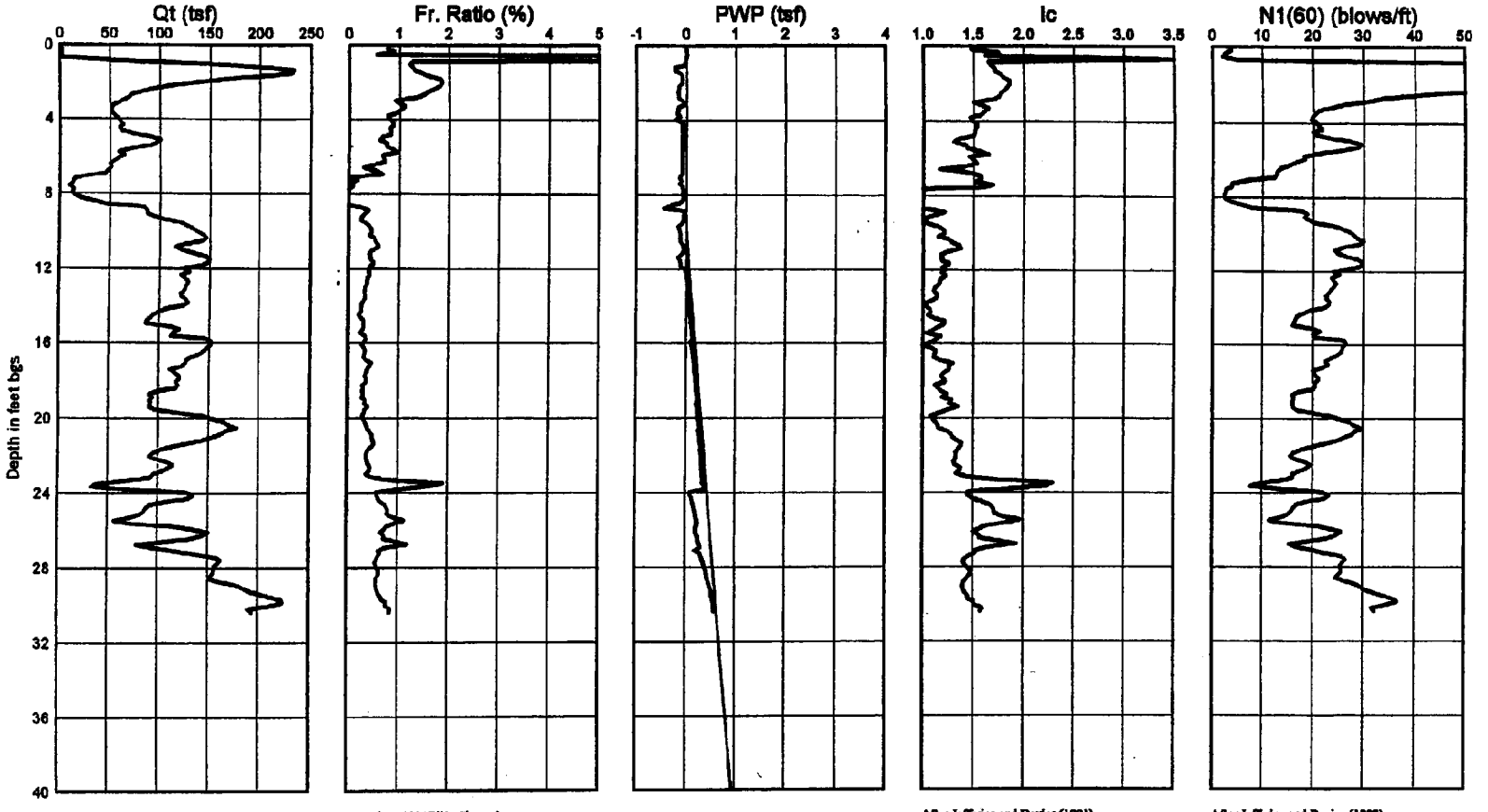
Cone Penetration Test - CPT-03

Test Date : Aug 11, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jeffries and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.50 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jeffries and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

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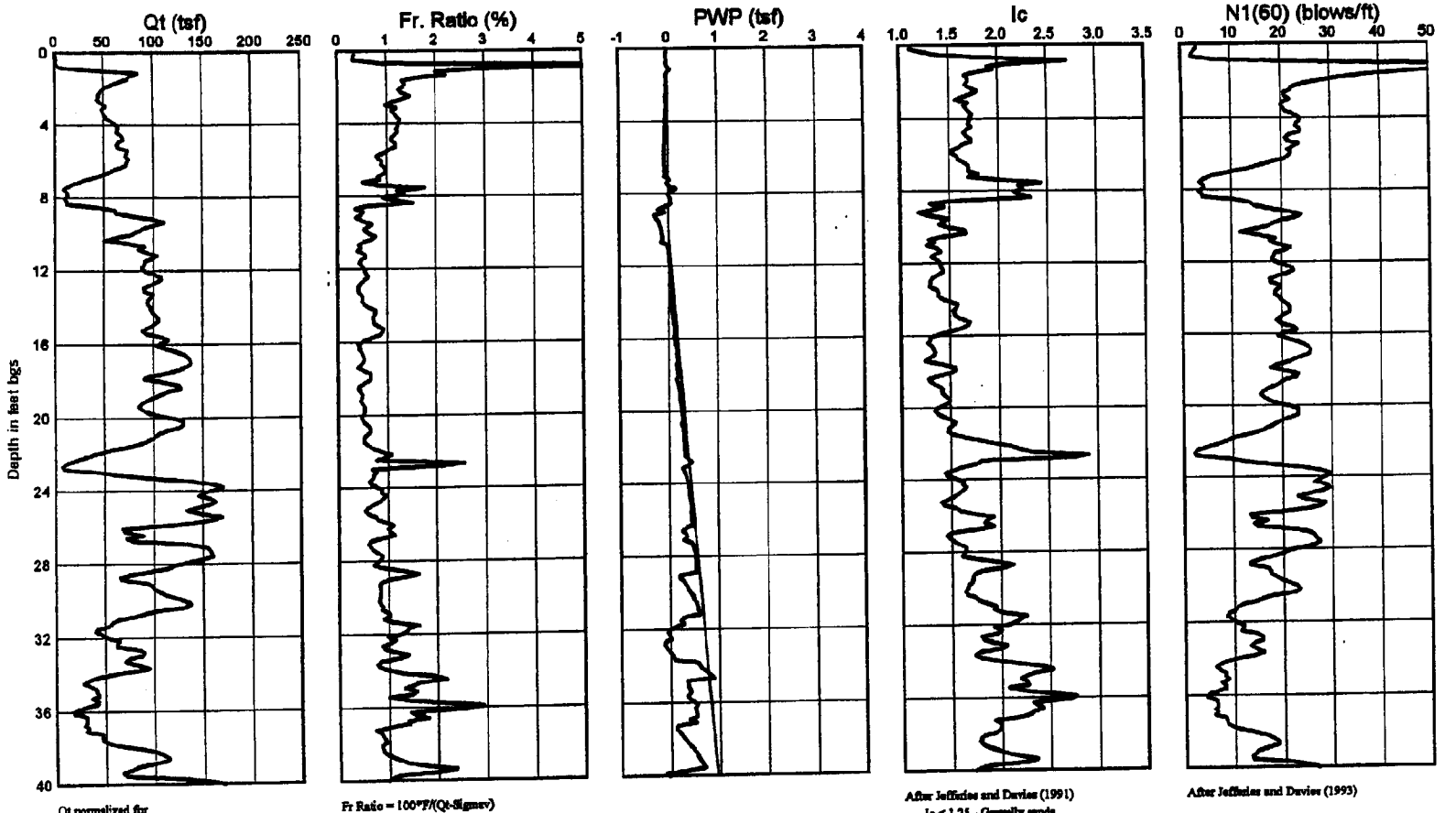
Cone Penetration Test - CPT-04

Test Date : Aug 11, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jeffries and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jeffries and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

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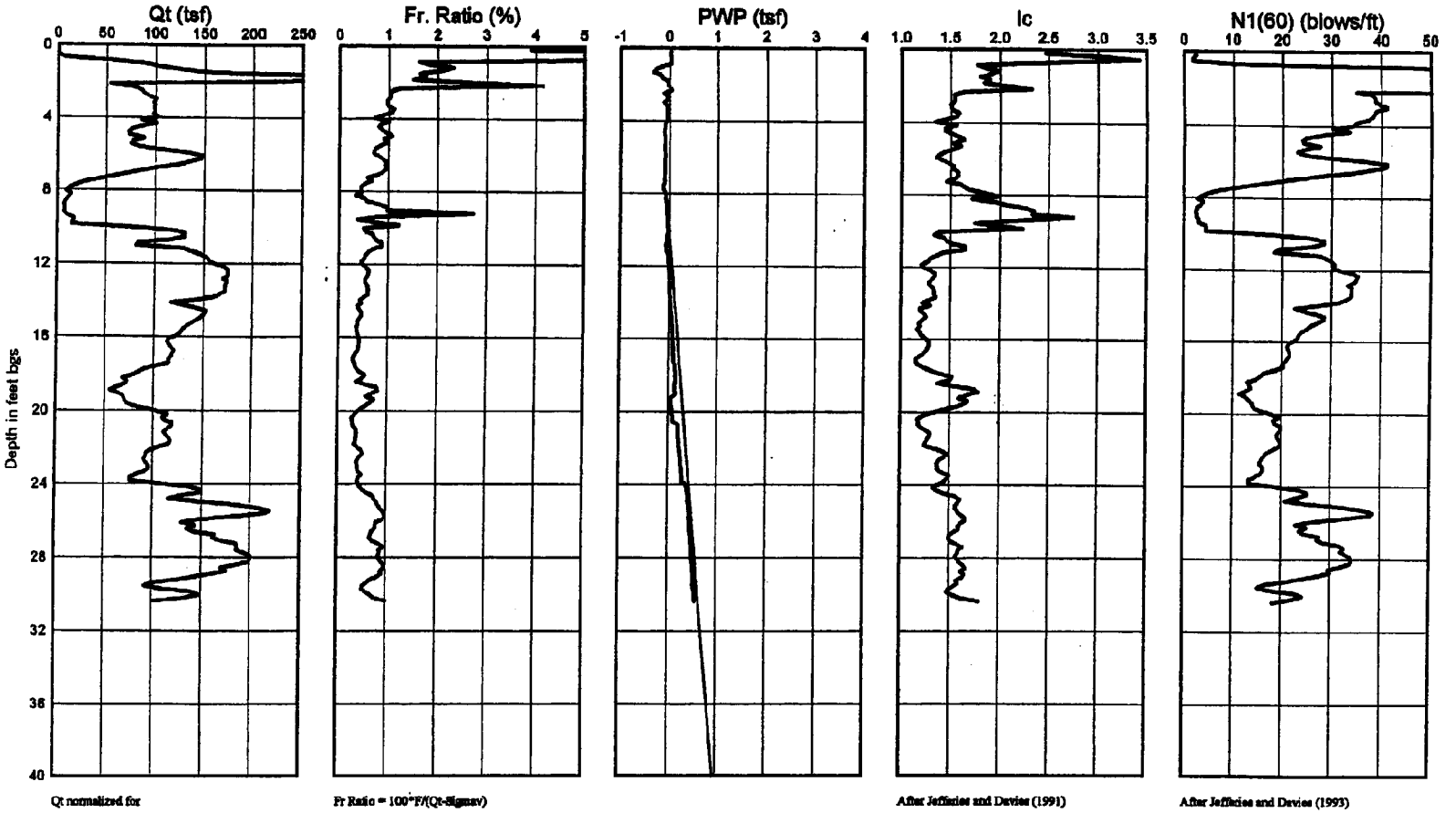
Cone Penetration Test - CPT-05

Test Date : Aug 11, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jefferies and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jefferies and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

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KCSlip4 43489

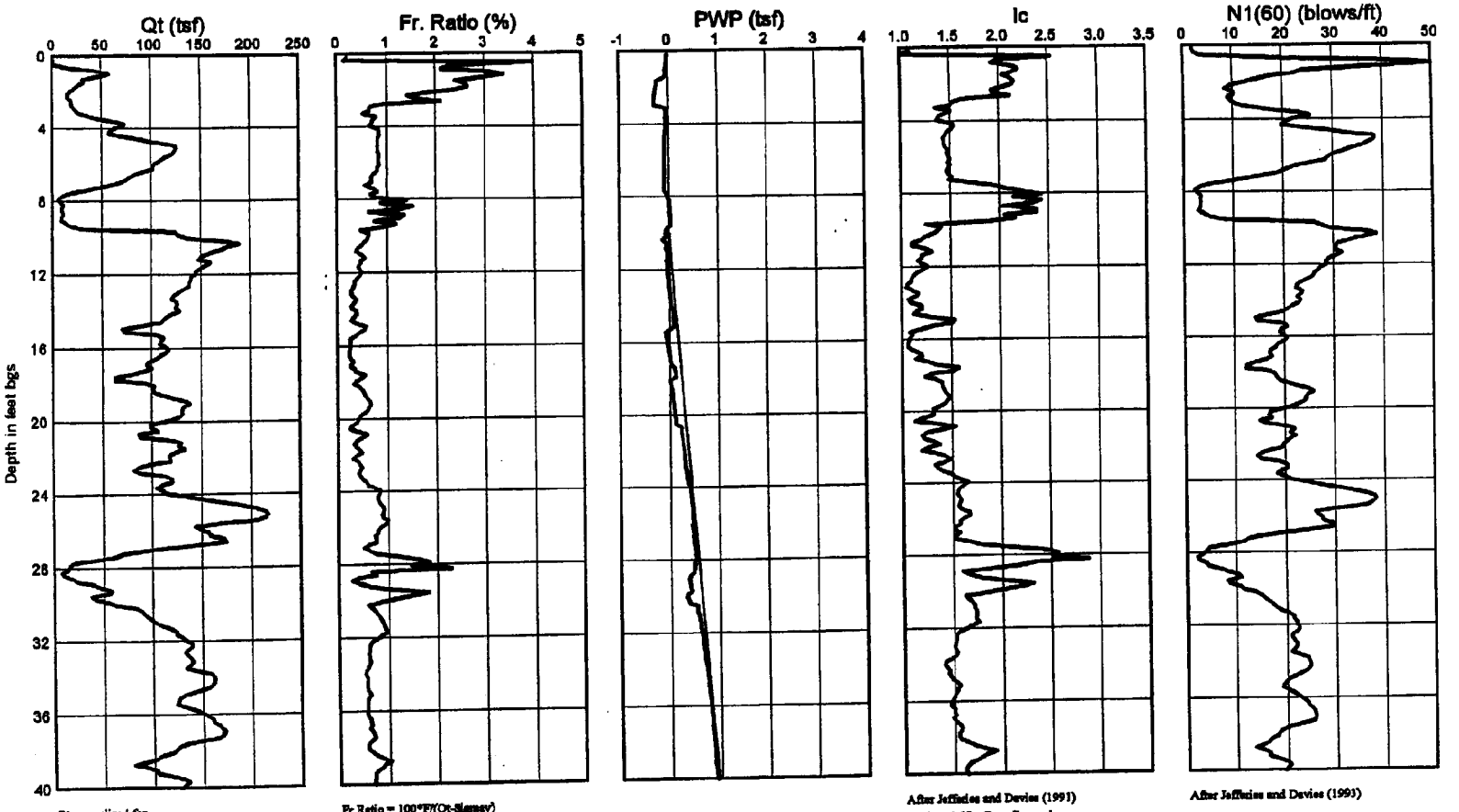
SEA410019

Cone Penetration Test - CPT-06

Test Date : Aug 11, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*Fr/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jeffries and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jeffries and Davies (1993)

PROJECT NO. 8091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43490

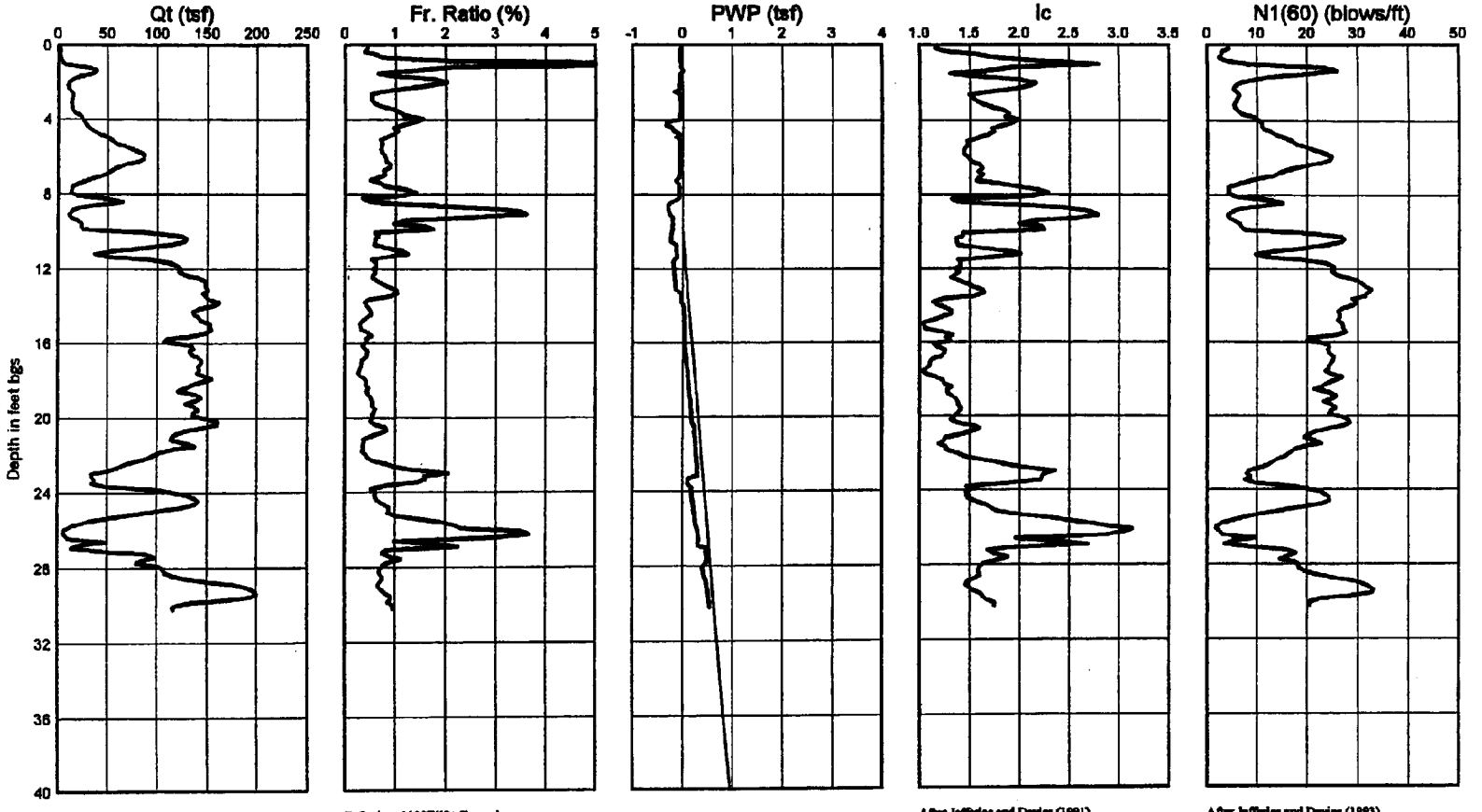
SEA410020

Cone Penetration Test - CPT-07

Test Date : Aug 11, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jefferies and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jefferies and Davies (1993)

PROJECT NO. 8091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43491

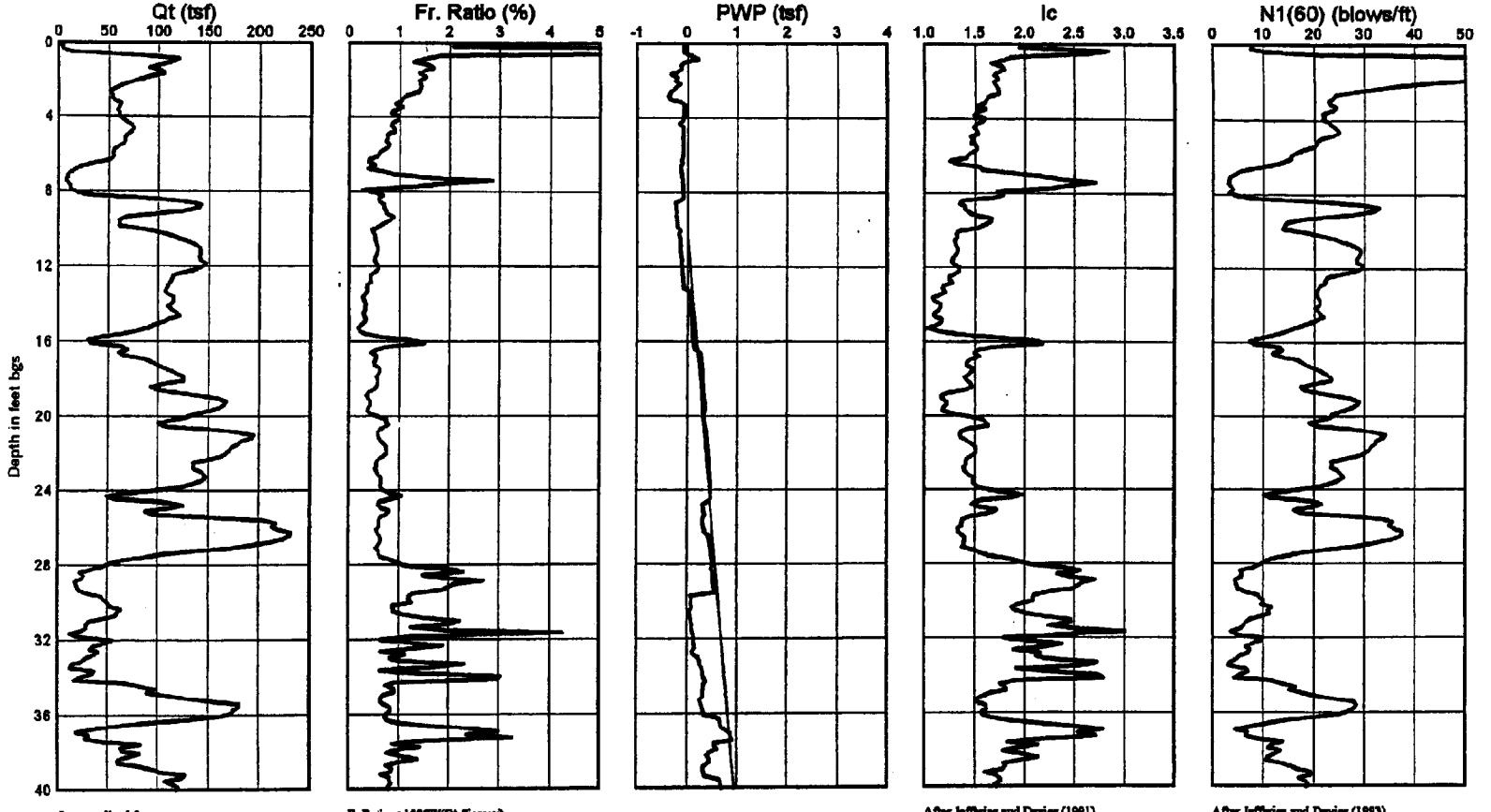
SEA410021

Cone Penetration Test - CPT-08

Test Date : Aug 11, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*Fr/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jeffries and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jeffries and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

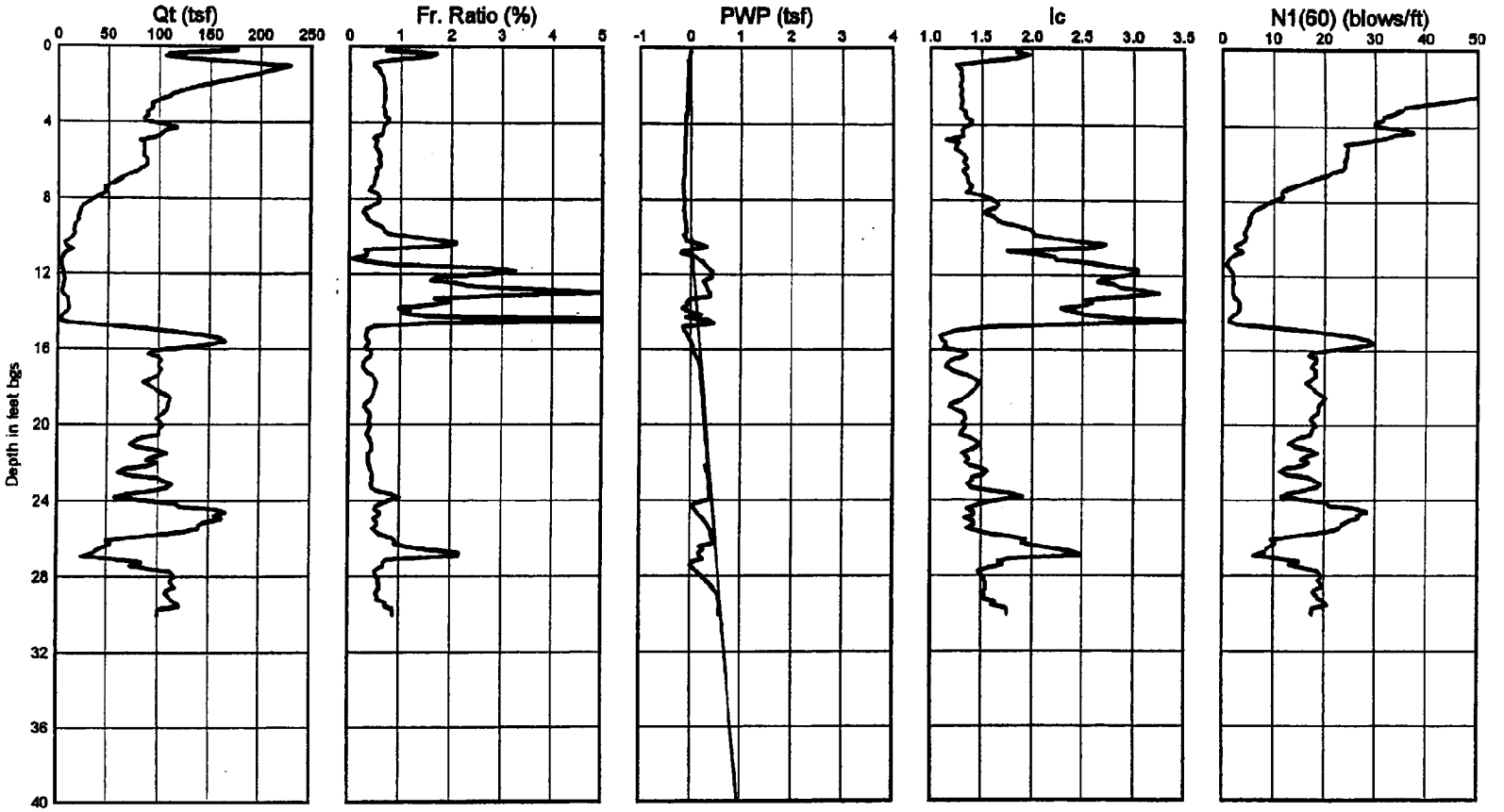
KCSlip4 43492
SEA410022

Cone Penetration Test - CPT-09

Test Date : Aug 15, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*Fr/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jeffries and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jeffries and Davies (1993)

PROJECT NO. 6081.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43493

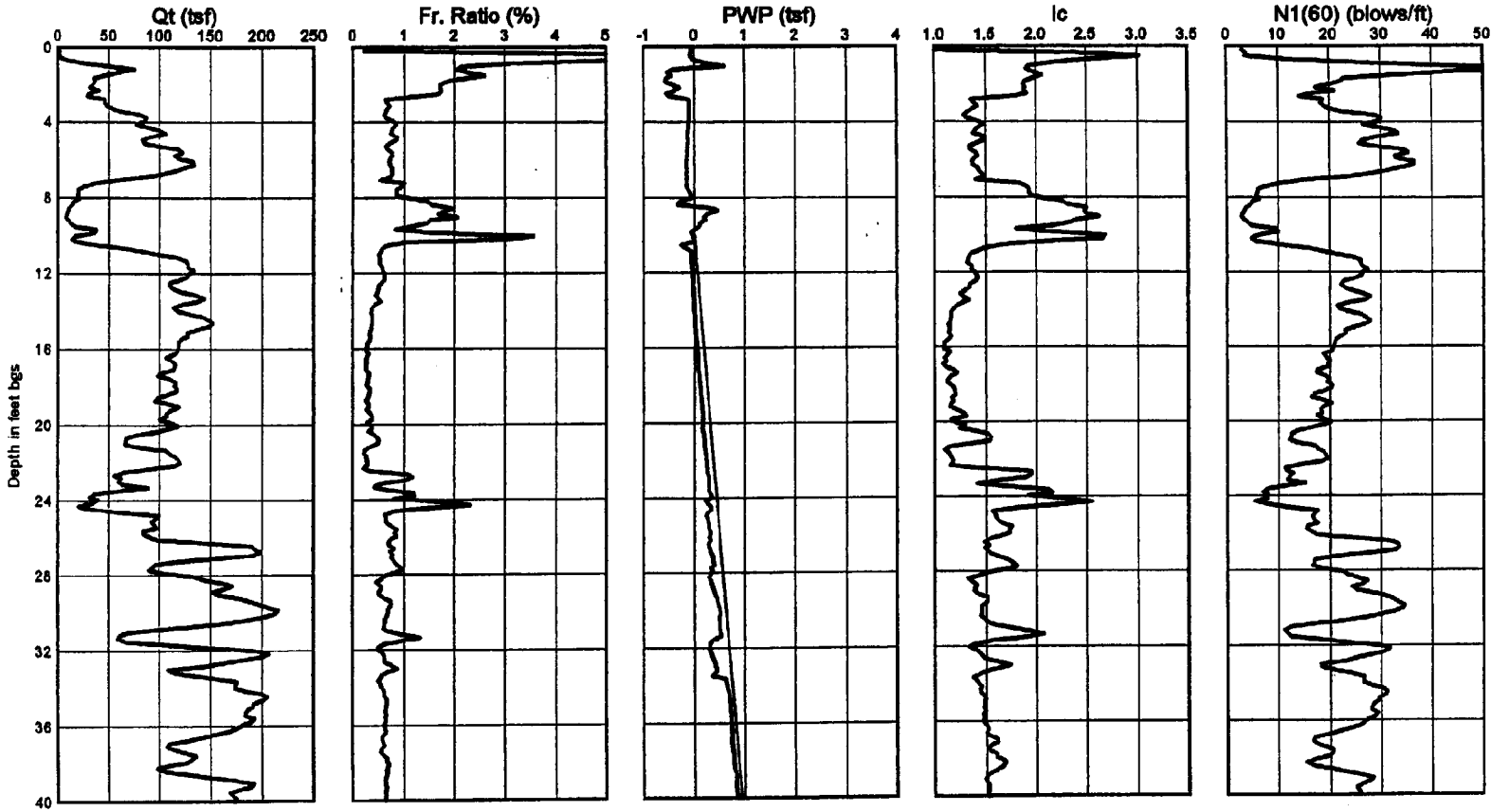
SEA410023

Cone Penetration Test - CPT-10

Test Date : Aug 15, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jeffries and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jeffries and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43494

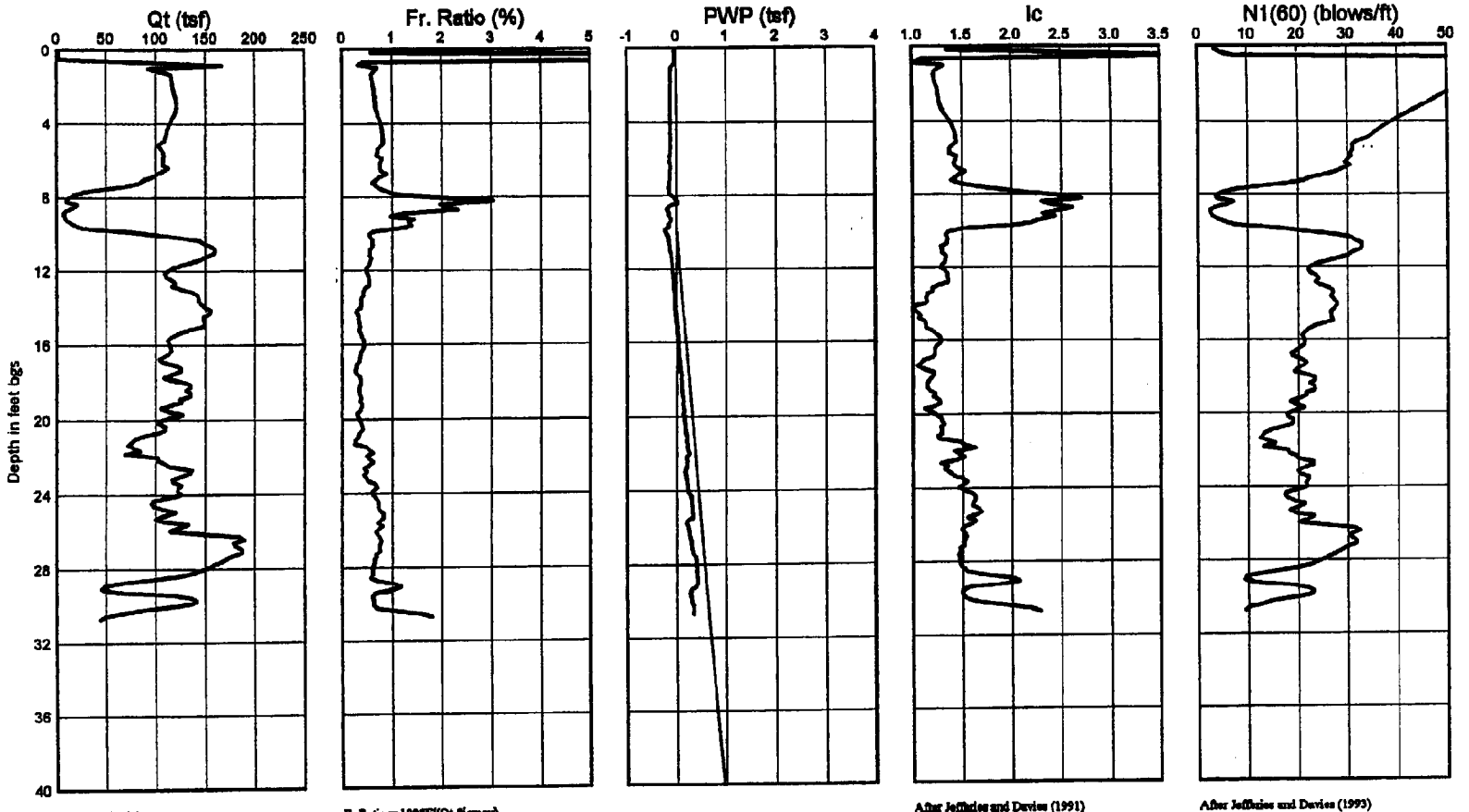
SEA410024

Cone Penetration Test - CPT-11

Test Date : Aug 15, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*Fr/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jeffries and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jeffries and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43495

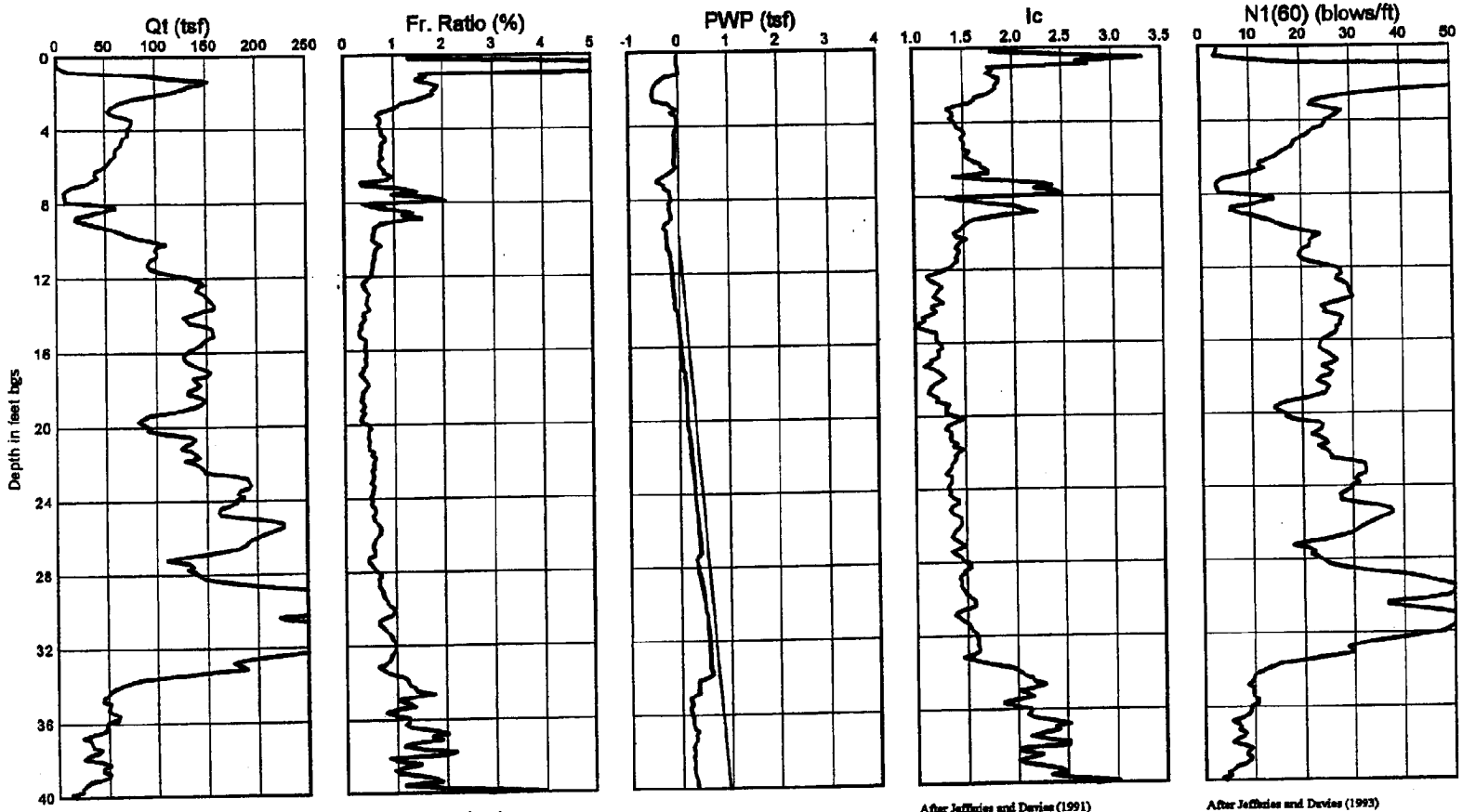
SEA410025

Cone Penetration Test - CPT-12

Test Date : Aug 15, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jeffries and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jeffries and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

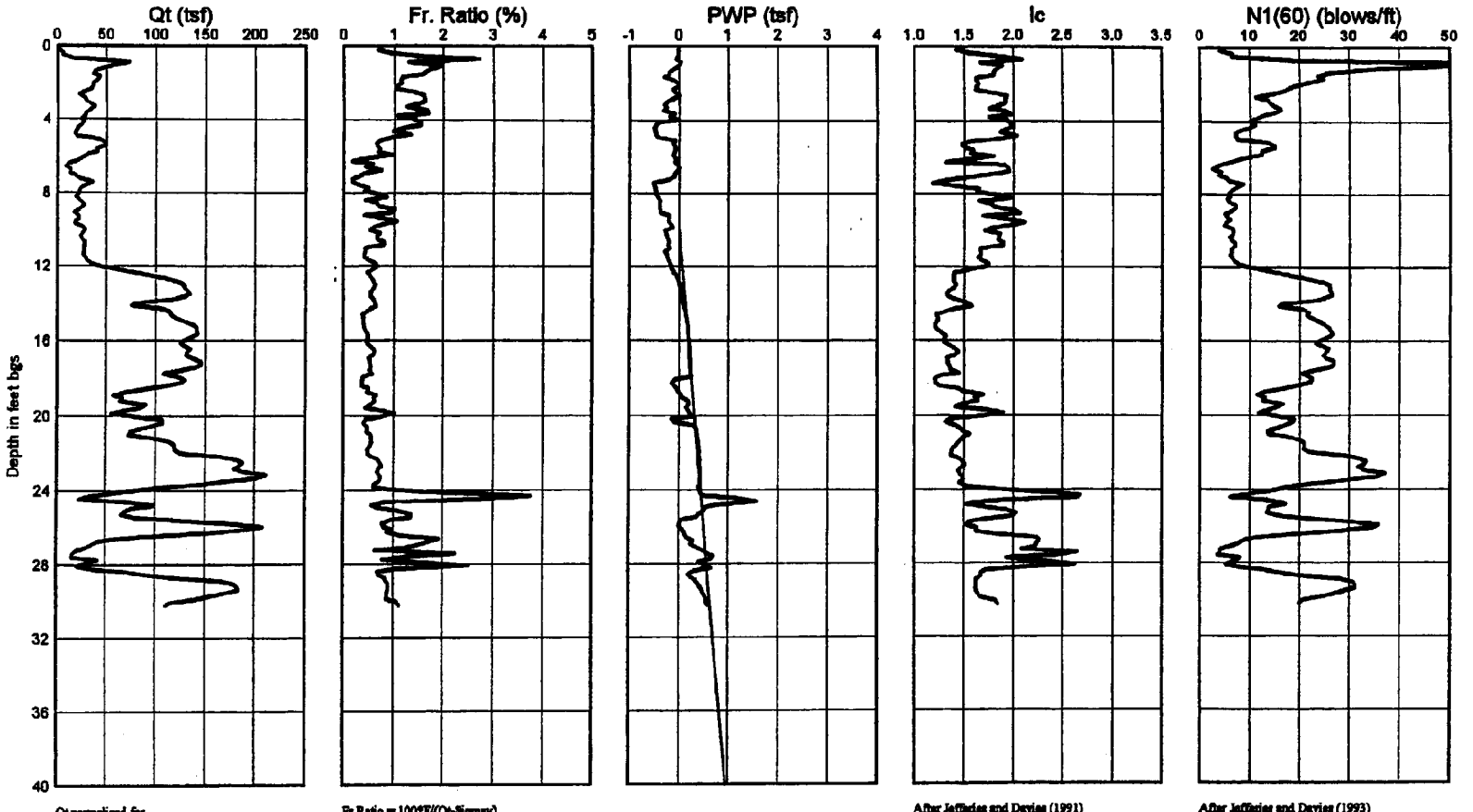
KCSlip4 43496
SEA410026

Cone Penetration Test - CPT-13

Test Date : Aug 15, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jeffries and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jeffries and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43497

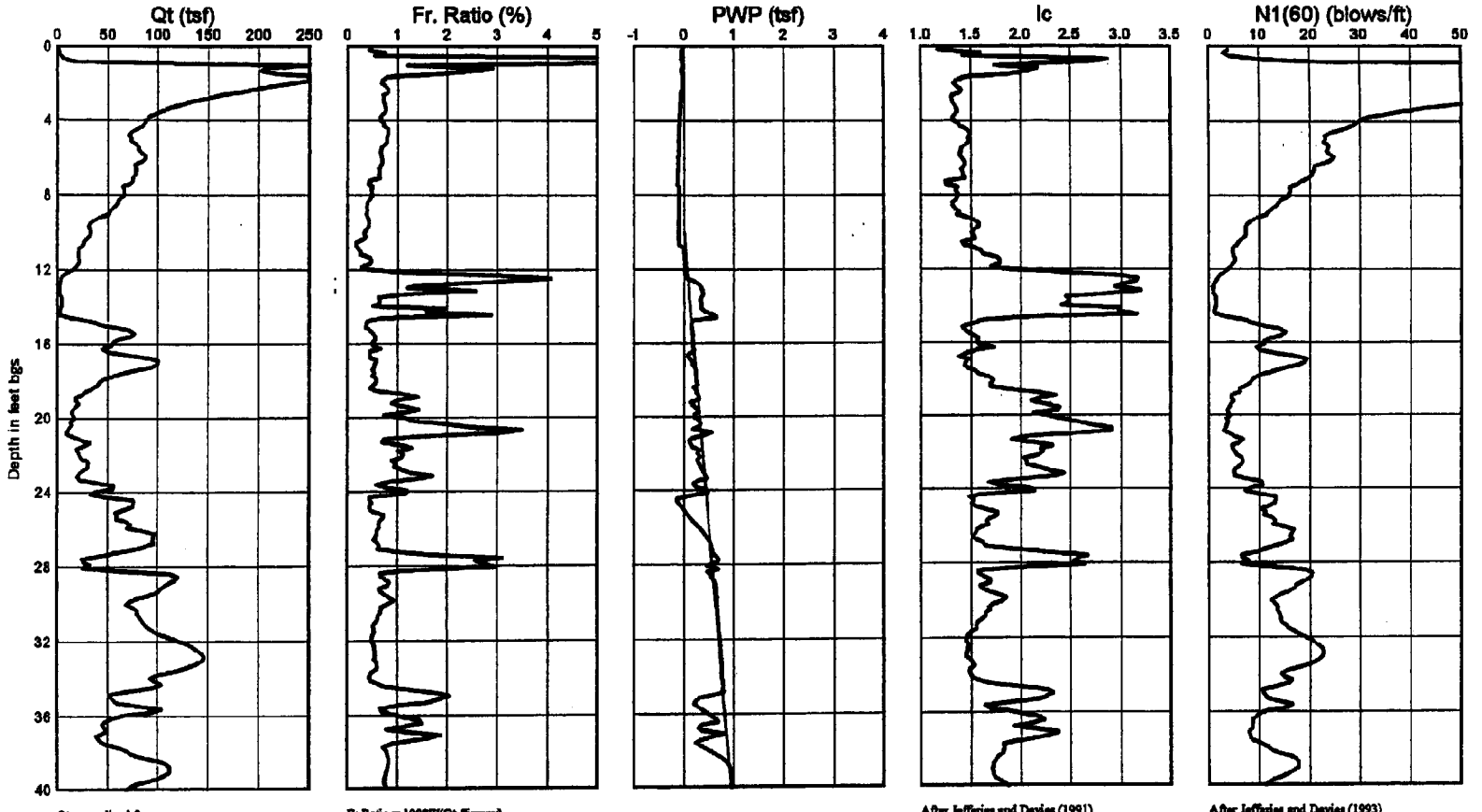
SEA410027

Cone Penetration Test - CPT-14

Test Date : Aug 15, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*Fr/(Qt-Sigmaxv)
Gamma = 110.1 pcf

After Jeffries and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jeffries and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43498

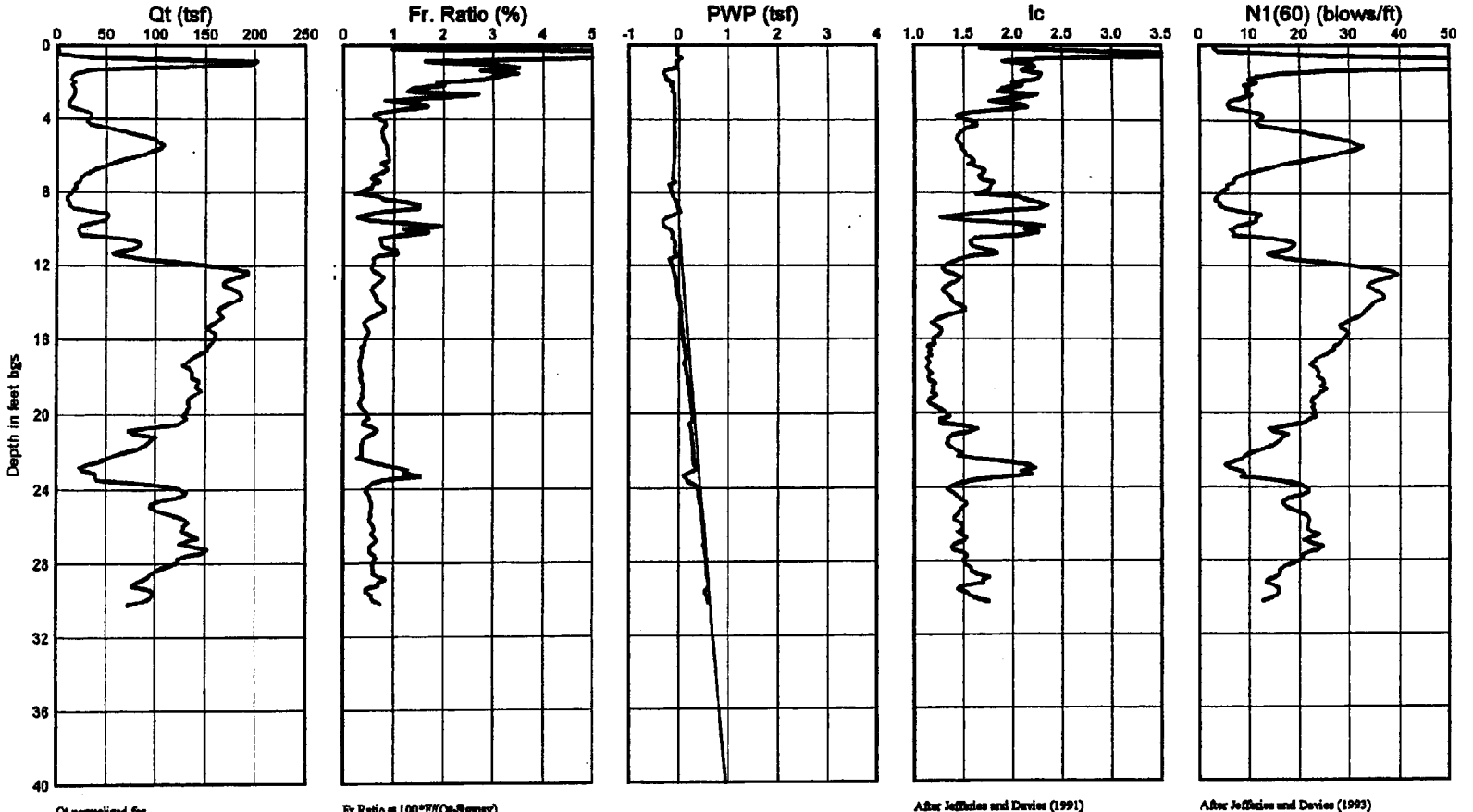
SEA410028

Cone Penetration Test - CPT-15

Test Date : Aug 15, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*Fr/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jeffries and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jeffries and Davies (1993)

PROJECT NO. 8091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43499

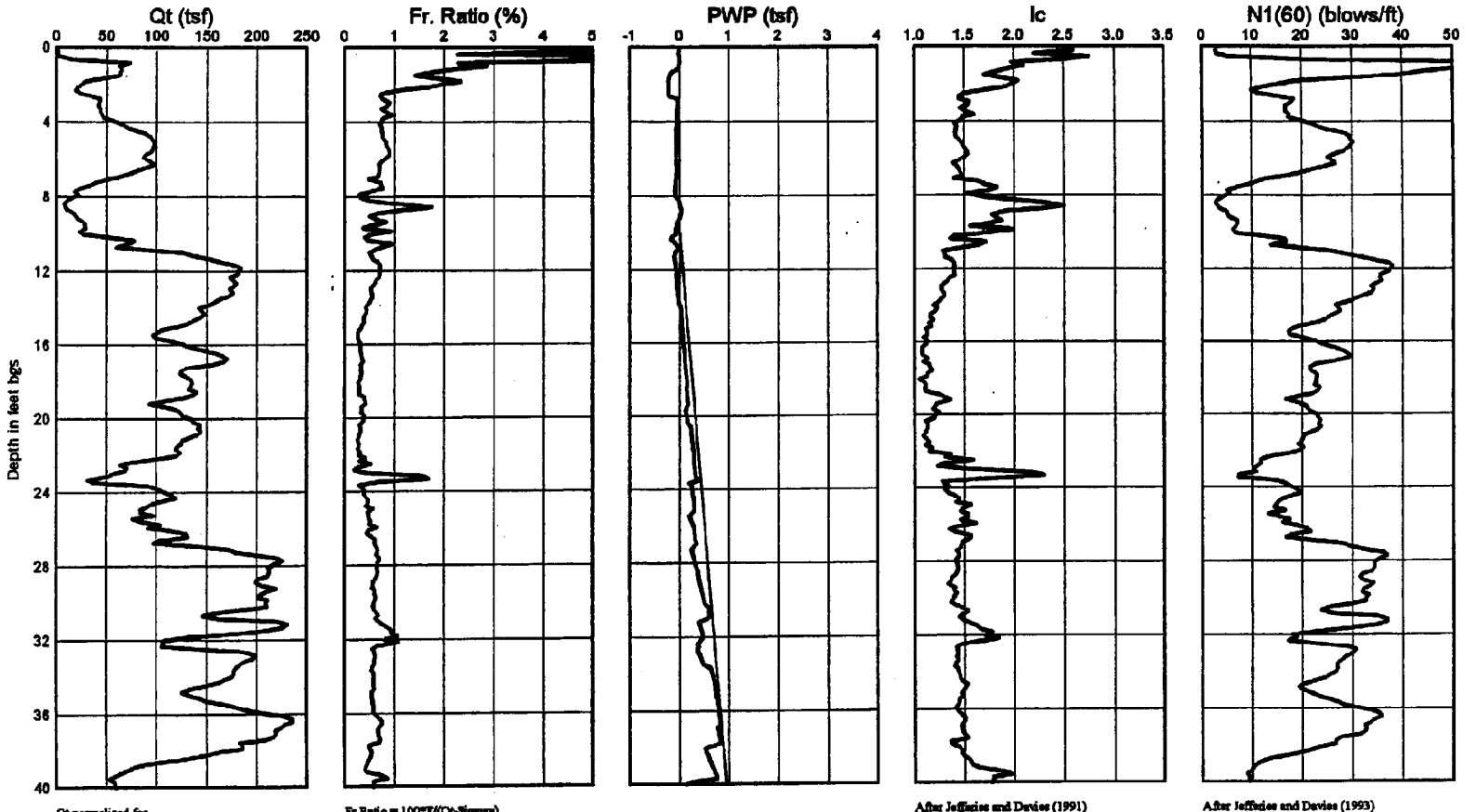
SEA410029

Cone Penetration Test - CPT-16

Test Date : Aug 15, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*Tf/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jefferies and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jefferies and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43500

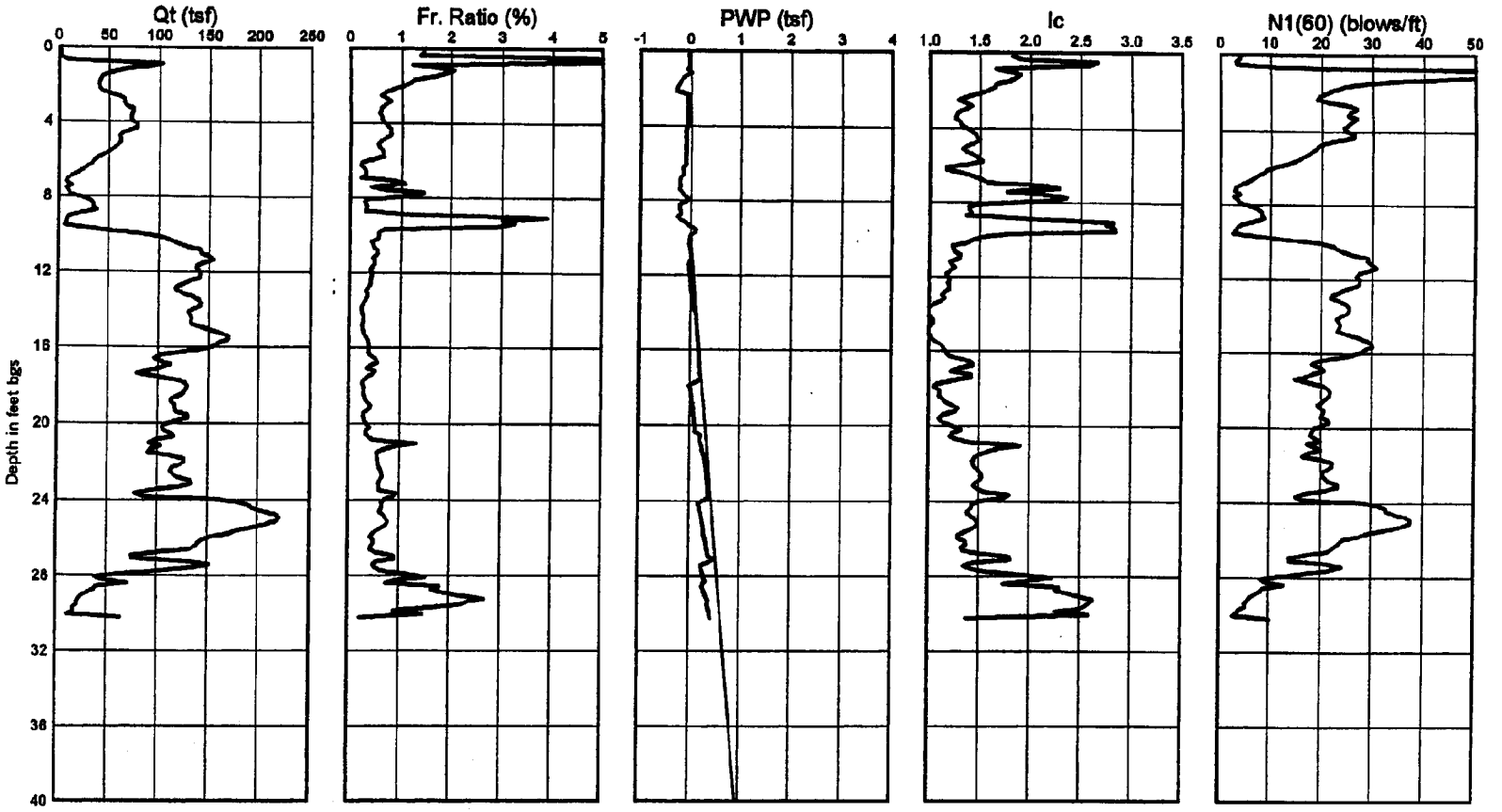
SEA410030

Cone Penetration Test - CPT-17

Test Date : Aug 15, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*Fr/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jefferies and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jefferies and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43501

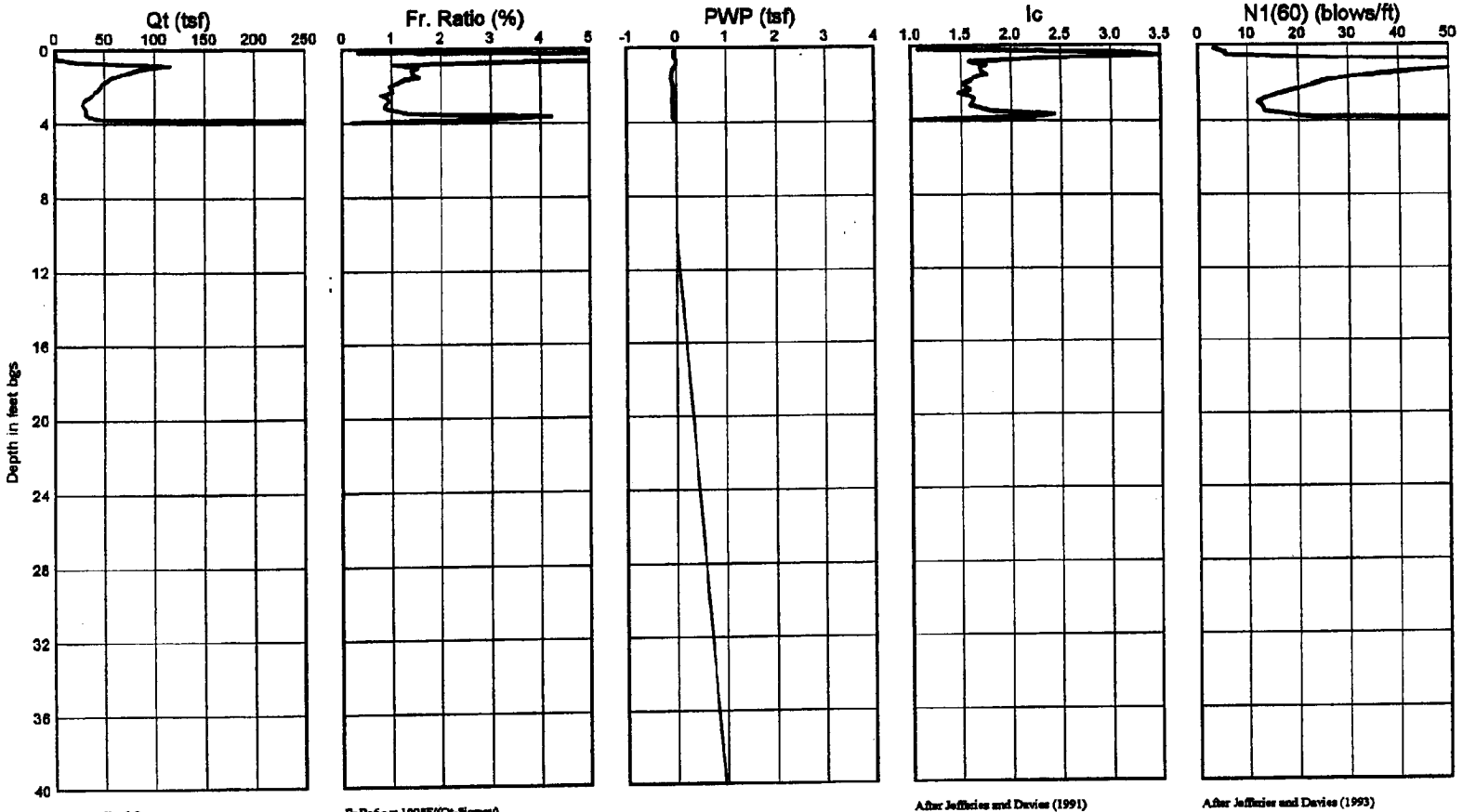
SEA410031

Cone Penetration Test - CPT-18

Test Date : Aug 15, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jefferies and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jefferies and Davies (1993)

PROJECT NO. 8091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43502

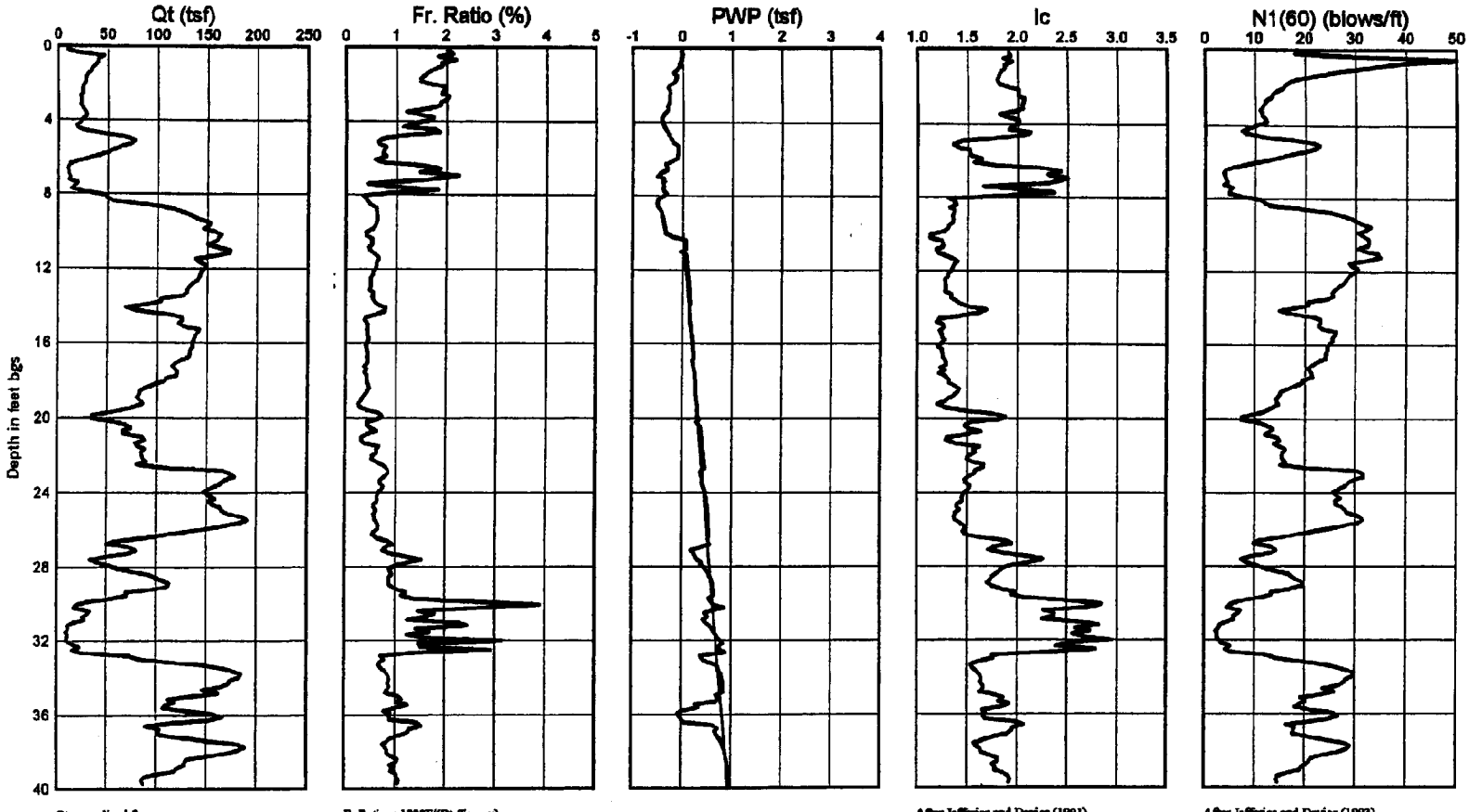
SEA410032

Cone Penetration Test - CPT-18A

Test Date : Aug 15, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jeffries and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jeffries and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43503

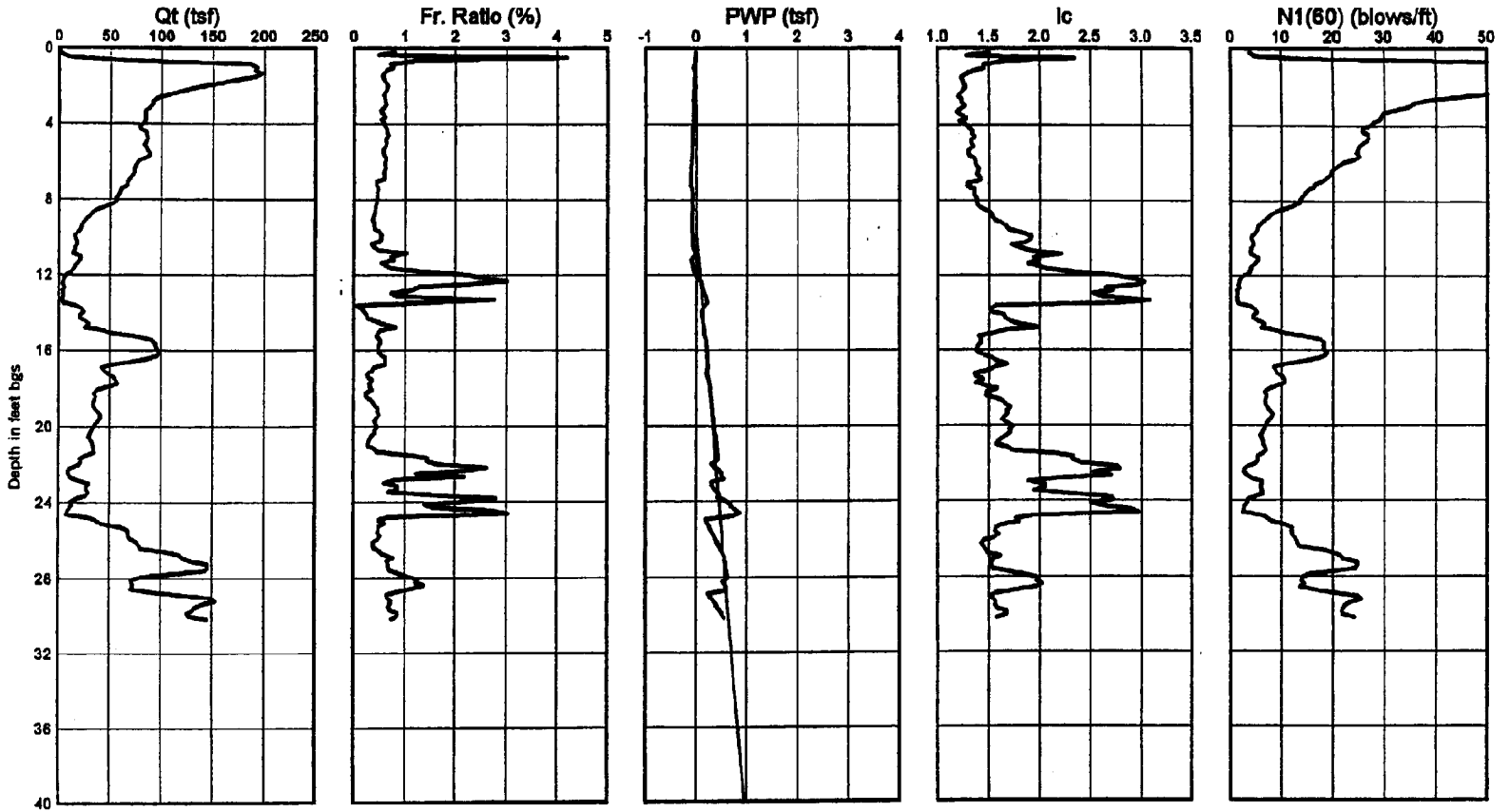
SEA410033

Cone Penetration Test - CPT-19

Test Date : Aug 15, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-sigmav)
Gamma = 110.1 pcf

After Jefferies and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jefferies and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

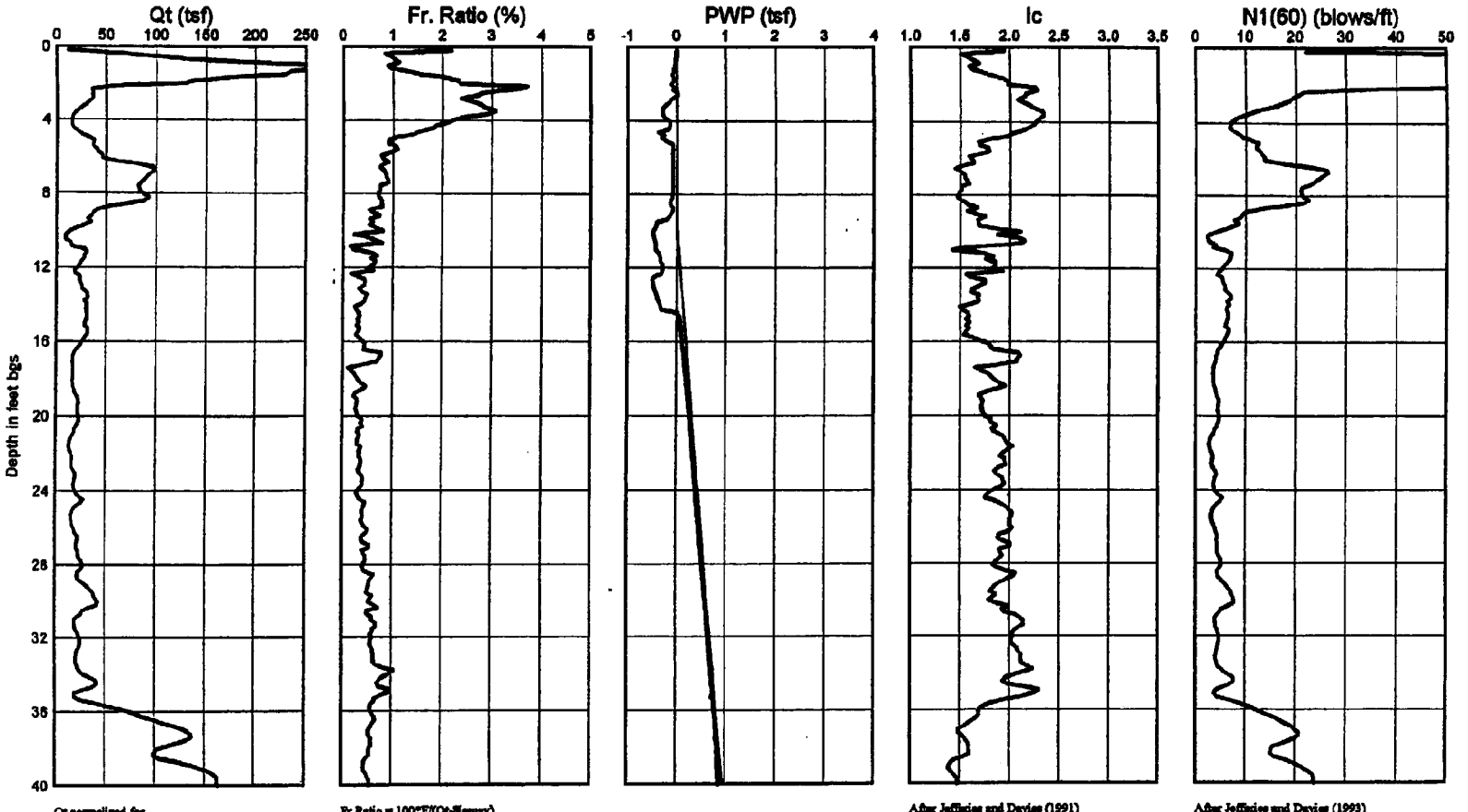
KCSlip4 43504
SEA410034

Cone Penetration Test - CPT-20

Test Date : Aug 16, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jefferies and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jefferies and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43505

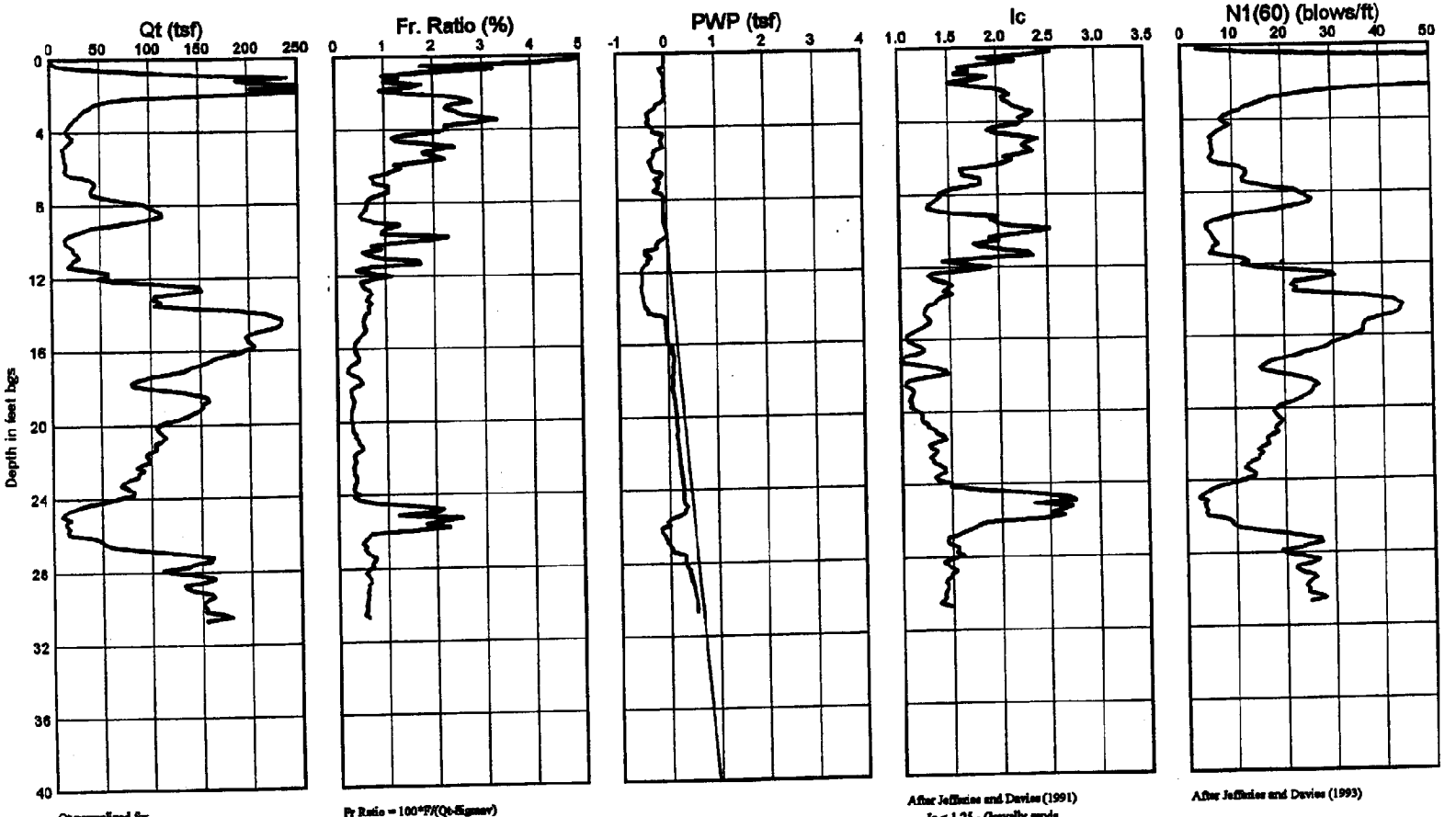
SEA410035

Cone Penetration Test - CPT-21

Test Date : Aug 16, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jefferies and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jefferies and Davies (1993)

PROJECT NO. 8091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43506

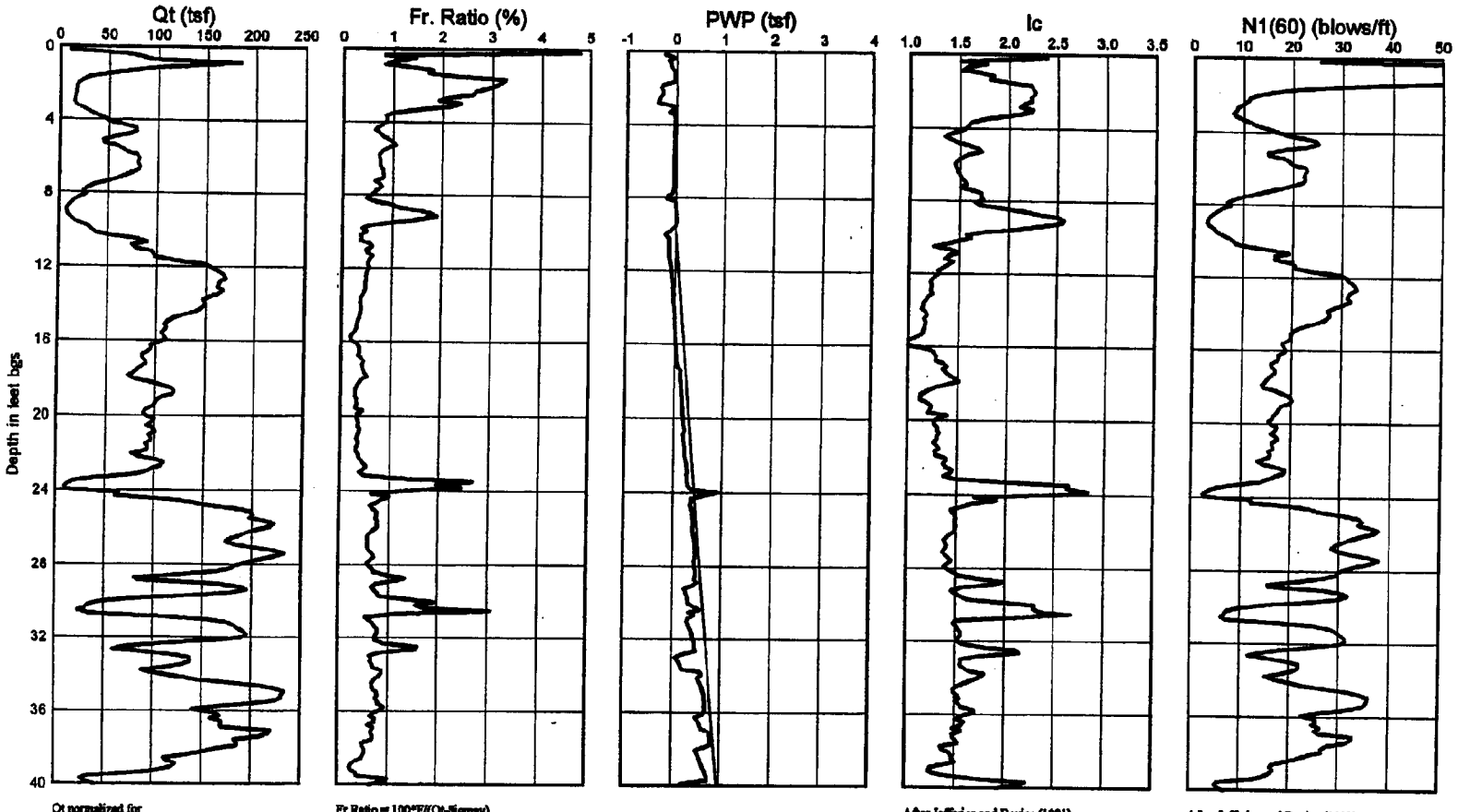
SEA410036

Cone Penetration Test - CPT-22

Test Date : Aug 16, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jeffries and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jeffries and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43507

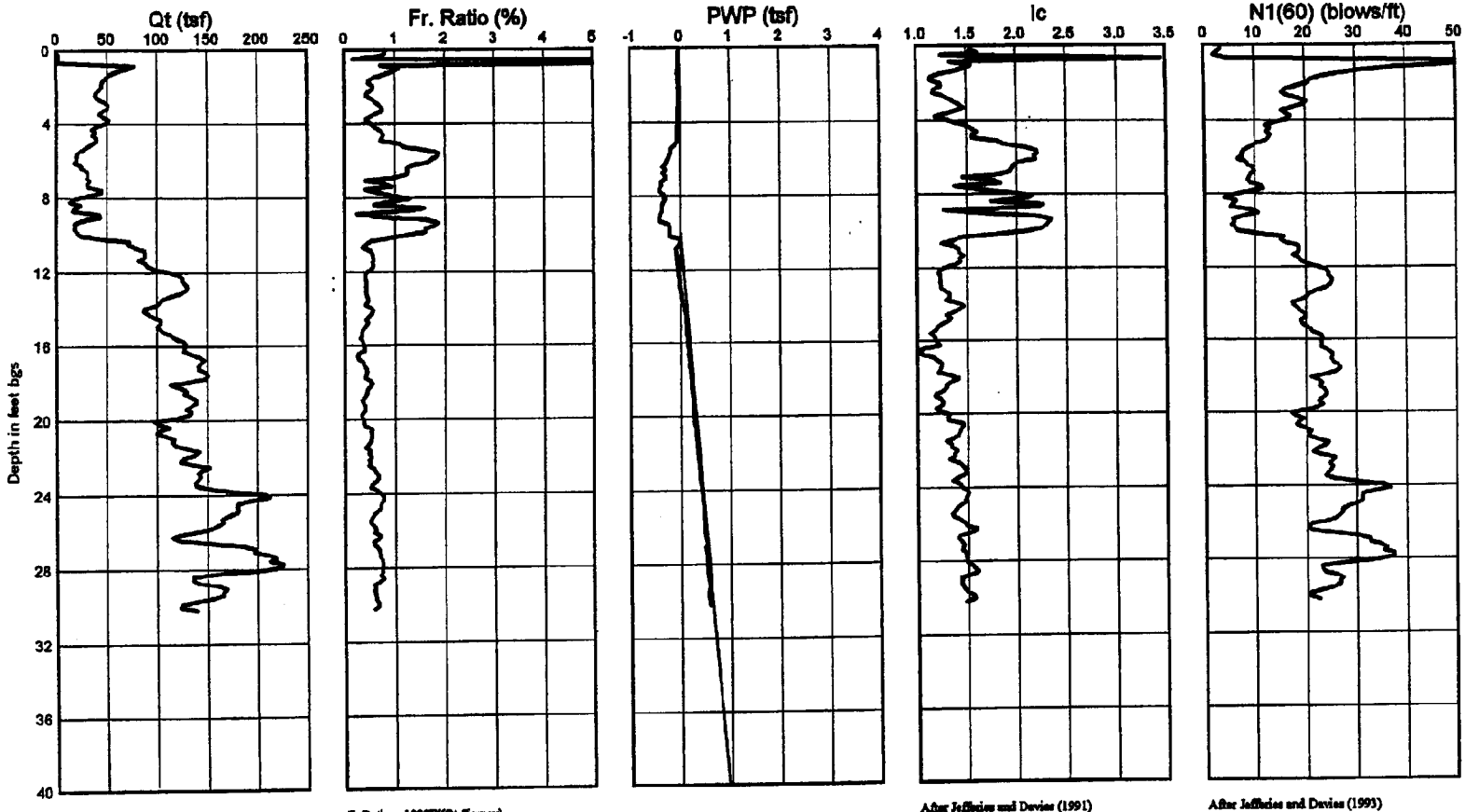
SEA410037

Cone Penetration Test - CPT-23

Test Date : Aug 16, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jefferies and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jefferies and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

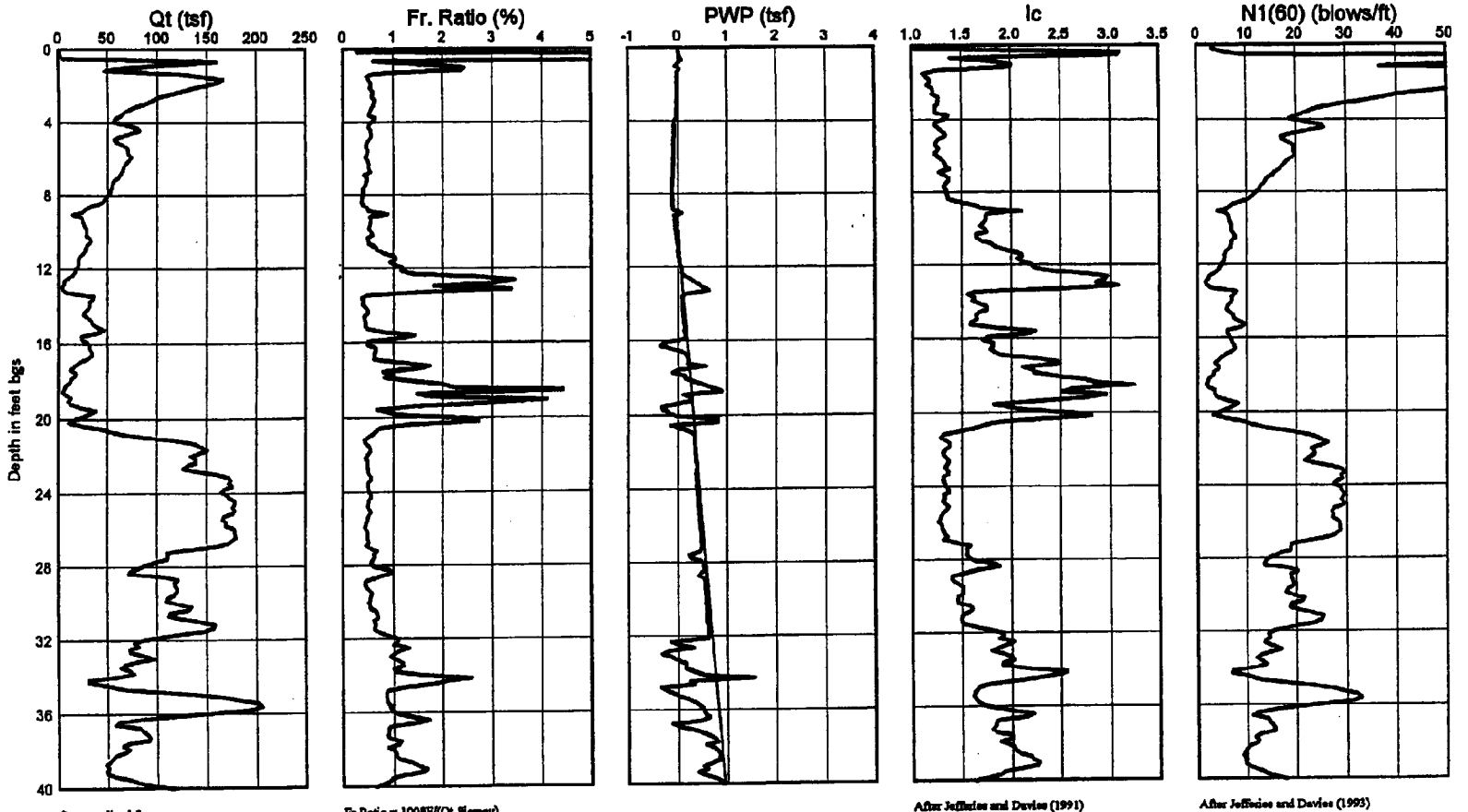
KCSlip4 43508
SEA410038

Cone Penetration Test - CPT-24

Test Date : Aug 16, 2000
Location : Washington Air National Guard, Seattle, Washington

Operator : Northwest Cone Exploration, Inc.

Ground Surf. Elev. : 0.00
Water Table Depth : 10.00



Qt normalized for unequal end area effects

Fr Ratio = 100*F/(Qt-Sigmav)
Gamma = 110.1 pcf

After Jefferies and Davies (1991)
Ic < 1.25 - Gravelly sands
1.25 <Ic < 1.90 - Clean to silty sand
1.90 <Ic < 2.54 - Silty sand to sandy silt
2.54 <Ic < 2.82 - Clayey silt to silty clay
2.82 <Ic < 3.22 - Clays

After Jefferies and Davies (1993)

PROJECT NO. 6091.20 DATE: August 17, 2000 DRAWN BY: Keith Brown

Environmental Resources Management

KCSlip4 43509

SEA410039

Appendix B

APPENDIX B

BOREHOLE LOGS AND MONITORING WELL/SUCTION LYSIMETER CONSTRUCTION DIAGRAMS

ERM
816 118th Avenue NE
Suite 130
Bellevue, Washington 98005
(425) 462-8081

BOREHOLE LOG

Site Id: MW-11

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Hollow Stem Auger
Logged By: D. Betts
Date(s): 08/31/00
Total Depth: 40.50'
Completed Depth: 40.00'
Borehole Dia.: 8.00in

Elevation: 12.39'
Measuring Point: 11.94'
X Coordinate: 10178.88
Y Coordinate: 10175.64
Static Water Level: 8.00'

Blank Casing: type: Sch 40 PVC		dia: 2.00in	fm: 0.0'	to: 30.00'
Screens: type: Slotted	size: 0.010in	dia: 2.00in	fm: 30.00'	to: 40.00'
Annular Fill: type: Grout			fm: 0.25'	to: 28.00'
type: Bentonite			fm: 28.00'	to: 29.00'
type: Sand Filter			fm: 29.00'	to: 40.50'

Depth (ft)	Graphic Log	USCS Code	Well Construction	Sample Recovery	Blow Count	PID (ppm)	Description/Soil Classification
5		SP			5 8 9	0.0	SAND (SP): dark gray, fine grained, loose, dry.
10					17 20 24	0.0	SAND (SP): as above, damp.
15		SW			20 26 30	0.0	SAND (SW): dark gray, coarse to fine grained, loose, wet.
20					23 27 30	0.0	SAND (SW): black, coarse to fine grained, loose, saturated.

ERM
915 118th Avenue SE
Suite 120
Bellevue, Washington 98005
(425) 462-8001

BOREHOLE LOG

Site Id: MW-11

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Hollow Stem Auger
Logged By: D. Betts
Date(s): 08/31/00
Total Depth: 40.50'
Completed Depth: 40.00'
Borehole Dia.: 8.00in

Elevation: 12.39'
Measuring Point: 11.94'
X Coordinate: 10178.88
Y Coordinate: 10175.64
Static Water Level: 8.00'

Blank Casing: type: Sch 40 PVC		dia: 2.00in	fm: 0.0'	to: 30.00'
Screens: type: Slotted	size: 0.010in	dia: 2.00in	fm: 30.00'	to: 40.00'
Annular Fill: type: Grout			fm: 0.25'	to: 28.00'
type: Bentonite			fm: 28.00'	to: 29.00'
type: Sand Filter			fm: 29.00'	to: 40.50'

Depth (ft)	Graphic Log	USCS Code	Well Construction	Sample Recovery	Blow Count	PID (ppm)	Description/Soil Classification
					10 20 26	0.0	SAND (SW): as above.
30					16 23 27	0.0	SAND (SW): black, coarse to fine grained, medium dense, saturated.
35					12 17 32	0.0	SAND (SW): black, coarse to fine grained, loose, saturated.
40					13 19 28	0.0	SAND (SW): black, coarse to fine grained, medium dense, saturated.
45							

ERM
615 118th Avenue SE
Suite 130
Bellevue, Washington 98005
(425) 462-8501

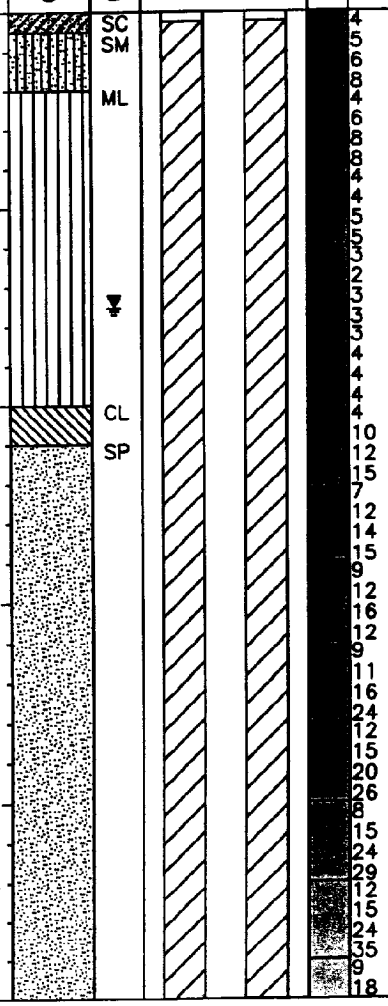
BOREHOLE LOG

Site Id: MW-12

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Hollow Stem Auger
Logged By: D. Betts
Date(s): 08/30/00
Total Depth: 40.50'
Completed Depth: 40.00'
Borehole Dia.: 8.00in

Elevation: 11.86'
Measuring Point: 11.23'
X Coordinate: 10248.12
Y Coordinate: 10006.49
Static Water Level: 7.50'

Blank Casing: type: Sch 40 PVC		dia: 2.00in	fm: 0.0'	to: 30.00'
Screens: type: Slotted	size: 0.010in	dia: 2.00in	fm: 30.00'	to: 40.00'
Annular Fill: type: Grout			fm: 0.25'	to: 28.00'
type: Bentonite			fm: 28.00'	to: 29.00'
type: Sand Filter			fm: 29.00'	to: 40.50'



Depth (ft)	USCS Code	Blow Count	PID (ppm)	Description/Soil Classification
	SC	4		GRAVEL (SC): fill, loose, dry.
	SM	5		SANDY SILT (SM): medium brown, fine grained, loose, damp.
		6		
		8		
	ML	4		CLAYEY SANDY SILT (ML): medium brown/gray with orange banding, fine grained, loose, low to no plasticity, damp.
		6		
		8		
		8		
		4		
		4		
5		5		CLAYEY SANDY SILT (ML): as above, increasing plasticity.
		5		
		3		
		2		CLAY (CL): medium brown/gray, trace fine sand and silt, medium plasticity, moist to wet.
		3		
		3		
		3		
		4		SANDY SILT (ML): medium brown/gray, trace clay, no plasticity, wet.
		4		
		4		
10	CL	4		SILTY CLAY (CL): medium to dark gray, trace fine sand, loose, low plasticity, wet.
	SP	10		SAND (SP): dark gray, fine to coarse grained, loose, wet.
		12		
		15		
		7		
		12		
		14		
		15		SAND (SP): as above, saturated.
		9		
		12		
15		16		
		12	1.0	SAND (SP): as above.
		9		
		11		
		16		
		24		SAND (SP): as above.
		12		
		15		
		20		
		26	1.3	SAND (SP): as above.
20		8		
		15		
		24		
		29		SAND (SP): as above.
		12		
		15		
		24		
		35		SAND (SP): as above.
		9		
		18		

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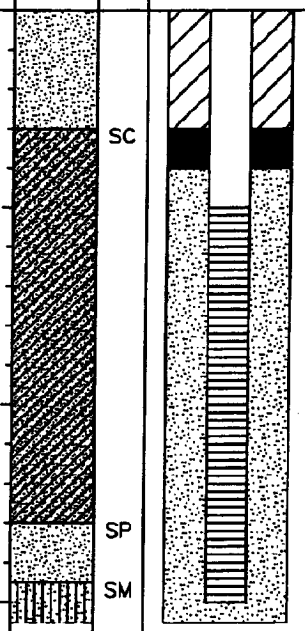
BOREHOLE LOG

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Hollow Stem Auger
Logged By: D. Betts
Date(s): 08/30/00
Total Depth: 40.50'
Completed Depth: 40.00'
Borehole Dia.: 8.00in

Elevation: 11.86'
Measuring Point: 11.23'
X Coordinate: 10248.12
Y Coordinate: 10006.49
Static Water Level: 7.50'

Blank Casing: type: Sch 40 PVC		dia: 2.00in	fm: 0.0'	to: 30.00'
Screens: type: Slotted	size: 0.010in	dia: 2.00in	fm: 30.00'	to: 40.00'
Annular Fill: type: Grout			fm: 0.25'	to: 28.00'
type: Bentonite			fm: 28.00'	to: 29.00'
type: Sand Filter			fm: 29.00'	to: 40.50'

Depth (ft) | Graphic Log | USCS Code | Well Construction | Sample Recovery | Blow Count | PID (ppm) | Description/Soil Classification



Depth (ft)	USCS Code	Blow Count	PID (ppm)	Description/Soil Classification
		34 35 9	2.0	SAND (SP): as above.
		24 32 35		SAND (SP): as above, with trace clay, low to no plasticity.
	SC	8 12 18		
30		30 12 18	1.8	CLAYEY SAND (SC): dark gray, fine to coarse grained, dense, low to no plasticity, saturated.
		30 32 12		
		15 27 35		CLAYEY SAND (SC): as above, with small clay lens.
		8 10 16		CLAYEY SAND (SC): as above, minus clay lens.
35		24 8 12	1.3	CLAYEY SAND (SC): as above.
		16 25 5		
	SP	6 12		SAND (SP): dark gray, coarse to fine grained, dense, wet.
40	SM	20	0.9	SILTY SAND (SM): dark gray, coarse to fine grained, slightly compacted, wet.
45				

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BOREHOLE LOG

Site Id: MW-13

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Hollow Stem Auger
Logged By: D. Betts
Date(s): 08/30/00
Total Depth: 40.50'
Completed Depth: 40.00'
Borehole Dia.: 8.00in

Elevation: 13.17'
Measuring Point: 12.58'
X Coordinate: 10064.29
Y Coordinate: 10044.12
Static Water Level: 9.00'

Blank Casing: type: Sch 40 PVC		dia: 2.00in	fm: 0.0'	to: 30.00'
Screens: type: Slotted	size: 0.010in	dia: 2.00in	fm: 30.00'	to: 40.00'
Annular Fill: type: Grout			fm: 0.25'	to: 28.00'
type: Bentonite			fm: 28.00'	to: 29.00'
type: Sand Filter			fm: 29.00'	to: 40.50'

Depth (ft)	Graphic Log	USCS Code	Well Construction	Sample Recovery	Blow Count	PID (ppm)	Description/Soil Classification
		SW					
5					10 9 10	0.0	SAND (SW): dark gray, coarse to fine grained, loose, damp.
10					8 13 13	1.3	SAND (SW): as above, medium density, wet.
15					13 28 35	0.9	SAND (SW): dark gray, coarse to fine grained, medium density, wet.
20					17 30 36	1.7	SAND (SW): as above.

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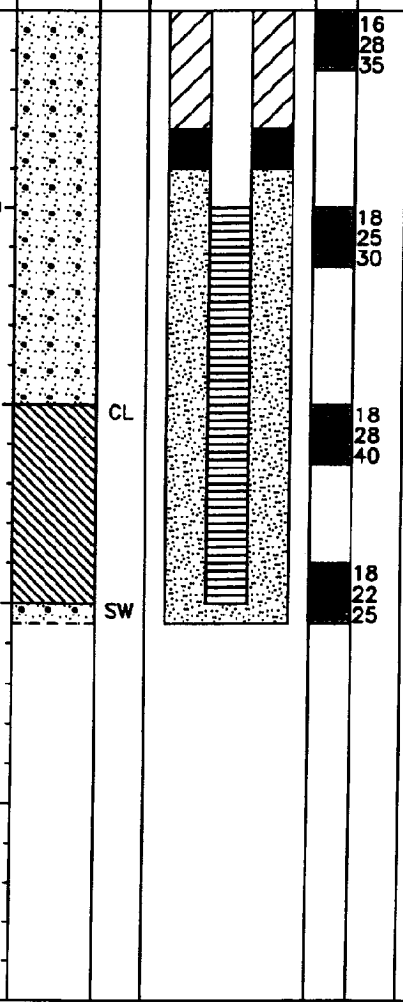
BOREHOLE LOG

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Hollow Stem Auger
Logged By: D. Betts
Date(s): 08/30/00
Total Depth: 40.50'
Completed Depth: 40.00'
Borehole Dia.: 8.00in

Elevation: 13.17'
Measuring Point: 12.58'
X Coordinate: 10064.29
Y Coordinate: 10044.12
Static Water Level: 9.00'

Blank Casing: type: Sch 40 PVC		dia: 2.00in	fm: 0.0'	to: 30.00'
Screens: type: Slotted	size: 0.010in	dia: 2.00in	fm: 30.00'	to: 40.00'
Annular Fill: type: Grout			fm: 0.25'	to: 28.00'
type: Bentonite			fm: 28.00'	to: 29.00'
type: Sand Filter			fm: 29.00'	to: 40.50'



Depth (ft)	USCS Code	Sample Recovery	Blow Count	PID (ppm)	Description/Soil Classification
			16 28 35	0.9	SAND (SW): as above.
30			18 25 30	0.7	SAND (SW): as above, saturated.
35	CL		18 28 40	0.3	SANDY SILTY CLAY (CL): dark gray, very soft, low plasticity.
40	SW		18 22 25		SAND (SW): dark gray/black, coarse to fine grained, medium density, saturated.
45					

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BOREHOLE LOG

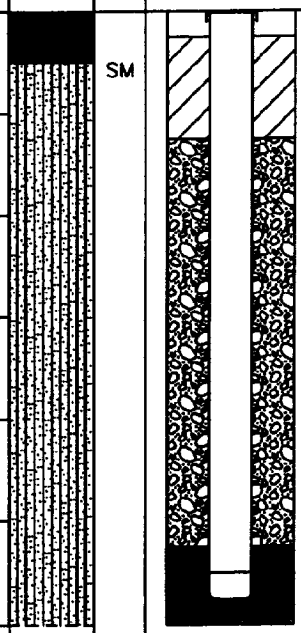
Site Id: SL-1A

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 08/31/00
Total Depth: 6.00'
Completed Depth: 5.75'
Borehole Dia.: 4.00in

Elevation: 13.01'
Measuring Point: 12.74'
X Coordinate: 10231.64
Y Coordinate: 10187.30

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 5.50'
Porous Ceramic Cup		fm: 5.50'	to: 5.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 5.25'
type: Silica Flour Paste		fm: 5.25'	to: 6.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
					Asphalt with gravel bed.
		SM			SILTY SAND (SM): light brown, fine grained, mixed with gravel, loose, dry.
1				0.0	SILTY SAND (SM): gray, fine grained, loose.
2					
3					
4					SILTY SAND (SM): as above.
5					
6					SILTY SAND (SM): as above.
7					
8					
9					



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BOREHOLE LOG

Site Id: SL-1B

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 08/31/00
Total Depth: 8.00'
Completed Depth: 7.75'
Borehole Dia.: 4.00in

Elevation: 13.02'
Measuring Point: 12.77'
X Coordinate: 10228.12
Y Coordinate: 10187.90

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 7.50'
Porous Ceramic Cup		fm: 7.50'	to: 7.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 7.25'
type: Silica Flour Paste		fm: 7.25'	to: 8.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
					Asphalt with gravel bed.
		SM			SILTY SAND (SM): light brown, fine grained, mixed with gravel, loose, dry.
1				0.0	SILTY SAND (SM): dark gray, fine grained, loose, damp.
2					
3					
4					SILTY SAND (SM): as above.
5					
6					
7					
8					SILTY SAND (SM): as above.
9					

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BOREHOLE LOG

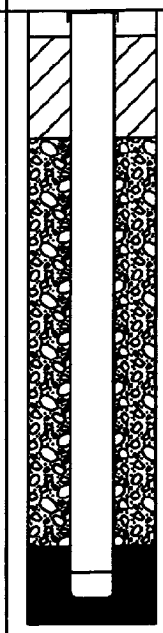
Site Id: SL-2A

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 08/31/00
Total Depth: 6.00'
Completed Depth: 5.75'
Borehole Dia.: 4.00in

Elevation: 13.04'
Measuring Point: 12.88'
X Coordinate: 10366.99
Y Coordinate: 10163.76

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 5.50'
Porous Ceramic Cup		fm: 5.50'	to: 5.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 5.25'
type: Silica Flour Paste		fm: 5.25'	to: 6.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
					Asphalt with gravel bed.
		SM		0.0	SILTY SAND (SM): light brown, fine grained, loose, dry.
1					
2					
3					
4					SILTY SAND (SM): as above, damp.
5					
6					
7					
8					
9					



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SEA410050

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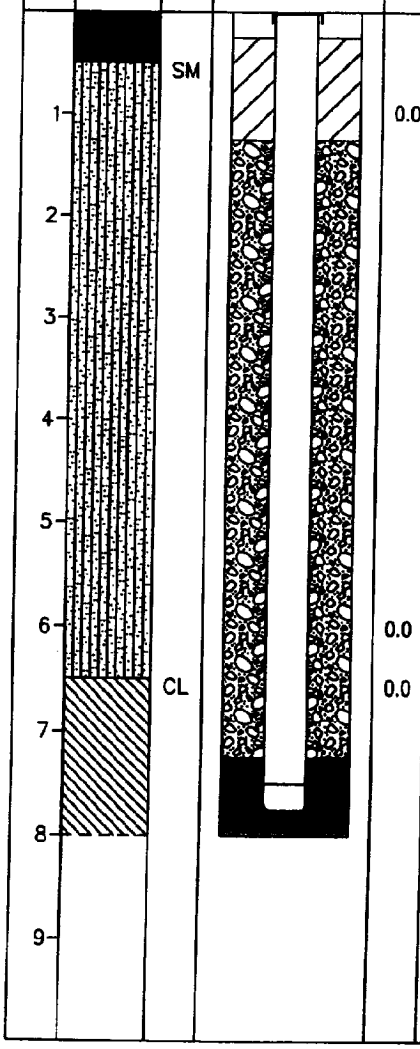
BOREHOLE LOG

Site Id: SL-2B

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 08/31/00
Total Depth: 8.00'
Completed Depth: 7.75'
Borehole Dia.: 4.00in

Elevation: 13.01'
Measuring Point: 12.51'
X Coordinate: 10634.11
Y Coordinate: 10165.02

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 7.50'
Porous Ceramic Cup		fm: 7.50'	to: 7.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 7.25'
type: Silica Flour Paste		fm: 7.25'	to: 8.00'



Depth (ft)	USCS Code	PID (ppm)	Description/Soil Classification
			Asphalt with gravel bed.
	SM		
1		0.0	SILTY SAND (SM): light brown, fine grained, trace gravel, loose, dry.
			SILTY SAND (SM): as above, no gravel.
2			
3			
4			
5			SILTY SAND (SM): light brown/gray, fine grained, loose, damp.
6		0.0	SILTY SAND (SM): as above, wet.
	CL	0.0	SANDY CLAY (CL): medium brown, fine grained, wet.
7			
8			SANDY CLAY (CL): as above.
9			

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BOREHOLE LOG

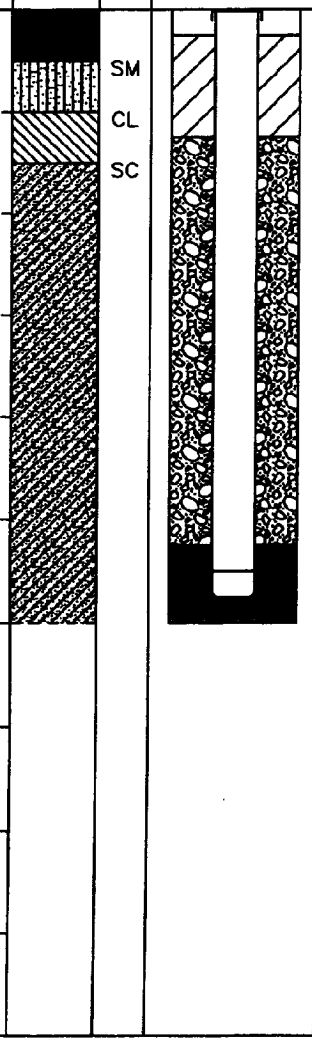
Site Id: SL-3A

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 08/31/00
Total Depth: 6.00'
Completed Depth: 5.75'
Borehole Dia.: 4.00in

Elevation: 12.48'
Measuring Point: 11.98'
X Coordinate: 10171.23
Y Coordinate: 10145.61

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 5.50'
Porous Ceramic Cup		fm: 5.50'	to: 5.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 5.25'
type: Silica Flour Paste		fm: 5.25'	to: 6.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
					Asphalt with gravel bed.
		SM			SILTY SAND (SM): light brown/gray, fine grained, mixed with gravel, loose, dry.
1		CL		0.0	SANDY CLAY (CL): dark gray, fine grained, high plasticity, wet.
		SC			CLAYEY SAND (SC): dark gray, fine grained, no plasticity, loose, damp.
2					
3					CLAYEY SAND (SC): as above.
4					
5					
6					CLAYEY SAND (SC): as above.
7					
8					
9					



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BOREHOLE LOG

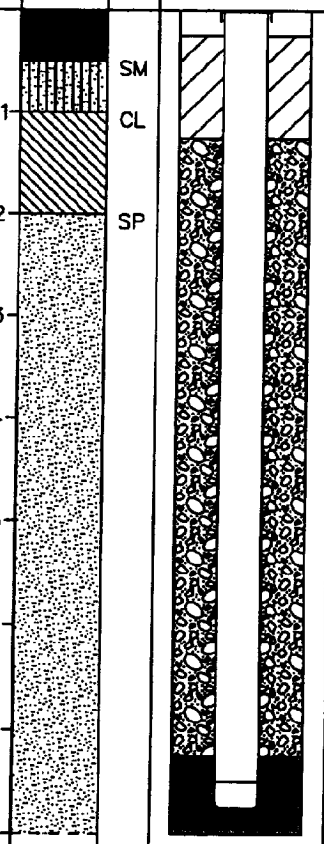
Site Id: SL-3B

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 08/31/00
Total Depth: 8.00'
Completed Depth: 7.75'
Borehole Dia.: 4.00in

Elevation: 12.45'
Measuring Point: 12.02'
X Coordinate: 10166.44
Y Coordinate: 10146.56

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 7.50'
Porous Ceramic Cup		fm: 7.50'	to: 7.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 7.25'
type: Silica Flour Paste		fm: 7.25'	to: 8.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
					Asphalt with gravel bed.
		SM			SILTY SAND (SM): light brown/gray, fine grained, with gravel, loose, dry.
1		CL		0.0	SANDY CLAY (CL): dark gray/brown, fine grained, high plasticity.
2		SP			SAND (SP): dark gray, trace clay, no plasticity, loose, moist.
3					
4				0.0	SAND (SP): as above.
5					
6					
7					
8					SAND (SP): as above.
9					



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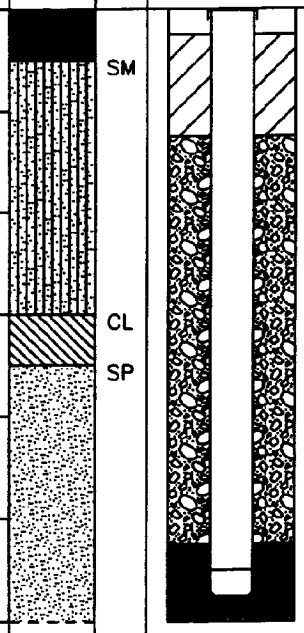
BOREHOLE LOG

Site Id: SL-4A

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 08/31/00
Total Depth: 6.00'
Completed Depth: 5.75'
Borehole Dia.: 4.00in

Elevation: 12.08'
Measuring Point: 11.38'
X Coordinate: 10304.21
Y Coordinate: 10118.48

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 5.50'
Porous Ceramic Cup		fm: 5.50'	to: 5.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 5.25'
type: Silica Flour Paste		fm: 5.25'	to: 6.00'



Depth (ft)	USCS Code	PID (ppm)	Description/Soil Classification
			Asphalt with gravel bed.
	SM	0.0	SILTY SAND (SM): light brown, fine grained, loose, dry.
1			
2			
3	CL		SANDY CLAY (CL): medium brown, fine grained, medium to high plasticity, wet.
	SP	0.0	SAND (SP): dark grains, fine grained, loose, wet.
4			
5			
6			SAND (SP): as above.
7			
8			
9			

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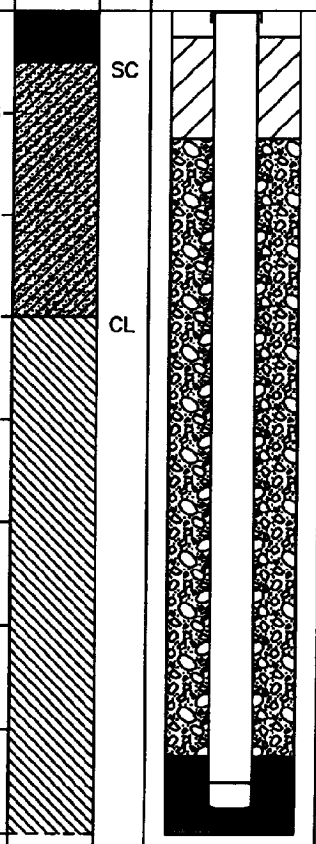
BOREHOLE LOG

Site Id: SL-4B

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 08/31/00
Total Depth: 8.00'
Completed Depth: 7.75'
Borehole Dia.: 4.00in

Elevation: 12.06'
Measuring Point: 11.63'
X Coordinate: 10300.42
Y Coordinate: 10119.25

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 7.50'
Porous Ceramic Cup		fm: 7.50'	to: 7.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 7.25'
type: Silica Flour Paste		fm: 7.25'	to: 8.00'



Depth (ft)	USCS Code	PID (ppm)	Description/Soil Classification
			Asphalt with gravel bed.
1	SC		CLAYEY SAND (SC): medium brown, loose, trace gravel and silt, dry.
2			
3	CL	0.0	SANDY CLAY (CL): medium brown, fine grained, high plasticity, wet.
4			
5			
6		0.0	SANDY CLAY (CL): medium brown/gray, fine grained, high plasticity, saturated.
7			
8			SANDY CLAY (CL): as above.
9			

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BOREHOLE LOG

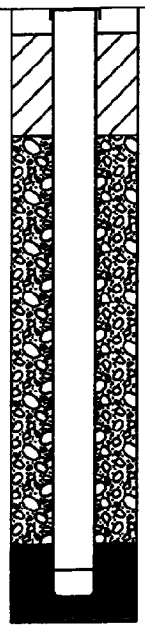
Site Id: SL-5A

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 08/31/00
Total Depth: 6.00'
Completed Depth: 5.75'
Borehole Dia.: 4.00in

Elevation: 13.21'
Measuring Point: 12.76'
X Coordinate: 10079.11
Y Coordinate: 10117.04

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 5.50'
Porous Ceramic Cup		fm: 5.50'	to: 5.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 5.25'
type: Silica Flour Paste		fm: 5.25'	to: 6.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
					Asphalt with gravel bed.
		SM			SILTY SAND (SM): medium brown, fine grained, with gravel, loose, dry.
1		CL		0.0	CLAY (CL): black, trace silt, low plasticity, damp.
2					CLAY (CL): medium brown, trace silt, high plasticity, wet.
3		SC		0.0	CLAYEY SAND (SC): dark gray/black, fine grained, loose, moist.
4					
5					
6					CLAYEY SAND (SC): as above.
7					
8					
9					



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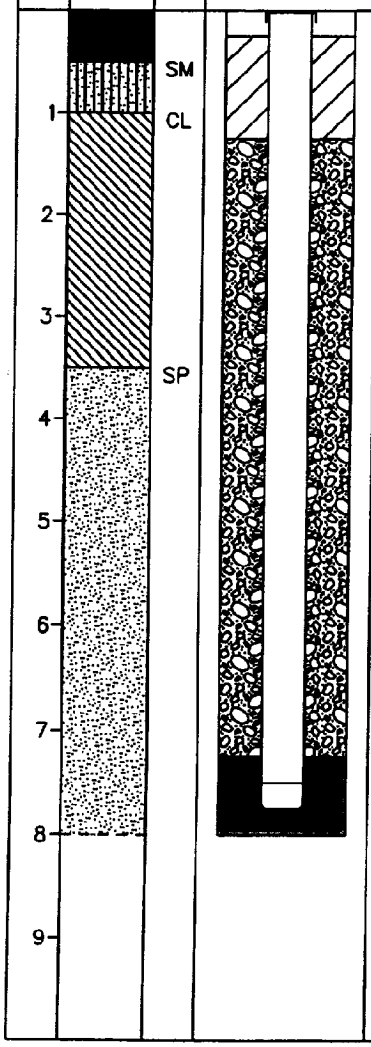
BOREHOLE LOG

Site Id: SL-5B

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 08/31/00
Total Depth: 8.00'
Completed Depth: 7.75'
Borehole Dia.: 4.00in

Elevation: 13.29'
Measuring Point: 12.89'
X Coordinate: 10076.23
Y Coordinate: 10117.63

Blank Casing: type: Sch 40 PV	dia: 2.00in	fm: 0.0'	to: 7.50'
Porous Ceramic Cup		fm: 7.50'	to: 7.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 7.25'
type: Silica Flour Paste		fm: 7.25'	to: 8.00'



Depth (ft)	USCS Code	PID (ppm)	Description/Soil Classification
			Asphalt with gravel bed.
	SM		SILTY SAND (SM): medium brown, fine grained, mixed with gravel, loose, dry.
1	CL	0.0	CLAY (CL): black, with trace silt, low plasticity, damp.
2		0.0	CLAY (CL): medium brown, with trace fine grained sand, high plasticity, moist.
3			
	SP		SAND (SP): dark brown/gray, fine grained, with trace clay, loose, moist.
4			
5			
6			
7			
8		0.0	SAND (SP): as above.
9			

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BOREHOLE LOG

Site Id: SL-6A

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 08/31/00
Total Depth: 6.00'
Completed Depth: 5.75'
Borehole Dia.: 4.00in

Elevation: 12.04'
Measuring Point: 11.49'
X Coordinate: 10205.20
Y Coordinate: 10088.60

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 5.50'
Porous Ceramic Cup		fm: 5.50'	to: 5.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 5.25'
type: Silica Flour Paste		fm: 5.25'	to: 6.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
					Asphalt with gravel bed.
		SM			SILTY SAND (SM): medium brown, fine grained, mixed with gravel, loose, dry.
1		CL		0.0	SILTY CLAY (CL): dark brown/black, trace gravel, low to no plasticity, dry.
2					SANDY CLAY (CL): dark gray, medium to high plasticity, trace silt, moist.
		SM		0.0	SILTY SAND (SM): dark gray, fine grained, loose, damp.
3					
4					
5					
6					SILTY SAND (SM): as above.
7					
8					
9					

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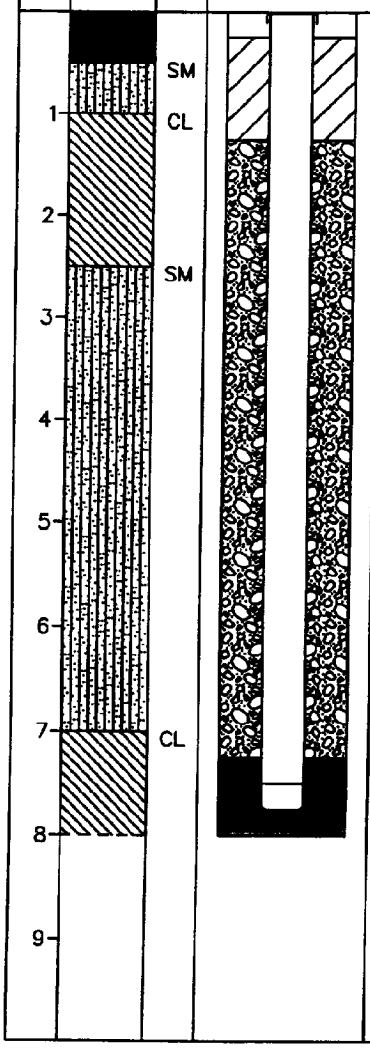
BOREHOLE LOG

Site Id: SL-6B

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 08/31/00
Total Depth: 8.00'
Completed Depth: 7.75'
Borehole Dia.: 4.00in

Elevation: 12.10'
Measuring Point: 11.85'
X Coordinate: 10202.39
Y Coordinate: 10089.32

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 7.50'
Porous Ceramic Cup		fm: 7.50'	to: 7.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 7.25'
type: Silica Flour Paste		fm: 7.25'	to: 8.00'



Depth (ft)	USCS Code	PID (ppm)	Description/Soil Classification
			Asphalt with gravel bed.
	SM		SILTY SAND (SM): medium brown, fine grained, with mixed gravel, loose, dry.
1	CL	0.0	SILTY CLAY (CL): dark brown/black, trace gravel, low to no plasticity, dry.
2			SANDY CLAY (CL): dark gray, trace silt, medium to high plasticity, moist.
	SM	0.0	SILTY SAND (SM): dark gray, fine grained, loose, damp.
3			
4			
5			
6			
7	CL	0.0	SANDY CLAY (CL): medium brown, fine grained, high plasticity, wet.
8			
9			

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BOREHOLE LOG

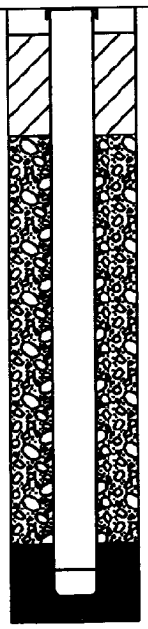
Site Id: SL-7A

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 09/01/00
Total Depth: 6.00'
Completed Depth: 5.75'
Borehole Dia.: 4.00in

Elevation: 12.18'
Measuring Point: 11.92'
X Coordinate: 10347.26
Y Coordinate: 10059.94

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 5.50'
Porous Ceramic Cup		fm: 5.50'	to: 5.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 5.25'
type: Silica Flour Paste		fm: 5.25'	to: 6.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
					Asphalt with gravel bed.
		SM		0.0	SILTY SAND (SM): medium brown, mixed with gravel, loose, dry.
1					
2		SP		0.0	SAND (SP): dark gray, fine grained, with trace silt, loose, damp.
3					
4					
5					
6					SAND (SP): as above.
7					
8					
9					



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BOREHOLE LOG

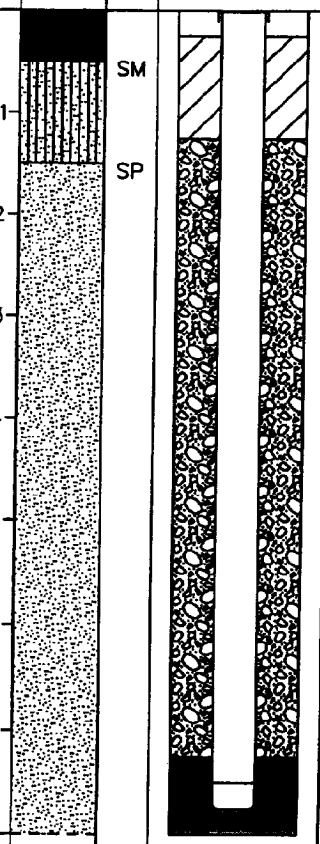
Site Id: SL-7B

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 09/01/00
Total Depth: 8.00'
Completed Depth: 7.75'
Borehole Dia.: 4.00in

Elevation: 12.26'
Measuring Point: 12.06'
X Coordinate: 10344.79
Y Coordinate: 10061.35

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 7.50'
Porous Ceramic Cup		fm: 7.50'	to: 7.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 7.25'
type: Silica Flour Paste		fm: 7.25'	to: 8.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
					Asphalt with gravel bed.
		SM		0.0	SILTY SAND (SM): medium brown, mixed with gravel, loose, dry.
1		SP			SAND (SP): dark gray, fine grained, with trace silt, loose, damp.
2					
3					
4					
5					
6					
7					
8				0.0	SAND (SP): as above.
9					



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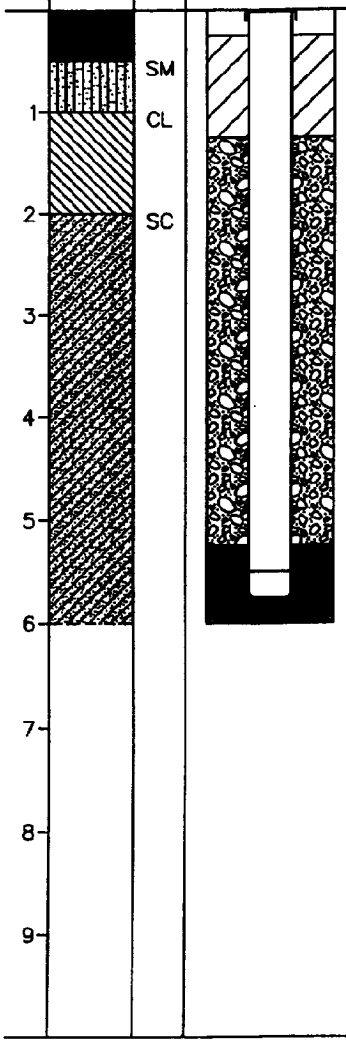
BOREHOLE LOG

Site Id: SL-8A

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 09/01/00
Total Depth: 6.00'
Completed Depth: 5.75'
Borehole Dia.: 4.00in

Elevation: 12.46'
Measuring Point: 12.21'
X Coordinate: 10123.05
Y Coordinate: 10061.27

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 5.50'
Porous Ceramic Cup		fm: 5.50'	to: 5.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 5.25'
type: Silica Flour Paste		fm: 5.25'	to: 6.00'



Depth (ft)	USCS Code	PID (ppm)	Description/Soil Classification
			Asphalt with gravel bed.
	SM	0.0	SILTY SAND (SM): medium brown, mixed with gravel, loose, dry.
1	CL		CLAY (CL): medium brown, very stiff, trace gravel, low plasticity, dry.
		0.0	CLAY (CL): medium brown, high plasticity, wet.
2	SC		CLAYEY SAND (SC): medium gray, fine grained, low plasticity, damp.
3			
4			
5			
6		0.0	CLAYEY SAND (SC): as above.
7			
8			
9			

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BOREHOLE LOG

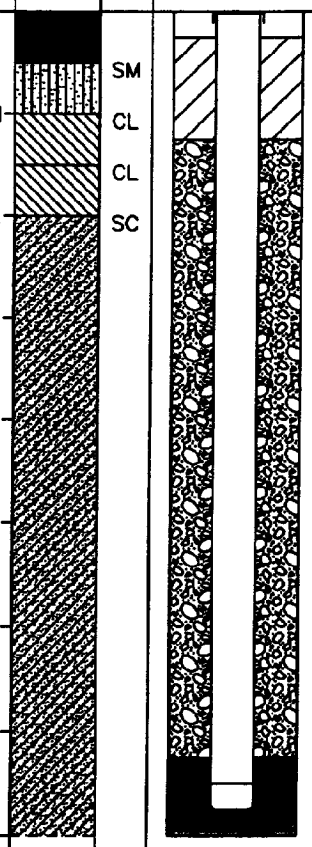
Site Id: SL-8B

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 09/01/00
Total Depth: 8.00'
Completed Depth: 7.75'
Borehole Dia.: 4.00in

Elevation: 12.52'
Measuring Point: 12.16'
X Coordinate: 10119.62
Y Coordinate: 10062.02

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 7.50'
Porous Ceramic Cup		fm: 7.50'	to: 7.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 7.25'
type: Silica Flour Paste		fm: 7.25'	to: 8.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
					Asphalt with gravel bed.
		SM			SILTY SAND (SM): light brown, mixed with gravel, loose, dry.
1		CL			CLAY (CL): medium brown, very stiff, low plasticity, dry.
		CL		0.0	CLAY (CL): medium brown, high plasticity, wet.
2		SC		0.0	CLAYEY SAND (SC): medium gray, fine grained, low plasticity, damp.
3					
4					
5					
6					CLAYEY SAND (SC): as above.
7					
8					CLAYEY SAND (SC): as above, moist.
9					



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BOREHOLE LOG

Site Id: SL-9A

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 09/01/00
Total Depth: 6.00'
Completed Depth: 5.75'
Borehole Dia.: 4.00in

Elevation: 11.60'
Measuring Point: 11.32'
X Coordinate: 10247.61
Y Coordinate: 10031.70

Blank Casing: type: Sch 40 PV	dia: 2.00in	fm: 0.0'	to: 5.50'
Porous Ceramic Cup		fm: 5.50'	to: 5.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 5.25'
type: Silica Flour Paste		fm: 5.25'	to: 6.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
					Asphalt with gravel bed.
		SM			SILTY SAND (SM): medium brown, mixed with gravel, loose, dry.
1		CL			CLAY (CL): dark brown, very stiff, no plasticity, dry.
		SM		0.0	SILTY SAND (SM): medium brown, fine grained, loose, dry.
2					
3					
4					
5					
6		CL		0.0	SANDY CLAY (CL): medium brown, fine grained, high plasticity, wet.
7					
8					
9					

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BOREHOLE LOG

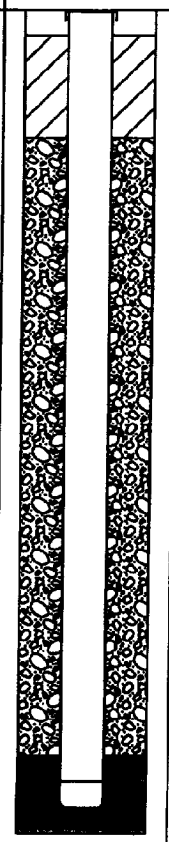
Site Id: SL-9B

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 09/01/00
Total Depth: 8.00'
Completed Depth: 7.75'
Borehole Dia.: 4.00in

Elevation: 11.60'
Measuring Point: 11.32'
X Coordinate: 10244.23
Y Coordinate: 10032.42

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 7.50'
Porous Ceramic Cup		fm: 7.50'	to: 7.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 7.25'
type: Silica Flour Paste		fm: 7.25'	to: 8.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
					Asphalt with gravel bed.
		SM			SILTY SAND (SM): medium brown, mixed with gravel, loose, dry.
1		CL			CLAY (CL): dark brown, very stiff, no plasticity, dry.
		SM		0.0	SILTY SAND (SM): medium brown, fine grained, loose, dry.
2					
3					
4					
5					
6		CL		0.0	SANDY CLAY (CL): medium brown, fine grained, high plasticity, wet.
7					
8					
9					



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BOREHOLE LOG

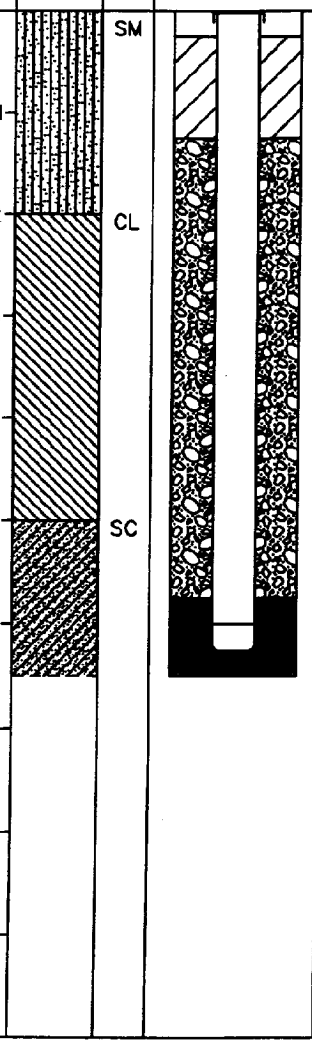
Site Id: SL-10A

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 09/01/00
Total Depth: 6.50'
Completed Depth: 6.25'
Borehole Dia.: 4.00in

Elevation: 14.04'
Measuring Point: 13.54'
X Coordinate: 10070.15
Y Coordinate: 10035.09

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 6.00'
Porous Ceramic Cup		fm: 6.00'	to: 6.25'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 5.75'
type: Silica Flour Paste		fm: 5.75'	to: 6.50'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
		SM			SILTY SAND (SM): fine grained, with gravel, trace roots from lawn, loose, dry.
1					
2		CL			CLAY (CL): dark brown, medium plasticity, damp.
3					SANDY CLAY (CL): medium brown, fine grained, high plasticity, wet.
4					
5		SC			CLAYEY SAND (SC): dark gray, fine grained, no plasticity, moist.
6					
7					
8					
9					



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BOREHOLE LOG

Site Id: SL-10B

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 09/01/00
Total Depth: 8.50'
Completed Depth: 8.25'
Borehole Dia.: 4.00in

Elevation: 14.07'
Measuring Point: 13.42'
X Coordinate: 10067.75
Y Coordinate: 10037.76

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 8.00'
Porous Ceramic Cup		fm: 8.00'	to: 8.25'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 7.75'
type: Silica Flour Paste		fm: 7.75'	to: 8.50'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
		SM			SILTY SAND (SM): fine grained, with gravel, trace roots from lawn, loose, dry.
1					
2		CL		0.0	CLAY (CL): dark brown, medium plasticity, damp.
3					SANDY CLAY (CL): medium brown, fine grained, high plasticity, wet.
4					
5		SC			CLAYEY SAND (SC): dark gray, fine grained, no plasticity, moist.
6					
7					
8				0.0	CLAYEY SAND (SC): as above.
9					

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BOREHOLE LOG

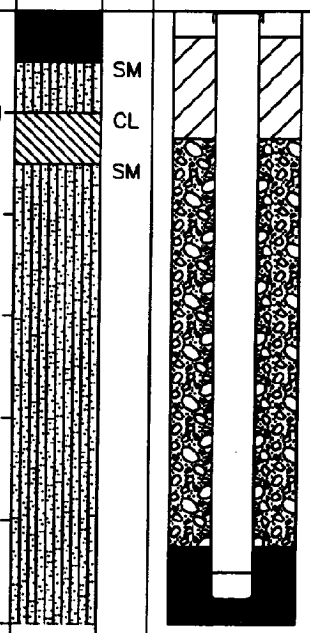
Site Id: SL-11A

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 09/01/00
Total Depth: 6.00'
Completed Depth: 5.75'
Borehole Dia.: 4.00in

Elevation: 13.11'
Measuring Point: 12.72'
X Coordinate: 10184.85
Y Coordinate: 10011.47

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 5.50'
Porous Ceramic Cup		fm: 5.50'	to: 5.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 5.25'
type: Silica Flour Paste		fm: 5.25'	to: 6.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
					Asphalt with gravel bed.
		SM			SILTY SAND (SM): medium brown, mixed with gravel, loose, dry.
1		CL			CLAY (CL): dark brown/gray, very stiff, no plasticity, trace gravel, dry.
		SM			SILTY SAND (SM): dark brown, fine grained, loose, damp.
2					
3					
4					
5					
6					SILTY SAND (SM): as above.
7					
8					
9					



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BOREHOLE LOG

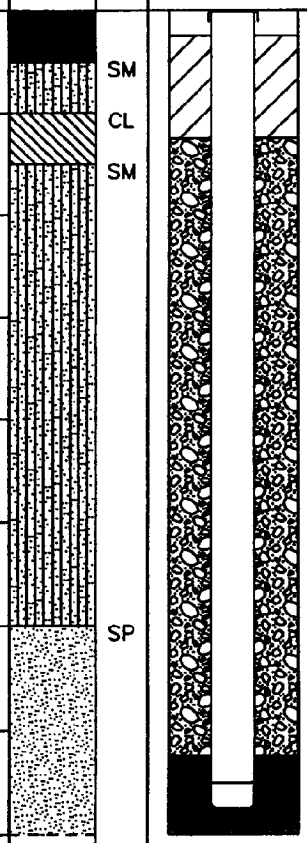
Site Id: SL-11B

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 09/01/00
Total Depth: 8.00'
Completed Depth: 7.75'
Borehole Dia.: 4.00in

Elevation: 13.12'
Measuring Point: 12.82'
X Coordinate: 10182.28
Y Coordinate: 10012.02

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 7.50'
Porous Ceramic Cup		fm: 7.50'	to: 7.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 7.25'
type: Silica Flour Paste		fm: 7.25'	to: 8.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
					Asphalt with gravel bed.
		SM			SILTY SAND (SM): medium brown, fine grained, mixed with gravel, loose, dry.
1		CL			CLAY (CL): dark brown, very stiff, no plasticity, trace gravel, dry.
		SM			SILTY SAND (SM): medium brown, fine grained, loose, dry.
2					
3					
4					
5					SILTY SAND (SM): as above.
6		SP			SAND (SP): dark brown, medium to fine grained, loose, damp.
7					SAND (SP): as above, wet.
8					
9					



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BOREHOLE LOG

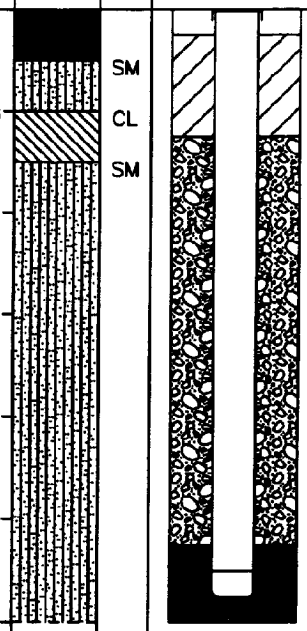
Site Id: SL-12A

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 09/01/00
Total Depth: 6.00'
Completed Depth: 5.75'
Borehole Dia.: 4.00in

Elevation: 12.17'
Measuring Point: 11.83'
X Coordinate: 10292.63
Y Coordinate: 9983.14

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 5.50'
Porous Ceramic Cup		fm: 5.50'	to: 5.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 5.25'
type: Silica Flour Paste		fm: 5.25'	to: 6.00'

Depth (ft)	Graphic Log	USCS Code	Well Construction	PID (ppm)	Description/Soil Classification
					Asphalt with gravel bed.
		SM		0.0	SILTY SAND (SM): medium brown, mixed with gravel, loose, dry.
1		CL			CLAY (CL): dark brown/gray, very stiff, no plasticity, trace gravel, dry.
		SM		0.0	SILTY SAND (SM): dark brown, fine grained, loose, damp.
2					
3					
4					
5					
6					SILTY SAND (SM): as above.
7					
8					
9					



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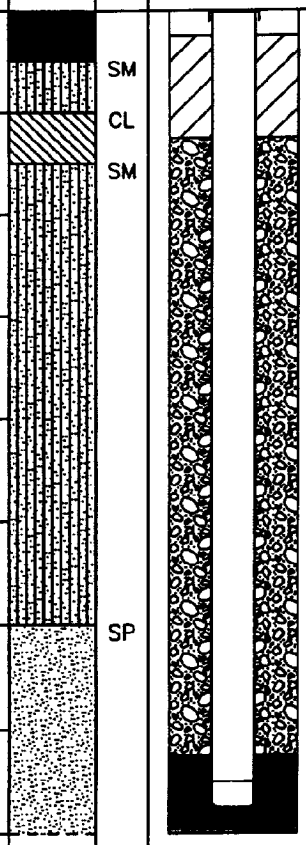
BOREHOLE LOG

Site Id: SL-12B

Project Number: 6091.20
Project Name: Seattle ANGS
Location: Seattle, Washington
Contractor: Cascade Drilling
Drilling Method: Solid Stem Auger
Logged By: D. Betts
Date(s): 09/01/00
Total Depth: 8.00'
Completed Depth: 7.75'
Borehole Dia.: 4.00in

Elevation: 12.26'
Measuring Point: 11.86'
X Coordinate: 10289.88
Y Coordinate: 9986.08

Blank Casing: type: Sch 40 PVC	dia: 2.00in	fm: 0.0'	to: 7.50'
Porous Ceramic Cup		fm: 7.50'	to: 7.75'
Annular Fill:			
type: Grout		fm: 0.25'	to: 1.25'
type: Native Backfill		fm: 1.25'	to: 7.25'
type: Silica Flour Paste		fm: 7.25'	to: 8.00'



Depth (ft)	USCS Code	PID (ppm)	Description/Soil Classification
			Asphalt with gravel bed.
	SM		SILTY SAND (SM): medium brown, fine grained, mixed with gravel, loose, dry.
1	CL		CLAY (CL): dark brown, very stiff, no plasticity, trace gravel, dry.
	SM	0.0	SILTY SAND (SM): medium brown, fine grained, loose, dry.
2			
3			
4			
5			SILTY SAND (SM): as above.
6	SP	0.0	SAND (SP): dark brown, medium to fine grained, loose, damp.
7			SAND (SP): as above, wet.
8			
9			

Appendix C

KCSlip4 43542

SEA410072

APPENDIX C

LABORATORY ANALYTICAL REPORTS

NCL 6091.20

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CASE NARRATIVE for B0I0107

Client: ERM-Bellevue
Project Manager: Rob Leet
Project Name: Seattle ANG
Project Number: 6091.20

1.0 DESCRIPTION OF CASE

Six water samples were submitted for analysis of Volatile Organic Compounds by EPA 8260B.

2.0 COMMENTS ON SAMPLE RECEIPT

Samples were received and logged in on September 7, 2000. No anomalies were noted.

3.0 PREPARATIONS AND ANALYSIS

Volatile Organic Compounds by EPA 8260B

There were no anomalies associated with the preparation and analysis of this method.

"I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature."

Kirk Gendron
Project Manager
North Creek Analytical

RCL 6091

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/11/00 15:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TRIP BLANK	B0I0107-01	Water	09/06/00 12:00	09/07/00 11:10
MW-11	B0I0107-02	Water	09/06/00 11:35	09/07/00 11:10
MW-11D	B0I0107-03	Water	09/06/00 11:35	09/07/00 11:10
MW-12	B0I0107-04	Water	09/06/00 12:45	09/07/00 11:10
MW-13	B0I0107-05	Water	09/06/00 13:55	09/07/00 11:10
MW-13R	B0I0107-06	Water	09/06/00 13:56	09/07/00 11:10

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Kirk Gendron, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

KCSlip4 43545

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ERM-Bellevue
915-118th Avenue S.E., Suite 130
Bellevue WA, 98005

Project: Seattle ANG GW Sampling
Project Number: 6091.20
Project Manager: Rob Leet

Reported:
09/11/00 15:28

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TRIP BLANK (B0I0107-01) Water Sampled: 09/06/00 12:00 Received: 09/07/00 11:10									
Bromodichloromethane	ND	1.00	ug/l	1	0I08010	09/07/00	09/08/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
is-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
rans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
urrogate: 1,2-DCA-d4	*100 %*	*60-130*			"	"	"	"	
urrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
urrogate: 4-BFB	*111 %*	*80-120*			"	"	"	"	
TW-11 (B0I0107-02) Water Sampled: 09/06/00 11:35 Received: 09/07/00 11:10									
romodichloromethane	ND	1.00	ug/l	1	0I08010	09/07/00	09/08/00	EPA 8260B	UJ
hlorobenzene	ND	1.00	"	"	"	"	"	"	
hloroethane	ND	1.00	"	"	"	"	"	"	
hloromethane	ND	5.00	"	"	"	"	"	"	
,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
s-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
ans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
lethylene chloride	ND	5.00	"	"	"	"	"	"	
,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
etrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
richloroethene	ND	1.00	"	"	"	"	"	"	
inyl chloride	ND	0.500	"	"	"	"	"	"	
urrogate: 1,2-DCA-d4	*99.3 %*	*60-130*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/11/00 15:28

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-11 (B0I0107-02) Water Sampled: 09/06/00 11:35 Received: 09/07/00 11:10									
Surrogate: Toluene-d8	*99.5 %*	*80-120*			*0I08010*	*09/07/00*	*09/08/00*	*EPA 8260B*	
Surrogate: 4-BFB	*112 %*	*80-120*			"	"	"	"	
MW-11D (B0I0107-03) Water Sampled: 09/06/00 11:35 Received: 09/07/00 11:10									
Bromodichloromethane	ND	1.00	ug/l	1	0I08010	09/07/00	09/08/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.8 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*112 %*	*80-120*			"	"	"	"	
MW-12 (B0I0107-04) Water Sampled: 09/06/00 12:45 Received: 09/07/00 11:10									
Bromodichloromethane	ND	1.00	ug/l	1	0I08010	09/07/00	09/08/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/11/00 15:28

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TW-12 (B0I0107-04) Water Sampled: 09/06/00 12:45 Received: 09/07/00 11:10									
,1,1-Trichloroethane	ND	1.00	ug/l	1	0I08010	09/07/00	09/08/00	EPA 8260B	UJ
richloroethene	ND	1.00	"	"	"	"	"	"	
inyl chloride	ND	0.500	"	"	"	"	"	"	
urrogate: 1,2-DCA-d4	*98.5 %*	*60-130*			"	"	"	"	
urrogate: Toluene-d8	*99.8 %*	*80-120*			"	"	"	"	
urrogate: 4-BFB	*113 %*	*80-120*			"	"	"	"	
IW-13 (B0I0107-05) Water Sampled: 09/06/00 13:55 Received: 09/07/00 11:10									
romodichloromethane	ND	1.00	ug/l	1	0I08010	09/07/00	09/08/00	EPA 8260B	UJ
hlorobenzene	ND	1.00	"	"	"	"	"	"	
hloroethane	ND	1.00	"	"	"	"	"	"	
hloromethane	ND	5.00	"	"	"	"	"	"	
,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
s-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
ans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
lethylene chloride	ND	5.00	"	"	"	"	"	"	
1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
etrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
richloroethene	ND	1.00	"	"	"	"	"	"	
inyl chloride	ND	0.500	"	"	"	"	"	"	
urrogate: 1,2-DCA-d4	*99.8 %*	*60-130*			"	"	"	"	
urrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
urrogate: 4-BFB	*112 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/11/00 15:28

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-13R (B0I0107-06) Water Sampled: 09/06/00 13:56 Received: 09/07/00 11:10									
Bromodichloromethane	ND	1.00	ug/l	1	0I08010	09/07/00	09/08/00	EPA 8260B	U
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*111 %*	*80-120*			"	"	"	"	

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	Reported:
Bellevue WA, 98005	Project Manager: Rob Leet	09/11/00 15:28

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0108010: Prepared 09/07/00 Using EPA 5030B [P/T]										
Blank (0108010-BLK1)										
romodichloromethane	ND	1.00	ug/l							
hlorobenzene	ND	1.00	"							
hloroethane	ND	1.00	"							
hloromethane	ND	5.00	"							
,1-Dichloroethane	ND	1.00	"							
2-Dichloroethane	ND	1.00	"							
,1-Dichloroethene	ND	1.00	"							
is-1,2-Dichloroethene	ND	1.00	"							
ans-1,2-Dichloroethene	ND	1.00	"							
,2-Dichloropropane	ND	1.00	"							
lethylene chloride	ND	5.00	"							
,1,2,2-Tetrachloroethane	ND	1.00	"							
etrachloroethene	ND	1.00	"							
,1,1-Trichloroethane	ND	1.00	"							
richloroethene	ND	1.00	"							
inyl chloride	ND	0.500	"							
urrogate: 1,2-DCA-d4	*39.9*		"	*40.0*		*99.8*	*60-130*			
urrogate: Toluene-d8	*40.4*		"	*40.0*		*101*	*80-120*			
urrogate: 4-BFB	*44.2*		"	*40.0*		*111*	*80-120*			
CS (0108010-BS1)										
hlorobenzene	21.1	1.00	ug/l	20.0		106	80-120			
,1-Dichloroethene	20.2	1.00	"	20.0		101	60-140			
richloroethene	22.0	1.00	"	20.0		110	70-130			
urrogate: 1,2-DCA-d4	*40.5*		"	*40.0*		*101*	*60-130*			
urrogate: Toluene-d8	*40.0*		"	*40.0*		*100*	*80-120*			
urrogate: 4-BFB	*40.2*		"	*40.0*		*101*	*80-120*			

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/11/00 15:28

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I08010: Prepared 09/07/00 Using EPA 5030B [P/T]										
LCS Dup (0I08010-BSD1)										
Chlorobenzene	20.5	1.00	ug/l	20.0		103	80-120	2.88	15	
1,1-Dichloroethene	19.3	1.00	"	20.0		96.5	60-140	4.56	30	
Trichloroethene	21.2	1.00	"	20.0		106	70-130	3.70	20	
Surrogate: 1,2-DCA-d4	*40.6*		"	*40.0*		*101*	*60-130*			
Surrogate: Toluene-d8	*40.0*		"	*40.0*		*100*	*80-120*			
Surrogate: 4-BFB	*40.3*		"	*40.0*		*101*	*80-120*			

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/11/00 15:28

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Environmental Resources Management

CHAIN OF CUSTODY RECORD

NO: 1112

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Page 1 of 1

PROJECT #	PROJECT NAME
6091.20	SEATTLE ANGS GW SAMPLING

SAMPLER: (PRINT NAME)	(SIGNATURE)
DAVID S. BETS	[signature]

RECEIVING LABORATORY: NCA, BOTHELL, WA

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	REQUESTED PARAMETERS: 8260 VOCS									
TRIP BLANK	9/6/00	—	—	—	GRAB SAMPLE	HCL	Y	80 ml	2		X		X									
MW-11		1135		X	SUB. PUMP			120ml	3		X		X									
MW-11D		1135									X		X									
MW-12		1245									X		X									
MW-13		1355									X		X									
MW-13R		1356			HAND						X		X									

DSB

DSB

B010107-01, 02, 03, 04, 05, 06

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9/7/00	0630	Sandra Gakanovich	9/7/00	10:45
Sandra Gakanovich	9/7/00	11:10	Karla Kaczkowski	9/7/00	11:10

FIELD REMARKS:

REMARKS ON SAMPLE RECEIPT: ☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED ☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS:

SEND REPORT TO: ROB LEET

KCSlip4 43553

SEA410083

RCR 6091.20

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CASE NARRATIVE for B0I0180

Client: ERM-Bellevue
Project Manager: Rob Leet
Project Name: Seattle ANG
Project Number: 6091.20

1.0 DESCRIPTION OF CASE

Twenty-five water samples were submitted for analysis of Volatile Organic Compounds by EPA 8260B.

2.0 COMMENTS ON SAMPLE RECEIPT

Samples were received and logged in on September 8, 2000. No anomalies were noted.

3.0 PREPARATIONS AND ANALYSIS

Volatile Organic Compounds by EPA 8260B

The surrogate recovery of *4-BFB* in 0I12046-BLK1 and 0I12047-BLK1 was outside the established control limits for the method. The spike and surrogate recoveries for the LCS, MS and MSD were acceptable, no further action was deemed necessary.

"I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature."

Kirk Gendron
Project Manager
North Creek Analytical

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/14/00 15:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BGA-1-10	B0I0180-01	Water	09/07/00 07:55	09/08/00 14:30
BGA-1-12.5	B0I0180-02	Water	09/07/00 08:15	09/08/00 14:30
BGA-1-15	B0I0180-03	Water	09/07/00 08:30	09/08/00 14:30
BGA-1-17.5	B0I0180-04	Water	09/07/00 08:55	09/08/00 14:30
BGA-1-20	B0I0180-05	Water	09/07/00 09:15	09/08/00 14:30
BGA-1-25	B0I0180-06	Water	09/07/00 09:40	09/08/00 14:30
BGA-1-30	B0I0180-07	Water	09/07/00 09:55	09/08/00 14:30
BGA-2-10	B0I0180-08	Water	09/07/00 10:35	09/08/00 14:30
BGA-2-12.5	B0I0180-09	Water	09/07/00 10:49	09/08/00 14:30
BGA-2-15	B0I0180-10	Water	09/07/00 11:07	09/08/00 14:30
BGA-2-17.5	B0I0180-11	Water	09/07/00 11:21	09/08/00 14:30
BGA-2-20	B0I0180-12	Water	09/07/00 11:37	09/08/00 14:30
BGA-2-25	B0I0180-13	Water	09/07/00 11:57	09/08/00 14:30
BGA-2-32	B0I0180-14	Water	09/07/00 12:15	09/08/00 14:30
BGA-2-40	B0I0180-15	Water	09/07/00 12:37	09/08/00 14:30
BGA-3-10	B0I0180-16	Water	09/07/00 13:30	09/08/00 14:30
BGA-3-12.5	B0I0180-17	Water	09/07/00 13:35	09/08/00 14:30
BGA-3-15	B0I0180-18	Water	09/07/00 13:55	09/08/00 14:30
BGA-3-17.5	B0I0180-19	Water	09/07/00 14:05	09/08/00 14:30
BGA-3-20	B0I0180-20	Water	09/07/00 14:20	09/08/00 14:30
BGA-3-23	B0I0180-21	Water	09/07/00 14:45	09/08/00 14:30
BGA-3-30	B0I0180-22	Water	09/07/00 15:05	09/08/00 14:30
BGA-3-20D	B0I0180-23	Water	09/07/00 14:20	09/08/00 14:30
BGA-3-30D	B0I0180-24	Water	09/07/00 15:05	09/08/00 14:30
TRIP BLANK	B0I0180-25	Water	09/07/00 12:00	09/08/00 14:30

North Creek Analytical - Bothell

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:M-Bellevue
5-118th Avenue S.E., Suite 130
:llevue WA, 98005

Project: Seattle ANG GW Sampling
Project Number: 6091.20
Project Manager: Rob Leet

Reported:
09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

alyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
A-1-10 (B0I0180-01) Water Sampled: 09/07/00 07:55 Received: 09/08/00 14:30									
modichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/12/00	EPA 8260B	UJ
orobenzene	ND	1.00	"	"	"	"	"	"	
oroethane	ND	1.00	"	"	"	"	"	"	
oromethane	ND	5.00	"	"	"	"	"	"	
-Dichloroethane	ND	1.00	"	"	"	"	"	"	
-Dichloroethane	ND	1.00	"	"	"	"	"	"	
-Dichloroethene	ND	1.00	"	"	"	"	"	"	
-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
is-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
-Dichloropropane	ND	1.00	"	"	"	"	"	"	
thylene chloride	ND	5.00	"	"	"	"	"	"	
,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
rachloroethene	ND	1.00	"	"	"	"	"	"	
,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
chloroethene	ND	1.00	"	"	"	"	"	"	
nyl chloride	ND	0.500	"	"	"	"	"	"	
rrogate: 1,2-DCA-d4	*90.7 %*	*60-130*			"	"	"	"	
rrogate: Toluene-d8	*94.5 %*	*80-120*			"	"	"	"	
rrogate: 4-BFB	*109 %*	*80-120*			"	"	"	"	
GA-1-12.5 (B0I0180-02) Water Sampled: 09/07/00 08:15 Received: 09/08/00 14:30									
omodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/12/00	EPA 8260B	UJ
ilorobenzene	ND	1.00	"	"	"	"	"	"	
iloroethane	ND	1.00	"	"	"	"	"	"	
iloromethane	ND	5.00	"	"	"	"	"	"	
1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
s-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
ns-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
ethylene chloride	ND	5.00	"	"	"	"	"	"	
1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
etrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
richloroethene	ND	1.00	"	"	"	"	"	"	
inyl chloride	ND	0.500	"	"	"	"	"	"	
urrogate: 1,2-DCA-d4	*95.5 %*	*60-130*			"	"	"	"	

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irk Gendron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
BGA-1-12.5 (B0I0180-02) Water Sampled: 09/07/00 08:15 Received: 09/08/00 14:30									
Surrogate: Toluene-d8	*106 %*	*80-120*			*0I12046*	*09/12/00*	*09/12/00*	*EPA 8260B*	
Surrogate: 4-BFB	*119 %*	*80-120*			"	"	"	"	
BGA-1-15 (B0I0180-03) Water Sampled: 09/07/00 08:30 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/12/00	EPA 8260B	U:
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*94.3 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*105 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*114 %*	*80-120*			"	"	"	"	
BGA-1-17.5 (B0I0180-04) Water Sampled: 09/07/00 08:55 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/12/00	EPA 8260B	U:
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	Reported:
Bellevue WA, 98005	Project Manager: Rob Leet	09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GA-1-17.5 (B010180-04) Water Sampled: 09/07/00 08:55 Received: 09/08/00 14:30									
,1,1-Trichloroethane	ND	1.00	ug/l	1	0112046	09/12/00	09/12/00	EPA 8260B	UJ
richloroethene	ND	1.00	"	"	"	"	"	"	↓
inyl chloride	ND	0.500	"	"	"	"	"	"	↓
urrogate: 1,2-DCA-d4	*91.8 %*	*60-130*			"	"	"	"	
urrogate: Toluene-d8	*105 %*	*80-120*			"	"	"	"	
urrogate: 4-BFB	*115 %*	*80-120*			"	"	"	"	
GA-1-20 (B010180-05) Water Sampled: 09/07/00 09:15 Received: 09/08/00 14:30									
romodichloromethane	ND	1.00	ug/l	1	0112046	09/12/00	09/12/00	EPA 8260B	UJ
hlorobenzene	ND	1.00	"	"	"	"	"	"	↓
hloroethane	ND	1.00	"	"	"	"	"	"	↓
hloromethane	ND	5.00	"	"	"	"	"	"	↓
,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	↓
,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	↓
,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	↓
s-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	↓
ans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	↓
2-Dichloropropane	ND	1.00	"	"	"	"	"	"	↓
lethylene chloride	ND	5.00	"	"	"	"	"	"	↓
1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	↓
etrachloroethene	ND	1.00	"	"	"	"	"	"	↓
1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	↓
richloroethene	ND	1.00	"	"	"	"	"	"	↓
inyl chloride	ND	0.500	"	"	"	"	"	"	↓
urrogate: 1,2-DCA-d4	*95.2 %*	*60-130*			"	"	"	"	
urrogate: Toluene-d8	*105 %*	*80-120*			"	"	"	"	
urrogate: 4-BFB	*114 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
BGA-1-25 (B0I0180-06) Water Sampled: 09/07/00 09:40 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/12/00	EPA 8260B	U
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*93.2 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*104 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*111 %*	*80-120*			"	"	"	"	
BGA-1-30 (B0I0180-07) Water Sampled: 09/07/00 09:55 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/12/00	EPA 8260B	U
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*92.3 %*	*60-130*			"	"	"	"	

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tM-Bellevue 5-118th Avenue S.E., Suite 130 :llevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

alyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
A-1-30 (B0I0180-07) Water Sampled: 09/07/00 09:55 Received: 09/08/00 14:30									
rogate: Toluene-d8	*104 %*	*80-120*			*0I12046*	*09/12/00*	*09/12/00*	*EPA 8260B*	
rogate: 4-BFB	*111 %*	*80-120*			"	"	"	"	
A-2-10 (B0I0180-08) Water Sampled: 09/07/00 10:35 Received: 09/08/00 14:30									
›modichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/12/00	EPA 8260B	UJ
lorobenzene	ND	1.00	"	"	"	"	"	"	
loroethane	ND	1.00	"	"	"	"	"	"	
loromethane	ND	5.00	"	"	"	"	"	"	
-Dichloroethane	ND	1.00	"	"	"	"	"	"	
-Dichloroethane	ND	1.00	"	"	"	"	"	"	
-Dichloroethene	ND	1.00	"	"	"	"	"	"	
-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
ns-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
:-Dichloropropane	ND	1.00	"	"	"	"	"	"	
:thylene chloride	ND	5.00	"	"	"	"	"	"	
,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
trachloroethene	ND	1.00	"	"	"	"	"	"	
,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	J
ichloroethene	5.47	1.00	"	"	"	"	"	"	UJ
nyl chloride	ND	0.500	"	"	"	"	"	"	
rrogate: 1,2-DCA-d4	*94.8 %*	*60-130*			"	"	"	"	
rrogate: Toluene-d8	*104 %*	*80-120*			"	"	"	"	
rrogate: 4-BFB	*118 %*	*80-120*			"	"	"	"	
3A-2-12.5 (B0I0180-09) Water Sampled: 09/07/00 10:49 Received: 09/08/00 14:30									
omodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/12/00	EPA 8260B	UJ
ılorobenzene	ND	1.00	"	"	"	"	"	"	
ıloroethane	ND	1.00	"	"	"	"	"	"	
ıloromethane	ND	5.00	"	"	"	"	"	"	
1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
s-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
ans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
lethylene chloride	ND	5.00	"	"	"	"	"	"	
1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
etrachloroethene	ND	1.00	"	"	"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
BGA-2-12.5 (B0I0180-09) Water Sampled: 09/07/00 10:49 Received: 09/08/00 14:30									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/12/00	EPA 8260B	U
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*89.3 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*108 %*	*80-120*			"	"	"	"	
BGA-2-15 (B0I0180-10) Water Sampled: 09/07/00 11:07 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/12/00	EPA 8260B	U
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*92.7 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*104 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*114 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	Reported:
Bellevue WA, 98005	Project Manager: Rob Leet	09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-2-17.5 (B0I0180-11) Water Sampled: 09/07/00 11:21 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/13/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*93.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*104 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*113 %*	*80-120*			"	"	"	"	
BGA-2-20 (B0I0180-12) Water Sampled: 09/07/00 11:37 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/13/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*94.0 %*	*60-130*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
BGA-2-20 (B0I0180-12) Water Sampled: 09/07/00 11:37 Received: 09/08/00 14:30									
Surrogate: Toluene-d8	*105 %*	*80-120*			*0I12046*	*09/12/00*	*09/13/00*	*EPA 8260B*	
Surrogate: 4-BFB	*119 %*	*80-120*			"	"	"	"	
BGA-2-25 (B0I0180-13) Water Sampled: 09/07/00 11:57 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/13/00	EPA 8260B	U
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*93.2 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*104 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*112 %*	*80-120*			"	"	"	"	
BGA-2-32 (B0I0180-14) Water Sampled: 09/07/00 12:15 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/13/00	EPA 8260B	U
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	Reported:
Bellevue WA, 98005	Project Manager: Rob Leet	09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-2-32 (B010180-14) Water Sampled: 09/07/00 12:15 Received: 09/08/00 14:30									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/13/00	EPA 8260B	UJ
Trichloroethene	ND	1.00	"	"	"	"	"	"	↓
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*93.8 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*104 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*113 %*	*80-120*			"	"	"	"	
BGA-2-40 (B010180-15) Water Sampled: 09/07/00 12:37 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/13/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	↓
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*93.8 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*105 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
BGA-3-10 (B0I0180-16) Water Sampled: 09/07/00 13:30 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/12/00	EPA 8260B	U
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*91.3 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*94.8 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*109 %*	*80-120*			"	"	"	"	
BGA-3-12.5 (B0I0180-17) Water Sampled: 09/07/00 13:35 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/13/00	EPA 8260B	U
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*94.0 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
3GA-3-12.5 (B0I0180-17) Water Sampled: 09/07/00 13:35 Received: 09/08/00 14:30									
Surrogate: Toluene-d8	*105 %*	*80-120*			*0I12046*	*09/12/00*	*09/13/00*	*EPA 8260B*	
Surrogate: 4-BFB	*117 %*	*80-120*			"	"	"	"	
3GA-3-15 (B0I0180-18) Water Sampled: 09/07/00 13:55 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/12/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
is-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
rans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*93.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*104 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*115 %*	*80-120*			"	"	"	"	
3GA-3-17.5 (B0I0180-19) Water Sampled: 09/07/00 14:05 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/13/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
is-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
rans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
BGA-3-17.5 (B0I0180-19) Water Sampled: 09/07/00 14:05 Received: 09/08/00 14:30									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I12046	09/12/00	09/13/00	EPA 8260B	U
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*93.8 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*105 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	
BGA-3-20 (B0I0180-20) Water Sampled: 09/07/00 14:20 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12047	09/12/00	09/13/00	EPA 8260B	U
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*100 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*102 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*114 %*	*80-120*			"	"	"	"	

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	Reported:
Bellevue WA, 98005	Project Manager: Rob Leet	09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GA-3-23 (B010180-21) Water Sampled: 09/07/00 14:45 Received: 09/08/00 14:30									
romodichloromethane	ND	1.00	ug/l	1	0112047	09/12/00	09/13/00	EPA 8260B	UJ
hlorobenzene	ND	1.00	"	"	"	"	"	"	
hloroethane	ND	1.00	"	"	"	"	"	"	
hloromethane	ND	5.00	"	"	"	"	"	"	
,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
is-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
ans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
etrachloroethene	ND	1.00	"	"	"	"	"	"	
,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
richloroethene	ND	1.00	"	"	"	"	"	"	
inyl chloride	ND	0.500	"	"	"	"	"	"	
urrogate: 1,2-DCA-d4	*98.5 %*	*60-130*			"	"	"	"	
urrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
urrogate: 4-BFB	*106 %*	*80-120*			"	"	"	"	
GA-3-30 (B010180-22) Water Sampled: 09/07/00 15:05 Received: 09/08/00 14:30									
romodichloromethane	ND	1.00	ug/l	1	0112047	09/12/00	09/13/00	EPA 8260B	UJ
hlorobenzene	ND	1.00	"	"	"	"	"	"	
hloroethane	ND	1.00	"	"	"	"	"	"	
hloromethane	ND	5.00	"	"	"	"	"	"	
,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
is-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
ans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
etrachloroethene	ND	1.00	"	"	"	"	"	"	
,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
richloroethene	ND	1.00	"	"	"	"	"	"	
inyl chloride	ND	0.500	"	"	"	"	"	"	
urrogate: 1,2-DCA-d4	*93.8 %*	*60-130*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
BGA-3-30 (B0I0180-22) Water Sampled: 09/07/00 15:05 Received: 09/08/00 14:30									
Surrogate: Toluene-d8	*102 %*	*80-120*			*0I12047*	*09/12/00*	*09/13/00*	*EPA 8260B*	
Surrogate: 4-BFB	*105 %*	*80-120*			"	"	"	"	
BGA-3-20D (B0I0180-23) Water Sampled: 09/07/00 14:20 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12047	09/12/00	09/13/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*98.8 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*111 %*	*80-120*			"	"	"	"	
BGA-3-30D (B0I0180-24) Water Sampled: 09/07/00 15:05 Received: 09/08/00 14:30									
Bromodichloromethane	ND	1.00	ug/l	1	0I12047	09/12/00	09/13/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	Reported:
Bellevue WA, 98005	Project Manager: Rob Leet	09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GA-3-30D (B0I0180-24) Water Sampled: 09/07/00 15:05 Received: 09/08/00 14:30									
1,1-Trichloroethane	ND	1.00	ug/l	1	0112047	09/12/00	09/13/00	EPA 8260B	UJ
richloroethene	ND	1.00	"	"	"	"	"	"	
inyl chloride	ND	0.500	"	"	"	"	"	"	
urrogate: 1,2-DCA-d4	*97.3 %*	*60-130*			"	"	"	"	
urrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
urrogate: 4-BFB	*106 %*	*80-120*			"	"	"	"	
RIP BLANK (B0I0180-25) Water Sampled: 09/07/00 12:00 Received: 09/08/00 14:30									
romodichloromethane	ND	1.00	ug/l	1	0112047	09/12/00	09/13/00	EPA 8260B	UJ
hlorobenzene	ND	1.00	"	"	"	"	"	"	
hloroethane	ND	1.00	"	"	"	"	"	"	
hloromethane	ND	5.00	"	"	"	"	"	"	
1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
s-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
ans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
lethylene chloride	ND	5.00	"	"	"	"	"	"	
1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
etrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
richloroethene	ND	1.00	"	"	"	"	"	"	
inyl chloride	ND	0.500	"	"	"	"	"	"	
urrogate: 1,2-DCA-d4	*100 %*	*60-130*			"	"	"	"	
urrogate: Toluene-d8	*102 %*	*80-120*			"	"	"	"	
urrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I12046: Prepared 09/12/00 Using EPA 5030B [P/T]										
Blank (0I12046-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*37.3*		"	*40.0*		*93.2*	*60-130*			
Surrogate: Toluene-d8	*38.0*		"	*40.0*		*95.0*	*80-120*			
Surrogate: 4-BFB	*48.3*		"	*40.0*		*121*	*80-120*			*S-*
LCS (0I12046-BS1)										
Chlorobenzene	19.8	1.00	ug/l	20.0		99.0	80-120			
1,1-Dichloroethene	16.7	1.00	"	20.0		83.5	60-140			
Trichloroethene	21.5	1.00	"	20.0		108	70-130			
Surrogate: 1,2-DCA-d4	*39.0*		"	*40.0*		*97.5*	*60-130*			
Surrogate: Toluene-d8	*37.8*		"	*40.0*		*94.5*	*80-120*			
Surrogate: 4-BFB	*41.2*		"	*40.0*		*103*	*80-120*			

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	Reported:
Bellevue WA, 98005	Project Manager: Rob Leet	09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
atch 0I12046: Prepared 09/12/00 Using EPA 5030B [P/T]										
Iatrix Spike (0I12046-MS1)					**Source: B0I0180-16**					
hlorobenzene	18.4	1.00	ug/l	20.0	ND	92.0	80-120			
1-Dichloroethene	22.9	1.00	"	20.0	ND	114	60-140			
richloroethene	16.9	1.00	"	20.0	ND	81.6	70-130			
urrogate: 1,2-DCA-d4	*33.2*		"	*40.0*		*83.0*	*60-130*			
urrogate: Toluene-d8	*42.5*		"	*40.0*		*106*	*80-120*			
urrogate: 4-BFB	*42.7*		"	*40.0*		*107*	*80-120*			
Iatrix Spike Dup (0I12046-MSD1)					**Source: B0I0180-16**					
hlorobenzene	17.9	1.00	ug/l	20.0	ND	89.5	80-120	2.75	15	
1-Dichloroethene	22.7	1.00	"	20.0	ND	114	60-140	0.877	30	
richloroethene	16.4	1.00	"	20.0	ND	79.1	70-130	3.00	20	
urrogate: 1,2-DCA-d4	*35.9*		"	*40.0*		*89.8*	*60-130*			
urrogate: Toluene-d8	*42.0*		"	*40.0*		*105*	*80-120*			
urrogate: 4-BFB	*43.9*		"	*40.0*		*110*	*80-120*			
atch 0I12047: Prepared 09/12/00 Using EPA 5030B [P/T]										
lank (0I12047-BLK1)										
romodichloromethane	ND	1.00	ug/l							
hlorobenzene	ND	1.00	"							
hloroethane	ND	1.00	"							
hloromethane	ND	5.00	"							
1-Dichloroethane	ND	1.00	"							
2-Dichloroethane	ND	1.00	"							
1-Dichloroethene	ND	1.00	"							
s-1,2-Dichloroethene	ND	1.00	"							
ans-1,2-Dichloroethene	ND	1.00	"							
2-Dichloropropane	ND	1.00	"							
ethylene chloride	ND	5.00	"							
1,2,2-Tetrachloroethane	ND	1.00	"							
etrachloroethene	ND	1.00	"							
1,1-Trichloroethane	ND	1.00	"							
richloroethene	ND	1.00	"							
inyl chloride	ND	0.500	"							
urrogate: 1,2-DCA-d4	*40.6*		"	*40.0*		*101*	*60-130*			
urrogate: Toluene-d8	*40.9*		"	*40.0*		*102*	*80-120*			

orth Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/14/00 15:14

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I12047: Prepared 09/12/00 Using EPA 5030B [P/T]										
Blank (0I12047-BLK1)										
Surrogate: 4-BFB	*51.4*		*ug/l*	*40.0*		*129*	*80-120*			*S-*
LCS (0I12047-BS1)										
Chlorobenzene	18.4	1.00	ug/l	20.0		92.0	80-120			
1,1-Dichloroethene	18.1	1.00	"	20.0		90.5	60-140			
Trichloroethene	18.2	1.00	"	20.0		91.0	70-130			
Surrogate: 1,2-DCA-d4	*41.1*		*"*	*40.0*		*103*	*60-130*			
Surrogate: Toluene-d8	*40.6*		*"*	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*39.4*		*"*	*40.0*		*98.5*	*80-120*			
LCS Dup (0I12047-BSD1)										
Chlorobenzene	19.8	1.00	ug/l	20.0		99.0	80-120	7.33	15	
1,1-Dichloroethene	20.4	1.00	"	20.0		102	60-140	11.9	30	
Trichloroethene	19.9	1.00	"	20.0		99.5	70-130	8.92	20	
Surrogate: 1,2-DCA-d4	*40.6*		*"*	*40.0*		*101*	*60-130*			
Surrogate: Toluene-d8	*40.1*		*"*	*40.0*		*100*	*80-120*			
Surrogate: 4-BFB	*45.6*		*"*	*40.0*		*114*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/14/00 15:14

Notes and Definitions

S-03	The surrogate recovery for this sample is outside of established control limits. Review of associated QC indicates the recovery for this surrogate does not represent an out-of-control condition.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

North Creek Analytical - Bothell

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Environmental Resources Management

CHAIN OF CUSTODY RECORD

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NCA# B010180

NO: 1135

Page 1 of 3

PROJECT #	PROJECT NAME
6091.20	SEATTLE ANGS DIRECT RUSH GW SAMPLING

SAMPLER: (PRINT NAME): DAVID S. BETTS

(SIGNATURE): [signature]

RECEIVING LABORATORY: NCA, Bothell, WA

REQUESTED PARAMETERS: 8260 VOCs; DSB; DMB

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	SOIL	WATER	GAS	8260 VOCs									
BGA-1-10	9/7/00	0755		X	Peri. Pump	HCL	Y	80 ml	2		X		X								B010180-	01
BGA-1-12.5		0815									X		X									02
BGA-1-15		0830									X		X									03
BGA-1-17.5		0855									X		X									04
BGA-1-20		0915									X		X									05
BGA-1-25		0940									X		X									06
BGA-1-30		0955									X		X									07
BGA-2-10		1035									X		X									08
BGA-2-12.5		1049									X		X									09
BGA-2-15		1107																				10

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9/8/00	0615	[signature]	9/8/00	12:30
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
			Cathy Nichols	9/8/00	14:30
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME

FIELD REMARKS: w/cs; 1[illegible] w/cs

REMARKS ON SAMPLE RECEIPT: ☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED ☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS

SEND REPORT TO: R. LEET

KCSlip4 43575

SEA410105

Management

CHAIN OF CUSTODY RECORD

915 - 118th Ave. S.E., Suite 130 • Bellevue, WA • 98005 • (425) 462-8591 • FAX (425) 455-3573

NCA# B010180

NO: 1137

PROJECT #	PROJECT NAME
6091.20	SEATTLE ANGS DIRECT PUSH GW SAMPLING

SAMPLER: (PRINT NAME)	(SIGNATURE)
DAVID S. BETTS	David S. Betts

RECEIVING LABORATORY: NCA, BOTHELL, WA

REQUESTED PARAMETERS: 8260 VOCs

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	SOIL	WATER	GAS	8260 VOCs								
BGA-2-17.5	9/7/00	1121		X	Peri. Pump	HCL	Y	80ml	2		X		X							B010180-	11
BGA-2-20		1137																			12
BGA-2-25		1157																			13
BGA-2-32		1215																			14
BGA-2-40		1237																			15
BGA-3-10		1330						120ml	3												16
BGA-3-12.5		1335																			17
BGA-3-15		1355																			18
BGA-3-17.5		1405																			19
BGA-3-20		1420																			20

DSB

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
David S. Betts	9/8/00	0615	Bill [illegible]	9/8/00	12:30
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
			Cathy Michels	9/8/00	17:30
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME

FIELD REMARKS: 1.0° W/CS

REMARKS ON SAMPLE RECEIPT: ☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED ☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS:

SEND REPORT TO: R. LEET

KCSlip4 43576

SEA410106

Environmental Resources Management

CHAIN OF CUSTODY RECORD

NO: 1136

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Page 3 of 3

PROJECT #	PROJECT NAME
6091.20	SEATTLE ANGS DIRECT PUSH GW SAMPLING

SAMPLER: (PRINT NAME) DAVID S. BETTS (SIGNATURE) [signature]

RECEIVING LABORATORY: NCA, BOTHELL, WA

REQUESTED PARAMETERS: 8260 VOCs — DSB

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	SOIL	WATER	GAS	8260 VOCs									
BGA-3-23	9/7/00	1445		X	PERI. PUMP	HCL	Y	120 ml	3		X		X								B010180-	21
BGA-3-30		1505							3		X		X									22
BGA-3-20D		1420						80 ml	2		X		X									23
BGA-3-30D		~~1445~~ 1505						120 ml	3		X		X									24
TRIP BLANK		~~1505~~ BD			LAB SUPPLIED	HCL		80 ml	2		X		X									25

DSB

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9/8/00	0615	[signature]	9/8/00	12:30
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
			Cathy Nichols	9/8/00	14:30
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME

FIELD REMARKS: 1.0° W/CS

REMARKS ON SAMPLE RECEIPT: ☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED ☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS

SEND REPORT TO: R. LEET

KCSlip4 43577

SEA410107

RCL 6091.20

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CASE NARRATIVE for B0I0193

Client: ERM-Bellevue
Project Manager: Rob Leet
Project Name: Seattle ANG
Project Number: 6091.20

1.0 DESCRIPTION OF CASE

Thirty-eight water samples were submitted for analysis of Volatile Organic Compounds by EPA 8260B.

2.0 COMMENTS ON SAMPLE RECEIPT

Samples were received and logged in on September 8, 2000. No anomalies were noted.

3.0 PREPARATIONS AND ANALYSIS

Volatile Organic Compounds by EPA 8260B

The surrogate recovery of *4-BFB* in 0I12047-BLK1 was outside the established control limits for the method. The spike and surrogate recoveries for the LCS, MS and MSD were acceptable, no further action was deemed necessary.
The spike recovery of *Chlorobenzene* in the MS and MSD from laboratory batch 0I13041 was outside the established control limits for the method due to sample matrix interference.

"I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature."

Kirk Gendron
Project Manager
North Creek Analytical

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/15/00 13:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BGA-7-10	B0I0193-01	Water	09/08/00 07:40	09/08/00 17:20
BGA-7-12.5	B0I0193-02	Water	09/08/00 07:50	09/08/00 17:20
BGA-7-15	B0I0193-03	Water	09/08/00 08:00	09/08/00 17:20
BGA-7-15D	B0I0193-04	Water	09/08/00 08:00	09/08/00 17:20
BGA-7-17.5	B0I0193-05	Water	09/08/00 08:15	09/08/00 17:20
BGA-7-23	B0I0193-06	Water	09/08/00 08:30	09/08/00 17:20
BGA-7-23R	B0I0193-07	Water	09/08/00 08:45	09/08/00 17:20
BGA-7-26	B0I0193-08	Water	09/08/00 08:40	09/08/00 17:20
BGA-7-30	B0I0193-09	Water	09/08/00 09:00	09/08/00 17:20
BGA-8-10	B0I0193-10	Water	09/08/00 09:40	09/08/00 17:20
BGA-8-12.5	B0I0193-11	Water	09/08/00 09:50	09/08/00 17:20
BGA-8-15	B0I0193-12	Water	09/08/00 10:00	09/08/00 17:20
BGA-8-17.5	B0I0193-13	Water	09/08/00 10:00	09/08/00 17:20
BGA-8-17.5D	B0I0193-14	Water	09/08/00 10:05	09/08/00 17:20
BGA-8-20	B0I0193-15	Water	09/08/00 10:15	09/08/00 17:20
BGA-8-20R	B0I0193-16	Water	09/08/00 10:20	09/08/00 17:20
BGA-8-28	B0I0193-17	Water	09/08/00 10:25	09/08/00 17:20
BGA-8-31	B0I0193-18	Water	09/08/00 10:45	09/08/00 17:20
BGA-8-37	B0I0193-19	Water	09/08/00 11:00	09/08/00 17:20
BGA-9-10	B0I0193-20	Water	09/08/00 11:45	09/08/00 17:20
BGA-9-12.5	B0I0193-21	Water	09/08/00 11:55	09/08/00 17:20
BGA-9-12.5D	B0I0193-22	Water	09/08/00 11:55	09/08/00 17:20
BGA-9-15	B0I0193-23	Water	09/08/00 12:10	09/08/00 17:20
BGA-9-17.5	B0I0193-24	Water	09/08/00 12:20	09/08/00 17:20
BGA-9-20	B0I0193-25	Water	09/08/00 12:35	09/08/00 17:20
BGA-9-20R	B0I0193-26	Water	09/08/00 12:50	09/08/00 17:20
BGA-9-26	B0I0193-27	Water	09/08/00 12:45	09/08/00 17:20
BGA-9-30	B0I0193-28	Water	09/08/00 13:25	09/08/00 17:20
BGA-10-10	B0I0193-29	Water	09/08/00 13:55	09/08/00 17:20

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/15/00 13:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BGA-10-12.5	B0I0193-30	Water	09/08/00 14:15	09/08/00 17:20
BGA-10-15	B0I0193-31	Water	09/08/00 14:25	09/08/00 17:20
BGA-10-17.5	B0I0193-32	Water	09/08/00 14:35	09/08/00 17:20
BGA-10-20	B0I0193-33	Water	09/08/00 14:50	09/08/00 17:20
BGA-10-24	B0I0193-34	Water	09/08/00 15:00	09/08/00 17:20
BGA-10-31	B0I0193-35	Water	09/08/00 15:15	09/08/00 17:20
BGA-10-40	B0I0193-36	Water	09/08/00 15:25	09/08/00 17:20
TB-090800-2	B0I0193-37	Water	09/08/00 12:00	09/08/00 17:20
TB-090800-3	B0I0193-38	Water	09/08/00 12:00	09/08/00 17:20

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-7-10 (B0I0193-01) Water Sampled: 09/08/00 07:40 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13040	09/13/00	09/13/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**4.22**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**5.19**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*107 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	
BGA-7-12.5 (B0I0193-02) Water Sampled: 09/08/00 07:50 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13040	09/13/00	09/13/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**7.48**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**7.60**	1.00	"	"	"	"	"	"	
Vinyl chloride	**2.11**	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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541.383.9310 fax 541.382.7508

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-7-12.5 (B0I0193-02) Water Sampled: 09/08/00 07:50 Received: 09/08/00 17:20									
Surrogate: Toluene-d8	*100 %*	*80-120*			*0I13040*	*09/13/00*	*09/13/00*	*EPA 8260B*	
Surrogate: 4-BFB	*99.5 %*	*80-120*			"	"	"	"	
BGA-7-15 (B0I0193-03) Water Sampled: 09/08/00 08:00 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13040	09/13/00	09/13/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1.05**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*105 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*102 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-7-15D (B0I0193-04) Water Sampled: 09/08/00 08:00 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13040	09/13/00	09/13/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1.10**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-7-15D (B0I0193-04) Water Sampled: 09/08/00 08:00 Received: 09/08/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I13040	09/13/00	09/13/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-7-17.5 (B0I0193-05) Water Sampled: 09/08/00 08:15 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13040	09/13/00	09/13/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	Reported:
Bellevue WA, 98005	Project Manager: Rob Leet	09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-7-23 (B0I0193-06) Water Sampled: 09/08/00 08:30 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0114007	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*101 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	
BGA-7-23R (B0I0193-07) Water Sampled: 09/08/00 08:45 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0114007	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-7-23R (B0I0193-07) Water Sampled: 09/08/00 08:45 Received: 09/08/00 17:20									
Surrogate: Toluene-d8	*98.0 %*	*80-120*			*0I14007*	*09/14/00*	*09/14/00*	*EPA 8260B*	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	
BGA-7-26 (B0I0193-08) Water Sampled: 09/08/00 08:40 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14007	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*97.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*99.5 %*	*80-120*			"	"	"	"	
BGA-7-30 (B0I0193-09) Water Sampled: 09/08/00 09:00 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I12047	09/12/00	09/13/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-7-30 (B0I0193-09) Water Sampled: 09/08/00 09:00 Received: 09/08/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I12047	09/12/00	09/13/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*100 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*117 %*	*80-120*			"	"	"	"	
BGA-8-10 (B0I0193-10) Water Sampled: 09/08/00 09:40 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I12047	09/12/00	09/13/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1.18**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	**1.87**	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**1.65**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.8 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-8-12.5 (B0I0193-11) Water Sampled: 09/08/00 09:50 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I12047	09/12/00	09/13/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*101 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*115 %*	*80-120*			"	"	"	"	
BGA-8-15 (B0I0193-12) Water Sampled: 09/08/00 10:00 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	UJ
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.3 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-8-15 (B0I0193-12) Water Sampled: 09/08/00 10:00 Received: 09/08/00 17:20									
Surrogate: Toluene-d8	*102 %*	*80-120*			*0I13041*	*09/13/00*	*09/14/00*	*EPA 8260B*	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	
BGA-8-17.5 (B0I0193-13) Water Sampled: 09/08/00 10:00 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*100 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*102 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	
BGA-8-17.5D (B0I0193-14) Water Sampled: 09/08/00 10:05 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-8-17.5D (B0I0193-14) Water Sampled: 09/08/00 10:05 Received: 09/08/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*101 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*117 %*	*80-120*			"	"	"	"	
BGA-8-20 (B0I0193-15) Water Sampled: 09/08/00 10:15 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*101 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*102 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*115 %*	*80-120*			"	"	"	"	

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-8-20R (B0I0193-16) Water Sampled: 09/08/00 10:20 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*98.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*109 %*	*80-120*			"	"	"	"	
BGA-8-28 (B0I0193-17) Water Sampled: 09/08/00 10:25 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*95.7 %*	*60-130*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-8-28 (B0I0193-17) Water Sampled: 09/08/00 10:25 Received: 09/08/00 17:20									
Surrogate: Toluene-d8	*100 %*	*80-120*			*0I13041*	*09/13/00*	*09/14/00*	*EPA 8260B*	
Surrogate: 4-BFB	*107 %*	*80-120*			"	"	"	"	
BGA-8-31 (B0I0193-18) Water Sampled: 09/08/00 10:45 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	
BGA-8-37 (B0I0193-19) Water Sampled: 09/08/00 11:00 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-8-37 (B0I0193-19) Water Sampled: 09/08/00 11:00 Received: 09/08/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*102 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*113 %*	*80-120*			"	"	"	"	
BGA-9-10 (B0I0193-20) Water Sampled: 09/08/00 11:45 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*113 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-9-12.5 (B0I0193-21) Water Sampled: 09/08/00 11:55 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14007	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*101 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-9-12.5D (B0I0193-22) Water Sampled: 09/08/00 11:55 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14007	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	**9.58**	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-9-12.5D (B0I0193-22) Water Sampled: 09/08/00 11:55 Received: 09/08/00 17:20									
Surrogate: Toluene-d8	*99.5 %*	*80-120*			*0114007*	*09/14/00*	*09/14/00*	*EPA 8260B*	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	
BGA-9-15 (B0I0193-23) Water Sampled: 09/08/00 12:10 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0114007	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	
BGA-9-17.5 (B0I0193-24) Water Sampled: 09/08/00 12:20 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0114007	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	**12.4**	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-9-17.5 (B0I0193-24) Water Sampled: 09/08/00 12:20 Received: 09/08/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I14007	09/14/00	09/14/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*107 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-9-20 (B0I0193-25) Water Sampled: 09/08/00 12:35 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14007	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-9-20R (B0I0193-26) Water Sampled: 09/08/00 12:50 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I12047	09/12/00	09/13/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*94.3 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*105 %*	*80-120*			"	"	"	"	
BGA-9-26 (B0I0193-27) Water Sampled: 09/08/00 12:45 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I12047	09/12/00	09/13/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*98.5 %*	*60-130*			"	"	"	"	

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RM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-9-26 (B0I0193-27) Water Sampled: 09/08/00 12:45 Received: 09/08/00 17:20									
Surrogate: Toluene-d8	*102 %*	*80-120*			*0I12047*	*09/12/00*	*09/13/00*	*EPA 8260B*	
Surrogate: 4-BFB	*111 %*	*80-120*			"	"	"	"	
BGA-9-30 (B0I0193-28) Water Sampled: 09/08/00 13:25 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I12047	09/12/00	09/13/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.8 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*103 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*114 %*	*80-120*			"	"	"	"	
BGA-10-10 (B0I0193-29) Water Sampled: 09/08/00 13:55 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-10-10 (B010193-29) Water Sampled: 09/08/00 13:55 Received: 09/08/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0113041	09/13/00	09/14/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*98.8 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*102 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*108 %*	*80-120*			"	"	"	"	
BGA-10-12.5 (B0I0193-30) Water Sampled: 09/08/00 14:15 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0113041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1.64**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.3 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*115 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Lect	**Reported:** 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-10-15 (B0I0193-31) Water Sampled: 09/08/00 14:25 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**4.69**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*113 %*	*80-120*			"	"	"	"	
BGA-10-17.5 (B0I0193-32) Water Sampled: 09/08/00 14:35 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**2.95**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*100 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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:rk Gendron, Project Manager

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-10-17.5 (B0I0193-32) Water Sampled: 09/08/00 14:35 Received: 09/08/00 17:20									
Surrogate: Toluene-d8	*101 %*	*80-120*			*0I13041*	*09/13/00*	*09/14/00*	*EPA 8260B*	
Surrogate: 4-BFB	*114 %*	*80-120*			"	"	"	"	
BGA-10-20 (B0I0193-33) Water Sampled: 09/08/00 14:50 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**3.82**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*101 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*103 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*114 %*	*80-120*			"	"	"	"	
BGA-10-24 (B0I0193-34) Water Sampled: 09/08/00 15:00 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1.79**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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RM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-10-24 (B0I0193-34) Water Sampled: 09/08/00 15:00 Received: 09/08/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*102 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*102 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*113 %*	*80-120*			"	"	"	"	
BGA-10-31 (B0I0193-35) Water Sampled: 09/08/00 15:15 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*101 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*103 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*113 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-10-40 (B010193-36) Water Sampled: 09/08/00 15:25 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*101 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	
TB-090800-2 (B010193-37) Water Sampled: 09/08/00 12:00 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*101 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TB-090800-2 (B0I0193-37) Water Sampled: 09/08/00 12:00 Received: 09/08/00 17:20									
Surrogate: Toluene-d8	*102 %*	*80-120*			*0I13041*	*09/13/00*	*09/14/00*	*EPA 8260B*	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	
TB-090800-3 (B0I0193-38) Water Sampled: 09/08/00 12:00 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I13041	09/13/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*100 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*115 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I12047: Prepared 09/12/00 Using EPA 5030B [P/T]										
Blank (0I12047-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*40.6*		"	*40.0*		*101*	*60-130*			
Surrogate: Toluene-d8	*40.9*		"	*40.0*		*102*	*80-120*			
Surrogate: 4-BFB	*51.4*		"	*40.0*		*129*	*80-120*			*S-03*
LCS (0I12047-BS1)										
Chlorobenzene	18.4	1.00	ug/l	20.0		92.0	80-120			
1,1-Dichloroethene	18.1	1.00	"	20.0		90.5	60-140			
Trichloroethene	18.2	1.00	"	20.0		91.0	70-130			
Surrogate: 1,2-DCA-d4	*41.1*		"	*40.0*		*103*	*60-130*			
Surrogate: Toluene-d8	*40.6*		"	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*39.4*		"	*40.0*		*98.5*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I12047: Prepared 09/12/00 Using EPA 5030B [P/T]										
LCS Dup (0I12047-BSD1)										
Chlorobenzene	19.8	1.00	ug/l	20.0		99.0	80-120	7.33	15	
1,1-Dichloroethene	20.4	1.00	"	20.0		102	60-140	11.9	30	
Trichloroethene	19.9	1.00	"	20.0		99.5	70-130	8.92	20	
Surrogate: 1,2-DCA-d4	*40.6*		"	*40.0*		*101*	*60-130*			
Surrogate: Toluene-d8	*40.1*		"	*40.0*		*100*	*80-120*			
Surrogate: 4-BFB	*45.6*		"	*40.0*		*114*	*80-120*			
Batch 0I13040: Prepared 09/13/00 Using EPA 5030B [P/T]										
Blank (0I13040-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*20.4*		"	*20.0*		*102*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*20.5*		"	*20.0*		*103*	*80-120*			

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I13040: Prepared 09/13/00 Using EPA 5030B [P/T]										
LCS (0I13040-BS1)										
Chlorobenzene	10.3	1.00	ug/l	10.0		103	80-120			
1,1-Dichloroethene	11.6	1.00	"	10.0		116	60-140			
Trichloroethene	10.6	1.00	"	10.0		106	70-130			
Surrogate: 1,2-DCA-d4	*19.6*		"	*20.0*		*98.0*	*60-130*			
Surrogate: Toluene-d8	*19.7*		"	*20.0*		*98.5*	*80-120*			
Surrogate: 4-BFB	*19.7*		"	*20.0*		*98.5*	*80-120*			
LCS Dup (0I13040-BSD1)										
Chlorobenzene	9.74	1.00	ug/l	10.0		97.4	80-120	5.59	15	
1,1-Dichloroethene	9.95	1.00	"	10.0		99.5	60-140	15.3	30	
Trichloroethene	9.87	1.00	"	10.0		98.7	70-130	7.13	20	
Surrogate: 1,2-DCA-d4	*19.7*		"	*20.0*		*98.5*	*60-130*			
Surrogate: Toluene-d8	*19.9*		"	*20.0*		*99.5*	*80-120*			
Surrogate: 4-BFB	*20.7*		"	*20.0*		*104*	*80-120*			
Batch 0I13041: Prepared 09/13/00 Using EPA 5030B [P/T]										
Blank (0I13041-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*39.5*		"	*40.0*		*98.8*	*60-130*			
Surrogate: Toluene-d8	*41.1*		"	*40.0*		*103*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I13041: Prepared 09/13/00 Using EPA 5030B [P/T]										
Blank (0I13041-BLK1)										
Surrogate: 4-BFB	*45.9*		*ug/l*	*40.0*		*115*	*80-120*			
LCS (0I13041-BS1)										
Chlorobenzene	19.8	1.00	ug/l	20.0		99.0	80-120			
1,1-Dichloroethene	20.2	1.00	"	20.0		101	60-140			
Trichloroethene	21.5	1.00	"	20.0		108	70-130			
Surrogate: 1,2-DCA-d4	*41.0*		*"*	*40.0*		*103*	*60-130*			
Surrogate: Toluene-d8	*40.9*		*"*	*40.0*		*102*	*80-120*			
Surrogate: 4-BFB	*37.7*		*"*	*40.0*		*94.3*	*80-120*			
LCS Dup (0I13041-BSD1)										
Chlorobenzene	21.1	1.00	ug/l	20.0		106	80-120	6.36	15	
1,1-Dichloroethene	21.2	1.00	"	20.0		106	60-140	4.83	30	
Trichloroethene	23.4	1.00	"	20.0		117	70-130	8.46	20	
Surrogate: 1,2-DCA-d4	*40.7*		*"*	*40.0*		*102*	*60-130*			
Surrogate: Toluene-d8	*40.2*		*"*	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*37.4*		*"*	*40.0*		*93.5*	*80-120*			
Matrix Spike (0I13041-MS1)					**Source: B0I0193-12**					
Chlorobenzene	15.2	1.00	ug/l	20.0	ND	76.0	80-120			Q-02
1,1-Dichloroethene	15.0	1.00	"	20.0	ND	75.0	60-140			
Trichloroethene	14.3	1.00	"	20.0	ND	71.5	70-130			
Surrogate: 1,2-DCA-d4	*38.7*		*"*	*40.0*		*96.8*	*60-130*			
Surrogate: Toluene-d8	*40.5*		*"*	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*46.4*		*"*	*40.0*		*116*	*80-120*			
Matrix Spike Dup (0I13041-MSD1)					**Source: B0I0193-12**					
Chlorobenzene	14.8	1.00	ug/l	20.0	ND	74.0	80-120	2.67	15	Q-02
1,1-Dichloroethene	14.7	1.00	"	20.0	ND	73.5	60-140	2.02	30	
Trichloroethene	14.2	1.00	"	20.0	ND	71.0	70-130	0.702	20	
Surrogate: 1,2-DCA-d4	*39.3*		*"*	*40.0*		*98.2*	*60-130*			
Surrogate: Toluene-d8	*41.6*		*"*	*40.0*		*104*	*80-120*			
Surrogate: 4-BFB	*46.3*		*"*	*40.0*		*116*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I14007: Prepared 09/14/00 Using EPA 5030B [P/T]										
Blank (0I14007-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*20.6*		"	*20.0*		*103*	*60-130*			
Surrogate: Toluene-d8	*19.9*		"	*20.0*		*99.5*	*80-120*			
Surrogate: 4-BFB	*20.3*		"	*20.0*		*101*	*80-120*			
LCS (0I14007-BS1)										
Chlorobenzene	9.08	1.00	ug/l	10.0		90.8	80-120			
1,1-Dichloroethene	10.0	1.00	"	10.0		100	60-140			
Trichloroethene	9.37	1.00	"	10.0		93.7	70-130			
Surrogate: 1,2-DCA-d4	*19.8*		"	*20.0*		*99.0*	*60-130*			
Surrogate: Toluene-d8	*20.1*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*19.7*		"	*20.0*		*98.5*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/15/00 13:23

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I14007: Prepared 09/14/00 Using EPA 5030B [P/T]										
Matrix Spike (0I14007-MS1)					**Source: B0I0128-03**					
Chlorobenzene	9.07	1.00	ug/l	10.0	ND	90.7	80-120			
1,1-Dichloroethene	9.36	1.00	"	10.0	ND	93.6	60-140			
Trichloroethene	9.41	1.00	"	10.0	ND	94.1	70-130			
Surrogate: 1,2-DCA-d4	*18.6*		"	*20.0*		*93.0*	*60-130*			
Surrogate: Toluene-d8	*20.5*		"	*20.0*		*103*	*80-120*			
Surrogate: 4-BFB	*20.4*		"	*20.0*		*102*	*80-120*			
Matrix Spike Dup (0I14007-MSD1)					**Source: B0I0128-03**					
Chlorobenzene	8.86	1.00	ug/l	10.0	ND	88.6	80-120	2.34	15	
1,1-Dichloroethene	9.63	1.00	"	10.0	ND	96.3	60-140	2.84	30	
Trichloroethene	9.01	1.00	"	10.0	ND	90.1	70-130	4.34	20	
Surrogate: 1,2-DCA-d4	*20.8*		"	*20.0*		*104*	*60-130*			
Surrogate: Toluene-d8	*20.2*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.7*		"	*20.0*		*104*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/15/00 13:23

Notes and Definitions

Q-02	The spike recovery for this QC sample is outside of NCA established control limits due to sample matrix interference.
S-03	The surrogate recovery for this sample is outside of established control limits. Review of associated QC indicates the recovery for this surrogate does not represent an out-of-control condition.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Environmental Resources Management

CHAIN OF CUSTODY RECORD

NO: 1125

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Page 1 of 4

PROJECT #	PROJECT NAME
6011.20	Seattle AIG BGA

SAMPLER: (PRINT NAME)	(SIGNATURE)
Chris Bailey	Chris Bailey

RECEIVING LABORATORY: NCA Bothell

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	REQUESTED PARAMETERS: 8260										
BG 4-7-10	9/8/00	745		X	Peri Pump	HCl	Y	120 mL	3		X		X										01
BG 4-7-12.5	9/8/00	750		↓	↓	HCl	↓	↓	3		X		X										02
BG 4-7-15	9/8/00	800		↓	↓	HCl	↓	↓	3		X		X										03
BG 4-7-15D	9/8/00	800		↓	↓	HCl	↓	↓	3		X		X										04
BG 4-7-17.5	9/8/00	815		↓	↓	HCl	↓	↓	3		X		X										05
BG 4-7-23	9/8/00	830		↓	↓	HCl	↓	↓	3		X		X										06
BG 4-7-23R	9/8/00	845		↓	↓	HCl	↓	↓	3		X		X										07
BG 4-7-24	9/8/00	840		↓	↓	HCl	↓	↓	3		X		X										08
BG 4-7-30	9/8/00	900		↓	↓	HCl	↓	↓	3		X		X										09
BG 4-8-10	9/8/00	940		↓	↓	HCl	↓	↓	3		X		X										10

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
Chris Bailey	9/8/00	1720	S Lykamovich NCA	9/8/00	1720
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME

FIELD REMARKS: 6.0° N/O

REMARKS ON SAMPLE RECEIPT
- ☐ BOTTLE INTACT
- ☐ CUSTODY SEALS
- ☐ CHILLED
- ☐ PRESERVED
- ☐ SEALS INTACT
- ☐ SEE REMARKS

ERM REMARKS:

SEND REPORT TO: Rob Leet

W ARC RY C Y - F COPY PINK ABAS IAGE GC ROJ E

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SEA410141

Environmental Resources Management

CHAIN OF CUSTODY RECORD

NO: 1123

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BOI0193

PROJECT #	PROJECT NAME
6091.20	Seattle Ave BGA

SAMPLER: (PRINT NAME) Chris Bailey (SIGNATURE) [signature]

RECEIVING LABORATORY: NCA Bothell

REQUESTED PARAMETERS: F200

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	F200									
BGA-8-12.5	9/8/00	950		X	Peripheral	HCl	Y	120mL	3		\		\									11
BGA-8-15	9/8/00	1000		↓	↓	↓	↓	360mL	9		\		\									12
BGA-8-17.5	9/8/00	1005		↓	↓	↓	↓	120mL	3		\		\									13
BGA-8-17.5D	9/8/00	1005		↓	↓	↓	↓	↓	3		\		\									14
BGA-8-20	9/8/00	1015		↓	↓	↓	↓	↓	3		\		\									15
BGA-8-20R	9/8/00	1020		↓	↓	↓	↓	↓	3		\		\									16
BGA-8-28	9/8/00	1025		↓	↓	↓	↓	↓	3		\		\									17
BGA-8-31	9/8/00	1045		↓	↓	↓	↓	↓	3		\		\									18
BGA-8-37	9/8/00	1100		↓	↓	↓	↓	↓	3		\		\									19
BGA-8-9-10	9/8/00	1145		↓	↓	↓	↓	↓	3		\		\									20

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9/8/00	1320	S. Yakamarich NCA	9/8/00	17/20
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME

FIELD REMARKS: Use BGA-8-15 for MS/MSD

6.0° w/o

REMARKS ON SAMPLE RECEIPT: ☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED ☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS

SEND REPORT TO: Rob Leet

WHITE - LABORATORY COPY CANARY - FIELD COPY PINK - DATABASE MANAGER GOLD - PROJECT FILE

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Environmental Resources Management

CHAIN OF CUSTODY RECORD

NO: 1124

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BOI0193

Page 3 of 4

PROJECT #	PROJECT NAME
6091.20	Seattle Ang Basewide G.W.

SAMPLER: (PRINT NAME)	(SIGNATURE)
Chris Bailey	[signature]

RECEIVING LABORATORY: HCl Bothell

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	REQUESTED PARAMETERS: 8260										
BGA-9-12.5	9/8/00	1155		X	Peri Pump	HCL	Y	120mL	3		\		\										21
BGA-9-12.5D	9/8/00	1155				HCL			3		\		\										22
BGA-9-15	9/8/00	1210				HCL			3		\		\										23
BGA-9-17.5	9/8/00	1220				HCL			3		\		\										24
BGA-9-20	9/8/00	1235				HCl			3		\		\										25
BGA-9-20R	9/8/00	1250				HCl			3		\		\										26
BGA-9-26	9/8/00	1245				HCl			3		\		\										27
BGA-9-30	9/8/00	1325				HCl			3		\		\										28
BG-4-10-10	9/8/00	1355				HCl		80mL	3		\		\										29
BGA-10-12.5	9/8/00	1415				HCl		120mL	3		\		\										30

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	[illegible]	1720	S. Lakamavich	9/8/00	1720
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME

FIELD REMARKS

6.0° w/o

REMARKS ON SAMPLE RECEIPT

☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED
☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS

SEND REPORT TO: Rob Lect

KCSlip4 43613

SEA410143

Environmental Resources Management

CHAIN OF CUSTODY RECORD

NO: 1126

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PROJECT #	PROJECT NAME
5091.20	Seattle ANG BGA

SAMPLER: (PRINT NAME)	(SIGNATURE)
Chris Bailey	Chris Bailey

RECEIVING LABORATORY: ACA Bothell

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	MATRIX GAS	REQUESTED PARAMETERS: 8260										
BGA-10-15	9/8/00	1425		Y	Peri Pump	HCl	Y	120mL	3		\		\										31
BGA-10-17.5	9/8/00	1435				HCL		120mL	3		\		\										32
BGA-10-20	9/8/00	1450				HCL		360mL	9		\		\										33
BGA-10-24	9/8/00	1500				HCl		120mL	3		\		\										34
BGA-10-31	9/8/00	1515				HCl			3		\		\										35
BGA-10-40	9/8/00	1525				HCl			3		\		\										36
TB-090800-2	—	—	—	—	—	HCl		80mL	2		\		\										37
TB-090800-3	—	—	—	—	—	HCl	Y	80mL	2		\		\										38
																							39 CA
																							CB

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
Chris Bailey	9/8/00	1720	S. Yakovavich NCA	9/8/00	1720
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME

FIELD REMARKS: Use BGA-10-20 as MS/MSD

6.0° C

REMARKS ON SAMPLE RECEIPT: ☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED ☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS:

SEND REPORT TO: Rob Lort

WHITE - LABORATORY COPY CANARY - FIELD COPY PINK - DATABASE MANAGER GOLD - PROJECT FILE

KCSlip4 43614

SEA410144

NCL 6091.20

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541.383.9310 fax 541.382.7588

CASE NARRATIVE for B0I0217

Client: ERM-Bellevue
Project Manager: Rob Leet
Project Name: Seattle ANG
Project Number: 6091.20

1.0 DESCRIPTION OF CASE

Twenty-seven water samples were submitted for analysis of Volatile Organic Compounds by EPA 8260B.

2.0 COMMENTS ON SAMPLE RECEIPT

Samples were received and logged in on September 8, 2000. No anomalies were noted.

3.0 PREPARATIONS AND ANALYSIS

Volatile Organic Compounds by EPA 8260B

The spike recovery of *1,1-Dichloroethene* in the MS and MSD of laboratory batch 0I14044 was outside the established control limits of the method due to matrix interference.

"I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature."

Kirk Gendron
Project Manager
North Creek Analytical

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-090800-1	B0I0217-01	Water	09/08/00 12:00	09/08/00 17:20
BGA-4-10	B0I0217-02	Water	09/08/00 07:30	09/08/00 17:20
BGA-4-12.5	B0I0217-03	Water	09/08/00 08:00	09/08/00 17:20
BGA-4-15R	B0I0217-04	Water	09/08/00 08:15	09/08/00 17:20
BGA-4-15	B0I0217-05	Water	09/08/00 08:30	09/08/00 17:20
BGA-4-17.5	B0I0217-06	Water	09/08/00 08:38	09/08/00 17:20
BGA-4-22	B0I0217-07	Water	09/08/00 08:50	09/08/00 17:20
BGA-4-26	B0I0217-08	Water	09/08/00 09:00	09/08/00 17:20
BGA-4-34	B0I0217-09	Water	09/08/00 09:17	09/08/00 17:20
BGA-4-39	B0I0217-10	Water	09/08/00 09:35	09/08/00 17:20
BGA-4-39D	B0I0217-11	Water	09/08/00 09:35	09/08/00 17:20
BGA-5-12.5	B0I0217-12	Water	09/08/00 10:50	09/08/00 17:20
BGA-5-15	B0I0217-13	Water	09/08/00 11:10	09/08/00 17:20
BGA-5-17.5	B0I0217-14	Water	09/08/00 11:25	09/08/00 17:20
BGA-5-20	B0I0217-15	Water	09/08/00 11:37	09/08/00 17:20
BGA-5-25	B0I0217-16	Water	09/08/00 11:55	09/08/00 17:20
BGA-5-30	B0I0217-17	Water	09/08/00 12:13	09/08/00 17:20
BGA-6-10	B0I0217-18	Water	09/08/00 13:25	09/08/00 17:20
BGA-6-12.5R	B0I0217-19	Water	09/08/00 13:33	09/08/00 17:20
BGA-6-12.5	B0I0217-20	Water	09/08/00 13:40	09/08/00 17:20
BGA-6-15	B0I0217-21	Water	09/08/00 13:55	09/08/00 17:20
BGA-6-15D	B0I0217-22	Water	09/08/00 13:55	09/08/00 17:20
BGA-6-17.5	B0I0217-23	Water	09/08/00 14:10	09/08/00 17:20
BGA-6-20	B0I0217-24	Water	09/08/00 14:25	09/08/00 17:20
BGA-6-27	B0I0217-25	Water	09/08/00 14:40	09/08/00 17:20
BGA-6-33	B0I0217-26	Water	09/08/00 15:00	09/08/00 17:20
BGA-6-40	B0I0217-27	Water	09/08/00 15:20	09/08/00 17:20

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Kirk Gendron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TB-090800-1 (B0I0217-01) Water Sampled: 09/08/00 12:00 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14007	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*95.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-4-10 (B0I0217-02) Water Sampled: 09/08/00 07:30 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*98.0 %*	*60-130*			"	"	"	"	

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Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-4-10 (B0I0217-02) Water Sampled: 09/08/00 07:30 Received: 09/08/00 17:20									
Surrogate: Toluene-d8	*101 %*	*80-120*			*0I14024*	*09/14/00*	*09/14/00*	*EPA 8260B*	
Surrogate: 4-BFB	*109 %*	*80-120*			"	"	"	"	
BGA-4-12.5 (B0I0217-03) Water Sampled: 09/08/00 08:00 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*95.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*117 %*	*80-120*			"	"	"	"	
BGA-4-15R (B0I0217-04) Water Sampled: 09/08/00 08:15 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-4-15R (B0I0217-04) Water Sampled: 09/08/00 08:15 Received: 09/08/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*91.8 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*95.2 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*105 %*	*80-120*			"	"	"	"	
BGA-4-15 (B0I0217-05) Water Sampled: 09/08/00 08:30 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*95.7 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-4-17.5 (B0I0217-06) Water Sampled: 09/08/00 08:38 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*95.7 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.8 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*107 %*	*80-120*			"	"	"	"	
BGA-4-22 (B0I0217-07) Water Sampled: 09/08/00 08:50 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*98.2 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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541.383.9310 fax 541.382.7568

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-4-22 (B0I0217-07) Water Sampled: 09/08/00 08:50 Received: 09/08/00 17:20									
Surrogate: Toluene-d8	*99.5 %*	*80-120*			*0I14024*	*09/14/00*	*09/14/00*	*EPA 8260B*	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	
BGA-4-26 (B0I0217-08) Water Sampled: 09/08/00 09:00 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*96.3 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*110 %*	*80-120*			"	"	"	"	
BGA-4-34 (B0I0217-09) Water Sampled: 09/08/00 09:17 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-4-34 (B0I0217-09) Water Sampled: 09/08/00 09:17 Received: 09/08/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*97.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*113 %*	*80-120*			"	"	"	"	
BGA-4-39 (B0I0217-10) Water Sampled: 09/08/00 09:35 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*93.8 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*103 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*106 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-4-39D (B0I0217-11) Water Sampled: 09/08/00 09:35 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*94.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*104 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*107 %*	*80-120*			"	"	"	"	
BGA-5-12.5 (B0I0217-12) Water Sampled: 09/08/00 10:50 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	**3.79**	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**4.14**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*96.5 %*	*60-130*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-5-12.5 (B0I0217-12) Water Sampled: 09/08/00 10:50 Received: 09/08/00 17:20									
Surrogate: Toluene-d8	*101 %*	*80-120*			*0I14024*	*09/14/00*	*09/14/00*	*EPA 8260B*	
Surrogate: 4-BFB	*117 %*	*80-120*			"	"	"	"	
BGA-5-15 (B0I0217-13) Water Sampled: 09/08/00 11:10 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**1.49**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*97.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.3 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*118 %*	*80-120*			"	"	"	"	
BGA-5-17.5 (B0I0217-14) Water Sampled: 09/08/00 11:25 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-5-17.5 (B0I0217-14) Water Sampled: 09/08/00 11:25 Received: 09/08/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*97.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	
BGA-5-20 (B0I0217-15) Water Sampled: 09/08/00 11:37 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*97.7 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-5-25 (B0I0217-16) Water Sampled: 09/08/00 11:55 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*97.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	
BGA-5-30 (B0I0217-17) Water Sampled: 09/08/00 12:13 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*97.3 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-5-30 (B0I0217-17) Water Sampled: 09/08/00 12:13 Received: 09/08/00 17:20									
Surrogate: Toluene-d8	*101 %*	*80-120*			*0I14024*	*09/14/00*	*09/14/00*	*EPA 8260B*	
Surrogate: 4-BFB	*111 %*	*80-120*			"	"	"	"	
BGA-6-10 (B0I0217-18) Water Sampled: 09/08/00 13:25 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**23.3**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**49.7**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*93.2 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*95.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*106 %*	*80-120*			"	"	"	"	
BGA-6-12.5R (B0I0217-19) Water Sampled: 09/08/00 13:33 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-6-12.5R (B0I0217-19) Water Sampled: 09/08/00 13:33 Received: 09/08/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/14/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*96.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*117 %*	*80-120*			"	"	"	"	
BGA-6-12.5 (B0I0217-20) Water Sampled: 09/08/00 13:40 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*95.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-6-15 (B0I0217-21) Water Sampled: 09/08/00 13:55 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**1.13**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*96.3 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	
BGA-6-15D (B0I0217-22) Water Sampled: 09/08/00 13:55 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14024	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*96.0 %*	*60-130*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-6-15D (B0I0217-22) Water Sampled: 09/08/00 13:55 Received: 09/08/00 17:20									
Surrogate: Toluene-d8	*101 %*	*80-120*			*0I14024*	*09/14/00*	*09/15/00*	*EPA 8260B*	
Surrogate: 4-BFB	*115 %*	*80-120*			"	"	"	"	
BGA-6-17.5 (B0I0217-23) Water Sampled: 09/08/00 14:10 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**2.24**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*93.2 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*103 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*107 %*	*80-120*			"	"	"	"	
BGA-6-20 (B0I0217-24) Water Sampled: 09/08/00 14:25 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-6-20 (B0I0217-24) Water Sampled: 09/08/00 14:25 Received: 09/08/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*96.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	
BGA-6-27 (B0I0217-25) Water Sampled: 09/08/00 14:40 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**2.68**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*94.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*108 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-6-33 (B0I0217-26) Water Sampled: 09/08/00 15:00 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*96.3 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	
BGA-6-40 (B0I0217-27) Water Sampled: 09/08/00 15:20 Received: 09/08/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**1.73**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*96.3 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-6-40 (B0I0217-27) Water Sampled: 09/08/00 15:20 Received: 09/08/00 17:20									
Surrogate: Toluene-d8	*99.8 %*	*80-120*			*0I14044*	*09/14/00*	*09/15/00*	*EPA 8260B*	
Surrogate: 4-BFB	*109 %*	*80-120*			*"*	*"*	*"*	*"*	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I14007: Prepared 09/14/00 Using EPA 5030B [P/T]										
Blank (0I14007-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*20.6*		"	*20.0*		*103*	*60-130*			
Surrogate: Toluene-d8	*19.9*		"	*20.0*		*99.5*	*80-120*			
Surrogate: 4-BFB	*20.3*		"	*20.0*		*101*	*80-120*			
LCS (0I14007-BS1)										
Chlorobenzene	9.08	1.00	ug/l	10.0		90.8	80-120			
1,1-Dichloroethene	10.0	1.00	"	10.0		100	60-140			
Trichloroethene	9.37	1.00	"	10.0		93.7	70-130			
Surrogate: 1,2-DCA-d4	*19.8*		"	*20.0*		*99.0*	*60-130*			
Surrogate: Toluene-d8	*20.1*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*19.7*		"	*20.0*		*98.5*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I14007: Prepared 09/14/00 Using EPA 5030B [P/T]										
Matrix Spike (0I14007-MS1)					**Source: B0I0128-03**					
Chlorobenzene	9.07	1.00	ug/l	10.0	ND	90.7	80-120			
1,1-Dichloroethene	9.36	1.00	"	10.0	ND	93.6	60-140			
Trichloroethene	9.41	1.00	"	10.0	ND	94.1	70-130			
Surrogate: 1,2-DCA-d4	*18.6*		"	*20.0*		*93.0*	*60-130*			
Surrogate: Toluene-d8	*20.5*		"	*20.0*		*103*	*80-120*			
Surrogate: 4-BFB	*20.4*		"	*20.0*		*102*	*80-120*			
Matrix Spike Dup (0I14007-MSD1)					**Source: B0I0128-03**					
Chlorobenzene	8.86	1.00	ug/l	10.0	ND	88.6	80-120	2.34	15	
1,1-Dichloroethene	9.63	1.00	"	10.0	ND	96.3	60-140	2.84	30	
Trichloroethene	9.01	1.00	"	10.0	ND	90.1	70-130	4.34	20	
Surrogate: 1,2-DCA-d4	*20.8*		"	*20.0*		*104*	*60-130*			
Surrogate: Toluene-d8	*20.2*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.7*		"	*20.0*		*104*	*80-120*			
Batch 0I14024: Prepared 09/14/00 Using EPA 5030B [P/T]										
Blank (0I14024-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*39.7*		"	*40.0*		*99.3*	*60-130*			
Surrogate: Toluene-d8	*41.1*		"	*40.0*		*103*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I14024: Prepared 09/14/00 Using EPA 5030B [P/T]										
Blank (0I14024-BLK1)										
Surrogate: 4-BFB	*45.9*		*ug/l*	*40.0*		*115*	*80-120*			
LCS (0I14024-BS1)										
Chlorobenzene	20.9	1.00	ug/l	20.0		104	80-120			
1,1-Dichloroethene	22.1	1.00	"	20.0		111	60-140			
Trichloroethene	21.3	1.00	"	20.0		106	70-130			
Surrogate: 1,2-DCA-d4	*41.0*		*"*	*40.0*		*103*	*60-130*			
Surrogate: Toluene-d8	*40.4*		*"*	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*39.7*		*"*	*40.0*		*99.3*	*80-120*			
Matrix Spike (0I14024-MS1)					**Source: B0I0217-02**					
Chlorobenzene	19.5	1.00	ug/l	20.0	ND	97.5	80-120			
1,1-Dichloroethene	16.9	1.00	"	20.0	ND	84.5	60-140			
Trichloroethene	19.7	1.00	"	20.0	ND	98.5	70-130			
Surrogate: 1,2-DCA-d4	*39.5*		*"*	*40.0*		*98.8*	*60-130*			
Surrogate: Toluene-d8	*40.3*		*"*	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*46.2*		*"*	*40.0*		*116*	*80-120*			
Matrix Spike Dup (0I14024-MSD1)					**Source: B0I0217-02**					
Chlorobenzene	19.5	1.00	ug/l	20.0	ND	97.5	80-120	0	15	
1,1-Dichloroethene	18.5	1.00	"	20.0	ND	92.5	60-140	9.04	30	
Trichloroethene	19.5	1.00	"	20.0	ND	97.5	70-130	1.02	20	
Surrogate: 1,2-DCA-d4	*39.5*		*"*	*40.0*		*98.8*	*60-130*			
Surrogate: Toluene-d8	*39.8*		*"*	*40.0*		*99.5*	*80-120*			
Surrogate: 4-BFB	*46.4*		*"*	*40.0*		*116*	*80-120*			
Batch 0I14044: Prepared 09/14/00 Using EPA 5030B [P/T]										
Blank (0I14044-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I14044: Prepared 09/14/00 Using EPA 5030B [P/T]										
Blank (0I14044-BLK1)										
trans-1,2-Dichloroethene	ND	1.00	ug/l							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*38.6*		"	*40.0*		*96.5*	*60-130*			
Surrogate: Toluene-d8	*40.6*		"	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*46.5*		"	*40.0*		*116*	*80-120*			
LCS (0I14044-BS1)										
Chlorobenzene	21.2	1.00	ug/l	20.0		106	80-120			
1,1-Dichloroethene	20.9	1.00	"	20.0		104	60-140			
Trichloroethene	23.3	1.00	"	20.0		116	70-130			
Surrogate: 1,2-DCA-d4	*39.8*		"	*40.0*		*99.5*	*60-130*			
Surrogate: Toluene-d8	*39.0*		"	*40.0*		*97.5*	*80-120*			
Surrogate: 4-BFB	*39.1*		"	*40.0*		*97.7*	*80-120*			
Matrix Spike (0I14044-MS1)					**Source: B0I0217-25**					
Chlorobenzene	19.5	1.00	ug/l	20.0	ND	97.5	80-120			
1,1-Dichloroethene	9.44	1.00	"	20.0	ND	47.2	60-140			Q-02
Trichloroethene	20.7	1.00	"	20.0	2.68	90.1	70-130			
Surrogate: 1,2-DCA-d4	*37.1*		"	*40.0*		*92.7*	*60-130*			
Surrogate: Toluene-d8	*41.0*		"	*40.0*		*103*	*80-120*			
Surrogate: 4-BFB	*42.1*		"	*40.0*		*105*	*80-120*			

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:07

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I14044: Prepared 09/14/00 Using EPA 5030B [P/T]										
Matrix Spike Dup (0I14044-MSD1)					**Source: B0I0217-25**					
Chlorobenzene	19.2	1.00	ug/l	20.0	ND	96.0	80-120	1.55	15	
1,1-Dichloroethene	9.09	1.00	"	20.0	ND	45.5	60-140	3.78	30	Q-02
Trichloroethene	20.2	1.00	"	20.0	2.68	87.6	70-130	2.44	20	
Surrogate: 1,2-DCA-d4	*36.9*		"	*40.0*		*92.3*	*60-130*			
Surrogate: Toluene-d8	*40.8*		"	*40.0*		*102*	*80-120*			
Surrogate: 4-BFB	*42.5*		"	*40.0*		*106*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:07

Notes and Definitions

Q-02	The spike recovery for this QC sample is outside of NCA established control limits due to sample matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

Mental Resources
Management

CHAIN OF CUSTODY RECORD

NO: 1113

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PROJECT #	PROJECT NAME
6091.20	SEATTLE ANGS DIRECT PUSH GW SAMPLING

SAMPLER: (PRINT NAME) DAVID S. BETTS (SIGNATURE) [signature]

RECEIVING LABORATORY
NCA
BOTHELL, WA

REQUESTED PARAMETERS

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	8260 VOCs								MS/MSD		
090800-1																							
TRIP BLANK	9/8/00	—	—	—	LAB SUPPLIED	HCL	Y	80 ml	2		X		X				B010217-01						
BGA-4-10		0730		X	PERI PUMP			360 ml	9				X								02	X	
BGA-4-12.5		0800						120 ml	3				X								03		
BGA-4-15R		0815			HAND				3				X								04		
BGA-4-15		0830			PERI PUMP				3				X								05		
BGA-4-~~20~~ 17.5		0838							3				X								06		
BGA-4-~~26~~ 22		0850							3				X								07		
BGA-4-26		0900							3				X								08		
BGA-4-34		0917							3				X								09		
BGA-4-39		0935							3				X								10		

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9/8/00	1600	Karla Kaczorowski	9/8/00	1720
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME

FIELD REMARKS

6.0° w/o

REMARKS ON SAMPLE RECEIPT
☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED
☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS

SEND REPORT TO: R. LEET

WH ABOI Y CO C - FIE OPY INK - BASE AGER GOL

KCSlip4 43640

SEA410170

Environmental Resources Management

CHAIN OF CUSTODY RECORD

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NCA # B010217

NO: 1116

PROJECT #	PROJECT NAME
6091.20	SEATTLE ANGLES DIRECT PUSH GW SAMPLING

SAMPLER: (PRINT NAME)	(SIGNATURE)
DAVID S BETTS	David S. Betts

RECEIVING LABORATORY

NCA
BOTHELL, WA

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	SOIL	WATER	GAS	8260 VOCS									
BGA-4-39.0	9/8/00	0935		X	Peri. Pump	HCL	Y	80 ml	2		X		X					B010217 -	11			
BGA-5-12.5		1050						120 ml	3		X		X						12			
BGA-5-15		1110									X		X						13			
BGA-5-17.5		1125									X		X						14			
BGA-5-20		1137									X		X						15			
BGA-5-25		1155									X		X						16			
BGA-5-30		1213									X		X						17			
BGA-6-10		1325									X		X						18			
BGA-6-12.5R		1333			HAND						X		X						19			
BGA-6-12.5		1340			Peri. Pump						X		X						20			

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
David S. Betts	9/8/00	1600	Karla Kaczorowski	9/8/00	17:20
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME

FIELD REMARKS

6.0° W/O

REMARKS ON SAMPLE RECEIPT

☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED
☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS

SEND REPORT TO:
R. LEET

WHITE - LABORATORY COPY CANARY - FIELD COPY

KCSlip4 43641

SEA410171

Management

CHAIN OF CUSTODY RECORD

NO: 1115

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NCA # B010217

Page 3 of 3

PROJECT #	PROJECT NAME
6091.20	SEATTLE ANGS DIRECT PUSH GW SAMPLING

SAMPLER: (PRINT NAME)	(SIGNATURE)
DAVID S. BETTS	[signature]

RECEIVING LABORATORY

NCA
BOTHELL, WA

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	REQUESTED PARAMETERS: 8260 VOCs									MS/MSD
GA-6-15	9/8/00	1355		X	PERI PUMP	HCL	Y	120 ml	3		X		X					B010217 -			21	
GA-6-15D	↓	1355		↓	↓	↓	↓	↓	↓		X		X								22	
GA-6-17.5	↓	1410		↓	↓	↓	↓	↓	↓		X		X								23	
GA-6-20	↓	1425		↓	↓	↓	↓	↓	↓		X		X								24	
GA-6-27	↓	1440		↓	↓	↓	↓	360 ml	9		X		X								25	X
GA-6-33	↓	1500		↓	↓	↓	↓	120 ml	3		X		X								26	
GA-6-40	↓	1520		↓	↓	↓	↓	↓	↓												27	

DSB

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9/8/00	1600	Karla Kaczorowski	9/8/00	17:20
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME

FIELD REMARKS

6.0° w/o

REMARKS ON SAMPLE RECEIPT

BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED
PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS

SEND REPORT TO: R. LEET

WHITE LABORATORY COPY CAN... FIEL... Y ...NK - D... ASE ... ER ... OLD ... JECT

KCSlip4 43642

SEA410172

RCL 6091.2

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CASE NARRATIVE for B0I0310

Client: ERM-Bellevue
Project Manager: Rob Leet
Project Name: Seattle ANG
Project Number: 6091.20

1.0 DESCRIPTION OF CASE

Twenty-eight water samples were submitted for analysis of Volatile Organic Compounds by EPA 8260B.

2.0 COMMENTS ON SAMPLE RECEIPT

Samples were received and logged in on September 13, 2000. No anomalies were noted.

3.0 PREPARATIONS AND ANALYSIS

Volatile Organic Compounds by EPA 8260B

The spike recovery of *1,1-Dichloroethene* in the MS and MSD of laboratory batch 0114044 was outside the established control limits of the method due to matrix interference.

"I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature."

Kirk Gendron
Project Manager
North Creek Analytical

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:09

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BGA-11-10	B0I0310-01	Water	09/12/00 07:40	09/13/00 13:00
BGA-11-12.5	B0I0310-02	Water	09/12/00 07:50	09/13/00 13:00
BGA-11-15	B0I0310-03	Water	09/12/00 08:00	09/13/00 13:00
BGA-11-17.5	B0I0310-04	Water	09/12/00 08:10	09/13/00 13:00
BGA-11-20	B0I0310-05	Water	09/12/00 08:25	09/13/00 13:00
BGA-11-25	B0I0310-06	Water	09/12/00 08:35	09/13/00 13:00
BGA-11-29	B0I0310-07	Water	09/12/00 08:45	09/13/00 13:00
BGA-11-29D	B0I0310-08	Water	09/12/00 08:45	09/13/00 13:00
BGA-12-10	B0I0310-09	Water	09/12/00 09:15	09/13/00 13:00
BGA-12-12.5	B0I0310-10	Water	09/12/00 09:25	09/13/00 13:00
BGA-12-15	B0I0310-11	Water	09/12/00 09:35	09/13/00 13:00
BGA-12-17.5	B0I0310-12	Water	09/12/00 09:45	09/13/00 13:00
BGA-12-20	B0I0310-13	Water	09/12/00 09:55	09/13/00 13:00
BGA-12-20D	B0I0310-14	Water	09/12/00 09:55	09/13/00 13:00
BGA-12-25	B0I0310-15	Water	09/12/00 10:10	09/13/00 13:00
BGA-12-25R	B0I0310-16	Water	09/12/00 10:30	09/13/00 13:00
BGA-12-34	B0I0310-17	Water	09/12/00 10:35	09/13/00 13:00
BGA-12-40	B0I0310-18	Water	09/12/00 10:45	09/13/00 13:00
BGA-13-15D	B0I0310-19	Water	09/12/00 11:45	09/13/00 13:00
BGA-13-24R	B0I0310-20	Water	09/12/00 13:10	09/13/00 13:00
BGA-14-15	B0I0310-21	Water	09/12/00 14:10	09/13/00 13:00
BGA-14-17.5	B0I0310-22	Water	09/12/00 14:25	09/13/00 13:00
BGA-14-20	B0I0310-23	Water	09/12/00 14:35	09/13/00 13:00
BGA-14-27	B0I0310-24	Water	09/12/00 14:45	09/13/00 13:00
BGA-14-27R	B0I0310-25	Water	09/12/00 14:50	09/13/00 13:00
BGA-14-34	B0I0310-26	Water	09/12/00 14:55	09/13/00 13:00
BGA-14-40	B0I0310-27	Water	09/12/00 15:05	09/13/00 13:00
TB-091200-2	B0I0310-28	Water	09/12/00 12:00	09/13/00 13:00

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Kirk Gendron, Project Manager

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-11-10 (B0I0310-01) Water Sampled: 09/12/00 07:40 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**16.9**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	**1.05**	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**47.7**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*94.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*97.7 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*113 %*	*80-120*			"	"	"	"	
BGA-11-12.5 (B0I0310-02) Water Sampled: 09/12/00 07:50 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**1.60**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*93.8 %*	*60-130*			"	"	"	"	

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Kirk Gendron, Project Manager

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-11-12.5 (B0I0310-02) Water Sampled: 09/12/00 07:50 Received: 09/13/00 13:00									
Surrogate: Toluene-d8	*99.5 %*	*80-120*			*0I14044*	*09/14/00*	*09/15/00*	*EPA 8260B*	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	
BGA-11-15 (B0I0310-03) Water Sampled: 09/12/00 08:00 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*94.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.3 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*116 %*	*80-120*			"	"	"	"	
BGA-11-17.5 (B0I0310-04) Water Sampled: 09/12/00 08:10 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

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Kirk Gendron, Project Manager

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-11-17.5 (B0I0310-04) Water Sampled: 09/12/00 08:10 Received: 09/13/00 13:00									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*95.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.8 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*117 %*	*80-120*			"	"	"	"	
BGA-11-20 (B0I0310-05) Water Sampled: 09/12/00 08:25 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I14044	09/14/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*94.8 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*114 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-11-25 (B0I0310-06) Water Sampled: 09/12/00 08:35 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15027	09/15/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-11-29 (B0I0310-07) Water Sampled: 09/12/00 08:45 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15027	09/15/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*107 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	Reported:
Bellevue WA, 98005	Project Manager: Rob Leet	09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-11-29 (B0I0310-07) Water Sampled: 09/12/00 08:45 Received: 09/13/00 13:00									
Surrogate: Toluene-d8	*100 %*	*80-120*			*0I15027*	*09/15/00*	*09/15/00*	*EPA 8260B*	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-11-29D (B0I0310-08) Water Sampled: 09/12/00 08:45 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15027	09/15/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*103 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-12-10 (B0I0310-09) Water Sampled: 09/12/00 09:15 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15027	09/15/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**11.1**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-12-10 (B0I0310-09) Water Sampled: 09/12/00 09:15 Received: 09/13/00 13:00									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I15027	09/15/00	09/15/00	EPA 8260B	
Trichloroethene	**33.2**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*101 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*95.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*100 %*	*80-120*			"	"	"	"	
BGA-12-12.5 (B0I0310-10) Water Sampled: 09/12/00 09:25 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15027	09/15/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**3.42**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**13.3**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	Reported:
Bellevue WA, 98005	Project Manager: Rob Leet	09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-12-15 (B0I0310-11) Water Sampled: 09/12/00 09:35 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15027	09/15/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	
BGA-12-17.5 (B0I0310-12) Water Sampled: 09/12/00 09:45 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15027	09/15/00	09/15/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-12-17.5 (B0I0310-12) Water Sampled: 09/12/00 09:45 Received: 09/13/00 13:00									
Surrogate: Toluene-d8	*100 %*	*80-120*			*0I15027*	*09/15/00*	*09/15/00*	*EPA 8260B*	
Surrogate: 4-BFB	*105 %*	*80-120*			"	"	"	"	
BGA-12-20 (B0I0310-13) Water Sampled: 09/12/00 09:55 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*101 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	
BGA-12-20D (B0I0310-14) Water Sampled: 09/12/00 09:55 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-12-20D (B0I0310-14) Water Sampled: 09/12/00 09:55 Received: 09/13/00 13:00									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-12-25 (B0I0310-15) Water Sampled: 09/12/00 10:10 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*102 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-12-25R (B0I0310-16) Water Sampled: 09/12/00 10:30 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-12-34 (B0I0310-17) Water Sampled: 09/12/00 10:35 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-12-34 (B0I0310-17) Water Sampled: 09/12/00 10:35 Received: 09/13/00 13:00									
Surrogate: Toluene-d8	*98.0 %*	*80-120*			*0I15041*	*09/15/00*	*09/16/00*	*EPA 8260B*	
Surrogate: 4-BFB	*100 %*	*80-120*			"	"	"	"	
BGA-12-40 (B0I0310-18) Water Sampled: 09/12/00 10:45 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-13-15D (B0I0310-19) Water Sampled: 09/12/00 11:45 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-13-15D (B0I0310-19) Water Sampled: 09/12/00 11:45 Received: 09/13/00 13:00									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	
BGA-13-24R (B0I0310-20) Water Sampled: 09/12/00 13:10 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*99.5 %*	*80-120*			"	"	"	"	

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-14-15 (B0I0310-21) Water Sampled: 09/12/00 14:10 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-14-17.5 (B0I0310-22) Water Sampled: 09/12/00 14:25 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1.05**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-14-17.5 (B0I0310-22) Water Sampled: 09/12/00 14:25 Received: 09/13/00 13:00									
Surrogate: Toluene-d8	*98.0 %*	*80-120*			*0I15041*	*09/15/00*	*09/16/00*	*EPA 8260B*	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-14-20 (B0I0310-23) Water Sampled: 09/12/00 14:35 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-14-27 (B0I0310-24) Water Sampled: 09/12/00 14:45 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-14-27 (B0I0310-24) Water Sampled: 09/12/00 14:45 Received: 09/13/00 13:00									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*99.5 %*	*80-120*			"	"	"	"	
BGA-14-27R (B0I0310-25) Water Sampled: 09/12/00 14:50 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-14-34 (B0I0310-26) Water Sampled: 09/12/00 14:55 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-14-40 (B0I0310-27) Water Sampled: 09/12/00 15:05 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-14-40 (B0I0310-27) Water Sampled: 09/12/00 15:05 Received: 09/13/00 13:00									
Surrogate: Toluene-d8	*99.0 %*	*80-120*			*0I15041*	*09/15/00*	*09/16/00*	*EPA 8260B*	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
TB-091200-2 (B0I0310-28) Water Sampled: 09/12/00 12:00 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*107 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*91.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I14044: Prepared 09/14/00 Using EPA 5030B [P/T]										
Blank (0I14044-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*38.6*		"	*40.0*		*96.5*	*60-130*			
Surrogate: Toluene-d8	*40.6*		"	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*46.5*		"	*40.0*		*116*	*80-120*			
LCS (0I14044-BS1)										
Chlorobenzene	21.2	1.00	ug/l	20.0		106	80-120			
1,1-Dichloroethene	20.9	1.00	"	20.0		104	60-140			
Trichloroethene	23.3	1.00	"	20.0		116	70-130			
Surrogate: 1,2-DCA-d4	*39.8*		"	*40.0*		*99.5*	*60-130*			
Surrogate: Toluene-d8	*39.0*		"	*40.0*		*97.5*	*80-120*			
Surrogate: 4-BFB	*39.1*		"	*40.0*		*97.7*	*80-120*			

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I14044: Prepared 09/14/00 Using EPA 5030B [P/T]										
Matrix Spike (0I14044-MS1)					**Source: B0I0217-25**					
Chlorobenzene	19.5	1.00	ug/l	20.0	ND	97.5	80-120			
1,1-Dichloroethene	9.44	1.00	"	20.0	ND	47.2	60-140			Q-02
Trichloroethene	20.7	1.00	"	20.0	2.68	90.1	70-130			
Surrogate: 1,2-DCA-d4	*37.1*		"	*40.0*		*92.7*	*60-130*			
Surrogate: Toluene-d8	*41.0*		"	*40.0*		*103*	*80-120*			
Surrogate: 4-BFB	*42.1*		"	*40.0*		*105*	*80-120*			
Matrix Spike Dup (0I14044-MSD1)					**Source: B0I0217-25**					
Chlorobenzene	19.2	1.00	ug/l	20.0	ND	96.0	80-120	1.55	15	
1,1-Dichloroethene	9.09	1.00	"	20.0	ND	45.5	60-140	3.78	30	Q-02
Trichloroethene	20.2	1.00	"	20.0	2.68	87.6	70-130	2.44	20	
Surrogate: 1,2-DCA-d4	*36.9*		"	*40.0*		*92.3*	*60-130*			
Surrogate: Toluene-d8	*40.8*		"	*40.0*		*102*	*80-120*			
Surrogate: 4-BFB	*42.5*		"	*40.0*		*106*	*80-120*			
Batch 0I15027: Prepared 09/15/00 Using EPA 5030B [P/T]										
Blank (0I15027-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*22.0*		"	*20.0*		*110*	*60-130*			
Surrogate: Toluene-d8	*19.7*		"	*20.0*		*98.5*	*80-120*			

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I15027: Prepared 09/15/00 Using EPA 5030B [P/T]										
Blank (0I15027-BLK1)										
Surrogate: 4-BFB	*20.4*		*ug/l*	*20.0*		*102*	*80-120*			
LCS (0I15027-BS1)										
Chlorobenzene	8.90	1.00	ug/l	10.0		89.0	80-120			
1,1-Dichloroethene	9.78	1.00	"	10.0		97.8	60-140			
Trichloroethene	9.33	1.00	"	10.0		93.3	70-130			
Surrogate: 1,2-DCA-d4	*20.0*		*"*	*20.0*		*100*	*60-130*			
Surrogate: Toluene-d8	*20.0*		*"*	*20.0*		*100*	*80-120*			
Surrogate: 4-BFB	*19.9*		*"*	*20.0*		*99.5*	*80-120*			
Matrix Spike (0I15027-MS1)					**Source: B0I0310-11**					
Chlorobenzene	10.3	1.00	ug/l	10.0	ND	103	80-120			
1,1-Dichloroethene	10.6	1.00	"	10.0	ND	106	60-140			
Trichloroethene	10.9	1.00	"	10.0	ND	109	70-130			
Surrogate: 1,2-DCA-d4	*19.8*		*"*	*20.0*		*99.0*	*60-130*			
Surrogate: Toluene-d8	*20.2*		*"*	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.1*		*"*	*20.0*		*101*	*80-120*			
Matrix Spike Dup (0I15027-MSD1)					**Source: B0I0310-11**					
Chlorobenzene	9.93	1.00	ug/l	10.0	ND	99.3	80-120	3.66	15	
1,1-Dichloroethene	10.2	1.00	"	10.0	ND	102	60-140	3.85	30	
Trichloroethene	10.5	1.00	"	10.0	ND	105	70-130	3.74	20	
Surrogate: 1,2-DCA-d4	*20.8*		*"*	*20.0*		*104*	*60-130*			
Surrogate: Toluene-d8	*20.1*		*"*	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.4*		*"*	*20.0*		*102*	*80-120*			
Batch 0I15041: Prepared 09/15/00 Using EPA 5030B [P/T]										
Blank (0I15041-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	Reported:
Bellevue WA, 98005	Project Manager: Rob Leet	09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I15041: Prepared 09/15/00 Using EPA 5030B [P/T]										
Blank (0I15041-BLK1)										
trans-1,2-Dichloroethene	ND	1.00	ug/l							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*19.1*		"	*20.0*		*95.5*	*60-130*			
Surrogate: Toluene-d8	*20.0*		"	*20.0*		*100*	*80-120*			
Surrogate: 4-BFB	*20.9*		"	*20.0*		*104*	*80-120*			
LCS (0I15041-BS1)										
Chlorobenzene	10.5	1.00	ug/l	10.0		105	80-120			
1,1-Dichloroethene	11.6	1.00	"	10.0		116	60-140			
Trichloroethene	10.7	1.00	"	10.0		107	70-130			
Surrogate: 1,2-DCA-d4	*19.0*		"	*20.0*		*95.0*	*60-130*			
Surrogate: Toluene-d8	*20.4*		"	*20.0*		*102*	*80-120*			
Surrogate: 4-BFB	*20.2*		"	*20.0*		*101*	*80-120*			
Matrix Spike (0I15041-MS1)					**Source: B0I0310-21**					
Chlorobenzene	8.81	1.00	ug/l	10.0	ND	88.1	80-120			
1,1-Dichloroethene	8.94	1.00	"	10.0	ND	89.4	60-140			
Trichloroethene	9.28	1.00	"	10.0	ND	92.8	70-130			
Surrogate: 1,2-DCA-d4	*17.2*		"	*20.0*		*86.0*	*60-130*			
Surrogate: Toluene-d8	*20.8*		"	*20.0*		*104*	*80-120*			
Surrogate: 4-BFB	*20.8*		"	*20.0*		*104*	*80-120*			

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/20/00 10:09

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I15041: Prepared 09/15/00 Using EPA 5030B [P/T]										
Matrix Spike Dup (0I15041-MSD1)					**Source: B0I0310-21**					
Chlorobenzene	8.69	1.00	ug/l	10.0	ND	86.9	80-120	1.37	15	
1,1-Dichloroethene	8.54	1.00	"	10.0	ND	85.4	60-140	4.58	30	
Trichloroethene	9.18	1.00	"	10.0	ND	91.8	70-130	1.08	20	
Surrogate: 1,2-DCA-d4	*19.9*		"	*20.0*		*99.5*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*20.5*		"	*20.0*		*103*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/20/00 10:09

Notes and Definitions

Q-02	The spike recovery for this QC sample is outside of NCA established control limits due to sample matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

North Creek Analytical - Bothell

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Natural Resources Management

CHAIN OF CUSTODY RECORD

NO: 1127

15 - 118th Ave. S.E., Suite 130 • Bellevue, WA • 98005 • (425) 462-8591 • FAX (425) 455-3573

B0I0310

Page 1 of 3

PROJECT #	PROJECT NAME
6091.20	Seattle Fuel - BGA

SAMPLER (PRINT NAME)	(SIGNATURE)
Chris Bailey	[signature]

RECEIVING LABORATORY: NCA - Bothell

REQUESTED PARAMETERS: 8260 VOC

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	SOIL	WATER	GAS	8260 VOC		FIELD REMARKS
BGA-11-10	9/12/00	740		✓	Peri Pump	HCl	Y	120 mL	3		✓		✓	01	
BGA-11-125	9/12/00	750		✓	↓	↓	↓	↓	3		✓		✓	02	
BGA-11-15	9/12/00	900		✓					3		✓		✓	03	
BGA-11-17.5	9/12/00	910		✓					3		✓		✓	04	
BGA-11-20	9/12/00	525		✓					3		✓		✓	05	
BGA-11-25	9/12/00	835		✓					3		✓		✓	06	
BGA-11-29	9/12/00	845		✓					3		✓		✓	07	
BGA-11-29 DUP	9/12/00	845		✓					3		✓		✓	08	
BGA-12-10	9/12/00	915		✓					3		✓		✓	09	
BGA-12-125	9/12/00	925		✓	↓	↓	↓	↓	3		✓		✓	10	

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9/12/00	1600	Bill C NCA	9/13/00	11:00
Bill C NCA	9/13/00	13:00	NCA S. Yakamavich	9/13/00	13:00

REMARKS ON SAMPLE RECEIPT: ☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED ☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS: W/cs 2.6

SEND REPORT TO: Rob Foot

WH ABOF Y CO C - FIL PY INK - BASE AGER GOL OJEC

KCSlip4 43668

SEA410198

Environmental Resources Management

CHAIN OF CUSTODY RECORD

NO: 1128

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BOI0310 Page 2 of 3

PROJECT #	PROJECT NAME
6091.20	Seattle ANG - BGA

SAMPLER: (PRINT NAME)	(SIGNATURE)
Chris Bailey	Chris Bailey

RECEIVING LABORATORY: NCA - Bothell

REQUESTED PARAMETERS: 8260 VOCs

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	8260 VOCs		
BGA-12-15	9/12/00	935		\	Pur Pump	1461	Y	320 ~~360~~ mL	8 ~~9~~		\		\		11
BGA-12-17.5	9/12/00	945		\	↓	↓	↓	120 mL	3		\		\		12
BGA-12-20	9/12/00	955		\	↓	↓	↓	↓	3		\		\		13
BGA-12-20D	9/12/00	955		\	↓	↓	↓	↓	3		\		\		14
BGA-~~25~~ 12-25	9/12/00	1010		\	↓	↓	↓	↓	3		\		\		15
BGA-12-25R	9/12/00	1030		\	↓	↓	↓	↓	3		\		\		16
BGA-12-34	9/12/00	1035		\	↓	↓	↓	↓	3		\		\		17
BGA-12-40	9/12/00	1045		\	↓	↓	↓	↓	3		\		\		18
BGA-13-15D	9/12/00	1145		\	↓	↓	↓	↓	3		\		\		19
BGA-13-24R	9/12/00	1310		\	—	↓	↓	↓	3		\		\		20

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
Chris Bailey	9/12/00	1600	Bill K NCA	9/13/00	11:00
Bill K NCK	9/13/00	13:00	S. Yakamavich NCA	9/13/00	13:00

FIELD REMARKS: Use BGA-12-15 for MS/MSD

REMARKS ON SAMPLE RECEIPT: ☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED ☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS: W/CS 2.6

SEND REPORT TO: Rob Leet

WHITE - LABORATORY COPY CANARY - FIELD COPY PINK - DATABASE MANAGER

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SEA410199

Management

CHAIN OF CUSTODY RECORD

NO: 1130

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BOI0310

Page #5 of #5

PROJECT #	PROJECT NAME
E091.20	Seattle ANG - BGA

SAMPLER: (PRINT NAME)	(SIGNATURE)
Chris Bailey	[signature]

RECEIVING LABORATORY: Bothell NCA

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	REQUESTED PARAMETERS: 8260 VOCs		
BGA-14-15	9/12/00	1410		\	Peri Pump	HCl	Y	~~120~~ 360 mL	9		\		\		21
BGA-14-17.5	9/12/00	1425		\	↓	↓	↓	120 mL	3		\		\		22
BGA-14-20	9/12/00	1435		\	↓	↓	↓	↓	3		\		\		23
BGA-14-27	9/12/00	1445		\	↓	↓	↓	↓	3		\		\		24
BGA-14-27R	9/12/00	1450		\	↓	↓	↓	↓	3		\		\		25
BGA-14-34	9/12/00	1455		\	↓	↓	↓	↓	3		\		\		26
BGA-14-40	9/12/00	1505		\	↓	↓	↓	↓	3		\		\		27
[illegible]	—	—			—	HCl	Y	80 mL	2		\		\		28

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9/12/00	1600	Bill K NCA	9/13/00	1100
Bill K NCA	9/13/00	1300	S. Yakamavich NCA	9/13/00	1300

FIELD REMARKS: BGA-14-15 Con MS/MSD

REMARKS ON SAMPLE RECEIPT: ☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED ☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS: W/CS 2.6

SEND REPORT TO: Rob Leet

WHITE - LABORATORY COPY CANARY - FIELD COPY PINK - DATABASE MANAGER GOLD - PROJECT FILE

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SEA410200

6091.20
RCL

Data Package

Client: ERM-Bellevue

Project: Seattle ANG GW Sampling

Project Number: 6091.20

Laboratory Work Order: B010314

(Amended Report)

October 24, 2000

North Creek Analytical, Inc.
11720 North Creek Parkway North, Suite 400
Bothell, WA 98011-8223

Phone: (425) 420-9200
FAX: (425) 420-9210

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SEA410201

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SEA410202

Case Narrative (Amended)

Sample Receiving

Nine water samples were collected 09/12/00 between 11:20 – 13:55. The samples were received at North Creek Analytical, Inc. (NCA) on 09/13/00 with all of the containers intact at a temperature of 2.6°C. A trip blank was not received with the samples.

Sample Preparation

- **EPA 5030B/8260B** – These samples were preserved in the field and then aliquots of 10 mLs were analyzed in the laboratory in two analytical batches (0115041 and 0116021) in accordance with EPA 5030B/8260B.

Analysis

- **EPA 5030B/8260B** – The samples were analyzed in accordance with EPA 8260B at an aliquot of 10 mLs. All of the samples were analyzed without the performance of any dilutions.

  The calibration for 1,1-Dichloroethene associated with the samples in this work order, was updated on 19 October 2000. Correspondingly, the 1,1-Dichloroethene results for the continuing calibration checks, samples, and associated quality control were updated to reflect this change.

  Sample BGA-13-15 (B010314-03) was analyzed outside the 12 hour BFB tune shift on 09/16/00. The following BFB tune passed. No additional corrective action was taken.

Quality Assurance

- **EPA 5030B/8260B** – The samples were analyzed in two analytical batches (0115041 and 0116021). All of the recoveries for the monitored target analytes were within the established acceptance criterion.

" I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signatures:"

D. A. Wunderlich 10/24/00

Prepared by Dave Wunderlich, QA Manager

10/24/00

Reviewed by Anne Conrad, QA Associate

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541.383.9310 fax 541.382.7588

ERM-Bellevue
915-118th Avenue S.E., Suite 130
Bellevue WA, 98005

Project: Seattle ANG GW Sampling
Project Number: 6091.20
Project Manager: Rob Leet

Reported:
10/24/00 14:22

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BGA-13-10	B0I0314-01	Water	09/12/00 11:20	09/13/00 13:00
BGA-13-12.5	B0I0314-02	Water	09/12/00 11:35	09/13/00 13:00
BGA-13-15	B0I0314-03	Water	09/12/00 11:45	09/13/00 13:00
BGA-13-17.5	B0I0314-04	Water	09/12/00 12:30	09/13/00 13:00
BGA-13-20	B0I0314-05	Water	09/12/00 12:40	09/13/00 13:00
BGA-13-24	B0I0314-06	Water	09/12/00 12:50	09/13/00 13:00
BGA-13-30	B0I0314-07	Water	09/12/00 13:00	09/13/00 13:00
BGA-14-10	B0I0314-08	Water	09/12/00 13:45	09/13/00 13:00
BGA-14-12.5	B0I0314-09	Water	09/12/00 13:55	09/13/00 13:00

North Creek Analytical - Bothell

Kirk Gendron, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:22

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-13-10 (B0I0314-01) Water Sampled: 09/12/00 11:20 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0115041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	UJ
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	UJ
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-13-12.5 (B0I0314-02) Water Sampled: 09/12/00 11:35 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0115041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	UJ
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	UJ
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:22

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-13-12.5 (B0I0314-02) Water Sampled: 09/12/00 11:35 Received: 09/13/00 13:00									
Surrogate: Toluene-d8	*99.5 %*	*80-120*			*0I15041*	*09/15/00*	*09/16/00*	*EPA 8260B*	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-13-15 (B0I0314-03) Water Sampled: 09/12/00 11:45 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I15041	09/15/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	UJ
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-13-17.5 (B0I0314-04) Water Sampled: 09/12/00 12:30 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I16021	09/16/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	UJ
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:22

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-13-17.5 (B0I0314-04) Water Sampled: 09/12/00 12:30 Received: 09/13/00 13:00									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I16021	09/16/00	09/16/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*103 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-13-20 (B0I0314-05) Water Sampled: 09/12/00 12:40 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I16021	09/16/00	09/16/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	UJ
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	

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Kirk Gendron, Project Manager

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:22

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-13-24 (B0I0314-06) Water Sampled: 09/12/00 12:50 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0116021	09/16/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	UJ
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*99.5 %*	*80-120*			"	"	"	"	
BGA-13-30 (B0I0314-07) Water Sampled: 09/12/00 13:00 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0116021	09/16/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	UJ
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*110 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:22

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-13-30 (B0I0314-07) Water Sampled: 09/12/00 13:00 Received: 09/13/00 13:00									
Surrogate: Toluene-d8	*99.0 %*	*80-120*			*0I16021*	*09/16/00*	*09/17/00*	*EPA 8260B*	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-14-10 (B0I0314-08) Water Sampled: 09/12/00 13:45 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I16021	09/16/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	UJ
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	UJ
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-14-12.5 (B0I0314-09) Water Sampled: 09/12/00 13:55 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I16021	09/16/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	UJ
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	UJ
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:22

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-14-12.5 (B0I0314-09) Water Sampled: 09/12/00 13:55 Received: 09/13/00 13:00									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0116021	09/16/00	09/17/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*112 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:22

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I15041: Prepared 09/15/00 Using EPA 5030B [P/T]										
Blank (0I15041-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*19.1*		"	*20.0*		*95.5*	*60-130*			
Surrogate: Toluene-d8	*20.0*		"	*20.0*		*100*	*80-120*			
Surrogate: 4-BFB	*20.9*		"	*20.0*		*104*	*80-120*			
LCS (0I15041-BS1)										
Chlorobenzene	10.5	1.00	ug/l	10.0		105	80-120			
1,1-Dichloroethene	10.3	1.00	"	10.0		103	60-140			
Trichloroethene	10.7	1.00	"	10.0		107	70-130			
Surrogate: 1,2-DCA-d4	*19.0*		"	*20.0*		*95.0*	*60-130*			
Surrogate: Toluene-d8	*20.4*		"	*20.0*		*102*	*80-120*			
Surrogate: 4-BFB	*20.2*		"	*20.0*		*101*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue
915-118th Avenue S.E., Suite 130
Bellevue WA, 98005

Project: Seattle ANG GW Sampling
Project Number: 6091.20
Project Manager: Rob Leet

Reported:
10/24/00 14:22

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I15041: Prepared 09/15/00 Using EPA 5030B [P/T]										
Matrix Spike (0I15041-MS1)					Source: B0I0310-21					
Chlorobenzene	8.81	1.00	ug/l	10.0	ND	88.1	80-120			
1,1-Dichloroethene	7.94	1.00	"	10.0	ND	79.4	60-140			
Trichloroethene	9.28	1.00	"	10.0	ND	92.8	70-130			
Surrogate: 1,2-DCA-d4	*17.2*		"	*20.0*		*86.0*	*60-130*			
Surrogate: Toluene-d8	*20.8*		"	*20.0*		*104*	*80-120*			
Surrogate: 4-BFB	*20.8*		"	*20.0*		*104*	*80-120*			
Matrix Spike Dup (0I15041-MSD1)					Source: B0I0310-21					
Chlorobenzene	8.69	1.00	ug/l	10.0	ND	86.9	80-120	1.37	15	
1,1-Dichloroethene	7.58	1.00	"	10.0	ND	75.8	60-140	4.64	30	
Trichloroethene	9.18	1.00	"	10.0	ND	91.8	70-130	1.08	20	
Surrogate: 1,2-DCA-d4	*19.9*		"	*20.0*		*99.5*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*20.5*		"	*20.0*		*103*	*80-120*			
Batch 0I16021: Prepared 09/16/00 Using EPA 5030B [P/T]										
Blank (0I16021-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*20.9*		"	*20.0*		*104*	*60-130*			
Surrogate: Toluene-d8	*19.9*		"	*20.0*		*99.5*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:22

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I16021: Prepared 09/16/00 Using EPA 5030B [P/T]										
Blank (0I16021-BLK1)										
Surrogate: 4-BFB	*20.5*		*ug/l*	*20.0*		*103*	*80-120*			
LCS (0I16021-BS1)										
Chlorobenzene	10.4	1.00	ug/l	10.0		104	80-120			
1,1-Dichloroethene	10.5	1.00	"	10.0		105	60-140			
Trichloroethene	10.8	1.00	"	10.0		108	70-130			
Surrogate: 1,2-DCA-d4	*21.0*		*"*	*20.0*		*105*	*60-130*			
Surrogate: Toluene-d8	*20.1*		*"*	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.0*		*"*	*20.0*		*100*	*80-120*			
Matrix Spike (0I16021-MS1)					**Source: B0I0314-05**					
Chlorobenzene	9.07	1.00	ug/l	10.0	ND	90.7	80-120			
1,1-Dichloroethene	8.86	1.00	"	10.0	ND	88.6	60-140			
Trichloroethene	9.56	1.00	"	10.0	ND	95.6	70-130			
Surrogate: 1,2-DCA-d4	*20.3*		*"*	*20.0*		*101*	*60-130*			
Surrogate: Toluene-d8	*20.1*		*"*	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*19.5*		*"*	*20.0*		*97.5*	*80-120*			
Matrix Spike Dup (0I16021-MSD1)					**Source: B0I0314-05**					
Chlorobenzene	9.72	1.00	ug/l	10.0	ND	97.2	80-120	6.92	15	
1,1-Dichloroethene	9.24	1.00	"	10.0	ND	92.4	60-140	4.20	30	
Trichloroethene	10.3	1.00	"	10.0	ND	103	70-130	7.45	20	
Surrogate: 1,2-DCA-d4	*19.9*		*"*	*20.0*		*99.5*	*60-130*			
Surrogate: Toluene-d8	*20.6*		*"*	*20.0*		*103*	*80-120*			
Surrogate: 4-BFB	*20.1*		*"*	*20.0*		*101*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:22

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

Environmental Resources Management

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PROJECT #	PROJECT NAME
5091.20	Seattle ANG BGA

SAMPLER: (PRINT NAME) Chris Bailey (SIGNATURE) Chris Bailey

RECEIVING LABORATORY: NCA - Bothell

REQUESTED PARAMETERS: 8260 VOCs

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	8260 VOCs										000114
BGA-13-10	9/12/00	1120		\	Peri Pump	HCl	Y	120 mL	3		\		\			01							
BGA-13-12.5	9/12/00	1135		\	↓	↓	↓	↓	3		\		\			02							
BGA-13-15	9/12/00	1145		\	↓	↓	↓	↓	3		\		\			03							
BGA-13-17.5	9/12/00	1230		\	↓	↓	↓	↓	3		\		\			04							
BGA-13-20	9/12/00	1240		\	↓	↓	↓	↓	3		\		\			05							
BGA-13-24	9/12/00	1250		\	↓	↓	↓	↓	3		\		\			06							
BGA-13-30	9/12/00	1300		\	↓	↓	↓	↓	3		\		\			07							
BGA-14-10	9/12/00	1345		\	↓	↓	↓	↓	3		\		\			08							
BGA-14-12.5	9/12/00	1355		\	↓	↓	↓	↓	3		\		\			09							

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
Chris Bailey	9/12/00	1600	Bill K NCA	9/13/00	11:00
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
Bill K NCA	9/13/00	13:00	S. Yakamovich NCA	9/13/00	13:00
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME

FIELD REMARKS: Report in Level IV Deliverable

REMARKS ON SAMPLE RECEIPT: ☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED ☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS: W/CS 2.6

SEND REPORT TO: Rob Lect

KCSlip4 43685

SEA410215

RCL 6091.20

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CASE NARRATIVE for B0I0316

Client: ERM-Bellevue
Project Manager: Rob Leet
Project Name: Seattle ANG
Project Number: 6091.20

1.0 DESCRIPTION OF CASE

Thirty-six water samples were submitted for analysis of Volatile Organic Compounds by EPA 8260B.

2.0 COMMENTS ON SAMPLE RECEIPT

Samples were received and logged in on September 13, 2000. No anomalies were noted.

3.0 PREPARATIONS AND ANALYSIS

Volatile Organic Compounds by EPA 8260B

The spike recovery of *Chlorobenzene* in the MS of laboratory batch 0I17005 was outside the established control limits of the method. The spike recoveries for the LCS and MSD were acceptable, no further action was deemed necessary.

"I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature."

Kirk Gendron
Project Manager
North Creek Analytical

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-091200-1	B0I0316-01	Water	09/12/00 12:00	09/13/00 13:00
BGA-15-10	B0I0316-02	Water	09/12/00 07:45	09/13/00 13:00
BGA-15-12.5	B0I0316-03	Water	09/12/00 08:02	09/13/00 13:00
BGA-15-15	B0I0316-04	Water	09/12/00 08:12	09/13/00 13:00
BGA-15-17.5	B0I0316-05	Water	09/12/00 08:25	09/13/00 13:00
BGA-15-17.5D	B0I0316-06	Water	09/12/00 08:25	09/13/00 13:00
BGA-15-22R	B0I0316-07	Water	09/12/00 08:35	09/13/00 13:00
BGA-15-22	B0I0316-08	Water	09/12/00 08:40	09/13/00 13:00
BGA-15-25	B0I0316-09	Water	09/12/00 08:55	09/13/00 13:00
BGA-15-30	B0I0316-10	Water	09/12/00 09:10	09/13/00 13:00
BGA-16-10	B0I0316-11	Water	09/12/00 09:35	09/13/00 13:00
BGA-16-12.5	B0I0316-12	Water	09/12/00 09:50	09/13/00 13:00
BGA-16-15	B0I0316-13	Water	09/12/00 10:00	09/13/00 13:00
BGA-16-17.5	B0I0316-14	Water	09/12/00 10:10	09/13/00 13:00
BGA-16-23	B0I0316-15	Water	09/12/00 10:25	09/13/00 13:00
BGA-16-27	B0I0316-16	Water	09/12/00 10:40	09/13/00 13:00
BGA-16-31	B0I0316-17	Water	09/12/00 10:55	09/13/00 13:00
BGA-16-31D	B0I0316-18	Water	09/12/00 10:55	09/13/00 13:00
BGA-16-39R	B0I0316-19	Water	09/12/00 11:05	09/13/00 13:00
BGA-16-39	B0I0316-20	Water	09/12/00 11:25	09/13/00 13:00
BGA-17-10	B0I0316-21	Water	09/12/00 11:55	09/13/00 13:00
BGA-17-12.5	B0I0316-22	Water	09/12/00 12:25	09/13/00 13:00
BGA-17-15	B0I0316-23	Water	09/12/00 12:45	09/13/00 13:00
BGA-17-17.5	B0I0316-24	Water	09/12/00 12:55	09/13/00 13:00
BGA-17-20	B0I0316-25	Water	09/12/00 13:10	09/13/00 13:00
BGA-17-28	B0I0316-26	Water	09/12/00 13:25	09/13/00 13:00
BGA-17-32	B0I0316-27	Water	09/12/00 13:45	09/13/00 13:00
BGA-19-10	B0I0316-28	Water	09/12/00 14:15	09/13/00 13:00
BGA-19-12	B0I0316-29	Water	09/12/00 14:30	09/13/00 13:00

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BGA-19-12D	B0I0316-30	Water	09/12/00 14:30	09/13/00 13:00
BGA-19-15R	B0I0316-31	Water	09/12/00 14:35	09/13/00 13:00
BGA-19-15	B0I0316-32	Water	09/12/00 14:45	09/13/00 13:00
BGA-19-17.5	B0I0316-33	Water	09/12/00 14:55	09/13/00 13:00
BGA-19-22	B0I0316-34	Water	09/12/00 15:10	09/13/00 13:00
BGA-19-26	B0I0316-35	Water	09/12/00 15:18	09/13/00 13:00
BGA-19-30	B0I0316-36	Water	09/12/00 15:35	09/13/00 13:00

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TB-091200-1 (B0I0316-01) Water Sampled: 09/12/00 12:00 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I16021	09/16/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*97.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	
BGA-15-10 (B0I0316-02) Water Sampled: 09/12/00 07:45 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I16021	09/16/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-15-10 (B0I0316-02) Water Sampled: 09/12/00 07:45 Received: 09/13/00 13:00									
Surrogate: Toluene-d8	*101 %*	*80-120*			*0I16021*	*09/16/00*	*09/17/00*	*EPA 8260B*	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-15-12.5 (B0I0316-03) Water Sampled: 09/12/00 08:02 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I16021	09/16/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*103 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-15-15 (B0I0316-04) Water Sampled: 09/12/00 08:12 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I16021	09/16/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**2.03**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-15-15 (B0I0316-04) Water Sampled: 09/12/00 08:12 Received: 09/13/00 13:00									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I16021	09/16/00	09/17/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*110 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-15-17.5 (B0I0316-05) Water Sampled: 09/12/00 08:25 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I16021	09/16/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**3.57**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*105 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-15-17.5D (B0I0316-06) Water Sampled: 09/12/00 08:25 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0116021	09/16/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**3.87**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-15-22R (B0I0316-07) Water Sampled: 09/12/00 08:35 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0116021	09/16/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-15-22R (B0I0316-07) Water Sampled: 09/12/00 08:35 Received: 09/13/00 13:00									
Surrogate: Toluene-d8	*100 %*	*80-120*			*0I16021*	*09/16/00*	*09/17/00*	*EPA 8260B*	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-15-22 (B0I0316-08) Water Sampled: 09/12/00 08:40 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I16021	09/16/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**2.60**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*107 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	
BGA-15-25 (B0I0316-09) Water Sampled: 09/12/00 08:55 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I16021	09/16/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**2.30**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-15-25 (B0I0316-09) Water Sampled: 09/12/00 08:55 Received: 09/13/00 13:00									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0116021	09/16/00	09/17/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	
BGA-15-30 (B0I0316-10) Water Sampled: 09/12/00 09:10 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0117004	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1.17**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*94.3 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.2 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*107 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-16-10 (B0I0316-11) Water Sampled: 09/12/00 09:35 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17004	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**8.93**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**20.6**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*95.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.2 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*117 %*	*80-120*			"	"	"	"	
BGA-16-12.5 (B0I0316-12) Water Sampled: 09/12/00 09:50 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17004	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**1.64**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*95.7 %*	*60-130*			"	"	"	"	

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	Reported:
Bellevue WA, 98005	Project Manager: Rob Leet	10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-16-12.5 (B0I0316-12) Water Sampled: 09/12/00 09:50 Received: 09/13/00 13:00									
Surrogate: Toluene-d8	*93.5 %*	*80-120*			*0I17004*	*09/17/00*	*09/17/00*	*EPA 8260B*	
Surrogate: 4-BFB	*107 %*	*80-120*			"	"	"	"	
BGA-16-15 (B0I0316-13) Water Sampled: 09/12/00 10:00 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17004	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**9.55**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**2.14**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*95.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*97.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*111 %*	*80-120*			"	"	"	"	
BGA-16-17.5 (B0I0316-14) Water Sampled: 09/12/00 10:10 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1.38**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-16-17.5 (B0I0316-14) Water Sampled: 09/12/00 10:10 Received: 09/13/00 13:00									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*97.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	
BGA-16-23 (B0I0316-15) Water Sampled: 09/12/00 10:25 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I18028	09/18/00	09/18/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-16-27 (B0I0316-16) Water Sampled: 09/12/00 10:40 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I18028	09/18/00	09/18/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*102 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*100 %*	*80-120*			"	"	"	"	
BGA-16-31 (B0I0316-17) Water Sampled: 09/12/00 10:55 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I19012	09/19/00	09/19/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*101 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-16-31 (B0I0316-17) Water Sampled: 09/12/00 10:55 Received: 09/13/00 13:00									
Surrogate: Toluene-d8	*103 %*	*80-120*			*0I19012*	*09/19/00*	*09/19/00*	*EPA 8260B*	
Surrogate: 4-BFB	*99.5 %*	*80-120*			"	"	"	"	
BGA-16-31D (B0I0316-18) Water Sampled: 09/12/00 10:55 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I19012	09/19/00	09/19/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	
BGA-16-39R (B0I0316-19) Water Sampled: 09/12/00 11:05 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I19012	09/19/00	09/19/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-16-39R (B0I0316-19) Water Sampled: 09/12/00 11:05 Received: 09/13/00 13:00									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I19012	09/19/00	09/19/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*100 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*103 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-16-39 (B0I0316-20) Water Sampled: 09/12/00 11:25 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-17-10 (B0I0316-21) Water Sampled: 09/12/00 11:55 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-17-12.5 (B0I0316-22) Water Sampled: 09/12/00 12:25 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17004	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**8.85**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**48.2**	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*97.7 %*	*60-130*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-17-12.5 (B0I0316-22) Water Sampled: 09/12/00 12:25 Received: 09/13/00 13:00									
Surrogate: Toluene-d8	*97.3 %*	*80-120*			*0I17004*	*09/17/00*	*09/17/00*	*EPA 8260B*	
Surrogate: 4-BFB	*110 %*	*80-120*			"	"	"	"	
BGA-17-15 (B0I0316-23) Water Sampled: 09/12/00 12:45 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*111 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*96.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-17-17.5 (B0I0316-24) Water Sampled: 09/12/00 12:55 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-17-17.5 (B0I0316-24) Water Sampled: 09/12/00 12:55 Received: 09/13/00 13:00									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*101 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-17-20 (B0I0316-25) Water Sampled: 09/12/00 13:10 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*100 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-17-28 (B0I0316-26) Water Sampled: 09/12/00 13:25 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-17-32 (B0I0316-27) Water Sampled: 09/12/00 13:45 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-17-32 (B0I0316-27) Water Sampled: 09/12/00 13:45 Received: 09/13/00 13:00									
Surrogate: Toluene-d8	*100 %*	*80-120*			*0I17005*	*09/17/00*	*09/17/00*	*EPA 8260B*	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	
BGA-19-10 (B0I0316-28) Water Sampled: 09/12/00 14:15 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	
BGA-19-12 (B0I0316-29) Water Sampled: 09/12/00 14:30 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-19-12 (B0I0316-29) Water Sampled: 09/12/00 14:30 Received: 09/13/00 13:00									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*111 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	
BGA-19-12D (B0I0316-30) Water Sampled: 09/12/00 14:30 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*115 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-19-15R (B0I0316-31) Water Sampled: 09/12/00 14:35 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-19-15 (B0I0316-32) Water Sampled: 09/12/00 14:45 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-19-15 (B0I0316-32) Water Sampled: 09/12/00 14:45 Received: 09/13/00 13:00									
Surrogate: Toluene-d8	*99.0 %*	*80-120*			*0I17005*	*09/17/00*	*09/17/00*	*EPA 8260B*	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-19-17.5 (B0I0316-33) Water Sampled: 09/12/00 14:55 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1.00**	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-19-22 (B0I0316-34) Water Sampled: 09/12/00 15:10 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-19-22 (B0I0316-34) Water Sampled: 09/12/00 15:10 Received: 09/13/00 13:00									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*97.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-19-26 (B0I0316-35) Water Sampled: 09/12/00 15:18 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-19-30 (B010316-36) Water Sampled: 09/12/00 15:35 Received: 09/13/00 13:00									
Bromodichloromethane	ND	1.00	ug/l	1	0117005	09/17/00	09/17/00	EPA 8260B	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I16021: Prepared 09/16/00 Using EPA 5030B [P/T]										
Blank (0I16021-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*20.9*		"	*20.0*		*104*	*60-130*			
Surrogate: Toluene-d8	*19.9*		"	*20.0*		*99.5*	*80-120*			
Surrogate: 4-BFB	*20.5*		"	*20.0*		*103*	*80-120*			
LCS (0I16021-BS1)										
Chlorobenzene	10.4	1.00	ug/l	10.0		104	80-120			
1,1-Dichloroethene	11.8	1.00	"	10.0		118	60-140			
Trichloroethene	10.8	1.00	"	10.0		108	70-130			
Surrogate: 1,2-DCA-d4	*21.0*		"	*20.0*		*105*	*60-130*			
Surrogate: Toluene-d8	*20.1*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.0*		"	*20.0*		*100*	*80-120*			

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I16021: Prepared 09/16/00 Using EPA 5030B [P/T]										
Matrix Spike (0I16021-MS1)					**Source: B0I0314-05**					
Chlorobenzene	9.07	1.00	ug/l	10.0	ND	90.7	80-120			
1,1-Dichloroethene	8.86	1.00	"	10.0	ND	88.6	60-140			
Trichloroethene	9.56	1.00	"	10.0	ND	95.6	70-130			
Surrogate: 1,2-DCA-d4	*20.3*		"	*20.0*		*101*	*60-130*			
Surrogate: Toluene-d8	*20.1*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*19.5*		"	*20.0*		*97.5*	*80-120*			
Matrix Spike Dup (0I16021-MSD1)					**Source: B0I0314-05**					
Chlorobenzene	9.72	1.00	ug/l	10.0	ND	97.2	80-120	6.92	15	
1,1-Dichloroethene	9.24	1.00	"	10.0	ND	92.4	60-140	4.20	30	
Trichloroethene	10.3	1.00	"	10.0	ND	103	70-130	7.45	20	
Surrogate: 1,2-DCA-d4	*19.9*		"	*20.0*		*99.5*	*60-130*			
Surrogate: Toluene-d8	*20.6*		"	*20.0*		*103*	*80-120*			
Surrogate: 4-BFB	*20.1*		"	*20.0*		*101*	*80-120*			
Batch 0I17004: Prepared 09/17/00 Using EPA 5030B [P/T]										
Blank (0I17004-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*37.7*		"	*40.0*		*94.3*	*60-130*			
Surrogate: Toluene-d8	*39.9*		"	*40.0*		*99.8*	*80-120*			

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I17004: Prepared 09/17/00 Using EPA 5030B [P/T]										
Blank (0I17004-BLK1)										
Surrogate: 4-BFB	*47.7*		*ug/l*	*40.0*		*119*	*80-120*			
LCS (0I17004-BS1)										
Chlorobenzene	20.8	1.00	ug/l	20.0		104	80-120			
1,1-Dichloroethene	20.8	1.00	"	20.0		104	60-140			
Trichloroethene	24.9	1.00	"	20.0		124	70-130			
Surrogate: 1,2-DCA-d4	*39.5*		*"*	*40.0*		*98.8*	*60-130*			
Surrogate: Toluene-d8	*39.0*		*"*	*40.0*		*97.5*	*80-120*			
Surrogate: 4-BFB	*39.6*		*"*	*40.0*		*99.0*	*80-120*			
Matrix Spike (0I17004-MS1)					**Source: B0I0316-22**					
Chlorobenzene	17.9	1.00	ug/l	20.0	ND	89.5	80-120			
1,1-Dichloroethene	15.5	1.00	"	20.0	ND	77.5	60-140			
Trichloroethene	68.8	1.00	"	20.0	48.2	103	70-130			
Surrogate: 1,2-DCA-d4	*38.7*		*"*	*40.0*		*96.8*	*60-130*			
Surrogate: Toluene-d8	*38.7*		*"*	*40.0*		*96.8*	*80-120*			
Surrogate: 4-BFB	*44.4*		*"*	*40.0*		*111*	*80-120*			
Matrix Spike Dup (0I17004-MSD1)					**Source: B0I0316-22**					
Chlorobenzene	17.6	1.00	ug/l	20.0	ND	88.0	80-120	1.69	15	
1,1-Dichloroethene	15.2	1.00	"	20.0	ND	76.0	60-140	1.95	30	
Trichloroethene	66.9	1.00	"	20.0	48.2	93.5	70-130	2.80	20	
Surrogate: 1,2-DCA-d4	*38.6*		*"*	*40.0*		*96.5*	*60-130*			
Surrogate: Toluene-d8	*38.7*		*"*	*40.0*		*96.8*	*80-120*			
Surrogate: 4-BFB	*44.1*		*"*	*40.0*		*110*	*80-120*			
Batch 0I17005: Prepared 09/17/00 Using EPA 5030B [P/T]										
Blank (0I17005-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I17005: Prepared 09/17/00 Using EPA 5030B [P/T]										
Blank (0I17005-BLK1)										
trans-1,2-Dichloroethene	ND	1.00	ug/l							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*20.2*		"	*20.0*		*101*	*60-130*			
Surrogate: Toluene-d8	*20.2*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.5*		"	*20.0*		*103*	*80-120*			
LCS (0I17005-BS1)										
Chlorobenzene	9.01	1.00	ug/l	10.0		90.1	80-120			
1,1-Dichloroethene	10.4	1.00	"	10.0		104	60-140			
Trichloroethene	9.34	1.00	"	10.0		93.4	70-130			
Surrogate: 1,2-DCA-d4	*20.0*		"	*20.0*		*100*	*60-130*			
Surrogate: Toluene-d8	*20.2*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*19.6*		"	*20.0*		*98.0*	*80-120*			
Matrix Spike (0I17005-MS1)					**Source: B0I0348-26**					
Chlorobenzene	7.51	1.00	ug/l	10.0	ND	75.1	80-120			Q-01
1,1-Dichloroethene	7.99	1.00	"	10.0	ND	79.9	60-140			
Trichloroethene	7.97	1.00	"	10.0	ND	79.7	70-130			
Surrogate: 1,2-DCA-d4	*20.0*		"	*20.0*		*100*	*60-130*			
Surrogate: Toluene-d8	*20.2*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.7*		"	*20.0*		*104*	*80-120*			

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Lect	Reported: 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I17005: Prepared 09/17/00 Using EPA 5030B [P/T]										
Matrix Spike Dup (0I17005-MSD1)					**Source: B0I0348-26**					
Chlorobenzene	8.10	1.00	ug/l	10.0	ND	81.0	80-120	7.56	15	
1,1-Dichloroethene	7.92	1.00	"	10.0	ND	79.2	60-140	0.880	30	
Trichloroethene	8.51	1.00	"	10.0	ND	85.1	70-130	6.55	20	
Surrogate: 1,2-DCA-d4	*20.9*		"	*20.0*		*104*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*20.3*		"	*20.0*		*101*	*80-120*			
Batch 0I17010: Prepared 09/17/00 Using EPA 5030B [P/T]										
Blank (0I17010-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*21.5*		"	*20.0*		*108*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*20.4*		"	*20.0*		*102*	*80-120*			

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I17010: Prepared 09/17/00 Using EPA 5030B [P/T]										
LCS (0I17010-BS1)										
Chlorobenzene	8.83	1.00	ug/l	10.0		88.3	80-120			
1,1-Dichloroethene	8.84	1.00	"	10.0		88.4	60-140			
Trichloroethene	9.11	1.00	"	10.0		91.1	70-130			
Surrogate: 1,2-DCA-d4	*22.2*		"	*20.0*		*111*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*19.3*		"	*20.0*		*96.5*	*80-120*			
Matrix Spike (0I17010-MS1)					**Source: B010240-01**					
Chlorobenzene	8.21	1.00	ug/l	10.0	ND	82.1	80-120			
1,1-Dichloroethene	7.21	1.00	"	10.0	ND	72.1	60-140			
Trichloroethene	11.3	1.00	"	10.0	ND	113	70-130			
Surrogate: 1,2-DCA-d4	*27.1*		"	*20.0*		*136*	*60-130*			*S-03*
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*19.9*		"	*20.0*		*99.5*	*80-120*			
Matrix Spike Dup (0I17010-MSD1)					**Source: B010240-01**					
Chlorobenzene	8.23	1.00	ug/l	10.0	ND	82.3	80-120	0.243	15	
1,1-Dichloroethene	7.19	1.00	"	10.0	ND	71.9	60-140	0.278	30	
Trichloroethene	9.89	1.00	"	10.0	ND	98.9	70-130	13.3	20	
Surrogate: 1,2-DCA-d4	*24.5*		"	*20.0*		*123*	*60-130*			
Surrogate: Toluene-d8	*20.0*		"	*20.0*		*100*	*80-120*			
Surrogate: 4-BFB	*20.1*		"	*20.0*		*101*	*80-120*			
Batch 0I18028: Prepared 09/18/00 Using EPA 5030B [P/T]										
Blank (0I18028-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I18028: Prepared 09/18/00 Using EPA 5030B [P/T]										
Blank (0I18028-BLK1)										
1,1,2,2-Tetrachloroethane	ND	1.00	ug/l							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*20.1*		"	*20.0*		*101*	*60-130*			
Surrogate: Toluene-d8	*20.0*		"	*20.0*		*100*	*80-120*			
Surrogate: 4-BFB	*20.4*		"	*20.0*		*102*	*80-120*			
LCS (0I18028-BS1)										
Chlorobenzene	9.65	1.00	ug/l	10.0		96.5	80-120			
1,1-Dichloroethene	10.6	1.00	"	10.0		106	60-140			
Trichloroethene	10.1	1.00	"	10.0		101	70-130			
Surrogate: 1,2-DCA-d4	*20.3*		"	*20.0*		*101*	*60-130*			
Surrogate: Toluene-d8	*20.3*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.2*		"	*20.0*		*101*	*80-120*			
Matrix Spike (0I18028-MS1)					**Source: B0I0348-04**					
Chlorobenzene	9.32	1.00	ug/l	10.0	ND	93.2	80-120			
1,1-Dichloroethene	9.48	1.00	"	10.0	ND	94.8	60-140			
Trichloroethene	12.0	1.00	"	10.0	2.64	93.6	70-130			
Surrogate: 1,2-DCA-d4	*21.7*		"	*20.0*		*109*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*20.4*		"	*20.0*		*102*	*80-120*			
Matrix Spike Dup (0I18028-MSD1)					**Source: B0I0348-04**					
Chlorobenzene	9.03	1.00	ug/l	10.0	ND	90.3	80-120	3.16	15	
1,1-Dichloroethene	9.29	1.00	"	10.0	ND	92.9	60-140	2.02	30	
Trichloroethene	10.9	1.00	"	10.0	2.64	82.6	70-130	9.61	20	
Surrogate: 1,2-DCA-d4	*20.4*		"	*20.0*		*102*	*60-130*			
Surrogate: Toluene-d8	*20.0*		"	*20.0*		*100*	*80-120*			
Surrogate: 4-BFB	*20.1*		"	*20.0*		*101*	*80-120*			

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I19012: Prepared 09/19/00 Using EPA 5030B [P/T]										
Blank (0I19012-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*20.5*		"	*20.0*		*103*	*60-130*			
Surrogate: Toluene-d8	*20.2*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.7*		"	*20.0*		*104*	*80-120*			
LCS (0I19012-BS1)										
Chlorobenzene	9.83	1.00	ug/l	10.0		98.3	80-120			
1,1-Dichloroethene	11.6	1.00	"	10.0		116	60-140			
Trichloroethene	10.2	1.00	"	10.0		102	70-130			
Surrogate: 1,2-DCA-d4	*19.7*		"	*20.0*		*98.5*	*60-130*			
Surrogate: Toluene-d8	*20.2*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.0*		"	*20.0*		*100*	*80-120*			

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I19012: Prepared 09/19/00 Using EPA 5030B [P/T]										
Matrix Spike (0I19012-MS1)					**Source: B0I0316-17**					
Chlorobenzene	8.69	1.00	ug/l	10.0	ND	86.9	80-120			
1,1-Dichloroethene	8.75	1.00	"	10.0	ND	87.5	60-140			
Trichloroethene	9.33	1.00	"	10.0	ND	93.3	70-130			
Surrogate: 1,2-DCA-d4	*20.8*		"	*20.0*		*104*	*60-130*			
Surrogate: Toluene-d8	*20.2*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.7*		"	*20.0*		*104*	*80-120*			
Matrix Spike Dup (0I19012-MSD1)					**Source: B0I0316-17**					
Chlorobenzene	8.32	1.00	ug/l	10.0	ND	83.2	80-120	4.35	15	
1,1-Dichloroethene	8.26	1.00	"	10.0	ND	82.6	60-140	5.76	30	
Trichloroethene	8.40	1.00	"	10.0	ND	84.0	70-130	10.5	20	
Surrogate: 1,2-DCA-d4	*21.7*		"	*20.0*		*109*	*60-130*			
Surrogate: Toluene-d8	*20.1*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.1*		"	*20.0*		*101*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/23/00 13:19

Notes and Definitions

Q-01	The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
S-03	The surrogate recovery for this sample is outside of established control limits. Review of associated QC indicates the recovery for this surrogate does not represent an out-of-control condition.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

Environmental Resources Management

CHAIN OF CUSTODY RECORD

NO: 1117

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B0103116 Page 1 of 14

PROJECT #	PROJECT NAME
6091.30	SEATTLE ASYES DIRECT PUSH GW SAMPLING

SAMPLER: (PRINT NAME): DAVID S. BETTS

(SIGNATURE): David S. Betts

RECEIVING LABORATORY: NCL, BOTHELL, WA

REQUESTED PARAMETERS: 8260 VOCs (DSB)

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	SOIL	WATER	GAS	8260 VOCs	
B-091300-1	9/12/00	—	—	—	GRAB SAMPLER	HCL	Y	80 ml	2		X		X	01
BGA-15-10		0745			PERI PUMP			80 ml	2		X		X	02
BGA-15-12.5		0802						120 ml	3		X		X	03
BGA-15-15		0812									X		X	04
BGA-15-17.5		0825									X		X	05
BGA-15-17.5D		0825									X		X	06
BGA-15-22.2		0835			HAND						X		X	07
BGA-15-22		0840			PERI PUMP						X		X	08
BGA-15-25		0855									X		X	09
BGA-15-30		0910									X		X	10

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
David S. Betts	9/13/00	0620	Bilek NCA	9/13/00	0620
Bilek NCA	9/13/00	13:00	S. Yakimovich NCA	9/13/00	1300

FIELD REMARKS:

REMARKS ON SAMPLE RECEIPT: ☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED ☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS: WCS 27

SEND REPORT TO: R. LEET

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Environmental Resources Management

CHAIN OF CUSTODY RECORD

NO: 1119

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B0I0316

PROJECT #	PROJECT NAME
6091.2	SEATTLE ANGES DIRECT PUSH GW SAMPLING

SAMPLER: (PRINT NAME)	(SIGNATURE)
DAVID S. BETTS	David S. Betts

RECEIVING LABORATORY

NCA
RENTON, WA

REQUESTED PARAMETERS: 8260 VOCs (VOCs)

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	SOIL	WATER	GAS	8260 VOCs	
SGA-16-10	9/12/00	0935		X	Peri Pump	HCL	Y	120 ml	3		X		X	11
SGA-16-12.5		0950									X		X	12
SGA-16-15		1000									X		X	13
SGA-16-17.5		1010						80 ml	2		X		X	14
SGA-16-23		1025						120 ml	3		X		X	15
SGA-16-25		1040									X		X	16
SGA-16-31		1055									X		X	17
SGA-16-31D		1055									X		X	18
SGA-16-39R		1105			HAND						X		X	19
SGA-16-39		1125			Peri Pump						X		X	20

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
David S. Betts	9/13/00	0620	Bill NCA	9/13/00	11:00
Bill NCA	9/13/00	13:00	G Yakamovich NCA	9/13/00	1300

FIELD REMARKS

REMARKS ON SAMPLE RECEIPT

☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED
☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS

SEND REPORT TO: R. LEET

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Environmental Resources Management

CHAIN OF CUSTODY RECORD

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BOI0316

NO: 1120

PROJECT #	PROJECT NAME
6091.20	SEATRE ANGS DIRECT PUSH GW SAMPLING

SAMPLER: (PRINT NAME): DAVID S. BETTS

(SIGNATURE): [signature]

RECEIVING LABORATORY: NCA, BOTHELL, WA

REQUESTED PARAMETERS

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	8260 VOCs									MS/MSD
BGA-17-10	9/12/00	1155		X	Peri Pump	HCL	Y	120 ml	3		X		X	21								
BGA-17-12.5		1225						360 ml	9		X		X	22								X
BGA-17-15		1245						120 ml	3		X		X	23								
BGA-17-17.5		1255									X		X	24								
BGA-17-20		1310									X		X	25								
BGA-17-28		1325									X		X	26								
BGA-17-32		1345									X		X	27								
BGA-19-10		1415									X		X	28								
BGA-19-12		1430									X		X	29								
BGA-19-12D		1430									X		X	30								

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9/13/00	0620	Bill NCA	9/13/00	11:00
Bill NCA	9/13/00	13:00	S. Yakomavich NCA	9/13/00	13:00

FIELD REMARKS

REMARKS ON SAMPLE RECEIPT

☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED
☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS: 4/05 2.7

SEND REPORT TO: R. LEET

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KCSlip4 43723

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Environmental Resources Management

CHAIN OF CUSTODY RECORD

BOI0316

NO: 1118

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PROJECT #	PROJECT NAME
6091.20	SEATTLE ANGS PIPEST PUSH GW SAMPLING

SAMPLER: (PRINT NAME)	(SIGNATURE)
DAVID S. BETTS	[signature]

RECEIVING LABORATORY

NCA
BOTHELL, WA

REQUESTED PARAMETERS

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	8260 VOCS	
BGA-19-15R	9/12/00	1435		X	HAND	HCL	Y	120 ml	3		X		X	31
BGA-19-15	↓	1445		↓	PERI. PUMP	↓	↓	↓	↓		X		X	32
BGA-19-17.5	↓	1455		↓	↓	↓	↓	↓	↓		X		X	33
BGA-19-22	↓	1570		↓	↓	↓	↓	↓	↓		X		X	34
BGA-19-26	↓	1518		↓	↓	↓	↓	80 ml	2		X		X	35
BGA-19-30	↓	1535		↓	↓	↓	↓	↓	↓		X		X	36

DSB

DSB

DSB

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9/13/00	0620	[signature] NCA	9/13/00	11:00
[signature] NCA	9/13/00	13:00	S. Yakamovich NCA	9/13/00	13:00

FIELD REMARKS

REMARKS ON SAMPLE RECEIPT

☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED
☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS

M/CS 2.7

SEND REPORT TO: R. LEET

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CASE NARRATIVE for B0I0348

Client: ERM-Bellevue
Project Manager: Rob Leet
Project Name: Seattle ANG
Project Number: 6091.20

1.0 DESCRIPTION OF CASE

Thirty water samples were submitted for analysis of Volatile Organic Compounds by EPA 8260B.

2.0 COMMENTS ON SAMPLE RECEIPT

Samples were received and logged in on September 14, 2000. The samples were received at a temperature of 1.0 degree C, which is outside the EPA established control limits of 4 degrees +/- 2.

3.0 PREPARATIONS AND ANALYSIS

Volatile Organic Compounds by EPA 8260B

The spike recovery of *Chlorobenzene* in the MS of laboratory batch 0I17005 and the MSD of laboratory batch 0I17007 was outside the established control limits of the method. The spike recoveries for the LCS, MS and/or MSD were acceptable, no further action was deemed necessary.

"I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature."

Kirk Gendron
Project Manager
North Creek Analytical

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-091300-1	B0I0348-01	Water	09/13/00 12:00	09/14/00 17:20
BGA-18-10	B0I0348-02	Water	09/13/00 07:25	09/14/00 17:20
BGA-18-12.5	B0I0348-03	Water	09/13/00 07:40	09/14/00 17:20
BGA-18-12.5D	B0I0348-04	Water	09/13/00 07:40	09/14/00 17:20
BGA-18-15	B0I0348-05	Water	09/13/00 07:55	09/14/00 17:20
BGA-18-17.5	B0I0348-06	Water	09/13/00 08:05	09/14/00 17:20
BGA-18-20	B0I0348-07	Water	09/13/00 08:20	09/14/00 17:20
BGA-18-26	B0I0348-08	Water	09/13/00 08:30	09/14/00 17:20
BGA-18-30R	B0I0348-09	Water	09/13/00 08:40	09/14/00 17:20
BGA-18-30	B0I0348-10	Water	09/13/00 08:55	09/14/00 17:20
BGA-18-37	B0I0348-11	Water	09/13/00 09:15	09/14/00 17:20
BGA-23-10	B0I0348-12	Water	09/13/00 09:45	09/14/00 17:20
BGA-23-12.5	B0I0348-13	Water	09/13/00 09:55	09/14/00 17:20
BGA-23-15	B0I0348-14	Water	09/13/00 10:05	09/14/00 17:20
BGA-23-17.5R	B0I0348-15	Water	09/13/00 10:15	09/14/00 17:20
BGA-23-17.5	B0I0348-16	Water	09/13/00 10:25	09/14/00 17:20
BGA-23-20	B0I0348-17	Water	09/13/00 10:40	09/14/00 17:20
BGA-23-25	B0I0348-18	Water	09/13/00 11:00	09/14/00 17:20
BGA-23-30	B0I0348-19	Water	09/13/00 11:20	09/14/00 17:20
BGA-23-30D	B0I0348-20	Water	09/13/00 11:20	09/14/00 17:20
BGA-24-10	B0I0348-21	Water	09/13/00 12:38	09/14/00 17:20
BGA-24-12.5	B0I0348-22	Water	09/13/00 12:50	09/14/00 17:20
BGA-24-15	B0I0348-23	Water	09/13/00 13:05	09/14/00 17:20
BGA-24-15D	B0I0348-24	Water	09/13/00 13:05	09/14/00 17:20
BGA-24-17.5	B0I0348-25	Water	09/13/00 13:15	09/14/00 17:20
BGA-24-20	B0I0348-26	Water	09/13/00 13:25	09/14/00 17:20
BGA-24-27	B0I0348-27	Water	09/13/00 13:47	09/14/00 17:20
BGA-24-34	B0I0348-28	Water	09/13/00 14:05	09/14/00 17:20
BGA-24-40R	B0I0348-29	Water	09/13/00 14:15	09/14/00 17:20

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BGA-24-40	B010348-30	Water	09/13/00 14:40	09/14/00 17:20

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TB-091300-1 (B0I0348-01) Water Sampled: 09/13/00 12:00 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*97.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-18-10 (B0I0348-02) Water Sampled: 09/13/00 07:25 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-18-10 (B0I0348-02) Water Sampled: 09/13/00 07:25 Received: 09/14/00 17:20									
Surrogate: Toluene-d8	*99.5 %*	*80-120*			*0I17005*	*09/17/00*	*09/17/00*	*EPA 8260B*	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	
BGA-18-12.5 (B0I0348-03) Water Sampled: 09/13/00 07:40 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1.69**	1.00	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**2.70**	1.00	"	"	"	"	"	"	J
Vinyl chloride	ND	0.500	"	"	"	"	"	"	UJ
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-18-12.5D (B0I0348-04) Water Sampled: 09/13/00 07:40 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I18028	09/18/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1.63**	1.00	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-18-12.5D (B0I0348-04) Water Sampled: 09/13/00 07:40 Received: 09/14/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I18028	09/18/00	09/18/00	EPA 8260B	UJ
Trichloroethene	**2.64**	1.00	"	"	"	"	"	"	J
Vinyl chloride	ND	0.500	"	"	"	"	"	"	UJ
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*103 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-18-15 (B0I0348-05) Water Sampled: 09/13/00 07:55 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I18028	09/18/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**2.95**	1.00	"	"	"	"	"	"	J
Vinyl chloride	ND	0.500	"	"	"	"	"	"	UJ
Surrogate: 1,2-DCA-d4	*103 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-18-17.5 (B0I0348-06) Water Sampled: 09/13/00 08:05 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I18028	09/18/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**1.22**	1.00	"	"	"	"	"	"	J
Vinyl chloride	ND	0.500	"	"	"	"	"	"	UJ
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-18-20 (B0I0348-07) Water Sampled: 09/13/00 08:20 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I18028	09/18/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*101 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-18-20 (B0I0348-07) Water Sampled: 09/13/00 08:20 Received: 09/14/00 17:20									
Surrogate: Toluene-d8	*102 %*	*80-120*			*0I18028*	*09/18/00*	*09/18/00*	*EPA 8260B*	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	
BGA-18-26 (B0I0348-08) Water Sampled: 09/13/00 08:30 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I18028	09/18/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*110 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-18-30R (B0I0348-09) Water Sampled: 09/13/00 08:40 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I18028	09/18/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-18-30R (B0I0348-09) Water Sampled: 09/13/00 08:40 Received: 09/14/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0118028	09/18/00	09/18/00	EPA 8260B	UJ
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*111 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	
BGA-18-30 (B0I0348-10) Water Sampled: 09/13/00 08:55 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0118028	09/18/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*110 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-18-37 (B0I0348-11) Water Sampled: 09/13/00 09:15 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I18028	09/18/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*107 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-23-10 (B0I0348-12) Water Sampled: 09/13/00 09:45 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I18028	09/18/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-23-10 (B0I0348-12) Water Sampled: 09/13/00 09:45 Received: 09/14/00 17:20									
Surrogate: Toluene-d8	*101 %*	*80-120*			*0I18028*	*09/18/00*	*09/18/00*	*EPA 8260B*	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-23-12.5 (B0I0348-13) Water Sampled: 09/13/00 09:55 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I18028	09/18/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*100 %*	*80-120*			"	"	"	"	
BGA-23-15 (B0I0348-14) Water Sampled: 09/13/00 10:05 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I20003	09/20/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-23-15 (B0I0348-14) Water Sampled: 09/13/00 10:05 Received: 09/14/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I20003	09/20/00	09/20/00	EPA 8260B	UJ
Trichloroethene	**2.36**	1.00	"	"	"	"	"	"	J
Vinyl chloride	ND	0.500	"	"	"	"	"	"	UJ
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-23-17.5R (B0I0348-15) Water Sampled: 09/13/00 10:15 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I19012	09/19/00	09/19/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*100 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-23-17.5 (B0I0348-16) Water Sampled: 09/13/00 10:25 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I20003	09/20/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**1.60**	1.00	"	"	"	"	"	"	J
Vinyl chloride	ND	0.500	"	"	"	"	"	"	UJ
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-23-20 (B0I0348-17) Water Sampled: 09/13/00 10:40 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I20003	09/20/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-23-20 (B0I0348-17) Water Sampled: 09/13/00 10:40 Received: 09/14/00 17:20									
Surrogate: Toluene-d8	*98.0 %*	*80-120*			*0I20003*	*09/20/00*	*09/20/00*	*EPA 8260B*	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	
BGA-23-25 (B0I0348-18) Water Sampled: 09/13/00 11:00 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I20003	09/20/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	
BGA-23-30 (B0I0348-19) Water Sampled: 09/13/00 11:20 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I20003	09/20/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-23-30 (B0I0348-19) Water Sampled: 09/13/00 11:20 Received: 09/14/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I20003	09/20/00	09/20/00	EPA 8260B	UJ
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	
BGA-23-30D (B0I0348-20) Water Sampled: 09/13/00 11:20 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I20003	09/20/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-24-10 (B0I0348-21) Water Sampled: 09/13/00 12:38 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17007	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	
BGA-24-12.5 (B0I0348-22) Water Sampled: 09/13/00 12:50 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17007	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-24-12.5 (B0I0348-22) Water Sampled: 09/13/00 12:50 Received: 09/14/00 17:20									
Surrogate: Toluene-d8	*101 %*	*80-120*			*0I17007*	*09/17/00*	*09/17/00*	*EPA 8260B*	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-24-15 (B0I0348-23) Water Sampled: 09/13/00 13:05 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17007	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*102 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*99.3 %*	*80-120*			"	"	"	"	
BGA-24-15D (B0I0348-24) Water Sampled: 09/13/00 13:05 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17007	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-24-15D (B0I0348-24) Water Sampled: 09/13/00 13:05 Received: 09/14/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I17007	09/17/00	09/17/00	EPA 8260B	UJ
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*111 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*103 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*99.3 %*	*80-120*			"	"	"	"	
BGA-24-17.5 (B0I0348-25) Water Sampled: 09/13/00 13:15 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17007	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*105 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-24-20 (B0I0348-26) Water Sampled: 09/13/00 13:25 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17005	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-24-27 (B0I0348-27) Water Sampled: 09/13/00 13:47 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17007	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*107 %*	*60-130*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-24-27 (B0I0348-27) Water Sampled: 09/13/00 13:47 Received: 09/14/00 17:20									
Surrogate: Toluene-d8	*99.8 %*	*80-120*			*0I17007*	*09/17/00*	*09/17/00*	*EPA 8260B*	
Surrogate: 4-BFB	*100 %*	*80-120*			"	"	"	"	
BGA-24-34 (B0I0348-28) Water Sampled: 09/13/00 14:05 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17007	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*104 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	
BGA-24-40R (B0I0348-29) Water Sampled: 09/13/00 14:15 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17007	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-24-40R (B0I0348-29) Water Sampled: 09/13/00 14:15 Received: 09/14/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I17007	09/17/00	09/17/00	EPA 8260B	UJ
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*102 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-24-40 (B0I0348-30) Water Sampled: 09/13/00 14:40 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I20003	09/20/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*111 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I17005: Prepared 09/17/00 Using EPA 5030B [P/T]										
Blank (0I17005-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*20.2*		"	*20.0*		*101*	*60-130*			
Surrogate: Toluene-d8	*20.2*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.5*		"	*20.0*		*103*	*80-120*			
LCS (0I17005-BS1)										
Chlorobenzene	9.01	1.00	ug/l	10.0		90.1	80-120			
1,1-Dichloroethene	10.4	1.00	"	10.0		104	60-140			
Trichloroethene	9.34	1.00	"	10.0		93.4	70-130			
Surrogate: 1,2-DCA-d4	*20.0*		"	*20.0*		*100*	*60-130*			
Surrogate: Toluene-d8	*20.2*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*19.6*		"	*20.0*		*98.0*	*80-120*			

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I17005: Prepared 09/17/00 Using EPA 5030B [P/T]										
Matrix Spike (0I17005-MS1)					**Source: B0I0348-26**					
Chlorobenzene	7.51	1.00	ug/l	10.0	ND	75.1	80-120			Q-01
1,1-Dichloroethene	7.99	1.00	"	10.0	ND	79.9	60-140			
Trichloroethene	7.97	1.00	"	10.0	ND	79.7	70-130			
Surrogate: 1,2-DCA-d4	*20.0*		"	*20.0*		*100*	*60-130*			
Surrogate: Toluene-d8	*20.2*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.7*		"	*20.0*		*104*	*80-120*			
Matrix Spike Dup (0I17005-MSD1)					**Source: B0I0348-26**					
Chlorobenzene	8.10	1.00	ug/l	10.0	ND	81.0	80-120	7.56	15	
1,1-Dichloroethene	7.92	1.00	"	10.0	ND	79.2	60-140	0.880	30	
Trichloroethene	8.51	1.00	"	10.0	ND	85.1	70-130	6.55	20	
Surrogate: 1,2-DCA-d4	*20.9*		"	*20.0*		*104*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*20.3*		"	*20.0*		*101*	*80-120*			
Batch 0I17007: Prepared 09/17/00 Using EPA 5030B [P/T]										
Blank (0I17007-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*42.4*		"	*40.0*		*106*	*60-130*			
Surrogate: Toluene-d8	*40.3*		"	*40.0*		*101*	*80-120*			

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I17007: Prepared 09/17/00 Using EPA 5030B [P/T]										
Blank (0I17007-BLK1)										
Surrogate: 4-BFB	*41.0*		*ug/l*	*40.0*		*103*	*80-120*			
LCS (0I17007-BS1)										
Chlorobenzene	18.7	1.00	ug/l	20.0		93.5	80-120			
1,1-Dichloroethene	17.0	1.00	"	20.0		85.0	60-140			
Trichloroethene	19.0	1.00	"	20.0		95.0	70-130			
Surrogate: 1,2-DCA-d4	*42.2*		*"*	*40.0*		*106*	*60-130*			
Surrogate: Toluene-d8	*41.1*		*"*	*40.0*		*103*	*80-120*			
Surrogate: 4-BFB	*40.8*		*"*	*40.0*		*102*	*80-120*			
Matrix Spike (0I17007-MS1)					**Source: B0I0348-21**					
Chlorobenzene	16.0	1.00	ug/l	20.0	ND	80.0	80-120			
1,1-Dichloroethene	15.7	1.00	"	20.0	ND	78.5	60-140			
Trichloroethene	16.9	1.00	"	20.0	ND	84.5	70-130			
Surrogate: 1,2-DCA-d4	*43.1*		*"*	*40.0*		*108*	*60-130*			
Surrogate: Toluene-d8	*40.3*		*"*	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*39.4*		*"*	*40.0*		*98.5*	*80-120*			
Matrix Spike Dup (0I17007-MSD1)					**Source: B0I0348-21**					
Chlorobenzene	15.8	1.00	ug/l	20.0	ND	79.0	80-120	1.26	15	Q-01
1,1-Dichloroethene	15.8	1.00	"	20.0	ND	79.0	60-140	0.635	30	
Trichloroethene	16.7	1.00	"	20.0	ND	83.5	70-130	1.19	20	
Surrogate: 1,2-DCA-d4	*42.8*		*"*	*40.0*		*107*	*60-130*			
Surrogate: Toluene-d8	*40.3*		*"*	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*39.3*		*"*	*40.0*		*98.2*	*80-120*			
Batch 0I17010: Prepared 09/17/00 Using EPA 5030B [P/T]										
Blank (0I17010-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I17010: Prepared 09/17/00 Using EPA 5030B [P/T]										
Blank (0I17010-BLK1)										
trans-1,2-Dichloroethene	ND	1.00	ug/l							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*21.5*		"	*20.0*		*108*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*20.4*		"	*20.0*		*102*	*80-120*			
LCS (0I17010-BS1)										
Chlorobenzene	8.83	1.00	ug/l	10.0		88.3	80-120			
1,1-Dichloroethene	9.96	1.00	"	10.0		99.6	60-140			
Trichloroethene	9.11	1.00	"	10.0		91.1	70-130			
Surrogate: 1,2-DCA-d4	*22.2*		"	*20.0*		*111*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*19.3*		"	*20.0*		*96.5*	*80-120*			
Matrix Spike (0I17010-MS1)					**Source: B0I0240-01**					
Chlorobenzene	8.21	1.00	ug/l	10.0	ND	82.1	80-120			
1,1-Dichloroethene	8.12	1.00	"	10.0	ND	81.2	60-140			
Trichloroethene	11.3	1.00	"	10.0	ND	113	70-130			
Surrogate: 1,2-DCA-d4	*25.7*		"	*20.0*		*129*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*19.9*		"	*20.0*		*99.5*	*80-120*			

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I17010: Prepared 09/17/00 Using EPA 5030B [P/T]										
Matrix Spike Dup (0I17010-MSD1)					**Source: B0I0240-01**					
Chlorobenzene	8.23	1.00	ug/l	10.0	ND	82.3	80-120	0.243	15	
1,1-Dichloroethene	8.10	1.00	"	10.0	ND	81.0	60-140	0.247	30	
Trichloroethene	9.89	1.00	"	10.0	ND	98.9	70-130	13.3	20	
Surrogate: 1,2-DCA-d4	*24.5*		"	*20.0*		*123*	*60-130*			
Surrogate: Toluene-d8	*20.0*		"	*20.0*		*100*	*80-120*			
Surrogate: 4-BFB	*20.1*		"	*20.0*		*101*	*80-120*			
Batch 0I18028: Prepared 09/18/00 Using EPA 5030B [P/T]										
Blank (0I18028-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*20.1*		"	*20.0*		*101*	*60-130*			
Surrogate: Toluene-d8	*20.0*		"	*20.0*		*100*	*80-120*			
Surrogate: 4-BFB	*20.4*		"	*20.0*		*102*	*80-120*			

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	Reported:
Bellevue WA, 98005	Project Manager: Rob Leet	09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I18028: Prepared 09/18/00 Using EPA 5030B [P/T]										
LCS (0I18028-BS1)										
Chlorobenzene	9.65	1.00	ug/l	10.0		96.5	80-120			
1,1-Dichloroethene	10.6	1.00	"	10.0		106	60-140			
Trichloroethene	10.1	1.00	"	10.0		101	70-130			
Surrogate: 1,2-DCA-d4	*20.3*		"	*20.0*		*101*	*60-130*			
Surrogate: Toluene-d8	*20.3*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.2*		"	*20.0*		*101*	*80-120*			
Matrix Spike (0I18028-MS1)					**Source: B0I0348-04**					
Chlorobenzene	9.32	1.00	ug/l	10.0	ND	93.2	80-120			
1,1-Dichloroethene	9.48	1.00	"	10.0	ND	94.8	60-140			
Trichloroethene	12.0	1.00	"	10.0	2.64	93.6	70-130			
Surrogate: 1,2-DCA-d4	*21.7*		"	*20.0*		*109*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*20.4*		"	*20.0*		*102*	*80-120*			
Matrix Spike Dup (0I18028-MSD1)					**Source: B0I0348-04**					
Chlorobenzene	9.03	1.00	ug/l	10.0	ND	90.3	80-120	3.16	15	
1,1-Dichloroethene	9.29	1.00	"	10.0	ND	92.9	60-140	2.02	30	
Trichloroethene	10.9	1.00	"	10.0	2.64	82.6	70-130	9.61	20	
Surrogate: 1,2-DCA-d4	*20.4*		"	*20.0*		*102*	*60-130*			
Surrogate: Toluene-d8	*20.0*		"	*20.0*		*100*	*80-120*			
Surrogate: 4-BFB	*20.1*		"	*20.0*		*101*	*80-120*			
Batch 0I19012: Prepared 09/19/00 Using EPA 5030B [P/T]										
Blank (0I19012-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							

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Kirk Gendron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I19012: Prepared 09/19/00 Using EPA 5030B [P/T]										
Blank (0I19012-BLK1)										
1,1,2,2-Tetrachloroethane	ND	1.00	ug/l							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*20.5*		"	*20.0*		*103*	*60-130*			
Surrogate: Toluene-d8	*20.2*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.7*		"	*20.0*		*104*	*80-120*			
LCS (0I19012-BS1)										
Chlorobenzene	9.83	1.00	ug/l	10.0		98.3	80-120			
1,1-Dichloroethene	11.6	1.00	"	10.0		116	60-140			
Trichloroethene	10.2	1.00	"	10.0		102	70-130			
Surrogate: 1,2-DCA-d4	*19.7*		"	*20.0*		*98.5*	*60-130*			
Surrogate: Toluene-d8	*20.2*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.0*		"	*20.0*		*100*	*80-120*			
Matrix Spike (0I19012-MS1)					**Source: B0I0316-17**					
Chlorobenzene	8.69	1.00	ug/l	10.0	ND	86.9	80-120			
1,1-Dichloroethene	8.75	1.00	"	10.0	ND	87.5	60-140			
Trichloroethene	9.33	1.00	"	10.0	ND	93.3	70-130			
Surrogate: 1,2-DCA-d4	*20.8*		"	*20.0*		*104*	*60-130*			
Surrogate: Toluene-d8	*20.2*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.7*		"	*20.0*		*104*	*80-120*			
Matrix Spike Dup (0I19012-MSD1)					**Source: B0I0316-17**					
Chlorobenzene	8.32	1.00	ug/l	10.0	ND	83.2	80-120	4.35	15	
1,1-Dichloroethene	8.26	1.00	"	10.0	ND	82.6	60-140	5.76	30	
Trichloroethene	8.40	1.00	"	10.0	ND	84.0	70-130	10.5	20	
Surrogate: 1,2-DCA-d4	*21.7*		"	*20.0*		*109*	*60-130*			
Surrogate: Toluene-d8	*20.1*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.1*		"	*20.0*		*101*	*80-120*			

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I20003: Prepared 09/20/00 Using EPA 5030B [P/T]										
Blank (0I20003-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*20.8*		"	*20.0*		*104*	*60-130*			
Surrogate: Toluene-d8	*20.1*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.4*		"	*20.0*		*102*	*80-120*			
LCS (0I20003-BS1)										
Chlorobenzene	9.83	1.00	ug/l	10.0		98.3	80-120			
1,1-Dichloroethene	10.9	1.00	"	10.0		109	60-140			
Trichloroethene	10.3	1.00	"	10.0		103	70-130			
Surrogate: 1,2-DCA-d4	*21.1*		"	*20.0*		*106*	*60-130*			
Surrogate: Toluene-d8	*20.0*		"	*20.0*		*100*	*80-120*			
Surrogate: 4-BFB	*21.3*		"	*20.0*		*106*	*80-120*			

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I20003: Prepared 09/20/00 Using EPA 5030B [P/T]										
Matrix Spike (0I20003-MS1)					**Source: B0I0353-01**					
Chlorobenzene	8.96	1.00	ug/l	10.0	ND	89.6	80-120			
1,1-Dichloroethene	8.87	1.00	"	10.0	ND	88.7	60-140			
Trichloroethene	11.2	1.00	"	10.0	ND	112	70-130			
Surrogate: 1,2-DCA-d4	*21.3*		"	*20.0*		*106*	*60-130*			
Surrogate: Toluene-d8	*20.0*		"	*20.0*		*100*	*80-120*			
Surrogate: 4-BFB	*20.2*		"	*20.0*		*101*	*80-120*			
Matrix Spike Dup (0I20003-MSD1)					**Source: B0I0353-01**					
Chlorobenzene	9.68	1.00	ug/l	10.0	ND	96.8	80-120	7.73	15	
1,1-Dichloroethene	9.47	1.00	"	10.0	ND	94.7	60-140	6.54	30	
Trichloroethene	11.6	1.00	"	10.0	ND	116	70-130	3.51	20	
Surrogate: 1,2-DCA-d4	*21.9*		"	*20.0*		*109*	*60-130*			
Surrogate: Toluene-d8	*20.1*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.3*		"	*20.0*		*101*	*80-120*			

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 14:18

Notes and Definitions

Q-01	The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kirk Gendron, Project Manager

Management

CHAIN OF CUSTODY RECORD BOI0348

NO: 1122

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Page 1 of 3

PROJECT #	PROJECT NAME
6-091.20	SEATTLE ARMS PIPEET FLUSH GW SAMPLING

SAMPLER: (PRINT NAME)	(SIGNATURE)
DAVID S. BETTS	David S. Betts

RECEIVING LABORATORY: NCA, BOTHELL, WA

REQUESTED PARAMETERS: 8260 VOCs

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	SOIL	WATER	GAS	8260 VOCs										
B-091340-1	9/13/00	—	—	—	LOTS SUPPLIED	HCL	Y	80 ml	3		X		X										
GA-18-10		0725		X	PETI PUMP	HCL	Y	120 ml	3		X		X										01
GA-18-12.5		0740									X		X										02
GA-18-12.5D		0740									X		X										03
GA-18-15		0755									X		X										04
GA-18-125		0805									X		X										05
GA-18-20		0820									X		X										06
GA-18-26		0830									X		X										07
GA-18-30R		0840			HAND			80 ml	2		X		X										08
GA-18-30		0855			PETI PUMP			120 ml	3		X		X										09
																							10

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
David S. Betts	9/14/00	0630	Bill C NCA	9/14/00	14:30
NCA	9/14/00	17:20	S. Yakamavich	9/14/00	1720

FIELD REMARKS: DSB

REMARKS ON SAMPLE RECEIPT: BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED; PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS: W/D 1.0

SEND REPORT TO: R. LEZET

WHITE - LABORATORY COPY CANARY - FIELD COPY PINK - PROJECT MANAGER GOLD - PROJECT

KCSlip4 43756

SEA410286

Environmental Resources Management

CHAIN OF CUSTODY RECORD

B0I0348

NO: 1121

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PROJECT #: 6091.20

PROJECT NAME: SEATTLE ANGLE DIRECT PUSH GW SAMPLING

SAMPLER: (PRINT NAME) DAVID S BEES

(SIGNATURE) [signature]

RECEIVING LABORATORY: NCA, BOTHELL, WA

REQUESTED PARAMETERS: 8260 VOCs

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	SOIL	WATER	GAS	8260 VOCs										
GA-18-37	9/13/00	0915		X	Peri Pump	HCL	Y	120 ml	3		X		X										11
GA-23-10		0945									X		X										12
GA-23-12.5		0955									X		X										13
GA-23-15		1005									X		X										14
A-23-17.5R		1015			HAND						X		X										15
A-23-17.5		1025			Peri Pump						X		X										16
GA-23-20		1040									X		X										17
A-23-25		1100									X		X										18
GA-23-30		1120									X		X										19
A-23-30D		1120									X		X										20

DSB

DSB

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9/14/00	0630	[signature] NCA	9/14/00	14:35
[signature] NCA	9/14/00	17:20	S. Yakamavich	9/14/00	17:20

FIELD REMARKS

REMARKS ON SAMPLE RECEIPT

BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED

PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS: W/O 1.0

SEND REPORT TO: R. LEET

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CHAIN OF CUSTODY RECORD

D010348

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NO: 1164

Page 3 of 3

PROJECT #	PROJECT NAME
604120	SEATTLE ANES DIRECT PUSH GW SAMPLING

SAMPLER: (PRINT NAME)	(SIGNATURE)
DAVID S. BETS	David S. Betts

RECEIVING LABORATORY: NCA, BOTHELL, WA

REQUESTED PARAMETERS: 8260 VOCs; MS/MSD

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	SOIL	WATER	GAS	8260 VOCs	MS/MSD
GA-24-10	9/13/00	1238		X	Peri. Pump	HCL	Y	120 ml	3		X		X	
GA-24-12.5		1250									X		X	21
A-24-15		1305									X		X	22
A-24-15D		1305									X		X	23
A-24-17.5		1315									X		X	24
A-24-20		1325						360 ml	9		X		X	25
A-24-27		1347						120 ml	3		X		X	26
A-24-34		1405						80 ml	2		X		X	27
A-24-40R		1415			HANO			120 ml	3		X		X	28
-24-40		1440			Peri. Pump			360 ml	9		X		X	29
													X	30

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
David S. Betts	9/14/00	0630	NCA	9/14/00	14:30
NCA	9/14/00	17:20	S. Yaranavich	9/14/00	17:20

FIELD REMARKS:

REMARKS ON SAMPLE RECEIPT: BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED; PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS: W/O 1.0

SEND REPORT TO: R. LEET

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6091.2

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CASE NARRATIVE for B0I0353

Client: ERM-Bellevue
Project Manager: Rob Leet
Project Name: Seattle ANG
Project Number: 6091.20

1.0 DESCRIPTION OF CASE

Eighteen water samples were submitted for analysis of Volatile Organic Compounds by EPA 8260B.

2.0 COMMENTS ON SAMPLE RECEIPT

Samples were received and logged in on September 14, 2000. The samples were received at a temperature of 1.0 degree C, which is outside the EPA established control limits of 4 degrees +/- 2.

3.0 PREPARATIONS AND ANALYSIS

Volatile Organic Compounds by EPA 8260B

The spike recovery of *Chlorobenzene* in the MSD of laboratory batch 0I17007 was outside the established control limits of the method. The spike recoveries for the LCS and MS were acceptable, no further action was deemed necessary.
The spike recovery of *Chlorobenzene* in the MS and MSD of laboratory batch 0I19041 was outside the established control limits of the method. The spike recoveries for the LCS were acceptable, no further action was deemed necessary.

"I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature."

Kirk Gendron
Project Manager
North Creek Analytical

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 17:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-091300-2	B0I0353-01	Water	09/13/00 12:00	09/14/00 17:20
BGA-20-12.5	B0I0353-02	Water	09/13/00 07:45	09/14/00 17:20
BGA-20-15	B0I0353-03	Water	09/13/00 07:55	09/14/00 17:20
BGA-20-15D	B0I0353-04	Water	09/13/00 07:55	09/14/00 17:20
BGA-20-15R	B0I0353-05	Water	09/13/00 08:15	09/14/00 17:20
BGA-20-17.5	B0I0353-06	Water	09/13/00 08:05	09/14/00 17:20
BGA-20-20	B0I0353-07	Water	09/13/00 08:25	09/14/00 17:20
BGA-20-25	B0I0353-08	Water	09/13/00 08:35	09/14/00 17:20
BGA-20-25D	B0I0353-09	Water	09/13/00 08:35	09/14/00 17:20
BGA-20-25R	B0I0353-10	Water	09/13/00 08:50	09/14/00 17:20
BGA-21-20R	B0I0353-11	Water	09/13/00 10:40	09/14/00 17:20
BGA-22-15	B0I0353-12	Water	09/13/00 11:45	09/14/00 17:20
BGA-22-17.5	B0I0353-13	Water	09/13/00 12:30	09/14/00 17:20
BGA-22-23	B0I0353-14	Water	09/13/00 12:40	09/14/00 17:20
BGA-22-23R	B0I0353-15	Water	09/13/00 12:55	09/14/00 17:20
BGA-22-27	B0I0353-16	Water	09/13/00 12:50	09/14/00 17:20
BGA-22-30	B0I0353-17	Water	09/13/00 13:10	09/14/00 17:20
BGA-22-39	B0I0353-18	Water	09/13/00 13:25	09/14/00 17:20

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TB-091300-2 (B0I0353-01) Water Sampled: 09/13/00 12:00 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I20003	09/20/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*95.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	
BGA-20-12.5 (B0I0353-02) Water Sampled: 09/13/00 07:45 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17007	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*105 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-20-12.5 (B0I0353-02) Water Sampled: 09/13/00 07:45 Received: 09/14/00 17:20									
Surrogate: Toluene-d8	*103 %*	*80-120*			*0I17007*	*09/17/00*	*09/17/00*	*EPA 8260B*	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-20-15 (B0I0353-03) Water Sampled: 09/13/00 07:55 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17007	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**3.63**	1.00	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.8 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*99.8 %*	*80-120*			"	"	"	"	
BGA-20-15D (B0I0353-04) Water Sampled: 09/13/00 07:55 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17007	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**3.58**	1.00	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-20-15D (B0I0353-04) Water Sampled: 09/13/00 07:55 Received: 09/14/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I17007	09/17/00	09/17/00	EPA 8260B	UJ
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*98.2 %*	*80-120*			"	"	"	"	
BGA-20-15R (B0I0353-05) Water Sampled: 09/13/00 08:15 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17007	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-20-17.5 (B010353-06) Water Sampled: 09/13/00 08:05 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0120003	09/20/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**4.82**	1.00	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*111 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-20-20 (B010353-07) Water Sampled: 09/13/00 08:25 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0120003	09/20/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**4.84**	1.00	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*112 %*	*60-130*			"	"	"	"	

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-20-20 (B0I0353-07) Water Sampled: 09/13/00 08:25 Received: 09/14/00 17:20									
Surrogate: Toluene-d8	*99.0 %*	*80-120*			*0I20003*	*09/20/00*	*09/20/00*	*EPA 8260B*	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-20-25 (B0I0353-08) Water Sampled: 09/13/00 08:35 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I20003	09/20/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**3.18**	1.00	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*111 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-20-25D (B0I0353-09) Water Sampled: 09/13/00 08:35 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I20003	09/20/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**3.20**	1.00	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-20-25D (B0I0353-09) Water Sampled: 09/13/00 08:35 Received: 09/14/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I20003	09/20/00	09/20/00	EPA 8260B	UJ
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*113 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-20-25R (B0I0353-10) Water Sampled: 09/13/00 08:50 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I19041	09/19/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*85.2 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	Reported:
Bellevue WA, 98005	Project Manager: Rob Leet	09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-21-20R (B0I0353-11) Water Sampled: 09/13/00 10:40 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I19041	09/19/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*82.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.8 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-22-15 (B0I0353-12) Water Sampled: 09/13/00 11:45 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I19041	09/19/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**5.03**	1.00	"	"	"	"	"	"	J
Vinyl chloride	ND	0.500	"	"	"	"	"	"	UJ
Surrogate: 1,2-DCA-d4	*82.5 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-22-15 (B0I0353-12) Water Sampled: 09/13/00 11:45 Received: 09/14/00 17:20									
Surrogate: Toluene-d8	*99.0 %*	*80-120*			*0I19041*	*09/19/00*	*09/20/00*	*EPA 8260B*	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-22-17.5 (B0I0353-13) Water Sampled: 09/13/00 12:30 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I19041	09/19/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**1.05**	1.00	"	"	"	"	"	"	J
Vinyl chloride	ND	0.500	"	"	"	"	"	"	UJ
Surrogate: 1,2-DCA-d4	*83.2 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*97.7 %*	*80-120*			"	"	"	"	
BGA-22-23 (B0I0353-14) Water Sampled: 09/13/00 12:40 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I19041	09/19/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-22-23 (B0I0353-14) Water Sampled: 09/13/00 12:40 Received: 09/14/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I19041	09/19/00	09/20/00	EPA 8260B	UJ
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*85.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*98.8 %*	*80-120*			"	"	"	"	
BGA-22-23R (B0I0353-15) Water Sampled: 09/13/00 12:55 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I19041	09/19/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*84.3 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.3 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*100 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-22-27 (B0I0353-16) Water Sampled: 09/13/00 12:50 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0119041	09/19/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*83.2 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*99.8 %*	*80-120*			"	"	"	"	
BGA-22-30 (B0I0353-17) Water Sampled: 09/13/00 13:10 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0119041	09/19/00	09/20/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*82.3 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-22-30 (B010353-17) Water Sampled: 09/13/00 13:10 Received: 09/14/00 17:20									
Surrogate: Toluene-d8	*98.0 %*	*80-120*			*0I19041*	*09/19/00*	*09/20/00*	*EPA 8260B*	
Surrogate: 4-BFB	*99.0 %*	*80-120*			"	"	"	"	
BGA-22-39 (B010353-18) Water Sampled: 09/13/00 13:25 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/17/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*103 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*96.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*96.5 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I17007: Prepared 09/17/00 Using EPA 5030B [P/T]										
Blank (0I17007-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*42.4*		"	*40.0*		*106*	*60-130*			
Surrogate: Toluene-d8	*40.3*		"	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*41.0*		"	*40.0*		*103*	*80-120*			
LCS (0I17007-BS1)										
Chlorobenzene	18.7	1.00	ug/l	20.0		93.5	80-120			
1,1-Dichloroethene	17.0	1.00	"	20.0		85.0	60-140			
Trichloroethene	19.0	1.00	"	20.0		95.0	70-130			
Surrogate: 1,2-DCA-d4	*42.2*		"	*40.0*		*106*	*60-130*			
Surrogate: Toluene-d8	*41.1*		"	*40.0*		*103*	*80-120*			
Surrogate: 4-BFB	*40.8*		"	*40.0*		*102*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I17007: Prepared 09/17/00 Using EPA 5030B [P/T]										
Matrix Spike (0I17007-MS1)					**Source: B0I0348-21**					
Chlorobenzene	16.0	1.00	ug/l	20.0	ND	80.0	80-120			
1,1-Dichloroethene	15.7	1.00	"	20.0	ND	78.5	60-140			
Trichloroethene	16.9	1.00	"	20.0	ND	84.5	70-130			
Surrogate: 1,2-DCA-d4	*43.1*		"	*40.0*		*108*	*60-130*			
Surrogate: Toluene-d8	*40.3*		"	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*39.4*		"	*40.0*		*98.5*	*80-120*			
Matrix Spike Dup (0I17007-MSD1)					**Source: B0I0348-21**					
Chlorobenzene	15.8	1.00	ug/l	20.0	ND	79.0	80-120	1.26	15	Q-01
1,1-Dichloroethene	15.8	1.00	"	20.0	ND	79.0	60-140	0.635	30	
Trichloroethene	16.7	1.00	"	20.0	ND	83.5	70-130	1.19	20	
Surrogate: 1,2-DCA-d4	*42.8*		"	*40.0*		*107*	*60-130*			
Surrogate: Toluene-d8	*40.3*		"	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*39.3*		"	*40.0*		*98.2*	*80-120*			
Batch 0I17010: Prepared 09/17/00 Using EPA 5030B [P/T]										
Blank (0I17010-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*21.5*		"	*20.0*		*108*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			

North Creek Analytical - Bothell

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Kirk Gentron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Lect	**Reported:** 09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I17010: Prepared 09/17/00 Using EPA 5030B [P/T]										
Blank (0I17010-BLK1)										
Surrogate: 4-BFB	*20.4*		*ug/l*	*20.0*		*102*	*80-120*			
LCS (0I17010-BS1)										
Chlorobenzene	8.83	1.00	ug/l	10.0		88.3	80-120			
1,1-Dichloroethene	9.96	1.00	"	10.0		99.6	60-140			
Trichloroethene	9.11	1.00	"	10.0		91.1	70-130			
Surrogate: 1,2-DCA-d4	*22.2*		*"*	*20.0*		*111*	*60-130*			
Surrogate: Toluene-d8	*19.8*		*"*	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*19.3*		*"*	*20.0*		*96.5*	*80-120*			
Matrix Spike (0I17010-MS1)					**Source: B0I0240-01**					
Chlorobenzene	8.21	1.00	ug/l	10.0	ND	82.1	80-120			
1,1-Dichloroethene	8.12	1.00	"	10.0	ND	81.2	60-140			
Trichloroethene	11.3	1.00	"	10.0	ND	113	70-130			
Surrogate: 1,2-DCA-d4	*25.7*		*"*	*20.0*		*129*	*60-130*			
Surrogate: Toluene-d8	*19.8*		*"*	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*19.9*		*"*	*20.0*		*99.5*	*80-120*			
Matrix Spike Dup (0I17010-MSD1)					**Source: B0I0240-01**					
Chlorobenzene	8.23	1.00	ug/l	10.0	ND	82.3	80-120	0.243	15	
1,1-Dichloroethene	8.10	1.00	"	10.0	ND	81.0	60-140	0.247	30	
Trichloroethene	9.89	1.00	"	10.0	ND	98.9	70-130	13.3	20	
Surrogate: 1,2-DCA-d4	*24.5*		*"*	*20.0*		*123*	*60-130*			
Surrogate: Toluene-d8	*20.0*		*"*	*20.0*		*100*	*80-120*			
Surrogate: 4-BFB	*20.1*		*"*	*20.0*		*101*	*80-120*			
Batch 0I19041: Prepared 09/19/00 Using EPA 5030B [P/T]										
Blank (0I19041-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	Reported:
Bellevue WA, 98005	Project Manager: Rob Leet	09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I19041: Prepared 09/19/00 Using EPA 5030B [P/T]										
Blank (0I19041-BLK1)										
trans-1,2-Dichloroethene	ND	1.00	ug/l							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*35.4*		"	*40.0*		*88.5*	*60-130*			
Surrogate: Toluene-d8	*39.7*		"	*40.0*		*99.3*	*80-120*			
Surrogate: 4-BFB	*39.0*		"	*40.0*		*97.5*	*80-120*			
LCS (0I19041-BS1)										
Chlorobenzene	18.1	1.00	ug/l	20.0		90.5	80-120			
1,1-Dichloroethene	18.1	1.00	"	20.0		90.5	60-140			
Trichloroethene	19.4	1.00	"	20.0		97.0	70-130			
Surrogate: 1,2-DCA-d4	*33.7*		"	*40.0*		*84.3*	*60-130*			
Surrogate: Toluene-d8	*39.2*		"	*40.0*		*98.0*	*80-120*			
Surrogate: 4-BFB	*40.0*		"	*40.0*		*100*	*80-120*			
Matrix Spike (0I19041-MS1)					**Source: B010353-10**					
Chlorobenzene	14.6	1.00	ug/l	20.0	ND	73.0	80-120			Q-01
1,1-Dichloroethene	12.2	1.00	"	20.0	ND	61.0	60-140			
Trichloroethene	14.5	1.00	"	20.0	ND	72.5	70-130			
Surrogate: 1,2-DCA-d4	*34.9*		"	*40.0*		*87.3*	*60-130*			
Surrogate: Toluene-d8	*40.0*		"	*40.0*		*100*	*80-120*			
Surrogate: 4-BFB	*39.8*		"	*40.0*		*99.5*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I19041: Prepared 09/19/00 Using EPA 5030B [P/T]										
Matrix Spike Dup (0I19041-MSD1)					**Source: B0I0353-10**					
Chlorobenzene	14.4	1.00	ug/l	20.0	ND	72.0	80-120	1.38	15	Q-01
1,1-Dichloroethene	12.5	1.00	"	20.0	ND	62.5	60-140	2.43	30	
Trichloroethene	14.0	1.00	"	20.0	ND	70.0	70-130	3.51	20	
Surrogate: 1,2-DCA-d4	*34.6*		"	*40.0*		*86.5*	*60-130*			
Surrogate: Toluene-d8	*40.2*		"	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*40.5*		"	*40.0*		*101*	*80-120*			
Batch 0I20003: Prepared 09/20/00 Using EPA 5030B [P/T]										
Blank (0I20003-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*20.8*		"	*20.0*		*104*	*60-130*			
Surrogate: Toluene-d8	*20.1*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.4*		"	*20.0*		*102*	*80-120*			

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue	Project: Seattle ANG GW Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/21/00 17:02

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I20003: Prepared 09/20/00 Using EPA 5030B [P/T]										
LCS (0I20003-BS1)										
Chlorobenzene	9.83	1.00	ug/l	10.0		98.3	80-120			
1,1-Dichloroethene	10.9	1.00	"	10.0		109	60-140			
Trichloroethene	10.3	1.00	"	10.0		103	70-130			
Surrogate: 1,2-DCA-d4	*21.1*		"	*20.0*		*106*	*60-130*			
Surrogate: Toluene-d8	*20.0*		"	*20.0*		*100*	*80-120*			
Surrogate: 4-BFB	*21.3*		"	*20.0*		*106*	*80-120*			
Matrix Spike (0I20003-MS1)					**Source: B0I0353-01**					
Chlorobenzene	8.96	1.00	ug/l	10.0	ND	89.6	80-120			
1,1-Dichloroethene	8.87	1.00	"	10.0	ND	88.7	60-140			
Trichloroethene	11.2	1.00	"	10.0	ND	112	70-130			
Surrogate: 1,2-DCA-d4	*21.3*		"	*20.0*		*106*	*60-130*			
Surrogate: Toluene-d8	*20.0*		"	*20.0*		*100*	*80-120*			
Surrogate: 4-BFB	*20.2*		"	*20.0*		*101*	*80-120*			
Matrix Spike Dup (0I20003-MSD1)					**Source: B0I0353-01**					
Chlorobenzene	9.68	1.00	ug/l	10.0	ND	96.8	80-120	7.73	15	
1,1-Dichloroethene	9.47	1.00	"	10.0	ND	94.7	60-140	6.54	30	
Trichloroethene	11.6	1.00	"	10.0	ND	116	70-130	3.51	20	
Surrogate: 1,2-DCA-d4	*21.9*		"	*20.0*		*109*	*60-130*			
Surrogate: Toluene-d8	*20.1*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.3*		"	*20.0*		*101*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/21/00 17:02

Notes and Definitions

Q-01	The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

Environmental Resources Management
118th Ave. S.E., Suite 130 • Bellevue, WA • 98005 • (425) 462-8591 • FAX (425) 455-3573

CHAIN OF CUSTODY RECORD

BOI0353

NO: 1132

Page 1 of 2

PROJECT #	PROJECT NAME
091.20	Seattle AWE - BGA

SAMPLER: (PRINT NAME)	(SIGNATURE)
Chris Bailey	Chris Bailey

RECEIVING LABORATORY: NCA - Bothell

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	REQUESTED PARAMETERS: 8260 Vols										
091300-2	—	—				HCl	Y	60 mL	2		\		\			01							
A-20-12.5	9/13/00	745		\	Peri Pump	HCl		120 mL	3		\		\			02							
A-20-15	9/13/00	755		\	↓	↓	↓	↓	3		\		\			03							
A-20-15D	9/13/00	755		\	↓	↓	↓	↓	3		\		\			04							
A-20-15R	9/13/00	815		\	—	↓	↓	↓	3		\		\			05							
A-20-17.5	9/13/00	805		\	Peri Pump	↓	↓	↓	3		\		\			06							
A-20-20	9/13/00	825		\	↓	↓	↓	↓	3		\		\			07							
A-20-25	9/13/00	835		\	↓	↓	↓	↓	3		\		\			08							
A-20-25D	9/13/00	835		\	↓	↓	↓	↓	3		\		\			09							
A-20-25R	9/13/00	850		\	—	↓	↓	↓	3		\		\			10							

LINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
Chris Bailey	9/13/00	1340	Billek NCA	9/14/00	1430
Billek NCA	9/14/00	1720	Szekanovich NCA	9/14/00	1720

FIELD REMARKS

REMARKS ON SAMPLE RECEIPT

BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED
PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS

SEND REPORT TO: Rob Leet

KCSlip4 43779

SEA410309

Management CHAIN OF CUSTODY RECORD

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BOI0353

NO: 1133

Page 2 of 32

PROJECT #	PROJECT NAME
091.20	Seattle AMG - BGA

SAMPLER: (PRINT NAME)	(SIGNATURE)
Iris Bailey	[signature]

RECEIVING LABORATORY: NCA - Bothell

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	REQUESTED PARAMETERS: 8260 & VOCs																			
~~A-21-15D~~																																
~~A-15~~	9/13/00	1000			Peri Pump	HCl	Y	120mL	3																							
A-21-20R	9/13/00	1040			—				3																							
~~A-22-15~~ ~~A-21~~	9/13/00	1145			Peri Pump				3																							
~~A-22-15D~~	9/13/00	1145							3																							
A-22-17.5	9/13/00	1230							3																							
A-22-23	9/13/00	1240							3																							
A-22-23R	9/13/00	1255			—				3																							
A-22-27	9/13/00	1250			Peri Pump				3																							
A-22-30	9/13/00	1310							3																							
A-22-39	9/13/00	1325							3																							

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9/13/00	1340	[signature] NCA	9/14/00	14:30
[signature] NCA	9/14/00	1720	S. Wakemanich NCA	9/14/00	1720
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME

FIELD REMARKS: 19, 11, 12, 20, 13, 14, 15, 16, 17, 18

REMARKS ON SAMPLE RECEIPT: BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED; PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS: W/O 1.1

SEND REPORT TO: Rob Leet

WHITE - LABORATORY COPY CANARY - FIELD COPY

KCSlip4 43780

SEA410310

6091.20
RCR

Data Package

Client: ERM-Bellevue

Project: Seattle ANG GW Sampling

Project Number: 6091.20

Laboratory Work Order: B010354

(Amended Report)

October 24, 2000

North Creek Analytical, Inc.
11720 North Creek Parkway North, Suite 400
Bothell, WA 98011-8223

Phone: (425) 420-9200
FAX: (425) 420-9210

KCSlip4 43781

SEA410311

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Preparation Bench Sheets	**000094**	**000095**		
Chain of Custody	**000096**	**000096**		

KCSlip4 43782

SEA410312

Case Narrative **(Amended)**

Sample Receiving

Nine water samples were collected 09/13/00 between 08:45 – 11:35. The samples were received at North Creek Analytical, Inc. (NCA) on 09/14/00 with all of the containers intact at a temperature of 1.0°C. The established acceptance criteria for sample storage is 4 +/- 2° C. A trip blank was not received with the samples.

Sample Preparation

- **EPA 5030B/8260B** – These samples were preserved in the field and then aliquots of 10 mLs were analyzed in the laboratory in one analytical batch (0117010) in accordance with EPA 5030B/8260B.

Analysis

- **EPA 5030B/8260B** – The samples were analyzed in accordance with EPA 8260B at an aliquot of 10 mLs. All of the samples were analyzed without the performance of any dilutions.

  The calibration for 1,1-Dichloroethene associated with the samples in this work order, was updated on 19 October 2000. Correspondingly, the 1,1-Dichloroethene results for the continuing calibration checks, samples, and associated quality control were updated to reflect this change.

Quality Assurance

- **EPA 5030B/8260B** – The samples were analyzed in one analytical batch (0117010). All of the recoveries for the monitored target analytes were within the established acceptance criterion.

  0117010-MS1/MSD1 - Batch QC samples were used for the matrix spike/matrix spike duplicate samples. Insufficient sample volumes were provided for site specific QC on this work order.

" I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signatures:"

D. A. Wunderlich 10/24/00

Prepared by Dave Wunderlich, QA Manager

10/24/00

Reviewed by Anne Conrad, QA Associate

KCSlip4 43783

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BGA-20-30	B0I0354-01	Water	09/13/00 08:45	09/14/00 17:20
BGA-20-40	B0I0354-02	Water	09/13/00 09:05	09/14/00 17:20
BGA-21-12.5	B0I0354-03	Water	09/13/00 09:40	09/14/00 17:20
BGA-21-15	B0I0354-04	Water	09/13/00 10:00	09/14/00 17:20
BGA-21-17.5	B0I0354-05	Water	09/13/00 10:10	09/14/00 17:20
BGA-21-20	B0I0354-06	Water	09/13/00 10:25	09/14/00 17:20
BGA-21-25	B0I0354-07	Water	09/13/00 10:35	09/14/00 17:20
BGA-21-30	B0I0354-08	Water	09/13/00 10:50	09/14/00 17:20
BGA-21-12.5	B0I0354-09	Water	09/13/00 11:35	09/14/00 17:20

North Creek Analytical - Bothell

Kirk Gendron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:24

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-20-30 (B0I0354-01) Water Sampled: 09/13/00 08:45 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-20-40 (B0I0354-02) Water Sampled: 09/13/00 09:05 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	

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Kirk Gendron, Project Manager

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ERM-Bellevue
915-118th Avenue S.E., Suite 130
Bellevue WA, 98005

Project: Seattle ANG GW Sampling
Project Number: 6091.20
Project Manager: Rob Leet

Reported:
10/24/00 14:24

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-20-40 (B0I0354-02) Water Sampled: 09/13/00 09:05 Received: 09/14/00 17:20									
Surrogate: Toluene-d8	*100 %*	*80-120*			*0I17010*	*09/17/00*	*09/18/00*	*EPA 8260B*	
Surrogate: 4-BFB	*99.5 %*	*80-120*			"	"	"	"	
BGA-21-12.5 (B0I0354-03) Water Sampled: 09/13/00 09:40 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**8.86**	1.00	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**29.1**	1.00	"	"	"	"	"	"	J
Vinyl chloride	ND	0.500	"	"	"	"	"	"	UJ
Surrogate: 1,2-DCA-d4	*107 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-21-15 (B0I0354-04) Water Sampled: 09/13/00 10:00 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1.16**	1.00	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

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Kirk Gehron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:24

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-21-15 (B0I0354-04) Water Sampled: 09/13/00 10:00 Received: 09/14/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	UJ
Trichloroethene	**3.70**	1.00	"	"	"	"	"	"	J
Vinyl chloride	ND	0.500	"	"	"	"	"	"	UJ
Surrogate: 1,2-DCA-d4	*104 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*99.5 %*	*80-120*			"	"	"	"	
BGA-21-17.5 (B0I0354-05) Water Sampled: 09/13/00 10:10 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1.87**	1.00	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*101 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*102 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:24

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-21-20 (B0I0354-06) Water Sampled: 09/13/00 10:25 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*103 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*103 %*	*80-120*			"	"	"	"	
BGA-21-25 (B0I0354-07) Water Sampled: 09/13/00 10:35 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*106 %*	*60-130*			"	"	"	"	

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:24

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-21-25 (B0I0354-07) Water Sampled: 09/13/00 10:35 Received: 09/14/00 17:20									
Surrogate: Toluene-d8	*99.0 %*	*80-120*			*0I17010*	*09/17/00*	*09/18/00*	*EPA 8260B*	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-21-30 (B0I0354-08) Water Sampled: 09/13/00 10:50 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*107 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
BGA-21-12.5 (B0I0354-09) Water Sampled: 09/13/00 11:35 Received: 09/14/00 17:20									
Bromodichloromethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**3.40**	1.00	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue
915-118th Avenue S.E., Suite 130
Bellevue WA, 98005

Project: Seattle ANG GW Sampling
Project Number: 6091.20
Project Manager: Rob Leet

Reported:
10/24/00 14:24

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BGA-21-12.5 (B0I0354-09) Water Sampled: 09/13/00 11:35 Received: 09/14/00 17:20									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I17010	09/17/00	09/18/00	EPA 8260B	UJ
Trichloroethene	**16.6**	1.00	"	"	"	"	"	"	J
Vinyl chloride	ND	0.500	"	"	"	"	"	"	UJ
Surrogate: 1,2-DCA-d4	*108 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 10/24/00 14:24

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I17010: Prepared 09/17/00 Using EPA 5030B [P/T]										
Blank (0I17010-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*21.5*		"	*20.0*		*108*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*20.4*		"	*20.0*		*102*	*80-120*			
LCS (0I17010-BS1)										
Chlorobenzene	8.83	1.00	ug/l	10.0		88.3	80-120			
1,1-Dichloroethene	8.84	1.00	"	10.0		88.4	60-140			
Trichloroethene	9.11	1.00	"	10.0		91.1	70-130			
Surrogate: 1,2-DCA-d4	*22.2*		"	*20.0*		*111*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*19.3*		"	*20.0*		*96.5*	*80-120*			

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:24

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I17010: Prepared 09/17/00 Using EPA 5030B [P/T]										
Matrix Spike (0I17010-MS1)					**Source: B0I0240-01**					
Chlorobenzene	8.21	1.00	ug/l	10.0	ND	82.1	80-120			
1,1-Dichloroethene	7.21	1.00	"	10.0	ND	72.1	60-140			
Trichloroethene	11.3	1.00	"	10.0	ND	113	70-130			
Surrogate: 1,2-DCA-d4	*25.7*		"	*20.0*		*129*	*60-130*			
Surrogate: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*80-120*			
Surrogate: 4-BFB	*19.9*		"	*20.0*		*99.5*	*80-120*			
Matrix Spike Dup (0I17010-MSD1)					**Source: B0I0240-01**					
Chlorobenzene	8.23	1.00	ug/l	10.0	ND	82.3	80-120	0.243	15	
1,1-Dichloroethene	7.19	1.00	"	10.0	ND	71.9	60-140	0.278	30	
Trichloroethene	9.89	1.00	"	10.0	ND	98.9	70-130	13.3	20	
Surrogate: 1,2-DCA-d4	*24.5*		"	*20.0*		*123*	*60-130*			
Surrogate: Toluene-d8	*20.0*		"	*20.0*		*100*	*80-120*			
Surrogate: 4-BFB	*20.1*		"	*20.0*		*101*	*80-120*			

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG GW Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 10/24/00 14:24

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Management

CHAIN OF CUSTODY RECORD

NO: 1131

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B0I0354

Page 1 of 1

PROJECT #	PROJECT NAME
091.20	Seattle AUG - BGA

SAMPLER: (PRINT NAME)	(SIGNATURE)
Chris Bailey	Chris Bailey

RECEIVING LABORATORY: NCA - Bothell

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	REQUESTED PARAMETERS: 8260 VOCs			
GA-20-30	9/13/00	845		\	Peri Pump	HCl	Y	120mL	3		\		\			01
GA-20-40	9/13/00	905		\	↓	↓	↓	↓	3		\		\			02
GA-21-12.5	9/13/00	940		\	↓	↓	↓	↓	3		\		\			03
GA-21-15	9/13/00	1000		\	↓	↓	↓	↓	3		\		\			04
GA-21-17.5	9/13/00	1010		\	↓	↓	↓	↓	3		\		\			05
GA-21-20	9/13/00	1025		\	↓	↓	↓	↓	3		\		\			06
GA-21-25	9/13/00	1035		\	↓	↓	↓	↓	3		\		\			07
GA-21-30	9/13/00	1050		\	↓	↓	↓	↓	3		\		\			08
GA-22-12.5	9/13/00	1135		\	↓	↓	↓	↓	3		\		\			09

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
Chris Bailey	9/13/00	1340	Bill [illegible] NCA	9/14/00	14:30
Bill [illegible] NCA	9/14/00	17:20	S. Lyakumovich NCA	9/14/00	17:20

FIELD REMARKS: Report in Level IV Deliverable

REMARKS ON SAMPLE RECEIPT: ☐ BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED ☐ PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS:

SEND REPORT TO: Rob Leet

WHI ABOF Y CO C Y - FIE DPY PINK - BASE AGEF GOL TOJE

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RCL 6091.20

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CASE NARRATIVE for B0I0435

Client: ERM-Bellevue
Project Manager: Rob Leet
Project Name: Seattle ANG
Project Number: 6091.20

1.0 DESCRIPTION OF CASE

Twenty-six water samples were submitted for analysis of Volatile Organic Compounds by EPA 8260B.

2.0 COMMENTS ON SAMPLE RECEIPT

Samples were received and logged in on September 18, 2000. The samples were received at a temperature of 1.0 degree C, which is outside the EPA established control limits of 4 degrees +/- 2.

3.0 PREPARATIONS AND ANALYSIS

Volatile Organic Compounds by EPA 8260B

There were no anomalies associated with the preparation and analysis of this method.

"I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature."

Kirk Gendron
Project Manager
North Creek Analytical

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/25/00 14:03

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-091400-1	B0I0435-01	Water	09/14/00 12:00	09/18/00 21:02
SL-1A	B0I0435-02	Water	09/14/00 10:05	09/18/00 21:02
SL-1B	B0I0435-03	Water	09/14/00 10:15	09/18/00 21:02
SL-2A	B0I0435-04	Water	09/14/00 10:25	09/18/00 21:02
SL-2B	B0I0435-05	Water	09/14/00 10:30	09/18/00 21:02
SL-3A	B0I0435-06	Water	09/14/00 10:45	09/18/00 21:02
SL-3B	B0I0435-07	Water	09/14/00 10:50	09/18/00 21:02
SL-4A	B0I0435-08	Water	09/14/00 11:00	09/18/00 21:02
SL-4B	B0I0435-09	Water	09/14/00 11:05	09/18/00 21:02
SL-5A	B0I0435-10	Water	09/14/00 11:15	09/18/00 21:02
SL-5B	B0I0435-11	Water	09/14/00 11:25	09/18/00 21:02
SL-6A	B0I0435-12	Water	09/14/00 11:30	09/18/00 21:02
SL-6B	B0I0435-13	Water	09/14/00 11:35	09/18/00 21:02
SL-6BD	B0I0435-14	Water	09/14/00 11:35	09/18/00 21:02
SL-7B	B0I0435-15	Water	09/14/00 11:50	09/18/00 21:02
SL-8A	B0I0435-16	Water	09/14/00 12:00	09/18/00 21:02
SL-8B	B0I0435-17	Water	09/14/00 12:05	09/18/00 21:02
SL-9A	B0I0435-18	Water	09/14/00 12:15	09/18/00 21:02
SL-9B	B0I0435-19	Water	09/14/00 12:25	09/18/00 21:02
SL-10A	B0I0435-20	Water	09/14/00 12:55	09/18/00 21:02
SL-10B	B0I0435-21	Water	09/14/00 13:00	09/18/00 21:02
SL-11B	B0I0435-22	Water	09/14/00 13:10	09/18/00 21:02
SL-12B	B0I0435-23	Water	09/14/00 13:20	09/18/00 21:02
SL-7A	B0I0435-24	Water	09/15/00 07:20	09/18/00 21:02
SL-7AFT	B0I0435-25	Water	09/15/00 07:40	09/18/00 21:02
SL-7AFA	B0I0435-26	Water	09/15/00 07:45	09/18/00 21:02

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ERM-Bellevue	Project: Seattle ANGS Soil Lysimeter Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TB-091400-1 (B0I0435-01) Water Sampled: 09/14/00 12:00 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*85.2 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.2 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
SL-1A (B0I0435-02) Water Sampled: 09/14/00 10:05 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*80.0 %*	*60-130*			"	"	"	"	

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ERM-Bellevue
915-118th Avenue S.E., Suite 130
Bellevue WA, 98005

Project: Seattle ANGS Soil Lysimeter Sampling
Project Number: 6091.20
Project Manager: Rob Lect

Reported:
09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SL-1A (B0I0435-02) Water Sampled: 09/14/00 10:05 Received: 09/18/00 21:02									
Surrogate: Toluene-d8	*99.5 %*	*80-120*			*0I20031*	*09/20/00*	*09/21/00*	*EPA 8260B*	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
SL-1B (B0I0435-03) Water Sampled: 09/14/00 10:15 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*82.5 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*103 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*98.2 %*	*80-120*			"	"	"	"	
SL-2A (B0I0435-04) Water Sampled: 09/14/00 10:25 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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541.383.9310 fax 541.382.7588

ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SL-2A (B0I0435-04) Water Sampled: 09/14/00 10:25 Received: 09/18/00 21:02									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*82.3 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*104 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*99.0 %*	*80-120*			"	"	"	"	
SL-2B (B0I0435-05) Water Sampled: 09/14/00 10:30 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*81.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.0 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*97.7 %*	*80-120*			"	"	"	"	

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ERM-Bellevue
915-118th Avenue S.E., Suite 130
Bellevue WA, 98005

Project: Seattle ANGS Soil Lysimeter Sampling
Project Number: 6091.20
Project Manager: Rob Leet

Reported:
09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SL-3A (B0I0435-06) Water Sampled: 09/14/00 10:45 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**1.20**	1.00	"	"	"	"	"	"	J
Vinyl chloride	ND	0.500	"	"	"	"	"	"	UJ
Surrogate: 1,2-DCA-d4	*78.8 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*99.5 %*	*80-120*			"	"	"	"	
SL-3B (B0I0435-07) Water Sampled: 09/14/00 10:50 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**2.73**	1.00	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**21.4**	1.00	"	"	"	"	"	"	J
Vinyl chloride	ND	0.500	"	"	"	"	"	"	UJ
Surrogate: 1,2-DCA-d4	*81.3 %*	*60-130*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SL-3B (B0I0435-07) Water Sampled: 09/14/00 10:50 Received: 09/18/00 21:02									
Surrogate: Toluene-d8	*101 %*	*80-120*			*0I20031*	*09/20/00*	*09/21/00*	*EPA 8260B*	
Surrogate: 4-BFB	*97.5 %*	*80-120*			"	"	"	"	
SL-4A (B0I0435-08) Water Sampled: 09/14/00 11:00 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*80.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
SL-4B (B0I0435-09) Water Sampled: 09/14/00 11:05 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SL-4B (B0I0435-09) Water Sampled: 09/14/00 11:05 Received: 09/18/00 21:02									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*83.2 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*104 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*98.0 %*	*80-120*			"	"	"	"	
SL-5A (B0I0435-10) Water Sampled: 09/14/00 11:15 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*80.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*101 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SL-5B (B0I0435-11) Water Sampled: 09/14/00 11:25 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*78.8 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.8 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*95.2 %*	*80-120*			"	"	"	"	
SL-6A (B0I0435-12) Water Sampled: 09/14/00 11:30 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*82.0 %*	*60-130*			"	"	"	"	

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ERM-Bellevue
915-118th Avenue S.E., Suite 130
Bellevue WA, 98005

Project: Seattle ANGS Soil Lysimeter Sampling
Project Number: 6091.20
Project Manager: Rob Leet

Reported:
09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SL-6A (B0I0435-12) Water Sampled: 09/14/00 11:30 Received: 09/18/00 21:02									
Surrogate: Toluene-d8	*99.0 %*	*80-120*			*0I20031*	*09/20/00*	*09/21/00*	*EPA 8260B*	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
SL-6B (B0I0435-13) Water Sampled: 09/14/00 11:35 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*79.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*97.3 %*	*80-120*			"	"	"	"	
SL-6BD (B0I0435-14) Water Sampled: 09/14/00 11:35 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SL-6BD (B0I0435-14) Water Sampled: 09/14/00 11:35 Received: 09/18/00 21:02									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*76.3 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.8 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*99.0 %*	*80-120*			"	"	"	"	
SL-7B (B0I0435-15) Water Sampled: 09/14/00 11:50 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*77.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*97.7 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SL-8A (B0I0435-16) Water Sampled: 09/14/00 12:00 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20031	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*80.2 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*102 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*101 %*	*80-120*			"	"	"	"	
SL-8B (B0I0435-17) Water Sampled: 09/14/00 12:05 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20040	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	**1.03**	1.00	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	**10.2**	1.00	"	"	"	"	"	"	J
Vinyl chloride	ND	0.500	"	"	"	"	"	"	UJ
Surrogate: 1,2-DCA-d4	*99.0 %*	*60-130*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SL-8B (B0I0435-17) Water Sampled: 09/14/00 12:05 Received: 09/18/00 21:02									
Surrogate: Toluene-d8	*101 %*	*80-120*			*0I20040*	*09/20/00*	*09/21/00*	*EPA 8260B*	
Surrogate: 4-BFB	*108 %*	*80-120*			"	"	"	"	
SL-9A (B0I0435-18) Water Sampled: 09/14/00 12:15 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20040	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*98.8 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*109 %*	*80-120*			"	"	"	"	
SL-9B (B0I0435-19) Water Sampled: 09/14/00 12:25 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20040	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SL-9B (B0I0435-19) Water Sampled: 09/14/00 12:25 Received: 09/18/00 21:02									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I20040	09/20/00	09/21/00	EPA 8260B	UJ
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.8 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.3 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*109 %*	*80-120*			"	"	"	"	
SL-10A (B0I0435-20) Water Sampled: 09/14/00 12:55 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20040	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.3 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.3 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*108 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SL-10B (B0I0435-21) Water Sampled: 09/14/00 13:00 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20040	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.0 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.8 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*109 %*	*80-120*			"	"	"	"	
SL-11B (B0I0435-22) Water Sampled: 09/14/00 13:10 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20040	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.0 %*	*60-130*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SL-11B (B0I0435-22) Water Sampled: 09/14/00 13:10 Received: 09/18/00 21:02									
Surrogate: Toluene-d8	*99.8 %*	*80-120*			*0I20040*	*09/20/00*	*09/21/00*	*EPA 8260B*	
Surrogate: 4-BFB	*109 %*	*80-120*			"	"	"	"	
SL-12B (B0I0435-23) Water Sampled: 09/14/00 13:20 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20040	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*100 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*97.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*109 %*	*80-120*			"	"	"	"	
SL-7A (B0I0435-24) Water Sampled: 09/15/00 07:20 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I20040	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Bothell

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ERM-Bellevue	Project: Seattle ANGS Soil Lysimeter Sampling	
915-118th Avenue S.E., Suite 130	Project Number: 6091.20	**Reported:**
Bellevue WA, 98005	Project Manager: Rob Leet	09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SL-7A (B0I0435-24) Water Sampled: 09/15/00 07:20 Received: 09/18/00 21:02									
1,1,1-Trichloroethane	ND	1.00	ug/l	1	0I20040	09/20/00	09/21/00	EPA 8260B	UJ
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.3 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*98.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*108 %*	*80-120*			"	"	"	"	
SL-7AFT (B0I0435-25) Water Sampled: 09/15/00 07:40 Received: 09/18/00 21:02									
Bromodichloromethane	1.73	1.00	ug/l	1	0I20040	09/20/00	09/21/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*99.3 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*99.5 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*109 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SL-7AFA (B0I0435-26) Water Sampled: 09/15/00 07:45 Received: 09/18/00 21:02									
Bromodichloromethane	ND	1.00	ug/l	1	0I24029	09/21/00	09/22/00	EPA 8260B	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	0.500	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*109 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*100 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I20031: Prepared 09/20/00 Using EPA 5030B [P/T]										
Blank (0I20031-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*32.6*		"	*40.0*		*81.5*	*60-130*			
Surrogate: Toluene-d8	*38.6*		"	*40.0*		*96.5*	*80-120*			
Surrogate: 4-BFB	*39.4*		"	*40.0*		*98.5*	*80-120*			
LCS (0I20031-BS1)										
Chlorobenzene	17.1	1.00	ug/l	20.0		85.5	80-120			
1,1-Dichloroethene	17.2	1.00	"	20.0		86.0	60-140			
Trichloroethene	18.0	1.00	"	20.0		90.0	70-130			
Surrogate: 1,2-DCA-d4	*32.7*		"	*40.0*		*81.8*	*60-130*			
Surrogate: Toluene-d8	*39.2*		"	*40.0*		*98.0*	*80-120*			
Surrogate: 4-BFB	*38.6*		"	*40.0*		*96.5*	*80-120*			

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Lect	Reported: 09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I20031: Prepared 09/20/00 Using EPA 5030B [P/T]										
Matrix Spike (0I20031-MS1)					Source: B0I0435-02					
Chlorobenzene	17.9	1.00	ug/l	20.0	ND	89.5	80-120			
1,1-Dichloroethene	16.0	1.00	"	20.0	ND	80.0	60-140			
Trichloroethene	19.0	1.00	"	20.0	ND	95.0	70-130			
Surrogate: 1,2-DCA-d4	*33.0*		"	*40.0*		*82.5*	*60-130*			
Surrogate: Toluene-d8	*40.2*		"	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*38.5*		"	*40.0*		*96.3*	*80-120*			
Matrix Spike Dup (0I20031-MSD1)					Source: B0I0435-02					
Chlorobenzene	17.7	1.00	ug/l	20.0	ND	88.5	80-120	1.12	15	
1,1-Dichloroethene	17.0	1.00	"	20.0	ND	85.0	60-140	6.06	30	
Trichloroethene	17.9	1.00	"	20.0	ND	89.5	70-130	5.96	20	
Surrogate: 1,2-DCA-d4	*33.6*		"	*40.0*		*84.0*	*60-130*			
Surrogate: Toluene-d8	*40.2*		"	*40.0*		*101*	*80-120*			
Surrogate: 4-BFB	*39.4*		"	*40.0*		*98.5*	*80-120*			
Batch 0I20040: Prepared 09/20/00 Using EPA 5030B [P/T]										
Blank (0I20040-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Vinyl chloride	ND	0.500	"							
Surrogate: 1,2-DCA-d4	*39.4*		"	*40.0*		*98.5*	*60-130*			
Surrogate: Toluene-d8	*40.2*		"	*40.0*		*101*	*80-120*			

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	Reported: 09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I20040: Prepared 09/20/00 Using EPA 5030B [P/T]										
Blank (0I20040-BLK1)										
Surrogate: 4-BFB	*44.0*		*ug/l*	*40.0*		*110*	*80-120*			
LCS (0I20040-BS1)										
Chlorobenzene	20.3	1.00	ug/l	20.0		101	80-120			
1,1-Dichloroethene	19.0	1.00	"	20.0		95.0	60-140			
Trichloroethene	20.6	1.00	"	20.0		103	70-130			
Surrogate: 1,2-DCA-d4	*40.9*		*"*	*40.0*		*102*	*60-130*			
Surrogate: Toluene-d8	*40.0*		*"*	*40.0*		*100*	*80-120*			
Surrogate: 4-BFB	*37.7*		*"*	*40.0*		*94.3*	*80-120*			
LCS Dup (0I20040-BSD1)										
Chlorobenzene	20.1	1.00	ug/l	20.0		101	80-120	0.990	15	
1,1-Dichloroethene	18.7	1.00	"	20.0		93.5	60-140	1.59	30	
Trichloroethene	20.3	1.00	"	20.0		101	70-130	1.47	20	
Surrogate: 1,2-DCA-d4	*40.7*		*"*	*40.0*		*102*	*60-130*			
Surrogate: Toluene-d8	*39.7*		*"*	*40.0*		*99.3*	*80-120*			
Surrogate: 4-BFB	*38.0*		*"*	*40.0*		*95.0*	*80-120*			
Batch 0I24029: Prepared 09/21/00 Using EPA 5030B [P/T]										
Blank (0I24029-BLK1)										
Bromodichloromethane	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/25/00 14:03

Volatile Organic Compounds (Special List) by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0I24029: Prepared 09/21/00 Using EPA 5030B [P/T]										
Blank (0I24029-BLK1)										
Vinyl chloride	ND	0.500	ug/l							
Surrogate: 1,2-DCA-d4	*21.8*		"	*20.0*		*109*	*60-130*			
Surrogate: Toluene-d8	*19.9*		"	*20.0*		*99.5*	*80-120*			
Surrogate: 4-BFB	*20.9*		"	*20.0*		*104*	*80-120*			
LCS (0I24029-BS1)										
Chlorobenzene	9.37	1.00	ug/l	10.0		93.7	80-120			
1,1-Dichloroethene	10.0	1.00	"	10.0		100	60-140			
Trichloroethene	9.72	1.00	"	10.0		97.2	70-130			
Surrogate: 1,2-DCA-d4	*20.1*		"	*20.0*		*101*	*60-130*			
Surrogate: Toluene-d8	*20.3*		"	*20.0*		*101*	*80-120*			
Surrogate: 4-BFB	*20.2*		"	*20.0*		*101*	*80-120*			
Matrix Spike (0I24029-MS1)					**Source: B0I0471-02**					
Chlorobenzene	8.60	1.00	ug/l	10.0	ND	86.0	80-120			
1,1-Dichloroethene	8.55	1.00	"	10.0	ND	85.5	60-140			
Trichloroethene	8.72	1.00	"	10.0	ND	87.2	70-130			
Surrogate: 1,2-DCA-d4	*21.3*		"	*20.0*		*106*	*60-130*			
Surrogate: Toluene-d8	*19.7*		"	*20.0*		*98.5*	*80-120*			
Surrogate: 4-BFB	*20.3*		"	*20.0*		*101*	*80-120*			
Matrix Spike Dup (0I24029-MSD1)					**Source: B0I0471-02**					
Chlorobenzene	9.32	1.00	ug/l	10.0	ND	93.2	80-120	8.04	15	
1,1-Dichloroethene	9.14	1.00	"	10.0	ND	91.4	60-140	6.67	30	
Trichloroethene	9.55	1.00	"	10.0	ND	95.5	70-130	9.09	20	
Surrogate: 1,2-DCA-d4	*21.8*		"	*20.0*		*109*	*60-130*			
Surrogate: Toluene-d8	*19.6*		"	*20.0*		*98.0*	*80-120*			
Surrogate: 4-BFB	*21.1*		"	*20.0*		*106*	*80-120*			

North Creek Analytical - Bothell

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Kirk Gehdron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANGS Soil Lysimeter Sampling Project Number: 6091.20 Project Manager: Rob Leet	**Reported:** 09/25/00 14:03

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

Environmental Resources Management

CHAIN OF CUSTODY RECORD

BOBOYSS

NO: 1144

Page 1 of 3

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PROJECT #	PROJECT NAME
6091.20	SEATTLE AVES SOIL LYSIMETER SAMPLING

SAMPLER: (PRINT NAME)	(SIGNATURE)
DAVID S BETTS	David S. Betts

RECEIVING LABORATORY

NCA
BATHELL, WA

REQUESTED PARAMETERS: 8260 VOCS

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	SOIL	WATER	GAS	8260 VOCS										
091400-1	9/14/00	—	—	—	LAB SUPPLIED	HCL	Y	80 ml	2		X		X										-01
L-1A		1005		X	BETE WETTON LYSIMETER			120 ml	3														-02
L-1B		1015																					-03
L-2A		1025																					-04
L-2B		1030																					-05
L-3A		1045																					-06
L-3B		1050																					-07
L-4A		1100																					-08
L-4B		1105																					-09
L-5A		1115																					-20

PSA

PSA

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
David S. Betts	9/15/00	1140	Bill K NCA	9/15/00	11:40
Bill K NCA	9-15-00	14:35	M. Hutchins	9/15/00	14:35

FIELD REMARKS: 1.0° w/o

REMARKS ON SAMPLE RECEIPT

BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED
PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS

SEND REPORT TO: R. LEET

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Environmental Resources Management

CHAIN OF CUSTODY RECORD

BOI0435

NO: 1145

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PROJECT #	PROJECT NAME
0091.70	SEATTLE ANGS SOIL LYSIMETER SAMPLING

SAMPLER: (PRINT NAME)	(SIGNATURE)
DAVID S. BETTS	[signature]

RECEIVING LABORATORY

NCA
BATHELL, WA

REQUESTED PARAMETERS: 8260 VOCs

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	8260 VOCs										
-5B	9/14/00	1125		X	SUCTION SOIL LYSIMETER	HCL	Y	120ml	3		X		X										-11
-6A		1130																					-12
-6B		1135																					-13
-6BD		1135						80 ml	2														-14
-7B		1150						120 ml	3														-15
-8A		1200																					-16
-8B		1205																					-17
-9A		1215																					-18
-9B		1225																				-19	-19
-10A		1255																					-20

DSB

DSB

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9/15/00	1140	[signature]	9/15/00	1140
[signature] NCA	9-15-00	1435	M. Hutchins	9/15/00	1435

FIELD REMARKS: 1.0" N/O

REMARKS ON SAMPLE RECEIPT: BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED; PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS

SEND REPORT TO: R. LEET

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Environmental Resources Management

CHAIN OF CUSTODY RECORD

NO: 1146

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PROJECT #	PROJECT NAME
6091.20	SEATTLE ANES SOIL LYSIMETER SAMPLING

SAMPLER: (PRINT NAME)	(SIGNATURE)
DAVID S. BETB	[signature]

RECEIVING LABORATORY

NCA
BOTHELL, WA

REQUESTED PARAMETERS: 8260 VOCS

SAMPLE I.D.	DATE	TIME	COMP	GRAB	SAMPLING METHOD	PRESERVATIVE	ICE (Y/N)	SAMPLING VOLUME	# OF CONTAINERS	MATRIX: SOIL	MATRIX: WATER	MATRIX: GAS	8260 VOCS	
-10B	9/14/00	1300		X	SUCTION ~~SOIL~~ LYSIMETER	HCL	Y	120ml	3		X		X	-21
-11B	↓	1310		↓	↓	↓	↓	↓	↓		↓		↓	-22
-12B	↓	1320		↓	↓	↓	↓	↓	↓		↓		↓	-23
-7A	9/15/00	0720		↓	↓	↓	↓	80ml	2		↓		↓	-24
-7AFT	↓	0740		↓	HAND	↓	↓	↓	3		↓		↓	-25
-7AFA	↓	0745		↓	↓	↓	↓	↓	3		↓		↓	-26

DSB

DSB

DSB

LINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9/15/00	1140	[signature] NCA	9/15/00	11:40
[signature] NCA	9/15/00	14:35	[signature]	9/15/00	14:35

FIELD REMARKS: 1.0° w/o

REMARKS ON SAMPLE RECEIPT

BOTTLE INTACT ☐ CUSTODY SEALS ☐ CHILLED
PRESERVED ☐ SEALS INTACT ☐ SEE REMARKS

ERM REMARKS

SEND REPORT TO: R. LEET

WHITE ORA COPY CAN FIELD BY NK-C ASE NUMBER GOLD OBJECT

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SEA410350

6091.20 RL

Data Package

Client: ERM-Bellevue

Project: Seattle ANG

Laboratory Work Order: B0J0362

November 10, 2000

North Creek Analytical, Inc.
11720 North Creek Parkway North, Suite 400
Bothell, WA 98011-8223

Phone: (425) 420-9200
FAX: (425) 420-9210

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SEA410351

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Chain of Custody	000095	000095		----	

Case Narrative

Sample Receiving

Three water samples and one trip blank were collected 10/13/00 between 10:20 and 11:05. The samples were received at North Creek Analytical, Inc. (NCA) on 10/13/00 with all of the containers intact at a temperature of 2.3°C.

Sample Preparation

- **EPA 5030B/8260B** – The samples were preserved in the field and then standard aliquots of 5 mL were analyzed in the laboratory in one analytical batch (0J23017) in accordance with EPA 5030B/8260B.

Analysis

- **EPA 5030B/8260B** – The samples were analyzed in accordance with EPA 8260B at standard aliquots of 5 mL. The samples were analyzed without the performance of any dilutions.

  The concentration of bromomethane in the continuing calibration check associated with the samples was less than the lower control limit. The concentration of acetone in the calibration check was greater than the upper control limit. Since none of these compounds were detected in the samples, no corrective action was taken.

  0J23017-BLK1: Bromomethane was detected in the blank at a concentration greater than the reporting limit. Since bromomethane was not detected in any of the samples, no further corrective action was taken.

Quality Assurance

- **EPA 5030B/8260B** – The samples were analyzed in one analytical batch (0J23017). All of the recoveries for the monitored target analytes were within the established acceptance criterion.

" I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signatures:"

11/10/00

Prepared by Anne Conrad, QA Associate

D. A. Wunderlich 11/13/00

Reviewed by Dave Wunderlich, QA Manager

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SEA410353

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ERM-Bellevue
915-118th Avenue S.E., Suite 130
Bellevue WA, 98005

Project: Seattle ANG
Project Number: [none]
Project Manager: Rob Leet

Reported:
10/26/00 16:05

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB101300-1	B0J0362-01	Water	10/13/00 12:00	10/13/00 15:45
MW-11-00-1	B0J0362-02	Water	10/13/00 11:05	10/13/00 15:45
MW-12-00-1	B0J0362-03	Water	10/13/00 11:45	10/13/00 15:45
MW-13-00-1	B0J0362-04	Water	10/13/00 10:20	10/13/00 15:45

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG Project Number: [none] Project Manager: Rob Leet	Reported: 10/26/00 16:05

Volatile Organic Compounds by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TB101300-1 (B0J0362-01) Water Sampled: 10/13/00 12:00 Received: 10/13/00 15:45									
Acetone	ND	10.0	ug/l	1	0J23017	10/22/00	10/23/00	EPA 8260B	UJ
Benzene	ND	1.00	"	"	"	"	"	"	
Bromobenzene	ND	1.00	"	"	"	"	"	"	
Bromochloromethane	ND	1.00	"	"	"	"	"	"	UJ
Bromodichloromethane	ND	1.00	"	"	"	"	"	"	UJ
Bromoform	ND	1.00	"	"	"	"	"	"	UJ
Bromomethane	ND	1.00	"	"	"	"	"	"	UJ
2-Butanone	ND	10.0	"	"	"	"	"	"	
n-Butylbenzene	ND	1.00	"	"	"	"	"	"	
sec-Butylbenzene	ND	1.00	"	"	"	"	"	"	
tert-Butylbenzene	ND	1.00	"	"	"	"	"	"	UJ
Carbon disulfide	ND	1.00	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	UJ
Chloroform	ND	5.00	"	"	"	"	"	"	
Chloromethane	ND	1.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	1.00	"	"	"	"	"	"	UJ
4-Chlorotoluene	ND	1.00	"	"	"	"	"	"	UJ
Dibromochloromethane	ND	5.00	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	1.00	"	"	"	"	"	"	
1,2-Dibromoethane	ND	1.00	"	"	"	"	"	"	
Dibromomethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1.00	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	UJ
1,1-Dichloropropene	ND	1.00	"	"	"	"	"	"	UJ
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	

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ERM-Bellevue
015-118th Avenue S.E., Suite 130
Bellevue WA, 98005

Project: Seattle ANG
Project Number: [none]
Project Manager: Rob Leet

Reported:
10/26/00 16:05

Volatile Organic Compounds by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TB101300-1 (B0J0362-01) Water	**Sampled: 10/13/00 12:00**	**Received: 10/13/00 15:45**							
Ethylbenzene	ND	1.00	ug/l	1	0J23017	10/22/00	10/23/00	EPA 8260B	UJ
Hexachlorobutadiene	ND	1.00	"	"	"	"	"	"	
2-Hexanone	ND	10.0	"	"	"	"	"	"	
Isopropylbenzene	ND	1.00	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1.00	"	"	"	"	"	"	UJ
Methylene chloride	ND	5.00	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	10.0	"	"	"	"	"	"	
Naphthalene	ND	1.00	"	"	"	"	"	"	
n-Propylbenzene	ND	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	UJ
1,1,1,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
Toluene	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	UJ
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
m,p-Xylene	ND	2.00	"	"	"	"	"	"	
o-Xylene	ND	1.00	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*110 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*102 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*104 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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North Creek Analytical, Inc.
Environmental Laboratory Network

KCSlip4 43826

SEA410356

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG Project Number: [none] Project Manager: Rob Leet	Reported: 10/26/00 16:05

Volatile Organic Compounds by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-11-00-1 (B0J0362-02) Water Sampled: 10/13/00 11:05 Received: 10/13/00 15:45									
Acetone	ND	10.0	ug/l	1	0J23017	10/22/00	10/23/00	EPA 8260B	UJ
Benzene	ND	1.00	"	"	"	"	"	"	
Bromobenzene	ND	1.00	"	"	"	"	"	"	
Bromochloromethane	ND	1.00	"	"	"	"	"	"	
Bromodichloromethane	ND	1.00	"	"	"	"	"	"	UJ
Bromoform	ND	1.00	"	"	"	"	"	"	UJ
Bromomethane	ND	1.00	"	"	"	"	"	"	UJ
2-Butanone	ND	10.0	"	"	"	"	"	"	UJ
n-Butylbenzene	ND	1.00	"	"	"	"	"	"	
sec-Butylbenzene	ND	1.00	"	"	"	"	"	"	
tert-Butylbenzene	ND	1.00	"	"	"	"	"	"	
Carbon disulfide	ND	1.00	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	UJ
2-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
Dibromochloromethane	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dibromo-3-chloropropane	ND	5.00	"	"	"	"	"	"	UJ
1,2-Dibromoethane	ND	1.00	"	"	"	"	"	"	
Dibromomethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	UJ
1,3-Dichloropropane	ND	1.00	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	UJ
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	UJ

North Creek Analytical - Bothell

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG Project Number: [none] Project Manager: Rob Leet	Reported: 10/26/00 16:05

Volatile Organic Compounds by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-11-00-1 (B0J0362-02) Water Sampled: 10/13/00 11:05 Received: 10/13/00 15:45									
Ethylbenzene	ND	1.00	ug/l	1	0J23017	10/22/00	10/23/00	EPA 8260B	
Hexachlorobutadiene	ND	1.00	"	"	"	"	"	"	UJ
2-Hexanone	ND	10.0	"	"	"	"	"	"	
Isopropylbenzene	ND	1.00	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	UJ
4-Methyl-2-pentanone	ND	10.0	"	"	"	"	"	"	
Naphthalene	ND	1.00	"	"	"	"	"	"	
n-Propylbenzene	ND	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	UJ
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
Toluene	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	UJ
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
m,p-Xylene	ND	2.00	"	"	"	"	"	"	
o-Xylene	ND	1.00	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*111 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*102 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*105 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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RM-Bellevue 5-118th Avenue S.E., Suite 130 ellevue WA, 98005	Project: Seattle ANG Project Number: [none] Project Manager: Rob Leet	**Reported:** 10/26/00 16:05

Volatile Organic Compounds by EPA Method 8260B

North Creek Analytical - Bothell

nalyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
IW-12-00-1 (B0J0362-03) Water Sampled: 10/13/00 11:45 Received: 10/13/00 15:45									
cetone	ND	10.0	ug/l	1	0J23017	10/22/00	10/23/00	EPA 8260B	UJ
enzene	ND	1.00	"	"	"	"	"	"	
romobenzene	ND	1.00	"	"	"	"	"	"	
Bromochloromethane	ND	1.00	"	"	"	"	"	"	UJ
romodichloromethane	ND	1.00	"	"	"	"	"	"	UJ
romoform	ND	1.00	"	"	"	"	"	"	UJ
Bromomethane	ND	1.00	"	"	"	"	"	"	UJ
-Butanone	ND	10.0	"	"	"	"	"	"	
-Butylbenzene	ND	1.00	"	"	"	"	"	"	
sec-Butylbenzene	ND	1.00	"	"	"	"	"	"	
tert-Butylbenzene	ND	1.00	"	"	"	"	"	"	
Carbon disulfide	ND	1.00	"	"	"	"	"	"	UJ
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	UJ
Chloromethane	ND	5.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	1.00	"	"	"	"	"	"	UJ
Dibromochloromethane	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dibromo-3-chloropropane	ND	5.00	"	"	"	"	"	"	
1,2-Dibromoethane	ND	1.00	"	"	"	"	"	"	
Dibromomethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	UJ
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1.00	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1.00	"	"	"	"	"	"	UJ
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	UJ
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	

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RM-Bellevue
15-118th Avenue S.E., Suite 130
Bellevue WA, 98005

Project: Seattle ANG
Project Number: [none]
Project Manager: Rob Leet

Reported:
10/26/00 16:05

Volatile Organic Compounds by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
IW-12-00-1 (B0J0362-03) Water Sampled: 10/13/00 11:45 Received: 10/13/00 15:45									
thylbenzene	ND	1.00	ug/l	1	0J23017	10/22/00	10/23/00	EPA 8260B	UJ
lexachlorobutadiene	ND	1.00	"	"	"	"	"	"	
-Hexanone	ND	10.0	"	"	"	"	"	"	
sopropylbenzene	ND	1.00	"	"	"	"	"	"	
-Isopropyltoluene	ND	1.00	"	"	"	"	"	"	UJ
Methylene chloride	ND	5.00	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	10.0	"	"	"	"	"	"	
Naphthalene	ND	1.00	"	"	"	"	"	"	
n-Propylbenzene	ND	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	UJ
1,1,1,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
Toluene	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	UJ
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
m,p-Xylene	ND	2.00	"	"	"	"	"	"	
o-Xylene	ND	1.00	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*111 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*102 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*106 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

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SEA410360

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ERM-Bellevue 15-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG Project Number: [none] Project Manager: Rob Leet	Reported: 10/26/00 16:05

Volatile Organic Compounds by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-13-00-1 (B0J0362-04) Water Sampled: 10/13/00 10:20 Received: 10/13/00 15:45									
Acetone	ND	10.0	ug/l	1	0J23017	10/22/00	10/23/00	EPA 8260B	UJ
Benzene	ND	1.00	"	"	"	"	"	"	
Bromobenzene	ND	1.00	"	"	"	"	"	"	
Bromochloromethane	ND	1.00	"	"	"	"	"	"	
Bromodichloromethane	ND	1.00	"	"	"	"	"	"	UJ
Bromoform	ND	1.00	"	"	"	"	"	"	UJ
Bromomethane	ND	1.00	"	"	"	"	"	"	UJ
2-Butanone	ND	10.0	"	"	"	"	"	"	UJ
n-Butylbenzene	ND	1.00	"	"	"	"	"	"	
sec-Butylbenzene	ND	1.00	"	"	"	"	"	"	
tert-Butylbenzene	ND	1.00	"	"	"	"	"	"	
Carbon disulfide	ND	1.00	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	UJ
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	UJ
2-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	1.00	"	"	"	"	"	"	
Dibromochloromethane	ND	1.00	"	"	"	"	"	"	UJ
1,2-Dibromo-3-chloropropane	ND	5.00	"	"	"	"	"	"	UJ
1,2-Dibromoethane	ND	1.00	"	"	"	"	"	"	
Dibromomethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	UJ
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	UJ
1,3-Dichloropropane	ND	1.00	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	UJ
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	UJ

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ERM-Bellevue
915-118th Avenue S.E., Suite 130
Bellevue WA, 98005

Project: Seattle ANG
Project Number: [none]
Project Manager: Rob Leet

Reported:
10/26/00 16:05

Volatile Organic Compounds by EPA Method 8260B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-13-00-1 (B0J0362-04) Water Sampled: 10/13/00 10:20 Received: 10/13/00 15:45									
Ethylbenzene	ND	1.00	ug/l	1	0J23017	10/22/00	10/23/00	EPA 8260B	UJ
Hexachlorobutadiene	ND	1.00	"	"	"	"	"	"	
2-Hexanone	ND	10.0	"	"	"	"	"	"	
Isopropylbenzene	ND	1.00	"	"	"	"	"	"	
p-Isopropyltoluene	ND	1.00	"	"	"	"	"	"	UJ
Methylene chloride	ND	5.00	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	10.0	"	"	"	"	"	"	
Naphthalene	ND	1.00	"	"	"	"	"	"	
n-Propylbenzene	ND	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	UJ
1,1,1,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
Toluene	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	UJ
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
Trichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
m,p-Xylene	ND	2.00	"	"	"	"	"	"	
o-Xylene	ND	1.00	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	*112 %*	*60-130*			"	"	"	"	
Surrogate: Toluene-d8	*103 %*	*80-120*			"	"	"	"	
Surrogate: 4-BFB	*105 %*	*80-120*			"	"	"	"	

North Creek Analytical - Bothell

Kirk Gandran, Project Manager

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North Creek Analytical, Inc.
Environmental Laboratory Network

Page 9 of 12

KCSlip4 43832

SEA410362

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ERM-Bellevue 15-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG Project Number: [none] Project Manager: Rob Leet	Reported: 10/26/00 16:05

Volatile Organic Compounds by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0J23017: Prepared 10/22/00 Using EPA 5030B [P/T]										
Blank (0J23017-BLK1)										
Acetone	ND	10.0	ug/l							
Benzene	ND	1.00	"							
Bromobenzene	ND	1.00	"							
Bromochloromethane	ND	1.00	"							
Bromodichloromethane	ND	1.00	"							
Bromoform	ND	1.00	"							
Bromomethane	1.07	1.00	"							
2-Butanone	ND	10.0	"							
n-Butylbenzene	ND	1.00	"							
sec-Butylbenzene	ND	1.00	"							
tert-Butylbenzene	ND	1.00	"							
Carbon disulfide	ND	1.00	"							
Carbon tetrachloride	ND	1.00	"							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloroform	ND	5.00	"							
Chloromethane	ND	1.00	"							
2-Chlorotoluene	ND	1.00	"							
4-Chlorotoluene	ND	1.00	"							
Dibromochloromethane	ND	5.00	"							
1,2-Dibromo-3-chloropropane	ND	1.00	"							
1,2-Dibromoethane "	ND	1.00	"							
Dibromomethane	ND	1.00	"							
1,2-Dichlorobenzene	ND	1.00	"							
1,3-Dichlorobenzene	ND	1.00	"							
1,4-Dichlorobenzene	ND	1.00	"							
Dichlorodifluoromethane	ND	1.00	"							
1,1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
1,3-Dichloropropane										

North Creek Analytical - Bothell

Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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SEA410363

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RM-Bellevue 15-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG Project Number: [none] Project Manager: Rob Leet	Reported: 10/26/00 16:05

Volatile Organic Compounds by EPA Method 8260B - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0J23017: Prepared 10/22/00 Using EPA 5030B [P/T]										
Blank (0J23017-BLK1)										
1,2-Dichloropropane	ND	1.00	ug/l							
1,1-Dichloropropene	ND	1.00	"							
cis-1,3-Dichloropropene	ND	1.00	"							
trans-1,3-Dichloropropene	ND	1.00	"							
Ethylbenzene	ND	1.00	"							
Hexachlorobutadiene	ND	1.00	"							
2-Hexanone	ND	10.0	"							
Isopropylbenzene	ND	1.00	"							
p-Isopropyltoluene	ND	1.00	"							
Methylene chloride	ND	5.00	"							
4-Methyl-2-pentanone	ND	10.0	"							
Naphthalene	ND	1.00	"							
n-Propylbenzene	ND	1.00	"							
Styrene	ND	1.00	"							
1,1,1,2-Tetrachloroethane	ND	1.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
Toluene	ND	1.00	"							
1,2,3-Trichlorobenzene	ND	1.00	"							
1,2,4-Trichlorobenzene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
1,1,2-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Trichlorofluoromethane	ND	1.00	"							
1,2,3-Trichloropropane	ND	1.00	"							
1,2,4-Trimethylbenzene	ND	1.00	"							
1,3,5-Trimethylbenzene	ND	1.00	"							
Vinyl chloride	ND	1.00	"							
m,p-Xylene	ND	2.00	"							
o-Xylene	ND	1.00	"							
Surrogate: 1,2-DCA-d4	*43.9*		"	*40.0*		*110*	*60-130*			
Surrogate: Toluene-d8	*41.0*		"	*40.0*		*103*	*80-120*			
Surrogate: 4-BFB	*42.1*		"	*40.0*		*105*	*80-120*			

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG Project Number: [none] Project Manager: Rob Leet	**Reported:** 10/26/00 16:05

Volatile Organic Compounds by EPA Method 8260B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0J23017: Prepared 10/22/00 Using EPA 5030B [P/T]										
LCS (0J23017-BS1)										
Benzene	19.7	1.00	ug/l	20.0		98.5	80-130			
Chlorobenzene	20.4	1.00	"	20.0		102	80-120			
1,1-Dichloroethene	17.5	1.00	"	20.0		87.5	60-140			
Toluene	20.2	1.00	"	20.0		101	70-130			
Trichloroethene	21.6	1.00	"	20.0		108	70-130			
Surrogate: 1,2-DCA-d4	*43.9*		"	*40.0*		*110*	*60-130*			
Surrogate: Toluene-d8	*40.1*		"	*40.0*		*100*	*80-120*			
Surrogate: 4-BFB	*40.4*		"	*40.0*		*101*	*80-120*			
LCS Dup (0J23017-BSD1)										
Benzene	20.2	1.00	ug/l	20.0		101	80-130	2.51	20	
Chlorobenzene	21.0	1.00	"	20.0		105	80-120	2.90	15	
1,1-Dichloroethene	17.2	1.00	"	20.0		86.0	60-140	1.73	30	
Toluene	21.1	1.00	"	20.0		106	70-130	4.36	20	
Trichloroethene	22.6	1.00	"	20.0		113	70-130	4.52	20	
Surrogate: 1,2-DCA-d4	*44.3*		"	*40.0*		*111*	*60-130*			
Surrogate: Toluene-d8	*40.1*		"	*40.0*		*100*	*80-120*			
Surrogate: 4-BFB	*40.6*		"	*40.0*		*101*	*80-120*			

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Kirk Gendron, Project Manager

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ERM-Bellevue 915-118th Avenue S.E., Suite 130 Bellevue WA, 98005	Project: Seattle ANG Project Number: [none] Project Manager: Rob Leet	**Reported:** 10/26/00 16:05

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Kirk Gardner, Project Manager

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CHAIN OF CUSTODY REPORT

Work Order #: BOJ0362

ENT: ERM
ORT TO: Rob Leet
DRESS: 915-118th Ave SE #130
Bellevue WA 98005
ONE: FAX: 425-455-3573
JECT NAME: Seattle Angs
JECT NUMBER: 6091.20
IPLED BY: Don Wyll

INVOICE TO: ERM - Walnut Creek

P.O. NUMBER: 6091120

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: 10 (STD.) | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: 5 (STD.) | 4 | 3 | 2 | 1 | <1
OTHER — Please Specify
* Turnaround Requests less than standard turnaround Rush Charges

REQUESTED ANALYSES

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	VOC/8260	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA W ID
101300-1	10/[illegible]	/	W	2	BOJ0362-	01
MW-11-00-1	10/13/00 1105	/	W	3		-02
MW-12-00-1	10/13/00 1145	/	W	3		-03
MW-13-00-1	10/13/00 1020	/	W	3		-04

QUISHED BY: [signature] DATE: 10/13
NAME: Don Wyll FIRM: ERM TIME: 1545
QUISHED BY: DATE:
NAME: FIRM: TIME:

RECEIVED BY: [signature] DATE: 10/13/00
PRINT NAME: C. Nichols FIRM: NCA TIME: 1547
RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

IONAL REMARKS: All Level IV Documentation

TEMP:

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Appendix D

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APPENDIX D

QA/QC DATA REVIEW AND VALIDATION REPORTS

APPENDIX D.1

QUALITY CONTROL DATA REVIEW/ VALIDATION REPORT - SEPTEMBER 2000 GROUNDWATER AND PORE WATER DATA

Analytical data are the basis for evaluating the environmental conditions at the Seattle Air National Guard Station (Seattle ANGS) in Seattle, Washington. A primary objective of environmental sampling conducted at the site is to obtain accurate data that reflect actual conditions.

This report addresses groundwater and vadose-zone pore water analytical data collected in September 2000 at the Seattle ANGS as part of the Basewide Groundwater Assessment. Two hundred and two primary samples were analyzed for volatile organic analytes using United States Environmental Protection Agency (USEPA) Method 8260. To ensure that data quality was acceptable for decision-making purposes, Environmental Resources Management (ERM) reviewed and/or validated the analytical data for this project. This process defines limitations on the use of the data, or identifies data that should not be used for decision-making purposes. ERM assessed the quality of the data and applied any necessary qualifiers in accordance with the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (October 1999).

The analytical data were reviewed for compliance with the following quality assurance/quality control (QA/QC) project- and/or method-prescribed criteria:

- Sample Holding Time and Preservation: The holding time is the period of time between collection of the sample and preparation or analysis of the sample. Analyses performed for this project have method-prescribed holding times. Preservation refers to the temperature at which the samples are received at the laboratory, as well as any pH anomalies noted by the laboratory for acid-preserved samples.

- Instrument Calibration: The analysis of target analytes at a range of concentrations to develop a graphical plot of instrument response against the different analyte concentrations. An initial calibration

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curve establishes the graphical plot, and the continuing calibration verification monitors daily instrument linearity against the initial calibration.

- Blank Samples: The preparation and analysis of samples from reagent (contaminant-free) water. Blank samples for this investigation included method, trip, rinsate, and field blanks. Compounds detected in a blank sample indicate contamination in the field, at the laboratory, or during sample handling.

- Spike Samples: The preparation and analysis of an environmental sample or a sample of reagent water spiked with a subset of target analytes at known concentrations. The results of the reagent sample spike analysis measure laboratory accuracy, and results from the environmental sample spike measure potential interference from the sample matrix.

- Internal Standards: The addition of compounds similar to target analytes of interest that are added to sample aliquots for organic analysis. The internal standards are used to quantitatively and qualitatively evaluate retention time and instrument response for each analytical run.

- Surrogate Spikes: The addition of compounds similar to target analytes of interest that are added to sample aliquots for organic analysis. Surrogate spikes measure possible interference from the sample matrix for the analysis of target analytes.

- Duplicate Samples: The preparation and analysis of an additional aliquot of the sample. The results from duplicate analysis measure potential heterogeneity of contaminant concentrations in the samples.

The following data qualifiers were used as appropriate during the data review/validation process:

U: The analyte was analyzed for, but was not detected above the reported quantitation limit.

J: The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ: The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

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R: The sample results were rejected due to deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte could not be verified.

None of the September 2000 data were rejected as a result of the data review/validation process. All of the data, including qualified data, are acceptable and can be used for decision-making purposes.

The following discussion addresses the results of the data review/validation for each of the QA/QC components listed above.

Sample Holding Time and Preservation

The USEPA has established maximum recommended holding times and acceptable temperature ranges at which samples must be stored to maintain sample preservation for the analyses performed on the September 2000 water samples. Holding times and sample temperatures extending beyond the maximum can negatively affect sample integrity (e.g., loss of volatile compounds, biodegradation), and impacted samples are qualified depending on the severity of the exceedence and the analytes of concern. The maximum recommended holding time for USEPA Method 8260 is 14 days for acid-preserved samples and 7 days for unpreserved samples. The recommended temperature range for sample storage is 2 to 6 degrees Celsius.

For this project, each analytical result was reviewed for compliance with the method-prescribed holding time and temperature of samples upon receipt at the laboratory. None of the analyses were performed outside of the prescribed holding time. Six sample shipments were received at temperatures of 1.0 to 1.4 degrees Celsius, which is below the recommended temperature range of 2 to 6 degrees Celsius. Results for detected analytes associated with out-of-range temperature preservation were qualified "J," estimated concentration; results for non-detected (ND) analytes were qualified "UJ," estimated detection limit. The samples affected by the out-of-range temperature preservation are listed in Table D.1-1, along with the applied qualifiers. No pH anomalies were noted by the laboratory for the September 2000 samples.

Instrument Calibration

Before an analytical instrument is used, the instrument should be calibrated to within USEPA method specifications. This calibration ensures that the instrument is appropriately responsive to measurable

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TABLE D.1-1

Data Qualified Based on Exceeded Temperature Preservation, September 2000
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Data Package	Received Temperature	Associated Samples	Analytical Method	ERM Qualifier *
B0I0107	1.4°C	Trip Blank	8260	UJ
		MW-11	8260	UJ
		MW-11D	8260	UJ
		MW-12	8260	UJ
		MW-13	8260	UJ
		MW-13R	8260	UJ
B0I0180	1.0°C	BGA-1-10	8260	UJ
		BGA-1-12.5	8260	UJ
		BGA-1-15	8260	UJ
		BGA-1-17.5	8260	UJ
		BGA-1-20	8260	UJ
		BGA-1-25	8260	UJ
		BGA-1-30	8260	UJ
		BGA-2-10	8260	J/UJ
		BGA-2-12.5	8260	UJ
		BGA-2-15	8260	UJ
		BGA-2-17.5	8260	UJ
		BGA-2-20	8260	UJ
		BGA-2-25	8260	UJ
		BGA-2-32	8260	UJ
		BGA-2-40	8260	UJ
		BGA-3-10	8260	UJ
		BGA-3-12.5	8260	UJ
		BGA-3-15	8260	UJ
		BGA-3-17.5	8260	UJ
		BGA-3-20	8260	UJ
		BGA-3-23	8260	UJ
		BGA-3-30	8260	UJ
		BGA-3-20D	8260	UJ
		BGA-3-30D	8260	UJ
		Trip Blank	8260	UJ
B0I0348	1.0°C	TB-091300-1	8260	UJ
		BGA-18-10	8260	UJ
		BGA-18-12.5	8260	J/UJ
		BGA-18-12.5D	8260	J/UJ
		BGA-18-15	8260	J/UJ
		BGA-18-17.5	8260	J/UJ

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TABLE D.1-1

Data Qualified Based on Exceeded Temperature Preservation, September 2000
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Data Package	Received Temperature	Associated Samples	Analytical Method	ERM Qualifier *
		BGA-18-20	8260	UJ
		BGA-18-26	8260	UJ
		BGA-18-30R	8260	UJ
		BGA-18-30	8260	UJ
		BGA-18-37	8260	UJ
		BGA-23-10	8260	UJ
		BGA-23-12.5	8260	UJ
		BGA-23-15	8260	J/UJ
		BGA-23-17.5R	8260	UJ
		BGA-23-17.5	8260	J/UJ
		BGA-23-20	8260	UJ
		BGA-23-25	8260	UJ
		BGA-23-30	8260	UJ
		BGA-23-30D	8260	UJ
		BGA-24-10	8260	UJ
		BGA-24-12.5	8260	UJ
		BGA-24-15	8260	UJ
		BGA-24-15D	8260	UJ
		BGA-24-17.5	8260	UJ
		BGA-24-20	8260	UJ
		BGA-24-20	8260	UJ
		BGA-24-27	8260	UJ
		BGA-24-34	8260	UJ
		BGA-24-40R	8260	UJ
		BGA-24-40	8260	UJ
B0I0353	1.0°C	TB-091300-2	8260	UJ
		BGA-20-12.5	8260	UJ
		BGA-20-15	8260	J/UJ
		BGA-20-15D	8260	J/UJ
		BGA-20-15R	8260	UJ
		BGA-20-17.5	8260	J/UJ
		BGA-20-20	8260	J/UJ
		BGA-20-25	8260	J/UJ
		BGA-20-25D	8260	J/UJ
		BGA-20-25R	8260	UJ
		BGA-21-20R	8260	UJ
		BGA-22-15	8260	J/UJ
		BGA-22-17.5	8260	J/UJ

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TABLE D.1-1

Data Qualified Based on Exceeded Temperature Preservation, September 2000
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Data Package	Received Temperature	Associated Samples	Analytical Method	ERM Qualifier *
		BGA-22-23	8260	UJ
		BGA-22-23R	8260	UJ
		BGA-22-27	8260	UJ
		BGA-22-30	8260	UJ
		BGA-22-39	8260	UJ
B0I0354	1.0°C	BGA-20-30	8260	UJ
		BGA-20-40	8260	UJ
		BGA-21-12.5	8260	J/UJ
		BGA-21-15	8260	J/UJ
		BGA-21-17.5	8260	J/UJ
		BGA-21-20	8260	UJ
		BGA-21-25	8260	UJ
		BGA-21-30	8260	UJ
		BGA-21-12.5	8260	J/UJ
B0I0435	1.0°C	TB-091400-1	8260	UJ
		SL-1A	8260	UJ
		SL-1B	8260	UJ
		SL-2A	8260	UJ
		SL-2B	8260	UJ
		SL-3A	8260	J/UJ
		SL-3B	8260	J/UJ
		SL-4A	8260	UJ
		SL-4B	8260	UJ
		SL-4A	8260	UJ
		SL-4B	8260	UJ
		SL-5A	8260	UJ
		SL-5B	8260	UJ
		SL-6A	8260	UJ
		SL-6B	8260	UJ
		SL-6BD	8260	UJ
		SL-7B	8260	UJ
		SL-8A	8260	UJ
		SL-8B	8260	J/UJ
		SL-9A	8260	UJ
		SL-9B	8260	UJ
		SL-10A	8260	UJ
		SL-10B	8260	UJ

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TABLE D.1-1

Data Qualified Based on Exceeded Temperature Preservation, September 2000
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Data Package	Received Temperature	Associated Samples	Analytical Method	ERM Qualifier *
		SL-11B	8260	UJ
		SL-12B	8260	UJ
		SL-7AFT	8260	J/UJ
		SL-7AFA	8260	UJ

J = Reported values for detected analytes are estimated concentrations.
UJ = Reported detection limits for non-detected analytes are estimated concentrations.
8260 = USEPA Method 8260 (volatile organic compounds)
D = Duplicate sample
FA = ASTM Type II water field blank
FT = Tap water field blank
R = Equipment rinsate blank
TB = Trip blank
* Data qualifiers apply to listed samples.

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chemical concentrations. If an instrument is not properly calibrated, it may not be capable of producing acceptable quantitative, qualitative, and reproducible data. For example, positive detections of a given analyte could contain an undetermined degree of inaccuracy if the instrument is out of calibration, although the results may still be considered valid. In the case of non-detections, the associated reporting limit would be similarly affected; however, such results would still be considered non-detections.

For this project, two types of calibration data were reviewed as part of the data validation process: initial calibration verification (ICV) and continuing calibration verification (CCV) data. The laboratory provided ICV and CCV data for the Level IV data packages (B0I0314 and B0I0354).

The ICV consisted of standards that were analyzed at five or more concentrations. These concentrations ranged from the reporting limit to the upper linear range of the instrument. Average response factors from the ICV were used to calculate sample results. The laboratory evaluated the ICV data using relative standard deviation (RSD). The reported RSDs were compared to the method-prescribed acceptance criteria during the data validation. ICV target analytes with RSDs that exceeded the method-prescribed acceptable limit included chloromethane, 1,1-dichloroethene, and methylene chloride, analyzed on instrument MS-4 on 8 September 2000. These compounds were not detected in the project samples associated with this ICV. Therefore, the ND chloromethane, 1,1-dichloroethene, and methylene chloride sample results were qualified "UJ," estimated detection limit (Table D.1-2).

The CCV data are analyzed either daily or every 12 hours to ensure the instrument response is still within method-performance criteria for linearity. The CCV consisted of analyzing a standard at one concentration; the concentration of this standard was generally in the mid-range of the ICV standard concentrations. The laboratory calculated the percent difference (%D) between the CCV and the ICV, and the %Ds were compared to the method-prescribed acceptable limit during the data validation. The CCV %D data were within the method-prescribed limit, with one exception: the %D for methylene chloride was 34.0%. Consequently, the ND results for this compound in the associated project samples were qualified "UJ," estimated detection limit (Table D.1-2).

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TABLE D.1-2

Data Qualified Based on Calibration Results, September 2000
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Data Package	Analytical Method	Calibration (ICV/CCV)	Associated Samples	Instrument ID	Date	Target Compound	%RSD or %D	ERM Qualifier *
B0I0354	8260	ICV	BGA-20-30	MS-4	9/8/00	Chloromethane	21.7	UJ
			BGA-20-40			1,1-Dichloroethene	21.1	UJ
			BGA-21-12.5			Methylene chloride	26.7	UJ
			BGA-21-15					
			BGA-21-17.5					
			BGA-21-20					
			BGA-21-25					
			BGA-21-30					
			BGA-22-12.5					
B0I0314	8260	ICV	BGA-13-10	MS-4	9/8/00	Chloromethane	21.7	UJ
			BGA-13-12.5			1,1-Dichloroethene	21.1	UJ
			BGA-13-15			Methylene chloride	26.7	UJ
			BGA-13-17.5					
			BGA-13-20					
			BGA-13-24					
			BGA-13-30					
			BGA-14-10					
			BGA-14-12.5					
		CCV	BGA-13-17.5	MS-4	9/16/00 pm	Methylene chloride	34.0	UJ
			BGA-13-20					
			BGA-13-24					
			BGA-13-30					
			BGA-14-10					
			BGA-14-12.5					

UJ = Reported detection limit is an estimated concentration.
8260 = USEPA Method 8260 (volatile organic compounds)
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
%RSD = Percent relative standard deviation
%D = Percent difference
* Data qualifiers apply to results for listed compounds in listed samples.

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Blank Samples

Blank samples are prepared in the laboratory or in the field and are carried through the analytical process. The purpose of a blank sample is to test for contamination resulting from laboratory, shipping, or other sample-handling activities. Blank samples are analyzed and evaluated for detections of target analytes. If target analytes are detected in a blank sample, these detections indicate that some element of the sample collection or analysis process has introduced contaminants that were not present in the original environmental sample aliquot. If target analytes are detected in a blank sample, then the associated project data must be evaluated to determine whether:

- Those data have been similarly impacted; or
- The blank detections are an isolated occurrence not representative of other data.

The four types of blank samples analyzed and reported with the water samples collected in September 2000 were method, trip, rinsate, and field blank samples. Preparation, handling, and analysis of these blank samples are summarized below.

1. Method blank samples monitor for potential laboratory contamination of samples. Method blank samples were prepared in the laboratory by taking an aliquot of reagent water through all preparation and analysis steps. A method blank was prepared and analyzed with each batch of environmental samples.

2. Trip blank samples monitor for potential contamination of samples during collection and transportation to the laboratory. Trip blank samples were prepared by filling a volatile organics analysis (VOA) vial with an aliquot of reagent water and sealing it with a Teflon-lined-septum lid. The trip blank sample travels with the filled sample containers to the laboratory.

3. Rinsate blank samples monitor for potential contamination of project samples from incomplete decontamination of sample collection equipment. Rinsate blank samples were prepared in the field by pouring American Society for Testing and Materials (ASTM) Type II reagent-grade water over the decontaminated sample collection equipment. The water was collected in clean sample containers

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supplied by the laboratory. Rinsate blank samples were labeled with an "R" identifier at the end of the sample ID.

4. Field blank samples monitor for potential contamination of project samples from ambient conditions at the sample collection site. Field blank samples were prepared at sample collection locations by slowly pouring tap water or ASTM Type II water into clean sample containers supplied by the laboratory. Field blank samples prepared with tap water were labeled with an "FT" identifier at the end of the sample ID. The identifier "FA" was used to designate field blank samples prepared with ASTM Type II water.

Target analytes were not detected in the blank samples, with one exception: the common drinking water contaminant bromodichloromethane was reported in the tap water field blank. This compound was not detected in any of the associated project samples. The USEPA-defined common laboratory contaminant methylene chloride was reported in two project samples (BGA-9-12.5D and BGA-9-17.5). These two detections are suspected laboratory artifacts.

Spike Samples

A spike sample is a QC sample that is prepared and analyzed by the laboratory. The laboratory prepares, analyzes, and reports spike sample results to demonstrate their ability to properly analyze, detect, and quantify target analytes. A spike sample result is typically reported as the amount of analyte detected divided by the known amount spiked into the sample, and is commonly referred to as percent recovery. The percent recovery is then compared to an established limit range.[1] The two types of spike samples analyzed with the project samples were matrix and blank spikes.

1. Matrix spike (MS) samples consist of an aliquot of an environmental sample that is spiked with known concentrations of a subset of target analytes. A matrix spike duplicate (MSD) sample is a second (duplicate) spike sample prepared and analyzed with the MS sample. MS samples are used to monitor potential interference from the sample matrix for target analytes. A low MS recovery may indicate low-

[1] In most cases, the prescribed analytical method will specify protocol to develop appropriate limit ranges. In some cases, however, limit ranges are established by the laboratory in the method procedures.

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biased sample results; a high MS recovery may indicate high-biased sample results.

2. Blank spike samples, commonly referred to as laboratory control samples (LCS), consist of an aliquot of reagent water that is spiked with known concentrations of a subset of target analytes. The LCS sample is used to monitor laboratory accuracy without the bias of a sample matrix. LCS recoveries outside of acceptable limits may indicate poor laboratory accuracy.

The MS and LCS recoveries were within acceptable limits, with limited exceptions. Several MS/MSD recoveries were below the laboratory's lower control limit. Associated sample data for the target analytes with low recoveries (chlorobenzene, 1,1-dichloroethene) were qualified "UJ," estimated detection limit. The out-of-limit spike recoveries and the associated project samples and applied data qualifiers are listed in Table D.1-3. The MS and LCS recoveries in the remaining samples indicate minimal matrix interference and acceptable laboratory accuracy for the September 2000 groundwater and pore water data.

Internal Standards

Under USEPA methods, a given analyte list for organic compounds is segregated by chemical properties and retention time into one or more subsets. A USEPA-defined internal standard with comparable chemical properties and retention time is assigned to each subset of analytes. The laboratory adds a known concentration of each internal standard to the samples prior to analysis, including laboratory QC samples (e.g., calibration standards, MS samples, method blank samples). The response of the analytical instrument to the internal standards is used to correct for potential sample matrix interference.

The instrument internal standard response for each sample is compared to the internal standard response in the daily CCV. The sample internal standard area count must be within the range of 0.5 to 2 times the CCV area count, and the retention time must be within ±30 seconds of the CCV retention time, for acceptable accuracy. If the area count and/or retention time measured for the sample is outside the acceptable range, quantitation results for the associated analyte subset may be biased. Interference from the sample matrix is typically responsible for internal standard responses that are consistently outside of acceptable ranges; most matrix interferences cause a consistently high or low bias.

TABLE D.1-3

Spike Recovery Results Outside of Acceptable Limits, September 2000
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Data Package	Sample ID	Analytical Method	Spiked Compound	MS/MSD % Recovery	Control Limit	Sample Result (µg/l)	ERM Qualifier*
B0I0193	BGA-8-15	8260	Chlorobenzene	76.0/74.0	80 - 120	ND	UJ
B0I0353	BGA-20-25R	8260	Chlorobenzene	73.0/72.0	80 - 120	ND	UJ
B0I0348	BGA-24-20	8260	Chlorobenzene	75.1/81.0	80 - 120	ND	UJ
	BGA-24-10	8260	Chlorobenzene	80.0/79.0	80 - 120	ND	UJ
B0I0217	BGA-6-27	8260	1,1-Dichloroethene	47.2/45.5	60 - 140	ND	UJ

ND = Not detected above method reporting limit
UJ = Reported detection limit is an estimated concentration.
8260 = USEPA Method 8260 (volatile organic compounds)
µg/l = Micrograms per liter
R = Equipment rinsate blank
* Data qualifiers apply to results for listed compounds in listed samples.

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Internal standards were added to each of the project samples. The internal standard responses were within acceptable limits, indicating minimal matrix interference and acceptable sample quantitation.

Surrogate Spikes

A surrogate spike is similar to an internal standard; it is chemically similar to the target analytes and is used in organic analyses. However, surrogate spikes are used only to assess potential interference from the sample matrix, not to correct for matrix interference. Surrogate spike results are typically reported in terms of percent recovery, which is calculated by dividing the amount of surrogate detected in the sample by the known amount of surrogate added to the sample.

For the September 2000 water data, surrogate recoveries were compared to the laboratory-generated limits of acceptance. The surrogate recoveries were within acceptable limits, indicating minimal matrix interference.

Duplicate Samples

A duplicate sample is a second aliquot of a sample that is treated the same as the primary sample. A duplicate sample analysis is performed to measure the precision of the analytical method and possible heterogeneity of analyte concentrations in the sample matrix. Duplicate field samples are collected to measure matrix heterogeneity.

Laboratory duplicate analyses for the project samples consisted of MSD analyses. The laboratory calculated the relative percent difference (RPD) between the MS and MSD spike concentrations. The calculated RPDs were compared to laboratory-generated acceptable limits. Field duplicate samples were also collected and submitted for analysis, and an RPD was calculated for detected analytes (Table D.1-4).

The duplicate sample RPDs were within acceptable limits, indicating acceptable analytical precision and minimal matrix heterogeneity.

Overall Assessment

None of the Seattle ANGS analytical data for groundwater and pore water samples collected in September 2000 were rejected. The calculated data completeness is 100 percent. The data can be used for decision-making

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TABLE D.1-4

Field Duplicate Sample Results and Qualifiers, September 2000
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Data Package	Sample ID	Detected Analytes	Reporting Limit (µg/l)	Primary Sample Concentration (µg/l)	Duplicate Sample Concentration (µg/l)	RPD	ERM Qualifier*
B0I0193	BGA-7-15	cis-1,2-Dichloroethene	1.00	1.05	1.10	5	None
	BGA-9-12.5	Methylene chloride	5.00	ND	9.58	NA	None
B0I0348	BGA-18-12.5	cis-1,2-Dichloroethene	1.00	1.69	1.63	4	None
		Trichloroethene	1.00	2.70	2.64	2	None
B0I0353	BGA-20-15	cis-1,2-Dichloroethene	1.00	3.63	3.58	1	None
	BGA-20-25	cis-1,2-Dichloroethene	1.00	3.18	3.20	1	None
B0I0217	BGA-6-15	Trichloroethene	1.00	1.13	ND	NA	None
B0I0316	BFA-15-17.5	cis-1,2-Dichloroethene	1.00	3.57	3.87	8	None

RPD = Relative percent difference
ND = Not detected above method reporting limit
NA = Not applicable
µg/l = Micrograms per liter
* Data qualifiers apply to listed primary and duplicate sample results.

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purposes within the limitations implied by the applied data qualifiers. The quality of the data, including qualified data, is acceptable for the preparation of technically defensible documents.

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APPENDIX D.2

QUALITY CONTROL DATA VALIDATION REPORT - OCTOBER 2000 GROUNDWATER DATA

Analytical data are the basis for evaluating the environmental conditions at the Seattle Air National Guard Station (Seattle ANGS) in Seattle, Washington. A primary objective of environmental sampling conducted at the site is to obtain accurate data that reflect actual conditions.

This report addresses groundwater analytical data collected in October 2000 at the Seattle ANGS as part of the Basewide Groundwater Assessment. Three primary groundwater samples were analyzed for volatile organic analytes using United States Environmental Protection Agency (USEPA) Method 8260. To ensure that data quality was acceptable for decision-making purposes, Environmental Resources Management (ERM) validated the analytical data for this project. This process defines limitations on the use of the data, or identifies data that should not be used for decision-making purposes. ERM assessed the quality of the data and applied any necessary qualifiers in accordance with the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (October 1999).

The analytical data were reviewed for compliance with the following quality assurance/quality control (QA/QC) project- and/or method-prescribed criteria:

- Sample Holding Time and Preservation: The holding time is the period of time between collection of the sample and preparation or analysis of the sample. Analyses performed for this project have method-prescribed holding times. Preservation refers to the temperature at which the samples are received at the laboratory, as well as any pH anomalies noted by the laboratory for acid-preserved samples.

- Instrument Calibration: The analysis of target analytes at a range of concentrations to develop a graphical plot of instrument response against the different analyte concentrations. An initial calibration curve establishes the graphical plot, and the continuing calibration

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verification monitors daily instrument linearity against the initial calibration.

- Blank Samples: The preparation and analysis of samples from reagent (contaminant-free) water. Blank samples for the October 2000 sampling event included method and trip blanks. Compounds detected in a blank sample indicate contamination in the field, at the laboratory, or during sample handling.

- Spike Samples: The preparation and analysis of an environmental sample or a sample of reagent water spiked with a subset of target analytes at known concentrations. The results of the reagent sample spike analysis measure laboratory accuracy, and results from the environmental sample spike measure potential interference from the sample matrix.

- Internal Standards: The addition of compounds similar to target analytes of interest that are added to sample aliquots for organic analysis. The internal standards are used to quantitatively and qualitatively evaluate retention time and instrument response for each analytical run.

- Surrogate Spikes: The addition of compounds similar to target analytes of interest that are added to sample aliquots for organic analysis. Surrogate spikes measure possible interference from the sample matrix for the analysis of target analytes.

- Duplicate Samples: The preparation and analysis of an additional aliquot of the sample. The results from duplicate analysis measure potential heterogeneity of contaminant concentrations in the samples.

The following data qualifiers were used as appropriate during the data validation process:

U: The analyte was analyzed for, but was not detected above the reported quantitation limit.

J: The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ: The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit was approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

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R: The sample results were rejected due to deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte could not be verified.

None of the October 2000 data were rejected as a result of the data validation process. All of the data, including qualified data, are acceptable and can be used for decision-making purposes.

The following discussion addresses the results of the data validation for each of the QA/QC components listed above.

Sample Holding Time and Preservation

The USEPA has established maximum recommended holding times and acceptable temperature ranges at which samples must be stored to maintain sample preservation for the analyses performed on the October 2000 groundwater samples. Holding times and sample temperatures extending beyond the maximum can negatively affect sample integrity (e.g., loss of volatile compounds, biodegradation), and impacted samples are qualified depending on the severity of the exceedence and the analytes of concern. The maximum recommended holding time for USEPA Method 8260 is 14 days for acid-preserved samples and 7 days for unpreserved samples. The recommended temperature range for sample storage is 2 to 6 degrees Celsius.

For this project, each analytical result was reviewed for compliance with the method-prescribed holding time and temperature of samples upon receipt at the laboratory. None of the analyses were performed outside of the prescribed holding time. The sample shipment was received within the recommended temperature range of 2 to 6 degrees Celsius. None of the data were qualified based on holding time or temperature preservation exceedences. No pH anomalies were noted by the laboratory for the October 2000 samples.

Instrument Calibration

Before an analytical instrument is used, the instrument should be calibrated to within USEPA method specifications. This calibration ensures that the instrument is appropriately responsive to measurable chemical concentrations. If an instrument is not properly calibrated, it may not be capable of producing acceptable quantitative, qualitative, and reproducible data. For example, positive detections of a given analyte could contain an undetermined degree of inaccuracy if the instrument is

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out of calibration, although the results may still be considered valid. In the case of non-detections, the associated reporting limit would be similarly affected; however, such results would still be considered non-detections.

For this project, two types of calibration data were reviewed as part of the data validation process: initial calibration verification (ICV) and continuing calibration verification (CCV) data. The ICV consisted of standards that were analyzed at five or more concentrations. These concentrations ranged from the reporting limit to the upper linear range of the instrument. Average response factors from the ICV were used to calculate sample results. The laboratory evaluated the ICV data using relative standard deviation (RSD). The reported RSDs were compared to the method-prescribed acceptance criteria during the data validation. A number of the ICV target analytes had RSDs that exceeded the method-prescribed acceptable limit; however, none of these analytes were detected in the project samples. The non-detected (ND) sample results for these target analytes were qualified "UJ," estimated detection limit (Table D.2-1).

The CCV data are analyzed either daily or every 12 hours to ensure the instrument response is still within method-performance criteria for linearity. The CCV consisted of analyzing a standard at one concentration; the concentration of this standard was generally in the mid-range of the ICV standard concentrations. The laboratory calculated the percent difference (%D) between the CCV and the ICV, and the %Ds were compared to the method-prescribed acceptable limit during the data validation. The CCV %D data were within the method-prescribed limit, with two exceptions: the %Ds for bromomethane and acetone were 32.4% and 36.4%, respectively. Consequently, the ND results for these compounds in the associated project samples were qualified "UJ," estimated detection limit (Table D.2-1).

Blank Samples

Blank samples are prepared in the laboratory or in the field and are carried through the analytical process. The purpose of a blank sample is to test for contamination resulting from laboratory, shipping, or other sample-handling activities. Blank samples are analyzed and evaluated for detections of target analytes. If target analytes are detected in a blank sample, these detections indicate that some element of the sample collection or analysis process has introduced contaminants that were not present in the original environmental sample aliquot. If target analytes

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TABLE D.2-1

Data Qualified Based on Calibration Results, October 2000
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Data Package	Analytical Method	Calibration (ICV/CCV)	Associated Samples	Instrument ID	Date	Target Compound	%RSD or %D	ERM Qualifier *
B0J0362	8260	ICV	TB101300-1	MS-5	10/20/00	Chloromethane	23.6	UJ
			MW-11-00-1			Bromomethane	70.8	UJ
			MW-12-00-1			Acetone	17.8	UJ
			MW-13-00-1			Methylene chloride	18.4	UJ
						1,1-Dichloroethene	27.9	UJ
						2-Butanone	17.7	UJ
						1,1,1-Trichloroethane	16.5	UJ
						Carbon tetrachloride	27.4	UJ
						1,2-Dichloropropane	15.9	UJ
						Bromodichloromethane	21.9	UJ
						cis-1,3-Dichloropropene	23.8	UJ
						trans-1,3-Dichloropropene	23.1	UJ
						Dibromochloromethane	28.5	UJ
						1,1,1,2-Tetrachloroethane	15.8	UJ
						Bromoform	31.7	UJ
						1,2-Dibromo-3-chloropropane	29.7	UJ
						Hexachlorobutadiene	25.4	UJ
		CCV	TB101300-1	MS-5	10/23/00	Bromomethane	32.4	UJ
			MW-11-00-1			Acetone	36.4	UJ
			MW-12-00-1					
			MW-13-00-1					

UJ = Reported detection limit is an estimated concentration.
8260 = USEPA Method 8260 (volatile organic compounds)
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
%RSD = Percent relative standard deviation
%D = Percent difference
TB = Trip blank
* Data qualifiers apply to results for listed compounds in listed samples.

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are detected in a blank sample, then the associated project data must be evaluated to determine whether:

- Those data have been similarly impacted; or
- The blank detections are an isolated occurrence not representative of other data.

The two types of blank samples analyzed and reported with the groundwater samples collected in October 2000 were method and trip blank samples. Preparation, handling, and analysis of these blank samples are summarized below.

1. Method blank samples monitor for potential laboratory contamination of samples. Method blank samples were prepared in the laboratory by taking an aliquot of reagent water through all preparation and analysis steps. A method blank was prepared and analyzed with each batch of environmental samples.

2. Trip blank samples monitor for potential contamination of samples during collection and transportation to the laboratory. Trip blank samples were prepared by filling a volatile organics analysis (VOA) vial with an aliquot of reagent water and sealing it with a Teflon-lined-septum lid. The trip blank sample travels with the filled sample containers to the laboratory.

Target analytes were not detected in the blank samples, with one exception: bromomethane was reported in the 22 October 2000 method blank. This compound was not detected in any of the associated project samples; thus, none of the data were qualified based on the method blank results.

Spike Samples

A spike sample is a QC sample that is prepared and analyzed by the laboratory. The laboratory prepares, analyzes, and reports spike sample results to demonstrate their ability to properly analyze, detect, and quantify target analytes. A spike sample result is typically reported as the amount of analyte detected divided by the known amount spiked into the

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sample, and is commonly referred to as percent recovery. The percent recovery is then compared to an established limit range.[1]

The laboratory reported and analyzed blank spike samples with the project samples. Blank spike samples, commonly referred to as laboratory control samples (LCS), consist of an aliquot of reagent water that is spiked with known concentrations of a subset of target analytes. The LCS sample is used to monitor laboratory accuracy without the bias of a sample matrix. LCS recoveries outside of acceptable limits may indicate poor laboratory accuracy.

The LCS recoveries were within acceptable limits. The LCS recoveries indicate minimal matrix interference and acceptable laboratory accuracy for the October 2000 groundwater data.

Internal Standards

Under USEPA methods, a given analyte list for organic compounds is segregated by chemical properties and retention time into one or more subsets. A USEPA-defined internal standard with comparable chemical properties and retention time is assigned to each subset of analytes. The laboratory adds a known concentration of each internal standard to the samples prior to analysis, including laboratory QC samples (e.g., calibration standards, MS samples, method blank samples). The response of the analytical instrument to the internal standards is used to correct for potential sample matrix interference.

The instrument internal standard response for each sample is compared to the internal standard response in the daily CCV. The sample internal standard area count must be within the range of 0.5 to 2 times the CCV area count, and the retention time must be within ±30 seconds of the CCV retention time, for acceptable accuracy. If the area count and/or retention time measured for the sample is outside the acceptable range, quantitation results for the associated analyte subset may be biased. Interference from the sample matrix is typically responsible for internal standard responses that are consistently outside of acceptable ranges; most matrix interferences cause a consistently high or low bias.

[1] In most cases, the prescribed analytical method will specify protocol to develop appropriate limit ranges. In some cases, however, limit ranges are established by the laboratory in the method procedures.

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Internal standards were added to each of the project samples. The internal standard responses were within acceptable limits, indicating minimal matrix interference and acceptable sample quantitation.

Surrogate Spikes

A surrogate spike is similar to an internal standard; it is chemically similar to the target analytes and is used in organic analyses. However, surrogate spikes are used only to assess potential interference from the sample matrix, not to correct for matrix interference. Surrogate spike results are typically reported in terms of percent recovery, which is calculated by dividing the amount of surrogate detected in the sample by the known amount of surrogate added to the sample.

For the October 2000 groundwater data, surrogate recoveries were compared to the laboratory-generated limits of acceptance. The surrogate recoveries were within acceptable limits, indicating minimal matrix interference.

Duplicate Samples

A duplicate sample is a second aliquot of a sample that is treated the same as the primary sample. A duplicate sample analysis is performed to measure the precision of the analytical method and possible heterogeneity of analyte concentrations in the sample matrix. Duplicate field samples are collected to measure matrix heterogeneity.

Laboratory duplicate analyses for the project samples consisted of LCS duplicate analyses. The laboratory calculated the relative percent difference (RPD) between the LCS and LCS duplicate spike concentrations. The calculated RPDs were compared to laboratory-generated acceptable limits.

The spike duplicate RPDs were within acceptable limits, indicating acceptable analytical precision and minimal matrix heterogeneity.

Overall Assessment

None of the Seattle ANGS analytical data for groundwater samples collected in October 2000 were rejected. The calculated data completeness is 100 percent. The data can be used for decision-making purposes within the limitations implied by the applied data qualifiers. The quality of the

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data, including qualified data, is acceptable for the preparation of technically defensible documents.

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Appendix E

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APPENDIX E

MANUAL WATER LEVEL MEASUREMENTS

TABLE E-1

Manual Water Level Measurements
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Monitoring Well	Measuring Point Elevation (ft amsl)	Date	Depth to Water (ft bmp)	Water Level Elevation (ft amsl)
BS-004PZ (Background Well)	14.66	8/16/00	12.19	2.47
		10/13/00	9.56	5.10
		1/3/01	9.30	5.36
		2/13/01	9.02	5.64
BS-005PZ	14.39	8/16/00	9.40	4.99
		10/13/00	NM	NM
		1/3/01	NM	NM
		2/13/01	NM	NM
BS-006PZ	14.59	8/16/00	9.36	5.23
		10/13/00	NM	NM
		1/3/01	NM	NM
		2/13/01	NM	NM
MW-1 (Background Well)	14.92	8/16/00	9.51	5.41
		10/13/00	NM	NM
		1/3/01	NM	NM
		2/13/01	NM	NM
MW-2	14.60	8/16/00	8.90	5.70
		10/13/00	NM	NM
		1/3/01	NM	NM
		2/13/01	NM	NM
MW-3	11.88	8/16/00	7.81	4.07
		10/13/00	8.24	3.64
		1/3/01	7.86	4.02
		2/13/01	7.61	4.27
MW-4	12.05	8/16/00	8.26	3.79
		10/13/00	8.60	3.45
		1/3/01	8.20	3.85
		2/13/01	7.98	4.07
MW-5	13.94	8/16/00	10.12	3.82
		10/13/00	10.50	3.44
		1/3/01	10.14	3.80
		2/13/01	9.95	3.99
MW-6	11.62	8/16/00	7.69	3.93
		10/13/00	7.87	3.75
		1/3/01	7.70	3.92
		2/13/01	7.51	4.11
MW-7	12.17	8/16/00	8.24	3.93
		10/13/00	NM	NM
		1/3/01	NM	NM
		2/13/01	NM	NM

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TABLE E-1

Manual Water Level Measurements
Basewide Groundwater Assessment
143rd CCSQ, Seattle ANGS, Seattle, Washington

Monitoring Well	Measuring Point Elevation (ft amsl)	Date	Depth to Water (ft bmp)	Water Level Elevation (ft amsl)
MW-8	11.90	8/16/00	8.09	3.81
		10/13/00	8.46	3.44
		1/3/01	8.14	3.76
		2/13/01	7.80	4.10
MW-9	14.30	8/16/00	8.96	5.34
		10/13/00	9.44	4.86
		1/3/01	9.18	5.12
		2/13/01	8.90	5.40
MW-10	14.97	8/16/00	9.71	5.26
		10/13/00	10.17	4.80
		1/3/01	9.90	5.07
		2/13/01	9.70	5.27
MW-11	11.94	9/5/00	7.85	4.09
		10/13/00	8.10	3.84
		1/3/01	NM	NM
		2/13/01	NM	NM
MW-12	11.23	9/5/01	7.34	3.89
		10/13/00	7.60	3.63
		1/3/01	NM	NM
		2/13/01	NM	NM
MW-13	12.58	9/5/00	8.78	3.80
		10/13/00	9.09	3.49
		1/3/01	NM	NM
		2/13/01	NM	NM

Notes:

ft amsl = Feet above mean sea level
ft bmp = Feet below measuring point
NM = Not measured

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Appendix F

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APPENDIX F

TOPOGRAPHIC SURVEY