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Phase II Environmental Site Assessment Report
Proposed Family Fun Center
Tukwila, Washington

November 17, 1997

Consulting Engineers
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FAMILY FUN CENTER
TUKWILA
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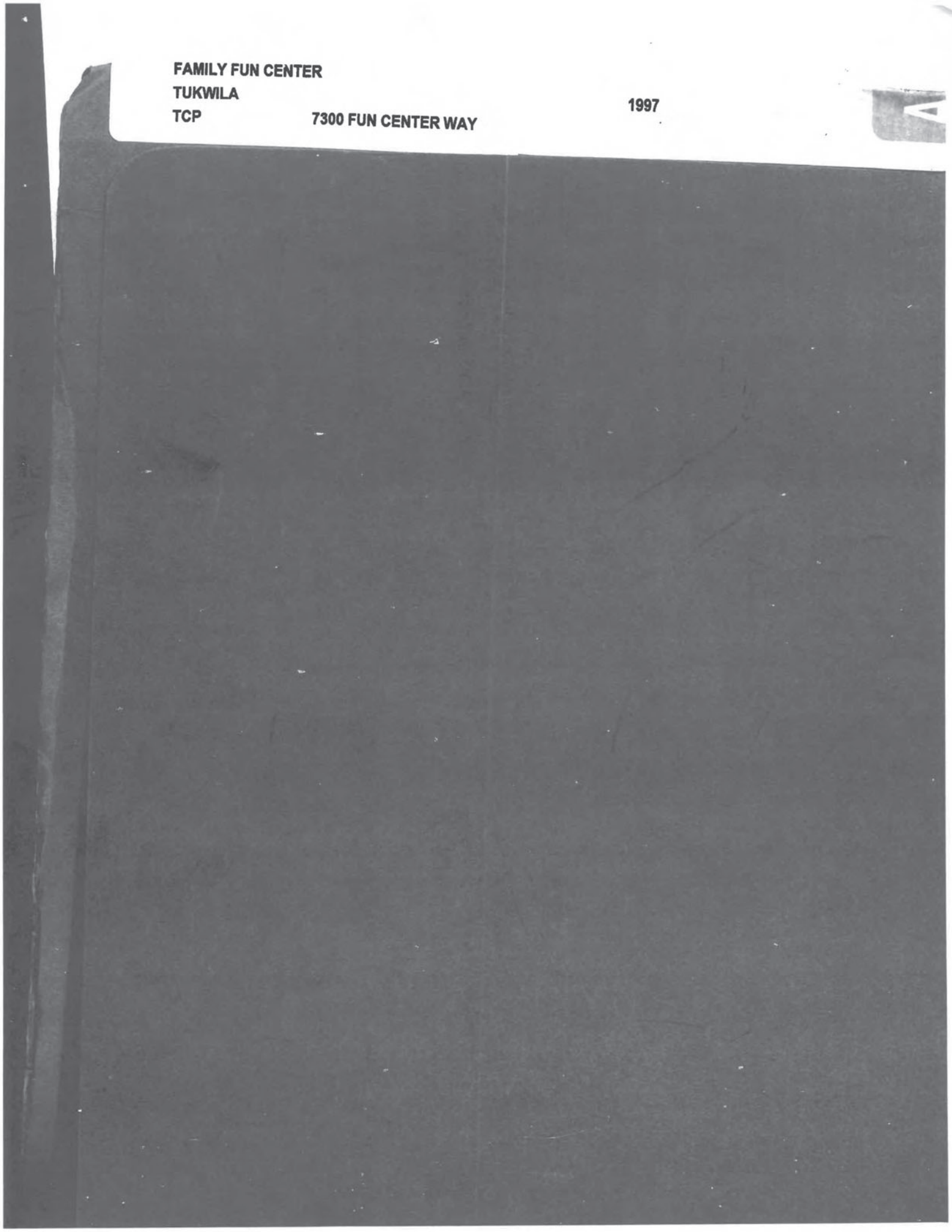

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Phase II Environmental Site Assessment Report
Proposed Family Fun Center
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For
Family Fun Centers

GeoEngineers

Consulting Engineers and Geoscientists
Offices in Washington, Oregon, and Alaska

November 17, 1997

Family Fun Centers
c/o Mulvanny Partnership Architects P.S.
11820 Northup Way, No. E300
Bellevue, Washington 98005

Attention: Chandler Stever

We are submitting three copies of our "Phase II Environmental Site Assessment" summarizing our recent environmental services at the proposed Family Fun Center site in Tukwila, Washington. Our services described in this report were conducted in October 1997, and were conducted in accordance with our proposal dated August 27, 1997.

We appreciate the opportunity to be of continued service to Family Fun Centers on this project. Please call if you have questions regarding this report.

Yours very truly,

GeoEngineers, Inc.

Kurt S. Anderson, C.P.G.
Associate

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PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT
PROPOSED FAMILY FUN CENTER
TUKWILA, WASHINGTON
FOR
FAMILY FUN CENTERS

INTRODUCTION

This report summarizes the results of our Phase II environmental site assessment (ESA) of the proposed Family Fun Center site located on South Grady Way and Southwest Monster Road in Tukwila, Washington. The site is shown relative to surrounding physical features in Figure 1. The general layout of the site is shown in Figure 2.

We understand that Family Fun Centers plans to develop the site with a Family Fun Center building, restaurant, four-story hotel and ancillary facilities (paved parking areas, 18-hole miniature golf course and a go-cart race track). GeoEngineers recently completed a geotechnical study and Phase I ESA for the site in preparation for development. The results of those studies are summarized in our reports dated June 30 and July 28, 1997.

Previous environmental/geotechnical studies by others at the site included testing and analysis of a limited number of soil and ground water samples obtained from 11 test pits, 8 soil borings and 4 monitoring wells (GCW-14, GCW-15, GCW-16 and GCW-17). All of the approximate test pit, exploratory boring and monitoring well locations that were provided to GeoEngineers in previous reports by others are shown in Figure 2. The previous environmental/geotechnical studies are summarized in our Phase I ESA. We identified the following confirmed and suspected contamination by hazardous substances on the site based on our review of the previously completed environmental/geotechnical reports:

- Asbestos-containing materials are present within some of the structures on the site. We did not address asbestos during our Phase II ESA study.
- Petroleum hydrocarbon contamination was qualitatively identified in soil samples obtained from the site's soil stockpile. Empty pails and a small drum of lubricants were encountered in the soil stockpile near the AST in the eastern portion of the site.
- Chromium and barium concentrations in samples of slag material exceeded MTCA Method A or B soil cleanup levels. The Washington Department of Ecology (Ecology) suggested in a November 1996 meeting with GeoTech Consultants Inc. that removal of the slag and/or capping the slag may be necessary.
- Dissolved arsenic and/or cadmium concentrations exceeded MTCA Method A cleanup levels in three of the four ground water samples obtained from the site's wells in 1996. Ecology suggested in the November 1996 meeting that further investigation of the source of arsenic by installing additional monitoring wells on site will be necessary.
- Possible petroleum-related soil and ground water contamination in the vicinity of former and existing USTs and ASTs. The reports we reviewed identified as many as seven former

and/or existing tanks on site. Approximate locations of five of the seven tanks are shown in Figure 2. We were unable to confirm the locations of the other two tanks suggested by the reports we reviewed.

- Possible petroleum- and solvent-related contamination in the vicinity of the site's repair shop. Ecology expressed their concern in the November 1996 meeting that there has been "extensive surface spillage" in this area.
- Combustible vapors (presumed to be methane) were detected in the range of 2.5% to 5.0% in two site borings (B-14 and B-15) in 1994. The combustible vapors were attributed to the presence of organic matter in soil encountered in the borings.

Our Phase I ESA results indicated that there is a potential of contamination by petroleum hydrocarbons, metals, pesticides, polychlorinated biphenyl compounds (PCBs), volatile organic compounds (solvents) (VOCs), and semivolatile organic compounds (SVOCs) beneath other portions of the site. The specific locations of confirmed and suspected site contamination are described in our Phase I ESA report and include the following:

- A soil stockpile in the eastern portion of the site.
- Slag fill.
- A detention pond.
- A former automobile repair shop.
- An oil dump.
- Former and existing underground storage tanks (USTs) and above ground storage tanks (ASTs).
- A former milk processing facility.
- Surface oil stains.
- An electrical vault.
- Former agricultural fields and storage of agricultural chemicals.

We do not address methane in this Phase II ESA. We have attempted to research the landfill that was near the site to ascertain whether or not it is actively producing methane. Representatives from Seattle-King County Health Department and the City of Renton were unable to provide this information when contacted in October 1997.

OBJECTIVES

The objectives of the Phase II ESA were to (1) assess the subsurface conditions in areas of potential contamination that were identified during our Phase I ESA study, and (2) further assess the subsurface contamination encountered by others during previous environmental/geotechnical studies at the site.

We understand that this Phase II ESA will be used by Family Fun Centers to (1) use as a summary of contaminant conditions at the site for completing a conceptual remedial action plan that will be submitted to the Ecology for review and comment, (2) address areas of the site that

may require remediation, special handling, removal and/or movement and capping of soils during site development, and (3) assist with integrating site development with remediation of site soils and ground water, to pursue a "no further action" determination from Ecology.

SCOPE OF SERVICES

The services performed consisted of soil and ground water sampling and chemical analyses that addressed each of the confirmed and suspected occurrences of contamination described in Section 6.0 of our Phase I ESA report, and listed above. We used the field and laboratory results from previous studies to the maximum extent possible to supplement our sampling and analysis plan. The specific scope of services performed is described below.

1. Prepared a site-specific health and safety plan and monitor health and safety conditions during field activities.
2. Subcontracted a geophysical survey in the vicinity of site structures to evaluate the potential presence of unidentified USTs.
3. Completed twelve shallow hand-augered borings at the locations of significant surface oil stains, discarded batteries, discarded railroad ties and two possible USTs.
4. Monitored the drilling of 20 direct-push soil borings at the locations of the soil stockpile, detention pond, slag fill, the repair shop, the former milk processing facility, the former agricultural fields, the downgradient (northern) portion of the site and UST/AST locations.
5. Obtained soil samples from approximately 1- to 5-foot depth intervals in each boring for field screening of potential contaminants using visual, water sheen and headspace vapor screening methods.
6. Measured the depth to ground water, temperature, pH, conductivity and dissolved oxygen concentration in monitoring well GCW-16. Obtained one ground water sample from GCW-16 and seven ground water samples from selected direct-push borings for chemical analysis.
7. Submitted selected soil samples from the borings and ground water samples for chemical analyses listed in Table 1.
8. Evaluated the field and laboratory data with regard to current environmental regulations and briefly discuss potential remedial options.

POTENTIAL CONTAMINANTS OF CONCERN

Based on our review of the site history, our experience at the site and with similar facilities, our preliminary site evaluation included chemical testing for the presence of the following contaminants:

- Petroleum-related compounds associated with former and/or likely existing ASTs and USTs.
- Petroleum-related compounds, solvents and metals associated with the automobile/boat repair and storage activities.
- Petroleum-related compounds and metals associated with the imported soil stockpile.

- Metals and potentially low pH associated with spilled car batteries.
- Solvents associated with floor cleaning at the former milk processing plant.
- Metals and SVOCs associated with the storage of railroad ties. SVOCs include PAHs, creosols and phenols.
- PCBs, petroleum hydrocarbons, metals and potentially low pH associated with slag.
- Pesticides associated with former agricultural fields and agricultural chemical storage.

A summary of the explorations completed for this Phase II ESA, with the depths of samples and sample analyses conducted, is provided in Table 1.

GEOPHYSICAL RECONNAISSANCE

Apollo Geophysics of Seattle, Washington conducted electromagnetic (EM) and ground penetrating radar (GPR) surveys of areas adjacent to buildings at 7100, 7120, 7140, 7150, 7160 and 7170 Monster Road and the area near the former diesel AST to locate any objects that would be indicative of underground storage tanks. According to Apollo Geophysics, the electromagnetic and GPR surveys identified the following:

- A potential UST was located near the southeast corner of the house at 7100 Monster Road. This area was sampled, as discussed below.
- Two potential USTs were found near the northeast corner of house at 7140 Monster Road. This area was sampled, as discussed below.
- An object was tentatively identified as a UST near the southeast corner of the repair shop located immediately to the west of the house at 7140 Monster Road. The EM and GPR response did not provide sufficient resolution for positive identification as an UST. This area was not sampled.
- A potential UST was located near the northwest corner of house at 7160 Monster Road. This area was sampled, as discussed below.
- Apollo Geophysics observed that a patch on the west wall of the house at 7120 Monster Road was indicative that an AST may have been present there at one time. This area was sampled, as discussed below.

The approximate locations of the possible USTs detected with the EM and GPR surveys are shown in Figure 2. A copy of the report prepared by Apollo Geophysics is presented in Appendix A.

SUBSURFACE EXPLORATIONS

GENERAL

Subsurface soil conditions beneath the site were explored by drilling 20 direct-push borings (SP-2 through SP-7, SP-9 through SP-11, SP-15 through SP-23 and SP-25) and 12 hand-augered borings (HA-1 through HA-12) between October 3 and October 6, 1997. The direct-push borings

were numbered consecutively in our sampling plan prior to field activities. Field explorations in the sampling plan were completed as time and field conditions allowed. All 25 planned direct-push borings were not completed. In particular, we did not complete the planned exploration at the utility vault (as discussed below), and we consolidated boring locations in the soil stockpile. The explorations listed in Table 1 are inclusive of all completed explorations. The approximate exploration locations are shown in Figure 1.

The direct-push borings were completed at depths ranging between approximately 3.0 and 51 feet below the ground surface; the hand-augered borings were completed at depths ranging between approximately 0.5 to 1.5 feet below the ground surface, with the exception of HA-11 (which was completed at a depth of approximately 5 feet below the ground surface). At a minimum, the explorations were sampled at changes in soil type and at the ground water table, if encountered. Field screening and soil description was conducted on all soil samples. Field screening results were used in selection of samples to submit for chemical analysis. Boring logs for explorations completed to depths of 3 feet or greater are provided in Figures B-3 through B-20. Field screening results for the soil samples are shown in the boring logs. Field screening results for the samples submitted for chemical analysis of petroleum-related compounds are summarized in Table 2.

SOIL CONDITIONS

Borings SP-6, SP-7, SP-9, SP-10, SP-11 and SP-13 were all completed in the stockpile material, which generally consisted of silt with occasional fine to medium sand and gravel to sandy silt with gravel. Borings SP-2, SP-3, SP-4, SP-15, SP-22 and SP-23 encountered soil that generally graded from silt to either silty fine sand to medium sand or fine to medium sand with depth. Borings SP-5, SP-16, SP-17, SP-18, SP-19, SP-20 encountered soil that generally consisted of silt with fine to medium sand or occasional fine to medium sand. Borings SP-21 and SP-25 were completed at depths of approximately 1 foot in soil that was very dense silt with sand and gravel. Boring SP-21 was completed through a 3-inch-thick layer of slag.

GROUND WATER CONDITIONS

Ground water conditions at the site were explored by obtaining water samples on October 2 and 3, 1997 from SP-2 through SP-5, SP-18, and SP-19, and SP-23 and on October 8, 1997 from GCW-16. Depth to ground water in the direct push borings on October 2 and 3, 1997 ranged from approximately 12 to 20 feet below ground surface. The depth to ground water in GCW-16 was approximately 16.5 feet below ground surface. The direction of ground water flow as determined by previous consultants appear to be generally to the north.

Water quality parameters of conductivity and temperature were obtained in the field in the water samples obtained from the direct-push borings. Conductivity of the water sampled ranged

from 119 to 550 micromhos/centimeter and temperature was measured between 12 and 15 degrees Centigrade. The pH was measured by North Creek Analytical Labs Inc. and varied from 5.69 to 6.84.

SUBSURFACE CONTAMINATION

Soil samples from selected borings, and ground water sample from selected direct-push borings and from existing monitoring well GCW-16, were obtained for chemical analysis to evaluate potential contamination in areas of concern as defined in a previous section of this report and listed in Table 1.

The soil chemical analytical data are summarized in Tables 2 through 5; the ground water chemical analytical data are summarized in Tables 8 through 10. In-situ ground water parameters of temperature, conductivity, pH and dissolved oxygen are summarized in Table 7. Sampling procedures are described in Appendix B. Laboratory reports and our review of the laboratory quality control documentation are presented in Appendix C.

SUMMARY OF FIELD OBSERVATIONS AND CHEMICAL ANALYTICAL RESULTS

SOIL STOCKPILE

Soil borings SP-6, SP-7, SP-9, SP-10, SP-11, SP-13 and SP-15 were completed in the soil stockpile. Heavy oil-range hydrocarbons were detected at concentrations slightly exceeding the MTCA Method A cleanup level in the soil samples submitted for chemical analysis. Chromium was detected at a concentration exceeding the MTCA Method A cleanup level in one soil sample obtained from boring SP-7, obtained from a depth of approximately 30 feet. The soil sample appeared to be obtained from the interface between the stockpile and underlying native soil. Diesel- and heavy oil-range hydrocarbons also were detected in samples obtained during previous site studies. Based on our review of other reports, the maximum heavy oil-range hydrocarbon concentration in soil samples from the stockpile is approximately 1,000 milligrams per kilogram.

SLAG FILL

Soil boring SP-21 was completed through slag in Monster Road. Other borings also were completed in the vicinity of slag. Contaminants of concern generally related to slag were not detected in the soil sample submitted from SP-21. In general, the pH in soil and ground water samples was near neutral and did not indicate that the slag resulted in lowering the pH, as we have observed on some other sites with slag.

DETENTION POND

Soil boring SP-5 was completed near the detention pond. Heavy oil-range hydrocarbons were detected at a concentration 1,570 mg/kg in a soil sample obtained from the boring at a depth of approximately 18 feet below the ground surface. Field screening results indicated that petroleum-related contamination may be present in the vicinity of SP-5 at depths ranging from

approximately 13 to 21 feet below the ground surface. No dissolved hydrocarbons were detected in ground water at this location. Arsenic was detected at a concentration of 68.4 μg/l in the water sample obtained from boring SP-5.

FORMER AUTOMOBILE REPAIR SHOP AND VICINITY

Soil borings HA-3, HA-4, HA-5 and SP-23 were completed in the vicinity of the former automobile repair shop. Soil borings HA-7 and HA-8 were completed in the vicinity of former automobile and boat parking and repair. Petroleum hydrocarbons were detected in soil samples submitted from borings HA-3, HA-4, HA-5 and SP-23, obtained at depths of approximately 0.5 to 1.0 foot below the ground surface. Arsenic, nickel and chromium also were detected at concentrations greater than MTCA Method A or B cleanup levels in one soil sample, and cPAHs were detected at a concentration greater than MTCA Method A cleanup levels in another soil sample obtained from a boring near the repair shop. The lateral and vertical extent of contamination was not determined in this area.

OIL DUMP

Soil borings HA-6 and SP-25 were completed in the vicinity of an oil dump observed during our Phase I ESA reconnaissance. Diesel- and heavy oil-range hydrocarbons were detected at relatively high concentrations in the soil samples submitted from these borings. These soil samples were obtained from depths of approximately 0.5 and 1.0 foot below the ground surface. The lateral and vertical extent of contamination was not determined in the oil dump area.

USTs and ASTs

Soil borings HA-11, HA-12, SP-18, SP-19, SP-20 and SP-22 were completed near known or possible ASTs and USTs at 7100, 7120, 7140 and 7160 Monster Road. Contaminants of concern were not detected at concentrations greater than MTCA Method A in the soil and/or ground water samples from these borings, with the following exception. The sum of diesel- and heavy oil-range hydrocarbons slightly exceeds the MTCA Method A cleanup level of 1.0 milligrams per liter in the water sample from boring SP-19, in the vicinity of a former diesel AST.

FORMER MILK PROCESSING FACILITY

Soil borings SP-16 and SP-17 were completed near the former milk processing facility. Contaminants of concern were not detected in the soil samples submitted from these borings.

ELECTRICAL VAULT

The utility locator removed the cover of the electrical vault in the northwest site corner on October 3, 1997. We observed that only wiring passed through the vault; no electrical equipment were observed. The utility locator indicated that it appeared as if the vault was placed in the

event that a transformer was necessary, but one had not been installed. The area surrounding the electrical vault does not appear to be of environmental concern, based on this observation; therefore, we did not obtain samples from the vicinity of the electrical vault.

BATTERY DUMPING

Soil boring HA-10 was completed in an area of battery dumping observed during our Phase I ESA reconnaissance. Metals were not detected at concentrations greater than MTCA Method A in the sample submitted from this boring.

RAILROAD TIE STORAGE

Soil boring HA-9 was completed adjacent to railroad ties stored near 7120 Monster Road. Potential contaminants of concern were not detected at concentrations greater than MTCA Method A or B in the sample submitted from this boring.

FORMER AGRICULTURAL FIELDS AND STORAGE OF AGRICULTURAL CHEMICALS

Soil borings HA-1 and HA-2 were completed in areas with the potential for pesticide contamination. The organochlorine pesticide chlordane was detected at a concentration exceeding the MTCA Method B single compound carcinogenic cleanup level in the soil sample submitted from HA-2, from a depth of approximately 0.5 foot. The vertical and horizontal extent of chlordane was not determined in the vicinity of HA-2.

ARSENIC IN GROUND WATER

Arsenic was detected at concentrations exceeding surface water criteria and the MTCA Method A cleanup level in ground water in samples obtained from borings SP-4 and SP-5, and the ground water sample from GCW-16. Arsenic also was previously detected by others in GCW-14 and GCW-17. These wells were not sampled during our study either because the well was not accessible or the well casing did not contain water.

SUMMARY OF RESULTS

The geophysical reconnaissance identified one probable UST near 7100 Monster Road, a second probable UST near 7140 Monster Road, and one possible UST near the southeast corner of the repair shop that previously were not documented.

GeoEngineers completed 20 direct-push borings and 12 hand-augered borings, and sampling of one existing monitoring well (GCW-16). The boring locations were selected to assess subsurface contaminant conditions in (1) areas identified with confirmed contamination by other consultants, (2) areas identified during our Phase I ESA as being of potential environmental concern, and (3) areas identified by geophysical reconnaissance as having potential USTs that previously were not documented.

The results of our Phase II ESA, and previous environmental studies at the site, indicate that the following contaminant conditions exist beneath the site:

- Diesel- and heavy oil-range hydrocarbon concentrations in soil stockpiled in the eastern portion of the site range from 217 mg/kg to about 1,000 mg/kg. Heavy oil-range hydrocarbons and chromium were detected at concentrations greater than MTCA Method A in a soil sample obtained from approximately the base of the stockpile in the northwest portion of the stockpile. A site-specific MTCA Method B soil cleanup level for hydrocarbons has not yet been calculated for this site.
- Heavy oil-range hydrocarbons were detected at a concentration of 1,570 mg/kg in a sample obtained from a depth of approximately 18 feet at the detention pond. Dissolved-phase hydrocarbons were not detected in ground water at this location.
- Petroleum hydrocarbons were detected at concentrations above MTCA Method A in shallow soil samples obtained near the automobile repair shop. Arsenic, nickel, chromium and cPAHs also were detected in this area. The source of arsenic, nickel and chromium may be leakage from car batteries or the presence of paint chips. The source of cPAHs may be waste oil from the automobiles.
- Diesel- and heavy oil-range hydrocarbons were detected at relatively high concentrations in shallow samples obtained at the oil dump, north of the automobile repair shop.
- An organochlorine pesticide (chlordane) was detected at a concentration greater than the MTCA Method B cleanup level in a shallow soil sample obtained at the location of the former barn, where agricultural chemicals had been stored.
- The sum of diesel- and heavy oil-range hydrocarbons slightly exceeded the MTCA Method A cleanup level in a water sample obtained in the location of the former diesel AST.
- Arsenic was detected at concentrations greater than MTCA Method A and surface water cleanup levels in water samples obtained at the downgradient portion of the site. Arsenic has previously been detected at concentrations of regulatory concern in a well (GCW-14) located in the southeast corner of the site. Arsenic was not detected in the soil samples submitted, with the exception of a shallow soil sample obtained near the automobile repair shop. Arsenic also was not detected in a slag sample that was previously tested. The source of arsenic was not determined during our Phase II ESA.

PRELIMINARY REMEDIAL OPTIONS

We understand that Family Fun Centers would like to schedule a meeting with Ecology to receive technical consultation under the Voluntary Cleanup Program regarding contamination at the Family Fun Center site. GeoEngineers intends to present options for further assessment and handling of soils that will assist in the remediation of the site concurrent with site development, while protecting human health and the environment. Based on our current understanding of the site and the objectives of Family Fun Centers, the following is a list of potential actions that we

recommend to address contamination at the site. We recommend that these items be discussed at a meeting with Ecology to receive their technical advice about these activities prior to proceeding with site development.

- Conduct document research regarding the potential for an off-site source of arsenic in ground water beneath the site.
- Install two monitoring wells in the downgradient portion of the site, located near the northeast site corner and approximately 150 west of the northeast site corner. The purpose of these wells is to assess arsenic concentrations from long-term monitoring wells in the downgradient portion of the site.
- Install one monitoring well near the upgradient portion of the site to determine if dissolved arsenic in ground water is being transported to the site from an upgradient source.
- Calculate site-specific MTCA Method B cleanup levels for hydrocarbons that are protective of human health. Soil sample results from Parcel 2 will be used for these calculations.
- Move soil from the stockpile in the eastern portion of the site to areas of the site that (1) require fill material, (2) will be paved, (3) cleanup to MTCA Method A cleanup levels is not the goal, and (4) areas of the site where the soil in the stockpile would be suitable backfill material. We recommend that a representative of GeoEngineers be present during movement of the stockpile to (1) field screen soil and observe if conditions change from what is expected based on environmental studies on the stockpile and (2) assist the contractor in separating slag, debris and organic material from the soil.
- Move soil that exceeds site-specific hydrocarbon cleanup levels from Parcel 2 and 3 to the portion of Parcel 1 that will be paved or capped. Move metals- and pesticide-contaminated soil and slag to the portion of Parcel 1 that will be paved if Ecology considers this an acceptable approach.
- Remove existing USTs from the site. Monitor and document UST removal.

LIMITATIONS

We have prepared this report for use by Family Fun Centers and other parties authorized by Family Fun Centers. This report is not intended for use by others and the information contained herein is not applicable to other sites.

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced locations at the site. It is always possible that contamination exists in areas of the site that were not explored or tested.

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

We appreciate the opportunity to be of continued service to Family Fun Centers. Please call if you have any questions regarding the report.

Respectfully submitted,
GeoEngineers, Inc.

Lisa J. Bona
Project Geologist

Kurt S. Anderson, C.P.G.
Associate

GRS:LJB:KSA:cdl
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TABLE 1 (Page 1 of 2)
SUMMARY OF EXPLORATIONS
FAMILY FUN CENTER
TUKWILA, WASHINGTON

Exploration Number[1]	Exploration Location	Depth of Exploration (feet)	Date of Exploration	Sample Media	Sample Analyses[2]
HA-1	Former agricultural field	1.5	10/06/97	Soil	PCBs and pesticides
HA-2	Former agricultural chemical storage area	0.5	10/06/97	Soil	PCBs and pesticides
HA-3	Adjacent to garage at 7140 Monster Rd.	1.0	10/06/97	Soil	VOCs, NWTPH-Gx, NWTPH-Dx, priority pollutant metals, barium, VPH, EPH
HA-4	North of garage, in area of oil staining	0.5	10/06/97	Soil	VOCs, NWTPH-Dx, priority pollutant metals, barium, EPH
HA-5	North of garage, in area of oil staining	0.5	10/06/97	Soil	VOCs, NWTPH-Dx, priority pollutant metals, barium, EPH
HA-6	Vicinity of former oil dump	0.5	10/06/97	Soil	VOCs, NWTPH-Gx, NWTPH-Dx, VPH and EPH
HA-7	Within former automobile/boat parking area	0.1	10/06/97	Soil	NWTPH-Dx
HA-8	Within automobile/boat parking area	0.5	10/06/97	Soil	NWTPH-Dx
HA-9	Adjacent to railroad tie storage area	1.0	10/06/97	Soil	Priority pollutant metals, barium and SVOCs
HA-10	Adjacent to former battery dump area	1.0	10/06/97	Soil	Priority pollutant metals, barium
HA-11	Near possible UST at 7100 Monster Rd	5.0	10/08/97	Soil	NWTPH-Dx
HA-12	Possible former AST location at 7120 Monster Rd	1.0	10/08/97	Soil	NWTPH-Dx
SP-2	Near northern site boundary in Parcel 1	13.0	10/03/97	Water	WTPH-G, WTPH-D ext., VOCs, dissolved priority pollutant metals, dissolved barium, pH
SP-2	Near northern site boundary in Parcel 1	10.0	10/03/97	Soil	WTPH-D ext.
SP-3	Near northern site boundary in Parcel 1	14.0	10/03/97	Water	WTPH-G, WTPH-D ext., VOCs, dissolved priority pollutant metals, dissolved barium, pH
SP-4	Near northern site boundary in Parcel 2	19.0	10/03/97	Water	WTPH-G, WTPH-D ext., VOCs, dissolved priority pollutant metals, dissolved barium, pH
SP-5	Near northern site boundary in Parcel 3	24.0	10/04/97	Water	WTPH-G, WTPH-D ext., VOCs, total priority pollutant metals, total barium, pH
SP-5	Near northern site boundary in Parcel 3	18.0	10/04/97	Soil	WTPH-D ext.
SP-6	North portion of soil stockpile	4.0	10/03/97	Soil	WTPH-D ext.
SP-7	Northwest portion of soil stockpile	30.0	10/02/97	Soil	WTPH-D ext., priority pollutant metals, barium
SP-9	East-central portion of soil stockpile	2.0	10/03/97	Soil	WTPH-D ext., priority pollutant metals, barium, pH
SP-10	West-central portion of soil stockpile	0.5	10/06/97	Soil	WTPH-D ext., priority pollutant metals, barium
SP-11	West-central portion of soil stockpile	3.0	10/03/97	Soil	WTPH-D ext., priority pollutant metals, barium, pH

Notes appear on page 2 of 2.

TABLE 1 (Page 2 of 2)

Exploration Number[1]	Exploration Location	Depth of Exploration (feet)	Date of Exploration	Sample Media	Sample Analyses[2]
SP-13	South portion of soil stockpile	4.0	10/03/97	Soil	WTPH-D ext.
SP-15	Southwest portion of soil stockpile	1.0	10/03/97	Soil	WTPH-D ext., priority pollutant metals, barium, PCBs, pH
SP-16	Adjacent to former milk processing plant	2.0	10/03/97	Soil	WTPH-D ext., VOCs
SP-17	Adjacent to former milk processing plant	2.0	10/03/97	Soil	WTPH-D ext., VOCs
SP-18	Adjacent to fuel shed	10.0	10/03/97	Soil	WTPH-G, BETX
SP-18	Adjacent to fuel shed	21.0	10/03/97	Water	WTPH-G, VOCs, dissolved lead
SP-19	Former diesel AST	10.0	10/03/97	Soil	WTPH-D ext.
SP-19	Former diesel AST	20.0	10/03/97	Water	WTPH-D ext., dissolved priority pollutant metals, dissolved barium, pH
SP-20	Near UST at 7160 Monster Rd.	9.0	10/03/97	Soil	WTPH-D ext.
SP-21	Slag in Monster Rd.	1.0	10/03/97	Soil	WTPH-D ext., priority pollutant metals, barium, PCBs, pH
SP-22	Near UST and former AST at 7140 Monster Rd.	9.0	10/03/97	Soil	WTPH-D ext.
SP-23	Adjacent to repair shop at 7140 Monster Rd.	0.5	10/03/97	Soil	WTPH-G, WTPH-D ext., VOCs, dissolved priority pollutant metals, dissolved barium
SP-23	Adjacent to repair shop at 7140 Monster Rd.	26.0	10/03/97	Water	WTPH-G, WTPH-D ext., priority pollutant metals, barium, VOCs, pH
SP-25	Vicinity of former oil dump	1.0	10/06/97	Soil	NWTPH-Dx, VOCs, priority pollutant metals, barium, EPH
GCW-16	Near northern site boundary in Parcel 2	16.0	10/08/97	Water	NWTPH-Gx, NWTPH-Dx, dissolved priority pollutant metals, dissolved barium, pH

Notes:

[1]Approximate exploration locations are shown in Figure 2.

[2]NWTPH-Gx = gasoline-range hydrocarbons by Ecology Method

NWTPH-Dx = diesel- and heavy oil-range hydrocarbons by Ecology Method

WTPH-G = gasoline-range hyrocarbons by Ecology Method

WTPH-D extended = diesel- and heavy oil-range hydrocarbons by Ecology Method

EPH = extractable petroleum hydrocarbons with polycyclic aromatic hydrocarbons by June 1997 Ecology Method (Publication ECY 97-602)

VPH = volatile petroleum hydrocarbons with benzene, ethylbenzene, toluene, xylenes, methyltert-butyl ether and naphthalene by June 1997 Ecology Method (Publication ECY 97-602)

pH by EPA Method 150.1

VOCs = volatile organic compounds by EPA Method 8240B

Priority pollutant metals and barium by EPA Methods 6010 and 7000 series

SVOCs = semivolatile organic compounds by EPA Method 8270

PCBs = polychlorinated biphenyls. PCBs and pesticides by EPA Method 8081

Lead by EPA Method 7421

PCBs and pesticides by EPA Method 8081

UST = underground storage tank; AST = aboveground storage tank

Document ID: P:\592502T1.WK1

TABLE 2 (Page 1 of 2)
SUMMARY OF SOIL FIELD SCREENING RESULTS AND CHEMICAL ANALYTICAL DATA
PETROLEUM-RELATED COMPOUNDS
FAMILY FUN CENTER
TUKWILA, WASHINGTON

Boring Number[1]	Date Sampled	Sample Depth (feet)	Field Screening Results[2]		BETX[3] (mg/kg)				Gasoline-range Hydrocarbons[4] (mg/kg)	Diesel-range Hydrocarbons[5] (mg/kg)	Heavy Oil-range Hydrocarbons[5] (mg/kg)
			Headspace Vapors (ppm)	Sheen	B	E	T	X			
HA-3	10/06/97	1.0	<100	NS	<0.200	<0.200	<0.200	<0.400	<5.00	52.1	268
HA-4	10/06/97	0.5	<100	HS	<0.200	<0.200	<0.200	<0.400	--	3,530	19,200
HA-5	10/06/97	0.5	<100	NS	<0.200	<0.200	<0.200	<0.400	--	566	2,250
HA-6	10/06/97	0.5	<100	SS	<0.200	<0.200	<0.200	<0.400	36.0	4,350	701
HA-7	10/06/97	0.1	<100	NS	--	--	--	--	--	19.9	83.0
HA-8	10/06/97	0.5	<100	NS	--	--	--	--	--	24.0	162
HA-11	10/08/97	5.0	<100	NS	--	--	--	--	--	<10.0	<25.0
HA-12	10/08/97	1.0	<100	NS	--	--	--	--	--	<10.0	<25.0
SP-2	10/02/97	10.0	<100	MS	--	--	--	--	--	<10.0	<25.0
SP-4	10/06/97	8.0	120	NS	--	--	--	--	--	15.0	25.4
SP-5	10/03/97	18.0	1,000	NS	--	--	--	--	--	156	1,570
SP-6	10/03/97	4.0	160	NS	--	--	--	--	--	<10.0	50.6
SP-7	10/02/97	30.0	100	NS	--	--	--	--	--	83.7	310
SP-9	10/03/97	2.0	100	NS	--	--	--	--	--	44.8	455
SP-10	10/06/97	0.5	<100	NS	--	--	--	--	--	53.6	303
SP-11	10/03/97	3.0	--	--	--	--	--	--	--	14.5	81.0
SP-13	10/03/97	4.0	180	NS	--	--	--	--	--	43.7	217
SP-15	10/03/97	1.0	<100	NS	--	--	--	--	--	40.9	285
SP-16	10/03/97	2.0	<100	NS	--	--	--	--	--	<10.0	<25.0
SP-17	10/03/97	2.0	<100	NS	--	--	--	--	--	<10.0	<25.0
SP-18	10/03/97	10.0	<100	NS	<0.0500	<0.0500	<0.0500	<0.100	<5.00	--	--
SP-19	10/03/97	10.0	370	HS	--	--	--	--	--	13.0	54.3
SP-20	10/03/97	9.0	<100	NS	--	--	--	--	--	<10.0	<25.0

Notes appear on page 2 of 2.

TABLE 2 (Page 2 of 2)

Boring Number[1]	Date Sampled	Sample Depth (feet)	Field Screening Results[2]		BETX[3] (mg/kg)				Gasoline-range Hydrocarbons[4] (mg/kg)	Diesel-range Hydrocarbons[5] (mg/kg)	Heavy Oil-range Hydrocarbons[5] (mg/kg)
			Headspace Vapors (ppm)	Sheen	B	E	T	X			
SP-21	10/03/97	1.0	<100	NS	--	--	--	--	--	11.2	65.1
SP-22	10/03/97	9.0	<100	NS	--	--	--	--	--	<10.0	<25.0
SP-23	10/03/97	0.5	<100	HS	--	--	--	--	117	3,650	359
SP-25	10/06/97	1.0	<100	HS	<0.200	<0.200	<0.200	<0.400	--	6,860	31,700

Notes:

[1]Approximate boring locations are shown in Figure 2.

[2]See Appendix A for a description of field screening methods. NS = no sheen, SS = slight sheen, MS = moderate sheen, HS = heavy sheen.

[3]Analyzed by EPA Method 8240. B = benzene, E = ethylbenzene, T = toluene, X = xylenes.

[4]Analyzed by Ecology Method WTPH-G or NWTPH-Gx.

[5]Analyzed by Ecology Method WTPH-D extended or NWTPH-Dx.

ppm = parts per million

mg/kg = milligrams per kilogram

'--' = not measured or analyzed

Chemical analyses performed by North Creek Analytical. Laboratory reports are presented in Appendix C.

Document ID: P:\592502T2.WK1

TABLE 3
SUMMARY OF SOIL CHEMICAL ANALYTICAL DATA
VOLATILE ORGANIC COMPOUNDS
FAMILY FUN CENTER
TUKWILA, WASHINGTON

Boring Number[1]	Date Sampled	Sample Depth (feet)	Volatile Organic Compounds[2] (mg/kg)
SP-16	10/03/97	2.0	ND
SP-17	10/03/97	2.0	ND
SP-23	10/03/97	0.5	ND
SP-25	10/06/97	1.0	ND
HA-3	10/06/97	1.0	ND
HA-4	10/06/97	0.5	ND
HA-5	10/06/97	0.5	ND
HA-6	10/06/97	0.5	ND

Notes:

[1]Approximate boring locations shown in Figure 2.

[2]Analyzed by EPA Method 8240B.

mg/kg = milligrams per kilogram

ND = none detected

Chemical analyses conducted by North Creek Analytical of Bothell, Washington.

Laboratory reprots are presented in Appendix C.

Document ID: P:\592502T3.WK

TABLE 4
SUMMARY OF SOIL CHEMICAL ANALYTICAL DATA
SVOCs, PCBs AND PESTICIDES
FAMILY FUN CENTER
TUKWILA, WASHINGTON

Boring Number[1]	Date Sampled	Sample Depth (feet)	SVOCs[2] (mg/kg)	PCBs[3] (mg/kg)	Organochloride Pesticides[3] (µg/kg)	
HA-1	10/06/97	1.5	–	ND	Gamma-chlordane	1.69
					4,4'-DDD	5.53
HA-2	10/06/97	0.5	–	ND	Chlordane (total)	8.34
					4,4'-DDD	9.36
					Dieldrin	5.16
HA-9	10/06/97	1.0	ND	–	–	
SP-15	10/03/97	1.0	–	ND	–	
SP-18	10/03/97	10.0	–	–	–	
SP-21	10/03/97	1.0	–	ND	–	
MTCA Method A or B Cleanup Level					Chlordane (total)	769
					DDD (total)	4,170
					Dieldrin	62.5

Notes:

[1]Approxiamte boring locations are shown in Figure 2.

[2]Analyzed by EPA Method 8270. SVOCs = semivolatile organi

[3]Analyzed by EPA Method 8081. PCBs = polychlorinated biph

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

"–" = not analyzed

ND = not detected

Chemical analyses performed by North Creek Analytical. Labo

See the laboratory reports for a complete list of analytes and d

Chlordane H.H. G.W.
2.48 ppm. .006 ppm
DDD 4.17 ppm. .03 ppm.
Dieldrin .06 ppm. .0005 ppm

TABLE 5
SUMMARY OF SOIL CHEMICAL ANALYTICAL DATA
PRIORITY POLLUTANT METALS, BARIUM AND pH
FAMILY FUN CENTER
TUKWILA, WASHINGTON

Boring Number[1]	Date Sampled	Sample Depth (feet)	Priority Pollutant Metals and Barium[2] (mg/kg)		pH[3]
SP-4	10/02/97	8.0	Below cleanup levels[4]		7.57
SP-7	10/02/97	30.0	Chromium	1,150	–
SP-9	10/03/97	2.0	Below cleanup levels[4]		7.61
SP-10	10/06/97	0.5	Below cleanup levels[4]		–
SP-11	10/03/97	3.0	Below cleanup levels[4]		7.01
SP-15	10/03/97	1.0	Below cleanup levels[4]		9.38
SP-21	10/03/97	1.0	Below cleanup levels[4]		6.96
SP-23	10/03/97	0.5	Arsenic	30.4	–
			Chromium	196	
			Nickel	2,720	
SP-25	10/06/97	1.0	Below cleanup levels[4]		–
HA-3	10/06/97	1.0	Below cleanup levels[4]		–
HA-4	10/06/97	0.5	Below cleanup levels[4]		–
HA-5	10/06/97	0.5	Below cleanup levels[4]		–
HA-9	10/06/97	1.0	Below cleanup levels[4]		–
HA-10	10/06/97	1.0	Below cleanup levels[4]		–
MTCA Method A Cleanup Level			Arsenic	20.0	
			Chromium	100	
MTCA Method B Cleanup Level			Nickel	1,600	

Notes:

[1]Approximate boring locations are shown in Figure 2.

[2]Analyzed by EPA 6000/7000 series methods. Only those metals detected at concentrations exceeding the MTCA Method A or B cleanup levels are listed. See the laboratory report for a complete list of analytes and detection limits.

[3]Analyzed by EPA Method 150.1.

[4]Chemical analyses resulted in concentrations less than detection levels and/or less than MTCA Method A or Method B cleanup levels for soil.

mg/kg = milligrams per kilogram

'–' = not analyzed

Chemical analyses conducted by North Creek Analytical of Bothell, Washington. Laboratory reports are presented in Appendix C.

Document ID: P:\592502T5

TABLE 6 (Page 1 of 2)
SUMMARY OF SOIL CHEMICAL ANALYTICAL DATA
EXTRACTABLE AND VOLATILE PETROLEUM HYDROCARBONS
FAMILY FUN CENTER
TUKWILA, WASHINGTON

Boring Number[1]	Date Sampled	Sample Depth (feet)	EPH and VPH[2] (mg/kg)	
HA-3	10/06/97	1.0	EPH	
			C16-C21 Aliphatics	16.1
			C21-C34 Aliphatics	143
			C21-C34 Aromatics	36.8
			cPAHs - Concentration less than MTCA Method A cleanup level	
			VPH	<5.00
			MTBE, BETX, Naphthalene	ND
HA-4	10/06/97	0.5	EPH	
			C10-C12 Aliphatics	54.8
			C12-C16 Aliphatics	85.7
			C16-C21 Aliphatics	690
			C21-C34 Aliphatics	9,100
			C10-C12 Aromatics	73.1
			C12-C16 Aromatics	76.5
			C16-C21 Aromatics	490
			C21-C34 Aromatics	4,020
			cPAHs	2.143
HA-5	10/06/97	0.5	EPH	
			C12-C16 Aliphatics	12.7
			C16-C21 Aliphatics	66.2
			C21-C34 Aliphatics	465
			C16-C21 Aromatics	145
			C21-C34 Aromatics	666
			cPAHs - Concentration less than MTCA Method A cleanup level	
HA-6	10/06/97	0.5	EPH	
			C10-C12 Aliphatics	23.4
			C12-C16 Aliphatics	481
			C16-C21 Aliphatics	795
			C21-C34 Aliphatics	320
			C12-C16 Aromatics	37.4
			C16-C21 Aromatics	501
			C21-C34 Aromatics	192
			cPAHs - Concentration less than MTCA Method A cleanup level	
			VPH	
			C10-C12 Aromatics	28.2
			C12-C13 Aromatics	56.0
			MTBE, BETX, Naphthalene	ND
MTCA Method A Cleanup Level			cPAHs	1.0

1/15

Notes appear on page 2 of 2.

TABLE 6 (Page 2 of 2)

Boring Number[1]	Date Sampled	Sample Depth (feet)	EPH and VPH[2] (mg/kg)	
SP-25	10/06/97	1.0	EPH	
			C12-C16 Aliphatics	114
			C16-C21 Aliphatics	1,630
			C21-C34 Aliphatics	12,800
			C16-C21 Aromatics	620
			C21-C34 Aromatics	3,460
			cPAHs	ND
MTCA Method A Cleanup Level			cPAHs	1.0

14430

Notes:

[1]Approximate boring locations are shown in Figure 2.

[2]Analyzed by Washington Department of Ecology June 1997 Methods with confirmation (Publication No. ECY 97-602).

EPH = extractable petroleum hydrocarbons

VPH = volatile petroleum hydrocarbons

MTBE = methyl tert-butyl ether

BETX = benzene, ethylbenzene, toluene and xylenes

cPAHs = carcinogenic polycyclic aromatic hydrocarbons

mg/kg = milligrams per kilogram

ND = not detected

Chemical analyses conducted by North Creek Analytical of Bothell, Washington. The laboratory reports are presented in Appendix C.

Document ID: P:\592502T8.WK1

TABLE 7
DEPTH TO GROUND WATER AND GROUND WATER PARAMETERS
FAMILY FUN CENTER
TUKWILA, WASHINGTON

Monitoring Well[1]	Date Measured	Depth to Water from Casing Rim (feet)	Temp. (°C)	Conductivity (μmhos)	pH	Dissolved Oxygen (mg/l)
GCW-14[2]	10/08/97	–	–	–	–	–
GCW-16	10/08/97	16.17	11.5	670	6.04	0.4
GCW-17[3]	10/08/97	>19.85	–	–	–	–

Notes:

[1]Approximate monitoring well locations are shown in Figure 2.

[2]Well was not accessible.

[3]Well casing did not contain water.

°C = degrees Celcius

μmhos = micromhos

mg/l = milligrams per liter

"–" = not measured

Field methods are described in Appendix C.

Document ID: P:\592502T6.WK1

TABLE 8
SUMMARY OF GROUND WATER CHEMICAL ANALYTICAL DATA
PETROLEUM HYDROCARBONS
FAMILY FUN CENTER
TUKWILA, WASHINGTON

Boring Number[1]	Date Sampled	Sample Depth (feet)	Gasoline-range Hydrocarbons[2] (mg/l)	Diesel-range Hydrocarbons[3] (mg/l)	Heavy Oil-range Hydrocarbons[3] (mg/l)
SP-2	10/02/97	13.0	–	<0.250	<0.750
SP-3	10/02/97	14.0	–	<0.250	<0.750
SP-4	10/02/97	19.0	<0.0500	<0.250	<0.750
SP-5	10/04/97	22.0	<0.0500	<0.250	<0.750
SP-18	10/04/97	20.0	<0.0500	–	–
SP-19	10/04/97	20.0	–	0.982	1.35
SP-23	10/07/97	25.0	0.0589	0.448	<0.750
GCW-16	10/08/97	Not applicable	<0.0500	<0.250	<0.500
MTCA Method A Water Cleanup Level				1.0	

Notes:

[1]Approximate boring locations are shown in Figure 2.

[2]Analyzed by Ecology Method WTPH-G.

[3]Analyzed by Ecology Method WTPH-D extended.

mg/l = milligrams per liter

'–' = not analyzed

Shaded value indicates a concentration greater than the MTCA Method A cleanup level.

Chemical analyses performed by North Creek Analytical. Laboratory reports are presented in Appendix C.

Document ID: P:\592502T8.WK1

TABLE 9
SUMMARY OF GROUND WATER CHEMICAL ANALYTICAL DATA
VOLATILE ORGANIC COMPOUNDS
FAMILY FUN CENTER
TUKWILA, WASHINGTON

Boring Number[1]	Date Sampled	Sample Depth (feet)	Volatile Organic Compounds[2] (µg/l)
SP-4	10/02/97	19.0	Below cleanup levels[3]
SP-5	10/03/97	22.0	ND
SP-18	10/03/97	20.0	Below cleanup levels[3]
SP-23	10/03/97	25.0	Below cleanup levels[3]

Notes:

[1]Approximate boring locations are shown in Figure 2.

[2]Analyzed by EPA Method 8240B.

[3]Chemical analyses resulted in concentrations less than detection levels and/or less than MTCA Method A or Method B cleanup levels for soil.

ND = not detected

mg/l = milligrams per liter

Chemical analyses performed by North Creek Analytical of Bothell, Washington. Laboratory reports are presented in Appendix C.

Document ID: P:\592502T9.WK1

TABLE 10
SUMMARY OF GROUND WATER CHEMICAL ANALYTICAL DATA
PRIORITY POLLUTANT METALS, BARIUM AND pH
FAMILY FUN CENTER
TUKWILA, WASHINGTON

Boring Number[1]	Date Sampled	pH[2]	Priority Pollutant Metals and Barium[3] (µg/l)	
SP-2	10/02/97	5.69	Below cleanup levels[4]	
SP-3	10/02/97	6.20	Below cleanup levels[4]	
SP-4	10/02/97	6.67	Arsenic	69.4
SP-5	10/03/97	6.84	Arsenic	68.4
SP-19	10/03/97	6.58	Below cleanup levels[4]	
SP-23	10/03/97	6.12	Below cleanup levels[4]	
GCW-16	10/08/97	6.35	Arsenic	6.60
MTCA Method A Cleanup Level			Arsenic	5.0

Notes:

[1]Approximate sampling locations are shown in Figure 2.

[2]Analyzed by EPA Method 150.1.

[3]Analyzed by EPA 6010/7000 series methods. The results are for total metals for SP-5 and for dissolve metals for SP-2, SP-3, SP-4, SP-19, SP-23 and GCW-16. Only the compound with a concentration exceeding the MTCA Method A or Method B single compound cleanup level is listed.

[4]Chemical analyses resulted in concentrations less than detection levels and/or less than MTCA Method A or Method B cleanup levels for soil.

mg/l = milligrams per liter

ND = not detected

Chemical analyses performed by North Creek Analytical of Bothell, Washington. Laboratory reports are presented in Appendix C. See the laboratory reports for a complete list of analytes and detection limits.

Document ID: P:\59252T10.WK1

Geo Engineers

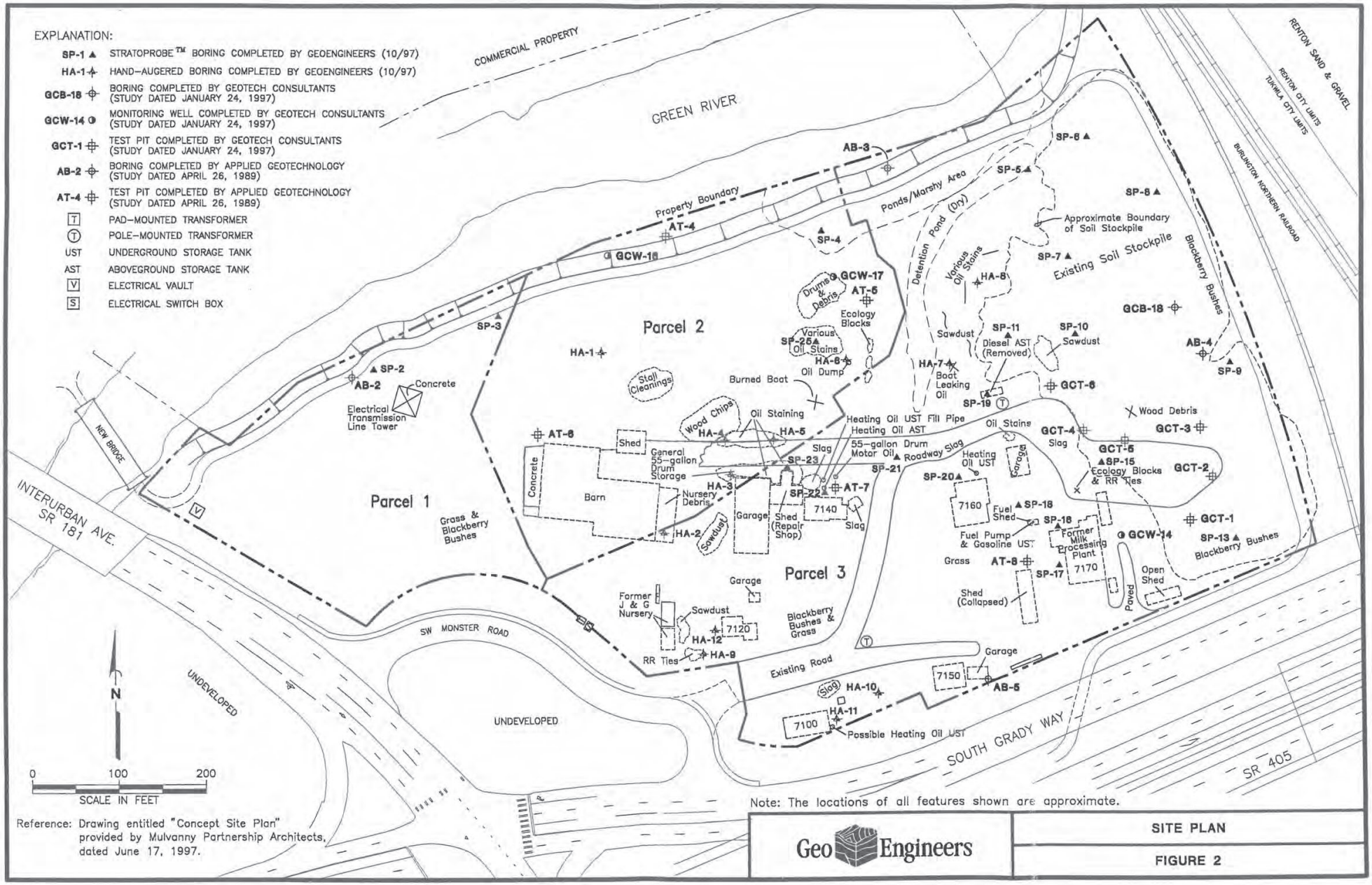
VICINITY MAP

FIGURE 1

06/24/97

5925-001-37

DJM:HLA



Reference: Drawing entitled "Concept Site Plan" provided by Mulvanny Partnership Architects, dated June 17, 1997.

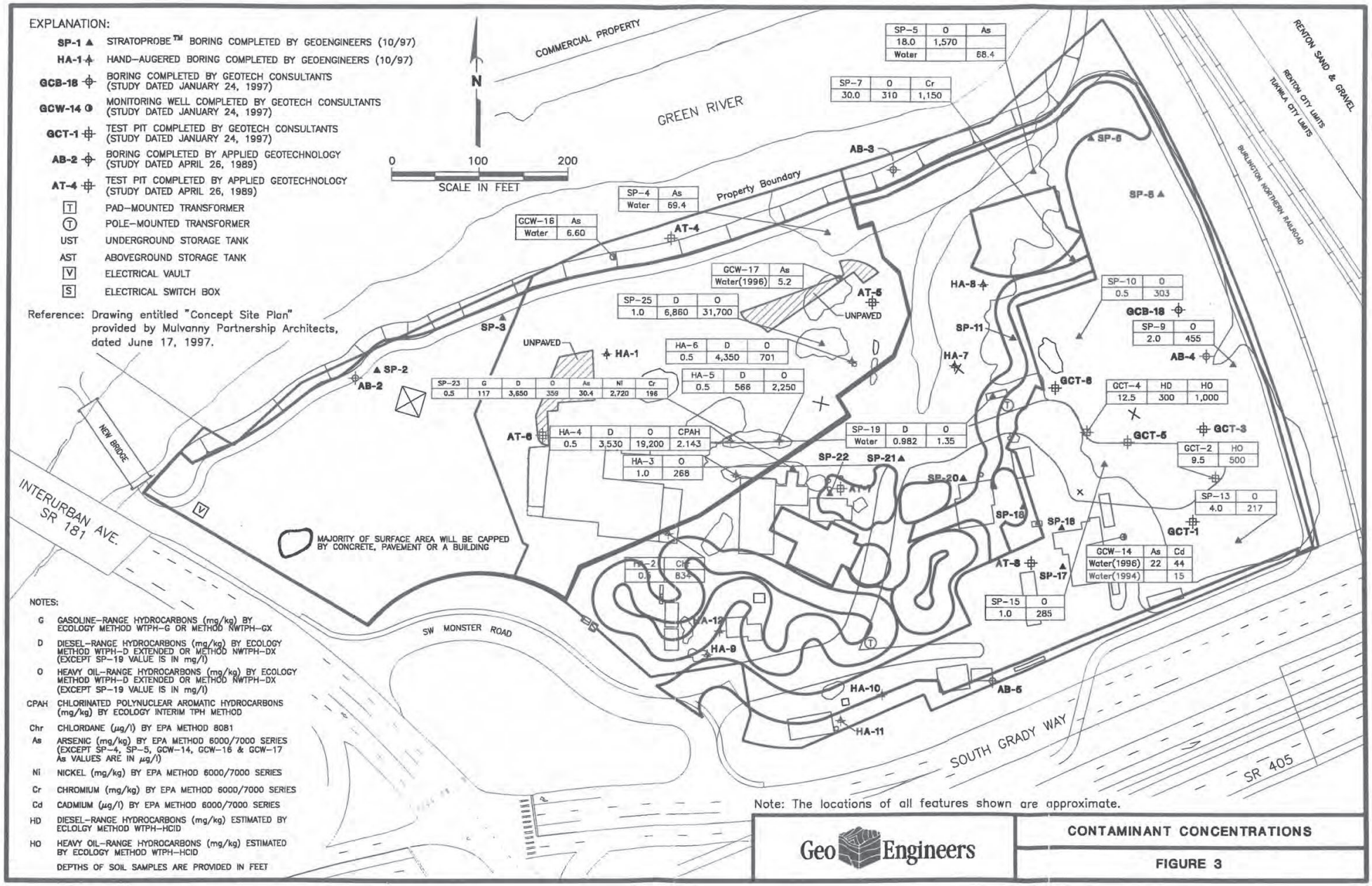
Note: The locations of all features shown are approximate.

Geo Engineers

SITE PLAN

FIGURE 2

LJB:HLA E:\5925002\5925002B.DWG 11/04/97


EXPLANATION:
SP-1 ▲ STRATOPROBE™ BORING COMPLETED BY GEOENGINEERS (10/97)
HA-1 HAND-AUGERED BORING COMPLETED BY GEOENGINEERS (10/97)
GCB-18 BORING COMPLETED BY GEOTECH CONSULTANTS (STUDY DATED JANUARY 24, 1997)
GCW-14 MONITORING WELL COMPLETED BY GEOTECH CONSULTANTS (STUDY DATED JANUARY 24, 1997)
GCT-1 TEST PIT COMPLETED BY GEOTECH CONSULTANTS (STUDY DATED JANUARY 24, 1997)
AB-2 BORING COMPLETED BY APPLIED GEOTECHNOLOGY (STUDY DATED APRIL 26, 1989)
AT-4 TEST PIT COMPLETED BY APPLIED GEOTECHNOLOGY (STUDY DATED APRIL 26, 1989)
T PAD-MOUNTED TRANSFORMER
T POLE-MOUNTED TRANSFORMER
UST UNDERGROUND STORAGE TANK
AST ABOVEGROUND STORAGE TANK
V ELECTRICAL VAULT
S ELECTRICAL SWITCH BOX
Reference: Drawing entitled "Concept Site Plan" provided by Mulvanny Partnership Architects, dated June 17, 1997.
N
0 100 200
SCALE IN FEET
COMMERCIAL PROPERTY
GREEN RIVER
Property Boundary
RENTON SAND & GRAVEL
RENTON CITY LIMITS
TUKWILA CITY LIMITS
BURLINGTON NORTHERN RAILROAD
SP-5 | 0 | As
18.0 | 1,570 |
Water | | 68.4
SP-7 | 0 | Cr
30.0 | 310 | 1,150
SP-4 | As
Water | 69.4
GCW-16 | As
Water | 6.60
GCW-17 | As
Water(1996) | 5.2
SP-25 | D | O
1.0 | 6,860 | 31,700
HA-6 | D | O
0.5 | 4,350 | 701
HA-5 | D | O
0.5 | 566 | 2,250
SP-23 | G | D | O | As | Ni | Cr
0.5 | 117 | 3,650 | 359 | 30.4 | 2,720 | 196
HA-4 | D | O | CPAH
0.5 | 3,530 | 19,200 | 2.143
HA-3 | O
1.0 | 268
SP-19 | D | O
Water | 0.982 | 1.35
SP-10 | O
0.5 | 303
SP-9 | O
2.0 | 455
GCT-4 | HD | HO
12.5 | 300 | 1,000
GCT-2 | HO
9.5 | 500
SP-13 | O
4.0 | 217
GCW-14 | As | Cd
Water(1996) | 22 | 44
Water(1994) | | 15
SP-15 | O
1.0 | 285
HA-2 | Chr
0.5 | 834
AB-3
SP-5 ▲
SP-8 ▲
HA-8
SP-11
HA-7
GCB-18
AB-4
GCT-8
GCT-5
GCT-3
GCT-1
SP-22
SP-21 ▲
SP-20 ▲
SP-18
SP-16
SP-17
AT-8
AT-7
AT-6
AT-5
AT-4
SP-3
SP-2
AB-2
HA-1
UNPAVED
NEW BRIDGE
INTERURBAN AVE. SR 181
MAJORITY OF SURFACE AREA WILL BE CAPPED BY CONCRETE, PAVEMENT OR A BUILDING
SW MONSTER ROAD
HA-12
HA-9
HA-10
HA-11
AB-5
SOUTH GRADY WAY
SR 405
NOTES:
G GASOLINE-RANGE HYDROCARBONS (mg/kg) BY ECOLOGY METHOD WTPH-G OR METHOD NWTPH-GX
D DIESEL-RANGE HYDROCARBONS (mg/kg) BY ECOLOGY METHOD WTPH-D EXTENDED OR METHOD NWTPH-DX (EXCEPT SP-19 VALUE IS IN mg/l)
O HEAVY OIL-RANGE HYDROCARBONS (mg/kg) BY ECOLOGY METHOD WTPH-D EXTENDED OR METHOD NWTPH-DX (EXCEPT SP-19 VALUE IS IN mg/l)
CPAH CHLORINATED POLYNUCLEAR AROMATIC HYDROCARBONS (mg/kg) BY ECOLOGY INTERIM TPH METHOD
Chr CHLORDANE (µg/l) BY EPA METHOD 8081
As ARSENIC (mg/kg) BY EPA METHOD 6000/7000 SERIES (EXCEPT SP-4, SP-5, GCW-14, GCW-16 & GCW-17 As VALUES ARE IN µg/l)
Ni NICKEL (mg/kg) BY EPA METHOD 6000/7000 SERIES
Cr CHROMIUM (mg/kg) BY EPA METHOD 6000/7000 SERIES
Cd CADMIUM (µg/l) BY EPA METHOD 6000/7000 SERIES
HD DIESEL-RANGE HYDROCARBONS (mg/kg) ESTIMATED BY ECLOLGY METHOD WTPH-HCID
HO HEAVY OIL-RANGE HYDROCARBONS (mg/kg) ESTIMATED BY ECOLOGY METHOD WTPH-HCID
DEPTHS OF SOIL SAMPLES ARE PROVIDED IN FEET
Note: The locations of all features shown are approximate.
Geo Engineers
CONTAMINANT CONCENTRATIONS
FIGURE 3
LJB:HLA E:\5925002\5925002C.DWG 11/14/97

APPENDIX A

APOLLO GEOPHYSICS

Post Office Box 65169
Seattle, Washington 98155-9169 USA
voice: (206) 365-3063 fax: (206) 365-3058
email: moonshot@apollogeophysics.com

Monday October 13, 1997

Lisa Bona
GeoEngineers, Inc.
8410 - 154th Avenue NE
Redmond, Washington 98052

Project No.: **A97-29**

Re: **UST Search**
Future Site for a Family Fun Center
Tukwila, Washington

Dear Lisa,

This letter reports the results of geophysical exploration for underground storage tanks (UST) at the above referenced site. The site is located northeast of the intersection between South Grady Way and Interurban Avenue in Tukwila, Washington. The field work was completed on Monday and Wednesday, October 6 & 8, 1997 by a two person field crew from Apollo Geophysics.

We investigated near buildings 7100, 7120, 7140 (including the repair shop), 7150, 7160, and 7170. Also, an area near GCT-6 was investigated. All the specific areas were traversed on approximate 5 foot line spacings with an Electromagnetic (EM) device, which locates buried metal targets. We further investigated the discovered EM targets with Ground Penetrating Radar (GPR) to determine the relative depth, size and ground projection of the object; (i.e. to determine if the object was indicative or was not indicative of a UST). Small objects in the near surface, 1 to 2 feet, will respond the same as a larger object (UST) at depth.

ELECTROMAGNETIC

The electromagnetic, or EM device, transmits and receives an electromagnetic signal. The EM signal is transmitted through the ground, which in turn radiates a signal that is dependent on the ground conductivity and which is also received at the receiver. The two signals, the transmitted and ground response EM waves, are balanced for a zero response in the instrument. When the ground conditions change, for example, when the transmitted signal encounters buried metal, the balance or null point is change, and the instrument responds with an audible signal. Depending on the size of the metal object, the penetration is up to 10 feet in depth. The EM search was limited in areas, where reinforcing steel was present in the concrete or immediately adjacent to any above ground metal objects on the site.

GROUND PENETRATING RADAR

Apollo Geophysics used a GSSI SIR System-3 with a 500 MHz antenna for the UST Search. The radar antenna transmits a 2.3 nanosecond (Ns) pulse at a frequency of 500 MHz for a selected scan rate of 16 times per second. When the signal encounters a change in electrical properties/permittivity, a portion of the signal energy is reflected back to the surface. The character of the reflection is used to define the source of the reflection. The reflected signal is received by the antenna, processed by internal electronics with signal gain control and recorded in analog format on a internal printer. The radar displays the data in real-time, which enables us to review the data in the field for on the spot suspected UST locations.

A normal circular UST will produce, in cross-section, a hyperbolic reflection. A traverse parallel to the centerline of the UST will show a horizontal (if there is no velocity or elevation change along the traverse) reflection, with a partial hyperbolic signatures at both ends of the UST. The hyperbolic signature is the result of "seeing" the tank before the center of the antenna is over the tank.

RESULTS OF THE GEOPHYSICAL SURVEY

The EM unit found several target areas for later GPR evaluation. These target areas were traversed with the GPR to evaluate their potential as UST locations. Below is a brief description on each area, which was investigated.

7100 A potential UST was found in the front portion of the house, East side, approximately 12 feet from the Southeast corner.

7120 No evidence of a UST was found. The Southeast corner & East side were impenetrable by brush and debris. It appears, that a possible AST may have been removed from the Southwest corner.

7140 (including the repair shop) Two suspected USTs were discovered on the North side of the main house. These suspected USTs are approximately four and half feet from the Northeast corner and ten feet out from the North side of the house. An object was found near the Repair Shop. We were not able to obtain sufficient EM and GPR data to resolve whether the target could represent a UST. The target is located thirteen feet from the Southeast corner and seven feet from the South side.

7150 There was a lot of metallic debris obscuring the EM and GPR signals. Two targets were found near the house. The first target, twelve feet from the Southeast corner and four feet out, didn't produce sufficient evidence to distinguish the target as a possible UST. On the East side of the house, ten feet from the Southeast corner, we found possible evidence of a metallic pipeline, which leads into the garage. We recommend further investigation under the garage canopy.

7160 A potential UST was located on the North side of the house. It is located approximately five feet from the Northwest corner and five feet out from the house.

7170 Due to impenetrable vegetation, we were not able to investigate near the building. We attempted to investigate around the building, where areas were not as overgrown with blackberry bushes. We did not find evidence of any USTs.

Area near GCT-6 After investigating the area with the EM unit, we traversed over all targets with the GPR. The targets appear to be scattered metallic objects (i.e. demolition debris).

All suspected USTs were marked in the field with environmentally degradable paint. Suspected pipes, demolition debris, etc. were not marked in the field.

Selected GPR Imagery records are shown in Figure 1 and 4. The horizontal scale thin black lines across each record are at 8 nanosecond intervals. The normal relationship between radar time and actual depth in feet for the Seattle area is approximately 4 to 4.5 nanoseconds per foot of depth. It should be noted, that this relationship holds true in a general sense. Variations of water content, silt content and other factors, such as the presence of concrete flooring, may also change this relationship. The vertical scale white/black dashed lines across each record are at 2 feet intervals.

Electromagnetic methods may define UST's constructed of non-ferrous metals, but not fiber glass or plastic materials. Ground Penetrating Radar may define fiber glass or plastic UST's provided the UST falls within the exploration grid of the GPR.

WARRANTY OF SERVICES

All geophysical information presented are based upon geophysical measurements made by generally accepted methods and field procedures and Apollo Geophysics' interpretation of these data. The geophysical results are, therefore, interpretative in nature and are considered to be a reasonably accurate presentation of existing conditions within the limitations of the methods employed. Services performed by Apollo Geophysics under this agreement are conducted in a manner consistent with, but no less than, that level of care skill ordinarily exercised by members of the profession currently practicing under similar conditions. We cannot guarantee the accuracy or correctness of any interpretation, and we shall not be liable or responsible for any loss, cost, damages or expenses incurred or sustained by the Client resulting from any interpretation made by any of our officers, agents or employees. No other warranty, expressed or implied, is made. Apollo Geophysics recognizes that subsurface conditions may vary from those encountered at the location where geophysical or other explorations are made. The data interpretations and recommendations made by Apollo Geophysics are based solely on the information available to them at the time of performance; and Apollo Geophysics shall not be responsible for the interpretation, by others, of the information developed.

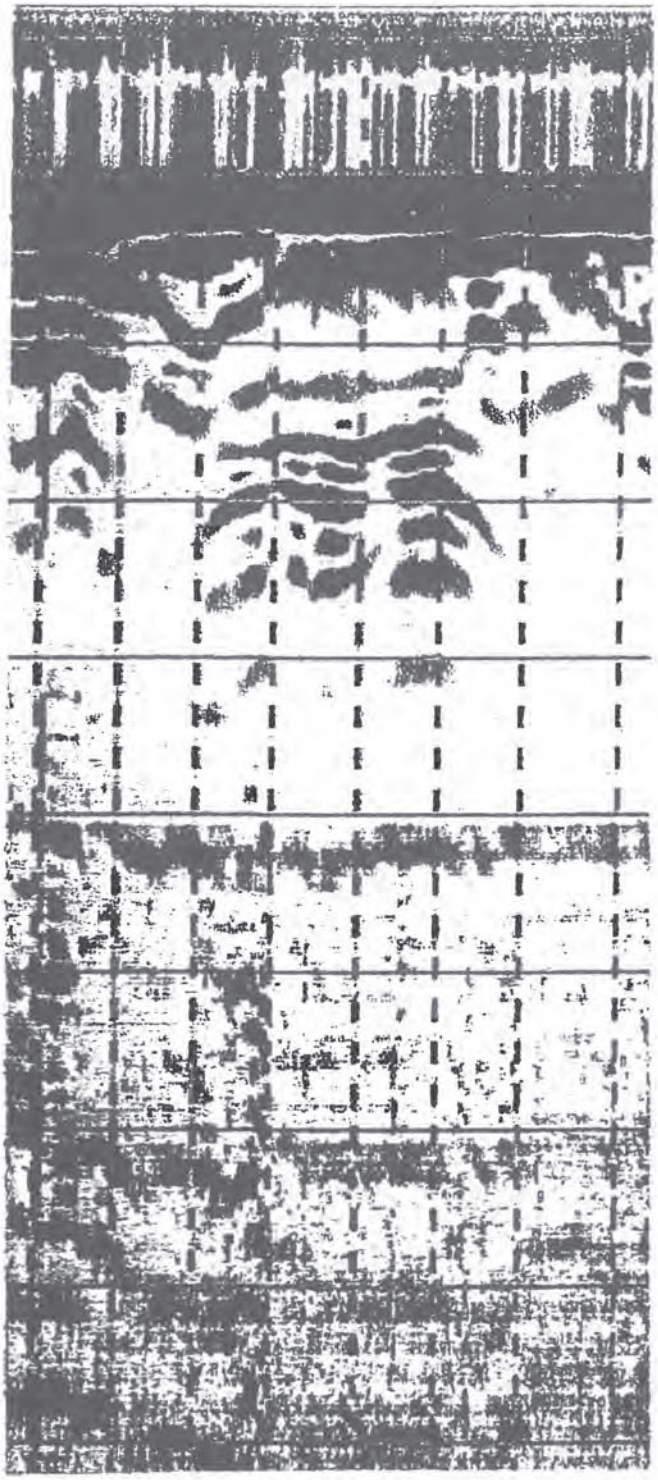
We trust this will complete your requirements for this project and look forward to working with you on future projects. If you have any further questions or need further assistance, please don't hesitate to call.

Sincerely,

APOLLO GEOPHYSICS CORPORATION

Matthew C. Ringstad
President

Clyde A. Ringstad
Senior Consultant Geophysicist



APOLLO GEOPHYSICS

UST Search - Tukwila, Washington

Ground Penetrating Radar Imagery

UST #1 - House No. 7100

survey completed for

GeoEngineers, Inc.

October 13, 1997	Figure 1 Project A97-29

APOLLO GEOPHYSICS

UST Search - Tukwila, Washington

Ground Penetrating Radar Imagery

UST #2 & #3 - House No. 7140

survey completed for

GeoEngineers, Inc.

October 13, 1997	Figure 2 Project A97-29

APOLLO GEOPHYSICS

UST Search - Tukwila, Washington

Ground Penetrating Radar Imagery

UST #4 - House No. 7140 Repair Shop

survey completed for

GeoEngineers, Inc.

October 13, 1997	Figure 3 Project A97-29

APOLLO GEOPHYSICS

UST Search - Tukwila, Washington

Ground Penetrating Radar Imagery

UST #5 - House No. 7160

survey completed for

GeoEngineers, Inc.

October 13, 1997

Figure 4
Project A97-29

APPENDIX B

APPENDIX B

FIELD PROCEDURES

DRILLING AND SOIL SAMPLING PROGRAM

Subsurface conditions at the Family Fun Center site were assessed by completing thirty exploratory borings between October 2 and 8, 1997. Twenty of the borings (designated as SP- borings) were drilled using truck-mounted Strataprobe™ (direct-push) drilling equipment owned and operated by Transglobal Environmental Geosciences Northwest, Inc of Lacey, Washington. The direct-push borings were completed to depths between approximately 1.0 and 51.0 feet below ground surface. Twelve borings (designated as HA- borings) were completed by hand augering to depths between 0.5 and 11 feet below ground surface. All of the drilling and soil sampling equipment was cleaned with an Alconox™ wash solution and distilled water rinse prior to each sampling attempt. Approximate boring locations are shown in Figure 2.

A scientist from our staff determined the boring locations, examined and classified the soils encountered, and prepared a detailed log of each boring. Soils encountered were classified visually in general accordance with ASTM D-2488-90, which is described in Figure B-1. An explanation of the boring log symbols is presented in Figure B-2. Selected boring logs (for borings completed to depths of 3 feet or greater) are presented in Figures B-3 through B-20.

Continuous soil samples were obtained with the direct-push borings using a 36-inch-long split-barrel sampler (1-inch inside diameter). Select soil samples were submitted for chemical analysis based on field screening results. Soil samples submitted for chemical analysis were kept cool and standard chain-of-custody procedures were observed during transport of the samples to the testing laboratory. Samples that were submitted for chemical analysis are denoted in our boring logs with "CA."

FIELD SCREENING OF SOIL SAMPLES

A GeoEngineers representative conducted field screening on soil samples obtained from the subsurface explorations. Field screening results are used as a general guideline to delineate areas of possible hydrocarbon contamination in soils. In addition, screening results are used to aid in the selection of soil samples for chemical analysis. The field screening methods used include (1) visual examination, (2) sheen screening, and (3) headspace vapor screening using a TLV Sniffer™ calibrated to hexane. Visual screening consists of inspecting the soil for stains indicative of hydrocarbon contamination. Sheen screening and headspace vapor screening are more sensitive screening methods that can be effective in detecting hydrocarbon contamination at concentrations less than regulatory cleanup guidelines, depending on the hydrocarbon type.

Sheen screening involves placing soil in a pan of water and observing the water surface for signs of sheen. Sheens classifications are as follow:

No Sheen (NS) No visible sheen on water surface.

Slight Sheen (SS)	Light, colorless, dull sheen; spread is irregular, not rapid; sheen dissipates rapidly.
Moderate Sheen (MS)	Light to heavy sheen; may have some color/iridescence; spread is irregular to flowing, may be rapid; few remaining areas of no sheen on water surface.
Heavy Sheen (HS)	Heavy sheen with color/iridescence; spread is rapid; entire water surface may be covered with sheen.

Headspace vapor screening involves placing a soil sample in a plastic sample bag. Air is captured in the bag and the bag is shaken to expose the soil to the air trapped in the bag. The probe of a TLV Sniffer™ is inserted in the bag, and the device measures the concentration of combustible vapors present within the sample bag headspace. The TLV Sniffer™ measures combustible vapor concentrations in ppm (parts per million) and is calibrated to hexane. The TLV Sniffer™ is designed to quantify combustible gas concentrations from 100 to 10,000 ppm in this application.

Field screening results are site-specific. The results vary with ambient air temperature, soil type, soil moisture and organic content, and type of contaminant.

GROUND WATER PARAMETERS

The depth to the ground water table relative to the monitoring well casing rim of GCW-16 was measured using an electric water level indicator. The electric indicator was cleaned with an Alconox solution wash and a distilled water rinse prior to use in the well.

Temperature and conductivity were measured in water from GCW-16 and in the water samples obtained from several direct-push borings with a YSI meter. Dissolved oxygen was measured in the well casing of GCW-16 with a YSI meter. Dissolved oxygen was measured in-situ with the probe of the YSI meter. A Hydac meter was used to measure pH.

GROUND WATER SAMPLING PROCEDURE

The ground water samples from the direct-push borings were obtained using a peristaltic pump and Teflon™ tubing provided by Transglobal Environmental Geosciences Northwest, Inc. The ground water sample was transferred to sample bottles provided by the analytical laboratory. The water samples were kept cool and standard chain-of-custody procedures were observed during transport of the samples to the testing laboratory.

A ground water sample was obtained from GCW-16 on October 8, 1997. The water sample was obtained using a clean, disposable polyethylene bailer after at least three well volumes of water were removed from the well casing. The water samples were transferred to appropriate containers in the field and were kept cool during transport to the testing laboratory. Hydrochloric

acid (a preservative) was present in the bottles used for collection of water samples for analysis of BETX and gasoline-range hydrocarbons. Chain-of-custody procedures were observed during transport of the water samples to the analytical laboratory.

SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE GRAINED SOILS More Than 50% Retained on No. 200 Sieve	GRAVEL More Than 50% of Coarse Fraction Retained on No. 4 Sieve	CLEAN GRAVEL	GW	WELL-GRADED GRAVEL, FINE TO COARSE GRAVEL
			GP	POORLY-GRADED GRAVEL
		GRAVEL WITH FINES	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	SAND More Than 50% of Coarse Fraction Passes No. 4 Sieve	CLEAN SAND	SW	WELL-GRADED SAND, FINE TO COARSE SAND
			SP	POORLY-GRADED SAND
		SAND WITH FINES	SM	SILTY SAND
			SC	CLAYEY SAND
FINE GRAINED SOILS More Than 50% Passes No. 200 Sieve	SILT AND CLAY Liquid Limit Less Than 50	INORGANIC	ML	SILT
			CL	CLAY
		ORGANIC	OL	ORGANIC SILT, ORGANIC CLAY
	SILT AND CLAY Liquid Limit 50 or More	INORGANIC	MH	SILT OF HIGH PLASTICITY, ELASTIC SILT
			CH	CLAY OF HIGH PLASTICITY, FAT CLAY
		ORGANIC	OH	ORGANIC CLAY, ORGANIC SILT
HIGHLY ORGANIC SOILS			PT	PEAT

NOTES:

1. Field classification is based on visual examination of soil in general accordance with ASTM D2488-90.
2. Soil classification using laboratory tests is based on ASTM D2487-90.
3. Descriptions of soil density or consistency are based on interpretation of blow count data, visual appearance of soils, and/or test data.

SOIL MOISTURE MODIFIERS:

Dry - Absence of moisture, dusty, dry to the touch

Moist - Damp, but no visible water

Wet - Visible free water or saturated, usually soil is obtained from below water table

GEI 85-85 Rev. 05/93

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SOIL CLASSIFICATION SYSTEM

FIGURE B-1

LABORATORY TESTS

CA Chemical Analysis

FIELD SCREENING TESTS:

Headspace vapor concentration data given in parts per million

Sheen classification system:

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
NT	Not Tested

SOIL GRAPH:

SM Soil Group Symbol (See Note 2)

Distinct Contact Between Soil Strata

Gradual or Approximate Location of Change Between Soil Strata

Water Level

Bottom of Boring

BLOW COUNT/SAMPLE DATA:

Blows required to drive a 2.4-inch I.D. split-barrel sampler 12 inches or other indicated distances using a 300-pound hammer falling 30 inches.

22 Location of relatively undisturbed sample

12 Location of disturbed sample

17 Location of sampling attempt with no recovery

Blows required to drive a 1.5-inch I.D. (SPT) split-barrel sampler 12 inches or other indicated distances using a 140-pound hammer falling 30 inches.

10 Location of sample obtained in general accordance with Standard Penetration Test (ASTM D-1586) procedures

26 Location of SPT sampling attempt with no recovery

Location of grab sample

"P" indicates sampler pushed with weight of hammer or against weight of drill rig.

NOTES:

1. The reader must refer to the discussion in the report text, the Key to Boring Log Symbols and the exploration logs for a proper understanding of subsurface conditions.
2. Soil classification system is summarized in Figure A-1.

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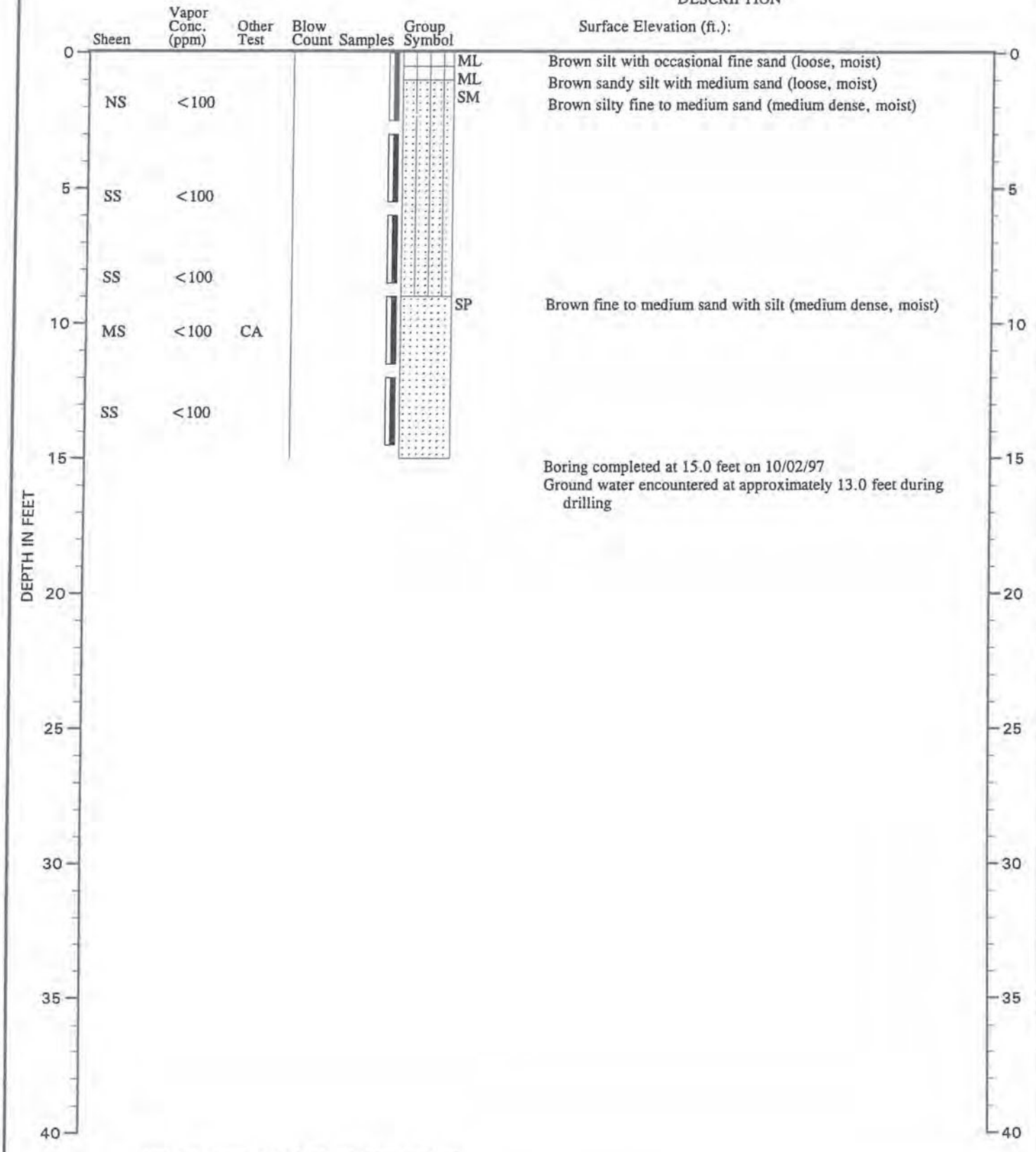
KEY TO BORING LOG SYMBOLS

FIGURE B-2

TEST DATA

BORING SP-2



Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

5925-002-54-1150

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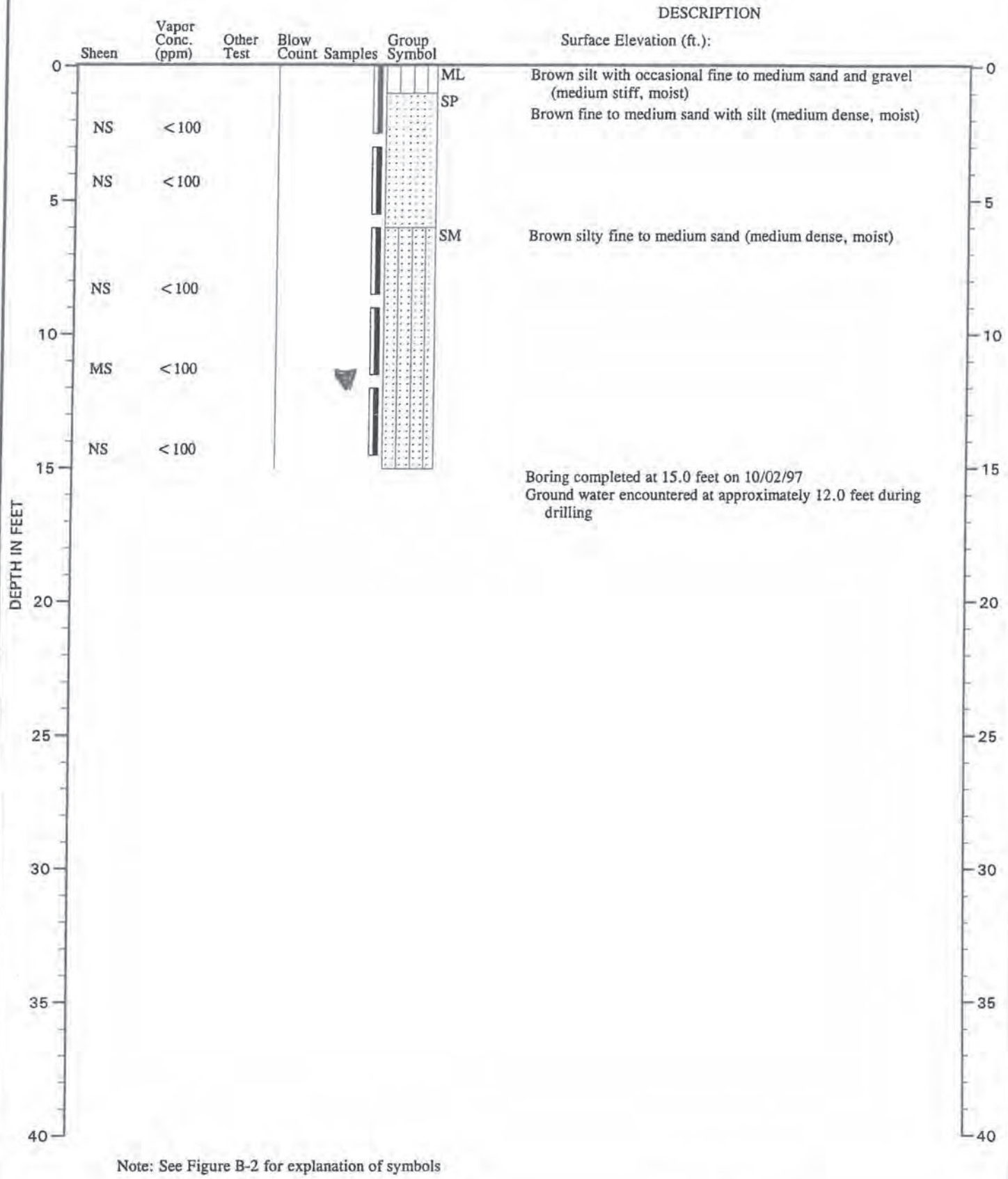
LOG OF BORING

FIGURE B-3

TEST DATA

BORING SP-3



Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

5925-002-54-1150

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LOG OF BORING

FIGURE B-4

TEST DATA

BORING SP-4

DESCRIPTION

Surface Elevation (ft.):

Sheen	Vapor Conc. (ppm)	Other Test	Blow Count	Samples	Group Symbol	Description
NS	<100				ML	Brown silt with occasional fine to medium sand and gravel (medium stiff, moist)
NS	<100				SM	Brown silty fine to medium sand with occasional gravel (medium dense, moist)
NS	<100				SM	Brownish black silty fine to medium sand with gravel (medium dense, moist)
NS	<100					
NS	500				ML	Gray silt (medium stiff, moist)
NS	<100					
NS	<100				SM	Gray silty fine to medium sand (medium stiff, moist)

Boring completed at 21.0 feet on 10/02/97
Ground water encountered at approximately 19.0 feet during drilling

DEPTH IN FEET: 0, 5, 10, 15, 20, 25, 30, 35, 40

Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

5925-002-54-1160

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LOG OF BORING

FIGURE B-5

BORING SP-5

Sheen	Vapor Conc. (ppm)	Other Test	Blow Count	Samples	Group Symbol	DESCRIPTION (Surface Elevation (ft.):)
					ML	Brown silt with fine to medium sand and occasional gravel (medium stiff, moist)
NS	110					
SS	< 100				ML	Brownish gray silt with fine to medium sand and gravel (medium stiff, moist)
					ML	Brownish gray silt with occasional fine to medium sand and gravel (medium stiff, moist)
SS	230					
NS	< 100					
					ML	Gray silt with occasional fine to medium sand (stiff, moist)
SS	2,000					
SS	2,000	CA				
SS	1,700					Becomes soft and wet
NS	1,000					
						Boring completed at 24.0 feet on 10/02/97 Ground water encountered at approximately 20.0 feet during drilling

DEPTH IN FEET: 0, 5, 10, 15, 20, 25, 30, 35, 40

Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

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LOG OF BORING

FIGURE B-6

TEST DATA

BORING SP-6

Sheen	Vapor Conc. (ppm)	Other Test	Blow Count	Samples	Group Symbol	DESCRIPTION
						Surface Elevation (ft.):
					ML	Gray silt with occasional fine sand (stiff, moist)
NS	<100					
NS	160	CA				
						Boring completed at 6.0 feet on 10/03/97
						No ground water encountered during drilling

DEPTH IN FEET

0 5 10 15 20 25 30 35 40

Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

5925-002-54-1150

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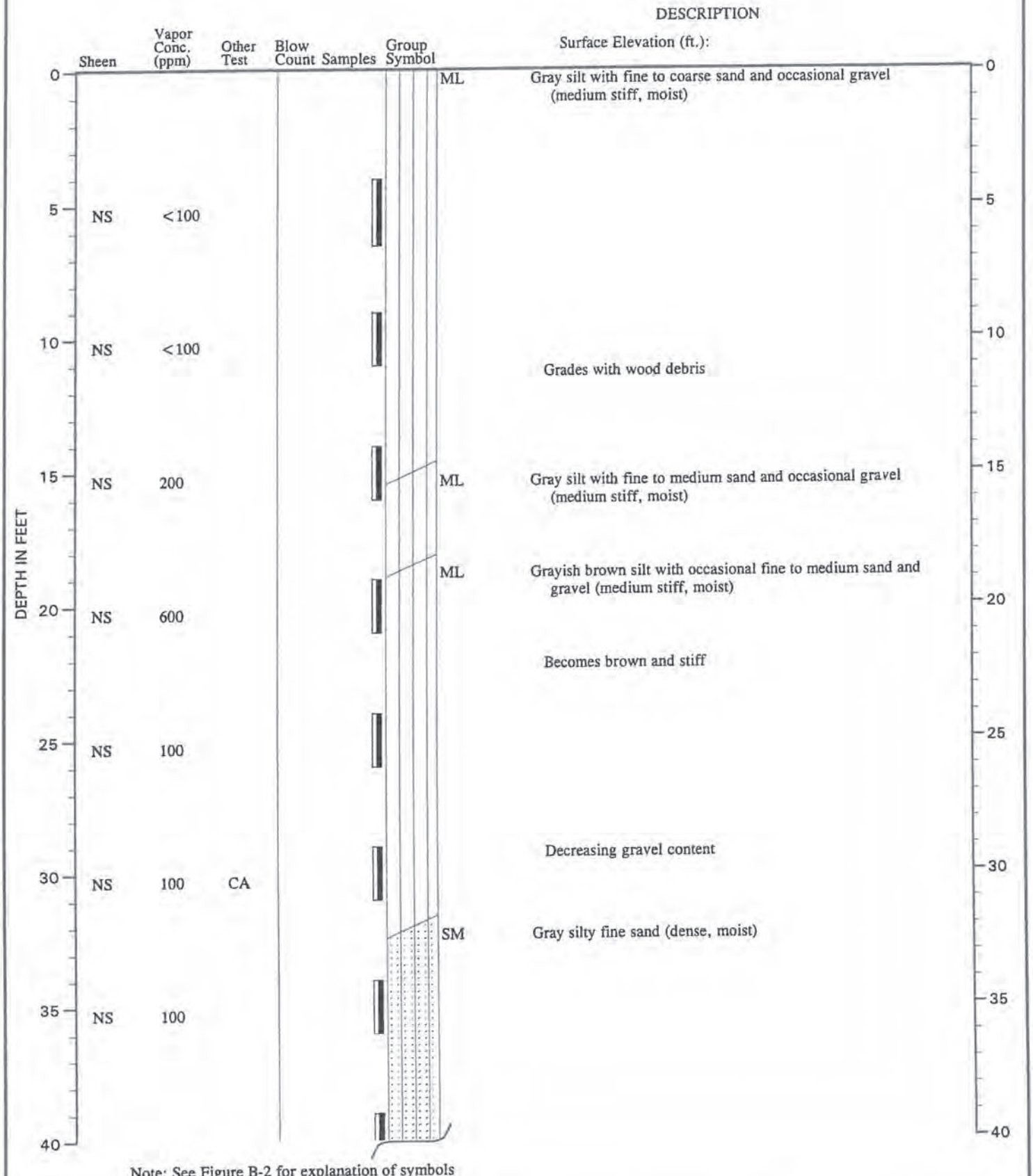
LOG OF BORING

FIGURE B-7

TEST DATA

BORING SP-7



Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

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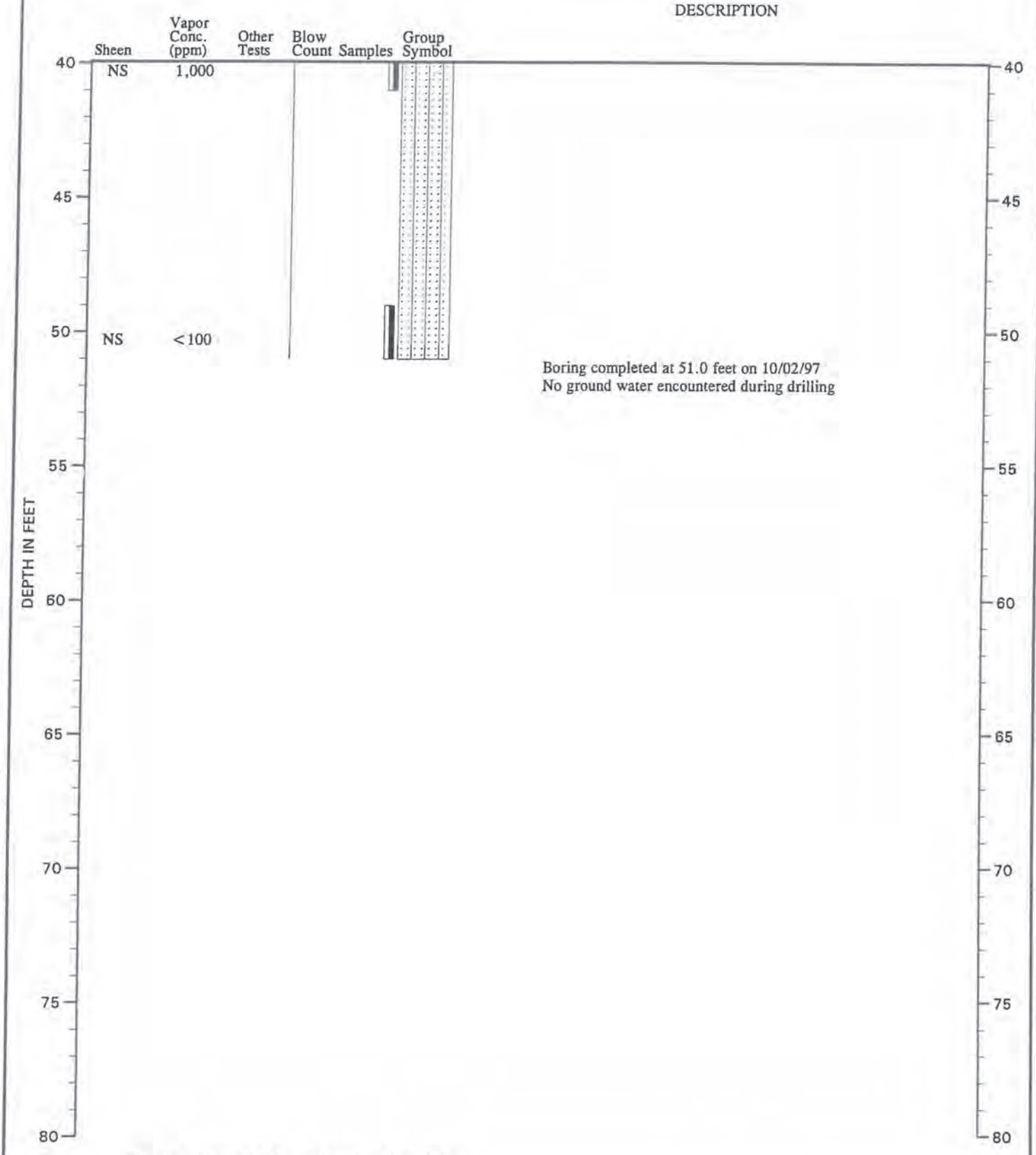
LOG OF BORING

FIGURE B-8

TEST DATA

BORING SP-7
(Continued)



Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

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LOG OF BORING

FIGURE B-8

TEST DATA

BORING SP-9

Sheen	Vapor Conc. (ppm)	Other Test	Blow Count	Samples	Group Symbol	DESCRIPTION
						Surface Elevation (ft.):
SS	<100	CA			ML	Brown silt with occasional fine to medium sand and gravel (medium stiff, moist)
NS	100					
						Boring completed at 6.0 feet on 10/03/97
						No ground water encountered during drilling

DEPTH IN FEET

0 5 10 15 20 25 30 35 40

Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

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LOG OF BORING

FIGURE B-9

TEST DATA

BORING SP-10

Sheen	Vapor Conc. (ppm)	Other Test	Blow Count	Samples	Group Symbol	DESCRIPTION Surface Elevation (ft.):
NS	<100	CA			ML	Brown silt with fine to medium sand and gravel (very stiff, moist)
						Boring completed at 3.0 feet on 10/03/97 No ground water encountered during drilling

DEPTH IN FEET

0 5 10 15 20 25 30 35 40

Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

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LOG OF BORING

FIGURE B-10

TEST DATA

BORING SP-11

Sheen	Vapor Conc. (ppm)	Other Test	Blow Count	Samples	Group Symbol	DESCRIPTION
						Surface Elevation (ft.):
NS	<100				ML	Brown silt with occasional fine to medium sand and gravel (medium stiff, moist)
		CA				
NS	<100					
						Boring completed at 6.0 feet on 10/03/97
						No ground water encountered during drilling

DEPTH IN FEET

0 5 10 15 20 25 30 35 40

Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

5925-002-54-1150

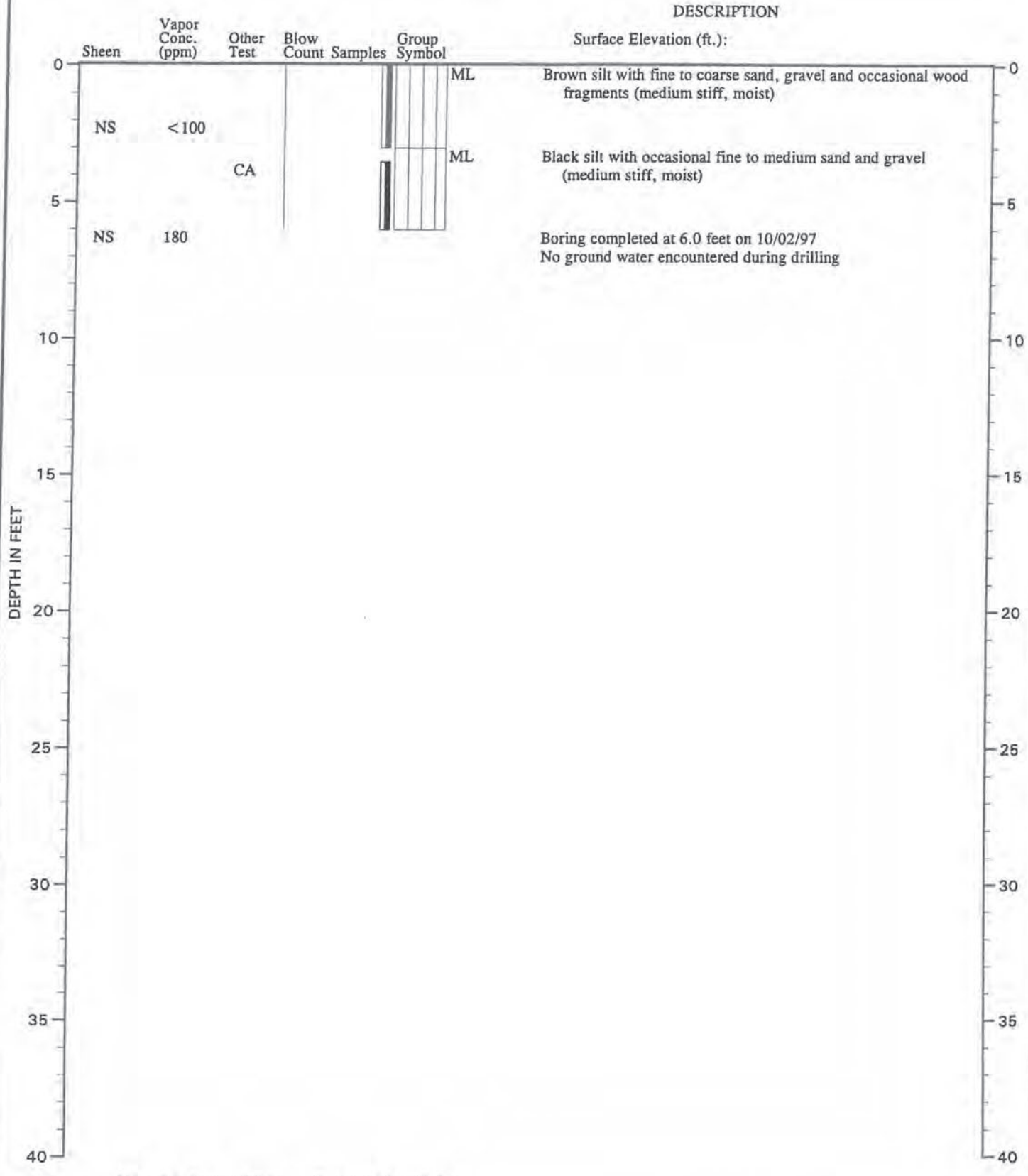
Geo Engineers

LOG OF BORING

FIGURE B-11

TEST DATA

BORING SP-13



Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

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LOG OF BORING

FIGURE B-12

TEST DATA

BORING SP-15

Sheen	Vapor Conc. (ppm)	Other Test	Blow Count	Samples	Group Symbol	DESCRIPTION
						Surface Elevation (ft.):
NS	<100	CA			SM	Black silty medium to coarse sand with gravel (dense, moist)
						Becomes wet
						Boring completed at 3.0 feet on 10/03/97
						Perched water encountered at 3.0 feet during drilling

perched

DEPTH IN FEET

0 5 10 15 20 25 30 35 40

Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

5925-002-54-1150

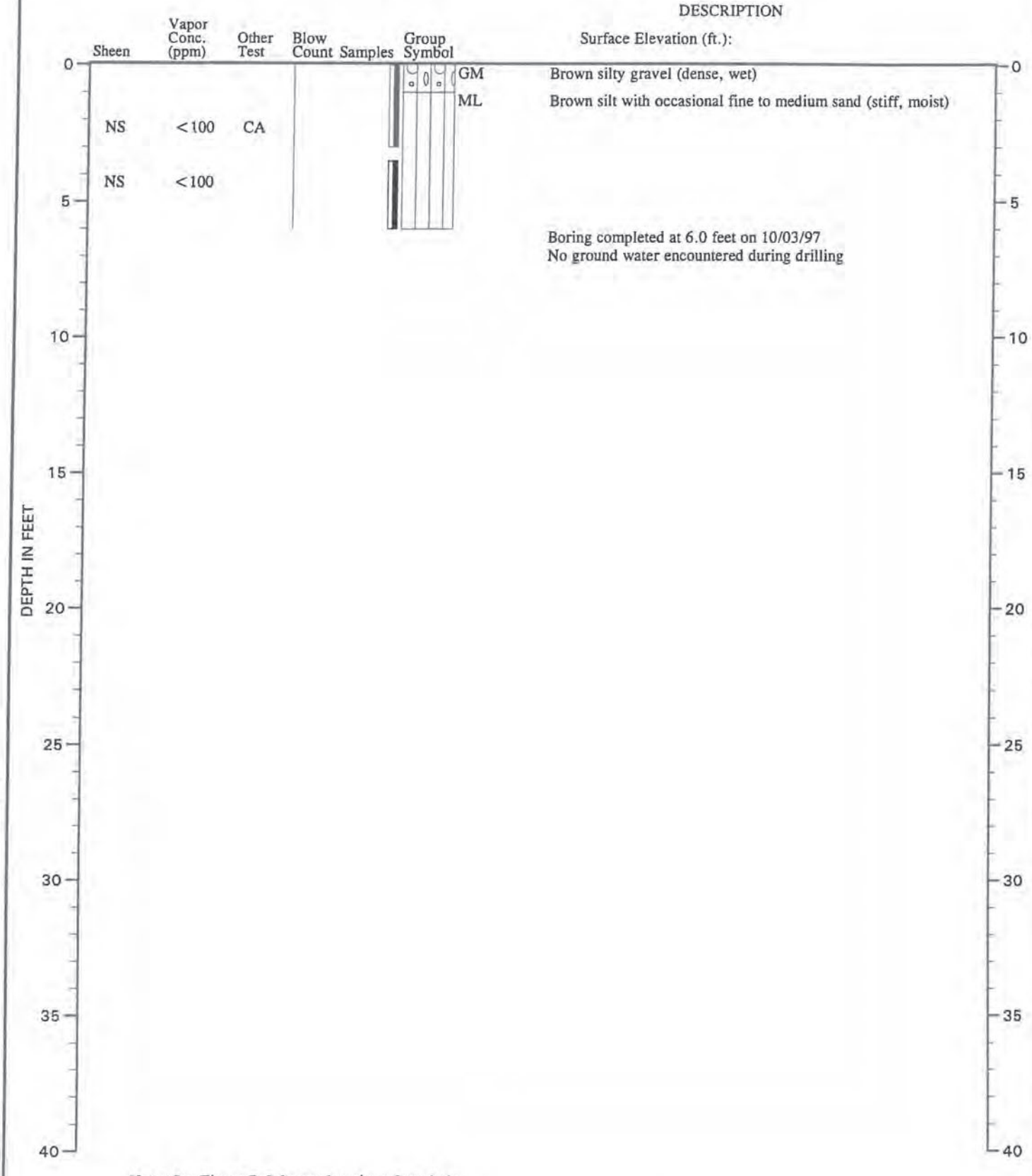
GeoEngineers

LOG OF BORING

FIGURE B-13

TEST DATA

BORING SP-16



Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

5925-002-54-1150

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LOG OF BORING

FIGURE B-14

TEST DATA

BORING SP-17

Sheen	Vapor Conc. (ppm)	Other Test	Blow Count	Samples	Group Symbol	DESCRIPTION Surface Elevation (ft.):
					GP	Black gravel with silt (dense, moist)
					ML	Brown silt with occasional fine sand (stiff, moist)
NS	<100	CA				
NS	<100					
						Boring completed at 6.0 feet on 10/03/97
						No ground water encountered during drilling

DEPTH IN FEET

0 5 10 15 20 25 30 35 40

Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

5925-002-54-1150

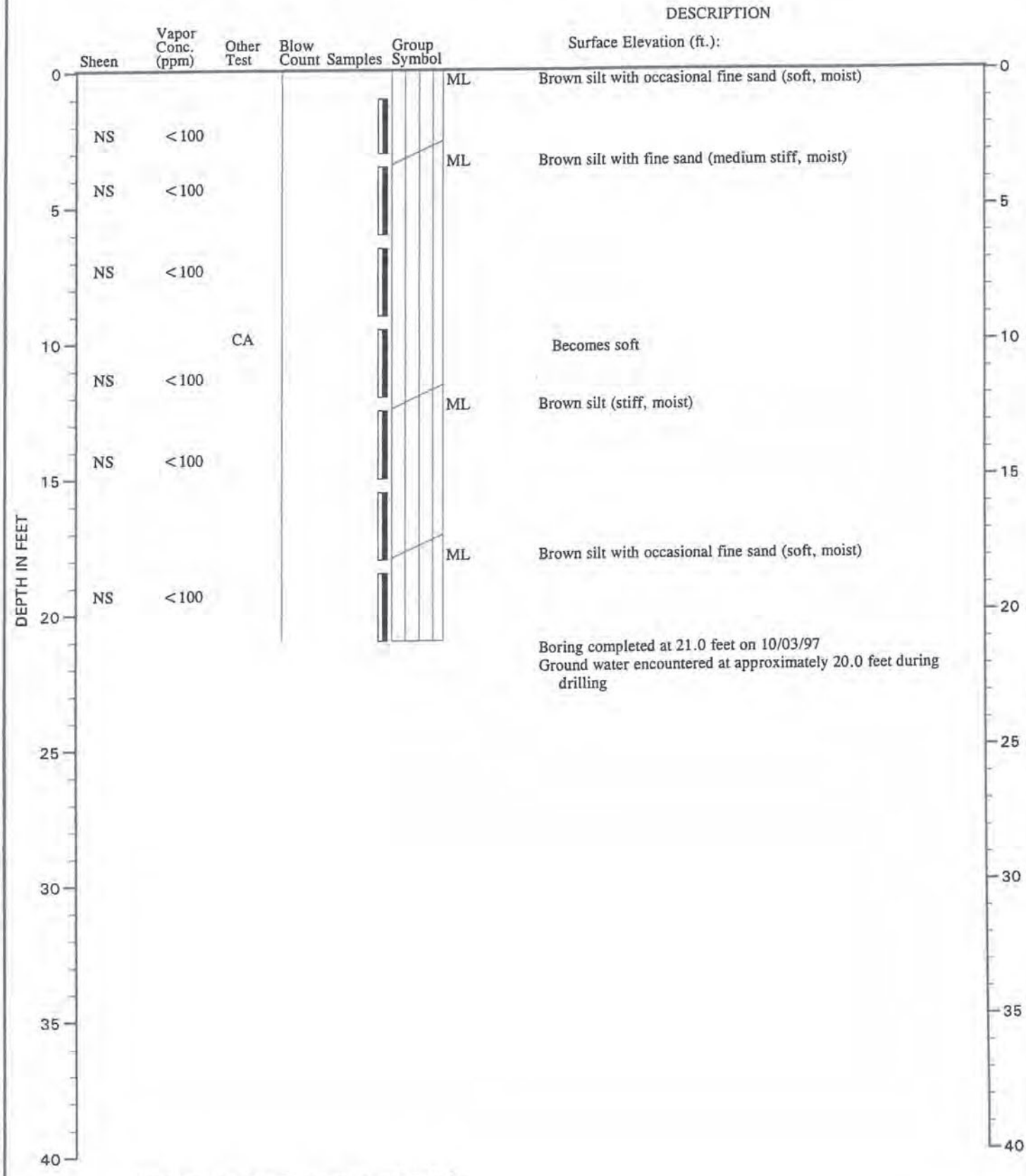
Geo Engineers

LOG OF BORING

FIGURE B-15

TEST DATA

BORING SP-18



Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

5926-002-54-1150

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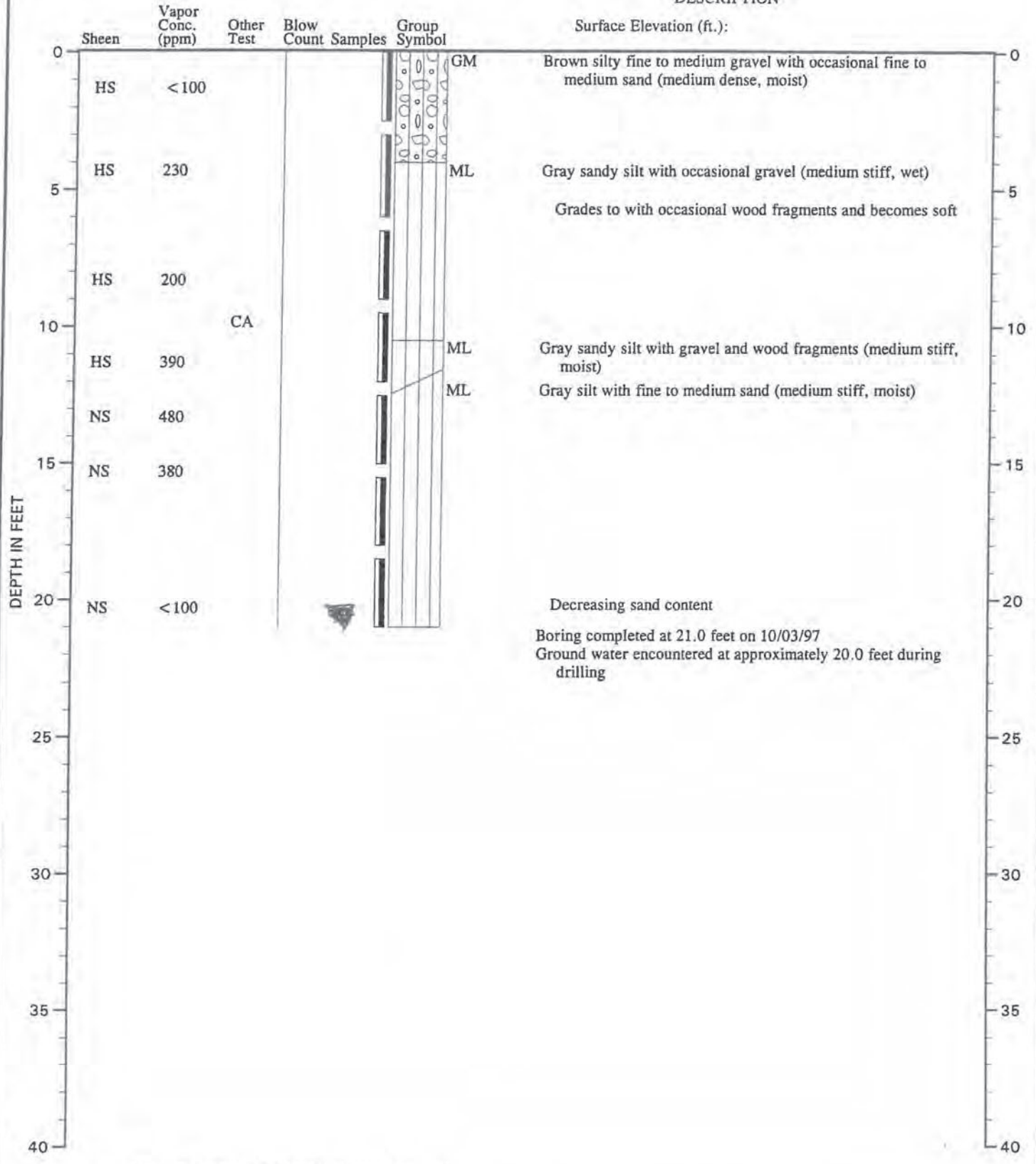
LOG OF BORING

FIGURE B-16

TEST DATA

BORING SP-19



Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

5926-002-54-1150

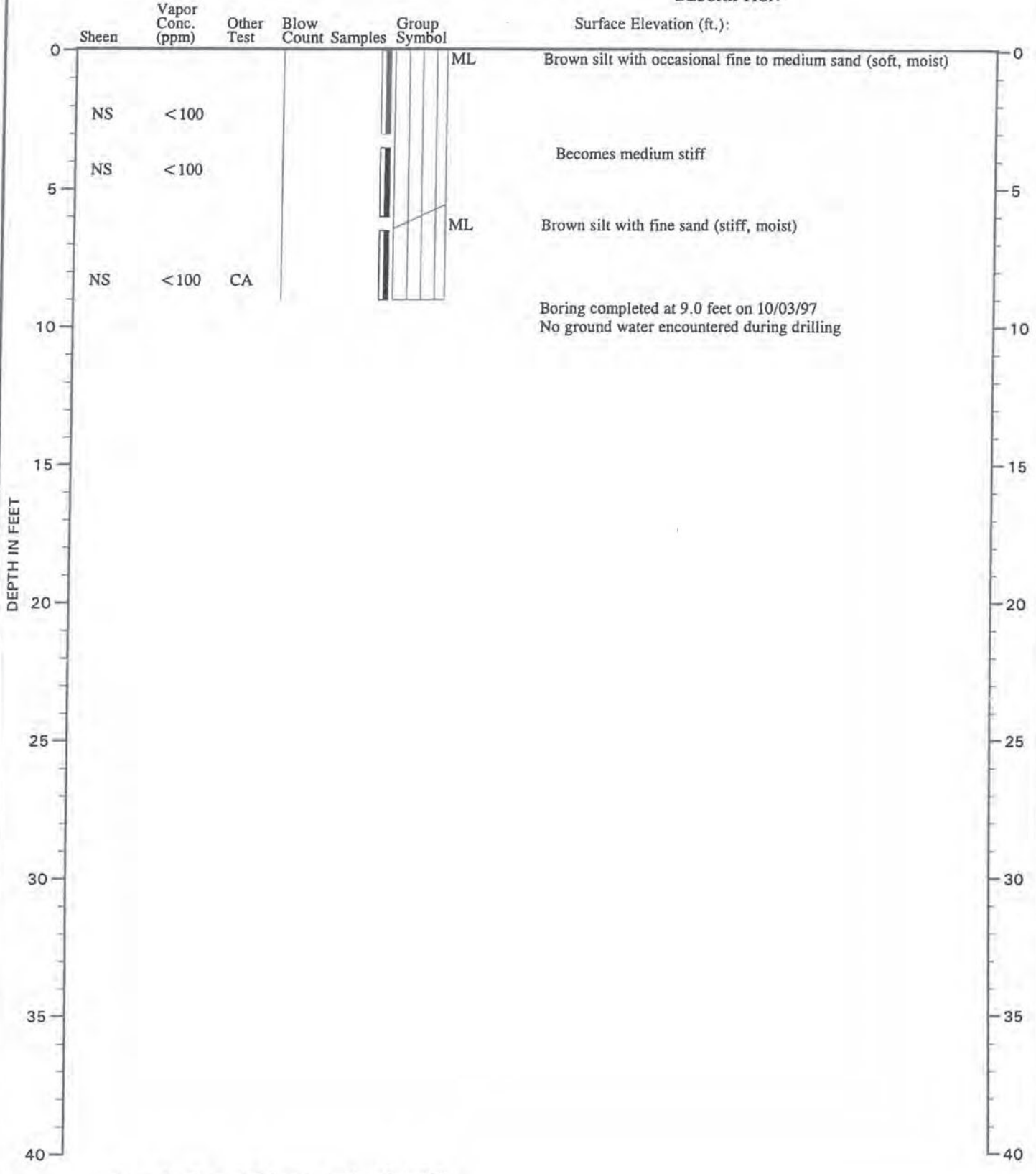
Geo Engineers

LOG OF BORING

FIGURE B-17

TEST DATA

BORING SP-20



Note: See Figure B-2 for explanation of symbols

:GRS:LJB:CMS 11/10/97

5925-002-54-1150

Geo Engineers

LOG OF BORING

FIGURE B-18

APPENDIX C

APPENDIX C

CHEMICAL ANALYTICAL PROGRAM

ANALYTICAL METHODS

Chain-of-custody procedures were followed during the transport of the field samples to the analytical laboratory. The samples were held in cold storage pending extraction and/or analysis. The analytical results, analytical methods reference and laboratory quality control records are included in this attachment. The analytical results also are summarized in the text, tables and Figure 3 of this report.

ANALYTICAL DATA REVIEW

The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries and blank spike duplicate recoveries to evaluate the validity of the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted any exceptions in the laboratory report. The data quality exceptions documented by the laboratory in the laboratory reports were reviewed by GeoEngineers using the applicable data validation guidelines from the following documents: "Guidance Document for the Assessment of RCRA Environmental Data Quality" draft dated 1988; "National Functional Guidelines for Organic Data Review" draft dated 1991; and "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" dated 1988.

ANALYTICAL DATA REVIEW SUMMARY

No significant data quality exceptions were documented in the laboratory report or noted during our review with the following exception: gamma-chlordane detected in HA-1 should be considered estimated because of possible coelution with another compound. Based on our data quality review, it is our opinion that the data are of acceptable quality for their intended use.

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/2/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/3/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/21/97 08:32

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
SP-2-10	B710056-01	Soil	10/2/97
SP-2	B710056-02	Water	10/2/97
SP-3	B710056-03	Water	10/2/97
SP-4-8	B710056-04	Soil	10/2/97
SP-4	B710056-05	Water	10/2/97
SP-7-30	B710056-06	Soil	10/2/97

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Gasoline Hydrocarbons (Toluene to Dodecane) by WTPH-G
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SP-4			B710056-05				Water	
Gasoline Range Hydrocarbons	1070127	10/6/97	10/6/97		50.0	ND	ug/l	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*79.2*	%	

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Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended) with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SP-2-10			**B710056-01**				**Soil**	
Diesel Range Hydrocarbons	1070100	10/3/97	10/6/97		10.0	ND	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*72.5*	*%*	
SP-2			**B710056-02**				**Water**	
Diesel Range Hydrocarbons	1070116	10/6/97	10/7/97		0.250	ND	mg/l	
Heavy Oil Range Hydrocarbons	"	"	"		0.750	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*97.0*	*%*	
SP-3			**B710056-03**				**Water**	
Diesel Range Hydrocarbons	1070116	10/6/97	10/8/97		0.250	ND	mg/l	
Heavy Oil Range Hydrocarbons	"	"	"		0.750	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*91.1*	*%*	
SP-4-8			**B710056-04**				**Soil**	
Diesel Range Hydrocarbons	1070100	10/3/97	10/6/97		10.0	**15.0**	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**25.4**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*75.9*	*%*	
SP-4			**B710056-05**				**Water**	
Diesel Range Hydrocarbons	1070116	10/6/97	10/8/97		0.250	ND	mg/l	
Heavy Oil Range Hydrocarbons	"	"	"		0.750	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*97.6*	*%*	
SP-7-30			**B710056-06**				**Soil**	
Diesel Range Hydrocarbons	1070100	10/3/97	10/6/97		10.0	**83.7**	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**310**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*72.5*	*%*	

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Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/21/97 08:32

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Note
SP-2			B710056-02				Water	
Antimony	1070112	10/6/97	10/9/97	EPA 6010A	0.100	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.0100	ND	"	
Beryllium	"	"	"	EPA 6010A	0.00500	ND	"	
Cadmium	"	"	"	EPA 6010A	0.00500	ND	"	
Chromium	"	"	"	EPA 6010A	0.0100	ND	"	
Copper	"	"	"	EPA 6010A	0.0300	ND	"	
Nickel	"	"	"	EPA 6010A	0.0300	ND	"	
Thallium	"	"	"	EPA 6010A	0.200	ND	"	
Zinc	"	"	"	EPA 6010A	0.0200	ND	"	
Arsenic	1070220	10/8/97	10/8/97	EPA 7060A	0.00400	ND	"	
Lead	"	"	"	EPA 7421	0.00200	ND	"	
Mercury	1070205	"	10/10/97	EPA 7470A	0.00100	ND	"	
Selenium	1070220	"	10/9/97	EPA 7740	0.00500	ND	"	
Silver	1070112	10/6/97	10/6/97	EPA 7760A	0.0200	ND	"	
SP-3			B710056-03				Water	
Antimony	1070112	10/6/97	10/9/97	EPA 6010A	0.100	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.0100	**0.0165**	"	
Beryllium	"	"	"	EPA 6010A	0.00500	ND	"	
Cadmium	"	"	"	EPA 6010A	0.00500	ND	"	
Chromium	"	"	"	EPA 6010A	0.0100	ND	"	
Copper	"	"	"	EPA 6010A	0.0300	ND	"	
Nickel	"	"	"	EPA 6010A	0.0300	ND	"	
Thallium	"	"	"	EPA 6010A	0.200	ND	"	
Zinc	"	"	"	EPA 6010A	0.0200	**0.172**	"	
Arsenic	1070220	10/8/97	10/8/97	EPA 7060A	0.00400	ND	"	
Lead	"	"	"	EPA 7421	0.00200	ND	"	
Mercury	1070205	"	10/10/97	EPA 7470A	0.00100	ND	"	
Selenium	1070220	"	10/9/97	EPA 7740	0.00500	ND	"	
Silver	1070112	10/6/97	10/6/97	EPA 7760A	0.0200	ND	"	
SP-4-8			B710056-04				Soil	
Antimony	1070329	10/13/97	10/14/97	EPA 6010A	5.00	ND	mg/kg dry	
Arsenic	"	"	"	EPA 6010A	10.0	ND	"	
Barium	"	"	"	EPA 6010A	0.500	**49.0**	"	
Beryllium	"	"	"	EPA 6010A	0.250	ND	"	
Cadmium	"	"	"	EPA 6010A	0.250	ND	"	
Chromium	"	"	"	EPA 6010A	0.500	**34.3**	"	

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Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
SP-4-8 (continued)			B710056-04				Soil	
Copper	1070329	10/13/97	10/14/97	EPA 6010A	1.50	**10.6**	mg/kg dry	
Lead	"	"	"	EPA 6010A	10.0	**10.4**	"	
Nickel	"	"	"	EPA 6010A	1.50	**22.5**	"	
Selenium	"	"	"	EPA 6010A	7.50	ND	"	
Thallium	"	"	"	EPA 6010A	10.0	ND	"	
Zinc	"	"	"	EPA 6010A	1.00	**37.5**	"	
Mercury	1070332	"	10/13/97	EPA 7471A	0.0500	ND	"	
Silver	1070329	"	10/15/97	EPA 7760A	1.00	ND	"	
SP-4			B710056-05				Water	
Antimony	1070112	10/6/97	10/9/97	EPA 6010A	0.100	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.0100	**0.0196**	"	
Beryllium	"	"	"	EPA 6010A	0.00500	ND	"	
Cadmium	"	"	"	EPA 6010A	0.00500	ND	"	
Chromium	"	"	"	EPA 6010A	0.0100	ND	"	
Copper	"	"	"	EPA 6010A	0.0300	ND	"	
Nickel	"	"	"	EPA 6010A	0.0300	ND	"	
Thallium	"	"	"	EPA 6010A	0.200	ND	"	
Zinc	"	"	"	EPA 6010A	0.0200	ND	"	
Arsenic	1070220	10/8/97	10/8/97	EPA 7060A	0.00400	**0.0694**	"	
Lead	"	"	"	EPA 7421	0.00200	ND	"	
Mercury	1070205	"	10/10/97	EPA 7470A	0.00100	ND	"	
Selenium	1070220	"	10/9/97	EPA 7740	0.00500	ND	"	
Silver	1070112	10/6/97	10/6/97	EPA 7760A	0.0200	ND	"	
SP-7-30			B710056-06				Soil	
Antimony	1070329	10/13/97	10/14/97	EPA 6010A	5.00	ND	mg/kg dry	
Arsenic	"	"	"	EPA 6010A	10.0	ND	"	
Barium	"	"	"	EPA 6010A	0.500	**281**	"	
Beryllium	"	"	"	EPA 6010A	0.250	ND	"	
Cadmium	"	"	"	EPA 6010A	0.250	ND	"	
Chromium	"	"	"	EPA 6010A	0.500	**1150**	"	
Copper	"	"	"	EPA 6010A	1.50	**77.4**	"	
Lead	"	"	"	EPA 6010A	10.0	**134**	"	
Nickel	"	"	"	EPA 6010A	1.50	**131**	"	
Selenium	"	"	"	EPA 6010A	7.50	ND	"	
Thallium	"	"	"	EPA 6010A	10.0	ND	"	
Zinc	"	"	"	EPA 6010A	1.00	**103**	"	

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Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/21/97 08:32

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes
SP-7-30 (continued)			B710056-06				Soil	
Mercury	1070332	10/13/97	10/13/97	EPA 7471A	0.0500	ND	mg/kg dry	
Silver	1070329	"	10/15/97	EPA 7760A	1.00	**2.17**	"	

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Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes
SP-4			B710056-05				Water	
Acetone	1070111	10/6/97	10/6/97		10.0	ND	ug/l	
Benzene	"	"	"		1.00	ND	"	
Bromodichloromethane	"	"	"		1.00	ND	"	
Bromoform	"	"	"		1.00	ND	"	
Bromomethane	"	"	"		1.00	ND	"	
2-Butanone	"	"	"		10.0	ND	"	
Carbon disulfide	"	"	"		1.00	ND	"	
Carbon tetrachloride	"	"	"		1.00	ND	"	
Chlorobenzene	"	"	"		1.00	ND	"	
Chloroethane	"	"	"		1.00	ND	"	
Chloroform	"	"	"		1.00	**1.28**	"	
Chloromethane	"	"	"		1.00	ND	"	
Dibromochloromethane	"	"	"		1.00	ND	"	
1,2-Dichlorobenzene	"	"	"		1.00	ND	"	
1,3-Dichlorobenzene	"	"	"		1.00	ND	"	
1,4-Dichlorobenzene	"	"	"		1.00	ND	"	
1,1-Dichloroethane	"	"	"		1.00	ND	"	
1,2-Dichloroethane	"	"	"		1.00	ND	"	
1,1-Dichloroethene	"	"	"		1.00	ND	"	
cis-1,2-Dichloroethene	"	"	"		1.00	ND	"	
trans-1,2-Dichloroethene	"	"	"		1.00	ND	"	
1,2-Dichloropropane	"	"	"		1.00	ND	"	
cis-1,3-Dichloropropene	"	"	"		1.00	ND	"	
trans-1,3-Dichloropropene	"	"	"		1.00	ND	"	
Ethylbenzene	"	"	"		1.00	ND	"	
2-Hexanone	"	"	"		10.0	ND	"	
Methylene chloride	"	"	"		5.00	ND	"	
4-Methyl-2-pentanone	"	"	"		10.0	ND	"	
Styrene	"	"	"		1.00	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		1.00	ND	"	
Tetrachloroethene	"	"	"		1.00	ND	"	
Toluene	"	"	"		1.00	**1.32**	"	
1,1,1-Trichloroethane	"	"	"		1.00	ND	"	
1,1,2-Trichloroethane	"	"	"		1.00	ND	"	
Trichloroethene	"	"	"		1.00	ND	"	
Vinyl chloride	"	"	"		1.00	ND	"	
Xylenes (total)	"	"	"		2.00	ND	"	
Surrogate: 2-Bromopropene	"	"	"	*80.0-120*		*96.5*	*%*	

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Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes
SP-4 (continued)			**B710056-05**				**Water**	
Surrogate: 1,2-DCA-d4	*1070111*	*10/6/97*	*10/6/97*	*80.0-120*		*109*	*%*	
Surrogate: Toluene-d8	"	"	"	*80.0-120*		*103*	"	
Surrogate: 4-BFB	"	"	"	*80.0-120*		*100*	"	

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Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/21/97 08:32

Conventional Chemistry Parameters by APHA/EPA Methods
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes
SP-2			B710056-02				Water	
pH	1070128	10/3/97	10/3/97	EPA 150.1		5.69	pH Units	
SP-3			B710056-03				Water	
pH	1070128	10/3/97	10/3/97	EPA 150.1		6.20	pH Units	
SP-4-8			B710056-04				Soil	
pH	1070206	10/8/97	10/8/97	EPA 9045B		7.57	pH units	
SP-4			B710056-05				Water	
pH	1070128	10/3/97	10/3/97	EPA 150.1		6.67	pH Units	

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Dry Weight Determination
North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
SP-2-10	B710056-01	Soil	79.9	%
SP-4-8	B710056-04	Soil	84.7	%
SP-7-30	B710056-06	Soil	86.8	%

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Geo Engineers - Redmond	Project:	Family Fun Center (EFC)	Sampled: 10/2/97
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Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/21/97 08:32

Gasoline Hydrocarbons (Toluene to Dodecane) by WTPH-G/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Note
Batch: 1070127	**Date Prepared: 10/6/97**					**Extraction Method: EPA 5030 (P/T)**				
Blank	**1070127-BLK1**									
Gasoline Range Hydrocarbons	10/6/97			**ND**	ug/l	**50.0**				
Surrogate: 4-BFB (FID)	"	*48.0*		*40.4*	"	*50.0-150*	*84.2*			
LCS	**1070127-BS1**									
Gasoline Range Hydrocarbons	10/6/97	500		511	ug/l	80.0-120	102			
Surrogate: 4-BFB (FID)	"	*48.0*		*45.5*	"	*50.0-150*	*94.8*			
Duplicate	**1070127-DUP1**	**B710012-01**								
Gasoline Range Hydrocarbons	10/6/97		1080	1240	ug/l			25.0	**13.8**	
Surrogate: 4-BFB (FID)	"	*48.0*		*58.6*	"	*50.0-150*	*122*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/2/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/3/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/21/97 08:32

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended) with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Note
Batch: 1070100	**Date Prepared: 10/3/97**					**Extraction Method: EPA 3550**				
Blank	**1070100-BLK1**									
Diesel Range Hydrocarbons	10/6/97			**ND**	mg/kg dry	**10.0**				
Heavy Oil Range Hydrocarbons	"			**ND**	"	**25.0**				
Surrogate: 2-FBP	"	*11.9*		*9.78*	"	*50.0-150*	*82.2*			
LCS	**1070100-BS1**									
Diesel Range Hydrocarbons	10/6/97	66.7		73.2	mg/kg dry	59.0-119	110			
Surrogate: 2-FBP	"	*11.9*		*10.2*	"	*50.0-150*	*85.7*			
Duplicate	**1070100-DUP1**	**B710056-01**								
Diesel Range Hydrocarbons	10/6/97		ND	ND	mg/kg dry			56.0		
Surrogate: 2-FBP	"	*14.9*		*10.7*	"	*50.0-150*	*71.8*			
Batch: 1070116	**Date Prepared: 10/6/97**					**Extraction Method: EPA 3520/600 Series**				
Blank	**1070116-BLK1**									
Diesel Range Hydrocarbons	10/7/97			**ND**	mg/l	**0.250**				
Heavy Oil Range Hydrocarbons	"			**ND**	"	**0.750**				
Surrogate: 2-FBP	"	*0.358*		*0.336*	"	*50.0-150*	*93.9*			
LCS	**1070116-BS1**									
Diesel Range Hydrocarbons	10/7/97	2.00		1.94	mg/l	39.0-121	97.0			
Surrogate: 2-FBP	"	*0.358*		*0.330*	"	*50.0-150*	*92.2*			
Duplicate	**1070116-DUP1**	**B710018-01**								
Diesel Range Hydrocarbons	10/7/97		ND	0.269	mg/l			44.0		
Surrogate: 2-FBP	"	*0.676*		*0.655*	"	*50.0-150*	*96.9*			
Duplicate	**1070116-DUP2**	**B710078-04**								
Diesel Range Hydrocarbons	10/7/97		0.310	0.371	mg/l			44.0	17.9	
Surrogate: 2-FBP	"	*0.676*		*0.607*	"	*50.0-150*	*89.8*			

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8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/3/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/21/97 08:32

Total Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Batch: 1070112	**Date Prepared: 10/6/97**					**Extraction Method: EPA 3010**				
Blank	**1070112-BLK1**									
Antimony	10/9/97			**ND**	mg/l	**0.100**				
Barium	"			**ND**	"	**0.0100**				
Beryllium	"			**ND**	"	**0.00500**				
Cadmium	"			**ND**	"	**0.00500**				
Chromium	"			**ND**	"	**0.0100**				
Copper	"			**ND**	"	**0.0300**				
Nickel	"			**ND**	"	**0.0300**				
Thallium	"			**ND**	"	**0.200**				
Zinc	"			**ND**	"	**0.0200**				
Silver	10/6/97			**ND**	"	**0.0200**				
LCS	**1070112-BS1**									
Antimony	10/9/97	1.00		0.858	mg/l	80.0-120	85.8			
Barium	"	1.00		0.836	"	80.0-120	83.6			
Beryllium	"	1.00		0.861	"	80.0-120	86.1			
Cadmium	"	1.00		0.881	"	80.0-120	88.1			
Chromium	"	1.00		0.881	"	80.0-120	88.1			
Copper	"	1.00		0.865	"	80.0-120	86.5			
Nickel	"	1.00		0.843	"	80.0-120	84.3			
Thallium	"	1.00		0.844	"	80.0-120	84.4			
Zinc	"	1.00		0.885	"	80.0-120	88.5			
Silver	10/6/97	1.00		1.06	"	75.0-125	106			
Duplicate	**1070112-DUP1**		**B710056-02**							
Antimony	10/9/97		ND	ND	mg/l			20.0		
Barium	"		ND	ND	"			20.0		
Beryllium	"		ND	ND	"			20.0		
Cadmium	"		ND	ND	"			20.0		
Chromium	"		ND	ND	"			20.0		
Copper	"		ND	ND	"			20.0		
Nickel	"		ND	ND	"			20.0		
Thallium	"		ND	ND	"			20.0		
Zinc	"		ND	ND	"			20.0		
Silver	10/6/97		ND	ND	"			20.0		
Matrix Spike	**1070112-MS1**		**B710056-02**							
Antimony	10/9/97	1.00	ND	0.871	mg/l	80.0-120	**87.1**			

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Total Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Note
Matrix Spike (continued)	**1070112-MS1**		**B710056-02**							
Barium	10/9/97	1.00	ND	0.820	mg/l	80.0-120	**82.0**			
Beryllium	"	1.00	ND	0.881	"	80.0-120	**88.1**			
Cadmium	"	1.00	ND	0.888	"	80.0-120	**88.8**			
Chromium	"	1.00	ND	0.891	"	80.0-120	**89.1**			
Copper	"	1.00	ND	0.893	"	80.0-120	**89.3**			
Nickel	"	1.00	ND	0.846	"	80.0-120	**84.6**			
Thallium	"	1.00	ND	0.716	"	80.0-120	**71.6**			
Zinc	"	1.00	ND	0.902	"	80.0-120	**90.2**			
Silver	10/6/97	1.00	ND	0.740	"	75.0-125	**74.0**			2
Matrix Spike Dup	**1070112-MSD1**		**B710056-02**							
Antimony	10/9/97	1.00	ND	0.867	mg/l	80.0-120	**86.7**	20.0	**0.460**	
Barium	"	1.00	ND	0.823	"	80.0-120	**82.3**	20.0	**0.365**	
Beryllium	"	1.00	ND	0.852	"	80.0-120	**85.2**	20.0	**3.35**	
Cadmium	"	1.00	ND	0.872	"	80.0-120	**87.2**	20.0	**1.82**	
Chromium	"	1.00	ND	0.868	"	80.0-120	**86.8**	20.0	**2.62**	
Copper	"	1.00	ND	0.870	"	80.0-120	**87.0**	20.0	**2.61**	
Nickel	"	1.00	ND	0.803	"	80.0-120	**80.3**	20.0	**5.22**	
Thallium	"	1.00	ND	1.01	"	80.0-120	**101**	20.0	**34.1**	3
Zinc	"	1.00	ND	0.885	"	80.0-120	**88.5**	20.0	**1.90**	
Silver	10/6/97	1.00	ND	0.725	"	75.0-125	**72.5**	20.0	**2.05**	
Batch: 1070205	**Date Prepared: 10/8/97**					**Extraction Method: BrCl Digestion**				
Blank	**1070205-BLK1**									
Mercury	10/10/97			**ND**	mg/l	**0.00100**				
LCS	**1070205-BS1**									
Mercury	10/10/97	0.00500		0.00528	mg/l	70.0-130	106			
Duplicate	**1070205-DUP1**		**B709617-17**							
Mercury	10/10/97		ND	ND	mg/l			20.0		
Matrix Spike	**1070205-MS1**		**B709617-17**							
Mercury	10/10/97	0.00500	ND	0.00554	mg/l	75.0-125	**111**			
Matrix Spike Dup	**1070205-MSD1**		**B709617-17**							
Mercury	10/10/97	0.00500	ND	0.00553	mg/l	75.0-125	**111**	20.0	**0**	

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8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/3/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/21/97 08:32

Total Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Batch: 1070220	**Date Prepared: 10/8/97**				**Extraction Method: EPA 3020**					
Blank	**1070220-BLK1**									
Arsenic	10/8/97			ND	mg/l	0.00400				
Lead	"			ND	"	0.00200				
Selenium	10/9/97			ND	"	0.00500				
LCS	**1070220-BS1**									
Arsenic	10/8/97	0.0500		0.0508	mg/l	75.0-125	102			
Lead	"	0.0250		0.0246	"	75.0-125	98.4			
Selenium	10/9/97	0.0250		0.0217	"	75.0-125	86.8			
Duplicate	**1070220-DUP1**		**B710056-02**							
Arsenic	10/8/97		ND	ND	mg/l			20.0		
Lead	"		ND	ND	"			20.0		
Selenium	10/9/97		ND	ND	"			20.0		
Matrix Spike	**1070220-MS1**		**B710056-02**							
Arsenic	10/8/97	0.0500	ND	0.0528	mg/l	70.0-130	106			
Lead	"	0.0250	ND	0.0244	"	70.0-130	97.6			
Selenium	10/9/97	0.0250	ND	0.0222	"	70.0-130	88.8			
Matrix Spike Dup	**1070220-MSD1**		**B710056-02**							
Arsenic	10/8/97	0.0500	ND	0.0535	mg/l	70.0-130	107	20.0	0.939	
Lead	"	0.0250	ND	0.0251	"	70.0-130	100	20.0	2.43	
Selenium	10/9/97	0.0250	ND	0.0227	"	70.0-130	90.8	20.0	2.23	
Batch: 1070329	**Date Prepared: 10/13/97**				**Extraction Method: EPA 3050**					
Blank	**1070329-BLK1**									
Antimony	10/14/97			ND	mg/kg dry	5.00				
Arsenic	"			ND	"	10.0				
Barium	"			ND	"	0.500				
Beryllium	"			ND	"	0.250				
Cadmium	"			ND	"	0.250				
Chromium	"			ND	"	0.500				
Copper	"			ND	"	1.50				
Lead	"			ND	"	10.0				
Nickel	"			ND	"	1.50				
Selenium	"			ND	"	7.50				
Thallium	"			ND	"	10.0				

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Total Metals by EPA 6000/7000 Series Methods/Quality Control
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Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Note:
Blank (continued)	**1070329-BLK1**									
Zinc	10/14/97			ND	mg/kg dry	1.00				
Silver	10/15/97			ND	"	1.00				
LCS	**1070329-BS1**									
Antimony	10/14/97	50.0		41.0	mg/kg dry	70.0-130	82.0			
Arsenic	"	50.0		45.7	"	70.0-130	91.4			
Barium	"	50.0		39.3	"	70.0-130	78.6			
Beryllium	"	50.0		39.1	"	70.0-130	78.2			
Cadmium	"	50.0		41.9	"	70.0-130	83.8			
Chromium	"	50.0		42.3	"	70.0-130	84.6			
Copper	"	50.0		40.7	"	70.0-130	81.4			
Lead	"	50.0		42.7	"	70.0-130	85.4			
Nickel	"	50.0		38.1	"	70.0-130	76.2			
Selenium	"	50.0		47.3	"	70.0-130	94.6			
Thallium	"	50.0		56.1	"	70.0-130	112			
Zinc	"	50.0		41.1	"	70.0-130	82.2			
Silver	10/15/97	50.0		47.7	"	75.0-125	95.4			
LCS	**1070329-BS2**									
Antimony	10/14/97	65.0		76.1	mg/kg dry	70.0-130	117			
Arsenic	"	71.5		66.3	"	70.0-130	92.7			
Barium	"	91.1		70.3	"	70.0-130	77.2			
Beryllium	"	104		84.2	"	70.0-130	81.0			
Cadmium	"	58.8		49.7	"	70.0-130	84.5			
Chromium	"	90.2		73.4	"	70.0-130	81.4			
Copper	"	178		146	"	70.0-130	82.0			
Lead	"	143		130	"	70.0-130	90.9			
Nickel	"	73.6		57.5	"	70.0-130	78.1			
Selenium	"	67.5		66.9	"	70.0-130	99.1			
Thallium	"	81.2		59.6	"	70.0-130	73.4			
Zinc	"	91.0		75.3	"	70.0-130	82.7			
Silver	10/15/97	73.3		74.0	"	75.0-125	101			
Duplicate	**1070329-DUP1**	**B710056-04**								
Antimony	10/14/97		ND	ND	mg/kg dry			20.0		
Arsenic	"		ND	ND	"			20.0		
Barium	"		49.0	45.6	"			20.0	7.19	
Beryllium	"		ND	ND	"			20.0		

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Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Note
Duplicate (continued)	**1070329-DUP1**		**B710056-04**							
Cadmium	10/14/97		ND	ND	mg/kg dry			20.0		
Chromium	"		34.3	29.3	"			20.0	**15.7**	
Copper	"		10.6	9.50	"			20.0	**10.9**	
Lead	"		10.4	11.3	"			20.0	**8.29**	
Nickel	"		22.5	21.4	"			20.0	**5.01**	
Selenium	"		ND	ND	"			20.0		
Thallium	"		ND	ND	"			20.0		
Zinc	"		37.5	35.1	"			20.0	**6.61**	
Silver	10/15/97		ND	ND	"			20.0		
Matrix Spike	**1070329-MS1**		**B710056-04**							
Antimony	10/14/97	56.8	ND	22.3	mg/kg dry	40.0-120	**39.3**			
Arsenic	"	56.8	ND	38.3	"	60.0-140	**67.4**			
Barium	"	56.8	49.0	91.9	"	70.0-130	**75.5**			
Beryllium	"	56.8	ND	42.2	"	70.0-130	**74.3**			
Cadmium	"	56.8	ND	43.1	"	70.0-130	**75.9**			
Chromium	"	56.8	34.3	305	"	70.0-130	**NR**			
Copper	"	56.8	10.6	52.7	"	70.0-130	**74.1**			
Lead	"	56.8	10.4	53.5	"	70.0-130	**75.9**			
Nickel	"	56.8	22.5	66.3	"	70.0-130	**77.1**			
Selenium	"	56.8	ND	47.0	"	60.0-140	**82.7**			
Thallium	"	56.8	ND	39.9	"	60.0-140	**70.2**			
Zinc	"	56.8	37.5	77.6	"	70.0-130	**70.6**			
Silver	10/15/97	56.8	ND	52.6	"	75.0-125	**92.6**			
Matrix Spike	**1070329-MS2**		**B710056-04**							
Antimony	10/14/97	115	ND	97.9	mg/kg dry	40.0-120	**85.1**			
Arsenic	"	115	ND	90.7	"	60.0-140	**78.9**			
Barium	"	115	49.0	144	"	70.0-130	**82.6**			
Beryllium	"	115	ND	95.8	"	70.0-130	**83.3**			
Cadmium	"	115	ND	98.6	"	70.0-130	**85.7**			
Chromium	"	115	34.3	133	"	70.0-130	**85.8**			
Copper	"	115	10.6	109	"	70.0-130	**85.6**			
Lead	"	115	10.4	111	"	70.0-130	**87.5**			
Nickel	"	115	22.5	116	"	70.0-130	**81.3**			
Selenium	"	115	ND	118	"	60.0-140	**103**			
Thallium	"	115	ND	94.4	"	60.0-140	**82.1**			
Zinc	"	115	37.5	140	"	70.0-130	**89.1**			

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Total Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike Dup	1070329-MSD1		B710056-04							
Antimony	10/14/97	56.8	ND	22.9	mg/kg dry	40.0-120	**40.3**	20.0	**2.51**	
Arsenic	"	56.8	ND	35.5	"	60.0-140	**62.5**	20.0	**7.54**	
Barium	"	56.8	49.0	91.4	"	70.0-130	**74.6**	20.0	**1.20**	
Beryllium	"	56.8	ND	42.3	"	70.0-130	**74.5**	20.0	**0.269**	
Cadmium	"	56.8	ND	44.2	"	70.0-130	**77.8**	20.0	**2.47**	
Chromium	"	56.8	34.3	76.4	"	70.0-130	**74.1**	20.0	**146**	
Copper	"	56.8	10.6	52.3	"	70.0-130	**73.4**	20.0	**0.949**	
Lead	"	56.8	10.4	51.4	"	70.0-130	**72.2**	20.0	**5.00**	
Nickel	"	56.8	22.5	62.4	"	70.0-130	**70.2**	20.0	**9.37**	
Selenium	"	56.8	ND	48.9	"	60.0-140	**86.1**	20.0	**4.03**	
Thallium	"	56.8	ND	39.7	"	60.0-140	**69.9**	20.0	**0.428**	
Zinc	"	56.8	37.5	80.7	"	70.0-130	**76.1**	20.0	**7.50**	
Silver	10/15/97	56.8	ND	52.6	"	75.0-125	**92.6**	20.0	**0**	
Batch: 1070332	Date Prepared: 10/13/97					Extraction Method: BrCl Digestion				
Blank	1070332-BLK1									
Mercury	10/13/97			**ND**	mg/kg dry	**0.0500**				
LCS	1070332-BS1									
Mercury	10/13/97	0.250		0.249	mg/kg dry	80.0-120	99.6			
Duplicate	1070332-DUP1		B710056-04							
Mercury	10/13/97		ND	ND	mg/kg dry			20.0		
Matrix Spike	1070332-MS1		B710056-04							
Mercury	10/13/97	0.284	ND	0.332	mg/kg dry	80.0-120	**117**			
Matrix Spike Dup	1070332-MSD1		B710056-04							
Mercury	10/13/97	0.295	ND	0.342	mg/kg dry	80.0-120	**116**	20.0	**0.858**	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions*

Joy B Changg, Project Manager

NORTH CREEK ANALYTICAL
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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/2/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/3/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/21/97 08:32

Volatile Organic Compounds by EPA Method 8240B/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Batch: 1070111	**Date Prepared: 10/6/97**					**Extraction Method: EPA 5030 [P/T]**				
Blank	**1070111-BLK1**									
Acetone	10/6/97			ND	ug/l	10.0				
Benzene	"			ND	"	1.00				
Bromodichloromethane	"			ND	"	1.00				
Bromoform	"			ND	"	1.00				
Bromomethane	"			ND	"	1.00				
2-Butanone	"			ND	"	10.0				
Carbon disulfide	"			ND	"	1.00				
Carbon tetrachloride	"			ND	"	1.00				
Chlorobenzene	"			ND	"	1.00				
Chloroethane	"			ND	"	1.00				
Chloroform	"			ND	"	1.00				
Chloromethane	"			ND	"	1.00				
Dibromochloromethane	"			ND	"	1.00				
1,2-Dichlorobenzene	"			ND	"	1.00				
1,3-Dichlorobenzene	"			ND	"	1.00				
1,4-Dichlorobenzene	"			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				
cis-1,3-Dichloropropene	"			ND	"	1.00				
trans-1,3-Dichloropropene	"			ND	"	1.00				
Ethylbenzene	"			ND	"	1.00				
2-Hexanone	"			ND	"	10.0				
Methylene chloride	"			ND	"	5.00				
4-Methyl-2-pentanone	"			ND	"	10.0				
Styrene	"			ND	"	1.00				
1,1,2,2-Tetrachloroethane	"			ND	"	1.00				
Tetrachloroethene	"			ND	"	1.00				
Toluene	"			ND	"	1.00				
1,1,1-Trichloroethane	"			ND	"	1.00				
1,1,2-Trichloroethane	"			ND	"	1.00				
Trichloroethene	"			ND	"	1.00				
Vinyl chloride	"			ND	"	1.00				
Xylenes (total)	"			ND	"	2.00				

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/2/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/3/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/21/97 08:32

Volatile Organic Compounds by EPA Method 8240B/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Blank (continued)	**1070111-BLK1**									
Surrogate: 2-Bromopropene	*10/6/97*	*20.0*		*20.0*	*ug/l*	*80.0-120*	*100*			
Surrogate: 1,2-DCA-d4	"	*20.0*		*21.8*	"	*80.0-120*	*109*			
Surrogate: Toluene-d8	"	*20.0*		*20.4*	"	*80.0-120*	*102*			
Surrogate: 4-BFB	"	*20.0*		*20.0*	"	*80.0-120*	*100*			
LCS	**1070111-BS1**									
Benzene	10/6/97	10.0		11.5	ug/l	80.0-120	115			
Chlorobenzene	"	10.0		10.8	"	80.0-120	108			
1,1-Dichloroethene	"	10.0		10.7	"	80.0-120	107			
Toluene	"	10.0		10.9	"	80.0-120	109			
Trichloroethene	"	10.0		10.9	"	80.0-120	109			
Surrogate: 2-Bromopropene	"	*20.0*		*20.1*	"	*80.0-120*	*101*			
Surrogate: 1,2-DCA-d4	"	*20.0*		*21.8*	"	*80.0-120*	*109*			
Surrogate: Toluene-d8	"	*20.0*		*20.6*	"	*80.0-120*	*103*			
Surrogate: 4-BFB	"	*20.0*		*19.8*	"	*80.0-120*	*99.0*			
Matrix Spike	**1070111-MS1**		**B709567-01**							
Benzene	10/6/97	10.0	ND	11.7	ug/l	80.0-120	**117**			
Chlorobenzene	"	10.0	ND	11.1	"	80.0-120	**111**			
1,1-Dichloroethene	"	10.0	ND	10.9	"	80.0-120	**109**			
Toluene	"	10.0	3.31	14.2	"	80.0-120	**109**			
Trichloroethene	"	10.0	ND	11.3	"	80.0-120	**113**			
Surrogate: 2-Bromopropene	"	*20.0*		*19.2*	"	*80.0-120*	*96.0*			
Surrogate: 1,2-DCA-d4	"	*20.0*		*22.1*	"	*80.0-120*	*111*			
Surrogate: Toluene-d8	"	*20.0*		*20.7*	"	*80.0-120*	*104*			
Surrogate: 4-BFB	"	*20.0*		*19.8*	"	*80.0-120*	*99.0*			
Matrix Spike Dup	**1070111-MSD1**		**B709567-01**							
Benzene	10/6/97	10.0	ND	11.2	ug/l	80.0-120	**112**	15.0	**4.37**	
Chlorobenzene	"	10.0	ND	10.7	"	80.0-120	**107**	15.0	**3.67**	
1,1-Dichloroethene	"	10.0	ND	10.3	"	80.0-120	**103**	15.0	**5.66**	
Toluene	"	10.0	3.31	13.7	"	80.0-120	**104**	15.0	**4.69**	
Trichloroethene	"	10.0	ND	10.8	"	80.0-120	**108**	15.0	**4.52**	
Surrogate: 2-Bromopropene	"	*20.0*		*18.8*	"	*80.0-120*	*94.0*			
Surrogate: 1,2-DCA-d4	"	*20.0*		*21.8*	"	*80.0-120*	*109*			
Surrogate: Toluene-d8	"	*20.0*		*20.4*	"	*80.0-120*	*102*			
Surrogate: 4-BFB	"	*20.0*		*20.0*	"	*80.0-120*	*100*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/2/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/3/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/21/97 08:32

Conventional Chemistry Parameters by APHA/EPA Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Note:
Batch: 1070128	**Date Prepared: 10/3/97**				**Extraction Method: General Preparation**					
Duplicate	**1070128-DUP1**		**B710056-03**							
pH	10/3/97		6.20	6.23	pH Units			10.0	0.483	
Batch: 1070206	**Date Prepared: 10/8/97**				**Extraction Method: General Preparation**					
Duplicate	**1070206-DUP1**		**B710081-16**							
pH	10/8/97		6.96	6.89	pH units			10.0	1.01	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/2/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/3/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/21/97 08:32

Notes and Definitions

#	Note
1	The spike recovery for this QC sample is outside of NCA established control limits due to sample matrix interference.
2	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.
3	The RPD value for this QC sample is above the established control limit. Review of associated QC indicates the high RPD 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
Recov	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

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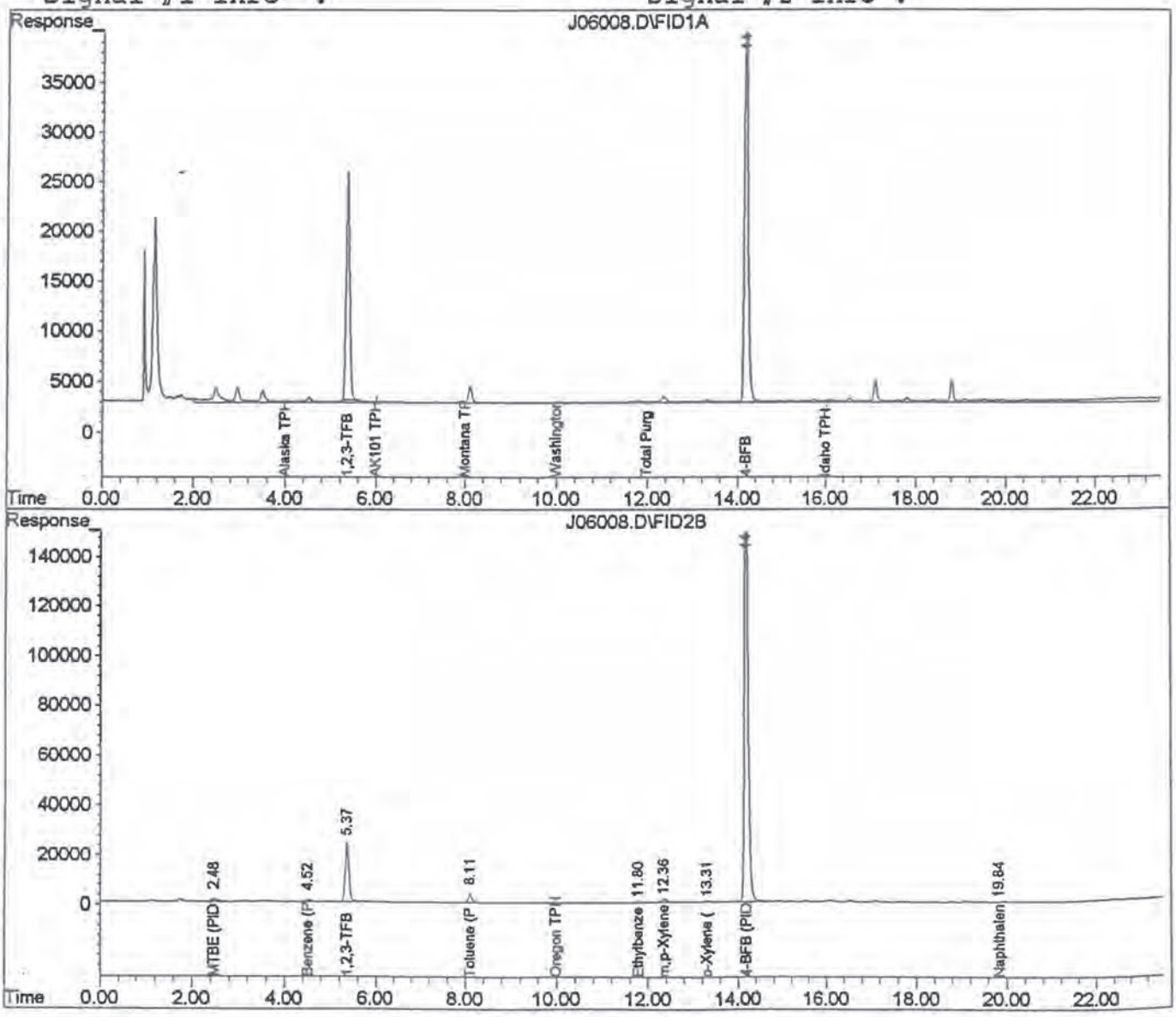
Data File : C:\HPCHEM\2\DATA\J06008.D\FID1A.CH Vial: 8
Acq On : 6 Oct 1997 8:57 am Operator: LAC
Sample : b710056-05 Inst : GC #4
Misc : 5 mL Multiplr: 1.00
IntFile : events.e

Data File : C:\HPCHEM\2\DATA\J06008.D\FID2B.CH Vial: 8
Acq On : 6 Oct 97 8:57 am Operator: LAC
Sample : b710056-05 Inst : GC #4
Misc : 5 mL Multiplr: 1.00
IntFile : events2.e
Quant Time: Oct 6 9:21 1997 Quant Results File: TPHG.RES

Quant Method : C:\HPCHEM\2\METHODS\TPHG.M (Chemstation Integrator)
Title : TPH-G Water Method
Last Update : Mon Sep 22 07:14:09 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHG.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



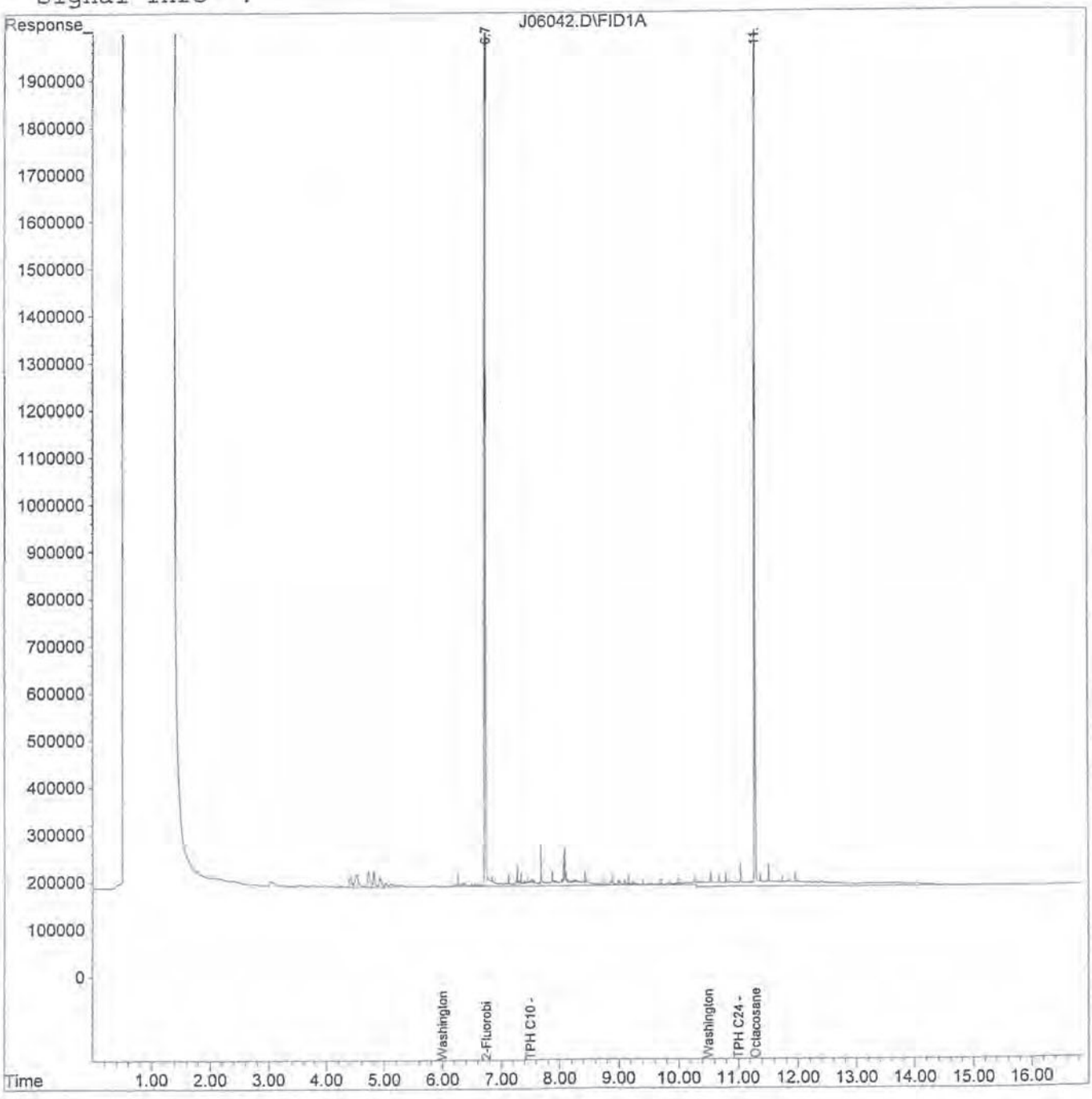
Quantitation Report

Data File : C:\HPCHEM\4\DATA\J06042.D
Acq On : 10-6-97 19:09:52
Sample : b710056-01 sg
Misc : S
IntFile : SURR.E
Quant Time: Oct 6 19:27 1997 Quant Results File: TPHD.RES

Vial: 21
Operator: bc
Inst : Ralph
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\TPHD.M (Chemstation Integrator)
Title : TPH-D Front Method
Last Update : Mon Oct 06 17:50:45 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

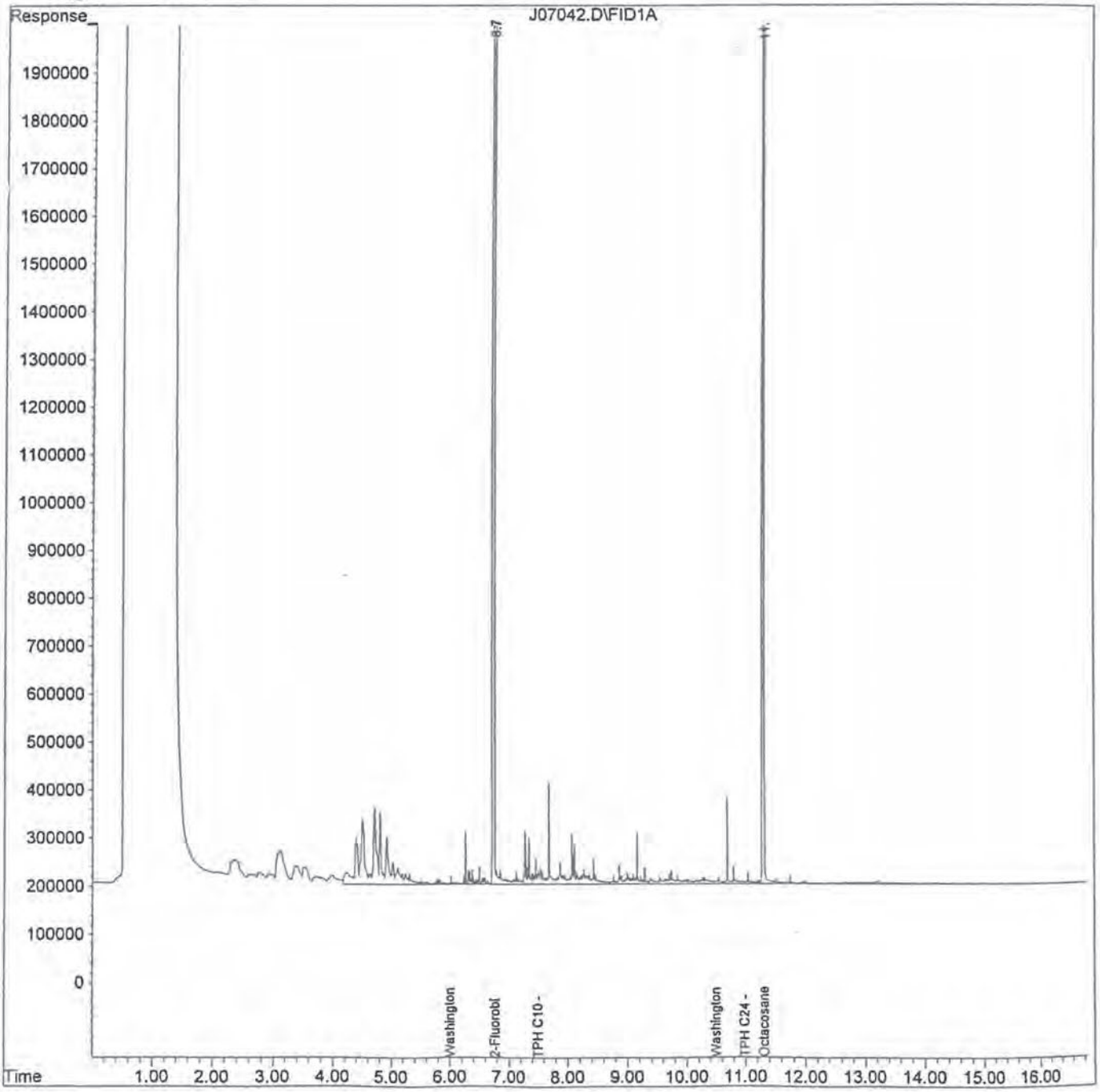


Quantitation Report

Data File : C:\HPCHEM\4\DATA\J07042.D Vial: 30
Acq On : 10-7-97 23:38:07 Operator: bc
Sample : b710056-02 Inst : Ralph
Misc : W Multiplr: 1.00
IntFile : SURR.E
Quant Time: Oct 8 7:16 1997 Quant Results File: TPHD.RES

Quant Method : C:\HPCHEM\4\METHODS\TPHD.M (Chemstation Integrator)
Title : TPH-D Front Method
Last Update : Mon Oct 06 17:50:45 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



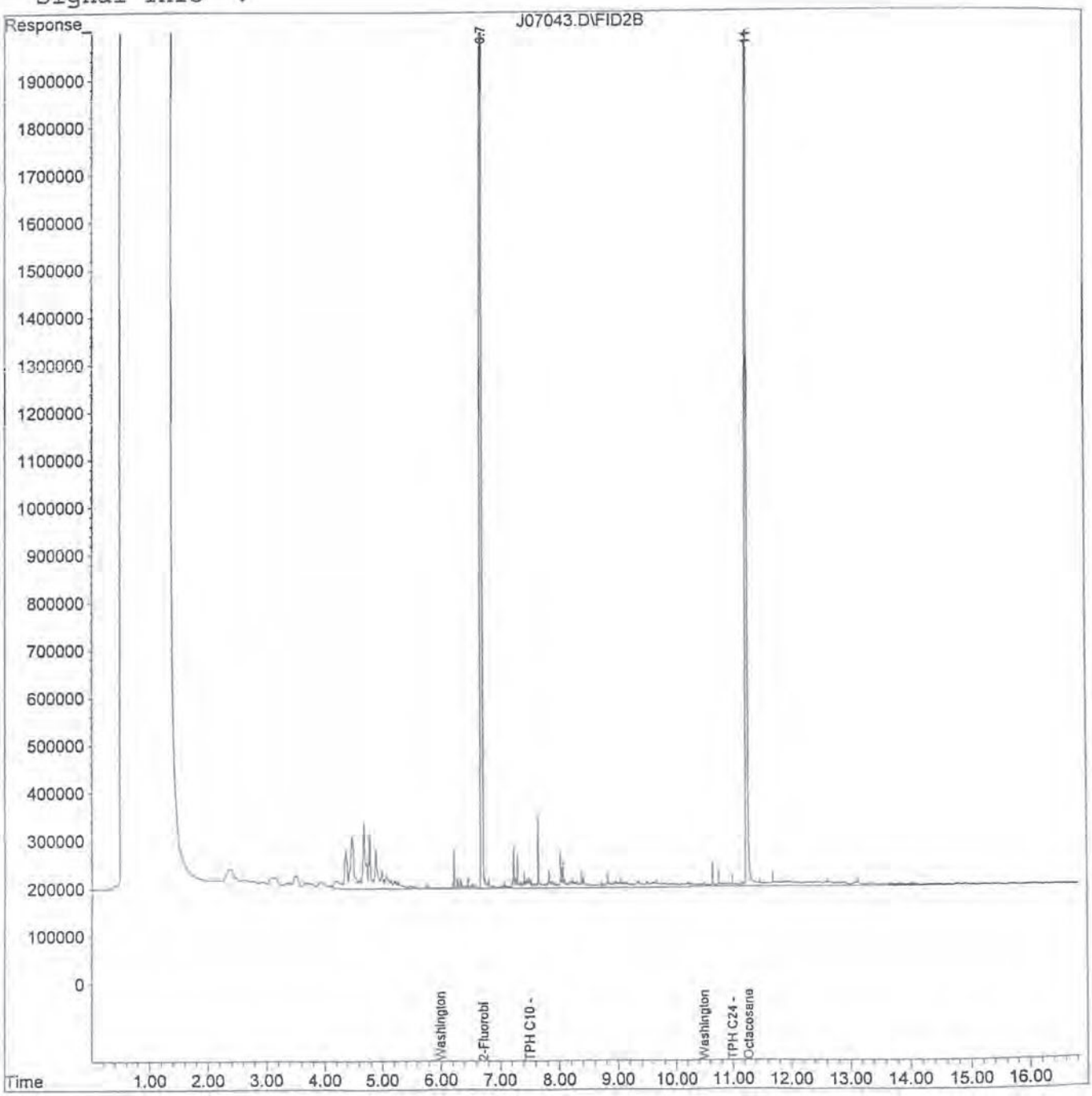
Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\J07043.D
Acq On : 10-8-97 12:01:40
Sample : b710056-03
Misc : W
IntFile : SURR.E
Quant Time: Oct 8 7:56 1997 Quant Results File: TPHD2.RES

Vial: 31
Operator: bc
Inst : Ralph
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\TPHD2.M (Chemstation Integrator)
Title : TPH-D Water Method
Last Update : Tue Oct 07 18:39:10 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

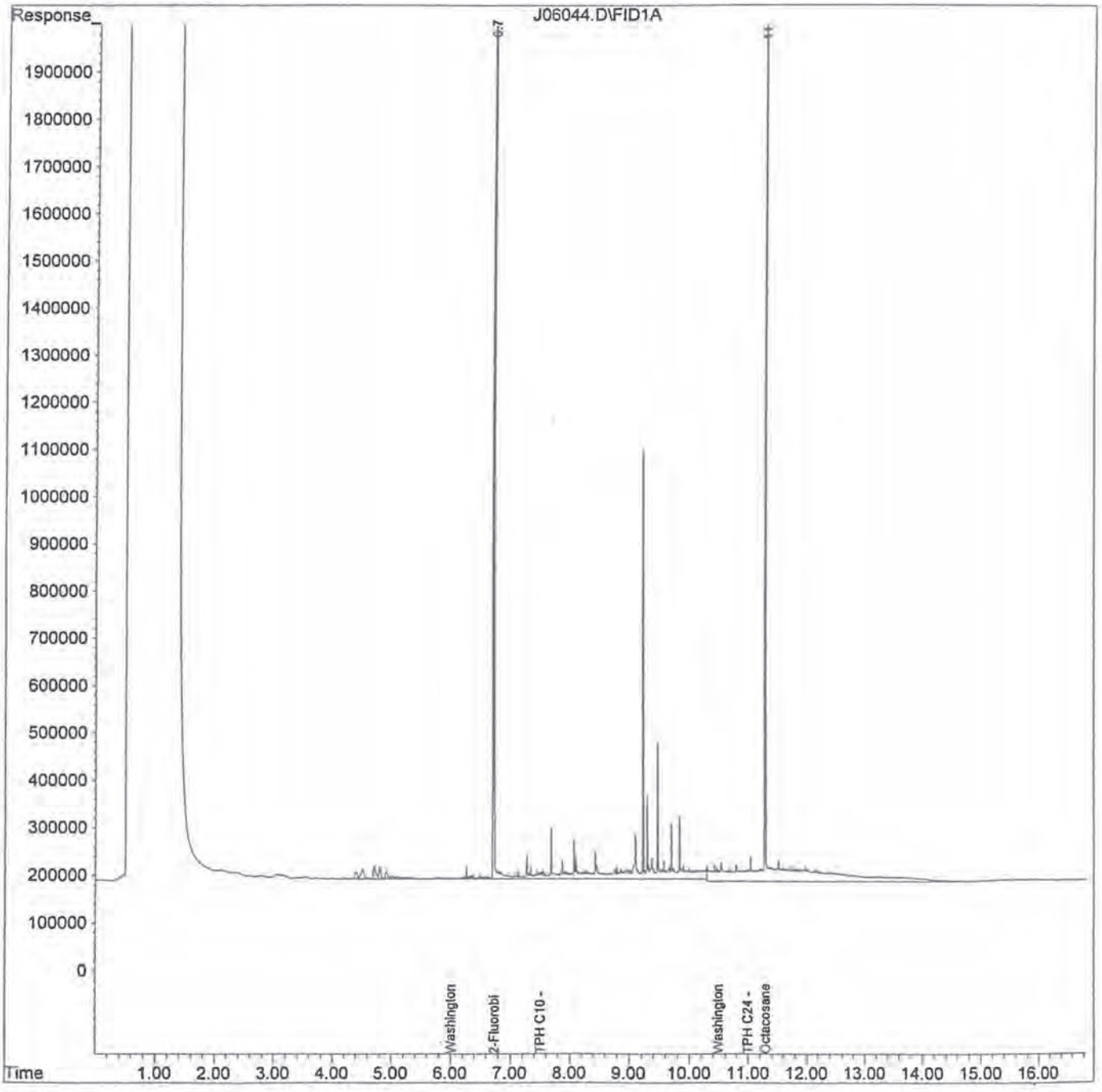


Quantitation Report

Data File : C:\HPCHEM\4\DATA\J06044.D Vial: 23
Acq On : 10-6-97 19:33:28 Operator: bc
Sample : b710056-04 sg Inst : Ralph
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Oct 6 19:51 1997 Quant Results File: TPHD.RES

Quant Method : C:\HPCHEM\4\METHODS\TPHD.M (Chemstation Integrator)
Title : TPH-D Front Method
Last Update : Mon Oct 06 17:50:45 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

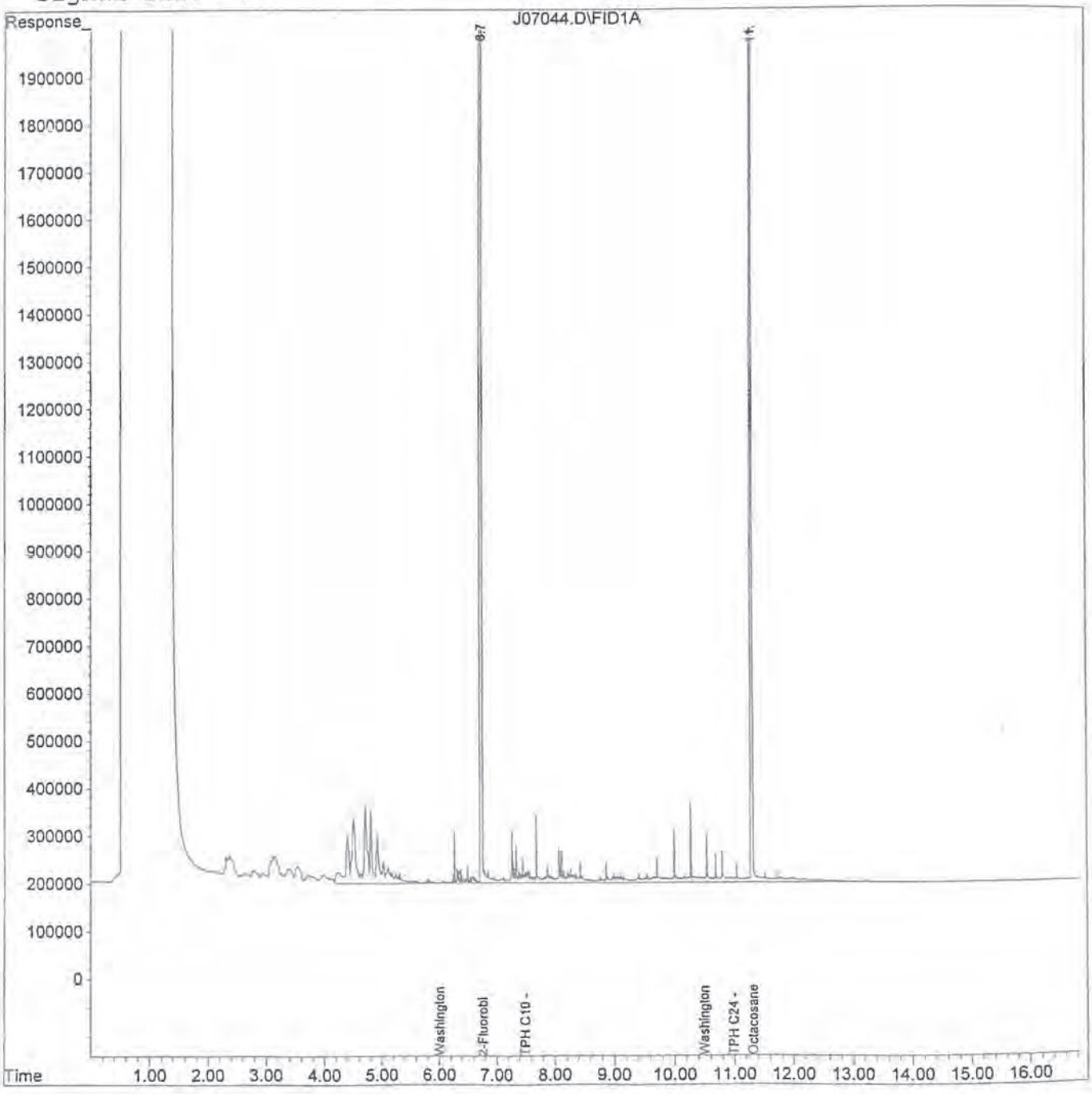


Data File : C:\HPCHEM\4\DATA\J07044.D
Acq On : 10-8-97 12:01:40
Sample : b710056-05
Misc : W
IntFile : SURR.E
Quant Time: Oct 8 7:17 1997 Quant Results File: TPHD.RES

Vial: 32
Operator: bc
Inst : Ralph
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\TPHD.M (Chemstation Integrator)
Title : TPH-D Front Method
Last Update : Mon Oct 06 17:50:45 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

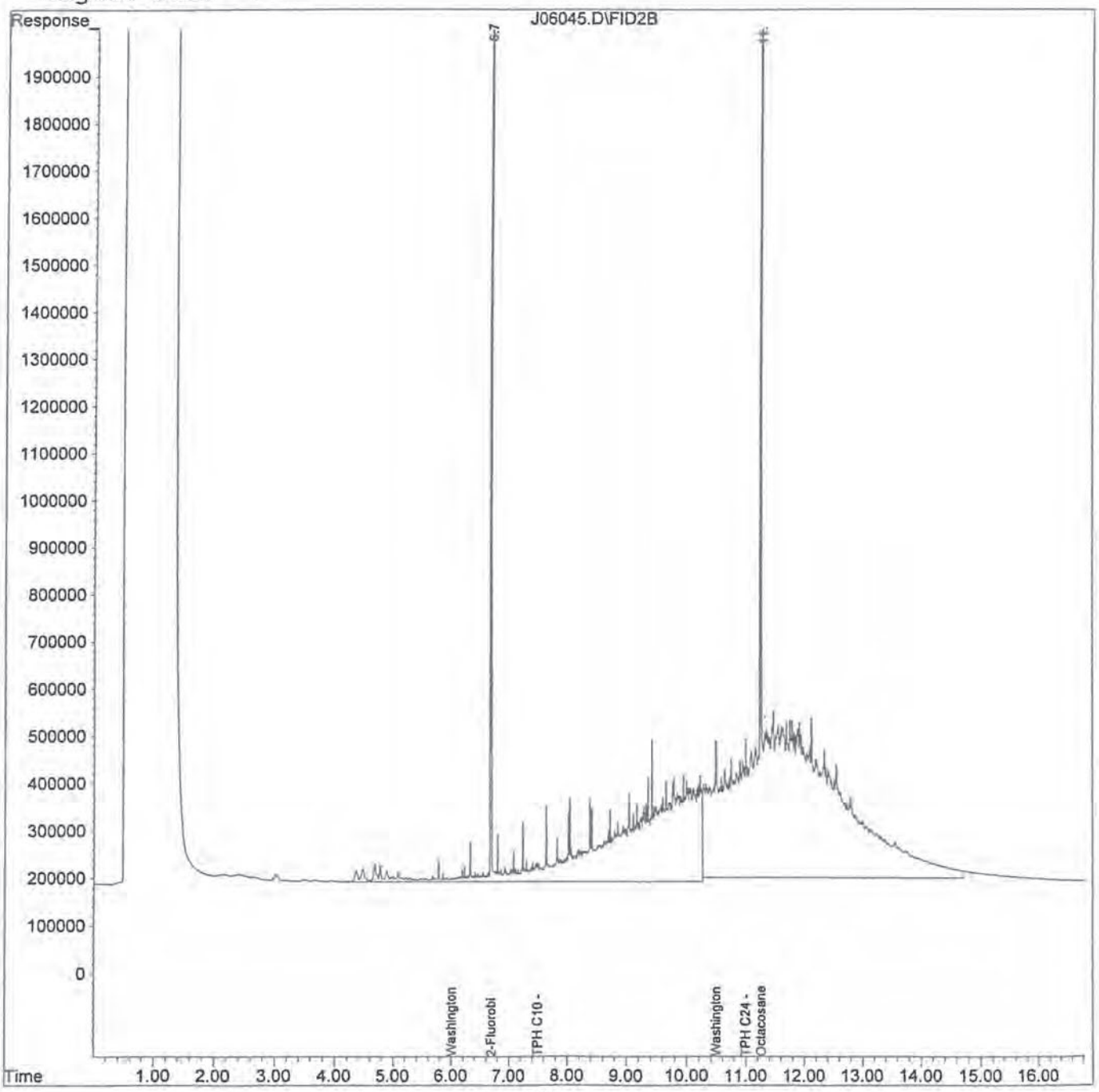


Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\J06045.D Vial: 24
Acq On : 10-6-97 19:57:06 Operator: bc
Sample : b710056-06 sg Inst : Ralph
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Oct 6 20:15 1997 Quant Results File: TPHD2.RES

Quant Method : C:\HPCHEM\4\METHODS\TPHD2.M (Chemstation Integrator)
Title : TPH-D Water Method
Last Update : Mon Oct 06 15:38:39 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



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CHAIN OF CUSTODY REPORT

Work Order # B710056

REPORT TO:	INVOICE TO:
ATTENTION: Lisa Borg GeoEngineers	ATTENTION: Same
ADDRESS: 8410 154th Ave Redmond WA	ADDRESS:
PHONE: 861-6000 FAX:	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: Family Fun Center (FFC)	
PROJECT NUMBER: 5925-002-37	
SAMPLED BY: GRS	

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 (Standard) | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: NWTPH-Dext.	P.P. Metals	Barium	pH	NWTPH-G	VOC's 8240	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1	SP-2-10	10/2/97 9:00	B710056-01	X						S	1	
2	SP-2	9:00	-02	X	X	X	X			W	3	
3	SP-3	10:00	-03	X	X	X	X			W	3	
4	SP-4-8	11:25	-04	X	X	X	X			S	1	
5	SP-4	11:25	-05	X	X	X	X	X	X	W	7	
6	SP-7-30	15:45	-06	X	X	X				S	2	
7	~~SP-7~~ SP-7-35	16:00	-07									Hold
8	SP-3-10	10/2/97 10:00	-08							S	1	Hold
9												
10												

RELINQUISHED BY: Gary Stevens	DATE: 10/2/97	RECEIVED BY: Scot Overdick	DATE: 10-3-97
PRINT NAME: Gary Stevens FIRM: GEI	TIME: 6:30 PM	PRINT NAME: SCOT OVERDICK FIRM: GEI	TIME: 0630
RELINQUISHED BY: Scot Overdick	DATE: 10-3-97	RECEIVED BY: Dana H	DATE: 10/3/97
PRINT NAME: SCOT OVERDICK FIRM: GEI	TIME: 0735	PRINT NAME: D. HEINE FIRM: NCAB	TIME: 0735

ADDITIONAL REMARKS: D-ext. w/ Silica Gel Cleanup

PAGE: 1 OF 1

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CHAIN OF CUSTODY REPORT

Work Order # B710056

REPORT TO:
ATTENTION: Lisa Bong GeoEngineers
ADDRESS: 8410 154th Ave
Redmond WA
PHONE: 861-6000 FAX:
PROJECT NAME: Family Fun Center (FFC)
PROJECT NUMBER: 5925-002-37
SAMPLED BY: GRS

INVOICE TO:
ATTENTION: Same
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: (10) 7 5 4 3 2 1 Same Day — 10 Standard circled
Fuels & Hydrocarbon Analyses: (5) 3-4 2 1 Same Day — 5 Standard circled
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges

Analysis Request: WTPH-D ext. | P.P. Metals | Barium | pH | WTPH-G | VOC's

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	WTPH-D ext.	P.P. Metals	Barium	pH	WTPH-G	VOC's				MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
SP-2-10	10/02/97/9:00	B710056-01	X									S	1	
SP-2	9:00	-02	X	X	X	X						W	3	
SP-3	10:00	-03	X	X	X	X						W	3	
SP-4-8	11:25	-04	X	X	X	X						S	1	
SP-4	11:25	-05	X	X	X	X	X	X				W	7	
SP-7-30	15:45	-06	X	X	X							S	2	
SP-7-35	16:00	-07												Hold
SP-3-10	10/2/97 10:00	-08										S	1	

RELINQUISHED BY (Signature): Gary Stevens	DATE: 10/02/97	RECEIVED BY (Signature): Scott Overdick	DATE: 10/3/97
PRINT NAME: Gary Stevens FIRM: GEI	TIME: 6:30 PM	PRINT NAME: Scott Overdick FIRM: GEI	TIME: 0630
RELINQUISHED BY (Signature): Scott Overdick	DATE: 10-3-97	RECEIVED BY (Signature): Dana H	DATE: 10/3/97
PRINT NAME: Scott Overdick FIRM: GEI	TIME: 0735	PRINT NAME: D. Heinz FIRM: NCAB	TIME: 0735

ADDITIONAL REMARKS: D. ext. w/ Silica Gel Cleanup

PAGE 1 OF 1

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
SP-5	B710081-01	Water	10/3/97
SP-18	B710081-02	Water	10/3/97
SP-19	B710081-03	Water	10/3/97
SP-23	B710081-04	Water	10/3/97
SP-5-18.0	B710081-05	Soil	10/3/97
SP-6-4.0	B710081-06	Soil	10/3/97
SP-9-2.0	B710081-07	Soil	10/3/97
SP-11-3.0	B710081-08	Soil	10/3/97
SP-13-4.0	B710081-09	Soil	10/3/97
SP-15-1.0	B710081-10	Soil	10/3/97
SP-16-2.0	B710081-11	Soil	10/3/97
SP-17-2.0	B710081-12	Soil	10/3/97
SP-18-10.0	B710081-13	Soil	10/3/97
SP-19-10.0	B710081-14	Soil	10/3/97
SP-20-9.0	B710081-15	Soil	10/3/97
SP-21-1.0	B710081-16	Soil	10/3/97
SP-22-9.0	B710081-17	Soil	10/3/97
SP-23-0.5	B710081-18	Soil	10/3/97

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Gasoline Hydrocarbons (Toluene to Dodecane) by WTPH-G
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SP-5			B710081-01				Water	
Gasoline Range Hydrocarbons	1070171	10/7/97	10/7/97		50.0	ND	ug/l	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*69.8*	%	
SP-18			B710081-02				Water	
Gasoline Range Hydrocarbons	1070171	10/7/97	10/7/97		50.0	ND	ug/l	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*82.9*	%	
SP-23			B710081-04				Water	
Gasoline Range Hydrocarbons	1070171	10/7/97	10/7/97		50.0	**58.9**	ug/l	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*74.2*	%	
SP-23-0.5			B710081-18				Soil	
Gasoline Range Hydrocarbons	1070150	10/7/97	10/7/97		10.0	117	mg/kg dry	I
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*106*	%	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled:	10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received:	10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported:	10/22/97 10:14

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SP-18-10.0			B710081-13				Soil	
Gasoline Range Hydrocarbons	1070150	10/7/97	10/7/97		5.00	ND	mg/kg dry	
Benzene	"	"	"		0.0500	ND	"	
Toluene	"	"	"		0.0500	ND	"	
Ethylbenzene	"	"	"		0.0500	ND	"	
Xylenes (total)	"	"	"		0.100	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*83.8*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*50.0-150*		*85.2*	"	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended) with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SP-5			B710081-01				Water	
Diesel Range Hydrocarbons	1070155	10/7/97	10/9/97		0.250	ND	mg/l	
Heavy Oil Range Hydrocarbons	"	"	"		0.750	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*90.1*	%	
SP-19			B710081-03				Water	
Diesel Range Hydrocarbons	1070155	10/7/97	10/9/97		0.250	**0.982**	mg/l	
Heavy Oil Range Hydrocarbons	"	"	"		0.750	**1.35**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*84.8*	%	
SP-23			B710081-04				Water	
Diesel Range Hydrocarbons	1070155	10/7/97	10/9/97		0.250	**0.448**	mg/l	
Heavy Oil Range Hydrocarbons	"	"	"		0.750	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*98.8*	%	
SP-5-18.0			B710081-05				Soil	
Diesel Range Hydrocarbons	1070149	10/7/97	10/8/97		10.0	**156**	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**1570**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*89.2*	%	
SP-6-4.0			B710081-06				Soil	
Diesel Range Hydrocarbons	1070149	10/7/97	10/8/97		10.0	ND	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**50.6**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*93.8*	%	
SP-9-2.0			B710081-07				Soil	
Diesel Range Hydrocarbons	1070149	10/7/97	10/8/97		10.0	**44.8**	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**455**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*82.0*	%	
SP-11-3.0			B710081-08				Soil	
Diesel Range Hydrocarbons	1070149	10/7/97	10/8/97		10.0	**14.5**	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**81.0**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*94.9*	%	
SP-13-4.0			B710081-09				Soil	
Diesel Range Hydrocarbons	1070149	10/7/97	10/8/97		10.0	**43.7**	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**217**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*86.8*	%	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended) with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SP-15-1.0			B710081-10				Soil	
Diesel Range Hydrocarbons	1070149	10/7/97	10/8/97		10.0	**40.9**	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**285**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*99.3*	%	
SP-16-2.0			B710081-11				Soil	
Diesel Range Hydrocarbons	1070149	10/7/97	10/8/97		10.0	ND	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*82.5*	%	
SP-17-2.0			B710081-12				Soil	
Diesel Range Hydrocarbons	1070149	10/7/97	10/8/97		10.0	ND	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*91.6*	%	
SP-19-10.0			B710081-14				Soil	
Diesel Range Hydrocarbons	1070149	10/7/97	10/8/97		10.0	**13.0**	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**54.3**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*89.7*	%	
SP-20-9.0			B710081-15				Soil	
Diesel Range Hydrocarbons	1070149	10/7/97	10/8/97		10.0	ND	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*90.6*	%	
SP-21-1.0			B710081-16				Soil	
Diesel Range Hydrocarbons	1070149	10/7/97	10/8/97		10.0	**11.2**	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**65.1**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*89.3*	%	
SP-22-9.0			B710081-17				Soil	
Diesel Range Hydrocarbons	1070149	10/7/97	10/8/97		10.0	ND	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*90.1*	%	
SP-23-0.5			B710081-18				Soil	
Diesel Range Hydrocarbons	1070149	10/7/97	10/8/97		50.0	**3650**	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**359**	"	2
Surrogate: 2-FBP	"	"	"	*50.0-150*		*133*	%	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
SP-5			**B710081-01**				**Water**	
Antimony	1070227	10/9/97	10/9/97	EPA 6010A	0.100	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.0100	**0.0542**	"	
Beryllium	"	"	"	EPA 6010A	0.00500	ND	"	
Cadmium	"	"	"	EPA 6010A	0.00500	ND	"	
Chromium	"	"	"	EPA 6010A	0.0100	ND	"	
Copper	"	"	"	EPA 6010A	0.0300	ND	"	
Nickel	"	"	"	EPA 6010A	0.0300	ND	"	
Thallium	"	"	"	EPA 6010A	0.200	ND	"	
Zinc	"	"	"	EPA 6010A	0.0200	ND	"	
Arsenic	1070413	10/15/97	10/20/97	EPA 7060A	0.00400	**0.0684**	"	
Lead	"	"	10/15/97	EPA 7421	0.00200	ND	"	
Mercury	1070205	10/8/97	10/10/97	EPA 7470A	0.00100	ND	"	
Selenium	1070413	10/15/97	10/16/97	EPA 7740	0.00500	ND	"	
Silver	1070227	10/9/97	10/13/97	EPA 7760A	0.0200	ND	"	
SP-9-2.0			**B710081-07**				**Soil**	
Antimony	1070395	10/15/97	10/15/97	EPA 6010A	5.00	ND	mg/kg dry	
Arsenic	"	"	"	EPA 6010A	10.0	ND	"	
Barium	"	"	10/16/97	EPA 6010A	0.500	**42.9**	"	
Beryllium	"	"	10/15/97	EPA 6010A	0.250	ND	"	
Cadmium	"	"	"	EPA 6010A	0.250	ND	"	
Chromium	"	"	"	EPA 6010A	0.500	**17.0**	"	
Copper	"	"	"	EPA 6010A	1.50	**23.1**	"	
Lead	"	"	"	EPA 6010A	10.0	**26.0**	"	
Nickel	"	"	"	EPA 6010A	1.50	**17.9**	"	
Selenium	"	"	"	EPA 6010A	7.50	ND	"	
Thallium	"	"	"	EPA 6010A	10.0	ND	"	
Zinc	"	"	"	EPA 6010A	1.00	**55.7**	"	
Mercury	1070275	"	10/16/97	EPA 7471A	0.0500	**0.0842**	"	
Silver	1070395	"	"	EPA 7760A	1.00	ND	"	
SP-11-3.0			**B710081-08**				**Soil**	
Antimony	1070395	10/15/97	10/15/97	EPA 6010A	5.00	ND	mg/kg dry	
Arsenic	"	"	"	EPA 6010A	10.0	ND	"	
Barium	"	"	10/16/97	EPA 6010A	0.500	**31.1**	"	
Beryllium	"	"	10/15/97	EPA 6010A	0.250	ND	"	
Cadmium	"	"	"	EPA 6010A	0.250	ND	"	
Chromium	"	"	"	EPA 6010A	0.500	**12.5**	"	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
SP-11-3.0 (continued)			B710081-08				Soil	
Copper	1070395	10/15/97	10/15/97	EPA 6010A	1.50	**13.8**	mg/kg dry	
Lead	"	"	"	EPA 6010A	10.0	ND	"	
Nickel	"	"	"	EPA 6010A	1.50	**10.0**	"	
Selenium	"	"	"	EPA 6010A	7.50	ND	"	
Thallium	"	"	"	EPA 6010A	10.0	ND	"	
Zinc	"	"	"	EPA 6010A	1.00	**30.1**	"	
Mercury	1070275	"	10/16/97	EPA 7471A	0.0500	**0.0645**	"	
Silver	1070395	"	"	EPA 7760A	1.00	ND	"	
SP-15-1.0			B710081-10				Soil	
Antimony	1070395	10/15/97	10/15/97	EPA 6010A	5.00	ND	mg/kg dry	
Arsenic	"	"	"	EPA 6010A	10.0	ND	"	
Barium	"	"	10/16/97	EPA 6010A	0.500	**38.8**	"	
Beryllium	"	"	10/15/97	EPA 6010A	0.250	ND	"	
Cadmium	"	"	"	EPA 6010A	0.250	ND	"	
Chromium	"	"	"	EPA 6010A	0.500	**15.4**	"	
Copper	"	"	"	EPA 6010A	1.50	**17.8**	"	
Lead	"	"	"	EPA 6010A	10.0	**15.7**	"	
Nickel	"	"	"	EPA 6010A	1.50	**15.5**	"	
Selenium	"	"	"	EPA 6010A	7.50	ND	"	
Thallium	"	"	"	EPA 6010A	10.0	ND	"	
Zinc	"	"	"	EPA 6010A	1.00	**38.6**	"	
Mercury	1070275	"	10/16/97	EPA 7471A	0.0500	**0.0860**	"	
Silver	1070395	"	"	EPA 7760A	1.00	ND	"	
SP-21-1.0			B710081-16				Soil	
Antimony	1070395	10/15/97	10/15/97	EPA 6010A	5.00	ND	mg/kg dry	
Arsenic	"	"	"	EPA 6010A	10.0	ND	"	
Barium	"	"	10/16/97	EPA 6010A	0.500	**40.6**	"	
Beryllium	"	"	10/15/97	EPA 6010A	0.250	ND	"	
Cadmium	"	"	"	EPA 6010A	0.250	ND	"	
Chromium	"	"	"	EPA 6010A	0.500	**9.63**	"	
Copper	"	"	"	EPA 6010A	1.50	**13.7**	"	
Lead	"	"	"	EPA 6010A	10.0	**18.2**	"	
Nickel	"	"	"	EPA 6010A	1.50	**8.94**	"	
Selenium	"	"	"	EPA 6010A	7.50	ND	"	
Thallium	"	"	"	EPA 6010A	10.0	ND	"	
Zinc	"	"	"	EPA 6010A	1.00	**33.9**	"	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
SP-21-1.0 (continued)			B710081-16				Soil	
Mercury	1070275	10/15/97	10/16/97	EPA 7471A	0.0500	**0.0538**	mg/kg dry	
Silver	1070395	"	"	EPA 7760A	1.00	ND	"	
SP-23-0.5			B710081-18				Soil	
Antimony	1070395	10/15/97	10/15/97	EPA 6010A	5.00	ND	mg/kg dry	
Arsenic	"	"	"	EPA 6010A	10.0	**30.4**	"	
Beryllium	"	"	"	EPA 6010A	0.250	ND	"	
Cadmium	"	"	"	EPA 6010A	0.250	ND	"	
Chromium	"	"	"	EPA 6010A	0.500	**196**	"	
Copper	"	"	"	EPA 6010A	1.50	**290**	"	
Lead	"	"	"	EPA 6010A	10.0	**85.5**	"	
Nickel	"	"	"	EPA 6010A	1.50	**2720**	"	
Selenium	"	"	"	EPA 6010A	7.50	ND	"	
Thallium	"	"	"	EPA 6010A	10.0	ND	"	
Zinc	"	"	"	EPA 6010A	1.00	**46.0**	"	
Mercury	1070275	"	10/16/97	EPA 7471A	0.0500	ND	"	
Silver	1070395	"	"	EPA 7760A	1.00	ND	"	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Dissolved Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
SP-18			**B710081-02**				**Water**	
Lead	1070407	10/15/97	10/16/97	EPA 6010A	0.100	ND	mg/l	
SP-19			**B710081-03**				**Water**	
Antimony	1070407	10/15/97	10/16/97	EPA 6010A	0.100	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.0100	**0.0383**	"	
Beryllium	"	"	"	EPA 6010A	0.00500	ND	"	
Cadmium	"	"	"	EPA 6010A	0.00500	ND	"	
Chromium	"	"	"	EPA 6010A	0.0100	ND	"	
Copper	"	"	"	EPA 6010A	0.0300	ND	"	
Nickel	"	"	"	EPA 6010A	0.0300	ND	"	
Zinc	"	"	"	EPA 6010A	0.0200	ND	"	
Arsenic	1070221	10/8/97	10/9/97	EPA 7060A	0.00400	ND	"	
Lead	"	"	10/8/97	EPA 7421	0.00200	ND	"	
Mercury	1070373	10/15/97	10/16/97	EPA 7470A	0.00100	ND	"	
Selenium	1070221	10/8/97	10/9/97	EPA 7740	0.00500	ND	"	
Silver	1070407	10/15/97	10/16/97	EPA 7760A	0.0200	ND	"	
Thallium	1070221	10/8/97	10/17/97	EPA 7841	0.00200	ND	"	
SP-23			**B710081-04**				**Water**	
Antimony	1070407	10/15/97	10/16/97	EPA 6010A	0.100	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.0100	**0.0133**	"	
Beryllium	"	"	"	EPA 6010A	0.00500	ND	"	
Cadmium	"	"	"	EPA 6010A	0.00500	ND	"	
Chromium	"	"	"	EPA 6010A	0.0100	ND	"	
Copper	"	"	"	EPA 6010A	0.0300	ND	"	
Nickel	"	"	"	EPA 6010A	0.0300	**0.0594**	"	
Zinc	"	"	"	EPA 6010A	0.0200	ND	"	
Arsenic	1070221	10/8/97	10/9/97	EPA 7060A	0.00400	ND	"	
Lead	"	"	10/8/97	EPA 7421	0.00200	ND	"	
Mercury	1070373	10/15/97	10/16/97	EPA 7470A	0.00100	ND	"	
Selenium	1070221	10/8/97	10/9/97	EPA 7740	0.00500	ND	"	
Silver	1070407	10/15/97	10/16/97	EPA 7760A	0.0200	ND	"	
Thallium	1070221	10/8/97	10/17/97	EPA 7841	0.00200	ND	"	

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Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Polychlorinated Biphenyls by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SP-15-1.0			B710081-10				Soil	6,7
Aroclor 1016	1070162	10/7/97	10/20/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*95.8*	%	
SP-21-1.0			B710081-16				Soil	6,7
Aroclor 1016	1070162	10/7/97	10/20/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Aroclor 1262	"	"	"		50.0	ND	"	
Aroclor 1268	"	"	"		50.0	ND	"	
Surrogate: TCX	"	"	"	*38.0-117*		*76.9*	%	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SP-5			B710081-01				Water	
Acetone	1070111	10/6/97	10/6/97		10.0	ND	ug/l	
Benzene	"	"	"		1.00	ND	"	
Bromodichloromethane	"	"	"		1.00	ND	"	
Bromoform	"	"	"		1.00	ND	"	
Bromomethane	"	"	"		1.00	ND	"	
2-Butanone	"	"	"		10.0	ND	"	
Carbon disulfide	"	"	"		1.00	ND	"	
Carbon tetrachloride	"	"	"		1.00	ND	"	
Chlorobenzene	"	"	"		1.00	ND	"	
Chloroethane	"	"	"		1.00	ND	"	
Chloroform	"	"	"		1.00	ND	"	
Chloromethane	"	"	"		1.00	ND	"	
Dibromochloromethane	"	"	"		1.00	ND	"	
1,2-Dichlorobenzene	"	"	"		1.00	ND	"	
1,3-Dichlorobenzene	"	"	"		1.00	ND	"	
1,4-Dichlorobenzene	"	"	"		1.00	ND	"	
1,1-Dichloroethane	"	"	"		1.00	ND	"	
1,2-Dichloroethane	"	"	"		1.00	ND	"	
1,1-Dichloroethene	"	"	"		1.00	ND	"	
cis-1,2-Dichloroethene	"	"	"		1.00	ND	"	
trans-1,2-Dichloroethene	"	"	"		1.00	ND	"	
1,2-Dichloropropane	"	"	"		1.00	ND	"	
cis-1,3-Dichloropropene	"	"	"		1.00	ND	"	
trans-1,3-Dichloropropene	"	"	"		1.00	ND	"	
Ethylbenzene	"	"	"		1.00	ND	"	
2-Hexanone	"	"	"		10.0	ND	"	
Methylene chloride	"	"	"		5.00	ND	"	
4-Methyl-2-pentanone	"	"	"		10.0	ND	"	
Styrene	"	"	"		1.00	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		1.00	ND	"	
Tetrachloroethene	"	"	"		1.00	ND	"	
Toluene	"	"	"		1.00	ND	"	
1,1,1-Trichloroethane	"	"	"		1.00	ND	"	
1,1,2-Trichloroethane	"	"	"		1.00	ND	"	
Trichloroethene	"	"	"		1.00	ND	"	
Vinyl chloride	"	"	"		1.00	ND	"	
Xylenes (total)	"	"	"		2.00	ND	"	
Surrogate: 2-Bromopropene	"	"	"	*80.0-120*		*103*	%	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Note
SP-5 (continued)			B710081-01				Water	
Surrogate: 1,2-DCA-d4	*1070111*	*10/6/97*	*10/6/97*	*80.0-120*		*104*	*%*	
Surrogate: Toluene-d8	*"*	*"*	*"*	*80.0-120*		*104*	*"*	
Surrogate: 4-BFB	*"*	*"*	*"*	*80.0-120*		*98.5*	*"*	

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Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes
SP-16-2.0			B710081-11				Soil	
Acetone	1070136	10/6/97	10/7/97		2.00	ND	mg/kg dry	
Benzene	"	"	"		0.200	ND	"	
Bromodichloromethane	"	"	"		0.200	ND	"	
Bromoform	"	"	"		0.200	ND	"	
Bromomethane	"	"	"		0.200	ND	"	
2-Butanone	"	"	"		2.00	ND	"	
Carbon disulfide	"	"	"		0.200	ND	"	
Carbon tetrachloride	"	"	"		0.200	ND	"	
Chlorobenzene	"	"	"		0.200	ND	"	
Chloroethane	"	"	"		0.200	ND	"	
Chloroform	"	"	"		0.200	ND	"	
Chloromethane	"	"	"		0.200	ND	"	
Dibromochloromethane	"	"	"		0.200	ND	"	
1,2-Dichlorobenzene	"	"	"		0.200	ND	"	
1,3-Dichlorobenzene	"	"	"		0.200	ND	"	
1,4-Dichlorobenzene	"	"	"		0.200	ND	"	
1,1-Dichloroethane	"	"	"		0.200	ND	"	
1,2-Dichloroethane	"	"	"		0.200	ND	"	
1,1-Dichloroethene	"	"	"		0.200	ND	"	
cis-1,2-Dichloroethene	"	"	"		0.200	ND	"	
trans-1,2-Dichloroethene	"	"	"		0.200	ND	"	
1,2-Dichloropropane	"	"	"		0.200	ND	"	
cis-1,3-Dichloropropene	"	"	"		0.200	ND	"	
trans-1,3-Dichloropropene	"	"	"		0.200	ND	"	
Ethylbenzene	"	"	"		0.200	ND	"	
2-Hexanone	"	"	"		2.00	ND	"	
Methylene chloride	"	"	"		1.00	ND	"	
4-Methyl-2-pentanone	"	"	"		2.00	ND	"	
Styrene	"	"	"		0.200	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		0.200	ND	"	
Tetrachloroethene	"	"	"		0.200	ND	"	
Toluene	"	"	"		0.200	ND	"	
1,1,1-Trichloroethane	"	"	"		0.200	ND	"	
1,1,2-Trichloroethane	"	"	"		0.200	ND	"	
Trichloroethene	"	"	"		0.200	ND	"	
Vinyl chloride	"	"	"		0.200	ND	"	
Xylenes (total)	"	"	"		0.400	ND	"	
Surrogate: 2-Bromopropene	"	"	"	*70.0-130*		*77.2*	*%*	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SP-16-2.0 (continued)			B710081-11				Soil	
Surrogate: 1,2-DCA-d4	*1070136*	*10/6/97*	*10/7/97*	*70.0-130*		*87.3*	*%*	
Surrogate: Toluene-d8	*"*	*"*	*"*	*70.0-130*		*91.8*	*"*	
Surrogate: 4-BFB	*"*	*"*	*"*	*70.0-130*		*91.0*	*"*	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
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Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SP-17-2.0			B710081-12				Soil	
Acetone	1070136	10/6/97	10/7/97		2.00	ND	mg/kg dry	
Benzene	"	"	"		0.200	ND	"	
Bromodichloromethane	"	"	"		0.200	ND	"	
Bromoform	"	"	"		0.200	ND	"	
Bromomethane	"	"	"		0.200	ND	"	
2-Butanone	"	"	"		2.00	ND	"	
Carbon disulfide	"	"	"		0.200	ND	"	
Carbon tetrachloride	"	"	"		0.200	ND	"	
Chlorobenzene	"	"	"		0.200	ND	"	
Chloroethane	"	"	"		0.200	ND	"	
Chloroform	"	"	"		0.200	ND	"	
Chloromethane	"	"	"		0.200	ND	"	
Dibromochloromethane	"	"	"		0.200	ND	"	
1,2-Dichlorobenzene	"	"	"		0.200	ND	"	
1,3-Dichlorobenzene	"	"	"		0.200	ND	"	
1,4-Dichlorobenzene	"	"	"		0.200	ND	"	
1,1-Dichloroethane	"	"	"		0.200	ND	"	
1,2-Dichloroethane	"	"	"		0.200	ND	"	
1,1-Dichloroethene	"	"	"		0.200	ND	"	
cis-1,2-Dichloroethene	"	"	"		0.200	ND	"	
trans-1,2-Dichloroethene	"	"	"		0.200	ND	"	
1,2-Dichloropropane	"	"	"		0.200	ND	"	
cis-1,3-Dichloropropene	"	"	"		0.200	ND	"	
trans-1,3-Dichloropropene	"	"	"		0.200	ND	"	
Ethylbenzene	"	"	"		0.200	ND	"	
2-Hexanone	"	"	"		2.00	ND	"	
Methylene chloride	"	"	"		1.00	ND	"	
4-Methyl-2-pentanone	"	"	"		2.00	ND	"	
Styrene	"	"	"		0.200	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		0.200	ND	"	
Tetrachloroethene	"	"	"		0.200	ND	"	
Toluene	"	"	"		0.200	ND	"	
1,1,1-Trichloroethane	"	"	"		0.200	ND	"	
1,1,2-Trichloroethane	"	"	"		0.200	ND	"	
Trichloroethene	"	"	"		0.200	ND	"	
Vinyl chloride	"	"	"		0.200	ND	"	
Xylenes (total)	"	"	"		0.400	ND	"	
Surrogate: 2-Bromopropene	"	"	"	*70.0-130*		*73.4*	%	

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8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Note
SP-17-2.0 (continued)			**B710081-12**				**Soil**	
Surrogate: 1,2-DCA-d4	*1070136*	*10/6/97*	*10/7/97*	*70.0-130*		*74.5*	*%*	
Surrogate: Toluene-d8	*"*	*"*	*"*	*70.0-130*		*90.6*	*"*	
Surrogate: 4-BFB	*"*	*"*	*"*	*70.0-130*		*87.8*	*"*	

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Gasoline Hydrocarbons (Toluene to Dodecane) by WTPH-G/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Batch: 1070150	**Date Prepared: 10/7/97**					**Extraction Method: EPA 5030 (MeOH)**				
Blank	**1070150-BLK1**									
Gasoline Range Hydrocarbons	10/7/97			**ND**	mg/kg dry	**5.00**				
Surrogate: 4-BFB (FID)	"	*4.00*		*4.00*	"	*50.0-150*	*100*			
LCS	**1070150-BS1**									
Gasoline Range Hydrocarbons	10/7/97	25.0		22.5	mg/kg dry	75.0-125	90.0			
Surrogate: 4-BFB (FID)	"	*4.00*		*4.33*	"	*50.0-150*	*108*			
Duplicate	**1070150-DUP1**		**B709514-13**							
Gasoline Range Hydrocarbons	10/7/97		2920	1910	mg/kg dry			50.0	**41.8**	
Surrogate: 4-BFB (FID)	"	*4.26*		*ND*	"	*50.0-150*	*NR*			
Matrix Spike	**1070150-MS1**		**B709514-15**							
Gasoline Range Hydrocarbons	10/7/97	30.6	ND	24.2	mg/kg dry	60.0-140	**79.1**			
Surrogate: 4-BFB (FID)	"	*4.90*		*4.46*	"	*50.0-150*	*91.0*			
Matrix Spike Dup	**1070150-MSD1**		**B709514-15**							
Gasoline Range Hydrocarbons	10/7/97	30.6	ND	23.6	mg/kg dry	60.0-140	**77.1**	25.0	**2.56**	
Surrogate: 4-BFB (FID)	"	*4.90*		*4.41*	"	*50.0-150*	*90.0*			
Batch: 1070171	**Date Prepared: 10/7/97**					**Extraction Method: EPA 5030 (P/T)**				
Blank	**1070171-BLK1**									
Gasoline Range Hydrocarbons	10/7/97			**ND**	ug/l	**50.0**				
Surrogate: 4-BFB (FID)	"	*48.0*		*40.1*	"	*50.0-150*	*83.5*			
LCS	**1070171-BS1**									
Gasoline Range Hydrocarbons	10/7/97	500		489	ug/l	80.0-120	97.8			
Surrogate: 4-BFB (FID)	"	*48.0*		*43.2*	"	*50.0-150*	*90.0*			
Duplicate	**1070171-DUP1**		**B710078-04**							
Gasoline Range Hydrocarbons	10/7/97		14100	13500	ug/l			25.0	4.35	
Surrogate: 4-BFB (FID)	"	*48.0*		*43.3*	"	*50.0-150*	*90.2*			

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PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Batch: 1070150	**Date Prepared: 10/7/97**					**Extraction Method: EPA 5030 (MeOH)**				
Blank	**1070150-BLK1**									
Gasoline Range Hydrocarbons	10/7/97			**ND**	mg/kg dry	**5.00**				
Benzene	"			**ND**	"	**0.0500**				
Toluene	"			**ND**	"	**0.0500**				
Ethylbenzene	"			**ND**	"	**0.0500**				
Xylenes (total)	"			**ND**	"	**0.100**				
Surrogate: 4-BFB (FID)	"	*4.00*		*4.00*	"	*50.0-150*	*100*			
Surrogate: 4-BFB (PID)	"	*4.00*		*4.04*	"	*50.0-150*	*101*			
LCS	**1070150-BS1**									
Gasoline Range Hydrocarbons	10/7/97	25.0		22.5	mg/kg dry	75.0-125	90.0			
Surrogate: 4-BFB (FID)	"	*4.00*		*4.33*	"	*50.0-150*	*108*			
Duplicate	**1070150-DUP1**	**B709514-13**								
Gasoline Range Hydrocarbons	10/7/97		2920	1910	mg/kg dry			50.0	**41.8**	
Surrogate: 4-BFB (FID)	"	*4.26*		*ND*	"	*50.0-150*	*NR*			*8*
Matrix Spike	**1070150-MS2**	**B710085-02**								
Benzene	10/7/97	0.610	ND	0.478	mg/kg dry	60.0-140	**78.4**			
Toluene	"	0.610	ND	0.503	"	60.0-140	**82.5**			
Ethylbenzene	"	0.610	ND	0.515	"	60.0-140	**84.4**			
Xylenes (total)	"	1.83	ND	1.54	"	60.0-140	**84.2**			
Surrogate: 4-BFB (PID)	"	*4.88*		*4.36*	"	*50.0-150*	*89.3*			
Matrix Spike Dup	**1070150-MSD2**	**B710085-02**								
Benzene	10/7/97	0.610	ND	0.488	mg/kg dry	60.0-140	**80.0**	20.0	**2.02**	
Toluene	"	0.610	ND	0.516	"	60.0-140	**84.6**	20.0	**2.51**	
Ethylbenzene	"	0.610	ND	0.532	"	60.0-140	**87.2**	20.0	**3.26**	
Xylenes (total)	"	1.83	ND	1.59	"	60.0-140	**86.9**	20.0	**3.16**	
Surrogate: 4-BFB (PID)	"	*4.88*		*4.43*	"	*50.0-150*	*90.8*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended) with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1070149	**Date Prepared: 10/7/97**					**Extraction Method: EPA 3550**				
Blank	**1070149-BLK1**									
Diesel Range Hydrocarbons	10/8/97			**ND**	mg/kg dry	**10.0**				
Heavy Oil Range Hydrocarbons	"			**ND**	"	**25.0**				
Surrogate: 2-FBP	"	*11.9*		*11.0*	"	*50.0-150*	*92.4*			
LCS	**1070149-BS1**									
Diesel Range Hydrocarbons	10/8/97	66.7		67.5	mg/kg dry	59.0-119	101			
Surrogate: 2-FBP	"	*11.9*		*11.1*	"	*50.0-150*	*93.3*			
Duplicate	**1070149-DUP1**	**B710081-15**								
Diesel Range Hydrocarbons	10/8/97		ND	ND	mg/kg dry			56.0		
Surrogate: 2-FBP	"	*12.7*		*10.6*	"	*50.0-150*	*83.5*			
Duplicate	**1070149-DUP2**	**B710081-17**								
Diesel Range Hydrocarbons	10/8/97		ND	ND	mg/kg dry			56.0		
Surrogate: 2-FBP	"	*14.2*		*12.9*	"	*50.0-150*	*90.8*			
Batch: 1070155	**Date Prepared: 10/7/97**					**Extraction Method: EPA 3520/600 Series**				
Blank	**1070155-BLK1**									
Diesel Range Hydrocarbons	10/9/97			**ND**	mg/l	**0.250**				
Heavy Oil Range Hydrocarbons	"			**ND**	"	**0.750**				
Surrogate: 2-FBP	"	*0.358*		*0.352*	"	*50.0-150*	*98.3*			
LCS	**1070155-BS1**									
Diesel Range Hydrocarbons	10/9/97	2.00		1.86	mg/l	39.0-121	93.0			
Surrogate: 2-FBP	"	*0.358*		*0.332*	"	*50.0-150*	*92.7*			
Duplicate	**1070155-DUP1**	**B710076-01**								
Diesel Range Hydrocarbons	10/9/97		ND	ND	mg/l			44.0		
Surrogate: 2-FBP	"	*0.676*		*0.625*	"	*50.0-150*	*92.5*			
Duplicate	**1070155-DUP2**	**B710081-03**								
Diesel Range Hydrocarbons	10/9/97		0.982	0.311	mg/l			44.0	**104**	9
Surrogate: 2-FBP	"	*0.676*		*0.588*	"	*50.0-150*	*87.0*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Total Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Batch: 1070205	**Date Prepared: 10/8/97**					**Extraction Method: BrCl Digestion**				
Blank	**1070205-BLK1**									
Mercury	10/10/97			ND	mg/l	0.00100				
LCS	**1070205-BS1**									
Mercury	10/10/97	0.00500		0.00528	mg/l	70.0-130	106			
Duplicate	**1070205-DUP1**		**B709617-17**							
Mercury	10/10/97		ND	ND	mg/l			20.0		
Matrix Spike	**1070205-MS1**		**B709617-17**							
Mercury	10/10/97	0.00500	ND	0.00554	mg/l	75.0-125	111			
Matrix Spike Dup	**1070205-MSD1**		**B709617-17**							
Mercury	10/10/97	0.00500	ND	0.00553	mg/l	75.0-125	111	20.0	0	
Batch: 1070227	**Date Prepared: 10/9/97**					**Extraction Method: EPA 3010**				
Blank	**1070227-BLK1**									
Antimony	10/9/97			ND	mg/l	0.100				
Barium	"			ND	"	0.0100				
Beryllium	"			ND	"	0.00500				
Cadmium	"			ND	"	0.00500				
Chromium	"			ND	"	0.0100				
Copper	"			ND	"	0.0300				
Nickel	"			ND	"	0.0300				
Thallium	"			ND	"	0.200				
Zinc	"			ND	"	0.0200				
Silver	10/13/97			ND	"	0.0200				
LCS	**1070227-BS1**									
Antimony	10/9/97	1.00		0.906	mg/l	80.0-120	90.6			
Barium	"	1.00		0.900	"	80.0-120	90.0			
Beryllium	"	1.00		0.900	"	80.0-120	90.0			
Cadmium	"	1.00		0.914	"	80.0-120	91.4			
Chromium	"	1.00		0.926	"	80.0-120	92.6			
Copper	"	1.00		0.910	"	80.0-120	91.0			
Nickel	"	1.00		0.923	"	80.0-120	92.3			
Thallium	"	1.00		0.863	"	80.0-120	86.3			
Zinc	"	1.00		0.926	"	80.0-120	92.6			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Total Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
LCS (continued)	**1070227-BS1**									
Silver	10/13/97	1.00		1.05	mg/l	75.0-125	105			
Duplicate	**1070227-DUP1**		**B710090-01**							
Antimony	10/9/97		ND	ND	mg/l			20.0		
Barium	"		0.0654	0.0736	"			20.0	**11.8**	
Beryllium	"		ND	ND	"			20.0		
Cadmium	"		ND	ND	"			20.0		
Chromium	"		0.0318	0.0338	"			20.0	**6.10**	
Copper	"		ND	ND	"			20.0		
Nickel	"		ND	ND	"			20.0		
Thallium	"		ND	ND	"			20.0		
Zinc	"		0.0939	0.102	"			20.0	**8.27**	
Silver	10/13/97		ND	ND	"			20.0		
Matrix Spike	**1070227-MS1**		**B710090-01**							
Antimony	10/9/97	1.00	ND	0.879	mg/l	80.0-120	**87.9**			
Barium	"	1.00	0.0654	0.937	"	80.0-120	**87.2**			
Beryllium	"	1.00	ND	0.873	"	80.0-120	**87.3**			
Cadmium	"	1.00	ND	0.880	"	80.0-120	**88.0**			
Chromium	"	1.00	0.0318	0.934	"	80.0-120	**90.2**			
Copper	"	1.00	ND	0.883	"	80.0-120	**88.3**			
Nickel	"	1.00	ND	0.876	"	80.0-120	**87.6**			
Thallium	"	1.00	ND	0.767	"	80.0-120	**76.7**			10
Zinc	"	1.00	0.0939	0.995	"	80.0-120	**90.1**			
Silver	10/13/97	1.00	ND	1.05	"	75.0-125	**105**			
Matrix Spike	**1070227-MS2**		**B710090-01**							
Antimony	10/9/97	2.00	ND	2.03	mg/l	80.0-120	**101**			
Barium	"	2.00	0.0654	2.11	"	80.0-120	**102**			
Beryllium	"	2.00	ND	1.98	"	80.0-120	**99.0**			
Cadmium	"	2.00	ND	2.07	"	80.0-120	**103**			
Chromium	"	2.00	0.0318	2.14	"	80.0-120	**105**			
Copper	"	2.00	ND	2.02	"	80.0-120	**101**			
Nickel	"	2.00	ND	2.07	"	80.0-120	**103**			
Thallium	"	2.00	ND	2.10	"	80.0-120	**105**			
Zinc	"	2.00	0.0939	2.18	"	80.0-120	**104**			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Total Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Matrix Spike Dup	**1070227-MSD1**		**B710090-01**							
Antimony	10/9/97	1.00	ND	0.813	mg/l	80.0-120	81.3	20.0	7.80	
Barium	"	1.00	0.0654	0.916	"	80.0-120	85.1	20.0	2.44	
Beryllium	"	1.00	ND	0.842	"	80.0-120	84.2	20.0	3.62	
Cadmium	"	1.00	ND	0.859	"	80.0-120	85.9	20.0	2.42	
Chromium	"	1.00	0.0318	0.898	"	80.0-120	86.6	20.0	4.07	
Copper	"	1.00	ND	0.863	"	80.0-120	86.3	20.0	2.29	
Nickel	"	1.00	ND	0.878	"	80.0-120	87.8	20.0	0.228	
Thallium	"	1.00	ND	1.04	"	80.0-120	104	20.0	30.2	
Zinc	"	1.00	0.0939	0.969	"	80.0-120	87.5	20.0	2.93	
Silver	10/13/97	1.00	ND	1.02	"	75.0-125	102	20.0	2.90	
Batch: 1070275	**Date Prepared: 10/15/97**					**Extraction Method: BrCl Digestion**				
Blank	**1070275-BLK1**									
Mercury	10/16/97			ND	mg/kg dry	0.0500				
LCS	**1070275-BS1**									
Mercury	10/16/97	0.250		0.243	mg/kg dry	80.0-120	97.2			
Duplicate	**1070275-DUP1**		**B710081-10**							
Mercury	10/16/97		0.0860	0.0784	mg/kg dry			20.0	9.25	
Matrix Spike	**1070275-MS1**		**B710081-10**							
Mercury	10/16/97	0.288	0.0860	0.345	mg/kg dry	80.0-120	89.9			
Matrix Spike Dup	**1070275-MSD1**		**B710081-10**							
Mercury	10/16/97	0.282	0.0860	0.344	mg/kg dry	80.0-120	91.5	20.0	1.76	
Batch: 1070395	**Date Prepared: 10/15/97**					**Extraction Method: EPA 3050**				
Blank	**1070395-BLK1**									
Antimony	10/15/97			ND	mg/kg dry	5.00				
Arsenic	"			ND	"	10.0				
Barium	10/16/97			ND	"	0.500				
Beryllium	10/15/97			ND	"	0.250				
Cadmium	"			ND	"	0.250				
Chromium	"			ND	"	0.500				
Copper	"			ND	"	1.50				
Lead	"			ND	"	10.0				
Nickel	"			ND	"	1.50				

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Total Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Blank (continued)	**1070395-BLK1**									
Selenium	10/15/97			**ND**	mg/kg dry	**7.50**				
Thallium	"			**ND**	"	**10.0**				
Zinc	"			**ND**	"	**1.00**				
Silver	10/16/97			**ND**	"	**1.00**				
LCS	**1070395-BS1**									
Antimony	10/15/97	50.0		39.4	mg/kg dry	70.0-130	78.8			
Arsenic	"	50.0		44.3	"	70.0-130	88.6			
Barium	10/16/97	50.0		39.2	"	70.0-130	78.4			
Beryllium	10/15/97	50.0		39.6	"	70.0-130	79.2			
Cadmium	"	50.0		42.0	"	70.0-130	84.0			
Chromium	"	50.0		40.8	"	70.0-130	81.6			
Copper	"	50.0		40.5	"	70.0-130	81.0			
Lead	"	50.0		40.8	"	70.0-130	81.6			
Nickel	"	50.0		37.9	"	70.0-130	75.8			
Selenium	"	50.0		38.0	"	70.0-130	76.0			
Thallium	"	50.0		40.1	"	70.0-130	80.2			
Zinc	"	50.0		40.3	"	70.0-130	80.6			
Silver	10/16/97	50.0		49.6	"	75.0-125	99.2			
LCS	**1070395-BS2**									
Antimony	10/15/97	65.0		68.1	mg/kg dry	70.0-130	105			
Arsenic	"	71.5		66.0	"	70.0-130	92.3			
Barium	10/16/97	91.1		64.6	"	70.0-130	70.9			
Beryllium	10/15/97	104		82.9	"	70.0-130	79.7			
Cadmium	"	58.8		49.1	"	70.0-130	83.5			
Chromium	"	90.2		69.8	"	70.0-130	77.4			
Copper	"	178		145	"	70.0-130	81.5			
Lead	"	143		108	"	70.0-130	75.5			
Nickel	"	73.6		52.5	"	70.0-130	71.3			
Selenium	"	67.5		61.0	"	70.0-130	90.4			
Zinc	"	91.0		71.8	"	70.0-130	78.9			
Silver	10/16/97	73.3		69.4	"	75.0-125	94.7			
Duplicate	**1070395-DUP1**	**B710115-10**								
Antimony	10/15/97		ND	ND	mg/kg dry			20.0		
Arsenic	"		ND	ND	"			20.0		
Barium	10/16/97		63.4	58.3	"			20.0	8.38	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Total Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Duplicate (continued)	**1070395-DUP1**		**B710115-10**							
Beryllium	10/15/97		ND	ND	mg/kg dry			20.0		
Cadmium	"		ND	ND	"			20.0		
Chromium	"		14.2	14.6	"			20.0	2.78	
Copper	"		24.9	24.1	"			20.0	3.27	
Lead	"		ND	10.1	"			20.0		
Nickel	"		11.9	10.9	"			20.0	8.77	
Selenium	"		ND	ND	"			20.0		
Thallium	"		ND	ND	"			20.0		
Zinc	"		60.2	59.5	"			20.0	1.17	
Silver	10/16/97		ND	ND	"			20.0		
Matrix Spike	**1070395-MS1**		**B710115-10**							
Antimony	10/15/97	69.0	ND	15.1	mg/kg dry	40.0-120	21.9			
Arsenic	"	69.0	ND	48.0	"	60.0-140	69.6			
Barium	10/16/97	69.0	63.4	106	"	70.0-130	61.7			
Beryllium	10/15/97	69.0	ND	52.8	"	70.0-130	76.5			
Cadmium	"	69.0	ND	54.3	"	70.0-130	78.7			
Chromium	"	69.0	14.2	66.1	"	70.0-130	75.2			
Copper	"	69.0	24.9	77.1	"	70.0-130	75.7			
Lead	"	69.0	ND	61.1	"	70.0-130	88.6			
Nickel	"	69.0	11.9	62.8	"	70.0-130	73.8			
Selenium	"	69.0	ND	47.2	"	60.0-140	68.4			
Thallium	"	69.0	ND	62.8	"	60.0-140	91.0			
Zinc	"	69.0	60.2	115	"	70.0-130	79.4			
Silver	10/16/97	69.0	ND	65.2	"	75.0-125	94.5			
Matrix Spike	**1070395-MS2**		**B710115-10**							
Antimony	10/15/97	134	ND	110	mg/kg dry	40.0-120	82.1			
Arsenic	"	134	ND	113	"	60.0-140	84.3			
Barium	10/16/97	134	63.4	178	"	70.0-130	85.5			
Beryllium	10/15/97	134	ND	115	"	70.0-130	85.8			
Cadmium	"	134	ND	117	"	70.0-130	87.3			
Chromium	"	134	14.2	131	"	70.0-130	87.2			
Copper	"	134	24.9	145	"	70.0-130	89.6			
Lead	"	134	ND	124	"	70.0-130	92.5			
Nickel	"	134	11.9	121	"	70.0-130	81.4			
Selenium	"	134	ND	107	"	60.0-140	79.9			
Thallium	"	134	ND	133	"	60.0-140	99.3			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Total Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike (continued)	**1070395-MS2**		**B710115-10**							
Zinc	10/15/97	134	60.2	181	mg/kg dry	70.0-130	**90.1**			
Matrix Spike Dup	**1070395-MSD1**		**B710115-10**							
Antimony	10/15/97	68.3	ND	24.0	mg/kg dry	40.0-120	**35.1**	20.0	**46.3**	
Arsenic	"	68.3	ND	46.9	"	60.0-140	**68.7**	20.0	**1.30**	
Barium	10/16/97	68.3	63.4	107	"	70.0-130	**63.8**	20.0	**3.35**	
Beryllium	10/15/97	68.3	ND	54.1	"	70.0-130	**79.2**	20.0	**3.47**	
Cadmium	"	68.3	ND	54.6	"	70.0-130	**79.9**	20.0	**1.51**	
Chromium	"	68.3	14.2	67.6	"	70.0-130	**78.2**	20.0	**3.91**	
Copper	"	68.3	24.9	79.5	"	70.0-130	**79.9**	20.0	**5.40**	
Lead	"	68.3	ND	67.1	"	70.0-130	**98.2**	20.0	**10.3**	
Nickel	"	68.3	11.9	60.9	"	70.0-130	**71.7**	20.0	**2.89**	
Selenium	"	68.3	ND	49.3	"	60.0-140	**72.2**	20.0	**5.41**	
Thallium	"	68.3	ND	44.9	"	60.0-140	**65.7**	20.0	**32.3**	
Zinc	"	68.3	60.2	119	"	70.0-130	**86.1**	20.0	**8.10**	
Silver	10/16/97	68.3	ND	63.2	"	75.0-125	**92.5**	20.0	**2.14**	
Batch: 1070413	**Date Prepared: 10/15/97**					**Extraction Method: EPA 3020**				
Blank	**1070413-BLK1**									
Arsenic	10/20/97			**ND**	mg/l	**0.00400**				
Lead	10/15/97			**ND**	"	**0.00200**				
Selenium	10/16/97			**ND**	"	**0.00500**				
LCS	**1070413-BS1**									
Arsenic	10/20/97	0.0500		0.0517	mg/l	75.0-125	103			
Lead	10/15/97	0.0250		0.0258	"	75.0-125	103			
Selenium	10/16/97	0.0250		0.0239	"	75.0-125	95.6			
Duplicate	**1070413-DUP1**		**B710109-01**							
Arsenic	10/20/97		ND	ND	mg/l			20.0		
Lead	10/15/97		ND	ND	"			20.0		
Selenium	10/16/97		ND	ND	"			20.0		
Matrix Spike	**1070413-MS1**		**B710109-01**							
Arsenic	10/20/97	0.0500	ND	0.0420	mg/l	70.0-130	**84.0**			
Lead	10/15/97	0.0250	ND	0.0253	"	70.0-130	**101**			
Selenium	10/16/97	0.0250	ND	0.0221	"	70.0-130	**88.4**			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Total Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Note
Matrix Spike Dup	**1070413-MSD1**		**B710109-01**							
Arsenic	10/20/97	0.0500	ND	0.0435	mg/l	70.0-130	**87.0**	20.0	**3.51**	
Lead	10/15/97	0.0250	ND	0.0251	"	70.0-130	**100**	20.0	**0.995**	
Selenium	10/16/97	0.0250	ND	0.0231	"	70.0-130	**92.4**	20.0	**4.42**	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Dissolved Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1070221	**Date Prepared: 10/8/97**					**Extraction Method: EPA 3020**				
Blank	**1070221-BLK1**									
Arsenic	10/9/97			**ND**	mg/l	**0.00400**				
Lead	10/8/97			**ND**	"	**0.00200**				
Selenium	10/9/97			**ND**	"	**0.00500**				
Thallium	10/17/97			**ND**	"	**0.00200**				
LCS	**1070221-BS1**									
Arsenic	10/9/97	0.0500		0.0497	mg/l	75.0-125	99.4			
Lead	10/8/97	0.0250		0.0249	"	75.0-125	99.6			
Selenium	10/9/97	0.0250		0.0233	"	75.0-125	93.2			
Thallium	10/17/97	0.0300		0.0282	"	75.0-125	94.0			
Duplicate	**1070221-DUP1**		**B710081-03**							
Arsenic	10/9/97		ND	0.00670	mg/l			20.0		
Lead	10/8/97		ND	ND	"			20.0		
Selenium	10/9/97		ND	ND	"			20.0		
Thallium	10/17/97		ND	ND	"			20.0		
Matrix Spike	**1070221-MS1**		**B710081-03**							
Arsenic	10/9/97	0.0500	ND	0.0486	mg/l	70.0-130	**97.2**			
Lead	10/8/97	0.0250	ND	0.0237	"	70.0-130	**94.8**			
Selenium	10/9/97	0.0250	ND	0.0212	"	70.0-130	**84.8**			
Thallium	10/17/97	0.0300	ND	0.0257	"	70.0-130	**85.7**			
Matrix Spike Dup	**1070221-MSD1**		**B710081-03**							
Arsenic	10/9/97	0.0500	ND	0.0476	mg/l	70.0-130	**95.2**	20.0	**2.08**	
Lead	10/8/97	0.0250	ND	0.0238	"	70.0-130	**95.2**	20.0	**0.421**	
Selenium	10/9/97	0.0250	ND	0.0215	"	70.0-130	**86.0**	20.0	**1.41**	
Thallium	10/17/97	0.0300	ND	0.0253	"	70.0-130	**84.3**	20.0	**1.65**	
Batch: 1070373	**Date Prepared: 10/15/97**					**Extraction Method: BrCl Digestion**				
Blank	**1070373-BLK1**									
Mercury	10/16/97			**ND**	mg/l	**0.00100**				
LCS	**1070373-BS1**									
Mercury	10/16/97	0.00500		0.00481	mg/l	70.0-130	96.2			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Dissolved Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Note:
Duplicate	**1070373-DUP1**		**B710081-03**							
Mercury	10/16/97		ND	ND	mg/l			20.0		
Matrix Spike	**1070373-MS1**		**B710081-03**							
Mercury	10/16/97	0.00500	ND	0.00497	mg/l	75.0-125	99.4			
Matrix Spike Dup	**1070373-MSD1**		**B710081-03**							
Mercury	10/16/97	0.00500	ND	0.00503	mg/l	75.0-125	101	20.0	1.60	
Batch: 1070407	**Date Prepared: 10/15/97**					**Extraction Method: EPA 3010**				
Blank	**1070407-BLK1**									
Antimony	10/16/97			ND	mg/l	0.100				
Barium	"			ND	"	0.0100				
Beryllium	"			ND	"	0.00500				
Cadmium	"			ND	"	0.00500				
Chromium	"			ND	"	0.0100				
Copper	"			ND	"	0.0300				
Lead	"			ND	"	0.100				
Nickel	"			ND	"	0.0300				
Zinc	"			ND	"	0.0200				
Silver	"			ND	"	0.0200				
LCS	**1070407-BS1**									
Antimony	10/16/97	1.00		0.944	mg/l	80.0-120	94.4			
Barium	"	1.00		0.999	"	80.0-120	99.9			
Beryllium	"	1.00		0.969	"	80.0-120	96.9			
Cadmium	"	1.00		1.01	"	80.0-120	101			
Chromium	"	1.00		0.997	"	80.0-120	99.7			
Copper	"	1.00		0.993	"	80.0-120	99.3			
Lead	"	1.00		1.03	"	80.0-120	103			
Nickel	"	1.00		0.978	"	80.0-120	97.8			
Zinc	"	1.00		1.01	"	80.0-120	101			
Silver	"	1.00		1.05	"	75.0-125	105			
Duplicate	**1070407-DUP1**		**B710081-02**							
Antimony	10/16/97		ND	ND	mg/l			20.0		
Barium	"		0.0202	0.0149	"			20.0	30.2	
Beryllium	"		ND	ND	"			20.0		
Cadmium	"		ND	ND	"			20.0		

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8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Dissolved Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Duplicate (continued)	**1070407-DUP1**		**B710081-02**							
Chromium	10/16/97		ND	ND	mg/l			20.0		
Copper	"		ND	ND	"			20.0		
Lead	"		ND	ND	"			20.0		
Nickel	"		ND	ND	"			20.0		
Zinc	"		ND	ND	"			20.0		
Silver	"		ND	ND	"			20.0		
Matrix Spike	**1070407-MS1**		**B710081-02**							
Antimony	10/16/97	1.00	ND	1.02	mg/l	80.0-120	102			
Barium	"	1.00	0.0202	1.03	"	80.0-120	101			
Beryllium	"	1.00	ND	1.02	"	80.0-120	102			
Cadmium	"	1.00	ND	1.03	"	80.0-120	103			
Chromium	"	1.00	ND	1.03	"	80.0-120	103			
Copper	"	1.00	ND	1.02	"	80.0-120	102			
Lead	"	1.00	ND	1.02	"	80.0-120	102			
Nickel	"	1.00	ND	0.981	"	80.0-120	98.1			
Zinc	"	1.00	ND	1.05	"	80.0-120	105			
Silver	"	1.00	ND	0.777	"	75.0-125	77.7			
Matrix Spike Dup	**1070407-MSD1**		**B710081-02**							
Antimony	10/16/97	1.00	ND	1.02	mg/l	80.0-120	102	20.0	0	
Barium	"	1.00	0.0202	1.01	"	80.0-120	99.0	20.0	2.00	
Beryllium	"	1.00	ND	1.04	"	80.0-120	104	20.0	1.94	
Cadmium	"	1.00	ND	1.05	"	80.0-120	105	20.0	1.92	
Chromium	"	1.00	ND	1.04	"	80.0-120	104	20.0	0.966	
Copper	"	1.00	ND	1.02	"	80.0-120	102	20.0	0	
Lead	"	1.00	ND	1.02	"	80.0-120	102	20.0	0	
Nickel	"	1.00	ND	0.994	"	80.0-120	99.4	20.0	1.32	
Zinc	"	1.00	ND	1.05	"	80.0-120	105	20.0	0	
Silver	"	1.00	ND	0.759	"	75.0-125	75.9	20.0	2.34	

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8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Polychlorinated Biphenyls by EPA Method 8081/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Batch: 1070162	**Date Prepared: 10/7/97**					**Extraction Method: EPA 3550**				
Blank	**1070162-BLK1**									6,
Aroclor 1016	10/20/97			ND	ug/kg dry	50.0				
Aroclor 1221	"			ND	"	50.0				
Aroclor 1232	"			ND	"	50.0				
Aroclor 1242	"			ND	"	50.0				
Aroclor 1248	"			ND	"	50.0				
Aroclor 1254	"			ND	"	50.0				
Aroclor 1260	"			ND	"	50.0				
Aroclor 1262	"			ND	"	50.0				
Aroclor 1268	"			ND	"	50.0				
Surrogate: TCX	"	*6.67*		*6.31*	"	*38.0-117*	*94.6*			
LCS	**1070162-BS1**									6,
Aroclor 1260	10/20/97	333		354	ug/kg dry	37.0-98.0	106			1(
Surrogate: TCX	"	*6.67*		*6.88*	"	*38.0-117*	*103*			
Matrix Spike	**1070162-MS1**		**B710081-16**							6,
Aroclor 1260	10/20/97	366	ND	369	ug/kg dry	37.0-98.0	**101**			1(
Surrogate: TCX	"	*7.32*		*6.85*	"	*38.0-117*	*93.6*			
Matrix Spike Dup	**1070162-MSD1**		**B710081-16**							6,
Aroclor 1260	10/20/97	366	ND	340	ug/kg dry	37.0-98.0	92.9	38.0	8.35	
Surrogate: TCX	"	*7.32*		*6.15*	"	*38.0-117*	*84.0*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Volatile Organic Compounds by EPA Method 8240B/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1070111	**Date Prepared: 10/6/97**					**Extraction Method: EPA 5030 [P/T]**				
Blank	**1070111-BLK1**									
Acetone	10/6/97			ND	ug/l	10.0				
Benzene	"			ND	"	1.00				
Bromodichloromethane	"			ND	"	1.00				
Bromoform	"			ND	"	1.00				
Bromomethane	"			ND	"	1.00				
2-Butanone	"			ND	"	10.0				
Carbon disulfide	"			ND	"	1.00				
Carbon tetrachloride	"			ND	"	1.00				
Chlorobenzene	"			ND	"	1.00				
Chloroethane	"			ND	"	1.00				
Chloroform	"			ND	"	1.00				
Chloromethane	"			ND	"	1.00				
Dibromochloromethane	"			ND	"	1.00				
1,2-Dichlorobenzene	"			ND	"	1.00				
1,3-Dichlorobenzene	"			ND	"	1.00				
1,4-Dichlorobenzene	"			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				
cis-1,3-Dichloropropene	"			ND	"	1.00				
trans-1,3-Dichloropropene	"			ND	"	1.00				
Ethylbenzene	"			ND	"	1.00				
2-Hexanone	"			ND	"	10.0				
Methylene chloride	"			ND	"	5.00				
4-Methyl-2-pentanone	"			ND	"	10.0				
Styrene	"			ND	"	1.00				
1,1,2,2-Tetrachloroethane	"			ND	"	1.00				
Tetrachloroethene	"			ND	"	1.00				
Toluene	"			ND	"	1.00				
1,1,1-Trichloroethane	"			ND	"	1.00				
1,1,2-Trichloroethane	"			ND	"	1.00				
Trichloroethene	"			ND	"	1.00				
Vinyl chloride	"			ND	"	1.00				
Xylenes (total)	"			ND	"	2.00				

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*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Volatile Organic Compounds by EPA Method 8240B/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Blank (continued)	**1070111-BLK1**									
Surrogate: 2-Bromopropene	*10/6/97*	*20.0*		*20.0*	*ug/l*	*80.0-120*	*100*			
Surrogate: 1,2-DCA-d4	"	*20.0*		*21.8*	"	*80.0-120*	*109*			
Surrogate: Toluene-d8	"	*20.0*		*20.4*	"	*80.0-120*	*102*			
Surrogate: 4-BFB	"	*20.0*		*20.0*	"	*80.0-120*	*100*			
LCS	**1070111-BS1**									
Benzene	10/6/97	10.0		11.5	ug/l	80.0-120	115			
Chlorobenzene	"	10.0		10.8	"	80.0-120	108			
1,1-Dichloroethene	"	10.0		10.7	"	80.0-120	107			
Toluene	"	10.0		10.9	"	80.0-120	109			
Trichloroethene	"	10.0		10.9	"	80.0-120	109			
Surrogate: 2-Bromopropene	"	*20.0*		*20.1*	"	*80.0-120*	*101*			
Surrogate: 1,2-DCA-d4	"	*20.0*		*21.8*	"	*80.0-120*	*109*			
Surrogate: Toluene-d8	"	*20.0*		*20.6*	"	*80.0-120*	*103*			
Surrogate: 4-BFB	"	*20.0*		*19.8*	"	*80.0-120*	*99.0*			
Matrix Spike	**1070111-MS1**		**B709567-01**							
Benzene	10/6/97	10.0	ND	11.7	ug/l	80.0-120	**117**			
Chlorobenzene	"	10.0	ND	11.1	"	80.0-120	**111**			
1,1-Dichloroethene	"	10.0	ND	10.9	"	80.0-120	**109**			
Toluene	"	10.0	3.31	14.2	"	80.0-120	**109**			
Trichloroethene	"	10.0	ND	11.3	"	80.0-120	**113**			
Surrogate: 2-Bromopropene	"	*20.0*		*19.2*	"	*80.0-120*	*96.0*			
Surrogate: 1,2-DCA-d4	"	*20.0*		*22.1*	"	*80.0-120*	*111*			
Surrogate: Toluene-d8	"	*20.0*		*20.7*	"	*80.0-120*	*104*			
Surrogate: 4-BFB	"	*20.0*		*19.8*	"	*80.0-120*	*99.0*			
Matrix Spike Dup	**1070111-MSD1**		**B709567-01**							
Benzene	10/6/97	10.0	ND	11.2	ug/l	80.0-120	**112**	15.0	**4.37**	
Chlorobenzene	"	10.0	ND	10.7	"	80.0-120	**107**	15.0	**3.67**	
1,1-Dichloroethene	"	10.0	ND	10.3	"	80.0-120	**103**	15.0	**5.66**	
Toluene	"	10.0	3.31	13.7	"	80.0-120	**104**	15.0	**4.69**	
Trichloroethene	"	10.0	ND	10.8	"	80.0-120	**108**	15.0	**4.52**	
Surrogate: 2-Bromopropene	"	*20.0*		*18.8*	"	*80.0-120*	*94.0*			
Surrogate: 1,2-DCA-d4	"	*20.0*		*21.8*	"	*80.0-120*	*109*			
Surrogate: Toluene-d8	"	*20.0*		*20.4*	"	*80.0-120*	*102*			
Surrogate: 4-BFB	"	*20.0*		*20.0*	"	*80.0-120*	*100*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Volatile Organic Compounds by EPA Method 8240B/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1070136	**Date Prepared: 10/6/97**					**Extraction Method: EPA 5030 [MeOH]**				
Blank	**1070136-BLK1**									
Acetone	10/6/97			ND	mg/kg dry	2.00				
Benzene	"			ND	"	0.200				
Bromodichloromethane	"			ND	"	0.200				
Bromoform	"			ND	"	0.200				
Bromomethane	"			ND	"	0.200				
2-Butanone	"			ND	"	2.00				
Carbon disulfide	"			ND	"	0.200				
Carbon tetrachloride	"			ND	"	0.200				
Chlorobenzene	"			ND	"	0.200				
Chloroethane	"			ND	"	0.200				
Chloroform	"			ND	"	0.200				
Chloromethane	"			ND	"	0.200				
Dibromochloromethane	"			ND	"	0.200				
1,2-Dichlorobenzene	"			ND	"	0.200				
1,3-Dichlorobenzene	"			ND	"	0.200				
1,4-Dichlorobenzene	"			ND	"	0.200				
1,1-Dichloroethane	"			ND	"	0.200				
1,2-Dichloroethane	"			ND	"	0.200				
1,1-Dichloroethene	"			ND	"	0.200				
cis-1,2-Dichloroethene	"			ND	"	0.200				
trans-1,2-Dichloroethene	"			ND	"	0.200				
1,2-Dichloropropane	"			ND	"	0.200				
cis-1,3-Dichloropropene	"			ND	"	0.200				
trans-1,3-Dichloropropene	"			ND	"	0.200				
Ethylbenzene	"			ND	"	0.200				
2-Hexanone	"			ND	"	2.00				
Methylene chloride	"			ND	"	1.00				
4-Methyl-2-pentanone	"			ND	"	2.00				
Styrene	"			ND	"	0.200				
1,1,2,2-Tetrachloroethane	"			ND	"	0.200				
Tetrachloroethene	"			ND	"	0.200				
Toluene	"			ND	"	0.200				
1,1,1-Trichloroethane	"			ND	"	0.200				
1,1,2-Trichloroethane	"			ND	"	0.200				
Trichloroethene	"			ND	"	0.200				
Vinyl chloride	"			ND	"	0.200				
Xylenes (total)	"			ND	"	0.400				

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Volatile Organic Compounds by EPA Method 8240B/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Blank (continued)	**1070136-BLK1**									
Surrogate: 2-Bromopropene	*10/6/97*	*2.00*		*1.67*	*mg/kg dry*	*70.0-130*	*83.5*			
Surrogate: 1,2-DCA-d4	"	*2.00*		*1.79*	"	*70.0-130*	*89.5*			
Surrogate: Toluene-d8	"	*2.00*		*1.99*	"	*70.0-130*	*99.5*			
Surrogate: 4-BFB	"	*2.00*		*1.96*	"	*70.0-130*	*98.0*			
LCS	**1070136-BS1**									
Benzene	10/6/97	1.00		0.945	mg/kg dry	70.0-130	94.5			
Chlorobenzene	"	1.00		0.956	"	70.0-130	95.6			
1,1-Dichloroethene	"	1.00		1.08	"	70.0-130	108			
Toluene	"	1.00		0.964	"	70.0-130	96.4			
Trichloroethene	"	1.00		0.827	"	70.0-130	82.7			
Surrogate: 2-Bromopropene	"	*2.00*		*1.83*	"	*70.0-130*	*91.5*			
Surrogate: 1,2-DCA-d4	"	*2.00*		*1.98*	"	*70.0-130*	*99.0*			
Surrogate: Toluene-d8	"	*2.00*		*2.07*	"	*70.0-130*	*103*			
Surrogate: 4-BFB	"	*2.00*		*2.06*	"	*70.0-130*	*103*			
Matrix Spike	**1070136-MS1**		**B710084-01**							
Benzene	10/6/97	1.07	ND	0.973	mg/kg dry	70.0-130	**90.9**			
Chlorobenzene	"	1.07	ND	1.00	"	70.0-130	**93.5**			
1,1-Dichloroethene	"	1.07	ND	0.968	"	70.0-130	**90.5**			
Toluene	"	1.07	ND	1.01	"	70.0-130	**94.4**			
Trichloroethene	"	1.07	ND	0.901	"	70.0-130	**84.2**			
Surrogate: 2-Bromopropene	"	*2.14*		*1.72*	"	*70.0-130*	*80.4*			
Surrogate: 1,2-DCA-d4	"	*2.14*		*1.81*	"	*70.0-130*	*84.6*			
Surrogate: Toluene-d8	"	*2.14*		*2.16*	"	*70.0-130*	*101*			
Surrogate: 4-BFB	"	*2.14*		*2.26*	"	*70.0-130*	*106*			
Matrix Spike Dup	**1070136-MSD1**		**B710084-01**							
Benzene	10/6/97	1.07	ND	0.954	mg/kg dry	70.0-130	**89.2**	15.0	**1.89**	
Chlorobenzene	"	1.07	ND	1.04	"	70.0-130	**97.2**	15.0	**3.88**	
1,1-Dichloroethene	"	1.07	ND	1.07	"	70.0-130	**100**	15.0	**9.97**	
Toluene	"	1.07	ND	1.03	"	70.0-130	**96.3**	15.0	**1.99**	
Trichloroethene	"	1.07	ND	0.895	"	70.0-130	**83.6**	15.0	**0.715**	
Surrogate: 2-Bromopropene	"	*2.14*		*1.69*	"	*70.0-130*	*79.0*			
Surrogate: 1,2-DCA-d4	"	*2.14*		*1.85*	"	*70.0-130*	*86.4*			
Surrogate: Toluene-d8	"	*2.14*		*2.21*	"	*70.0-130*	*103*			
Surrogate: 4-BFB	"	*2.14*		*2.18*	"	*70.0-130*	*102*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Conventional Chemistry Parameters by APHA/EPA Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1070129	**Date Prepared: 10/6/97**				**Extraction Method: General Preparation**					
Duplicate	**1070129-DUP1**	**B710081-04**								
pH	10/6/97		6.12	6.09	pH Units			10.0	**0.491**	
Batch: 1070206	**Date Prepared: 10/8/97**				**Extraction Method: General Preparation**					
Duplicate	**1070206-DUP1**	**B710081-16**								
pH	10/8/97		6.96	6.89	pH units			10.0	**1.01**	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/3/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/6/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/22/97 10:14

Notes and Definitions

#	Note
1	This sample appears to contain extractable diesel range organics.
2	The heavy oil range organics present are due to hydrocarbons eluting primarily in the diesel range.
3	Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
4	Multiple analyses indicate the percent recovery is outside the control limits due to a matrix effect.
5	The RPD value for this QC sample is above the established control limit. Review of associated QC indicates the high RPD does not represent an out-of-control condition for the batch.
6	To reduce matrix interference, the sample extract has undergone copper clean-up, method 3660, which is specific to sulfur contamination.
7	To reduce matrix interference, the sample extract has undergone sulfuric acid clean-up, method 3665, which is specific to hydrocarbon contamination.
8	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
9	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit.
10	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
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

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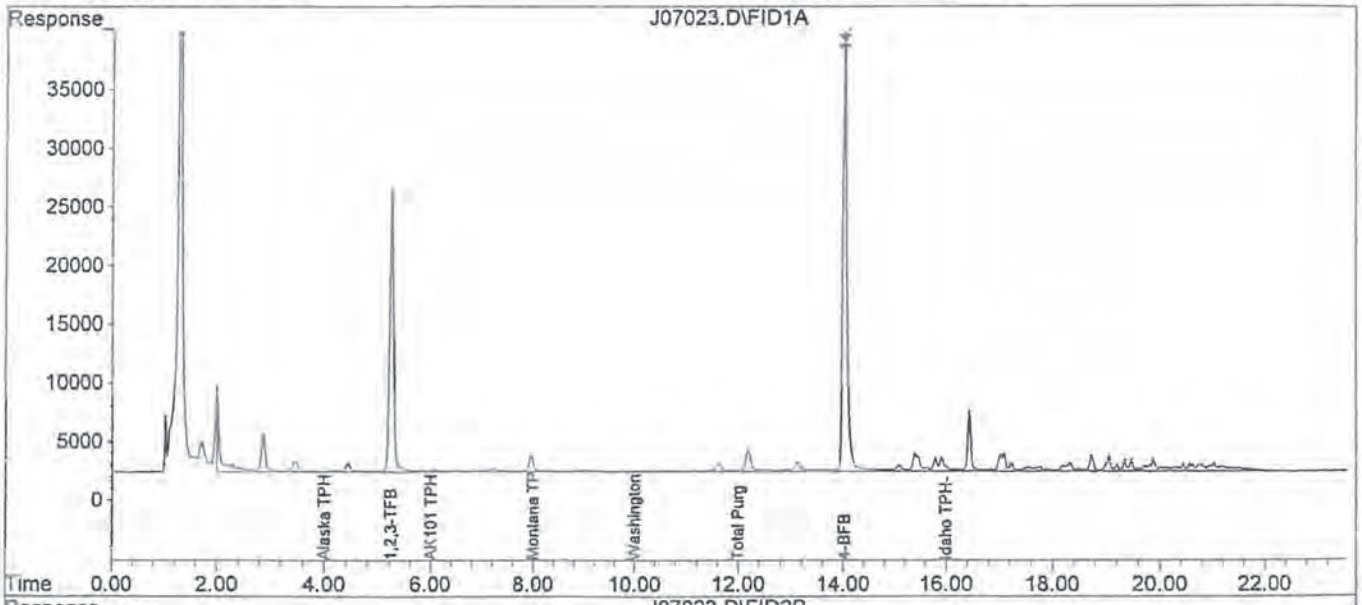
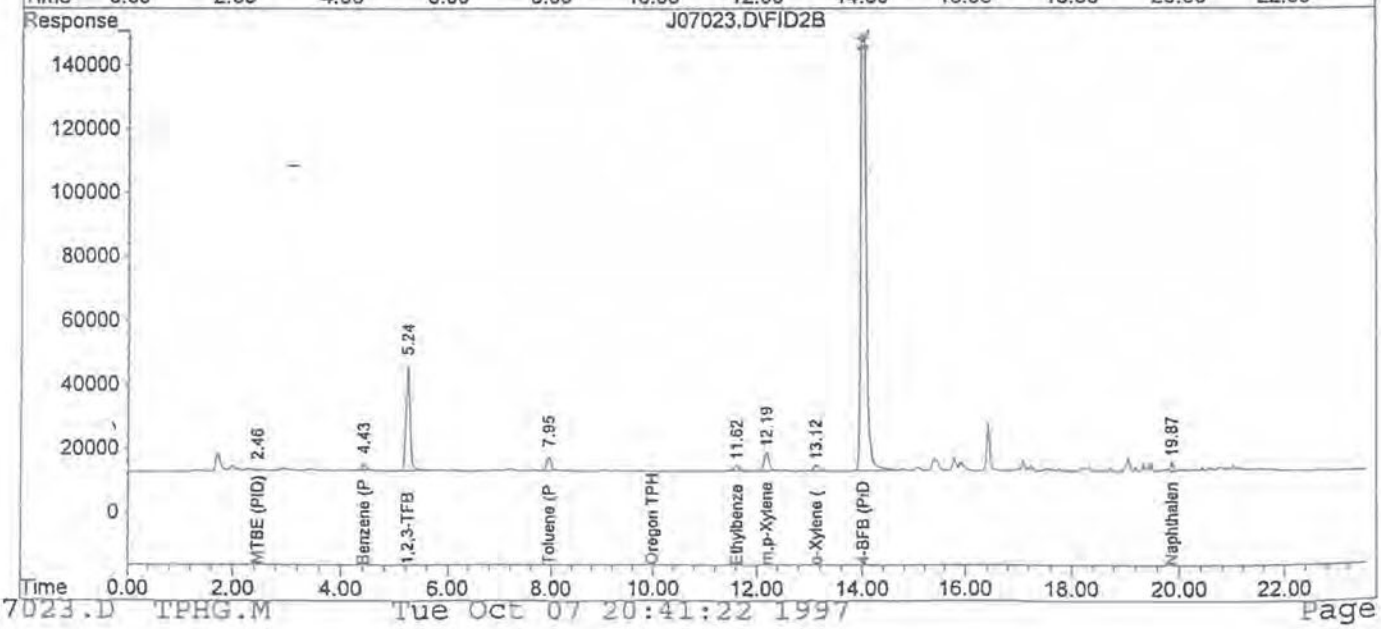
Data File : C:\HPCHEM\3\DATA\J07023.D\FID1A.CH Vial: 23
Acq On : 7 Oct 1997 8:17 pm Operator: JC
Sample : b710081-01 r1 Inst : GC #6
Misc : 5 mL Multiplr: 1.00
IntFile : TPH.E

Data File : C:\HPCHEM\3\DATA\J07023.D\FID2B.CH Vial: 23
Acq On : 7 Oct 97 8:17 pm Operator: JC
Sample : b710081-01 r1 Inst : GC #6
Misc : 5 mL Multiplr: 1.00
IntFile : PID.E
Quant Time: Oct 7 20:41 1997 Quant Results File: TPHG.RES

Quant Method : C:\HPCHEM\3\METHODS\TPHG.M (Chemstation Integrator)
Title : TPH-G Water Method
Last Update : Sat Sep 20 10:29:48 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHG.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



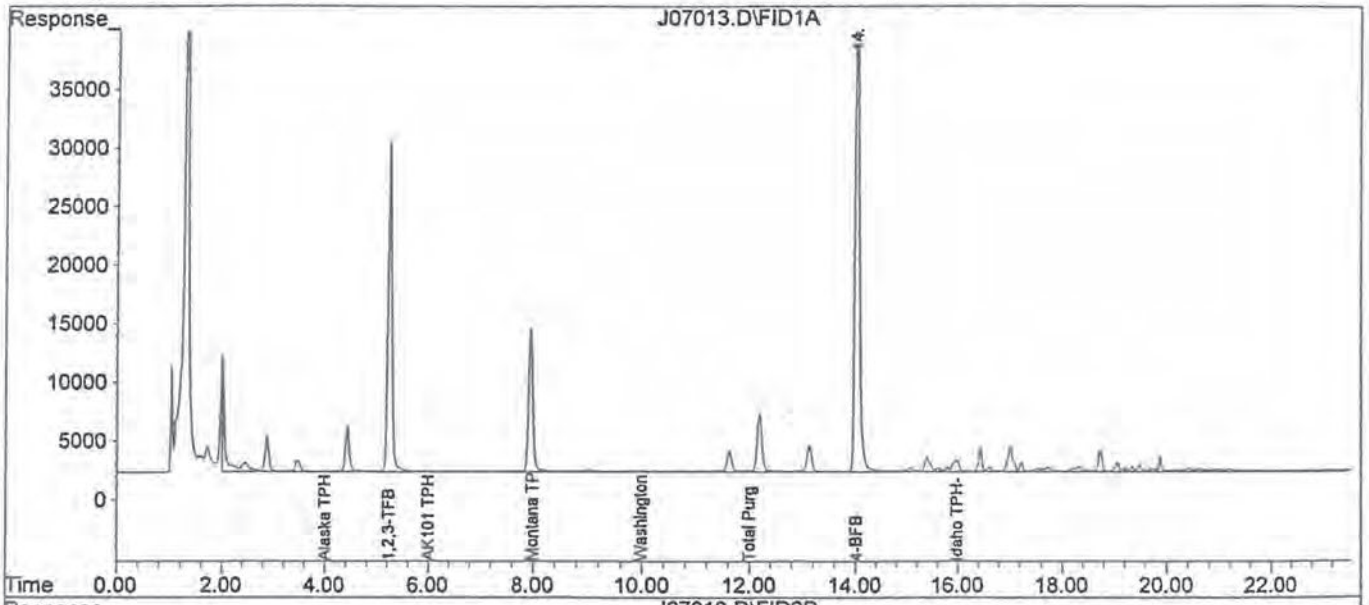


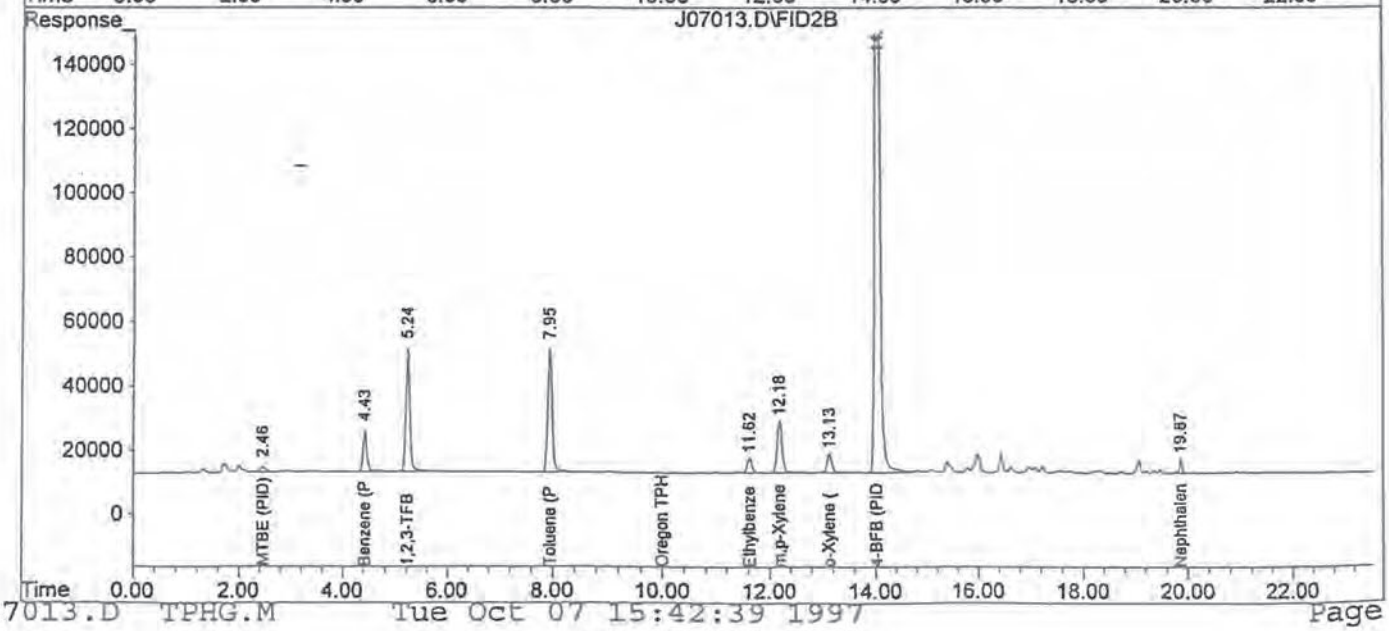
Data File : C:\HPCHEM\3\DATA\J07013.D\FID1A.CH Vial: 13
Acq On : 7 Oct 1997 3:18 pm Operator: JC
Sample : b710081-02 Inst : GC #6
Misc : 5 mL Multiplr: 1.00
IntFile : TPH.E

Data File : C:\HPCHEM\3\DATA\J07013.D\FID2B.CH Vial: 13
Acq On : 7 Oct 97 3:18 pm Operator: JC
Sample : b710081-02 Inst : GC #6
Misc : 5 mL Multiplr: 1.00
IntFile : PID.E
Quant Time: Oct 7 15:42 1997 Quant Results File: TPHG.RES

Quant Method : C:\HPCHEM\3\METHODS\TPHG.M (Chemstation Integrator)
Title : TPH-G Water Method
Last Update : Sat Sep 20 10:29:48 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHG.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



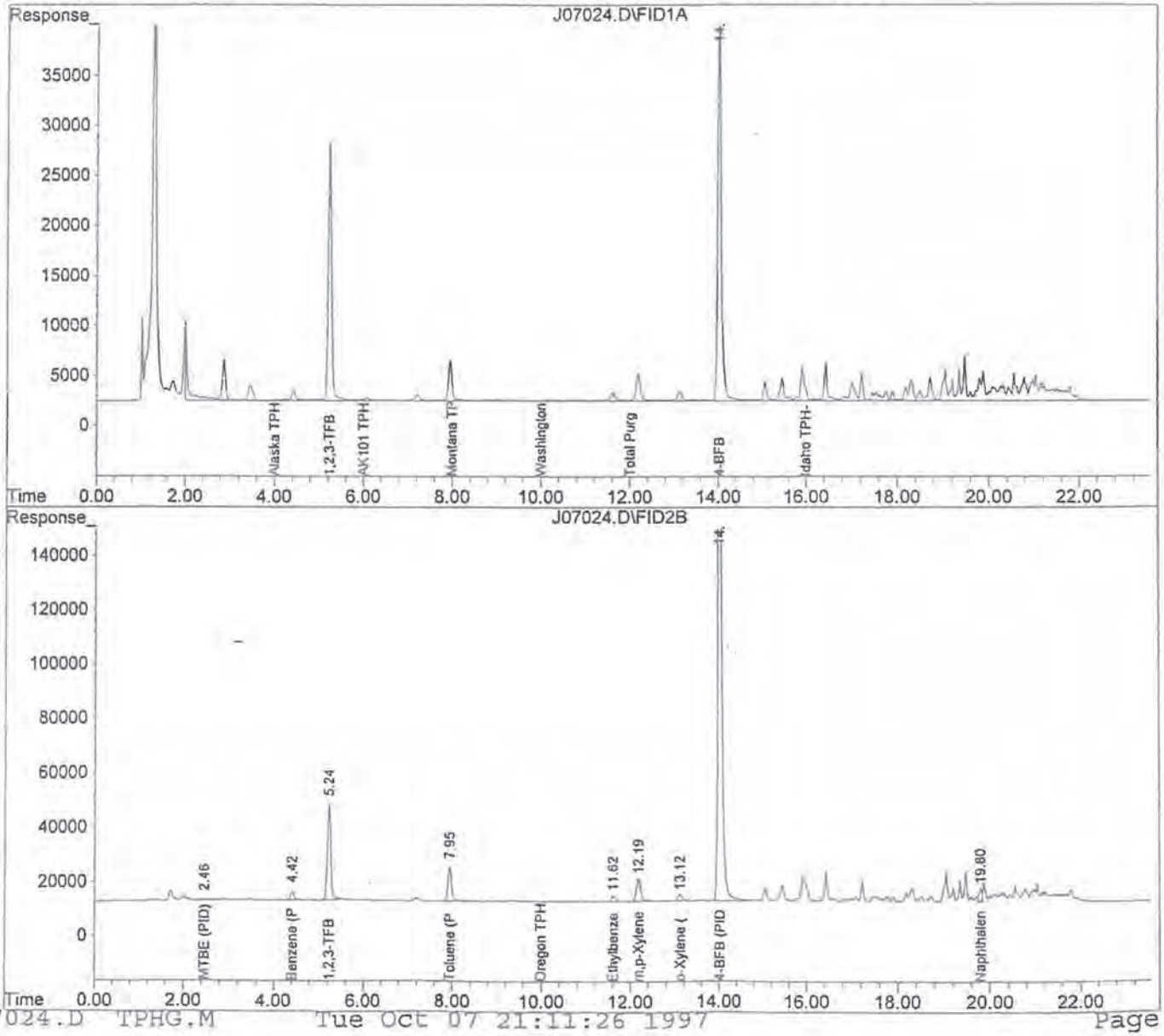


Data File : C:\HPCHEM\3\DATA\J07024.D\FID1A.CH Vial: 24
Acq On : 7 Oct 1997 8:47 pm Operator: JC
Sample : b710081-04 r1 Inst : GC #6
Misc : 5 mL Multiplr: 1.00
IntFile : TPH.E

Data File : C:\HPCHEM\3\DATA\J07024.D\FID2B.CH Vial: 24
Acq On : 7 Oct 97 8:47 pm Operator: JC
Sample : b710081-04 r1 Inst : GC #6
Misc : 5 mL Multiplr: 1.00
IntFile : PID.E
Quant Time: Oct 7 21:11 1997 Quant Results File: TPHG.RES

Quant Method : C:\HPCHEM\3\METHODS\TPHG.M (Chemstation Integrator)
Title : TPH-G Water Method
Last Update : Sat Sep 20 10:29:48 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHG.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



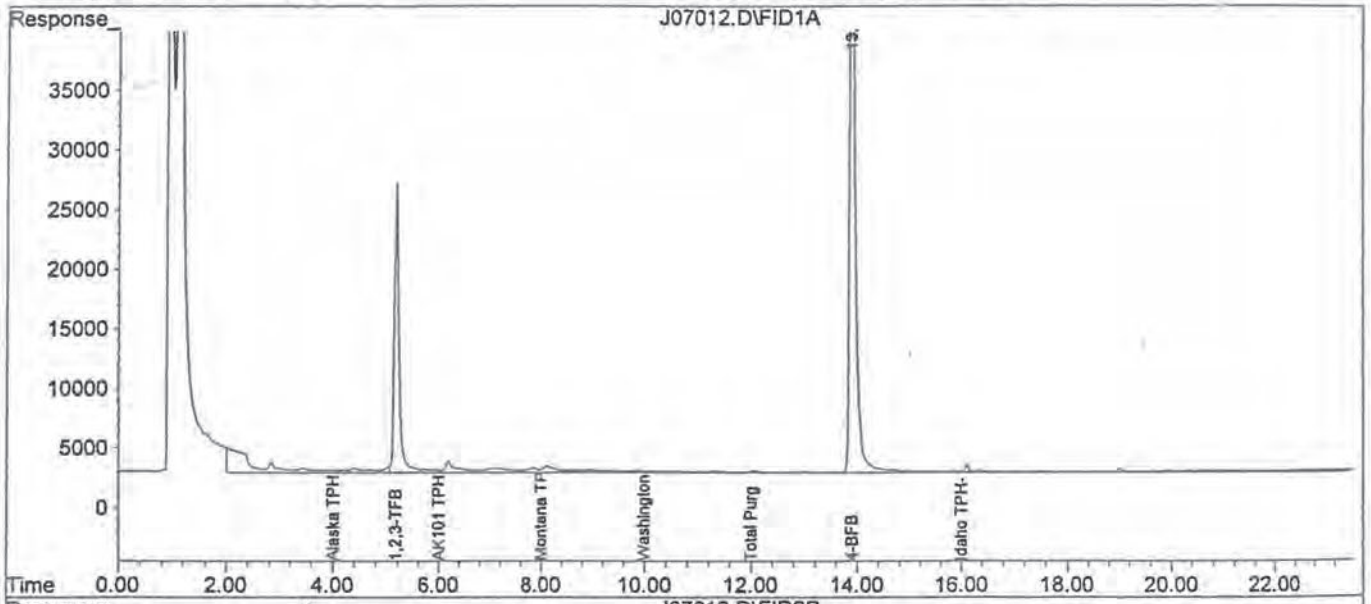
Quantitation Report

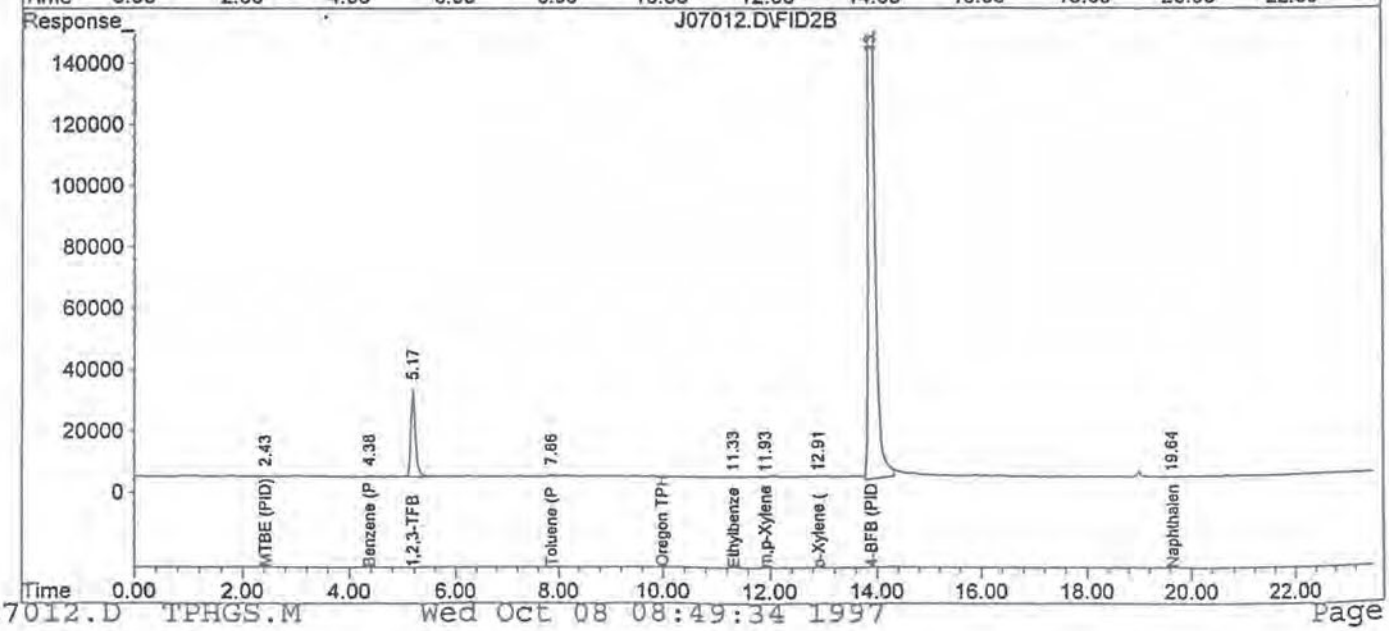
Data File : C:\HPCHEM\4\DATA\100797\J07012.D\FID1A.CH Vial: 12
Acq On : 7 Oct 1997 12:32 pm Operator: GAP
Sample : b710081-13 Inst : GC #8
Misc : 100 uL Multiplr: 1.00
IntFile : events.e

Data File : C:\HPCHEM\4\DATA\100797\J07012.D\FID2B.CH Vial: 12
Acq On : 7 Oct 97 12:32 pm Operator: GAP
Sample : b710081-13 Inst : GC #8
Misc : 100 uL Multiplr: 1.00
IntFile : events2.e
Quant Time: Oct 8 8:49 1997 Quant Results File: TPHGS.RES

Quant Method : C:\HPCHEM\4\METHODS\TPHGS.M (Chemstation Integrator)
Title : TPH-G Soil Method
Last Update : Mon Sep 29 14:23:12 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHGS.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



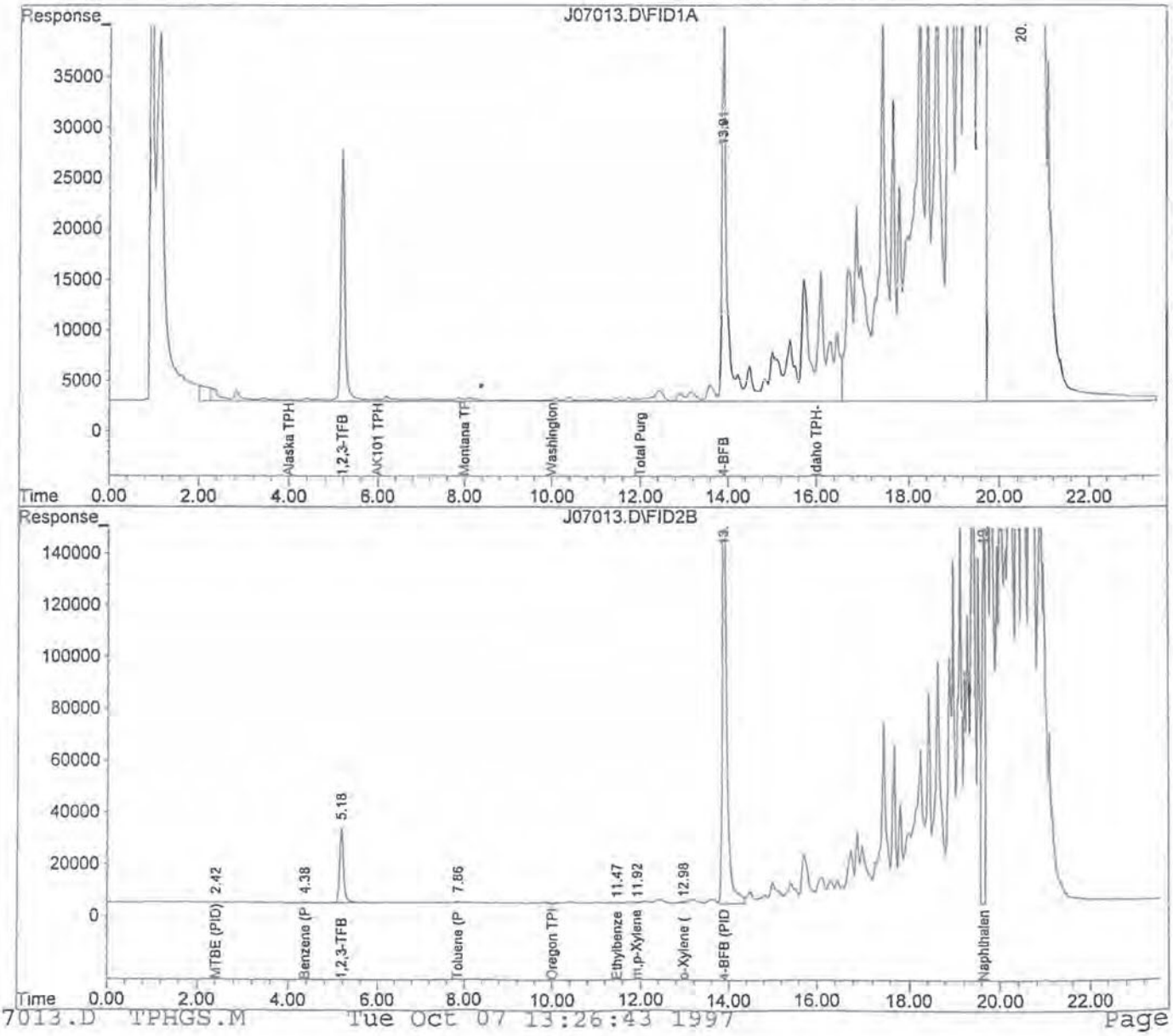


Data File : C:\HPCHEM\4\DATA\J07013.D\FID1A.CH Vial: 13
Acq On : 7 Oct 1997 1:02 pm Operator: GAP
Sample : b710081-18 Inst : GC #8
Misc : 50 uL Multiplr: 2.00
IntFile : events.e

Data File : C:\HPCHEM\4\DATA\J07013.D\FID2B.CH Vial: 13
Acq On : 7 Oct 97 1:02 pm Operator: GAP
Sample : b710081-18 Inst : GC #8
Misc : 50 uL Multiplr: 2.00
IntFile : events2.e
Quant Time: Oct 7 13:26 1997 Quant Results File: TPHGS.RES

Quant Method : C:\HPCHEM\4\METHODS\TPHGS.M (Chemstation Integrator)
Title : TPH-G Soil Method
Last Update : Mon Sep 29 14:23:12 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHGS.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

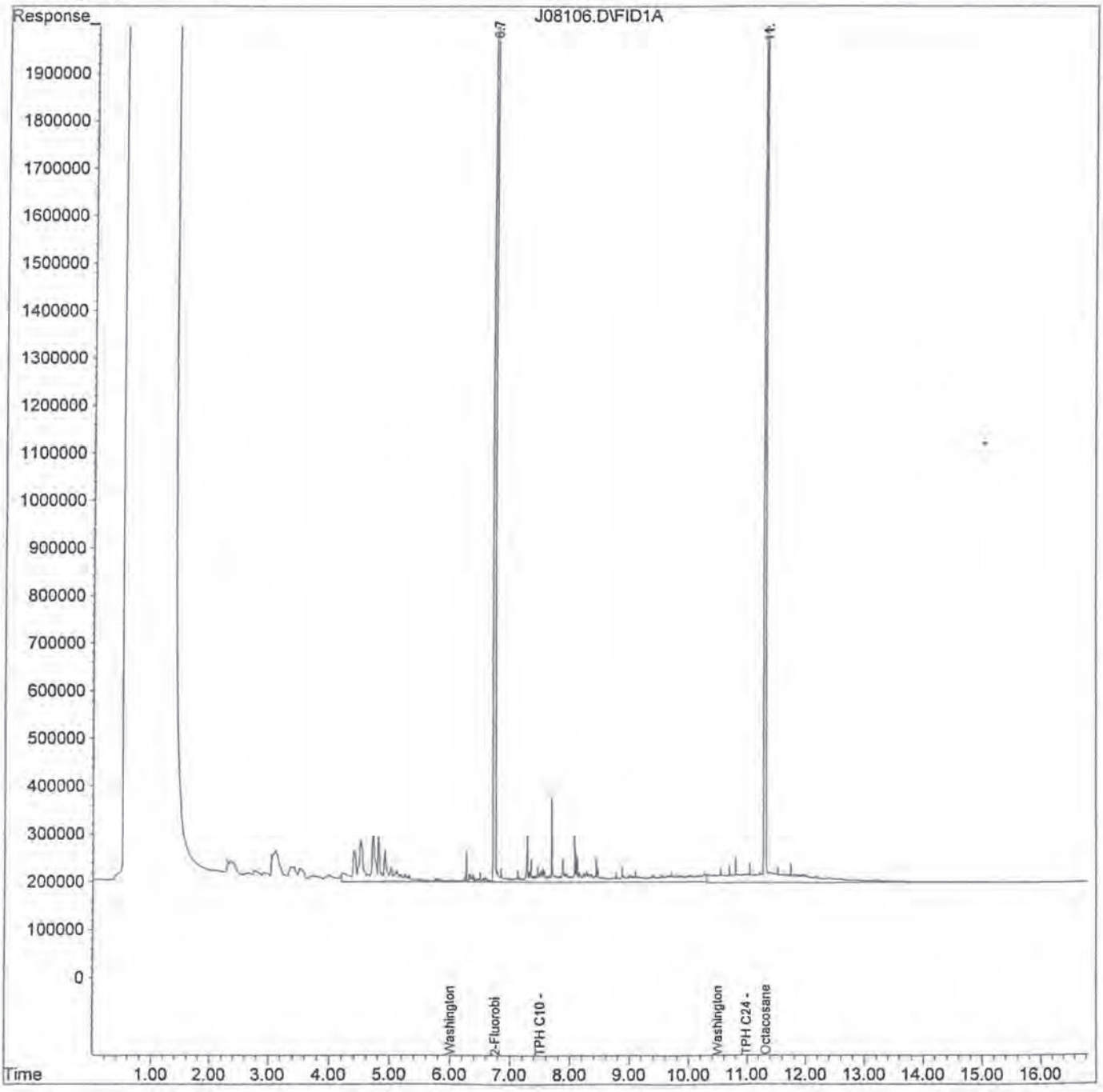


Quantitation Report

Data File : C:\HPCHEM\4\DATA\J08106.D Vial: 73
Acq On : 10-9-97 5:29:06 Operator: bc
Sample : b710081-01 Inst : Ralph
Misc : W Multiplr: 1.00
IntFile : SURR.E
Quant Time: Oct 9 9:08 1997 Quant Results File: TPHD.RES

Quant Method : C:\HPCHEM\4\METHODS\TPHD.M (Chemstation Integrator)
Title : TPH-D Front Method
Last Update : Wed Oct 08 15:04:18 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

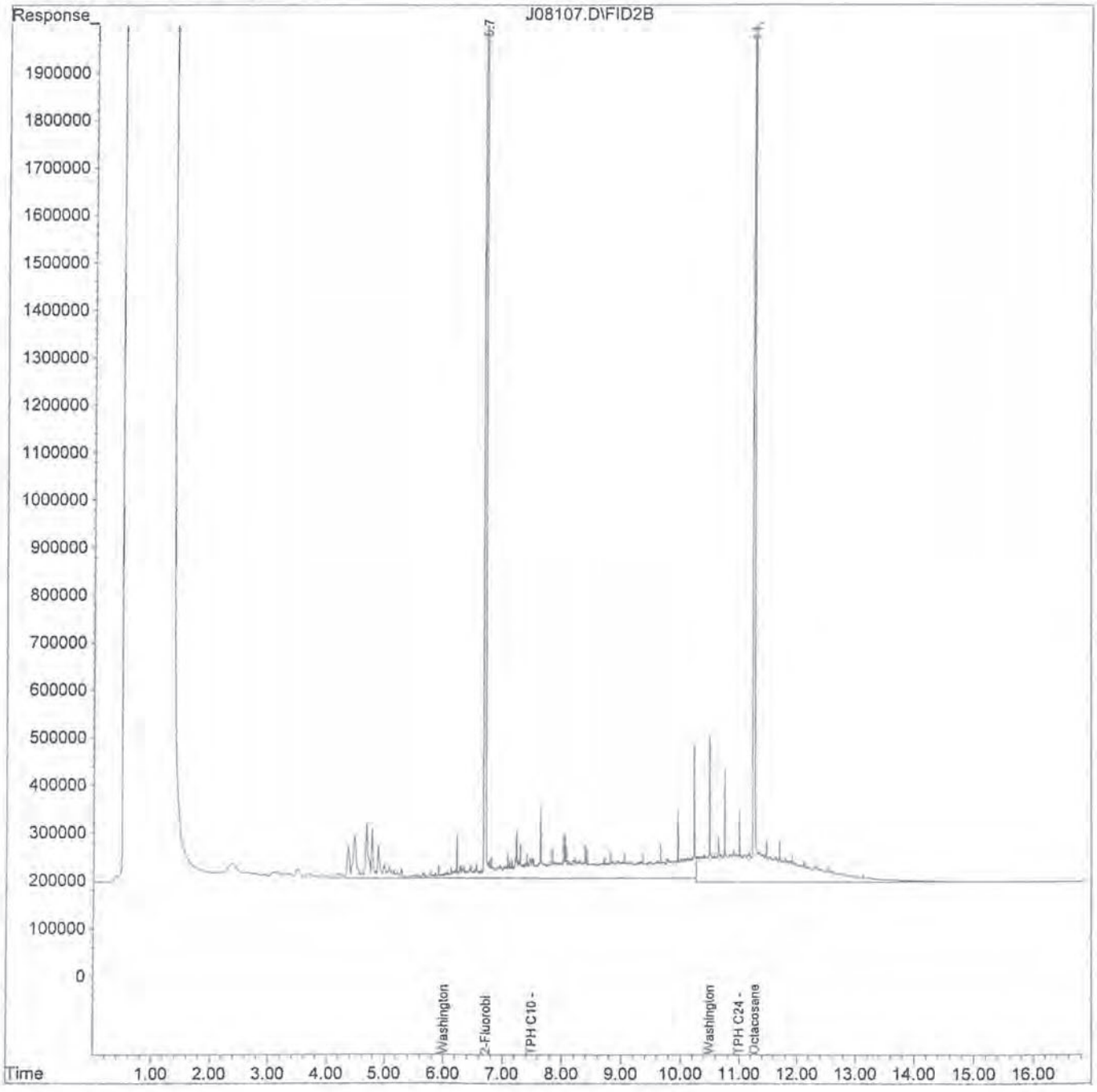


Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\J08107.D Vial: 74
Acq On : 10-9-97 5:52:42 Operator: bc
Sample : b710081-03 Inst : Ralph
Misc : W Multiplr: 1.00
IntFile : SURR.E
Quant Time: Oct 9 8:32 1997 Quant Results File: TPHD2.RES

Quant Method : C:\HPCHEM\4\METHODS\TPHD2.M (Chemstation Integrator)
Title : TPH-D Water Method
Last Update : Tue Oct 07 18:39:10 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

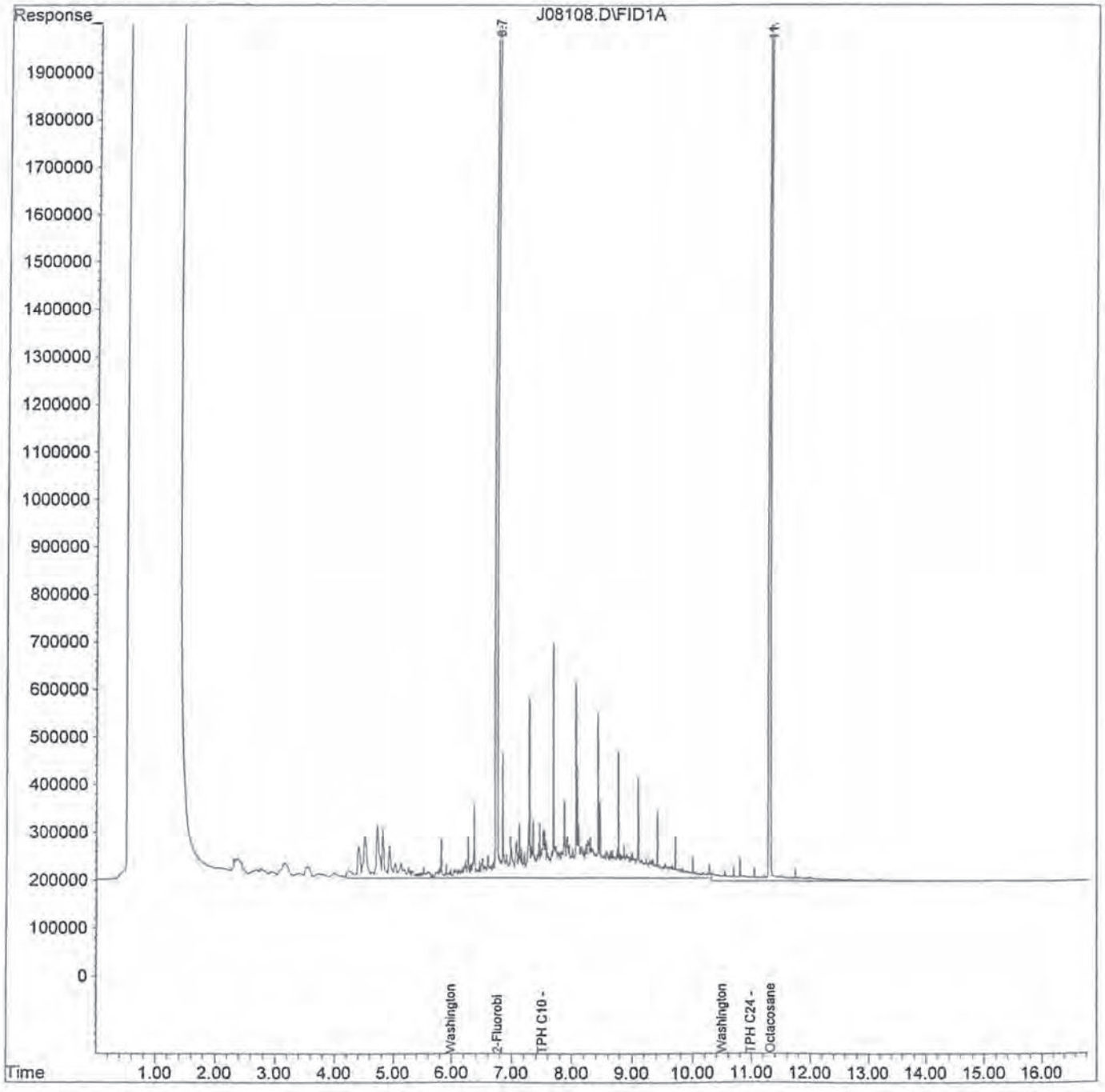


Quantitation Report

Data File : C:\HPCHEM\4\DATA\J08108.D Vial: 75
Acq On : 10-9-97 5:52:42 Operator: bc
Sample : b710081-04 Inst : Ralph
Misc : W Multiplr: 1.00
IntFile : SURR.E
Quant Time: Oct 9 9:09 1997 Quant Results File: TPHD.RES

Quant Method : C:\HPCHEM\4\METHODS\TPHD.M (Chemstation Integrator)
Title : TPH-D Front Method
Last Update : Wed Oct 08 15:04:18 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



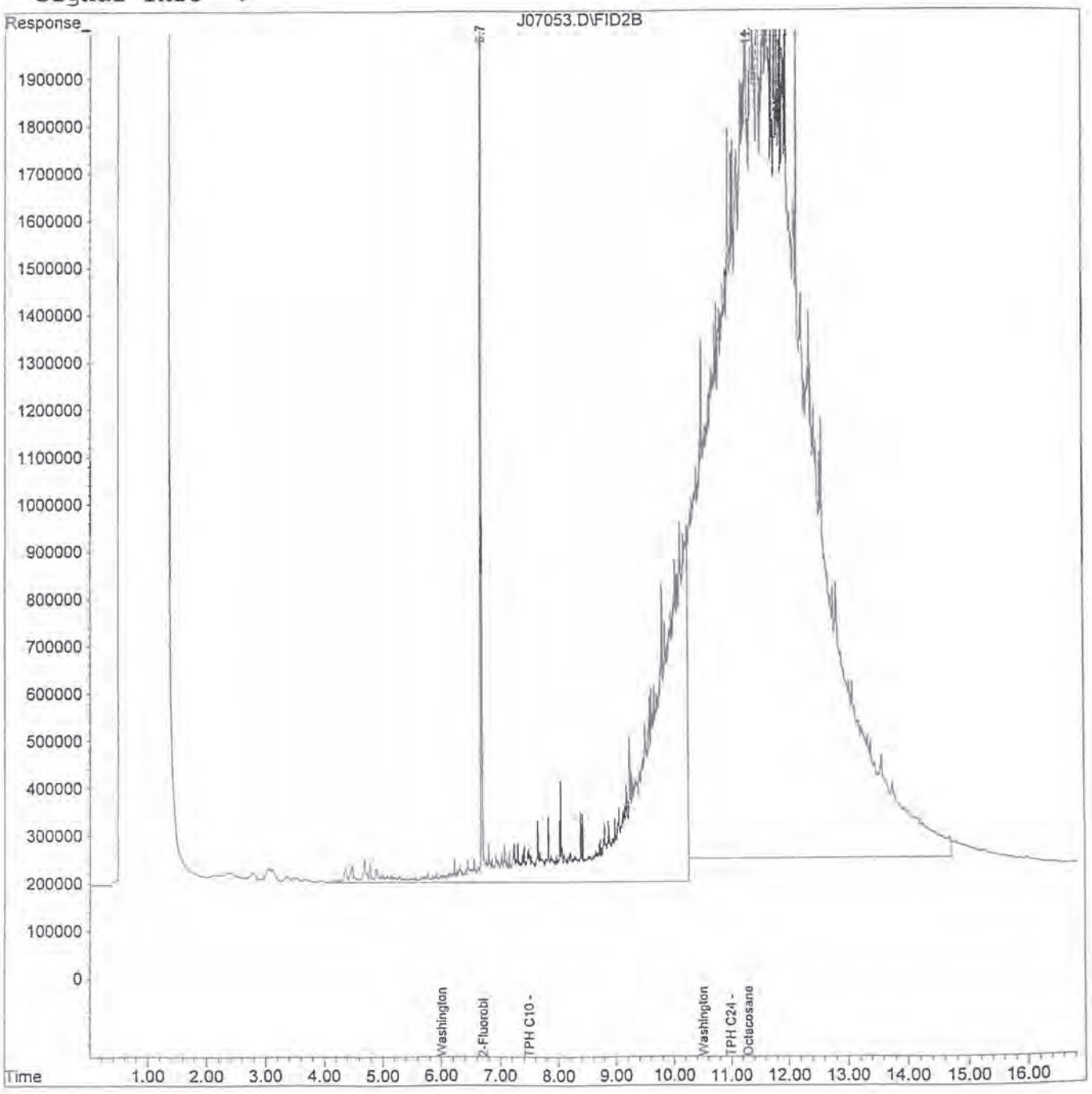
Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\J07053.D
Acq On : 10-8-97 2:00:11
Sample : b710081-05
Misc : S
IntFile : SURR.E
Quant Time: Oct 8 8:01 1997 Quant Results File: TPHD2.RES

Vial: 38
Operator: bc
Inst : Ralph
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\TPHD2.M (Chemstation Integrator)
Title : TPH-D Water Method
Last Update : Tue Oct 07 18:39:10 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



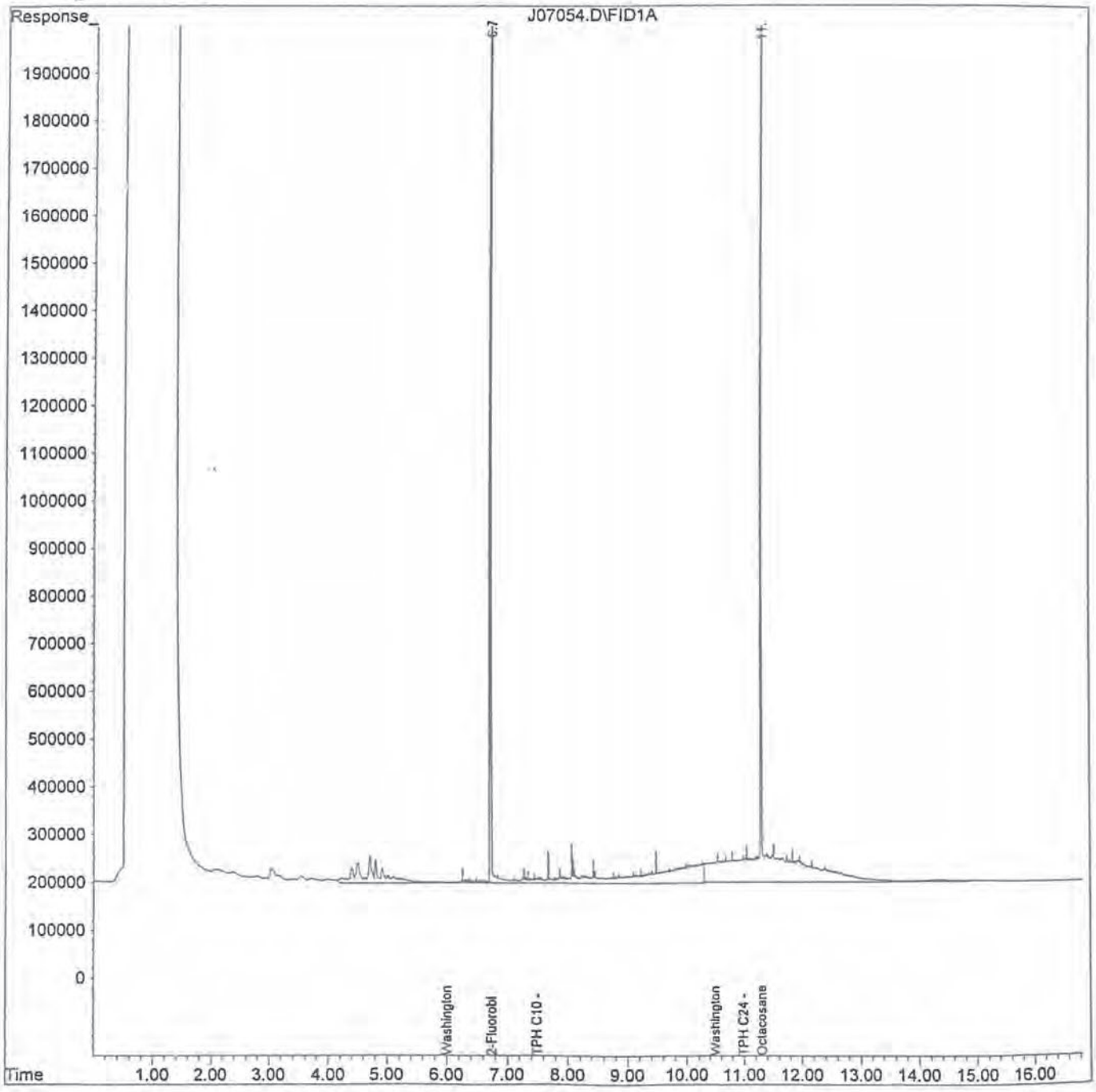
Quantitation Report

Data File : C:\HPCHEM\4\DATA\J07054.D
Acq On : 10-8-97 2:00:11
Sample : b710081-06
Misc : S
IntFile : SURR.E
Quant Time: Oct 8 7:22 1997 Quant Results File: TPHD.RES

Vial: 39
Operator: bc
Inst : Ralph
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\TPHD.M (Chemstation Integrator)
Title : TPH-D Front Method
Last Update : Mon Oct 06 17:50:45 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



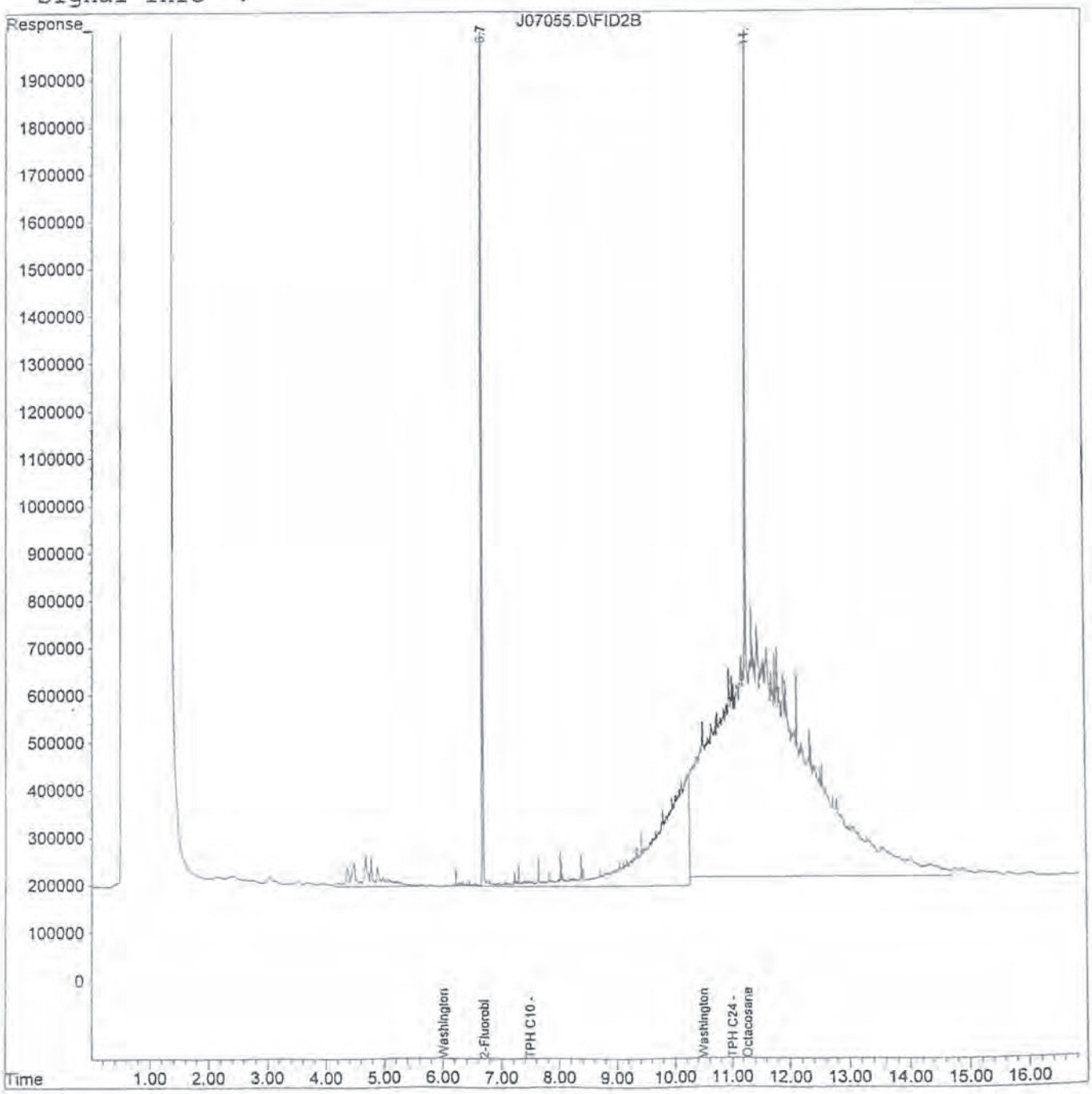
Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\J07055.D
Acq On : 10-8-97 2:23:53
Sample : b710081-07
Misc : S
IntFile : SURR.E
Quant Time: Oct 8 8:02 1997 Quant Results File: TPHD2.RES

Vial: 40
Operator: bc
Inst : Ralph
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\TPHD2.M (Chemstation Integrator)
Title : TPH-D Water Method
Last Update : Tue Oct 07 18:39:10 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

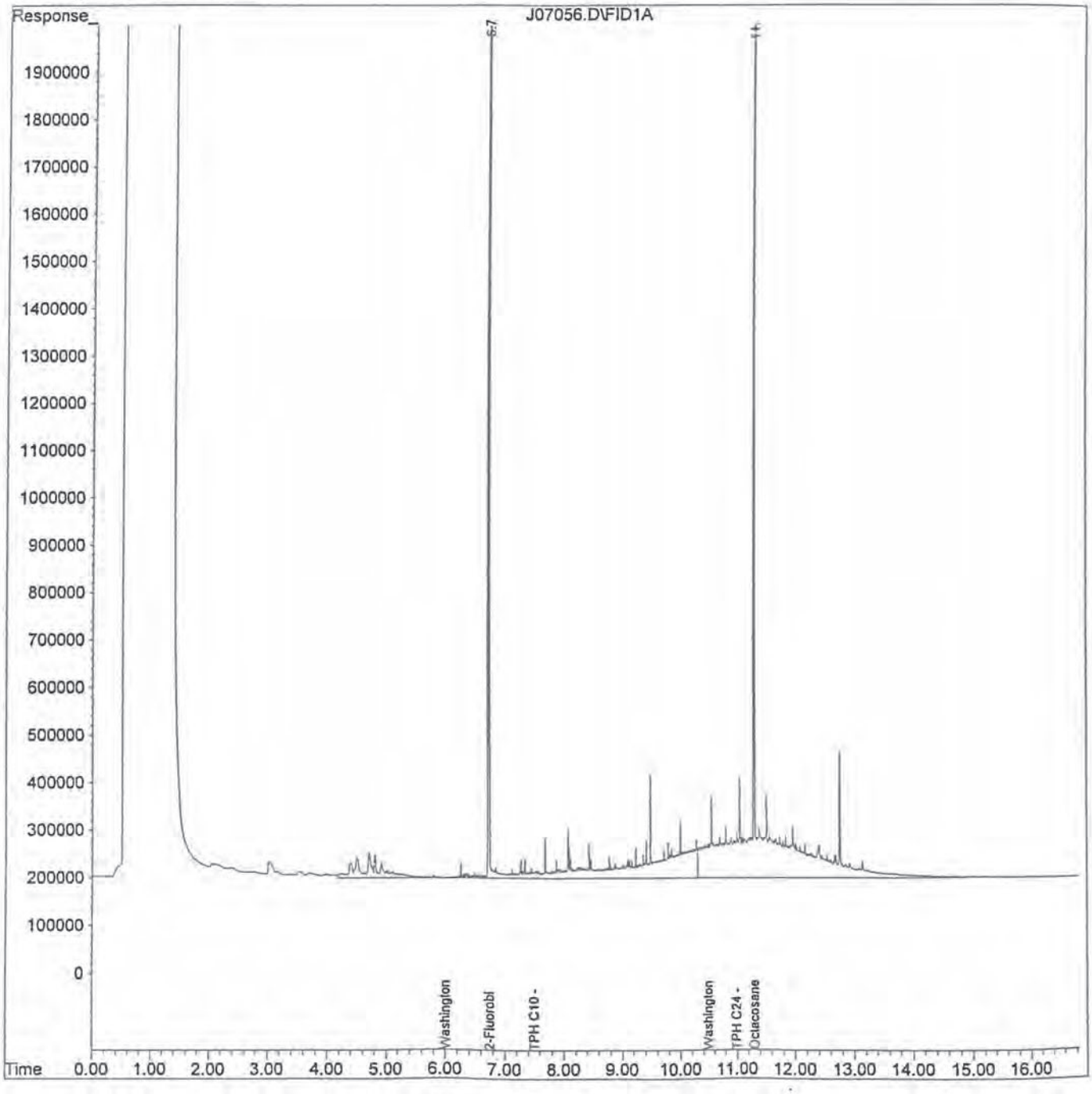


Quantitation Report

Data File : C:\HPCHEM\4\DATA\J07056.D Vial: 41
Acq On : 10-8-97 2:23:53 Operator: bc
Sample : b710081-08 Inst : Ralph
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Oct 8 7:23 1997 Quant Results File: TPHD.RES

Quant Method : C:\HPCHEM\4\METHODS\TPHD.M (Chemstation Integrator)
Title : TPH-D Front Method
Last Update : Mon Oct 06 17:50:45 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



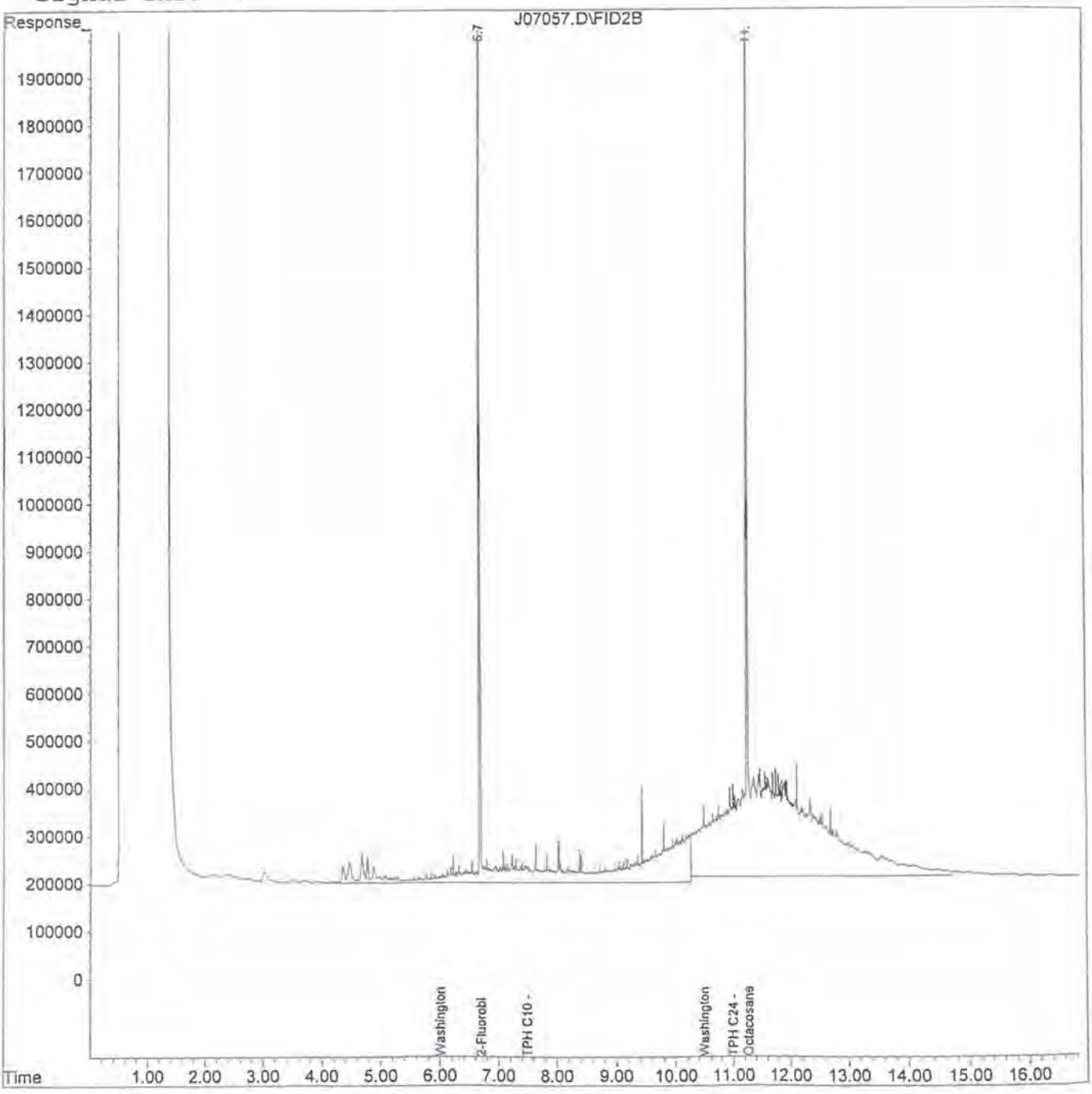
Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\J07057.D
Acq On : 10-8-97 2:47:34
Sample : b710081-09
Misc : S
IntFile : SURR.E
Quant Time: Oct 8 8:04 1997 Quant Results File: TPHD2.RES

Vial: 42
Operator: bc
Inst : Ralph
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\TPHD2.M (Chemstation Integrator)
Title : TPH-D Water Method
Last Update : Tue Oct 07 18:39:10 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



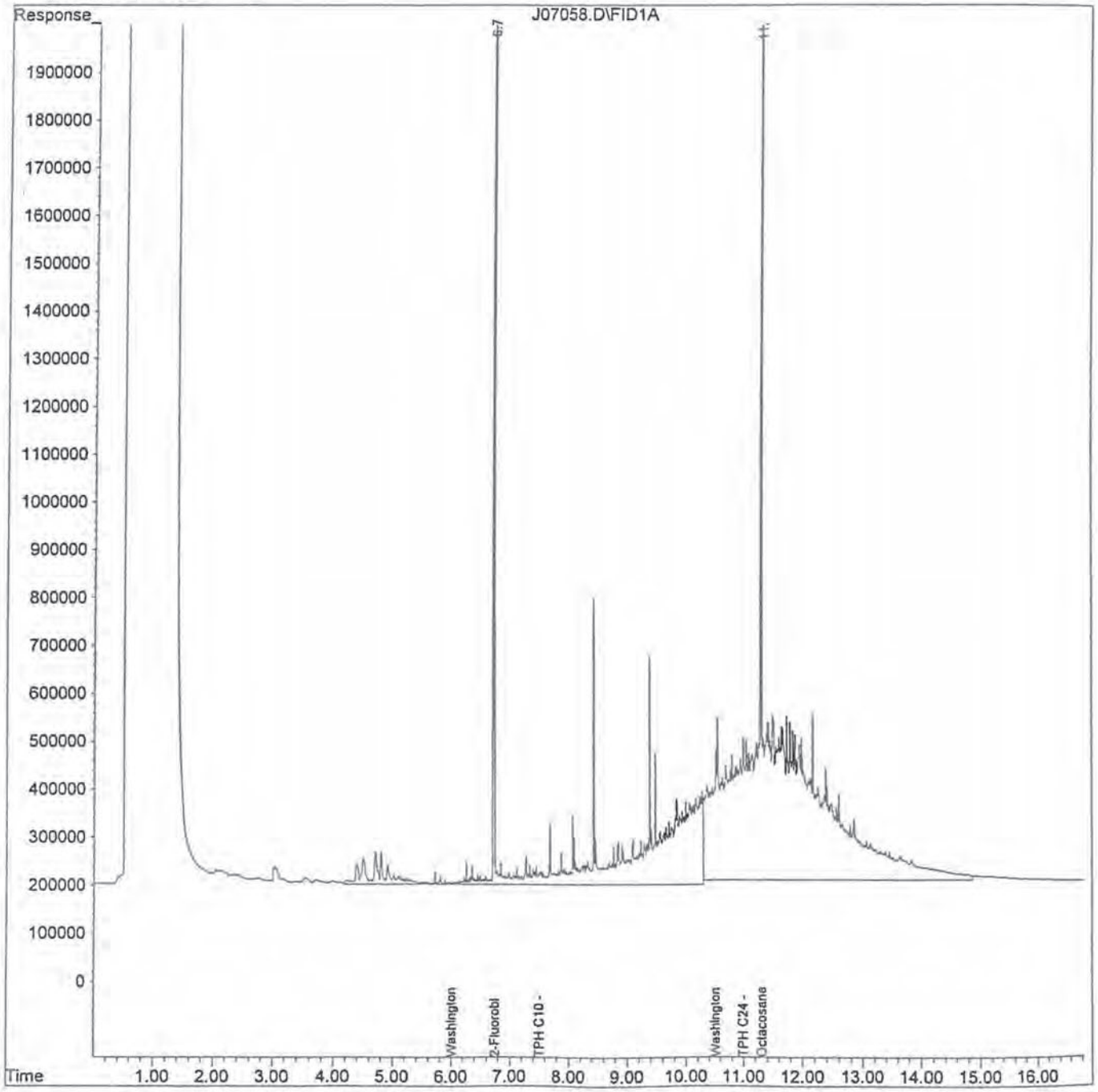
Quantitation Report

Data File : C:\HPCHEM\4\DATA\J07058.D
Acq On : 10-8-97 2:47:34
Sample : b710081-10
Misc : S
IntFile : SURR.E
Quant Time: Oct 8 7:24 1997 Quant Results File: TPHD.RES

Vial: 43
Operator: bc
Inst : Ralph
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\TPHD.M (Chemstation Integrator)
Title : TPH-D Front Method
Last Update : Mon Oct 06 17:50:45 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



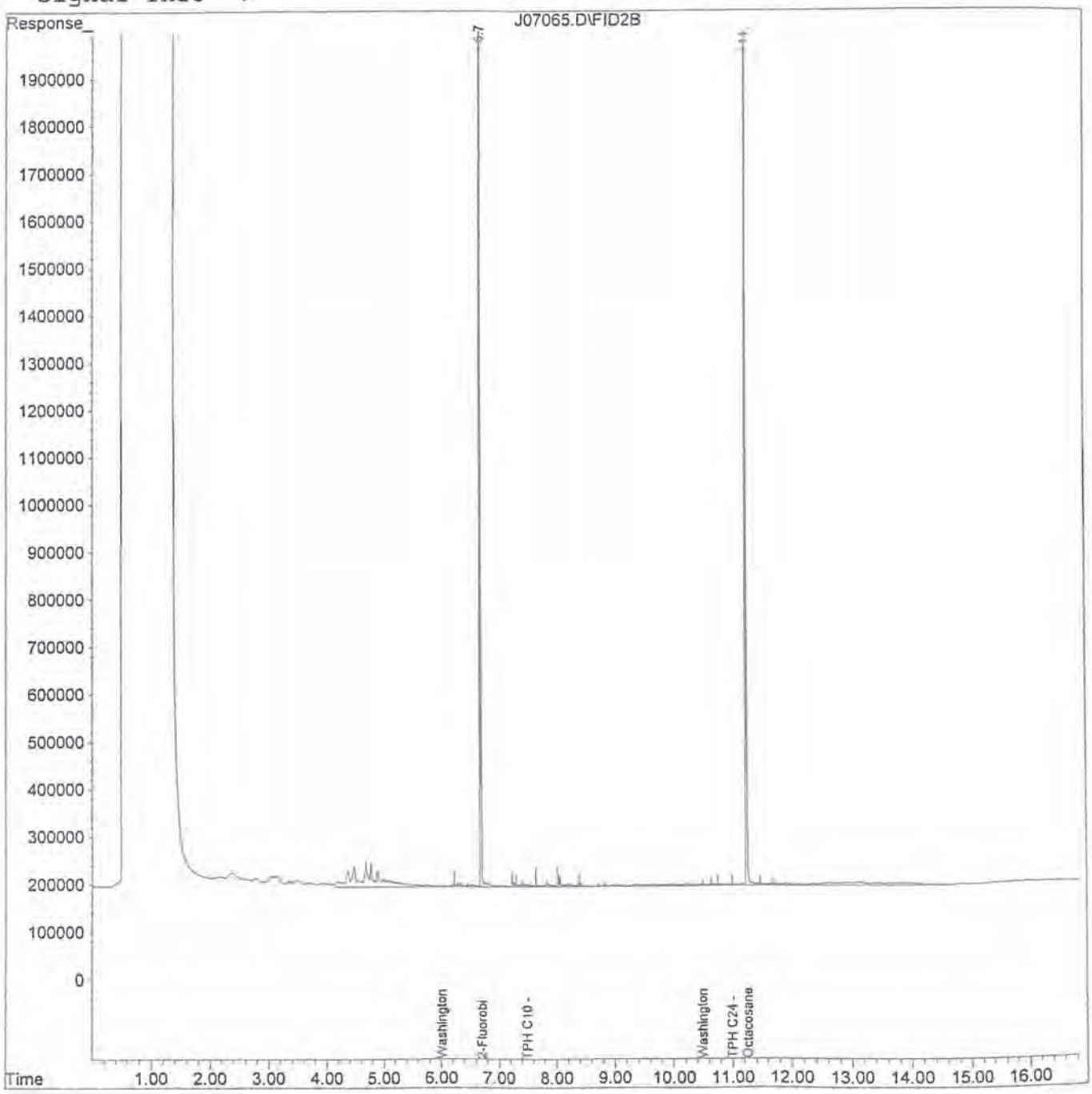
Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\J07065.D
Acq On : 10-8-97 4:22:29
Sample : b710081-11
Misc : S
IntFile : SURR.E
Quant Time: Oct 8 8:08 1997 Quant Results File: TPHD2.RES

Vial: 44
Operator: bc
Inst : Ralph
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\TPHD2.M (Chemstation Integrator)
Title : TPH-D Water Method
Last Update : Tue Oct 07 18:39:10 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



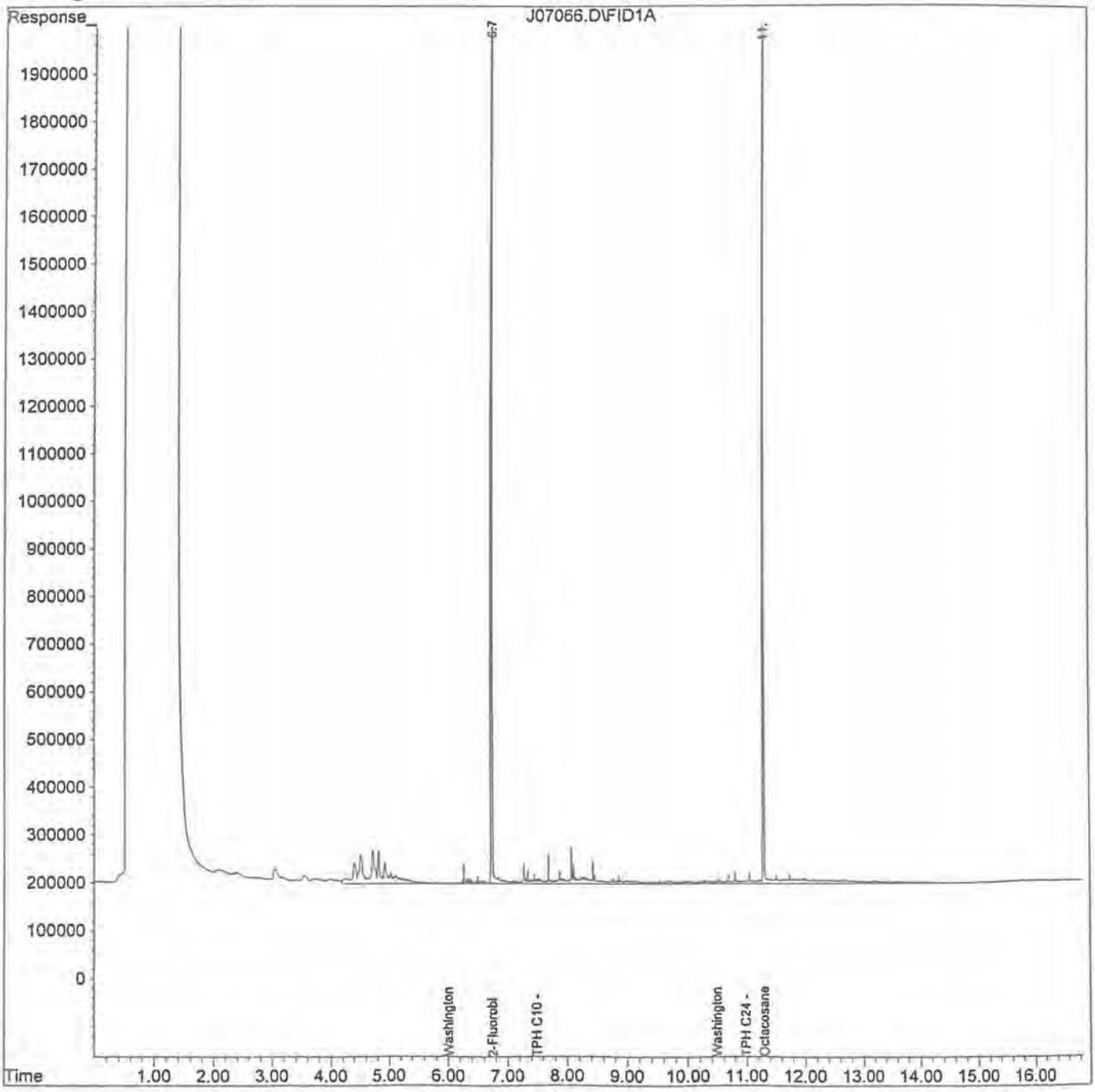
Quantitation Report

Data File : C:\HPCHEM\4\DATA\J07066.D
Acq On : 10-8-97 4:22:29
Sample : b710081-12
Misc : S
IntFile : SURR.E
Quant Time: Oct 8 7:28 1997 Quant Results File: TPHD.RES

Vial: 45
Operator: bc
Inst : Ralph
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\TPHD.M (Chemstation Integrator)
Title : TPH-D Front Method
Last Update : Mon Oct 06 17:50:45 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



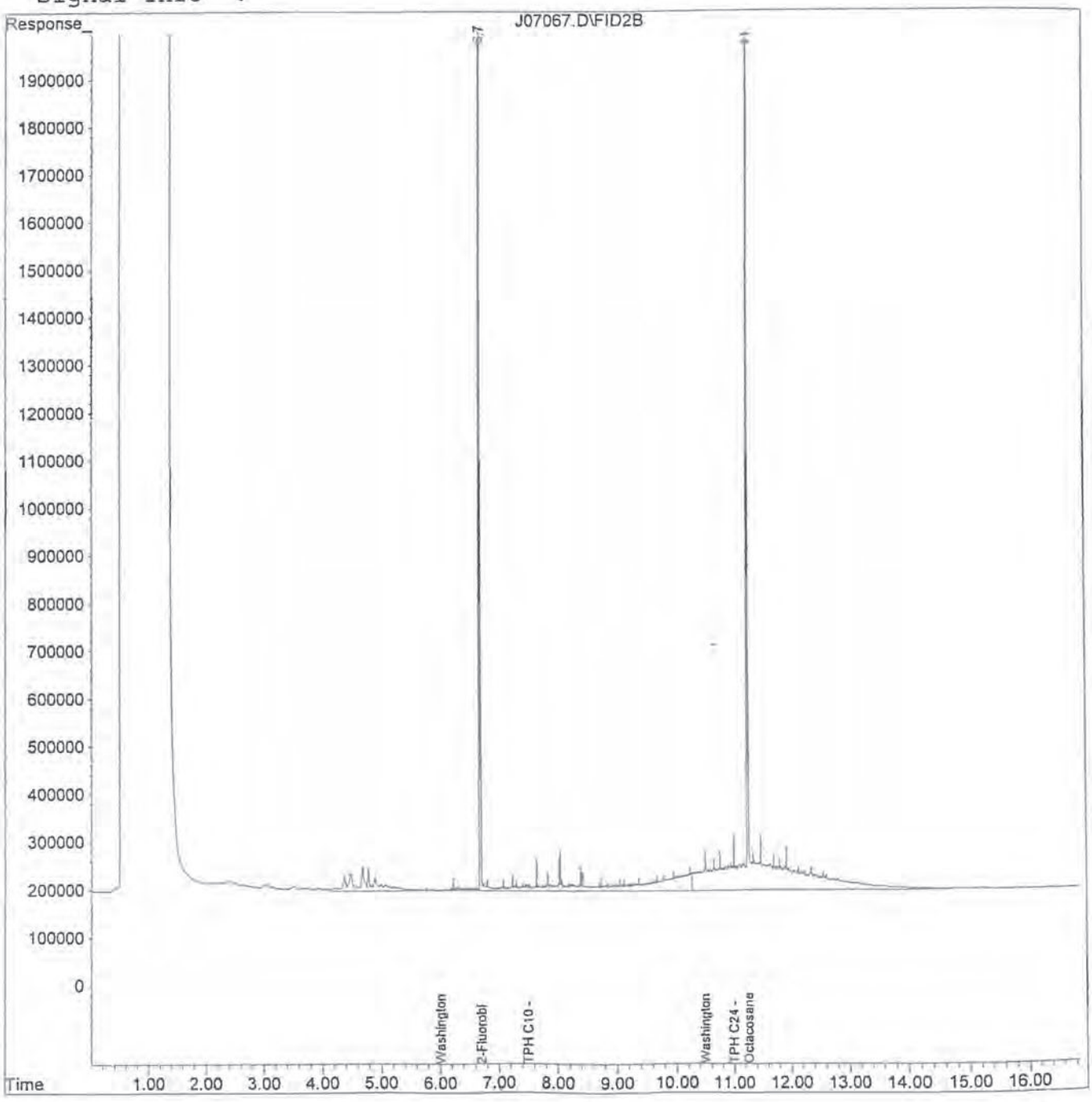
Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\J07067.D
Acq On : 10-8-97 4:46:12
Sample : b710081-14
Misc : S
IntFile : SURR.E
Quant Time: Oct 8 8:09 1997 Quant Results File: TPHD2.RES

Vial: 46
Operator: bc
Inst : Ralph
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\TPHD2.M (Chemstation Integrator)
Title : TPH-D Water Method
Last Update : Tue Oct 07 18:39:10 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :

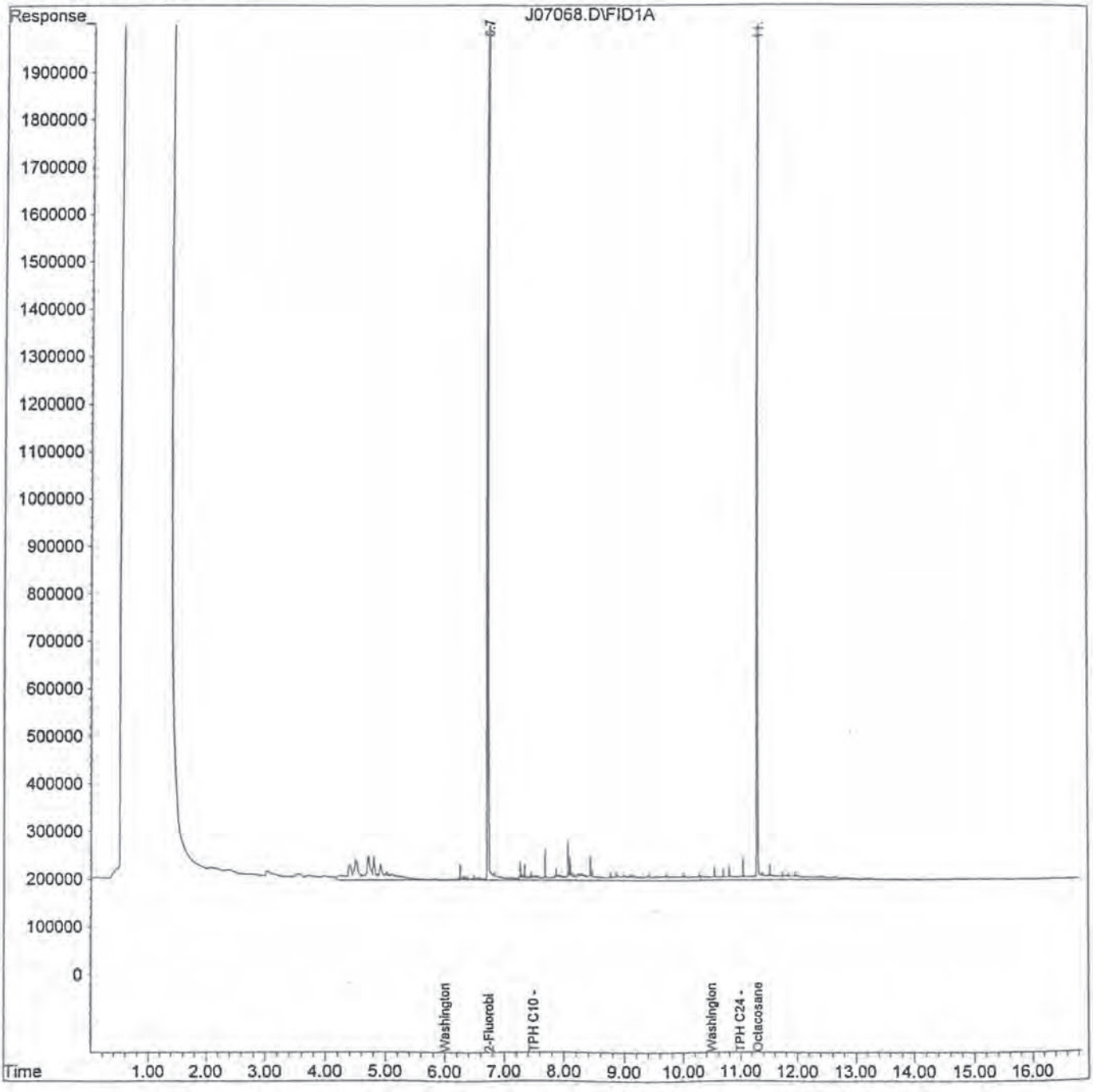


Quantitation Report

Data File : C:\HPCHEM\4\DATA\J07068.D Vial: 47
Acq On : 10-8-97 4:46:12 Operator: bc
Sample : b710081-15 Inst : Ralph
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Oct 8 7:29 1997 Quant Results File: TPHD.RES

Quant Method : C:\HPCHEM\4\METHODS\TPHD.M (Chemstation Integrator)
Title : TPH-D Front Method
Last Update : Mon Oct 06 17:50:45 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



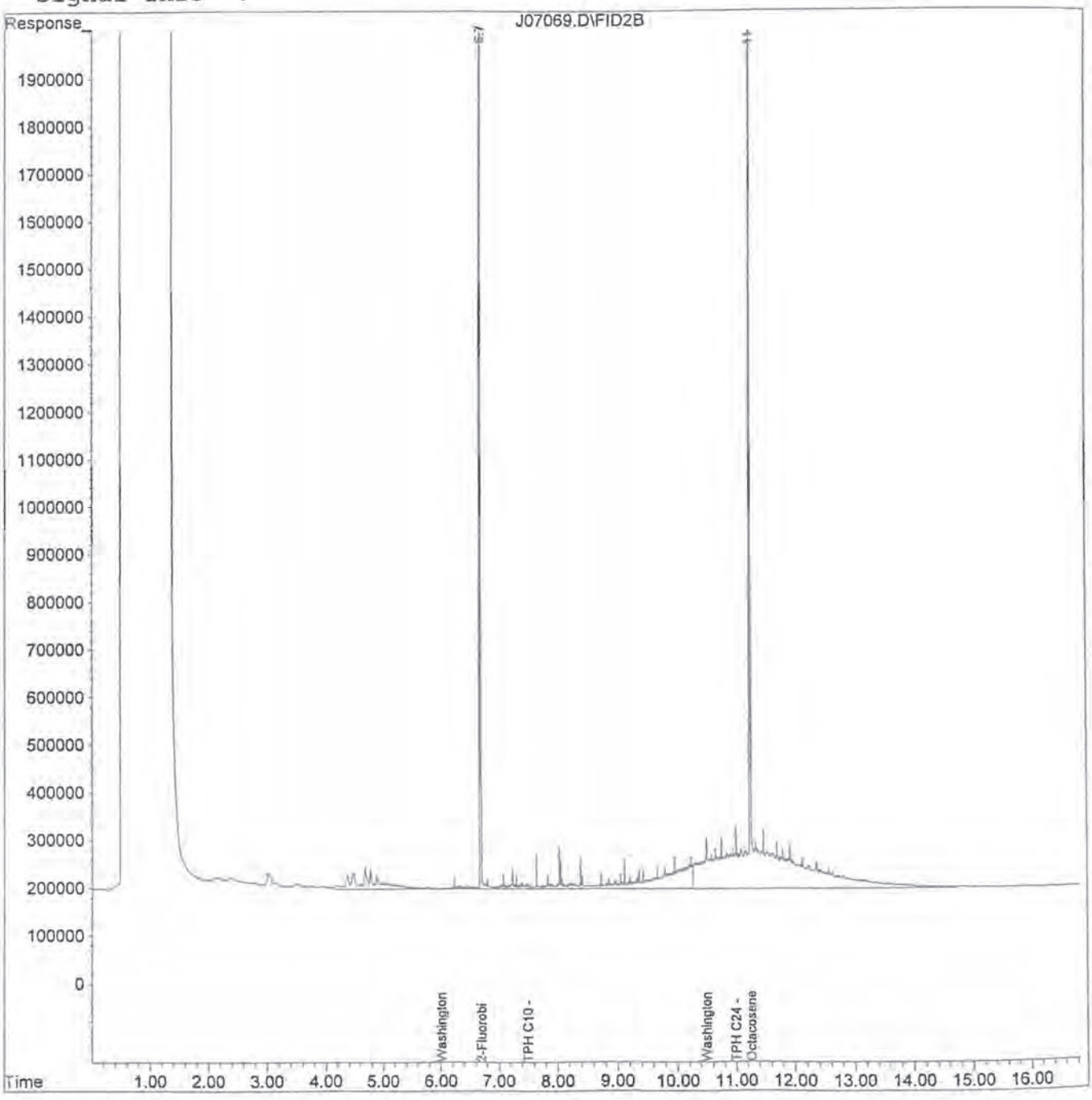
Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\J07069.D
Acq On : 10-8-97 5:09:56
Sample : b710081-16
Misc : S
IntFile : SURR.E
Quant Time: Oct 8 8:11 1997 Quant Results File: TPHD2.RES

Vial: 48
Operator: bc
Inst : Ralph
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\TPHD2.M (Chemstation Integrator)
Title : TPH-D Water Method
Last Update : Tue Oct 07 18:39:10 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

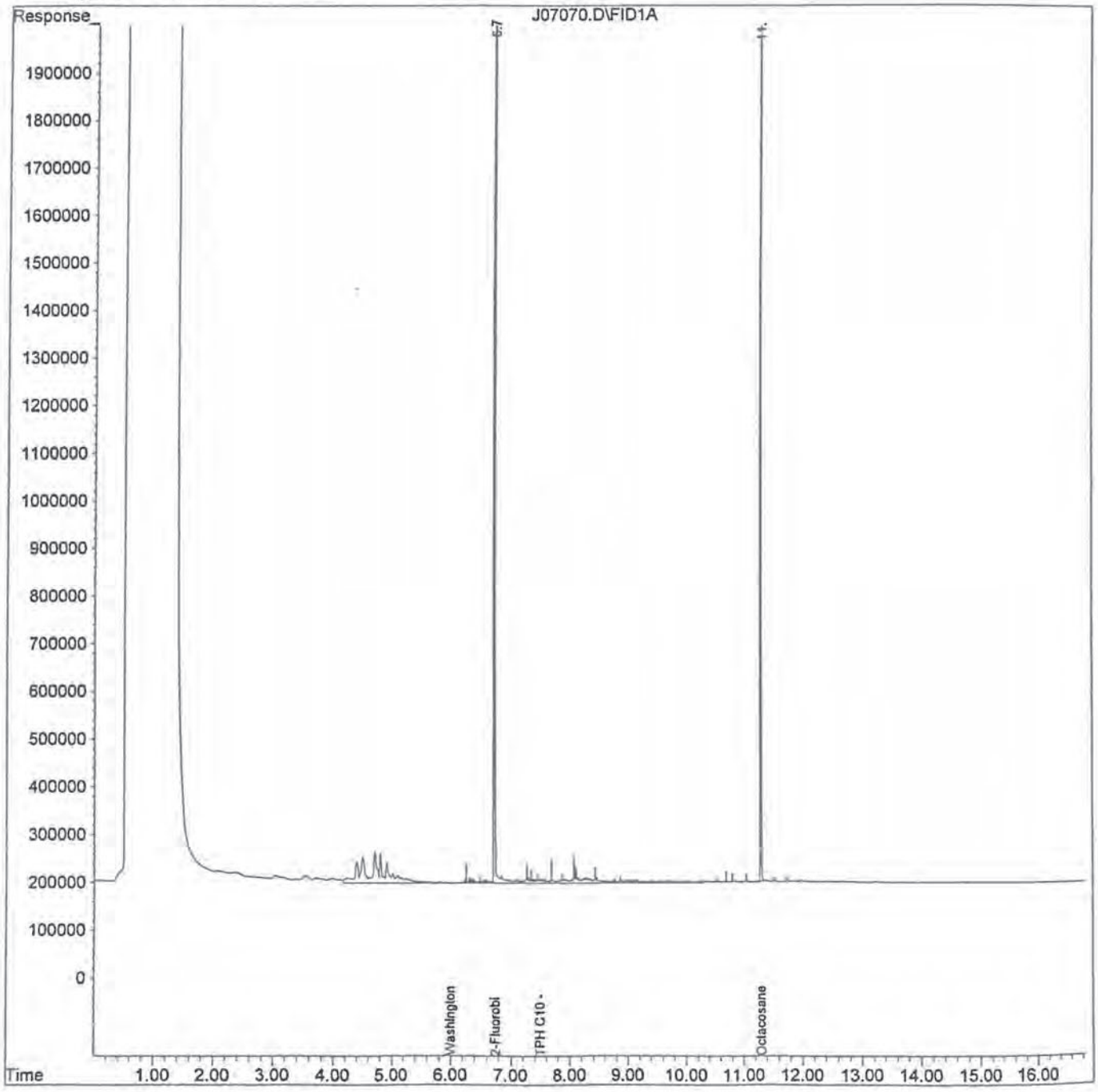
Volume Inj. :
Signal Phase :
Signal Info :



Data File : C:\HPCHEM\4\DATA\J07070.D Vial: 49
Acq On : 10-8-97 5:09:56 Operator: bc
Sample : b710081-17 Inst : Ralph
Misc : S Multiplr: 1.00
IntFile : SURR.E
Quant Time: Oct 8 7:30 1997 Quant Results File: TPHD.RES

Quant Method : C:\HPCHEM\4\METHODS\TPHD.M (Chemstation Integrator)
Title : TPH-D Front Method
Last Update : Mon Oct 06 17:50:45 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



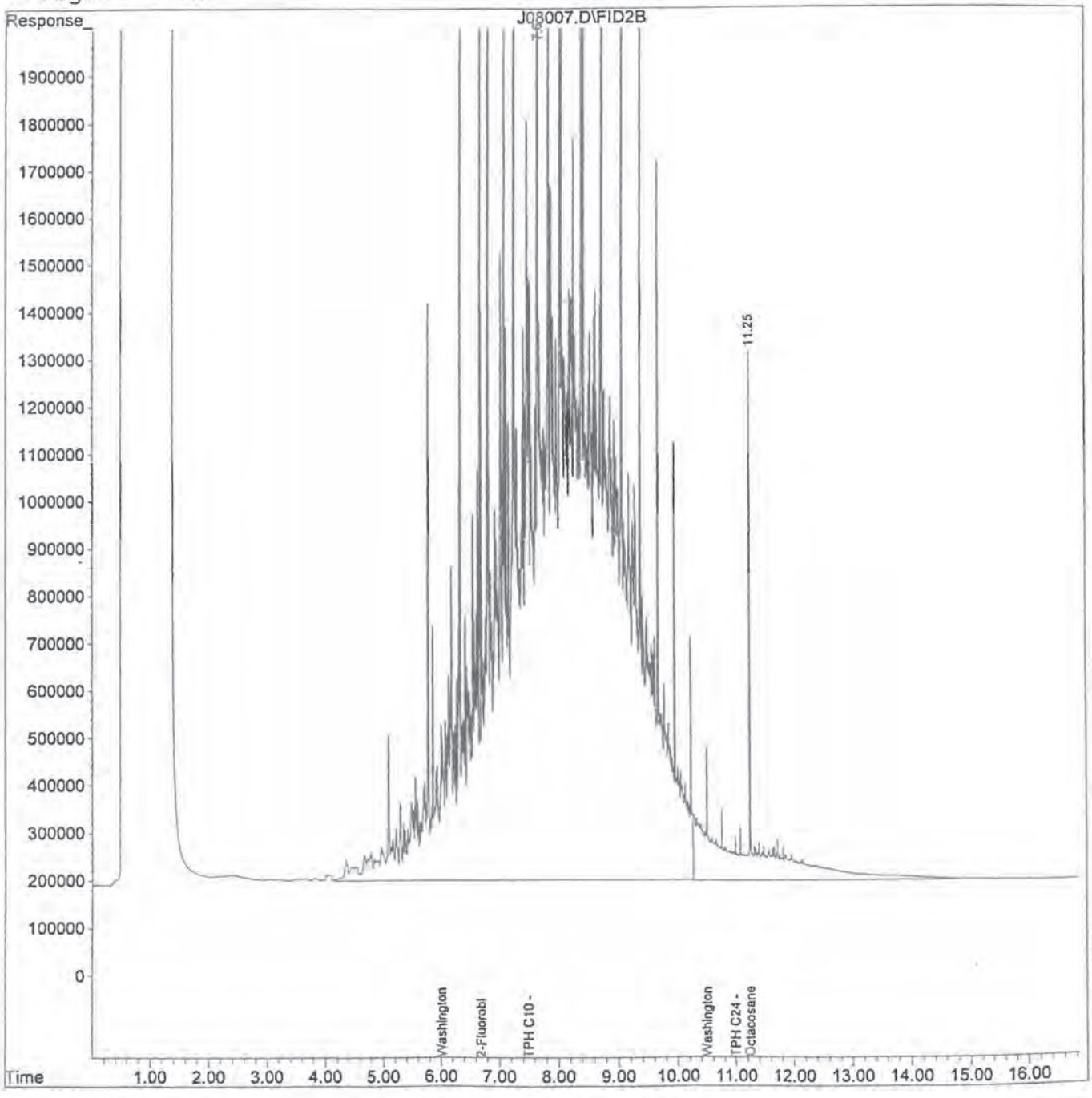
Quantitation Report

Data File : C:\HPCHEM\4\DATA.SEC\J08007.D
Acq On : 10-8-97 9:53:31
Sample : b710081-18 r1
Misc : S 5x
IntFile : SURR.E
Quant Time: Oct 8 10:47 1997 Quant Results File: TPHD2.RES

Vial: 4
Operator: bc
Inst : Ralph
Multiplr: 1.00

Quant Method : C:\HPCHEM\4\METHODS\TPHD2.M (Chemstation Integrator)
Title : TPH-D Water Method
Last Update : Tue Oct 07 18:39:10 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHD.M

Volume Inj. :
Signal Phase :
Signal Info :



ANALYTICAL
Environmental Laboratory Services

[illegible] Spot [illegible] (360) [illegible] FAX [illegible]
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B710081

REPORT TO:	INVOICE TO:
ATTENTION: Lisa Berg	ATTENTION: Same
ADDRESS: 5410 154th Ave NE	ADDRESS:
Redmond, WA	
PHONE: FAX:	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: Family Fun Center (FFC)	
PROJECT NUMBER: 5925-002-37	
SAMPLED BY: GRS	

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: 5 (Standard) | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: WTPH-G	WTPH-D extended	P.P. Metals-diss.	Barium-diss.	VOC's 8240	Pb.-diss.	pH	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
~~SP-2~~	~~10/03/97 9:00~~		X			X				W	4	
~~SP-3~~	~~10:00~~		X			X				W	4	
SP-5	10/03/97/8:50	B710081-01	X	X	X	X	X		X	W	6	
SP-15	12:13	02	X				X	X		W	5	
SP-19	11:00	03		X	X	X			X	W	7	
SP-23	13:30	04	X	X	X	X	X		X	W	7	

RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
Gary Stevens	10/04/97	Russell Lister	10-4-97
PRINT NAME: Gary Stevens FIRM: GEC	TIME: 13:10	PRINT NAME: Russell Lister FIRM: NCA	TIME: 15:10
RELINQUISHED BY:	DATE:	RECEIVED BY: Lisa Hurley	DATE: 10-6-97
PRINT NAME: FIRM:	TIME:	PRINT NAME: Lisa Hurley FIRM: NCA	TIME: 0700

ADDITIONAL REMARKS:

PAGE 1 OF 3

No 8.9' 45

OCT 06 '97 08:44 FR NCA BOTHELL 206 485 2992 TO GEO-RED P.02/04

CREEK ANALYTICAL
Environmental Laboratory Services

[illegible] Avenue N.E., Suite 107, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B710081

REPORT TO:	INVOICE TO:
ATTENTION: Lisa Berg	ATTENTION: Same
ADDRESS: 8410 154th Ave NE	ADDRESS:
Redmond, WA	
PHONE: 861-6000 FAX:	P.O. NUMBER: NCA QUOTE #:
PROJECT NAME: Family Fun Center (FFC)	
PROJECT NUMBER: 5925-002-07	
SAMPLED BY: GRS	

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 (Standard) | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	BETX 8020	WTPH-G	WTPH-D extended	P.P. Metals - Dissolved	Barium - Diss.	VOC's	PCB's	pH	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1. SP-5-18.0	10/03/97 8:40	B710081-05		Hold	X	Hold	Hold	Hold 40z			S	2	
2. SP-6-4.0	14:33	06			X						S	1	
3. SP-9-2.0	16:36	07			X	X	X			X	S	1	
4. SP-11-3.0	17:24	08			X	X	X			X	S	1	
5. SP-13-4.0	16:52	09			X						S	1	
6. SP-15-1.0	17:05	10			X	X	X		X	X	S	4	
7. SP-16-2.0	15:13	11			X			X			S	2	
8. SP-17-2.0	16:03	12			X			X			S	2	
9. SP-18-10.0	12:05	13	X	X				Hold 40z			S	2	
10. SP-14-8.0	10:50				X						S	2	

RELINQUISHED BY: Gary Stevens	DATE: 10/04/97	RECEIVED BY: Russell Lister	DATE: 10-4-97
PRINT NAME: Gary Stevens FIRM: GRS	TIME: 13:10	PRINT NAME: Russell Lister FIRM: NCA	TIME: 13:10
RELINQUISHED BY:	DATE:	RECEIVED BY: Lisa Hurley	DATE: 10.6.97
PRINT NAME: FIRM:	TIME:	PRINT NAME: Lisa Hurley FIRM: NCA	TIME: 0700

ADDITIONAL REMARKS: D-extended w/ silica gel cleanup

PAGE 2 OF 3

8.9: NO

CREEK ANALYTICAL
Environmental Laboratory Services

[illegible] Montgomery, [illegible] B. Spo[illegible], WA 992[illegible] (509) [illegible] FAX [illegible]
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 641-9200 FAX 641-2702

CHAIN OF CUSTODY REPORT

Work Order # B710081

REPORT TO:	INVOICE TO:	TURNAROUND REQUEST (In Business Days) *
ATTENTION: Lisa Bona	ATTENTION: Same	Organic & Inorganic Analyses: (10) (7) (5) (4) (3) (2) (1) (Same Day)
ADDRESS: 8410 154th Ave NE	ADDRESS:	Fuels & Hydrocarbon Analyses: (5) (3-4) (2) (1) (Same Day)
Redmond, WA		OTHER Specify:
PHONE: 861-6000 TAX:	P.O. NUMBER: * NCA QUOTE #:	* Turnaround Requests less than standard may incur Rush Charges
PROJECT NAME: Family Fun Center (FFC)		
PROJECT NUMBER: 5925-002-37		
SAMPLED BY: GRS		

Analysis Requested: WTPH-G; WTPH-D extended; P.P. Metals-Diss.; Barium-Diss.; VOC's; PCB's; PIT

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	WTPH-G	WTPH-D extended	P.P. Metals-Diss.	Barium-Diss.	VOC's	PCB's	PIT	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1	SP-19-10.0	10/03/97/10:50	B710081-14		X						S	1	
2	SP-20-9.0	15:23	15		X						S	1	
3	SP-21-1.0	14:51	16		X	X	X		X	X	S	4	
4	SP-22-9.0	14:33	17		X						S	1	
5	SP-23-0.5	14:00	18	X	X	X		X			S	1	
6													
7													
8													
9													
10				1									

RELINQUISHED BY (Signature): Gary Steven	DATE: 10/07/97	RECEIVED BY (Signature): Russell Lister	DATE: 10-4-97
PRINT NAME: Gary Steven FIRM: GCE	TIME: 13:00	PRINT NAME: Russell Lister FIRM: NCA	TIME: 15:10
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature): Lisa Hurley	DATE: 10-6-97
PRINT NAME: FIRM:	TIME:	PRINT NAME: Lisa Hurley FIRM: NCA	TIME: 0700

ADDITIONAL REMARKS: D. extended w/ silica gel clean-up.

PAGE 3 OF 3

8.9. 206

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

ANALYTICAL REPORT FOR SAMPLES

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
HA-1	B710115-01	Soil	10/6/97
HA-2	B710115-02	Soil	10/6/97
HA-3	B710115-03	Soil	10/6/97
HA-4	B710115-04	Soil	10/6/97
HA-5	B710115-05	Soil	10/6/97
HA-6	B710115-06	Soil	10/6/97
HA-7	B710115-07	Soil	10/6/97
HA-8	B710115-08	Soil	10/6/97
HA-9	B710115-09	Soil	10/6/97
HA-10	B710115-10	Soil	10/6/97
SP-10	B710115-11	Soil	10/6/97
SP-25	B710115-12	Soil	10/6/97

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Gasoline Hydrocarbons (Toluene to Dodecane) by NWTPH-Gx
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes
HA-3			B710115-03				Soil	
Gasoline	1070289	10/10/97	10/11/97		5.00	ND	mg/kg dry	
Aviation Gasoline	"	"	"		5.00	ND	"	
Mineral Spirits	"	"	"		5.00	ND	"	
Weathered Gasoline	"	"	"		5.00	ND	"	
VM&P Naphtha	"	"	"		5.00	ND	"	
Gasoline Range Hydrocarbons	"	"	"		5.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*69.3*	%	
HA-6			B710115-06				Soil	
Gasoline	1070289	10/10/97	10/13/97		20.0	ND	mg/kg dry	
Aviation Gasoline	"	"	"		20.0	ND	"	
Mineral Spirits	"	"	"		20.0	ND	"	
Weathered Gasoline	"	"	"		20.0	ND	"	
VM&P Naphtha	"	"	"		20.0	ND	"	
Gasoline Range Hydrocarbons	"	"	"		20.0	**36.0**	"	1
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*108*	%	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Volatile Petroleum Hydrocarbons by WDOE Interim TPH Policy Method
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes
HA-3			B710115-03				Soil	
C5-C6 Aliphatics	1070467	10/17/97	10/17/97		5.00	ND	mg/kg dry	
C6-C8 Aliphatics	"	"	"		5.00	ND	"	
C8-C10 Aliphatics	"	"	"		5.00	ND	"	
C10-C12 Aliphatics	"	"	"		5.00	ND	"	
C8-C10 Aromatics	"	"	"		5.00	ND	"	
C10-C12 Aromatics	"	"	"		5.00	ND	"	
C12-C13 Aromatics	"	"	"		5.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*60.0-140*		*88.9*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*60.0-140*		*85.4*	"	
HA-6			B710115-06				Soil	
C5-C6 Aliphatics	1070467	10/17/97	10/17/97		25.0	ND	mg/kg dry	
C6-C8 Aliphatics	"	"	"		25.0	ND	"	
C8-C10 Aliphatics	"	"	"		25.0	ND	"	
C10-C12 Aliphatics	"	"	"		25.0	ND	"	
C8-C10 Aromatics	"	"	"		25.0	ND	"	
C10-C12 Aromatics	"	"	"		25.0	**28.2**	"	
C12-C13 Aromatics	"	"	"		25.0	**56.0**	"	
Surrogate: 4-BFB (FID)	"	"	"	*60.0-140*		*104*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*60.0-140*		*103*	"	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

BTEX, MTBE and Naphthalene by WDOE Interim TPH Policy Method using GC/MS
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
HA-3			B710115-03				Soil	
Methyl tert-butyl ether	1070174	10/8/97	10/8/97		1.00	ND	mg/kg dry	
Benzene	"	"	"		0.200	ND	"	
Toluene	"	"	"		0.200	ND	"	
Ethylbenzene	"	"	"		0.200	ND	"	
m,p-Xylene	"	"	"		0.400	ND	"	
o-Xylene	"	"	"		0.200	ND	"	
Naphthalene	"	"	"		0.200	ND	"	
Surrogate: 2-Bromopropene	"	"	"	*70.0-130*		*72.8*	*%*	
Surrogate: 1,2-DCA-d4	"	"	"	*70.0-130*		*91.1*	"	
Surrogate: Toluene-d8	"	"	"	*70.0-130*		*86.8*	"	
Surrogate: 4-BFB	"	"	"	*70.0-130*		*87.5*	"	
HA-6			B710115-06				Soil	
Methyl tert-butyl ether	1070174	10/8/97	10/8/97		1.00	ND	mg/kg dry	
Benzene	"	"	"		0.200	ND	"	
Toluene	"	"	"		0.200	ND	"	
Ethylbenzene	"	"	"		0.200	ND	"	
m,p-Xylene	"	"	"		0.400	ND	"	
o-Xylene	"	"	"		0.200	ND	"	
Naphthalene	"	"	"		0.200	ND	"	
Surrogate: 2-Bromopropene	"	"	"	*70.0-130*		*85.8*	*%*	
Surrogate: 1,2-DCA-d4	"	"	"	*70.0-130*		*89.5*	"	
Surrogate: Toluene-d8	"	"	"	*70.0-130*		*96.8*	"	
Surrogate: 4-BFB	"	"	"	*70.0-130*		*95.4*	"	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
HA-3			B710115-03				Soil	
Diesel #2	1070212	10/9/97	10/12/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**52.1**	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	**268**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*74.0*	%	
HA-4			B710115-04				Soil	
Diesel #2	1070212	10/9/97	10/15/97		1010	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		1010	ND	"	
Diesel Range Hydrocarbons	"	"	"		1010	**3530**	"	
Fuel Oil #6 (Bunker C)	"	"	"		2530	ND	"	
Transformer Oil	"	"	"		2530	ND	"	
Motor Oil	"	"	"		2530	**19200**	"	
Hydraulic Oil	"	"	"		2530	ND	"	
Fuel Oil #2	"	"	"		2530	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		2530	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*NR*	%	2
HA-5			B710115-05				Soil	
Diesel #2	1070212	10/9/97	10/13/97		110	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		110	ND	"	
Diesel Range Hydrocarbons	"	"	"		110	**566**	"	
Fuel Oil #6 (Bunker C)	"	"	"		275	ND	"	
Transformer Oil	"	"	"		275	ND	"	
Motor Oil	"	"	"		275	ND	"	
Hydraulic Oil	"	"	"		275	ND	"	
Fuel Oil #2	"	"	"		275	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		275	**2250**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*68.7*	%	
HA-6			B710115-06				Soil	
Diesel #2	1070212	10/9/97	10/13/97		110	**4350**	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		110	ND	"	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes
HA-6 (continued)			B710115-06				Soil	
Diesel Range Hydrocarbons	1070212	10/9/97	10/13/97		110	ND	mg/kg dry	
Fuel Oil #6 (Bunker C)	"	"	"		275	ND	"	
Transformer Oil	"	"	"		275	ND	"	
Motor Oil	"	"	"		275	ND	"	
Hydraulic Oil	"	"	"		275	ND	"	
Fuel Oil #2	"	"	"		275	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		275	**701**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*94.7*	%	
HA-7			B710115-07				Soil	
Diesel #2	1070212	10/9/97	10/13/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**19.9**	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	**83.0**	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*84.4*	%	
HA-8			B710115-08				Soil	
Diesel #2	1070212	10/9/97	10/12/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**24.0**	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	**162**	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*78.8*	%	
SP-10			B710115-11				Soil	
Diesel #2	1070212	10/9/97	10/13/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	**53.6**	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	

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Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes
SP-10 (continued)			B710115-11				Soil	
Transformer Oil	1070212	10/9/97	10/13/97		25.0	ND	mg/kg dry	
Motor Oil	"	"	"		25.0	**303**	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*83.8*	*%*	
SP-25			B710115-12				Soil	
Diesel #2	1070212	10/9/97	10/15/97		1010	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		1010	ND	"	
Diesel Range Hydrocarbons	"	"	"		1010	**6860**	"	
Fuel Oil #6 (Bunker C)	"	"	"		2530	ND	"	
Transformer Oil	"	"	"		2530	ND	"	
Motor Oil	"	"	"		2530	ND	"	
Hydraulic Oil	"	"	"		2530	ND	"	
Fuel Oil #2	"	"	"		2530	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		2530	**31700**	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*NR*	*%*	*2*

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Extractable Petroleum Hydrocarbons by WDOE Interim TPH Policy Method
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
HA-3			B710115-03				Soil	
C8-C10 Aliphatics	1070240	10/9/97	10/12/97		5.00	ND	mg/kg dry	
C10-C12 Aliphatics	"	"	"		5.00	ND	"	
C12-C16 Aliphatics	"	"	"		5.00	ND	"	
C16-C21 Aliphatics	"	"	"		5.00	**16.1**	"	
C21-C34 Aliphatics	"	"	"		5.00	**143**	"	
C10-C12 Aromatics	"	"	"		5.00	ND	"	
C12-C16 Aromatics	"	"	"		5.00	ND	"	
C16-C21 Aromatics	"	"	"		5.00	ND	"	
C21-C34 Aromatics	"	"	"		5.00	**36.8**	"	
Surrogate: Octacosane	"	"	"	*50.0-150*		*94.7*	%	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*70.7*	"	
HA-4			B710115-04				Soil	
C8-C10 Aliphatics	1070240	10/9/97	10/12/97		40.0	ND	mg/kg dry	
C10-C12 Aliphatics	"	"	"		40.0	**54.8**	"	
C12-C16 Aliphatics	"	"	"		40.0	**85.7**	"	
C16-C21 Aliphatics	"	"	"		40.0	**690**	"	
C21-C34 Aliphatics	"	"	"		40.0	**9100**	"	
C10-C12 Aromatics	"	"	"		40.0	**73.1**	"	
C12-C16 Aromatics	"	"	"		40.0	**76.5**	"	
C16-C21 Aromatics	"	"	"		40.0	**490**	"	
C21-C34 Aromatics	"	"	"		40.0	**4020**	"	
Surrogate: Octacosane	"	"	"	*50.0-150*		*101*	%	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*62.3*	"	
HA-5			B710115-05				Soil	
C8-C10 Aliphatics	1070240	10/9/97	10/12/97		10.0	ND	mg/kg dry	
C10-C12 Aliphatics	"	"	"		10.0	ND	"	
C12-C16 Aliphatics	"	"	"		10.0	**12.7**	"	
C16-C21 Aliphatics	"	"	"		10.0	**66.2**	"	
C21-C34 Aliphatics	"	"	"		10.0	**465**	"	
C10-C12 Aromatics	"	"	10/13/97		10.0	ND	"	
C12-C16 Aromatics	"	"	"		10.0	ND	"	
C16-C21 Aromatics	"	"	"		10.0	**145**	"	
C21-C34 Aromatics	"	"	"		10.0	**666**	"	
Surrogate: Octacosane	"	"	*10/12/97*	*50.0-150*		*52.5*	%	
Surrogate: 2-FBP	"	"	*10/13/97*	*50.0-150*		*65.5*	"	

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8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Extractable Petroleum Hydrocarbons by WDOE Interim TPH Policy Method
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
HA-6			B710115-06				Soil	
C8-C10 Aliphatics	1070240	10/9/97	10/13/97		5.00	ND	mg/kg dry	
C10-C12 Aliphatics	"	"	"		5.00	23.4	"	
C12-C16 Aliphatics	"	"	"		5.00	481	"	
C16-C21 Aliphatics	"	"	"		5.00	795	"	
C21-C34 Aliphatics	"	"	"		5.00	320	"	
C10-C12 Aromatics	"	"	"		5.00	ND	"	
C12-C16 Aromatics	"	"	"		5.00	37.4	"	
C16-C21 Aromatics	"	"	"		5.00	501	"	
C21-C34 Aromatics	"	"	"		5.00	192	"	
Surrogate: Octacosane	"	"	"	*50.0-150*		*96.1*	*%*	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*76.6*	"	
SP-25			B710115-12				Soil	
C8-C10 Aliphatics	1070240	10/9/97	10/13/97		83.5	ND	mg/kg dry	
C10-C12 Aliphatics	"	"	"		83.5	ND	"	
C12-C16 Aliphatics	"	"	"		83.5	114	"	
C16-C21 Aliphatics	"	"	"		83.5	1630	"	
C21-C34 Aliphatics	"	"	"		83.5	12800	"	
C10-C12 Aromatics	"	"	"		83.5	ND	"	
C12-C16 Aromatics	"	"	"		83.5	ND	"	
C16-C21 Aromatics	"	"	"		83.5	620	"	
C21-C34 Aromatics	"	"	"		83.5	3460	"	
Surrogate: Octacosane	"	"	"	*50.0-150*		*90.7*	*%*	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*85.2*	"	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Polynuclear Aromatic Hydrocarbons by WDOE Interim TPH Policy Method using GC/MS-SIM
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
HA-3			B710115-03				Soil	
Acenaphthene	1070240	10/9/97	10/14/97		0.0100	ND	mg/kg dry	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	ND	"	
Benzo (a) anthracene	"	"	"		0.0100	**0.0137**	"	
Benzo (a) pyrene	"	"	"		0.0100	**0.0137**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.0249**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.0601**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	ND	"	
Chrysene	"	"	"		0.0100	**0.0266**	"	
Dibenzo (a,h) anthracene	"	"	"		0.0100	ND	"	
Fluoranthene	"	"	"		0.0100	**0.0395**	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.0275**	"	
2-Methylnaphthalene	"	"	"		0.0100	ND	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	**0.0232**	"	
Pyrene	"	"	"		0.0100	**0.0635**	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*74.4*	*%*	
HA-4			B710115-04				Soil	
Acenaphthene	1070240	10/9/97	10/16/97		0.0800	ND	mg/kg dry	
Acenaphthylene	"	"	"		0.0800	ND	"	
Anthracene	"	"	"		0.0800	**0.303**	"	
Benzo (a) anthracene	"	"	"		0.0800	**0.553**	"	
Benzo (a) pyrene	"	"	"		0.0800	**0.250**	"	
Benzo (b) fluoranthene	"	"	"		0.0800	**0.285**	"	
Benzo (ghi) perylene	"	"	"		0.0800	**0.483**	"	
Benzo (k) fluoranthene	"	"	"		0.0800	**0.111**	"	
Chrysene	"	"	"		0.0800	**0.501**	"	
Dibenzo (a,h) anthracene	"	"	"		0.0800	ND	"	
Fluoranthene	"	"	"		0.0800	**1.04**	"	
Fluorene	"	"	"		0.0800	**0.169**	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0800	**0.140**	"	
2-Methylnaphthalene	"	"	"		0.0800	**2.82**	"	
Naphthalene	"	"	"		0.0800	**0.216**	"	
Phenanthrene	"	"	"		0.0800	**0.652**	"	
Pyrene	"	"	"		0.0800	**0.897**	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*52.3*	*%*	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Polynuclear Aromatic Hydrocarbons by WDOE Interim TPH Policy Method using GC/MS-SIM
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
HA-5			**B710115-05**				Soil	
Acenaphthene	1070240	10/9/97	10/16/97		0.0200	ND	mg/kg dry	
Acenaphthylene	"	"	"		0.0200	ND	"	
Anthracene	"	"	"		0.0200	ND	"	
Benzo (a) anthracene	"	"	"		0.0200	ND	"	
Benzo (a) pyrene	"	"	"		0.0200	**0.0436**	"	
Benzo (b) fluoranthene	"	"	"		0.0200	**0.0553**	"	
Benzo (ghi) perylene	"	"	"		0.0200	**0.470**	"	
Benzo (k) fluoranthene	"	"	"		0.0200	ND	"	
Chrysene	"	"	"		0.0200	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.0200	ND	"	
Fluoranthene	"	"	"		0.0200	**0.0235**	"	
Fluorene	"	"	"		0.0200	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0200	**0.101**	"	
2-Methylnaphthalene	"	"	"		0.0200	ND	"	
Naphthalene	"	"	"		0.0200	ND	"	
Phenanthrene	"	"	"		0.0200	ND	"	
Pyrene	"	"	"		0.0200	**0.0587**	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*64.3*	%	
HA-6			**B710115-06**				Soil	
Acenaphthene	1070240	10/9/97	10/15/97		0.0100	ND	mg/kg dry	
Acenaphthylene	"	"	"		0.0100	**0.0168**	"	
Anthracene	"	"	"		0.0100	**0.0124**	"	
Benzo (a) anthracene	"	"	"		0.0100	ND	"	
Benzo (a) pyrene	"	"	"		0.0100	**0.0241**	"	
Benzo (b) fluoranthene	"	"	"		0.0100	**0.0256**	"	
Benzo (ghi) perylene	"	"	"		0.0100	**0.0878**	"	
Benzo (k) fluoranthene	"	"	"		0.0100	ND	"	
Chrysene	"	"	"		0.0100	**0.0446**	"	
Dibenzo (a,h) anthracene	"	"	"		0.0100	ND	"	
Fluoranthene	"	"	"		0.0100	ND	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	**0.0709**	"	
2-Methylnaphthalene	"	"	"		0.0100	ND	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	**0.0154**	"	
Pyrene	"	"	"		0.0100	**0.105**	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*78.9*	%	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Polynuclear Aromatic Hydrocarbons by WDOE Interim TPH Policy Method using GC/MS-SIM
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
SP-25			B710115-12				Soil	
Acenaphthene	1070240	10/9/97	10/16/97		0.167	ND	mg/kg dry	
Acenaphthylene	"	"	"		0.167	ND	"	
Anthracene	"	"	"		0.167	ND	"	
Benzo (a) anthracene	"	"	"		0.167	ND	"	
Benzo (a) pyrene	"	"	"		0.167	ND	"	
Benzo (b) fluoranthene	"	"	"		0.167	ND	"	
Benzo (ghi) perylene	"	"	"		0.167	ND	"	
Benzo (k) fluoranthene	"	"	"		0.167	ND	"	
Chrysene	"	"	"		0.167	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.167	ND	"	
Fluoranthene	"	"	"		0.167	ND	"	
Fluorene	"	"	"		0.167	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.167	ND	"	
2-Methylnaphthalene	"	"	"		0.167	ND	"	
Naphthalene	"	"	"		0.167	ND	"	
Phenanthrene	"	"	"		0.167	ND	"	
Pyrene	"	"	"		0.167	ND	"	
Surrogate: p-Terphenyl-d14	"	"	"	*30.0-150*		*70.7*	*%*	

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Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
HA-3			B710115-03				Soil	
Antimony	1070395	10/15/97	10/15/97	EPA 6010A	5.00	ND	mg/kg dry	
Arsenic	"	"	"	EPA 6010A	10.0	ND	"	
Barium	"	"	10/16/97	EPA 6010A	0.500	**48.0**	"	
Beryllium	"	"	10/15/97	EPA 6010A	0.250	ND	"	
Cadmium	"	"	"	EPA 6010A	0.250	**0.715**	"	
Chromium	"	"	"	EPA 6010A	0.500	**23.6**	"	
Copper	"	"	"	EPA 6010A	1.50	**41.2**	"	
Lead	"	"	"	EPA 6010A	10.0	**127**	"	
Nickel	"	"	"	EPA 6010A	1.50	**37.8**	"	
Selenium	"	"	"	EPA 6010A	7.50	ND	"	
Thallium	"	"	"	EPA 6010A	10.0	ND	"	
Zinc	"	"	"	EPA 6010A	1.00	**138**	"	
Mercury	1070275	"	10/16/97	EPA 7471A	0.0500	**0.119**	"	
Silver	1070395	"	"	EPA 7760A	1.00	ND	"	
HA-4			B710115-04				Soil	
Antimony	1070395	10/15/97	10/15/97	EPA 6010A	5.00	ND	mg/kg dry	
Arsenic	"	"	"	EPA 6010A	10.0	ND	"	
Barium	"	"	10/16/97	EPA 6010A	0.500	**36.0**	"	
Beryllium	"	"	10/15/97	EPA 6010A	0.250	ND	"	
Cadmium	"	"	"	EPA 6010A	0.250	**0.664**	"	
Chromium	"	"	"	EPA 6010A	0.500	**12.6**	"	
Copper	"	"	"	EPA 6010A	1.50	**29.2**	"	
Lead	"	"	"	EPA 6010A	10.0	**146**	"	
Nickel	"	"	"	EPA 6010A	1.50	**18.0**	"	
Selenium	"	"	"	EPA 6010A	7.50	ND	"	
Thallium	"	"	"	EPA 6010A	10.0	ND	"	
Zinc	"	"	"	EPA 6010A	1.00	**120**	"	
Mercury	1070275	"	10/16/97	EPA 7471A	0.0500	**0.0535**	"	
Silver	1070395	"	"	EPA 7760A	1.00	ND	"	
HA-5			B710115-05				Soil	
Antimony	1070395	10/15/97	10/15/97	EPA 6010A	5.00	ND	mg/kg dry	
Arsenic	"	"	"	EPA 6010A	10.0	ND	"	
Barium	"	"	10/16/97	EPA 6010A	0.500	**58.3**	"	
Beryllium	"	"	10/15/97	EPA 6010A	0.250	ND	"	
Cadmium	"	"	"	EPA 6010A	0.250	ND	"	
Chromium	"	"	"	EPA 6010A	0.500	**24.0**	"	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
HA-5 (continued)			B710115-05				Soil	
Copper	1070395	10/15/97	10/15/97	EPA 6010A	1.50	28.1	mg/kg dry	
Lead	"	"	"	EPA 6010A	10.0	71.8	"	
Nickel	"	"	"	EPA 6010A	1.50	71.5	"	
Selenium	"	"	"	EPA 6010A	7.50	ND	"	
Thallium	"	"	"	EPA 6010A	10.0	ND	"	
Zinc	"	"	"	EPA 6010A	1.00	90.9	"	
Mercury	1070275	"	10/16/97	EPA 7471A	0.0500	0.0841	"	
Silver	1070395	"	"	EPA 7760A	1.00	ND	"	
HA-9			B710115-09				Soil	
Antimony	1070395	10/15/97	10/15/97	EPA 6010A	5.00	ND	mg/kg dry	
Arsenic	"	"	"	EPA 6010A	10.0	ND	"	
Barium	"	"	10/16/97	EPA 6010A	0.500	19.1	"	
Beryllium	"	"	10/15/97	EPA 6010A	0.250	ND	"	
Cadmium	"	"	"	EPA 6010A	0.250	ND	"	
Chromium	"	"	10/16/97	EPA 6010A	0.500	18.9	"	
Copper	"	"	10/15/97	EPA 6010A	1.50	62.3	"	
Lead	"	"	"	EPA 6010A	10.0	15.1	"	
Nickel	"	"	"	EPA 6010A	1.50	23.7	"	
Selenium	"	"	"	EPA 6010A	7.50	ND	"	
Thallium	"	"	"	EPA 6010A	10.0	ND	"	
Zinc	"	"	"	EPA 6010A	1.00	55.2	"	
Mercury	1070275	"	10/16/97	EPA 7471A	0.0500	0.0628	"	
Silver	1070395	"	"	EPA 7760A	1.00	ND	"	
HA-10			B710115-10				Soil	
Antimony	1070395	10/15/97	10/15/97	EPA 6010A	5.00	ND	mg/kg dry	
Arsenic	"	"	"	EPA 6010A	10.0	ND	"	
Barium	"	"	10/16/97	EPA 6010A	0.500	63.4	"	
Beryllium	"	"	10/15/97	EPA 6010A	0.250	ND	"	
Cadmium	"	"	"	EPA 6010A	0.250	ND	"	
Chromium	"	"	"	EPA 6010A	0.500	14.2	"	
Copper	"	"	"	EPA 6010A	1.50	24.9	"	
Lead	"	"	"	EPA 6010A	10.0	ND	"	
Nickel	"	"	"	EPA 6010A	1.50	11.9	"	
Selenium	"	"	"	EPA 6010A	7.50	ND	"	
Thallium	"	"	"	EPA 6010A	10.0	ND	"	
Zinc	"	"	"	EPA 6010A	1.00	60.2	"	

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Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
HA-10 (continued)			B710115-10				Soil	
Mercury	1070275	10/15/97	10/16/97	EPA 7471A	0.0500	0.103	mg/kg dry	
Silver	1070395	"	"	EPA 7760A	1.00	ND	"	
SP-10			B710115-11				Soil	
Antimony	1070395	10/15/97	10/15/97	EPA 6010A	5.00	ND	mg/kg dry	
Arsenic	"	"	"	EPA 6010A	10.0	ND	"	
Barium	"	"	10/16/97	EPA 6010A	0.500	49.4	"	
Beryllium	"	"	10/15/97	EPA 6010A	0.250	ND	"	
Cadmium	"	"	"	EPA 6010A	0.250	ND	"	
Chromium	"	"	"	EPA 6010A	0.500	41.0	"	
Copper	"	"	"	EPA 6010A	1.50	22.8	"	
Lead	"	"	"	EPA 6010A	10.0	19.1	"	
Nickel	"	"	"	EPA 6010A	1.50	18.2	"	
Selenium	"	"	"	EPA 6010A	7.50	ND	"	
Thallium	"	"	"	EPA 6010A	10.0	ND	"	
Zinc	"	"	"	EPA 6010A	1.00	47.8	"	
Mercury	1070275	"	10/16/97	EPA 7471A	0.0500	0.0814	"	
Silver	1070395	"	"	EPA 7760A	1.00	ND	"	
SP-25			B710115-12				Soil	
Antimony	1070395	10/15/97	10/15/97	EPA 6010A	5.00	ND	mg/kg dry	
Arsenic	"	"	"	EPA 6010A	10.0	ND	"	
Barium	"	"	10/16/97	EPA 6010A	0.500	48.1	"	
Beryllium	"	"	10/15/97	EPA 6010A	0.250	ND	"	
Cadmium	"	"	"	EPA 6010A	0.250	ND	"	
Chromium	"	"	"	EPA 6010A	0.500	17.6	"	
Copper	"	"	"	EPA 6010A	1.50	12.1	"	
Lead	"	"	"	EPA 6010A	10.0	ND	"	
Nickel	"	"	"	EPA 6010A	1.50	22.6	"	
Selenium	"	"	"	EPA 6010A	7.50	ND	"	
Thallium	"	"	"	EPA 6010A	10.0	ND	"	
Zinc	"	"	"	EPA 6010A	1.00	27.5	"	
Mercury	1070275	"	10/16/97	EPA 7471A	0.0500	0.0575	"	
Silver	1070395	"	"	EPA 7760A	1.00	ND	"	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Organochlorine Pesticides and PCBs by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
HA-1			B710115-01				Soil	
Aldrin	1070378	10/15/97	10/20/97		1.00	ND	ug/kg dry	
alpha-BHC	"	"	"		0.500	ND	"	
beta-BHC	"	"	"		0.900	ND	"	
delta-BHC	"	"	"		0.600	ND	"	
gamma-BHC (Lindane)	"	"	"		1.00	ND	"	
Chlordane (tech)	"	"	"		1.00	ND	"	
alpha-Chlordane	"	"	"		0.800	ND	"	
gamma-Chlordane	"	"	"		0.700	**1.69**	"	6
4,4'-DDD	"	"	"		1.00	**5.53**	"	
4,4'-DDE	"	"	"		1.00	ND	"	
4,4'-DDT	"	"	"		1.00	ND	"	
Dieldrin	"	"	"		2.00	ND	"	
Endosulfan I	"	"	"		1.00	ND	"	
Endosulfan II	"	"	"		2.00	ND	"	
Endosulfan sulfate	"	"	"		1.00	ND	"	
Endrin	"	"	"		2.00	ND	"	
Endrin aldehyde	"	"	"		2.00	ND	"	
Heptachlor	"	"	"		1.00	ND	"	
Heptachlor epoxide	"	"	"		1.00	ND	"	
Methoxychlor	"	"	"		4.00	ND	"	
Toxaphene	"	"	"		50.0	ND	"	
Aroclor 1016	"	"	10/21/97		50.0	ND	"	7,8
Aroclor 1221	"	"	"		50.0	ND	"	7,8
Aroclor 1232	"	"	"		50.0	ND	"	7,8
Aroclor 1242	"	"	"		50.0	ND	"	7,8
Aroclor 1248	"	"	"		50.0	ND	"	7,8
Aroclor 1254	"	"	"		50.0	ND	"	7,8
Aroclor 1260	"	"	"		50.0	ND	"	7,8
Aroclor 1262	"	"	"		50.0	ND	"	7,8
Aroclor 1268	"	"	"		50.0	ND	"	7,8
Surrogate: TCX	"	"	"	*38.0-117*		*90.3*	*%*	*7,8*

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Organochlorine Pesticides and PCBs by EPA Method 8081
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
HA-2			B710115-02				Soil	
Aldrin	1070378	10/15/97	10/20/97		1.00	ND	ug/kg dry	
alpha-BHC	"	"	"		0.500	ND	"	
beta-BHC	"	"	"		0.900	ND	"	
delta-BHC	"	"	"		0.600	ND	"	
gamma-BHC (Lindane)	"	"	"		1.00	ND	"	
Chlordane (tech)	"	"	10/24/97		1.00	**738**	"	
alpha-Chlordane	"	"	10/20/97		0.800	**49.6**	"	
gamma-Chlordane	"	"	"		0.700	**46.4**	"	
4,4'-DDD	"	"	"		1.00	ND	"	
4,4'-DDE	"	"	"		1.00	ND	"	
4,4'-DDT	"	"	"		1.00	**9.36**	"	
Dieldrin	"	"	"		2.00	**5.16**	"	
Endosulfan I	"	"	"		1.00	ND	"	
Endosulfan II	"	"	"		2.00	ND	"	
Endosulfan sulfate	"	"	"		1.00	ND	"	
Endrin	"	"	"		2.00	ND	"	
Endrin aldehyde	"	"	"		2.00	ND	"	
Heptachlor	"	"	"		1.00	ND	"	
Heptachlor epoxide	"	"	"		1.00	ND	"	
Methoxychlor	"	"	"		4.00	ND	"	
Toxaphene	"	"	"		50.0	ND	"	
Aroclor 1016	"	"	10/21/97		50.0	ND	"	7,8
Aroclor 1221	"	"	"		50.0	ND	"	7,8
Aroclor 1232	"	"	"		50.0	ND	"	7,8
Aroclor 1242	"	"	"		50.0	ND	"	7,8
Aroclor 1248	"	"	"		50.0	ND	"	7,8
Aroclor 1254	"	"	"		50.0	ND	"	7,8
Aroclor 1260	"	"	"		50.0	ND	"	7,8
Aroclor 1262	"	"	"		50.0	ND	"	7,8
Aroclor 1268	"	"	"		50.0	ND	"	7,8
Surrogate: TCX	"	"	"	*38.0-117*		*93.1*	*%*	*7,8*

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
HA-3			B710115-03				Soil	
Acetone	1070174	10/8/97	10/8/97		2.00	ND	mg/kg dry	
Benzene	"	"	"		0.200	ND	"	
Bromodichloromethane	"	"	"		0.200	ND	"	
Bromoform	"	"	"		0.200	ND	"	
Bromomethane	"	"	"		0.200	ND	"	
2-Butanone	"	"	"		2.00	ND	"	
Carbon disulfide	"	"	"		0.200	ND	"	
Carbon tetrachloride	"	"	"		0.200	ND	"	
Chlorobenzene	"	"	"		0.200	ND	"	
Chloroethane	"	"	"		0.200	ND	"	
Chloroform	"	"	"		0.200	ND	"	
Chloromethane	"	"	"		0.200	ND	"	
Dibromochloromethane	"	"	"		0.200	ND	"	
1,2-Dichlorobenzene	"	"	"		0.200	ND	"	
1,3-Dichlorobenzene	"	"	"		0.200	ND	"	
1,4-Dichlorobenzene	"	"	"		0.200	ND	"	
1,1-Dichloroethane	"	"	"		0.200	ND	"	
1,2-Dichloroethane	"	"	"		0.200	ND	"	
1,1-Dichloroethene	"	"	"		0.200	ND	"	
cis-1,2-Dichloroethene	"	"	"		0.200	ND	"	
trans-1,2-Dichloroethene	"	"	"		0.200	ND	"	
1,2-Dichloropropane	"	"	"		0.200	ND	"	
cis-1,3-Dichloropropene	"	"	"		0.200	ND	"	
trans-1,3-Dichloropropene	"	"	"		0.200	ND	"	
Ethylbenzene	"	"	"		0.200	ND	"	
2-Hexanone	"	"	"		2.00	ND	"	
Methylene chloride	"	"	"		1.00	ND	"	
4-Methyl-2-pentanone	"	"	"		2.00	ND	"	
Styrene	"	"	"		0.200	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		0.200	ND	"	
Tetrachloroethene	"	"	"		0.200	ND	"	
Toluene	"	"	"		0.200	ND	"	
1,1,1-Trichloroethane	"	"	"		0.200	ND	"	
1,1,2-Trichloroethane	"	"	"		0.200	ND	"	
Trichloroethene	"	"	"		0.200	ND	"	
Vinyl chloride	"	"	"		0.200	ND	"	
Xylenes (total)	"	"	"		0.400	ND	"	
Surrogate: 2-Bromopropene	"	"	"	*70.0-130*		*72.8*	%	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes
HA-3 (continued)			B710115-03				Soil	
Surrogate: 1,2-DCA-d4	*1070174*	*10/8/97*	*10/8/97*	*70.0-130*		*91.1*	*%*	
Surrogate: Toluene-d8	*"*	*"*	*"*	*70.0-130*		*86.8*	*"*	
Surrogate: 4-BFB	*"*	*"*	*"*	*70.0-130*		*87.5*	*"*	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond. WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes
HA-4			B710115-04				Soil	
Acetone	1070174	10/8/97	10/8/97		2.00	ND	mg/kg dry	
Benzene	"	"	"		0.200	ND	"	
Bromodichloromethane	"	"	"		0.200	ND	"	
Bromoform	"	"	"		0.200	ND	"	
Bromomethane	"	"	"		0.200	ND	"	
2-Butanone	"	"	"		2.00	ND	"	
Carbon disulfide	"	"	"		0.200	ND	"	
Carbon tetrachloride	"	"	"		0.200	ND	"	
Chlorobenzene	"	"	"		0.200	ND	"	
Chloroethane	"	"	"		0.200	ND	"	
Chloroform	"	"	"		0.200	ND	"	
Chloromethane	"	"	"		0.200	ND	"	
Dibromochloromethane	"	"	"		0.200	ND	"	
1,2-Dichlorobenzene	"	"	"		0.200	ND	"	
1,3-Dichlorobenzene	"	"	"		0.200	ND	"	
1,4-Dichlorobenzene	"	"	"		0.200	ND	"	
1,1-Dichloroethane	"	"	"		0.200	ND	"	
1,2-Dichloroethane	"	"	"		0.200	ND	"	
1,1-Dichloroethene	"	"	"		0.200	ND	"	
cis-1,2-Dichloroethene	"	"	"		0.200	ND	"	
trans-1,2-Dichloroethene	"	"	"		0.200	ND	"	
1,2-Dichloropropane	"	"	"		0.200	ND	"	
cis-1,3-Dichloropropene	"	"	"		0.200	ND	"	
trans-1,3-Dichloropropene	"	"	"		0.200	ND	"	
Ethylbenzene	"	"	"		0.200	ND	"	
2-Hexanone	"	"	"		2.00	ND	"	
Methylene chloride	"	"	"		1.00	ND	"	
4-Methyl-2-pentanone	"	"	"		2.00	ND	"	
Styrene	"	"	"		0.200	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		0.200	ND	"	
Tetrachloroethene	"	"	"		0.200	ND	"	
Toluene	"	"	"		0.200	ND	"	
1,1,1-Trichloroethane	"	"	"		0.200	ND	"	
1,1,2-Trichloroethane	"	"	"		0.200	ND	"	
Trichloroethene	"	"	"		0.200	ND	"	
Vinyl chloride	"	"	"		0.200	ND	"	
Xylenes (total)	"	"	"		0.400	ND	"	
Surrogate: 2-Bromopropene	"	"	"	*70.0-130*		*86.2*	%	

North Creek Analytical, Inc.

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
HA-5 (continued)			B710115-05				Soil	
Surrogate: 1,2-DCA-d4	*1070174*	*10/8/97*	*10/8/97*	*70.0-130*		*84.9*	*%*	
Surrogate: Toluene-d8	*"*	*"*	*"*	*70.0-130*		*88.9*	*"*	
Surrogate: 4-BFB	*"*	*"*	*"*	*70.0-130*		*90.1*	*"*	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
HA-6			B710115-06				Soil	
Acetone	1070174	10/8/97	10/8/97		2.00	ND	mg/kg dry	
Benzene	"	"	"		0.200	ND	"	
Bromodichloromethane	"	"	"		0.200	ND	"	
Bromoform	"	"	"		0.200	ND	"	
Bromomethane	"	"	"		0.200	ND	"	
2-Butanone	"	"	"		2.00	ND	"	
Carbon disulfide	"	"	"		0.200	ND	"	
Carbon tetrachloride	"	"	"		0.200	ND	"	
Chlorobenzene	"	"	"		0.200	ND	"	
Chloroethane	"	"	"		0.200	ND	"	
Chloroform	"	"	"		0.200	ND	"	
Chloromethane	"	"	"		0.200	ND	"	
Dibromochloromethane	"	"	"		0.200	ND	"	
1,2-Dichlorobenzene	"	"	"		0.200	ND	"	
1,3-Dichlorobenzene	"	"	"		0.200	ND	"	
1,4-Dichlorobenzene	"	"	"		0.200	ND	"	
1,1-Dichloroethane	"	"	"		0.200	ND	"	
1,2-Dichloroethane	"	"	"		0.200	ND	"	
1,1-Dichloroethene	"	"	"		0.200	ND	"	
cis-1,2-Dichloroethene	"	"	"		0.200	ND	"	
trans-1,2-Dichloroethene	"	"	"		0.200	ND	"	
1,2-Dichloropropane	"	"	"		0.200	ND	"	
cis-1,3-Dichloropropene	"	"	"		0.200	ND	"	
trans-1,3-Dichloropropene	"	"	"		0.200	ND	"	
Ethylbenzene	"	"	"		0.200	ND	"	
2-Hexanone	"	"	"		2.00	ND	"	
Methylene chloride	"	"	"		1.00	ND	"	
4-Methyl-2-pentanone	"	"	"		2.00	ND	"	
Styrene	"	"	"		0.200	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		0.200	ND	"	
Tetrachloroethene	"	"	"		0.200	ND	"	
Toluene	"	"	"		0.200	ND	"	
1,1,1-Trichloroethane	"	"	"		0.200	ND	"	
1,1,2-Trichloroethane	"	"	"		0.200	ND	"	
Trichloroethene	"	"	"		0.200	ND	"	
Vinyl chloride	"	"	"		0.200	ND	"	
Xylenes (total)	"	"	"		0.400	ND	"	
Surrogate: 2-Bromopropene	"	"	"	*70.0-130*		*85.8*	*%*	

North Creek Analytical, Inc.

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
HA-6 (continued)			B710115-06				Soil	
Surrogate: 1,2-DCA-d4	*1070174*	*10/8/97*	*10/8/97*	*70.0-130*		*89.5*	*%*	
Surrogate: Toluene-d8	*"*	*"*	*"*	*70.0-130*		*96.8*	*"*	
Surrogate: 4-BFB	*"*	*"*	*"*	*70.0-130*		*95.4*	*"*	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes
SP-25			B710115-12				Soil	
Acetone	1070174	10/8/97	10/8/97		2.00	ND	mg/kg dry	
Benzene	"	"	"		0.200	ND	"	
Bromodichloromethane	"	"	"		0.200	ND	"	
Bromoform	"	"	"		0.200	ND	"	
Bromomethane	"	"	"		0.200	ND	"	
2-Butanone	"	"	"		2.00	ND	"	
Carbon disulfide	"	"	"		0.200	ND	"	
Carbon tetrachloride	"	"	"		0.200	ND	"	
Chlorobenzene	"	"	"		0.200	ND	"	
Chloroethane	"	"	"		0.200	ND	"	
Chloroform	"	"	"		0.200	ND	"	
Chloromethane	"	"	"		0.200	ND	"	
Dibromochloromethane	"	"	"		0.200	ND	"	
1,2-Dichlorobenzene	"	"	"		0.200	ND	"	
1,3-Dichlorobenzene	"	"	"		0.200	ND	"	
1,4-Dichlorobenzene	"	"	"		0.200	ND	"	
1,1-Dichloroethane	"	"	"		0.200	ND	"	
1,2-Dichloroethane	"	"	"		0.200	ND	"	
1,1-Dichloroethene	"	"	"		0.200	ND	"	
cis-1,2-Dichloroethene	"	"	"		0.200	ND	"	
trans-1,2-Dichloroethene	"	"	"		0.200	ND	"	
1,2-Dichloropropane	"	"	"		0.200	ND	"	
cis-1,3-Dichloropropene	"	"	"		0.200	ND	"	
trans-1,3-Dichloropropene	"	"	"		0.200	ND	"	
Ethylbenzene	"	"	"		0.200	ND	"	
2-Hexanone	"	"	"		2.00	ND	"	
Methylene chloride	"	"	"		1.00	ND	"	
4-Methyl-2-pentanone	"	"	"		2.00	ND	"	
Styrene	"	"	"		0.200	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		0.200	ND	"	
Tetrachloroethene	"	"	"		0.200	ND	"	
Toluene	"	"	"		0.200	ND	"	
1,1,1-Trichloroethane	"	"	"		0.200	ND	"	
1,1,2-Trichloroethane	"	"	"		0.200	ND	"	
Trichloroethene	"	"	"		0.200	ND	"	
Vinyl chloride	"	"	"		0.200	ND	"	
Xylenes (total)	"	"	"		0.400	ND	"	
Surrogate: 2-Bromopropene	"	"	"	*70.0-130*		*89.5*	%	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions*

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Volatile Organic Compounds by EPA Method 8240B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes
SP-25 (continued)			B710115-12				Soil	
Surrogate: 1,2-DCA-d4	*1070174*	*10/8/97*	*10/8/97*	*70.0-130*		*89.0*	*%*	
Surrogate: Toluene-d8	*"*	*"*	*"*	*70.0-130*		*96.3*	*"*	
Surrogate: 4-BFB	*"*	*"*	*"*	*70.0-130*		*94.1*	*"*	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Semivolatile Organic Compounds by EPA Method 8270B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes
HA-9			B710115-09				Soil	
Acenaphthene	1070237	10/9/97	10/10/97		0.100	ND	mg/kg dry	
Acenaphthylene	"	"	"		0.100	ND	"	
Aniline	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzoic Acid	"	"	"		0.500	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzyl alcohol	"	"	"		0.100	ND	"	
Bis(2-chloroethoxy)methane	"	"	"		0.100	ND	"	
Bis(2-chloroethyl)ether	"	"	"		0.100	ND	"	
Bis(2-chloroisopropyl)ether	"	"	"		0.100	ND	"	
Bis(2-ethylhexyl)phthalate	"	"	"		0.500	ND	"	
4-Bromophenyl phenyl ether	"	"	"		0.100	ND	"	
Butyl benzyl phthalate	"	"	"		0.100	ND	"	
Carbazole	"	"	"		0.500	ND	"	
4-Chloroaniline	"	"	"		0.100	ND	"	
2-Chloronaphthalene	"	"	"		0.100	ND	"	
4-Chloro-3-methylphenol	"	"	"		0.100	ND	"	
2-Chlorophenol	"	"	"		0.100	ND	"	
4-Chlorophenyl phenyl ether	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenzo (a,h) anthracene	"	"	"		0.100	ND	"	
Dibenzofuran	"	"	"		0.100	ND	"	
Di-n-butyl phthalate	"	"	"		0.500	ND	"	
1,3-Dichlorobenzene	"	"	"		0.100	ND	"	
1,4-Dichlorobenzene	"	"	"		0.100	ND	"	
1,2-Dichlorobenzene	"	"	"		0.100	ND	"	
3,3'-Dichlorobenzidine	"	"	"		5.00	ND	"	
2,4-Dichlorophenol	"	"	"		0.100	ND	"	
Diethyl phthalate	"	"	"		0.100	ND	"	
2,4-Dimethylphenol	"	"	"		0.100	ND	"	
Dimethyl phthalate	"	"	"		0.100	ND	"	
4,6-Dinitro-2-methylphenol	"	"	"		0.500	ND	"	
2,4-Dinitrophenol	"	"	"		0.500	ND	"	
2,4-Dinitrotoluene	"	"	"		0.100	ND	"	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Semivolatile Organic Compounds by EPA Method 8270B
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
HA-9 (continued)			B710115-09				Soil	
2,6-Dinitrotoluene	1070237	10/9/97	10/10/97		0.100	ND	mg/kg dry	
Di-n-octyl phthalate	"	"	"		0.500	ND	"	
Fluoranthene	"	"	"		0.100	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Hexachlorobenzene	"	"	"		0.100	ND	"	
Hexachlorobutadiene	"	"	"		0.100	ND	"	
Hexachlorocyclopentadiene	"	"	"		0.100	ND	"	
Hexachloroethane	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Isophorone	"	"	"		0.100	ND	"	
2-Methylnaphthalene	"	"	"		0.100	ND	"	
2-Methylphenol	"	"	"		0.100	ND	"	
3 & 4-Methylphenol	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.100	ND	"	
2-Nitroaniline	"	"	"		0.500	ND	"	
3-Nitroaniline	"	"	"		0.500	ND	"	
4-Nitroaniline	"	"	"		0.500	ND	"	
Nitrobenzene	"	"	"		0.100	ND	"	
2-Nitrophenol	"	"	"		0.100	ND	"	
4-Nitrophenol	"	"	"		0.500	ND	"	
N-Nitrosodiphenylamine	"	"	"		0.200	ND	"	
N-Nitrosodi-n-propylamine	"	"	"		0.100	ND	"	
Pentachlorophenol	"	"	"		0.500	ND	"	
Phenanthrene	"	"	"		0.100	ND	"	
Phenol	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.100	ND	"	
1,2,4-Trichlorobenzene	"	"	"		0.100	ND	"	
2,4,5-Trichlorophenol	"	"	"		0.500	ND	"	
2,4,6-Trichlorophenol	"	"	"		0.100	ND	"	
Surrogate: 2-FP	"	"	"	*19.0-141*		*52.1*	*%*	
Surrogate: Phenol-d6	"	"	"	*44.0-128*		*63.9*	"	
Surrogate: 2,4,6-TBP	"	"	"	*10.0-137*		*125*	"	
Surrogate: Nitrobenzene-d5	"	"	"	*33.0-108*		*58.8*	"	
Surrogate: 2-FBP	"	"	"	*51.0-124*		*72.2*	"	
Surrogate: p-Terphenyl-d14	"	"	"	*48.0-149*		*76.3*	"	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Dry Weight Determination
North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
HA-1	B710115-01	Soil	81.2	%
HA-2	B710115-02	Soil	85.2	%
HA-3	B710115-03	Soil	77.7	%
HA-4	B710115-04	Soil	91.6	%
HA-5	B710115-05	Soil	79.5	%
HA-6	B710115-06	Soil	91.1	%
HA-7	B710115-07	Soil	64.4	%
HA-8	B710115-08	Soil	87.4	%
HA-9	B710115-09	Soil	86.1	%
HA-10	B710115-10	Soil	74.0	%
SP-10	B710115-11	Soil	87.5	%
SP-25	B710115-12	Soil	91.2	%

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Gasoline Hydrocarbons (Toluene to Dodecane) by NWTPH-Gx/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Note
Batch: 1070289	**Date Prepared: 10/10/97**					**Extraction Method: EPA 5030 (MeOH)**				
Blank	**1070289-BLK1**									
Gasoline	10/11/97			ND	mg/kg dry	5.00				
Aviation Gasoline	"			ND	"	5.00				
Mineral Spirits	"			ND	"	5.00				
Weathered Gasoline	"			ND	"	5.00				
VM&P Naphtha	"			ND	"	5.00				
Gasoline Range Hydrocarbons	"			ND	"	5.00				
Surrogate: 4-BFB (FID)	"	*4.00*		*3.65*	"	*50.0-150*	*91.3*			
LCS	**1070289-BS1**									
Gasoline	10/11/97	25.0		21.2	mg/kg dry	75.0-125	84.8			
Surrogate: 4-BFB (FID)	"	*4.00*		*4.36*	"	*50.0-150*	*109*			
Duplicate	**1070289-DUP1**	**B710074-24**								
Gasoline Range Hydrocarbons	10/11/97		149	120	mg/kg dry			50.0	**21.6**	
Surrogate: 4-BFB (FID)	"	*4.93*		*5.01*	"	*50.0-150*	*102*			
Duplicate	**1070289-DUP2**	**B710115-06**								
Gasoline Range Hydrocarbons	10/13/97		36.0	39.6	mg/kg dry			50.0	**9.52**	
Surrogate: 4-BFB (FID)	"	*4.39*		*5.34*	"	*50.0-150*	*122*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Volatile Petroleum Hydrocarbons by WDOE Interim TPH Policy Method/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1070467	**Date Prepared: 10/17/97**					**Extraction Method: EPA 5030 (MeOH)**				
Blank	**1070467-BLK1**									
C5-C6 Aliphatics	10/17/97			ND	mg/kg dry	5.00				
C6-C8 Aliphatics	"			ND	"	5.00				
C8-C10 Aliphatics	"			ND	"	5.00				
C10-C12 Aliphatics	"			ND	"	5.00				
C8-C10 Aromatics	"			ND	"	5.00				
C10-C12 Aromatics	"			ND	"	5.00				
C12-C13 Aromatics	"			ND	"	5.00				
Surrogate: 4-BFB (FID)	"	*4.00*		*4.40*	"	*60.0-140*	*110*			
Surrogate: 4-BFB (PID)	"	*4.00*		*4.28*	"	*60.0-140*	*107*			
LCS	**1070467-BS1**									
C5-C6 Aliphatics	10/17/97	2.00		2.55	mg/kg dry	70.0-130	127			
C6-C8 Aliphatics	"	1.00		1.27	"	70.0-130	127			
C8-C10 Aliphatics	"	1.00		1.55	"	70.0-130	155			9
C10-C12 Aliphatics	"	1.00		1.21	"	70.0-130	121			
C8-C10 Aromatics	"	4.00		4.09	"	70.0-130	102			
C10-C12 Aromatics	"	1.00		1.18	"	70.0-130	118			
C12-C13 Aromatics	"	1.00		0.992	"	70.0-130	99.2			
Surrogate: 4-BFB (FID)	"	*4.00*		*4.18*	"	*60.0-140*	*104*			
Surrogate: 4-BFB (PID)	"	*4.00*		*4.26*	"	*60.0-140*	*107*			
Duplicate	**1070467-DUP1**		**B710115-06**							
C5-C6 Aliphatics	10/17/97		ND	ND	mg/kg dry			25.0		
C6-C8 Aliphatics	"		ND	ND	"			25.0		
C8-C10 Aliphatics	"		ND	ND	"			25.0		
C10-C12 Aliphatics	"		ND	ND	"			25.0		
C8-C10 Aromatics	"		ND	ND	"			25.0		
C10-C12 Aromatics	"		28.2	ND	"			25.0		
C12-C13 Aromatics	"		56.0	47.3	"			25.0	**16.8**	
Surrogate: 4-BFB (FID)	"	*4.39*		*4.41*	"	*60.0-140*	*100*			
Surrogate: 4-BFB (PID)	"	*4.39*		*4.54*	"	*60.0-140*	*103*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

BTEX, MTBE and Naphthalene by WDOE Interim TPH Policy Method using GC/MS/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1070174	**Date Prepared: 10/8/97**					**Extraction Method: EPA 5030 [MeOH]**				
Blank	**1070174-BLK1**									
Methyl tert-butyl ether	10/8/97			ND	mg/kg dry	1.00				
Benzene	"			ND	"	0.200				
Toluene	"			ND	"	0.200				
Ethylbenzene	"			ND	"	0.200				
m,p-Xylene	"			ND	"	0.400				
o-Xylene	"			ND	"	0.200				
Naphthalene	"			ND	"	0.200				
Surrogate: 2-Bromopropene	"	*2.00*		*1.76*	"	*70.0-130*	*88.0*			
Surrogate: 1,2-DCA-d4	"	*2.00*		*1.71*	"	*70.0-130*	*85.5*			
Surrogate: Toluene-d8	"	*2.00*		*2.10*	"	*70.0-130*	*105*			
Surrogate: 4-BFB	"	*2.00*		*2.10*	"	*70.0-130*	*105*			
LCS	**1070174-BS1**									
Benzene	10/8/97	1.00		1.00	mg/kg dry	70.0-130	100			
Toluene	"	1.00		0.956	"	70.0-130	95.6			
Surrogate: 2-Bromopropene	"	*2.00*		*1.47*	"	*70.0-130*	*73.5*			
Surrogate: 1,2-DCA-d4	"	*2.00*		*1.95*	"	*70.0-130*	*97.5*			
Surrogate: Toluene-d8	"	*2.00*		*2.13*	"	*70.0-130*	*107*			
Surrogate: 4-BFB	"	*2.00*		*2.20*	"	*70.0-130*	*110*			
Matrix Spike	**1070174-MS1**		**B710115-03**							
Benzene	10/8/97	1.29	ND	1.12	mg/kg dry	70.0-130	86.8			
Toluene	"	1.29	ND	1.11	"	70.0-130	86.0			
Surrogate: 2-Bromopropene	"	*2.57*		*1.81*	"	*70.0-130*	*70.4*			
Surrogate: 1,2-DCA-d4	"	*2.57*		*2.11*	"	*70.0-130*	*82.1*			
Surrogate: Toluene-d8	"	*2.57*		*2.34*	"	*70.0-130*	*91.1*			
Surrogate: 4-BFB	"	*2.57*		*2.41*	"	*70.0-130*	*93.8*			
Matrix Spike Dup	**1070174-MSD1**		**B710115-03**							
Benzene	10/8/97	1.29	ND	1.14	mg/kg dry	70.0-130	88.4	20.0	1.83	
Toluene	"	1.29	ND	1.10	"	70.0-130	85.3	20.0	0.817	
Surrogate: 2-Bromopropene	"	*2.57*		*1.96*	"	*70.0-130*	*76.3*			
Surrogate: 1,2-DCA-d4	"	*2.57*		*2.16*	"	*70.0-130*	*84.0*			
Surrogate: Toluene-d8	"	*2.57*		*2.30*	"	*70.0-130*	*89.5*			
Surrogate: 4-BFB	"	*2.57*		*2.36*	"	*70.0-130*	*91.8*			

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Geo Engineers - Redmond	Project: Family Fun Center (FFC)	Sampled:	10/6/97
8410 154th Ave NE	Project Number: 5925-002-37	Received:	10/7/97
Redmond, WA 98052	Project Manager: Lisa Bona	Reported:	10/24/97 15:48

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Note
Batch: 1070212	**Date Prepared: 10/9/97**					**Extraction Method: EPA 3550**				
Blank	**1070212-BLK1**									
Diesel #2	10/12/97			**ND**	mg/kg dry	**10.0**				
Kerosene Range Hydrocarbons	"			**ND**	"	**10.0**				
Diesel Range Hydrocarbons	"			**ND**	"	**10.0**				
Fuel Oil #6 (Bunker C)	"			**ND**	"	**25.0**				
Transformer Oil	"			**ND**	"	**25.0**				
Motor Oil	"			**ND**	"	**25.0**				
Hydraulic Oil	"			**ND**	"	**25.0**				
Fuel Oil #2	"			**ND**	"	**25.0**				
Heavy Oil Range Hydrocarbons	"			**ND**	"	**25.0**				
Surrogate: 2-FBP	"	*11.9*		*9.58*	"	*50.0-150*	*80.5*			
LCS	**1070212-BS1**									
Diesel #2	10/12/97	66.7		57.2	mg/kg dry	50.0-150	85.8			
Surrogate: 2-FBP	"	*11.9*		*9.89*	"	*50.0-150*	*83.1*			
Duplicate	**1070212-DUP1**		**B710115-12**							
Diesel #2	10/15/97		ND	ND	mg/kg dry			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		6860	5450	"			50.0	**22.9**	
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Hydraulic Oil	"		ND	ND	"			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Heavy Oil Range Hydrocarbons	"		31700	25500	"			50.0	**21.7**	
Surrogate: 2-FBP	*10/12/97*	*13.1*		*ND*	"	*50.0-150*	*NR*			
Duplicate	**1070212-DUP2**		**B710074-09**							
Diesel #2	10/12/97		ND	ND	mg/kg dry			50.0		
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Hydraulic Oil	"		ND	ND	"			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Heavy Oil Range Hydrocarbons	"		ND	ND	"			50.0		

North Creek Analytical, Inc.

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Note
Duplicate (continued)	1070212-DUP2		B710074-09							
Surrogate: 2-FBP	*10/12/97*	*13.6*		*10.9*	*mg/kg dry*	*50.0-150*	*80.1*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Extractable Petroleum Hydrocarbons by WDOE Interim TPH Policy Method/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Batch: 1070240	**Date Prepared: 10/9/97**					**Extraction Method: EPA 3550**				
Blank	**1070240-BLK1**									
C8-C10 Aliphatics	10/12/97			ND	mg/kg dry	5.00				
C10-C12 Aliphatics	"			ND	"	5.00				
C12-C16 Aliphatics	"			ND	"	5.00				
C16-C21 Aliphatics	"			ND	"	5.00				
C21-C34 Aliphatics	"			ND	"	5.00				
C10-C12 Aromatics	"			ND	"	5.00				
C12-C16 Aromatics	"			ND	"	5.00				
C16-C21 Aromatics	"			ND	"	5.00				
C21-C34 Aromatics	"			ND	"	5.00				
Surrogate: Octacosane	"	*11.8*		*11.0*	"	*50.0-150*	*93.2*			
Surrogate: 2-FBP	"	*11.7*		*8.56*	"	*50.0-150*	*73.2*			
LCS	**1070240-BS1**									
C8-C10 Aliphatics	10/12/97	1.67		1.07	mg/kg dry	60.0-140	64.1			
C10-C12 Aliphatics	"	1.67		1.14	"	60.0-140	68.3			
C12-C16 Aliphatics	"	1.67		1.26	"	60.0-140	75.4			
C16-C21 Aliphatics	"	1.67		1.44	"	60.0-140	86.2			
C21-C34 Aliphatics	"	1.67		1.42	"	60.0-140	85.0			
C10-C12 Aromatics	"	1.67		1.19	"	60.0-140	71.3			
C12-C16 Aromatics	"	5.00		3.47	"	60.0-140	69.4			
C16-C21 Aromatics	"	8.33		6.68	"	60.0-140	80.2			
C21-C34 Aromatics	"	13.3		11.6	"	60.0-140	87.2			
Surrogate: Octacosane	"	*11.8*		*11.2*	"	*50.0-150*	*94.9*			
Surrogate: 2-FBP	"	*11.7*		*8.29*	"	*50.0-150*	*70.9*			
LCS Dup	**1070240-BSD1**									
C8-C10 Aliphatics	10/12/97	1.67		1.08	mg/kg dry	60.0-140	64.7	40.0	0.932	
C10-C12 Aliphatics	"	1.67		1.16	"	60.0-140	69.5	40.0	1.74	
C12-C16 Aliphatics	"	1.67		1.32	"	60.0-140	79.0	40.0	4.66	
C16-C21 Aliphatics	"	1.67		1.51	"	60.0-140	90.4	40.0	4.76	
C21-C34 Aliphatics	"	1.67		1.48	"	60.0-140	88.6	40.0	4.15	
C10-C12 Aromatics	"	1.67		0.897	"	60.0-140	53.7	40.0	28.2	10
C12-C16 Aromatics	"	5.00		3.61	"	60.0-140	72.2	40.0	3.95	
C16-C21 Aromatics	"	8.33		7.09	"	60.0-140	85.1	40.0	5.93	
C21-C34 Aromatics	"	13.3		12.2	"	60.0-140	91.7	40.0	5.03	
Surrogate: Octacosane	"	*11.8*		*11.7*	"	*50.0-150*	*99.2*			
Surrogate: 2-FBP	"	*11.7*		*8.70*	"	*50.0-150*	*74.4*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Extractable Petroleum Hydrocarbons by WDOE Interim TPH Policy Method/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike	1070240-MS1		B710115-03							
C8-C10 Aliphatics	10/12/97	2.15	ND	1.24	mg/kg dry	60.0-140	57.7			
C10-C12 Aliphatics	"	2.15	ND	1.48	"	60.0-140	68.8			
C12-C16 Aliphatics	"	2.15	ND	2.53	"	60.0-140	118			
C16-C21 Aliphatics	"	2.15	16.1	12.4	"	60.0-140	NR			
C21-C34 Aliphatics	"	2.15	143	101	"	60.0-140	NR			9
C10-C12 Aromatics	"	2.15	ND	1.60	"	60.0-140	74.4			
C12-C16 Aromatics	"	6.44	ND	4.91	"	60.0-140	76.2			
C16-C21 Aromatics	"	10.7	ND	11.4	"	60.0-140	107			
C21-C34 Aromatics	"	17.2	36.8	42.7	"	60.0-140	34.3			9
Surrogate: Octacosane	"	*15.2*		*14.3*	"	*50.0-150*	*94.1*			
Surrogate: 2-FBP	"	*15.0*		*10.6*	"	*50.0-150*	*70.7*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Total Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1070275	**Date Prepared: 10/15/97**					**Extraction Method: BrCl Digestion**				
Blank	1070275-BLK1									
Mercury	10/16/97			ND	mg/kg dry	0.0500				
LCS	1070275-BS1									
Mercury	10/16/97	0.250		0.243	mg/kg dry	80.0-120	97.2			
Duplicate	1070275-DUP1		B710081-10							
Mercury	10/16/97		0.0860	0.0784	mg/kg dry			20.0	9.25	
Matrix Spike	1070275-MS1		B710081-10							
Mercury	10/16/97	0.288	0.0860	0.345	mg/kg dry	80.0-120	89.9			
Matrix Spike Dup	1070275-MSD1		B710081-10							
Mercury	10/16/97	0.282	0.0860	0.344	mg/kg dry	80.0-120	91.5	20.0	1.76	
Batch: 1070395	**Date Prepared: 10/15/97**					**Extraction Method: EPA 3050**				
Blank	1070395-BLK1									
Antimony	10/15/97			ND	mg/kg dry	5.00				
Arsenic	"			ND	"	10.0				
Barium	10/16/97			ND	"	0.500				
Beryllium	10/15/97			ND	"	0.250				
Cadmium	"			ND	"	0.250				
Chromium	"			ND	"	0.500				
Copper	"			ND	"	1.50				
Lead	"			ND	"	10.0				
Nickel	"			ND	"	1.50				
Selenium	"			ND	"	7.50				
Thallium	"			ND	"	10.0				
Zinc	"			ND	"	1.00				
Silver	10/16/97			ND	"	1.00				
LCS	1070395-BS1									
Antimony	10/15/97	50.0		39.4	mg/kg dry	70.0-130	78.8			
Arsenic	"	50.0		44.3	"	70.0-130	88.6			
Barium	10/16/97	50.0		39.2	"	70.0-130	78.4			
Beryllium	10/15/97	50.0		39.6	"	70.0-130	79.2			
Cadmium	"	50.0		42.0	"	70.0-130	84.0			
Chromium	"	50.0		40.8	"	70.0-130	81.6			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Total Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
LCS (continued)	1070395-BS1									
Copper	10/15/97	50.0		40.5	mg/kg dry	70.0-130	81.0			
Lead	"	50.0		40.8	"	70.0-130	81.6			
Nickel	"	50.0		37.9	"	70.0-130	75.8			
Selenium	"	50.0		38.0	"	70.0-130	76.0			
Thallium	"	50.0		40.1	"	70.0-130	80.2			
Zinc	"	50.0		40.3	"	70.0-130	80.6			
Silver	10/16/97	50.0		49.6	"	75.0-125	99.2			
LCS	1070395-BS2									
Antimony	10/15/97	65.0		68.1	mg/kg dry	70.0-130	105			
Arsenic	"	71.5		66.0	"	70.0-130	92.3			
Barium	10/16/97	91.1		64.6	"	70.0-130	70.9			
Beryllium	10/15/97	104		82.9	"	70.0-130	79.7			
Cadmium	"	58.8		49.1	"	70.0-130	83.5			
Chromium	"	90.2		69.8	"	70.0-130	77.4			
Copper	"	178		145	"	70.0-130	81.5			
Lead	"	143		108	"	70.0-130	75.5			
Nickel	"	73.6		52.5	"	70.0-130	71.3			
Selenium	"	67.5		61.0	"	70.0-130	90.4			
Zinc	"	91.0		71.8	"	70.0-130	78.9			
Silver	10/16/97	73.3		69.4	"	75.0-125	94.7			
Duplicate	1070395-DUP1		B710115-10							
Antimony	10/15/97		ND	ND	mg/kg dry			20.0		
Arsenic	"		ND	ND	"			20.0		
Barium	10/16/97		63.4	58.3	"			20.0	8.38	
Beryllium	10/15/97		ND	ND	"			20.0		
Cadmium	"		ND	ND	"			20.0		
Chromium	"		14.2	14.6	"			20.0	2.78	
Copper	"		24.9	24.1	"			20.0	3.27	
Lead	"		ND	10.1	"			20.0		
Nickel	"		11.9	10.9	"			20.0	8.77	
Selenium	"		ND	ND	"			20.0		
Thallium	"		ND	ND	"			20.0		
Zinc	"		60.2	59.5	"			20.0	1.17	
Silver	10/16/97		ND	ND	"			20.0		

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Total Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike	1070395-MS1		B710115-10							
Antimony	10/15/97	69.0	ND	15.1	mg/kg dry	40.0-120	21.9			
Arsenic	"	69.0	ND	48.0	"	60.0-140	69.6			
Barium	10/16/97	69.0	63.4	106	"	70.0-130	61.7			
Beryllium	10/15/97	69.0	ND	52.8	"	70.0-130	76.5			
Cadmium	"	69.0	ND	54.3	"	70.0-130	78.7			
Chromium	"	69.0	14.2	66.1	"	70.0-130	75.2			
Copper	"	69.0	24.9	77.1	"	70.0-130	75.7			
Lead	"	69.0	ND	61.1	"	70.0-130	88.6			
Nickel	"	69.0	11.9	62.8	"	70.0-130	73.8			
Selenium	"	69.0	ND	47.2	"	60.0-140	68.4			
Thallium	"	69.0	ND	62.8	"	60.0-140	91.0			
Zinc	"	69.0	60.2	115	"	70.0-130	79.4			
Silver	10/16/97	69.0	ND	65.2	"	75.0-125	94.5			
Matrix Spike	1070395-MS2		B710115-10							
Antimony	10/15/97	134	ND	110	mg/kg dry	40.0-120	82.1			
Arsenic	"	134	ND	113	"	60.0-140	84.3			
Barium	10/16/97	134	63.4	178	"	70.0-130	85.5			
Beryllium	10/15/97	134	ND	115	"	70.0-130	85.8			
Cadmium	"	134	ND	117	"	70.0-130	87.3			
Chromium	"	134	14.2	131	"	70.0-130	87.2			
Copper	"	134	24.9	145	"	70.0-130	89.6			
Lead	"	134	ND	124	"	70.0-130	92.5			
Nickel	"	134	11.9	121	"	70.0-130	81.4			
Selenium	"	134	ND	107	"	60.0-140	79.9			
Thallium	"	134	ND	133	"	60.0-140	99.3			
Zinc	"	134	60.2	181	"	70.0-130	90.1			
Matrix Spike Dup	1070395-MSD1		B710115-10							
Antimony	10/15/97	68.3	ND	24.0	mg/kg dry	40.0-120	35.1	20.0	46.3	4
Arsenic	"	68.3	ND	46.9	"	60.0-140	68.7	20.0	1.30	
Barium	10/16/97	68.3	63.4	107	"	70.0-130	63.8	20.0	3.35	4
Beryllium	10/15/97	68.3	ND	54.1	"	70.0-130	79.2	20.0	3.47	
Cadmium	"	68.3	ND	54.6	"	70.0-130	79.9	20.0	1.51	
Chromium	"	68.3	14.2	67.6	"	70.0-130	78.2	20.0	3.91	
Copper	"	68.3	24.9	79.5	"	70.0-130	79.9	20.0	5.40	
Lead	"	68.3	ND	67.1	"	70.0-130	98.2	20.0	10.3	
Nickel	"	68.3	11.9	60.9	"	70.0-130	71.7	20.0	2.89	

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8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Total Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Matrix Spike Dup (continued)	1070395-MSD1		B710115-10							
Selenium	10/15/97	68.3	ND	49.3	mg/kg dry	60.0-140	72.2	20.0	5.41	
Thallium	"	68.3	ND	44.9	"	60.0-140	65.7	20.0	32.3	
Zinc	"	68.3	60.2	119	"	70.0-130	86.1	20.0	8.10	
Silver	10/16/97	68.3	ND	63.2	"	75.0-125	92.5	20.0	2.14	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Organochlorine Pesticides and PCBs by EPA Method 8081/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1070378	Date Prepared: 10/15/97					Extraction Method: EPA 3550				
Blank	1070378-BLK1									
Aldrin	10/20/97			ND	ug/kg dry	1.00				
alpha-BHC	"			ND	"	0.500				
beta-BHC	"			ND	"	0.900				
delta-BHC	"			ND	"	0.600				
gamma-BHC (Lindane)	"			ND	"	1.00				
Chlordane (tech)	"			ND	"	1.00				
alpha-Chlordane	"			ND	"	0.800				
gamma-Chlordane	"			ND	"	0.700				
4,4'-DDD	"			ND	"	1.00				
4,4'-DDE	"			ND	"	1.00				
4,4'-DDT	"			ND	"	1.00				
Dieldrin	"			ND	"	2.00				
Endosulfan I	"			ND	"	1.00				
Endosulfan II	"			ND	"	2.00				
Endosulfan sulfate	"			ND	"	1.00				
Endrin	"			ND	"	2.00				
Endrin aldehyde	"			ND	"	2.00				
Heptachlor	"			ND	"	1.00				
Heptachlor epoxide	"			ND	"	1.00				
Methoxychlor	"			ND	"	4.00				
Toxaphene	"			ND	"	50.0				
Aroclor 1016	10/21/97			ND	"	50.0				7,8
Aroclor 1221	"			ND	"	50.0				7,
Aroclor 1232	"			ND	"	50.0				7,o
Aroclor 1242	"			ND	"	50.0				7,8
Aroclor 1248	"			ND	"	50.0				7,
Aroclor 1254	"			ND	"	50.0				7,
Aroclor 1260	"			ND	"	50.0				7,8
Aroclor 1262	"			ND	"	50.0				7,°
Aroclor 1268	"			ND	"	50.0				7,
Surrogate: TCX	"	*6.67*		*5.83*	"	*38.0-117*	*87.4*			*7,8*
LCS	1070378-BS1									
Aldrin	10/20/97	8.33		6.65	ug/kg dry	35.0-138	79.8			
gamma-BHC (Lindane)	"	8.33		8.84	"	44.0-137	106			
Heptachlor	"	8.33		6.60	"	40.0-146	79.2			
Aroclor 1260	10/21/97	333		334	"	37.0-98.0	100			7,8,!

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*Refer to end of report for text of notes and definitions.

Joy B Chang, Project Manager

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Organochlorine Pesticides and PCBs by EPA Method 8081/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
LCS (continued)	**1070378-BS1**									
Surrogate: TCX	*10/21/97*	*6.67*		*5.92*	*ug/kg dry*	*38.0-117*	*88.8*			*7,*
Matrix Spike	**1070378-MS1**		**B710115-01**							
Aldrin	10/20/97	10.3	ND	7.92	ug/kg dry	35.0-138	**76.9**			
gamma-BHC (Lindane)	"	10.3	ND	11.6	"	44.0-137	**113**			
Heptachlor	"	10.3	ND	10.4	"	40.0-146	**101**			
Aroclor 1260	10/21/97	410	ND	494	"	37.0-98.0	**120**			7,8,
Surrogate: TCX	"	*8.21*		*6.97*	"	*38.0-117*	*84.9*			*7,*
Matrix Spike Dup	**1070378-MSD1**		**B710115-01**							
Aldrin	10/24/97	10.3	ND	6.90	ug/kg dry	35.0-138	**67.0**	33.0	**13.8**	
gamma-BHC (Lindane)	"	10.3	ND	9.81	"	44.0-137	**95.2**	35.0	**17.1**	
Heptachlor	"	10.3	ND	9.13	"	40.0-146	**88.6**	32.0	**13.1**	
Aroclor 1260	10/21/97	410	ND	478	"	37.0-98.0	**117**	38.0	**2.53**	7,8,
Surrogate: TCX	"	*8.21*		*6.92*	"	*38.0-117*	*84.3*			*7,*

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Volatile Organic Compounds by EPA Method 8240B/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Batch: 1070174	**Date Prepared: 10/8/97**					**Extraction Method: EPA 5030 [MeOH]**				
Blank	**1070174-BLK1**									
Acetone	10/8/97			ND	mg/kg dry	2.00				
Benzene	"			ND	"	0.200				
Bromodichloromethane	"			ND	"	0.200				
Bromoform	"			ND	"	0.200				
Bromomethane	"			ND	"	0.200				
2-Butanone	"			ND	"	2.00				
Carbon disulfide	"			ND	"	0.200				
Carbon tetrachloride	"			ND	"	0.200				
Chlorobenzene	"			ND	"	0.200				
Chloroethane	"			ND	"	0.200				
Chloroform	"			ND	"	0.200				
Chloromethane	"			ND	"	0.200				
Dibromochloromethane	"			ND	"	0.200				
1,2-Dichlorobenzene	"			ND	"	0.200				
1,3-Dichlorobenzene	"			ND	"	0.200				
1,4-Dichlorobenzene	"			ND	"	0.200				
1,1-Dichloroethane	"			ND	"	0.200				
1,2-Dichloroethane	"			ND	"	0.200				
1,1-Dichloroethene	"			ND	"	0.200				
cis-1,2-Dichloroethene	"			ND	"	0.200				
trans-1,2-Dichloroethene	"			ND	"	0.200				
1,2-Dichloropropane	"			ND	"	0.200				
cis-1,3-Dichloropropene	"			ND	"	0.200				
trans-1,3-Dichloropropene	"			ND	"	0.200				
Ethylbenzene	"			ND	"	0.200				
2-Hexanone	"			ND	"	2.00				
Methylene chloride	"			ND	"	1.00				
4-Methyl-2-pentanone	"			ND	"	2.00				
Styrene	"			ND	"	0.200				
1,1,2,2-Tetrachloroethane	"			ND	"	0.200				
Tetrachloroethene	"			ND	"	0.200				
Toluene	"			ND	"	0.200				
1,1,1-Trichloroethane	"			ND	"	0.200				
1,1,2-Trichloroethane	"			ND	"	0.200				
Trichloroethene	"			ND	"	0.200				
Vinyl chloride	"			ND	"	0.200				
Xylenes (total)	"			ND	"	0.400				

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Volatile Organic Compounds by EPA Method 8240B/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Blank (continued)	**1070174-BLK1**									
Surrogate: 2-Bromopropene	*10/8/97*	*2.00*		*1.76*	*mg/kg dry*	*70.0-130*	*88.0*			
Surrogate: 1,2-DCA-d4	*"*	*2.00*		*1.71*	*"*	*70.0-130*	*85.5*			
Surrogate: Toluene-d8	*"*	*2.00*		*2.10*	*"*	*70.0-130*	*105*			
Surrogate: 4-BFB	*"*	*2.00*		*2.10*	*"*	*70.0-130*	*105*			
LCS	**1070174-BS1**									
Benzene	10/8/97	1.00		1.00	mg/kg dry	70.0-130	100			
Chlorobenzene	"	1.00		0.927	"	70.0-130	92.7			
1,1-Dichloroethene	"	1.00		0.712	"	70.0-130	71.2			
Toluene	"	1.00		0.956	"	70.0-130	95.6			
Trichloroethene	"	1.00		0.864	"	70.0-130	86.4			
Surrogate: 2-Bromopropene	*"*	*2.00*		*1.47*	*"*	*70.0-130*	*73.5*			
Surrogate: 1,2-DCA-d4	*"*	*2.00*		*1.95*	*"*	*70.0-130*	*97.5*			
Surrogate: Toluene-d8	*"*	*2.00*		*2.13*	*"*	*70.0-130*	*107*			
Surrogate: 4-BFB	*"*	*2.00*		*2.20*	*"*	*70.0-130*	*110*			
Matrix Spike	**1070174-MS1**		**B710115-03**							
Benzene	10/8/97	1.29	ND	1.12	mg/kg dry	70.0-130	86.8			
Chlorobenzene	"	1.29	ND	1.04	"	70.0-130	80.6			
1,1-Dichloroethene	"	1.29	ND	1.08	"	70.0-130	83.7			
Toluene	"	1.29	ND	1.11	"	70.0-130	86.0			
Trichloroethene	"	1.29	ND	0.961	"	70.0-130	74.5			
Surrogate: 2-Bromopropene	*"*	*2.57*		*1.81*	*"*	*70.0-130*	*70.4*			
Surrogate: 1,2-DCA-d4	*"*	*2.57*		*2.11*	*"*	*70.0-130*	*82.1*			
Surrogate: Toluene-d8	*"*	*2.57*		*2.34*	*"*	*70.0-130*	*91.1*			
Surrogate: 4-BFB	*"*	*2.57*		*2.41*	*"*	*70.0-130*	*93.8*			
Matrix Spike Dup	**1070174-MSD1**		**B710115-03**							
Benzene	10/8/97	1.29	ND	1.14	mg/kg dry	70.0-130	88.4	15.0	1.83	
Chlorobenzene	"	1.29	ND	1.05	"	70.0-130	81.4	15.0	0.988	
1,1-Dichloroethene	"	1.29	ND	1.12	"	70.0-130	86.8	15.0	3.64	
Toluene	"	1.29	ND	1.10	"	70.0-130	85.3	15.0	0.817	
Trichloroethene	"	1.29	ND	0.967	"	70.0-130	75.0	15.0	0.669	
Surrogate: 2-Bromopropene	*"*	*2.57*		*1.96*	*"*	*70.0-130*	*76.3*			
Surrogate: 1,2-DCA-d4	*"*	*2.57*		*2.16*	*"*	*70.0-130*	*84.0*			
Surrogate: Toluene-d8	*"*	*2.57*		*2.30*	*"*	*70.0-130*	*89.5*			
Surrogate: 4-BFB	*"*	*2.57*		*2.36*	*"*	*70.0-130*	*91.8*			

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Geo Engineers - Redmond	Project: Family Fun Center (FFC)	Sampled:	10/6/97
8410 154th Ave NE	Project Number: 5925-002-37	Received:	10/7/97
Redmond, WA 98052	Project Manager: Lisa Bona	Reported:	10/24/97 15:48

Semivolatile Organic Compounds by EPA Method 8270B/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1070237	**Date Prepared: 10/9/97**				**Extraction Method: EPA 3550**					
Blank	**1070237-BLK1**									
Acenaphthene	10/10/97			ND	mg/kg dry	0.100				
Acenaphthylene	"			ND	"	0.100				
Aniline	"			ND	"	0.100				
Anthracene	"			ND	"	0.100				
Benzoic Acid	"			ND	"	0.500				
Benzo (a) anthracene	"			ND	"	0.100				
Benzo (b) fluoranthene	"			ND	"	0.100				
Benzo (k) fluoranthene	"			ND	"	0.100				
Benzo (ghi) perylene	"			ND	"	0.100				
Benzo (a) pyrene	"			ND	"	0.100				
Benzyl alcohol	"			ND	"	0.100				
Bis(2-chloroethoxy)methane	"			ND	"	0.100				
Bis(2-chloroethyl)ether	"			ND	"	0.100				
Bis(2-chloroisopropyl)ether	"			ND	"	0.100				
Bis(2-ethylhexyl)phthalate	"			ND	"	0.500				
4-Bromophenyl phenyl ether	"			ND	"	0.100				
Butyl benzyl phthalate	"			ND	"	0.100				
Carbazole	"			ND	"	0.500				
4-Chloroaniline	"			ND	"	0.100				
2-Chloronaphthalene	"			ND	"	0.100				
4-Chloro-3-methylphenol	"			ND	"	0.100				
2-Chlorophenol	"			ND	"	0.100				
4-Chlorophenyl phenyl ether	"			ND	"	0.100				
Chrysene	"			ND	"	0.100				
Dibenzo (a,h) anthracene	"			ND	"	0.100				
Dibenzofuran	"			ND	"	0.100				
Di-n-butyl phthalate	"			ND	"	0.500				
1,3-Dichlorobenzene	"			ND	"	0.100				
1,4-Dichlorobenzene	"			ND	"	0.100				
1,2-Dichlorobenzene	"			ND	"	0.100				
3,3'-Dichlorobenzidine	"			ND	"	5.00				
2,4-Dichlorophenol	"			ND	"	0.100				
Diethyl phthalate	"			ND	"	0.100				
2,4-Dimethylphenol	"			ND	"	0.100				
Dimethyl phthalate	"			ND	"	0.100				
4,6-Dinitro-2-methylphenol	"			ND	"	0.500				
2,4-Dinitrophenol	"			ND	"	0.500				

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Semivolatile Organic Compounds by EPA Method 8270B/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Blank (continued)	**1070237-BLK1**									
2,4-Dinitrotoluene	10/10/97			**ND**	mg/kg dry	**0.100**				
2,6-Dinitrotoluene	"			**ND**	"	**0.100**				
Di-n-octyl phthalate	"			**ND**	"	**0.500**				
Fluoranthene	"			**ND**	"	**0.100**				
Fluorene	"			**ND**	"	**0.100**				
Hexachlorobenzene	"			**ND**	"	**0.100**				
Hexachlorobutadiene	"			**ND**	"	**0.100**				
Hexachlorocyclopentadiene	"			**ND**	"	**0.100**				
Hexachloroethane	"			**ND**	"	**0.100**				
Indeno (1,2,3-cd) pyrene	"			**ND**	"	**0.100**				
Isophorone	"			**ND**	"	**0.100**				
2-Methylnaphthalene	"			**ND**	"	**0.100**				
2-Methylphenol	"			**ND**	"	**0.100**				
3 & 4-Methylphenol	"			**ND**	"	**0.100**				
Naphthalene	"			**ND**	"	**0.100**				
2-Nitroaniline	"			**ND**	"	**0.500**				
3-Nitroaniline	"			**ND**	"	**0.500**				
4-Nitroaniline	"			**ND**	"	**0.500**				
Nitrobenzene	"			**ND**	"	**0.100**				
2-Nitrophenol	"			**ND**	"	**0.100**				
4-Nitrophenol	"			**ND**	"	**0.500**				
N-Nitrosodiphenylamine	"			**ND**	"	**0.200**				
N-Nitrosodi-n-propylamine	"			**ND**	"	**0.100**				
Pentachlorophenol	"			**ND**	"	**0.500**				
Phenanthrene	"			**ND**	"	**0.100**				
Phenol	"			**ND**	"	**0.100**				
Pyrene	"			**ND**	"	**0.100**				
1,2,4-Trichlorobenzene	"			**ND**	"	**0.100**				
2,4,5-Trichlorophenol	"			**ND**	"	**0.500**				
2,4,6-Trichlorophenol	"			**ND**	"	**0.100**				
Surrogate: 2-FP	"	*1.67*		*0.893*	"	*19.0-141*	*53.5*			
Surrogate: Phenol-d6	"	*1.67*		*1.08*	"	*44.0-128*	*64.7*			
Surrogate: 2,4,6-TBP	"	*1.67*		*1.56*	"	*10.0-137*	*93.4*			
Surrogate: Nitrobenzene-d5	"	*1.67*		*0.997*	"	*33.0-108*	*59.7*			
Surrogate: 2-FBP	"	*1.67*		*1.11*	"	*51.0-124*	*66.5*			
Surrogate: p-Terphenyl-d14	"	*1.67*		*1.31*	"	*48.0-149*	*78.4*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Semivolatile Organic Compounds by EPA Method 8270B/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
LCS	1070237-BS1									
Acenaphthene	10/10/97	3.33		2.11	mg/kg dry	48.0-110	63.4			
4-Chloro-3-methylphenol	"	6.67		4.44	"	34.0-115	66.6			
2-Chlorophenol	"	6.67		4.27	"	57.0-110	64.0			
1,4-Dichlorobenzene	"	3.33		1.93	"	39.0-110	58.0			
2,4-Dinitrotoluene	"	3.33		2.13	"	50.0-110	64.0			
4-Nitrophenol	"	6.67		3.74	"	26.0-116	56.1			
N-Nitrosodi-n-propylamine	"	3.33		1.92	"	28.0-147	57.7			
Pentachlorophenol	"	6.67		5.48	"	46.0-120	82.2			
Phenol	"	6.67		4.26	"	35.0-110	63.9			
Pyrene	"	3.33		2.59	"	35.0-143	77.8			
1,2,4-Trichlorobenzene	"	3.33		2.25	"	39.0-110	67.6			
Surrogate: 2-FP	"	*1.67*		*0.897*	"	*19.0-141*	*53.7*			
Surrogate: Phenol-d6	"	*1.67*		*1.01*	"	*44.0-128*	*60.5*			
Surrogate: 2,4,6-TBP	"	*1.67*		*1.69*	"	*10.0-137*	*101*			
Surrogate: Nitrobenzene-d5	"	*1.67*		*0.950*	"	*33.0-108*	*56.9*			
Surrogate: 2-FBP	"	*1.67*		*0.991*	"	*51.0-124*	*59.3*			
Surrogate: p-Terphenyl-d14	"	*1.67*		*1.19*	"	*48.0-149*	*71.3*			
Matrix Spike	1070237-MS1		B710115-09							
Acenaphthene	10/10/97	3.87	ND	2.71	mg/kg dry	34.0-122	**70.0**			
4-Chloro-3-methylphenol	"	7.75	ND	5.42	"	26.0-129	**69.9**			
2-Chlorophenol	"	7.75	ND	5.49	"	43.0-131	**70.8**			
1,4-Dichlorobenzene	"	3.87	ND	2.65	"	34.0-131	**68.5**			
2,4-Dinitrotoluene	"	3.87	ND	2.77	"	10.0-126	**71.6**			
4-Nitrophenol	"	7.75	ND	4.54	"	10.0-111	**58.6**			
N-Nitrosodi-n-propylamine	"	3.87	ND	2.42	"	29.0-160	**62.5**			
Pentachlorophenol	"	7.75	ND	6.88	"	46.0-120	**88.8**			
Phenol	"	7.75	ND	5.32	"	41.0-118	**68.6**			
Pyrene	"	3.87	ND	3.52	"	44.0-122	**91.0**			
1,2,4-Trichlorobenzene	"	3.87	ND	2.90	"	10.0-176	**74.9**			
Surrogate: 2-FP	"	*1.94*		*1.14*	"	*19.0-141*	*58.8*			
Surrogate: Phenol-d6	"	*1.94*		*1.32*	"	*44.0-128*	*68.0*			
Surrogate: 2,4,6-TBP	"	*1.94*		*2.15*	"	*10.0-137*	*111*			
Surrogate: Nitrobenzene-d5	"	*1.94*		*1.17*	"	*33.0-108*	*60.3*			
Surrogate: 2-FBP	"	*1.94*		*1.39*	"	*51.0-124*	*71.6*			
Surrogate: p-Terphenyl-d14	"	*1.94*		*1.56*	"	*48.0-149*	*80.4*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Semivolatile Organic Compounds by EPA Method 8270B/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Matrix Spike Dup	**1070237-MSD1**		**B710115-09**							
Acenaphthene	10/10/97	3.87	ND	2.84	mg/kg dry	34.0-122	**73.4**	56.0	**4.74**	
4-Chloro-3-methylphenol	"	7.75	ND	5.58	"	26.0-129	**72.0**	29.0	**2.96**	
2-Chlorophenol	"	7.75	ND	5.82	"	43.0-131	**75.1**	27.0	**5.89**	
1,4-Dichlorobenzene	"	3.87	ND	2.86	"	34.0-131	**73.9**	23.0	**7.58**	
2,4-Dinitrotoluene	"	3.87	ND	2.85	"	10.0-126	**73.6**	22.0	**2.75**	
4-Nitrophenol	"	7.75	ND	4.72	"	10.0-111	**60.9**	43.0	**3.85**	
N-Nitrosodi-n-propylamine	"	3.87	ND	2.68	"	29.0-160	**69.3**	25.0	**10.3**	
Pentachlorophenol	"	7.75	ND	6.75	"	46.0-120	**87.1**	29.0	**1.93**	
Phenol	"	7.75	ND	5.61	"	41.0-118	**72.4**	29.0	**5.39**	
Pyrene	"	3.87	ND	3.67	"	44.0-122	**94.8**	31.0	**4.09**	
1,2,4-Trichlorobenzene	"	3.87	ND	2.86	"	10.0-176	**73.9**	24.0	**1.34**	
Surrogate: 2-FP	"	*1.94*		*1.20*	"	*19.0-141*	*61.9*			
Surrogate: Phenol-d6	"	*1.94*		*1.47*	"	*44.0-128*	*75.8*			
Surrogate: 2,4,6-TBP	"	*1.94*		*2.41*	"	*10.0-137*	*124*			
Surrogate: Nitrobenzene-d5	"	*1.94*		*1.19*	"	*33.0-108*	*61.3*			
Surrogate: 2-FBP	"	*1.94*		*1.45*	"	*51.0-124*	*74.7*			
Surrogate: p-Terphenyl-d14	"	*1.94*		*1.59*	"	*48.0-149*	*82.0*			

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/6/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/7/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 15:48

Notes and Definitions

#	Note
1	This sample appears to contain extractable diesel range organics.
2	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
3	Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
4	Multiple analyses indicate the percent recovery is outside the control limits due to a matrix effect.
5	The RPD value for this QC sample is above the established control limit. Review of associated QC indicates the high RPD does not represent an out-of-control condition for the batch.
6	Hit for Gamma-chlordane is unconfirmed due to possible coelution.
7	To reduce matrix interference, the sample extract has undergone sulfuric acid clean-up, method 3665, which is specific to hydrocarbon contamination.
8	To reduce matrix interference, the sample extract has undergone copper clean-up, method 3660, which is specific to sulfur contamination.
9	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.
10	Volatile range hydrocarbons appear to have been partially lost during extraction. Review of associated QC does not indicate 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
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

Joy B Chang, Project Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

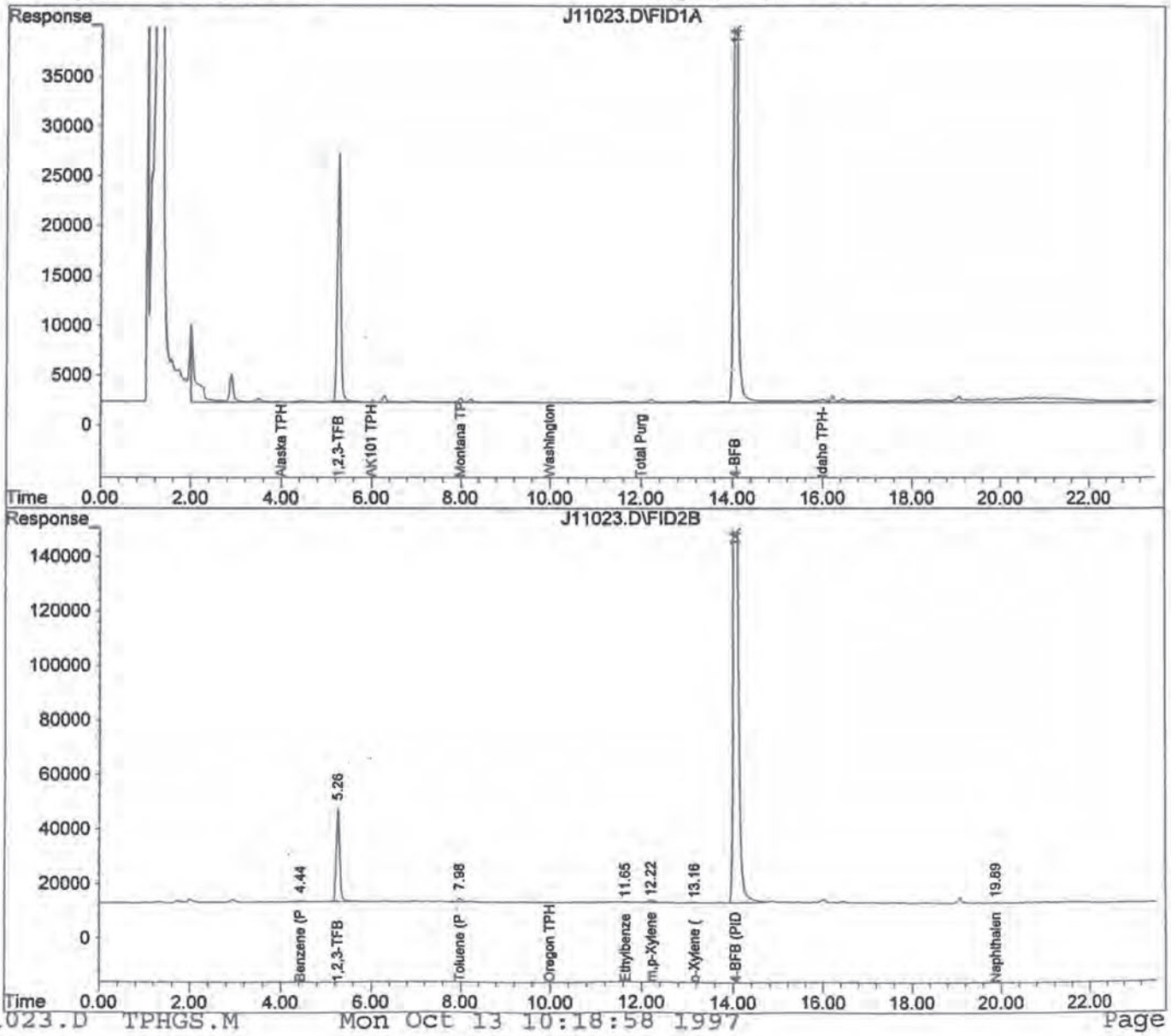
Quantitation Report

Data File : C:\HPCHEM\3\DATA\101197\J11023.D\FID1A.CH Vial: 23
Acq On : 11 Oct 1997 8:29 pm Operator: JCC
Sample : b710115-03 Inst : GC #6
Misc : 100 ul Multiplr: 1.00
IntFile : tph.e

Data File : C:\HPCHEM\3\DATA\101197\J11023.D\FID2B.CH Vial: 23
Acq On : 11 Oct 97 8:29 pm Operator: JCC
Sample : b710115-03 Inst : GC #6
Misc : 100 ul Multiplr: 1.00
IntFile : PID.E
Quant Time: Oct 13 10:18 1997 Quant Results File: TPHGS.RES

Quant Method : C:\HPCHEM\3\METHODS\TPHGS.M (Chemstation Integrator)
Title : TPH-G Soil Method
Last Update : Sat Sep 20 10:18:31 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHGS.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



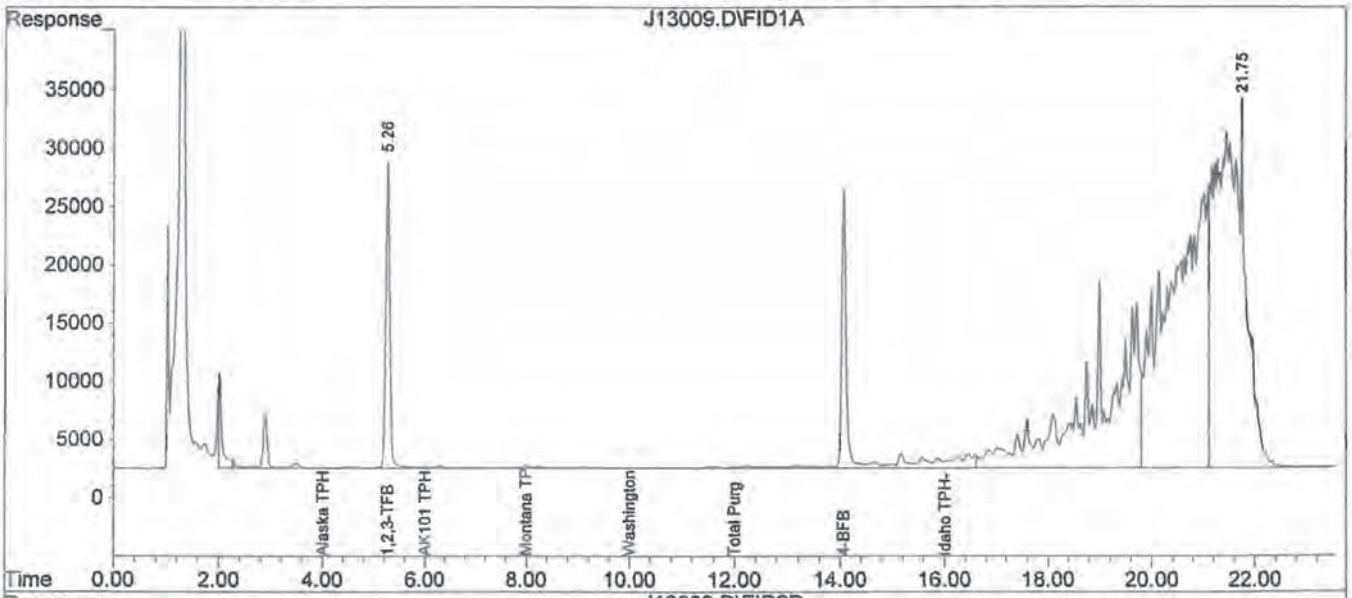
Quantitation Report

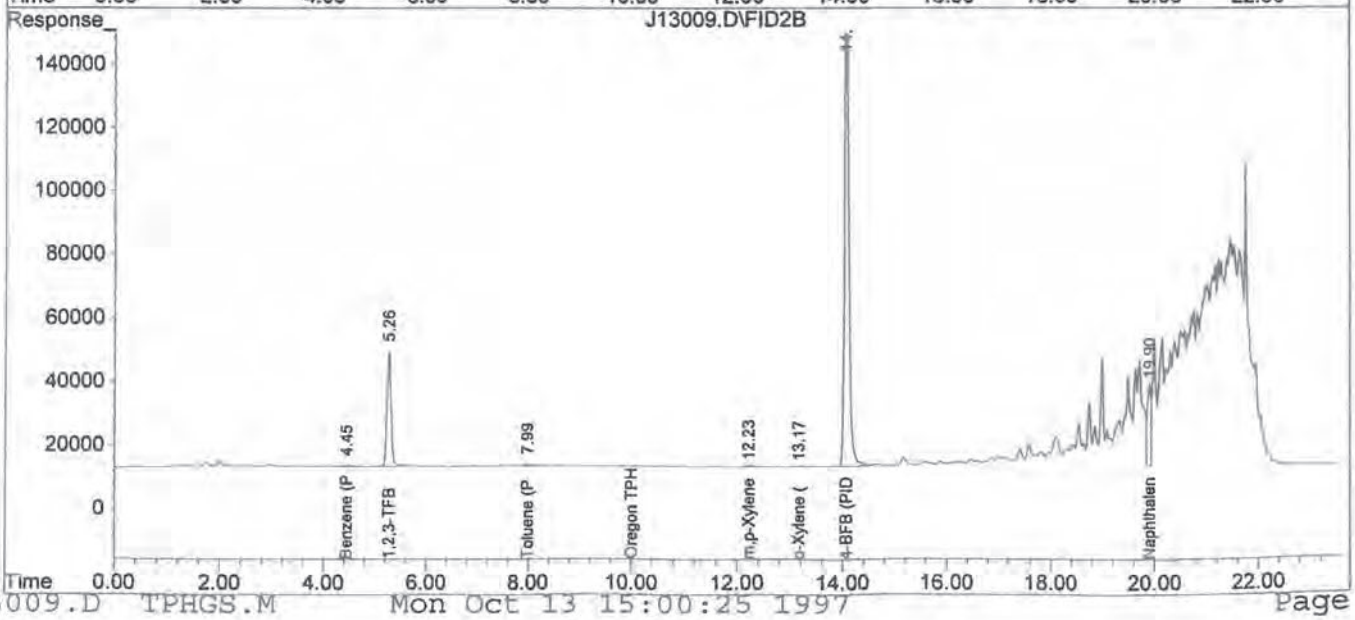
Data File : C:\HPCHEM\3\DATA\J13009.D\FID1A.CH Vial: 9
Acq On : 13 Oct 1997 2:36 pm Operator: AJG
Sample : b710115-06 r1 Inst : GC #6
Misc : 25 uL Multiplr: 4.00
IntFile : tph.e

Data File : C:\HPCHEM\3\DATA\J13009.D\FID2B.CH Vial: 9
Acq On : 13 Oct 97 2:36 pm Operator: AJG
Sample : b710115-06 r1 Inst : GC #6
Misc : 25 uL Multiplr: 4.00
IntFile : PID.E
Quant Time: Oct 13 15:00 1997 Quant Results File: TPHGS.RES

Quant Method : C:\HPCHEM\3\METHODS\TPHGS.M (Chemstation Integrator)
Title : TPH-G Soil Method
Last Update : Sat Sep 20 10:18:31 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHGS.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





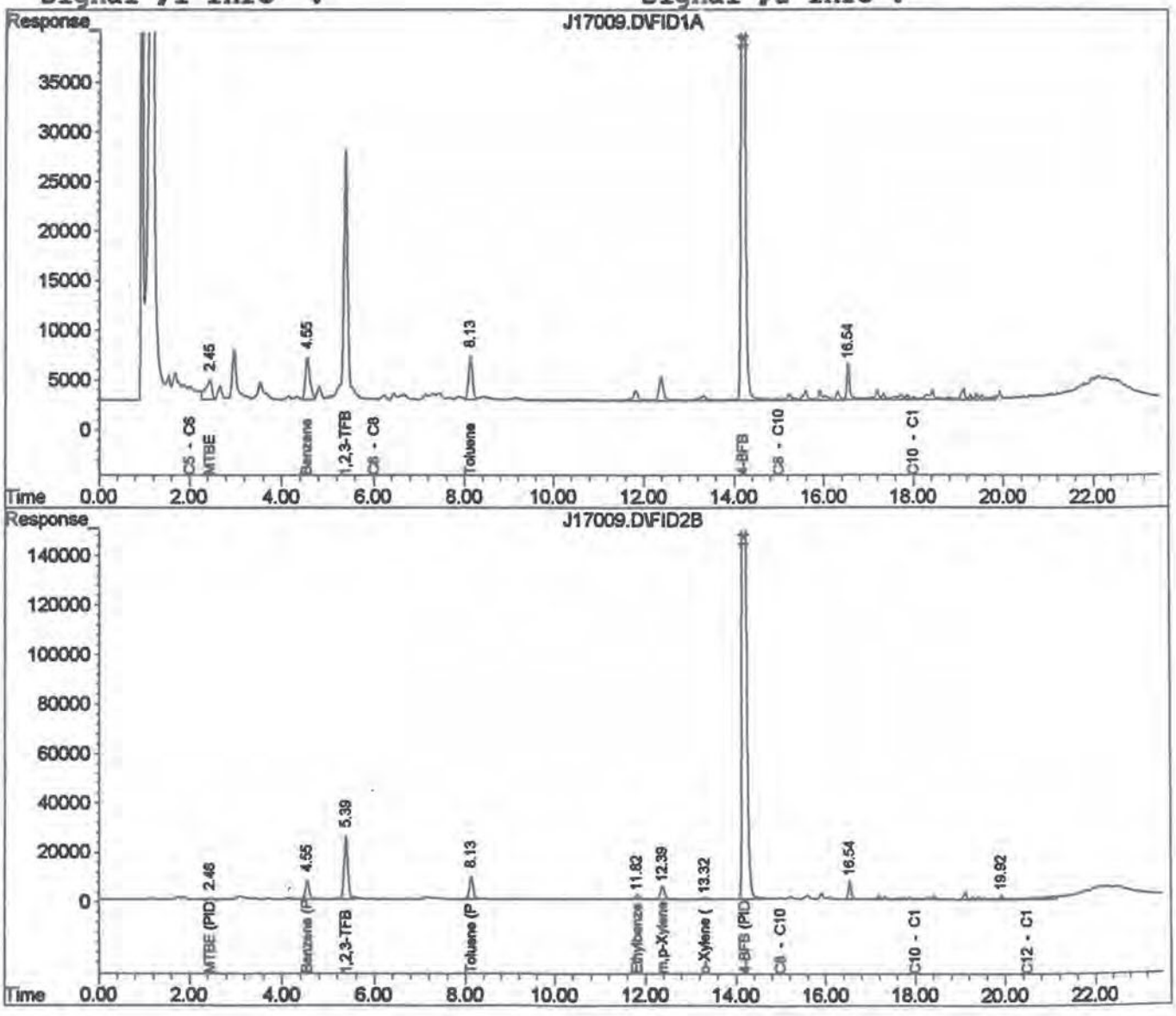
Quantitation Report

Data File : C:\HPCHEM\2\DATA\J17009.D\FID1A.CH Vial: 9
Acq On : 17 Oct 1997 9:39 am Operator: LAC
Sample : b710115-03 vph soil Inst : GC #4
Misc : 100 uL Multiplr: 1.00
IntFile : events.e

Data File : C:\HPCHEM\2\DATA\J17009.D\FID2B.CH Vial: 9
Acq On : 17 Oct 97 9:39 am Operator: LAC
Sample : b710115-03 vph soil Inst : GC #4
Misc : 100 uL Multiplr: 1.00
IntFile : events2.e
Quant Time: Oct 17 10:04 1997 Quant Results File: VPHS.RES

Quant Method : C:\HPCHEM\2\METHODS\VPHS.M (Chemstation Integrator)
Title : VPH Soil Method
Last Update : Mon Aug 25 06:30:48 1997
Response via : Multiple Level Calibration
DataAcq Meth : VPHS.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

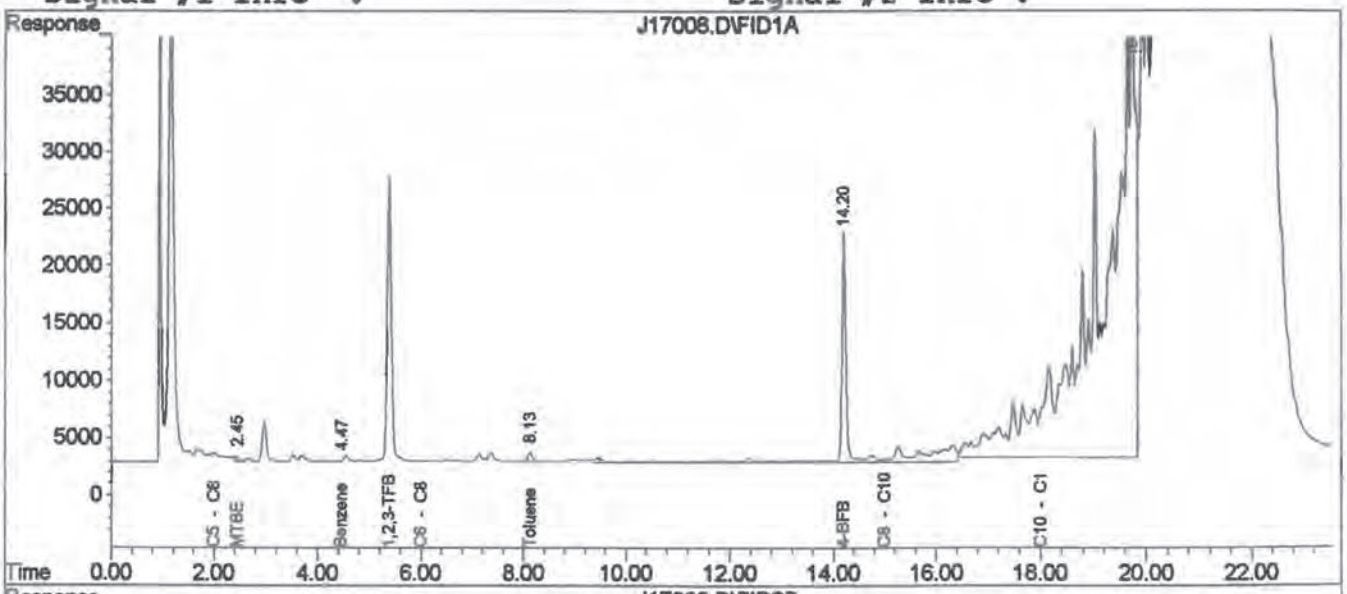


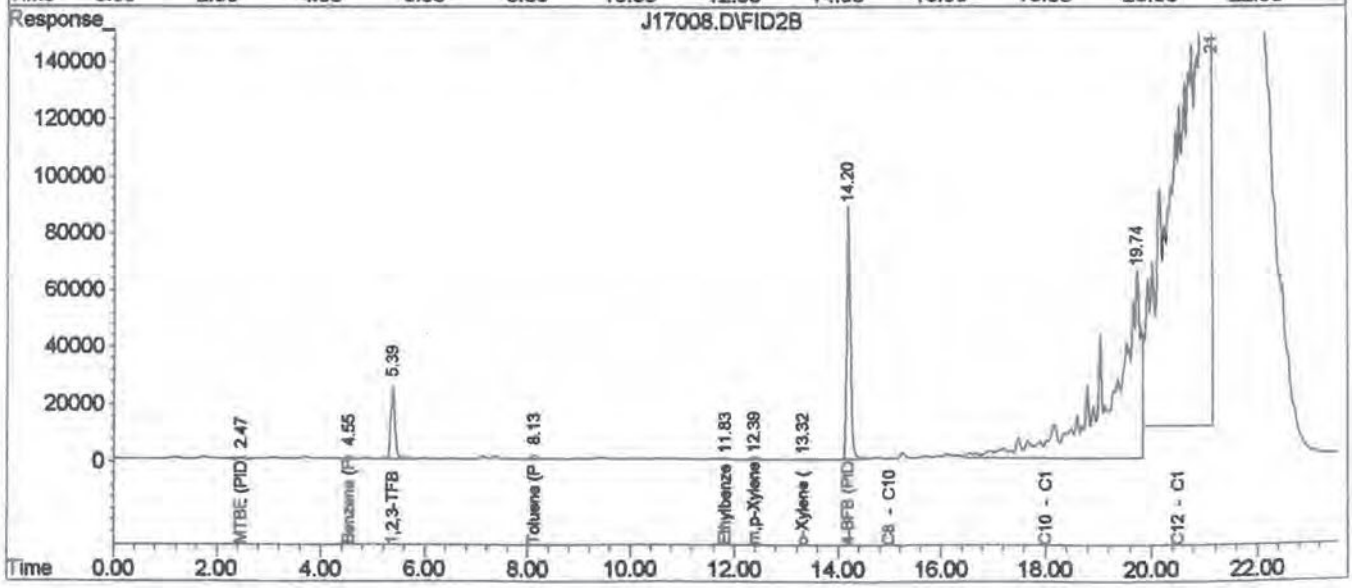
Data File : C:\HPCHEM\2\DATA\J17008.D\FID1A.CH Vial: 8
Acq On : 17 Oct 1997 9:10 am Operator: LAC
Sample : b710115-06 vph soil Inst : GC #4
Misc : 20 uL Multiplr: 5.00
IntFile : events.e

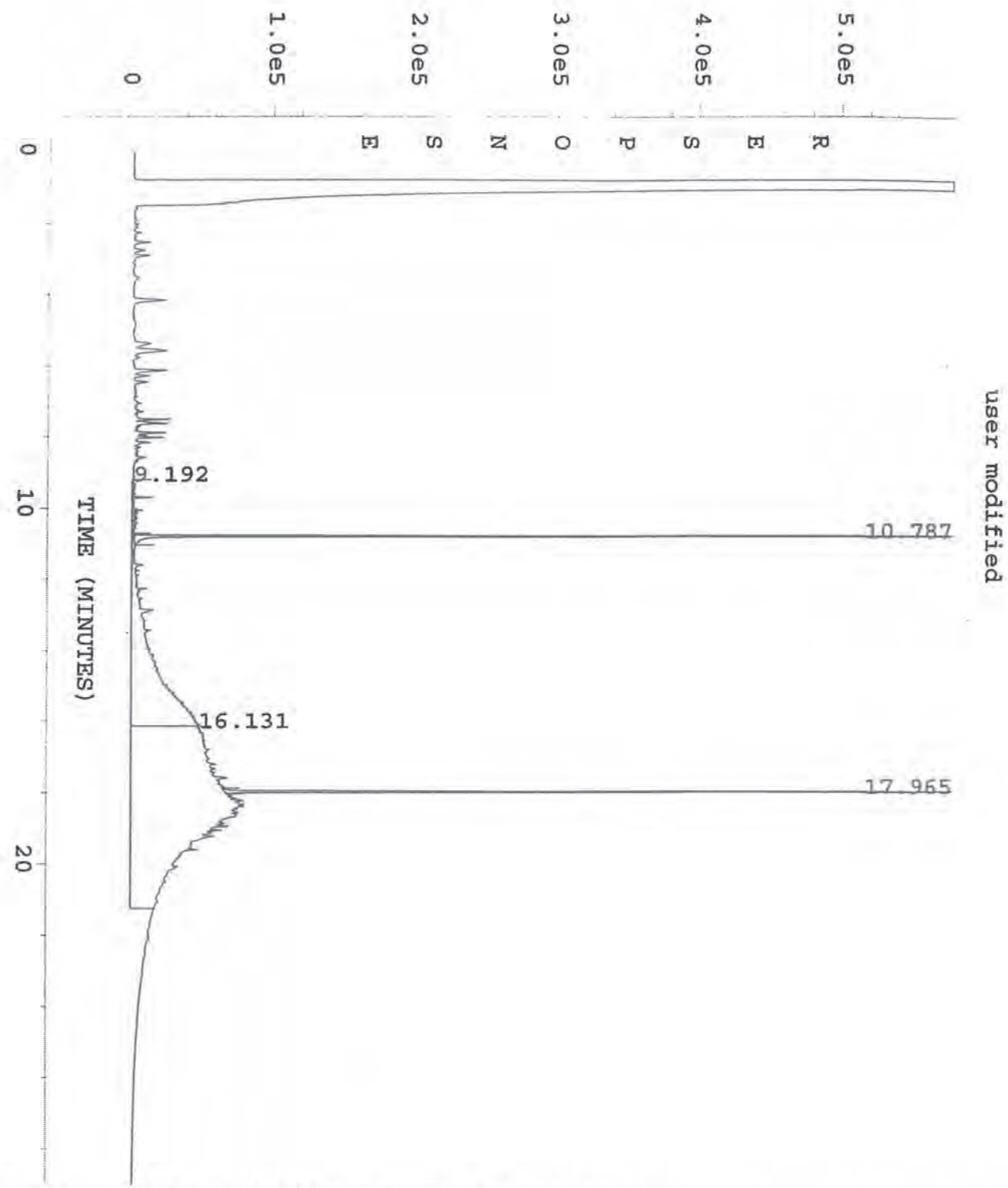
Data File : C:\HPCHEM\2\DATA\J17008.D\FID2B.CH Vial: 8
Acq On : 17 Oct 97 9:10 am Operator: LAC
Sample : b710115-06 vph soil Inst : GC #4
Misc : 20 uL Multiplr: 5.00
IntFile : events2.e
Quant Time: Oct 17 9:34 1997 Quant Results File: VPHS.RES

Quant Method : C:\HPCHEM\2\METHODS\VPHS.M (Chemstation Integrator)
Title : VPH Soil Method
Last Update : Mon Aug 25 06:30:48 1997
Response via : Multiple Level Calibration
DataAcq Meth : VPHS.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

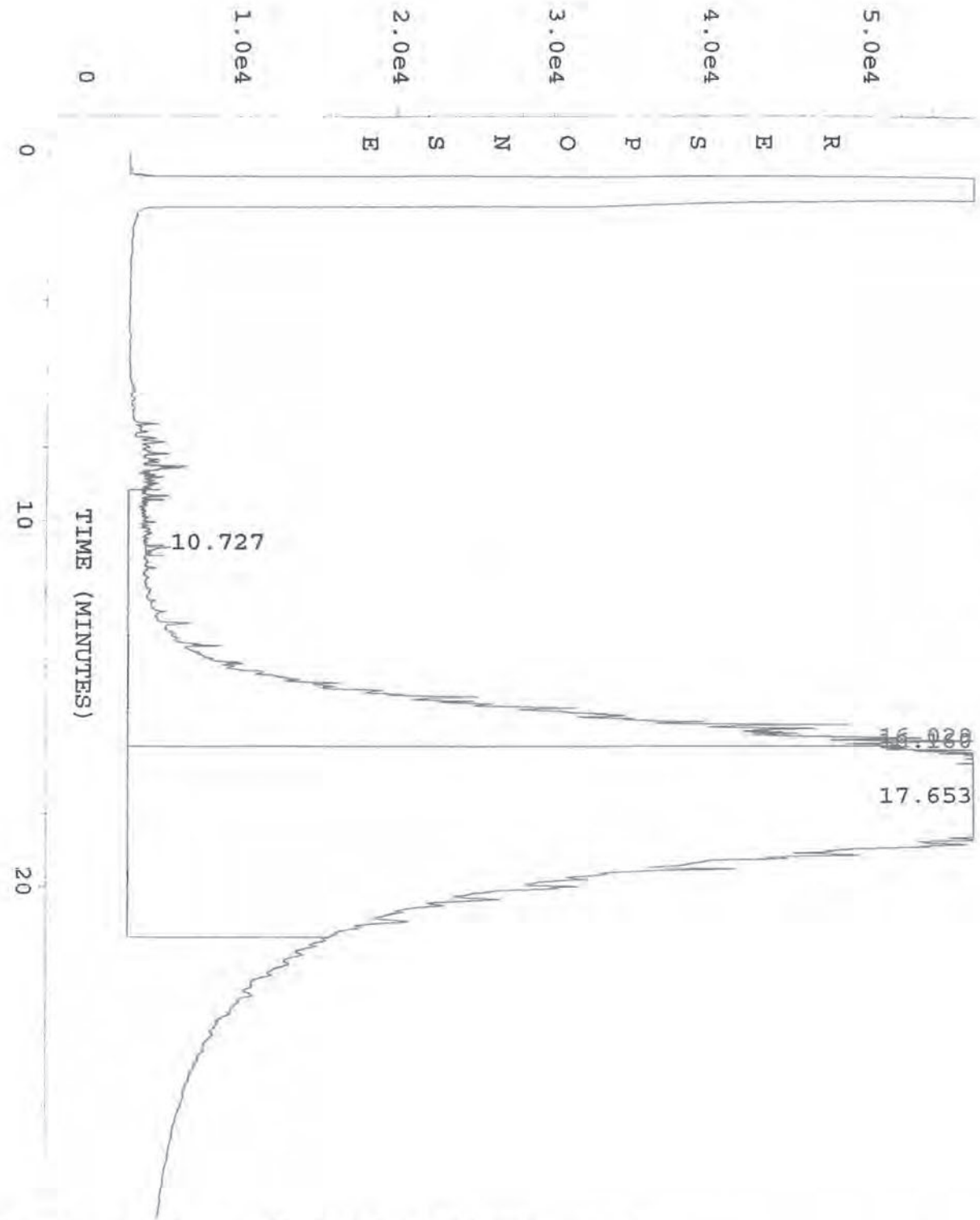






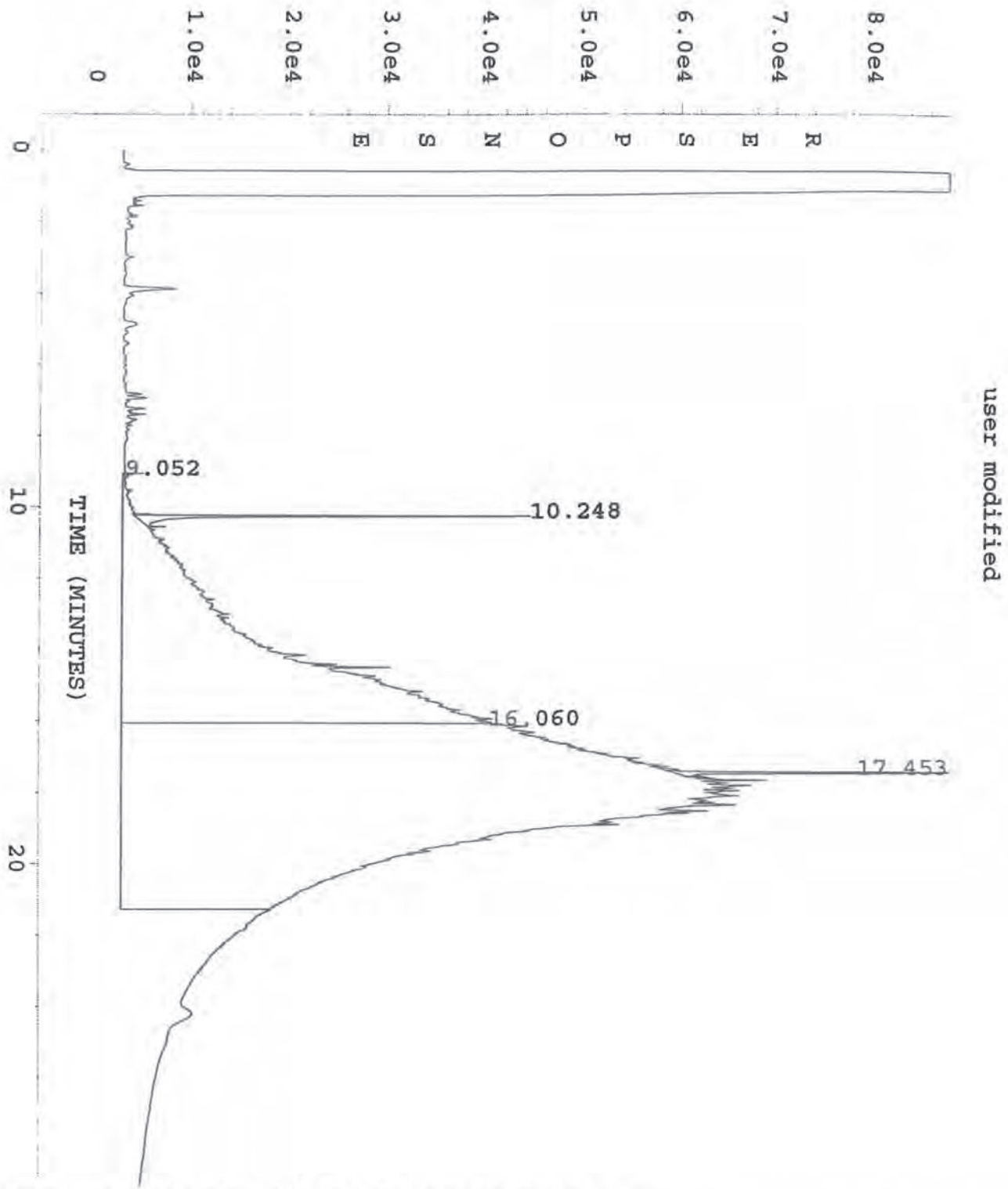
Data File Name : C:\HPCHEM\1\DATA\OCT12\056R0501.D
Operator : TF
Instrument : PHIL
Sample Name : 710115-03 S NW
Run Time Bar Code:
Acquired on : 12 Oct 97 04:15 PM
Report Created on: 13 Oct 97 08:32 AM

Page Number : 1
Vial Number : 56
Injection Number : 1
Sequence Line : 5
Instrument Method: TPHER.MTH
Analysis Method : TPHE.MTH



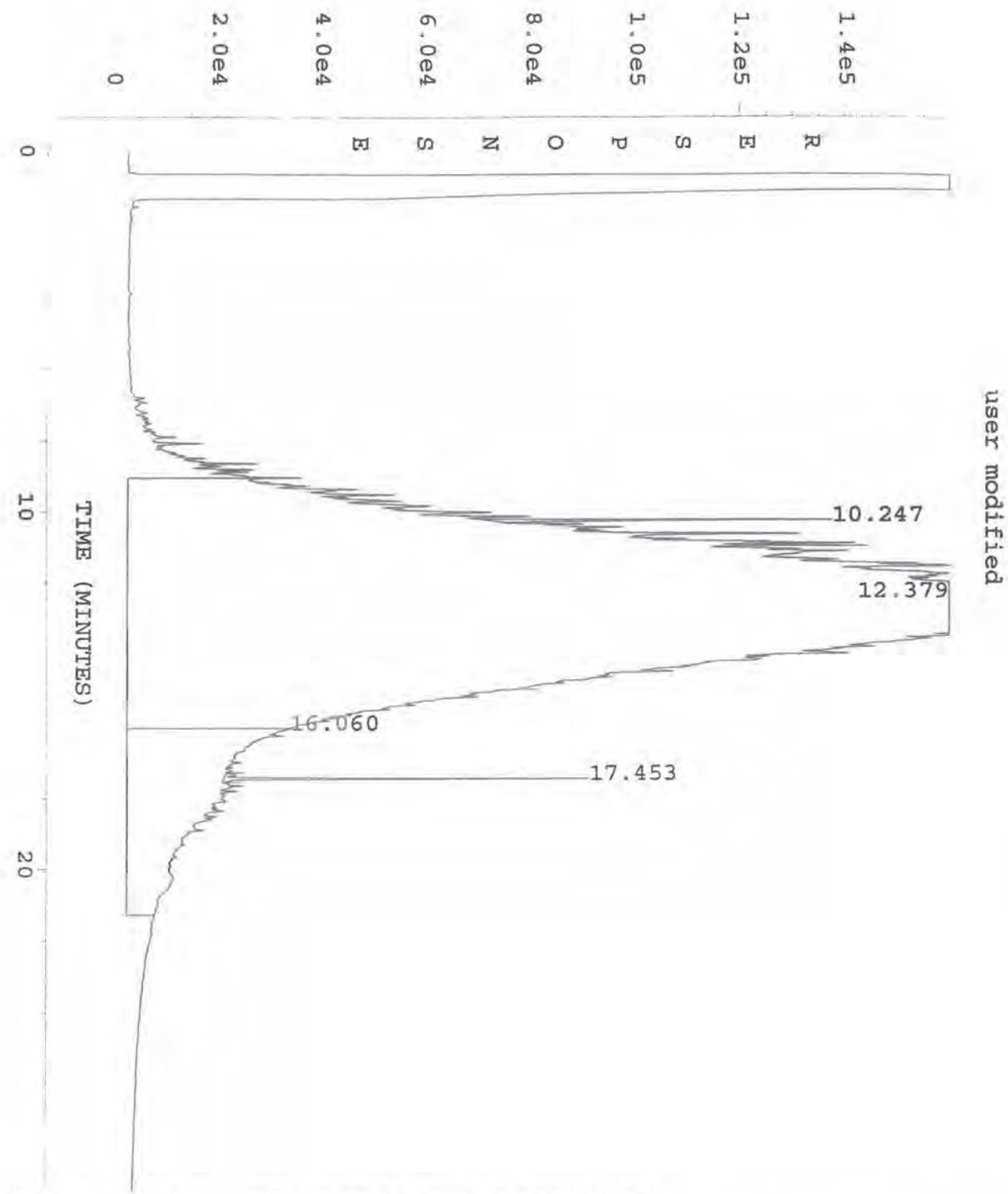
Data File Name : C:\HPCHEM\1\DATA\OCT14\016F1201.D
Operator : TF
Instrument : PHIL
Sample Name : 710115-04 s 101x
Run Time Bar Code:
Acquired on : 15 Oct 97 00:56 AM
Report Created on: 15 Oct 97 07:40 AM

Page Number : 1
Vial Number : 16
Injection Number : 1
Sequence Line : 12
Instrument Method: TPHER.MTH
Analysis Method : TPHE.MTH

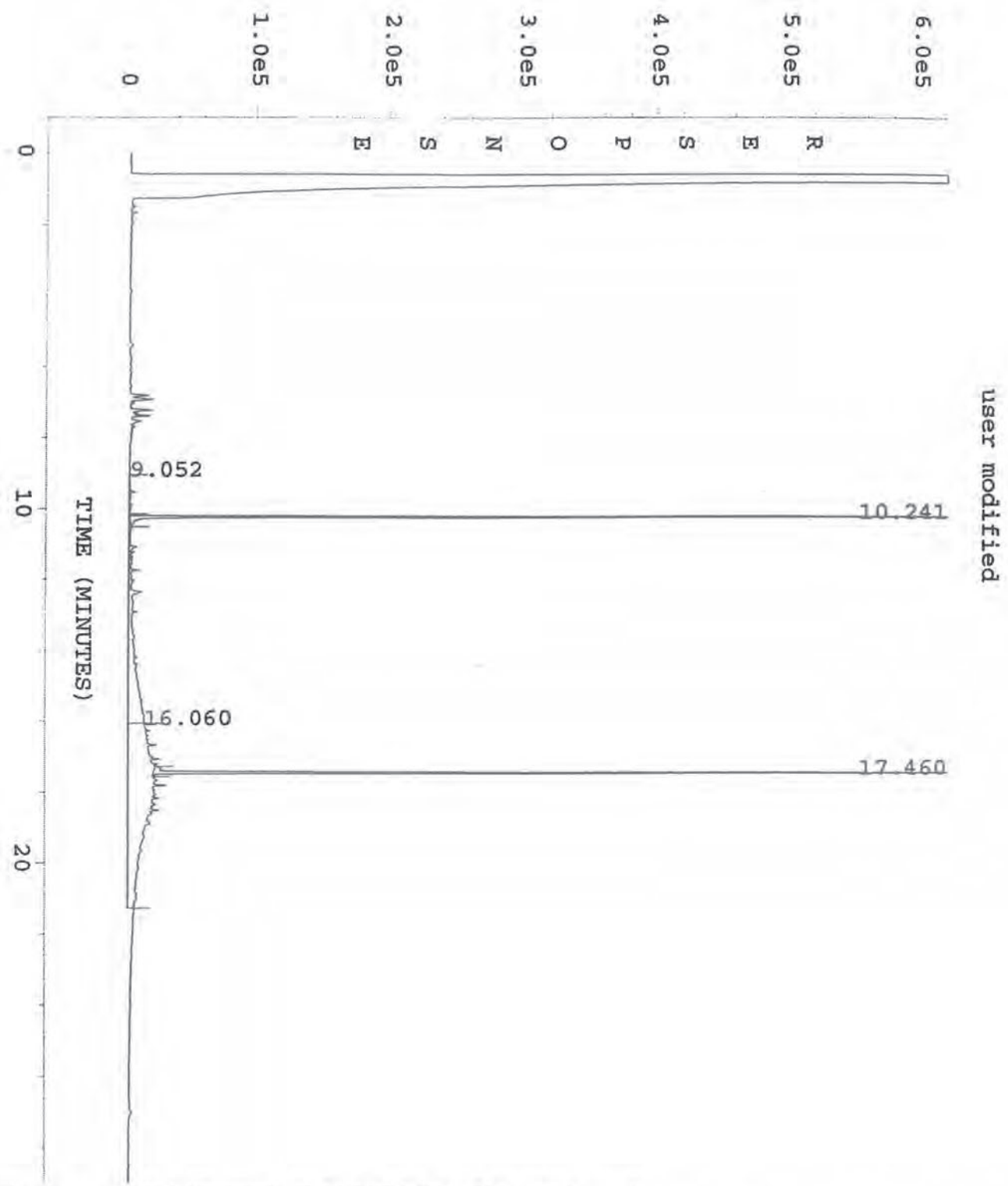


Data File Name : C:\HPCHEM\1\DATA\OCT13\009F0801.D
Operator : TF
Instrument : PHIL
Sample Name : 710115-05 S 11X
Run Time Bar Code:
Acquired on : 13 Oct 97 06:10 PM
Report Created on: 14 Oct 97 08:05 AM

Page Number : 1
Vial Number : 9
Injection Number : 1
Sequence Line : 8
Instrument Method: TPHER.MTH
Analysis Method : TPHE.MTH

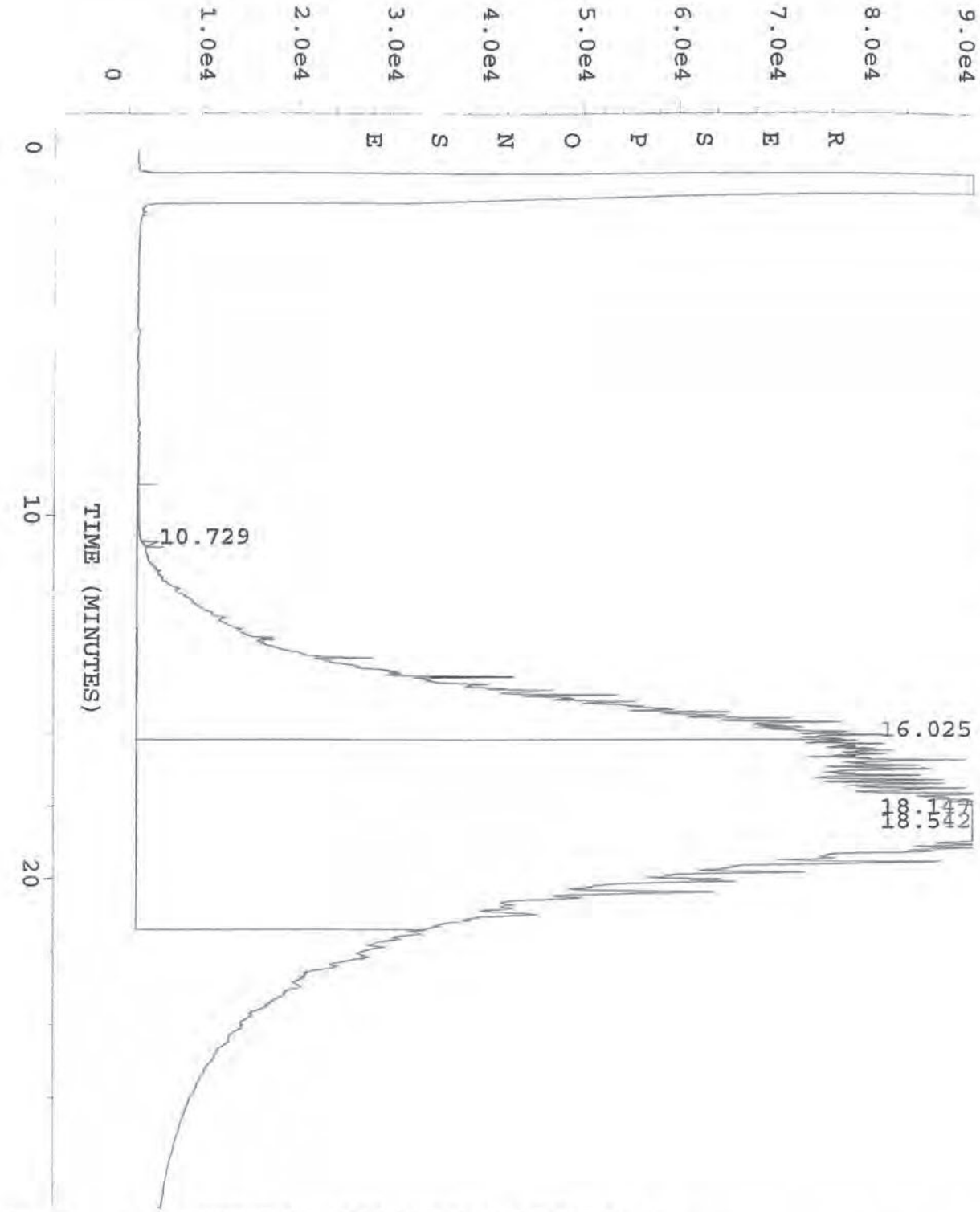


Data File Name	: C:\HPCHEM\1\DATA\OCT13\010F0801.D		
Operator	: TF	Page Number	: 1
Instrument	: PHIL	Vial Number	: 10
Sample Name	: 710115-06 S 11X	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 13 Oct 97 06:49 PM	Instrument Method	: TPHER.MTH
Report Created on:	14 Oct 97 08:05 AM	Analysis Method	: TPHE.MTH



Data File Name : C:\HPCHEM\1\DATA\OCT13\011F0701.D
Operator : TF
Instrument : PHIL
Sample Name : 710115-07 S
Run Time Bar Code:
Acquired on : 13 Oct 97 05:32 PM
Report Created on: 14 Oct 97 08:04 AM

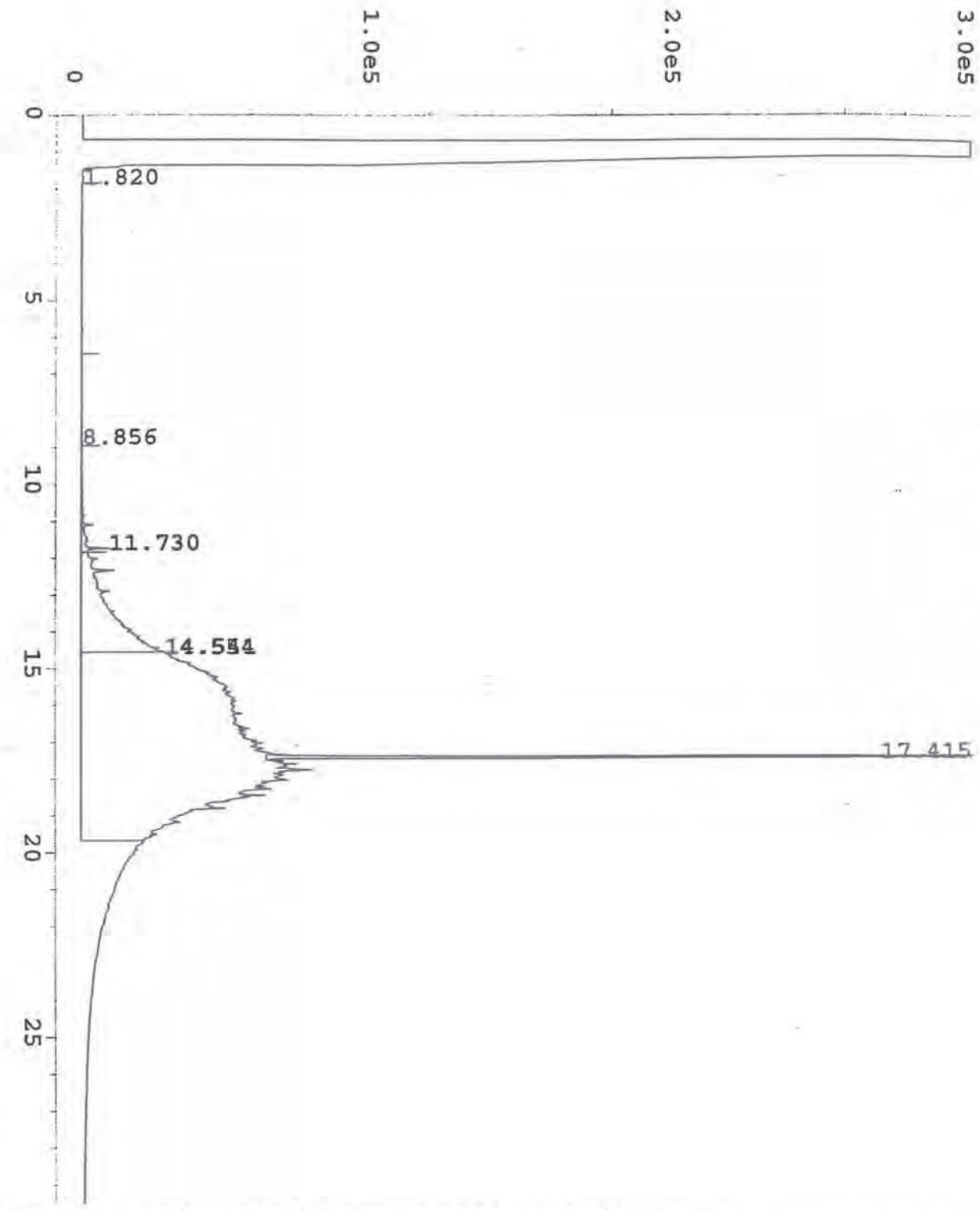
Page Number : 1
Vial Number : 11
Injection Number : 1
Sequence Line : 7
Instrument Method: TPHER.MTH
Analysis Method : TPHE.MTH



user modified

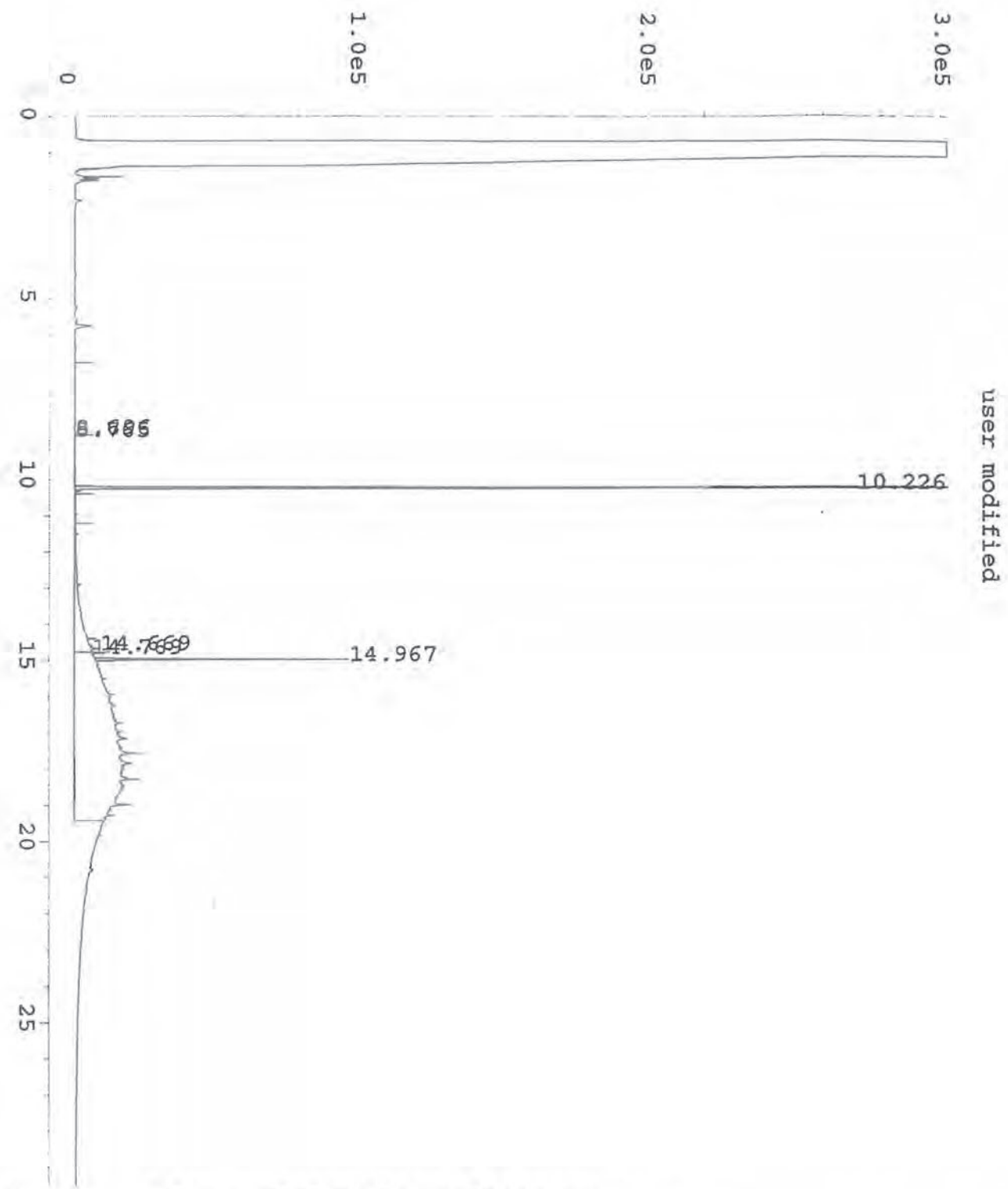
Data File Name : C:\HPCHEM\1\DATA\OCT14\017F1601.D
Operator : TF
Instrument : PHIL
Sample Name : 710115-12 s 101x
Run Time Bar Code:
Acquired on : 15 Oct 97 03:29 AM
Report Created on: 15 Oct 97 07:43 AM

Page Number : 1
Vial Number : 17
Injection Number : 1
Sequence Line : 16
Instrument Method: TPHER.MTH
Analysis Method : TPHE.MTH



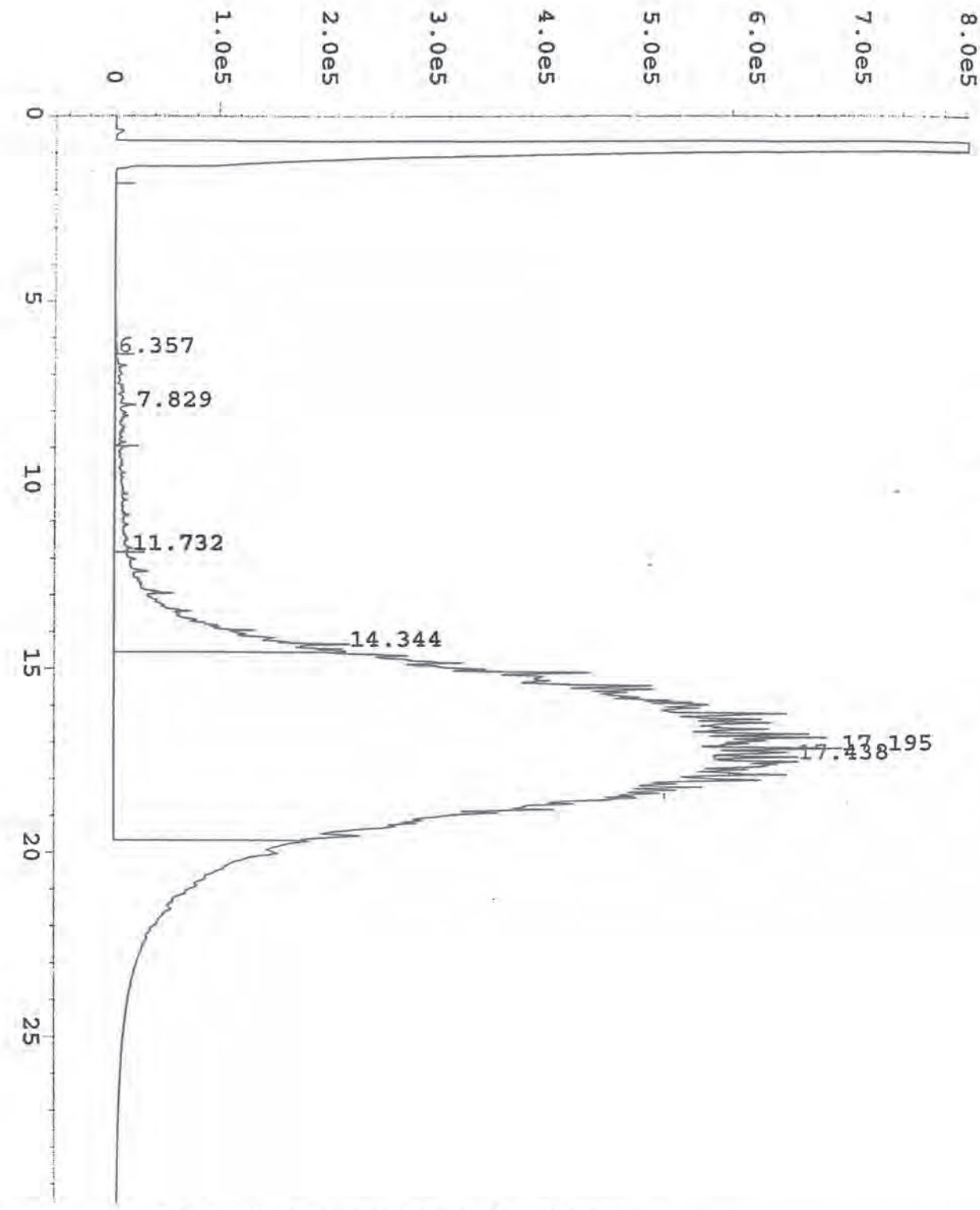
Data File Name : C:\HPCHEM\2\DATA\OCT12\012F0601.D
Operator : TF
Instrument : BOB
Sample Name : 710115-03 AL
Run Time Bar Code:
Acquired on : 12 Oct 97 07:25 PM
Report Created on: 13 Oct 97 09:56 AM

Page Number : 1
Vial Number : 12
Injection Number : 1
Sequence Line : 6
Instrument Method: TPHER.MTH
Analysis Method : TPHDR.MTH



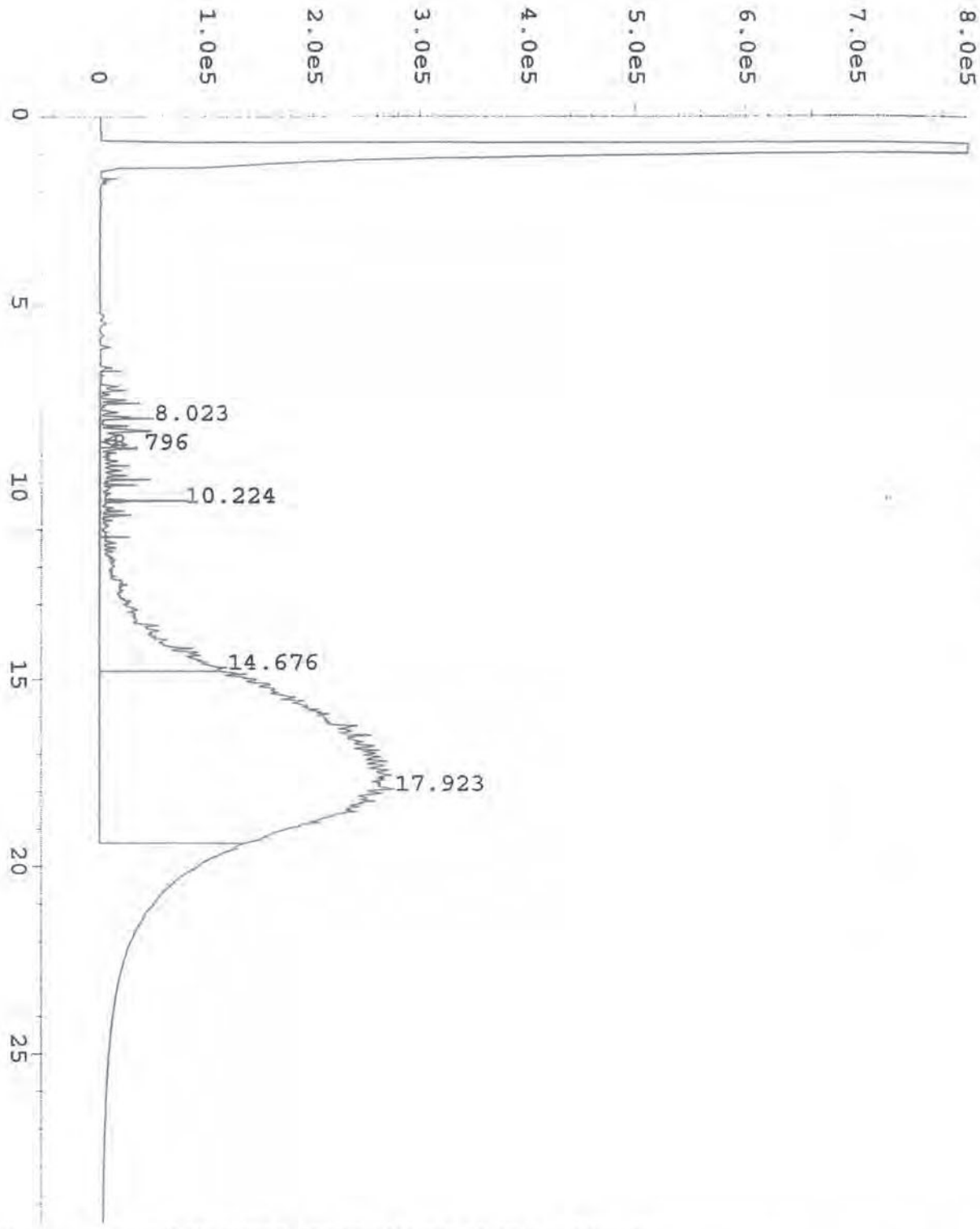
Data File Name : C:\HPCHEM\2\DATA\OCT12\013F0601.D
Operator : TF
Instrument : BOB
Sample Name : 710115-03 AR
Run Time Bar Code:
Acquired on : 12 Oct 97 08:03 PM
Report Created on: 13 Oct 97 09:58 AM

Page Number : 1
Vial Number : 13
Injection Number : 1
Sequence Line : 6
Instrument Method: TPHER.MTH
Analysis Method : TPHDR.MTH



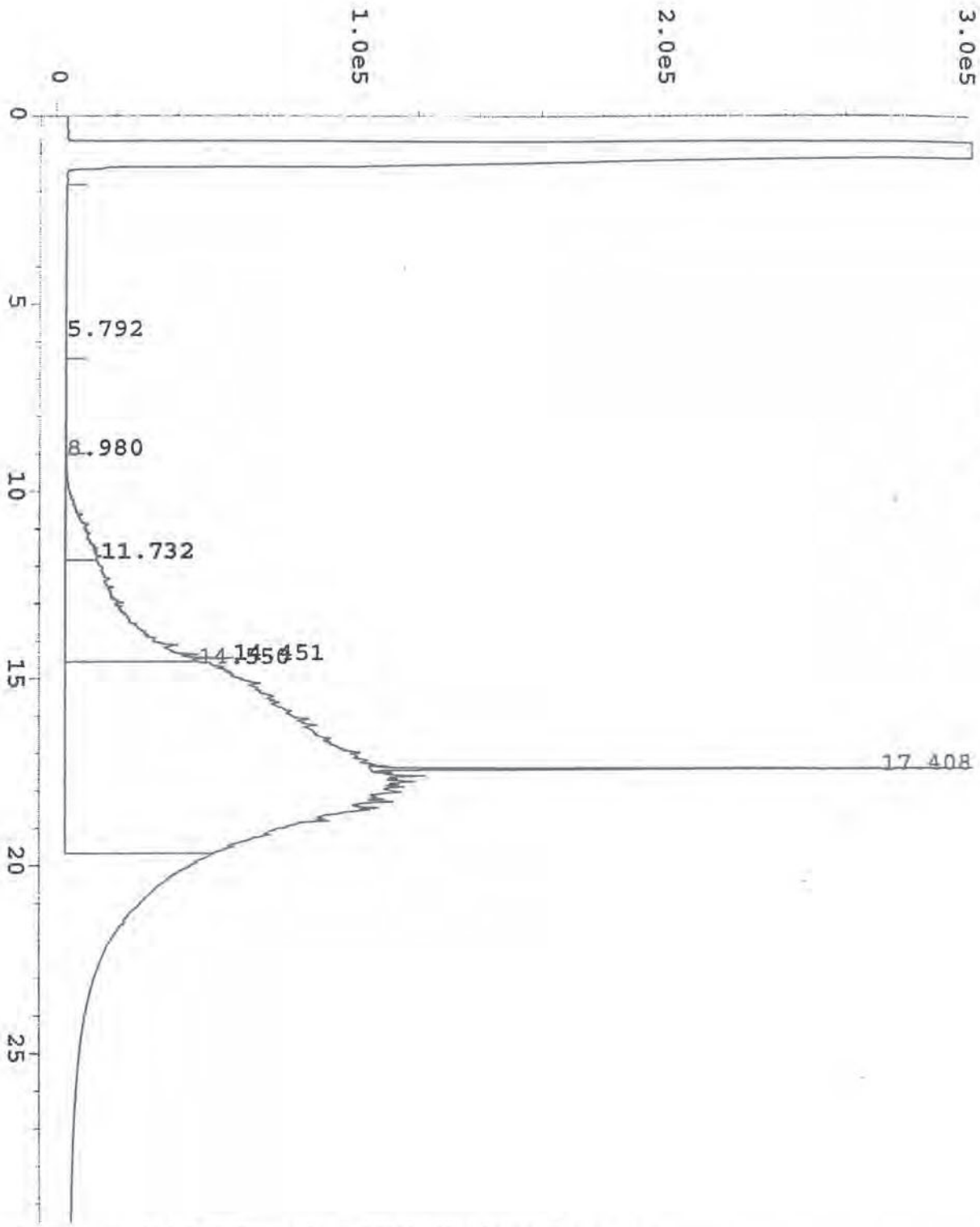
Data File Name : C:\HPCHEM\2\DATA\OCT12\014F1001.D
Operator : TF
Instrument : BOB
Sample Name : 710115-04 AL
Run Time Bar Code:
Acquired on : 12 Oct 97 10:36 PM
Report Created on: 13 Oct 97 10:02 AM

Page Number : 1
Vial Number : 14
Injection Number : 1
Sequence Line : 10
Instrument Method: TPHER.MTH
Analysis Method : TPHDR.MTH



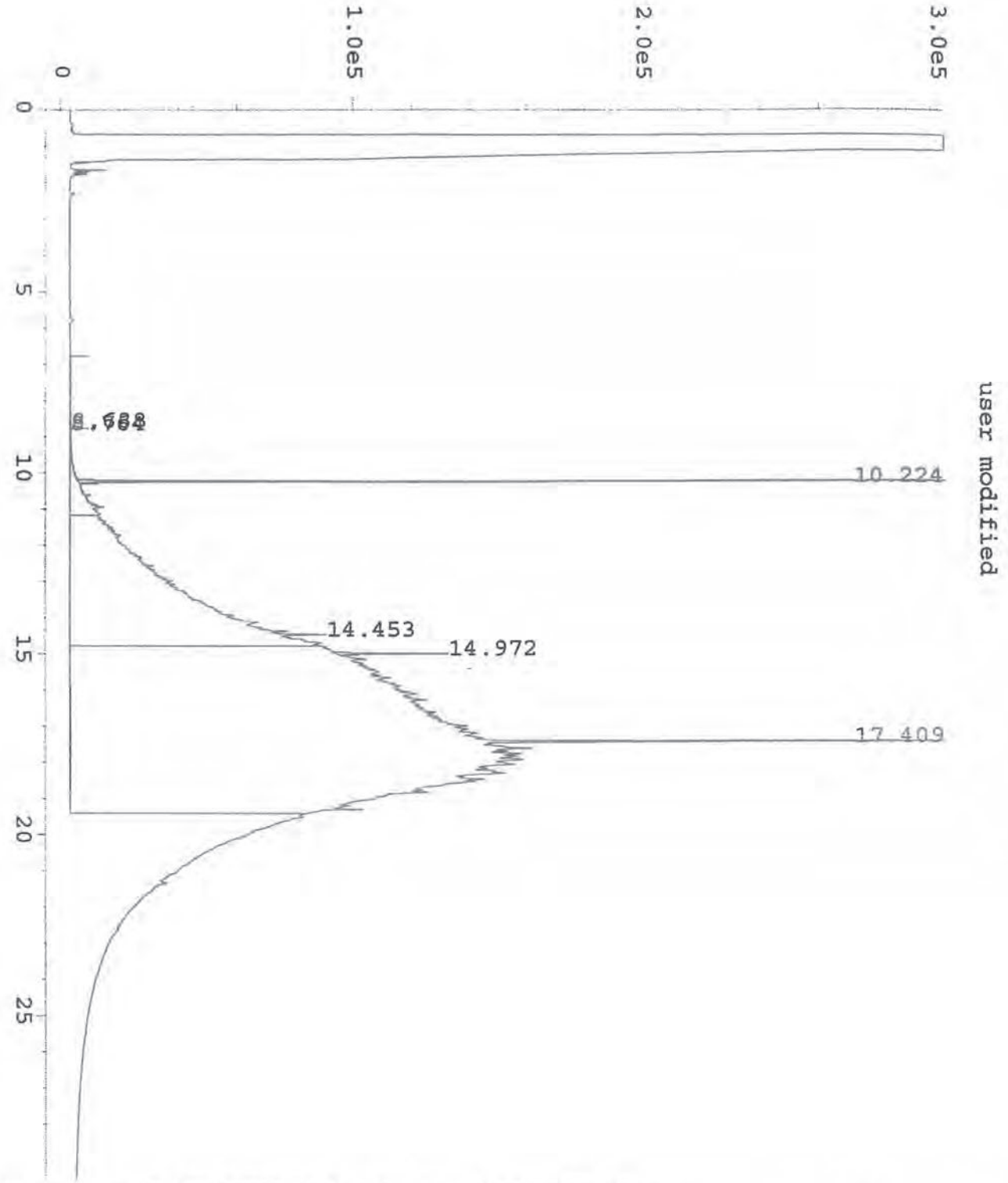
Data File Name : C:\HPCHEM\2\DATA\OCT12\015F1001.D
Operator : TF
Instrument : BOB
Sample Name : 710115-04 AR
Run Time Bar Code:
Acquired on : 12 Oct 97 11:14 PM
Report Created on: 13 Oct 97 10:03 AM

Page Number : 1
Vial Number : 15
Injection Number : 1
Sequence Line : 10
Instrument Method: TPHER.MTH
Analysis Method : TPHDR.MTH



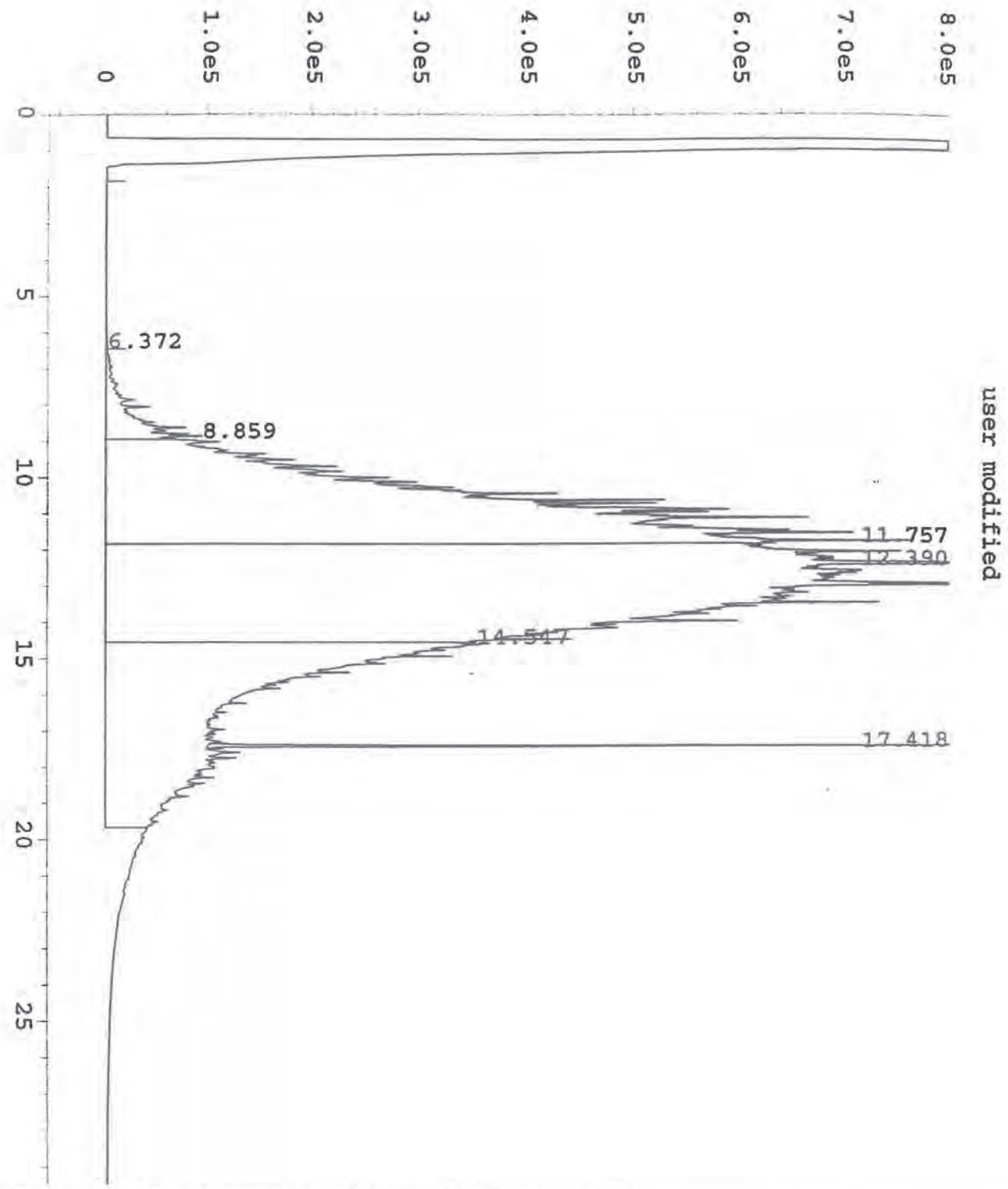
Data File Name : C:\HPCHEM\2\DATA\OCT12\016F1001.D
Operator : TF
Instrument : BOB
Sample Name : 710115-05 AL
Run Time Bar Code:
Acquired on : 12 Oct 97 11:52 PM
Report Created on: 13 Oct 97 10:05 AM

Page Number : 1
Vial Number : 16
Injection Number : 1
Sequence Line : 10
Instrument Method: TPHER.MTH
Analysis Method : TPHDR.MTH



Data File Name : C:\HPCHEM\2\DATA\OCT12\017F1001.D
Operator : TF
Instrument : BOB
Sample Name : 710115-05 AR
Run Time Bar Code:
Acquired on : 13 Oct 97 00:30 AM
Report Created on: 13 Oct 97 10:07 AM

Page Number : 1
Vial Number : 17
Injection Number : 1
Sequence Line : 10
Instrument Method: TPHER.MTH
Analysis Method : TPHDR.MTH



Data File Name : C:\HPCHEM\2\DATA\OCT12\018F1001.D
Operator : TF
Instrument : BOB
Sample Name : 710115-06 AL
Run Time Bar Code:
Acquired on : 13 Oct 97 01:08 AM
Report Created on: 13 Oct 97 10:08 AM

Page Number : 1
Vial Number : 18
Injection Number : 1
Sequence Line : 10
Instrument Method: TPHER.MTH
Analysis Method : TPHDR.MTH

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B710115

REPORT TO:
ATTENTION: Lisa Bong
ADDRESS:
Redmond WA
PHONE: 861-6000 FAX:
PROJECT NAME: Family Fun Center
PROJECT NUMBER: 5925-002-37
SAMPLED BY: GRS

INVOICE TO:
ATTENTION: Same
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: (10 Standard) 7 5 4 3 2 1 Same Day
Fuels & Hydrocarbon Analyses: (5 Standard) 3-4 2 1 Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	WTPH-G	WTPH-D extended	PP Metals	Barium	VOC's	SVOC's	PCB's & Pesticides	VPH	EPH	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1	HA-1	10/06/97 9:36								X			S	1	
2	HA-2	10:03								X			S	1	
3	HA-3	10:28		X	X	X	X	X			X	X	S	5	VPH + EPH with Confirmation.
4	HA-4	11:04			X	X	X	X				X	S	5	
5	HA-5	11:26			X	X	X	X				X	S	5	
6	HA-6	12:19		X	X			X			X	X	S	1	✓
7	HA-7	12:58			X								S	1	
8	HA-8	13:10			X								S	1	
9	HA-9	14:08				X	X		X				S	2	
10	HA-10	8:12				X	X						S	2	

RELINQUISHED BY (Signature): Gary Stevens DATE: 10/06/97
PRINT NAME: Gary Stevens FIRM: GEI TIME: 18:00

RECEIVED BY (Signature): K Barker DATE: 10/7/97
PRINT NAME: Kendra Barker FIRM: NCA TIME: 17:05

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:
7.2° w/ cust

PAGE OF

COC Rev 8, 1/96

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/8/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/9/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 13:23

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
HA-11	B710175-01	Soil	10/8/97
HA-12	B710175-02	Soil	10/8/97
GCW-16	B710175-03	Water	10/8/97

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/8/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/9/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 13:23

Gasoline Hydrocarbons (Toluene to Dodecane) by NWTPH-Gx
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
GCW-16			B710175-03				Water	
Gasoline	1070434	10/16/97	10/16/97		50.0	ND	ug/l	
Aviation Gasoline	"	"	"		50.0	ND	"	
Mineral Spirits	"	"	"		50.0	ND	"	
Weathered Gasoline	"	"	"		50.0	ND	"	
VM&P Naphtha	"	"	"		50.0	ND	"	
Gasoline Range Hydrocarbons	"	"	"		50.0	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*90.6*	*%*	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/8/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/9/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 13:23

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes
HA-11			**B710175-01**				**Soil**	
Diesel #2	1070270	10/10/97	10/15/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*87.8*	*%*	
HA-12			**B710175-02**				**Soil**	
Diesel #2	1070270	10/10/97	10/15/97		10.0	ND	mg/kg dry	
Kerosene Range Hydrocarbons	"	"	"		10.0	ND	"	
Diesel Range Hydrocarbons	"	"	"		10.0	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		25.0	ND	"	
Transformer Oil	"	"	"		25.0	ND	"	
Motor Oil	"	"	"		25.0	ND	"	
Hydraulic Oil	"	"	"		25.0	ND	"	
Fuel Oil #2	"	"	"		25.0	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*82.9*	*%*	
GCW-16			**B710175-03**				**Water**	
Diesel #2	1070301	10/11/97	10/13/97		0.250	ND	mg/l	
Kerosene Range Hydrocarbons	"	"	"		0.250	ND	"	
Diesel Range Hydrocarbons	"	"	"		0.250	ND	"	
Fuel Oil #6 (Bunker C)	"	"	"		0.500	ND	"	
Transformer Oil	"	"	"		0.500	ND	"	
Motor Oil	"	"	"		0.500	ND	"	
Hydraulic Oil	"	"	"		0.500	ND	"	
Fuel Oil #2	"	"	"		0.500	ND	"	
Heavy Oil Range Hydrocarbons	"	"	"		0.500	ND	"	
Surrogate: 2-FBP	"	"	"	*50.0-150*		*86.5*	*%*	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/8/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/9/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 13:23

Dissolved Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
GCW-16			B710175-03				Water	
Antimony	1070492	10/20/97	10/22/97	EPA 6010A	0.100	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.0100	**0.0423**	"	
Beryllium	"	"	"	EPA 6010A	0.00500	ND	"	
Cadmium	"	"	"	EPA 6010A	0.00500	ND	"	
Chromium	"	"	"	EPA 6010A	0.0100	ND	"	
Copper	"	"	"	EPA 6010A	0.0300	ND	"	
Nickel	"	"	"	EPA 6010A	0.0300	ND	"	
Zinc	"	"	"	EPA 6010A	0.0200	ND	"	
Arsenic	1070458	10/16/97	10/23/97	EPA 7060A	0.00400	**0.00660**	"	
Lead	"	"	10/16/97	EPA 7421	0.00200	ND	"	
Mercury	1070621	10/24/97	10/24/97	EPA 7470A	0.00100	ND	"	
Selenium	1070458	10/16/97	10/16/97	EPA 7740	0.00500	ND	"	
Silver	1070492	10/20/97	10/21/97	EPA 7760A	0.0200	**0.0350**	"	
Thallium	1070458	10/16/97	10/17/97	EPA 7841	0.00200	ND	"	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/8/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/9/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 13:23

Conventional Chemistry Parameters by APHA/EPA Methods
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes
GCW-16			B710175-03				Water	
pH	1070242	10/9/97	10/9/97	EPA 150.1		6.35	pH Units	

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled:	10/8/97
8410 154th Ave NE	Project Number:	5925-002-37	Received:	10/9/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported:	10/24/97 13:23

Dry Weight Determination
North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
HA-11	B710175-01	Soil	72.6	%
HA-12	B710175-02	Soil	73.0	%

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/8/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/9/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 13:23

Gasoline Hydrocarbons (Toluene to Dodecane) by NWTPH-Gx/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Batch: 1070434	**Date Prepared: 10/16/97**					**Extraction Method: EPA 5030 (P/T)**				
Blank	**1070434-BLK1**									
Gasoline	10/16/97			**ND**	ug/l	**50.0**				
Aviation Gasoline	"			**ND**	"	**50.0**				
Mineral Spirits	"			**ND**	"	**50.0**				
Weathered Gasoline	"			**ND**	"	**50.0**				
VM&P Naphtha	"			**ND**	"	**50.0**				
Gasoline Range Hydrocarbons	"			**ND**	"	**50.0**				
Surrogate: 4-BFB (FID)	"	*48.0*		*44.1*	"	*50.0-150*	*91.9*			
LCS	**1070434-BS1**									
Gasoline	10/16/97	500		593	ug/l	80.0-120	119			
Surrogate: 4-BFB (FID)	"	*48.0*		*48.9*	"	*50.0-150*	*102*			
Duplicate	**1070434-DUP1**	**B710249-05**								
Gasoline Range Hydrocarbons	10/16/97		10500	8920	ug/l			50.0	**16.3**	
Surrogate: 4-BFB (FID)	"	*48.0*		*47.8*	"	*50.0-150*	*99.6*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/8/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/9/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 13:23

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1070270	**Date Prepared: 10/10/97**					**Extraction Method: EPA 3550**				
Blank	**1070270-BLK1**									
Diesel #2	10/13/97			**ND**	mg/kg dry	**10.0**				
Kerosene Range Hydrocarbons	"			**ND**	"	**10.0**				
Diesel Range Hydrocarbons	"			**ND**	"	**10.0**				
Fuel Oil #6 (Bunker C)	"			**ND**	"	**25.0**				
Transformer Oil	"			**ND**	"	**25.0**				
Motor Oil	"			**ND**	"	**25.0**				
Hydraulic Oil	"			**ND**	"	**25.0**				
Fuel Oil #2	"			**ND**	"	**25.0**				
Heavy Oil Range Hydrocarbons	"			**ND**	"	**25.0**				
Surrogate: 2-FBP	"	*11.9*		*9.56*	"	*50.0-150*	*80.3*			
LCS	**1070270-BS1**									
Diesel #2	10/13/97	66.7		58.0	mg/kg dry	50.0-150	87.0			
Surrogate: 2-FBP	"	*11.9*		*10.1*	"	*50.0-150*	*84.9*			
Duplicate	**1070270-DUP1**	**B710074-13**								
Diesel #2	10/13/97		614	635	mg/kg dry			50.0	3.36	
Kerosene Range Hydrocarbons	"		ND	ND	"			50.0		
Diesel Range Hydrocarbons	"		ND	ND	"			50.0		
Fuel Oil #6 (Bunker C)	"		ND	ND	"			50.0		
Transformer Oil	"		ND	ND	"			50.0		
Motor Oil	"		ND	ND	"			50.0		
Hydraulic Oil	"		ND	ND	"			50.0		
Fuel Oil #2	"		ND	ND	"			50.0		
Heavy Oil Range Hydrocarbons	"		ND	ND	"			50.0		
Surrogate: 2-FBP	"	*14.8*		*16.9*	"	*50.0-150*	*114*			
Batch: 1070301	**Date Prepared: 10/11/97**					**Extraction Method: EPA 3520/600 Series**				
Blank	**1070301-BLK1**									
Diesel #2	10/13/97			**ND**	mg/l	**0.250**				
Kerosene Range Hydrocarbons	"			**ND**	"	**0.250**				
Diesel Range Hydrocarbons	"			**ND**	"	**0.250**				
Fuel Oil #6 (Bunker C)	"			**ND**	"	**0.500**				
Transformer Oil	"			**ND**	"	**0.500**				
Motor Oil	"			**ND**	"	**0.500**				
Hydraulic Oil	"			**ND**	"	**0.500**				
Fuel Oil #2	"			**ND**	"	**0.500**				

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**Refer to end of report for text of notes and definition.*

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/8/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/9/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 13:23

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by NWTPH-Dx with Silica Gel Clean-up/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Blank (continued)	**1070301-BLK1**									
Heavy Oil Range Hydrocarbons	10/13/97			**ND**	mg/l	**0.500**				
Surrogate: 2-FBP	"	*0.358*		*0.282*	"	*50.0-150*	*78.8*			
LCS	**1070301-BS1**									
Diesel #2	10/13/97	2.00		2.35	mg/l	50.0-150	117			
Surrogate: 2-FBP	"	*0.358*		*0.367*	"	*50.0-150*	*103*			

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/8/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/9/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 13:23

Dissolved Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1070458	**Date Prepared: 10/16/97**					**Extraction Method: EPA 3020**				
Blank	**1070458-BLK1**									
Arsenic	10/22/97			**ND**	mg/l	**0.00400**				
Lead	10/16/97			**ND**	"	**0.00200**				
Selenium	"			**ND**	"	**0.00500**				
Thallium	10/17/97			**ND**	"	**0.00200**				
LCS	**1070458-BS1**									
Arsenic	10/22/97	0.0500		0.0480	mg/l	75.0-125	96.0			
Lead	10/16/97	0.0250		0.0230	"	75.0-125	92.0			
Selenium	"	0.0250		0.0213	"	75.0-125	85.2			
Thallium	10/17/97	0.0300		0.0279	"	75.0-125	93.0			
Duplicate	**1070458-DUP1**		**B710175-03**							
Arsenic	10/22/97		0.00660	0.00820	mg/l			20.0	**21.6**	
Lead	10/16/97		ND	ND	"			20.0		
Selenium	"		ND	ND	"			20.0		
Thallium	10/17/97		ND	ND	"			20.0		
Matrix Spike	**1070458-MS1**		**B710175-03**							
Arsenic	10/23/97	0.0500	0.00660	0.0366	mg/l	70.0-130	**60.0**			
Lead	10/16/97	0.0250	ND	0.0232	"	70.0-130	**92.8**			
Selenium	"	0.0250	ND	0.0232	"	70.0-130	**92.8**			
Thallium	10/17/97	0.0300	ND	0.0270	"	70.0-130	**90.0**			
Matrix Spike Dup	**1070458-MSD1**		**B710175-03**							
Arsenic	10/23/97	0.0500	0.00660	0.0380	mg/l	70.0-130	**62.8**	20.0	**4.56**	2
Lead	10/16/97	0.0250	ND	0.0232	"	70.0-130	**92.8**	20.0	**0**	
Selenium	"	0.0250	ND	0.0220	"	70.0-130	**88.0**	20.0	**5.31**	
Thallium	10/17/97	0.0300	ND	0.0273	"	70.0-130	**91.0**	20.0	**1.10**	
Batch: 1070492	**Date Prepared: 10/20/97**					**Extraction Method: EPA 3010**				
Blank	**1070492-BLK1**									
Antimony	10/22/97			**ND**	mg/l	**0.100**				
Barium	"			**ND**	"	**0.0100**				
Beryllium	"			**ND**	"	**0.00500**				
Cadmium	"			**ND**	"	**0.00500**				
Chromium	"			**ND**	"	**0.0100**				
Copper	"			**ND**	"	**0.0300**				

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Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/8/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/9/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 13:23

Dissolved Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Blank (continued)	**1070492-BLK1**									
Nickel	10/22/97			**ND**	mg/l	**0.0300**				
Zinc	"			**ND**	"	**0.0200**				
Silver	10/21/97			**ND**	"	**0.0200**				
LCS	**1070492-BS1**									
Antimony	10/22/97	1.00		0.974	mg/l	80.0-120	97.4			
Barium	"	1.00		1.04	"	80.0-120	104			
Beryllium	"	1.00		0.991	"	80.0-120	99.1			
Cadmium	"	1.00		1.06	"	80.0-120	106			
Chromium	"	1.00		1.06	"	80.0-120	106			
Copper	"	1.00		1.07	"	80.0-120	107			
Nickel	"	1.00		1.03	"	80.0-120	103			
Zinc	"	1.00		1.05	"	80.0-120	105			
Silver	10/21/97	1.00		1.09	"	75.0-125	109			
Duplicate	**1070492-DUP1**		**B710175-03**							
Antimony	10/22/97		ND	ND	mg/l			20.0		
Barium	"		0.0423	0.0445	"			20.0	5.07	
Beryllium	"		ND	ND	"			20.0		
Cadmium	"		ND	ND	"			20.0		
Chromium	"		ND	ND	"			20.0		
Copper	"		ND	ND	"			20.0		
Nickel	"		ND	ND	"			20.0		
Zinc	"		ND	ND	"			20.0		
Silver	10/21/97		0.0350	0.0280	"			20.0	22.2	
Matrix Spike	**1070492-MS1**		**B710175-03**							
Antimony	10/22/97	1.00	ND	0.960	mg/l	80.0-120	96.0			
Barium	"	1.00	0.0423	1.05	"	80.0-120	101			
Beryllium	"	1.00	ND	1.02	"	80.0-120	102			
Cadmium	"	1.00	ND	1.04	"	80.0-120	104			
Chromium	"	1.00	ND	1.05	"	80.0-120	105			
Copper	"	1.00	ND	1.05	"	80.0-120	105			
Nickel	"	1.00	ND	1.02	"	80.0-120	102			
Zinc	"	1.00	ND	1.06	"	80.0-120	106			
Silver	10/21/97	1.00	0.0350	0.843	"	75.0-125	80.8			

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Dissolved Metals by EPA 6000/7000 Series Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike	**1070492-MS2**		**B710175-03**							
Antimony	10/22/97	2.00	ND	2.02	mg/l	80.0-120	101			
Barium	"	2.00	0.0423	2.18	"	80.0-120	107			
Beryllium	"	2.00	ND	2.11	"	80.0-120	105			
Cadmium	"	2.00	ND	2.19	"	80.0-120	110			
Chromium	"	2.00	ND	2.23	"	80.0-120	112			
Copper	"	2.00	ND	2.17	"	80.0-120	109			
Nickel	"	2.00	ND	2.15	"	80.0-120	108			
Zinc	"	2.00	ND	2.24	"	80.0-120	112			
Matrix Spike Dup	**1070492-MSD1**		**B710175-03**							
Antimony	10/22/97	1.00	ND	0.963	mg/l	80.0-120	96.3	20.0	0.312	
Barium	"	1.00	0.0423	1.05	"	80.0-120	101	20.0	0	
Beryllium	"	1.00	ND	1.01	"	80.0-120	101	20.0	0.985	
Cadmium	"	1.00	ND	1.03	"	80.0-120	103	20.0	0.966	
Chromium	"	1.00	ND	1.05	"	80.0-120	105	20.0	0	
Copper	"	1.00	ND	1.04	"	80.0-120	104	20.0	0.957	
Nickel	"	1.00	ND	1.02	"	80.0-120	102	20.0	0	
Zinc	"	1.00	ND	1.08	"	80.0-120	108	20.0	1.87	
Silver	10/21/97	1.00	0.0350	0.854	"	75.0-125	81.9	20.0	1.35	
Batch: 1070621	**Date Prepared: 10/24/97**					**Extraction Method: BrCl Digestion**				
Blank	**1070621-BLK1**									
Mercury	10/24/97			ND	mg/l	0.00100				
LCS	**1070621-BS1**									
Mercury	10/24/97	0.00500		0.00485	mg/l	70.0-130	97.0			
Duplicate	**1070621-DUP1**		**B710175-03**							
Mercury	10/24/97		ND	ND	mg/l			20.0		
Matrix Spike	**1070621-MS1**		**B710175-03**							
Mercury	10/24/97	0.00500	ND	0.00484	mg/l	75.0-125	96.8			
Matrix Spike Dup	**1070621-MSD1**		**B710175-03**							
Mercury	10/24/97	0.00500	ND	0.00506	mg/l	75.0-125	101	20.0	4.25	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definition*

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NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Geo Engineers - Redmond	Project:	Family Fun Center (FFC)	Sampled: 10/8/97
8410 154th Ave NE	Project Number:	5925-002-37	Received: 10/9/97
Redmond, WA 98052	Project Manager:	Lisa Bona	Reported: 10/24/97 13:23

Conventional Chemistry Parameters by APHA/EPA Methods/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes
Batch: 1070242	**Date Prepared: 10/9/97**				**Extraction Method: General Preparation**					
Duplicate	**1070242-DUP1**		**B710161-01**							
pH	10/9/97		8.06	8.10	pH Units			10.0	0.495	
Duplicate	**1070242-DUP2**		**B710164-01**							
pH	10/9/97		6.53	6.63	pH Units			10.0	1.52	

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Notes and Definitions

#	Note
1	Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
2	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
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

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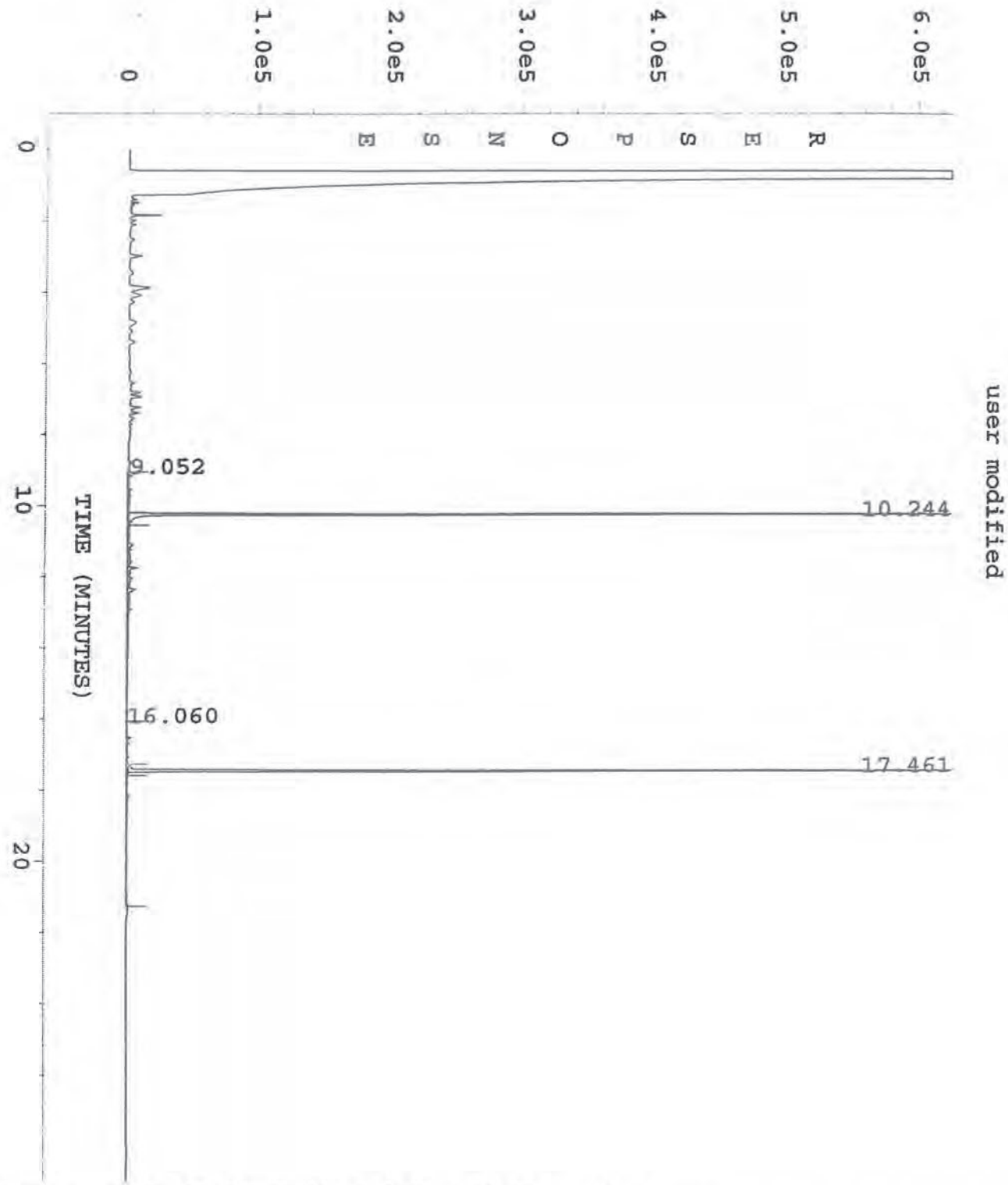
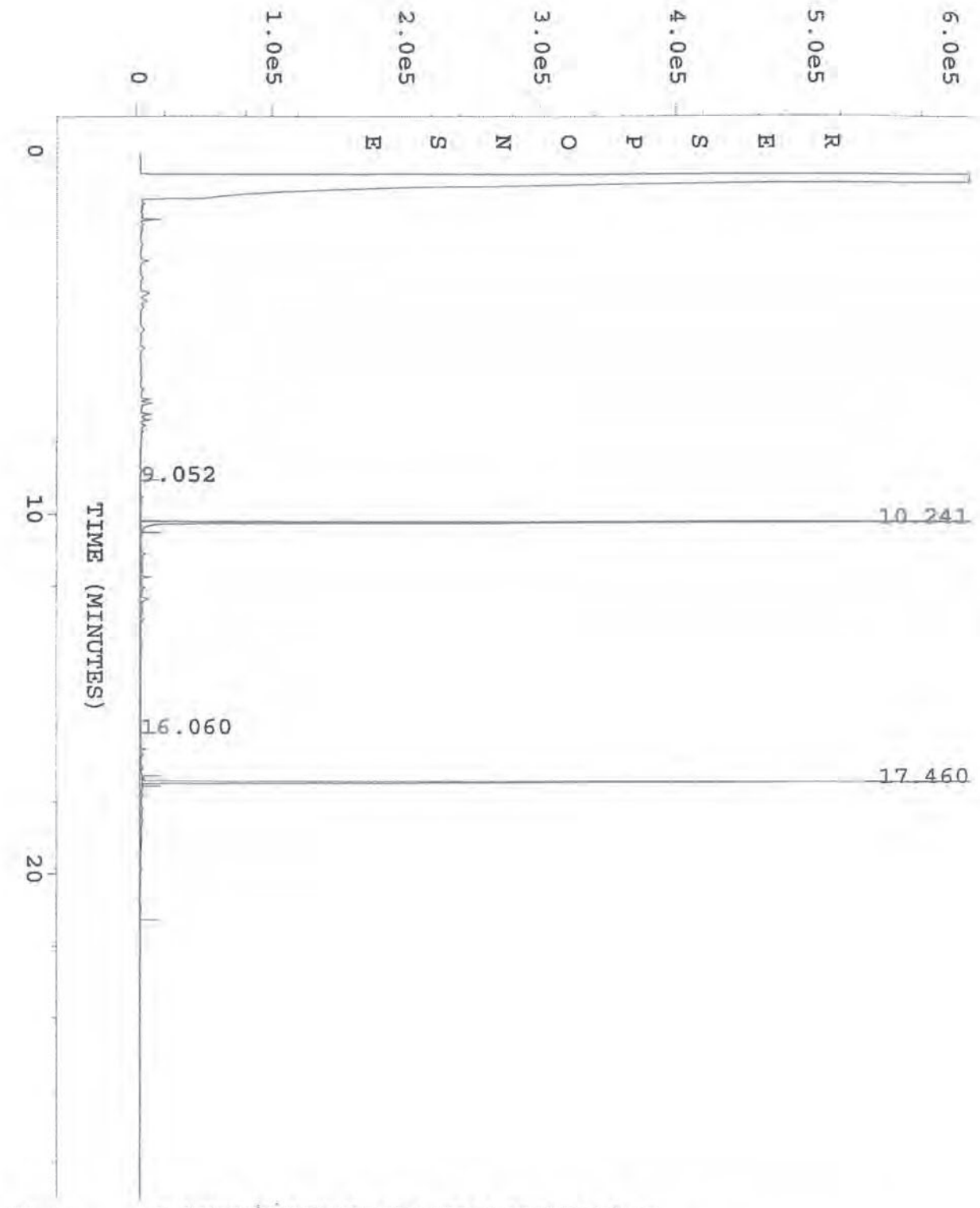


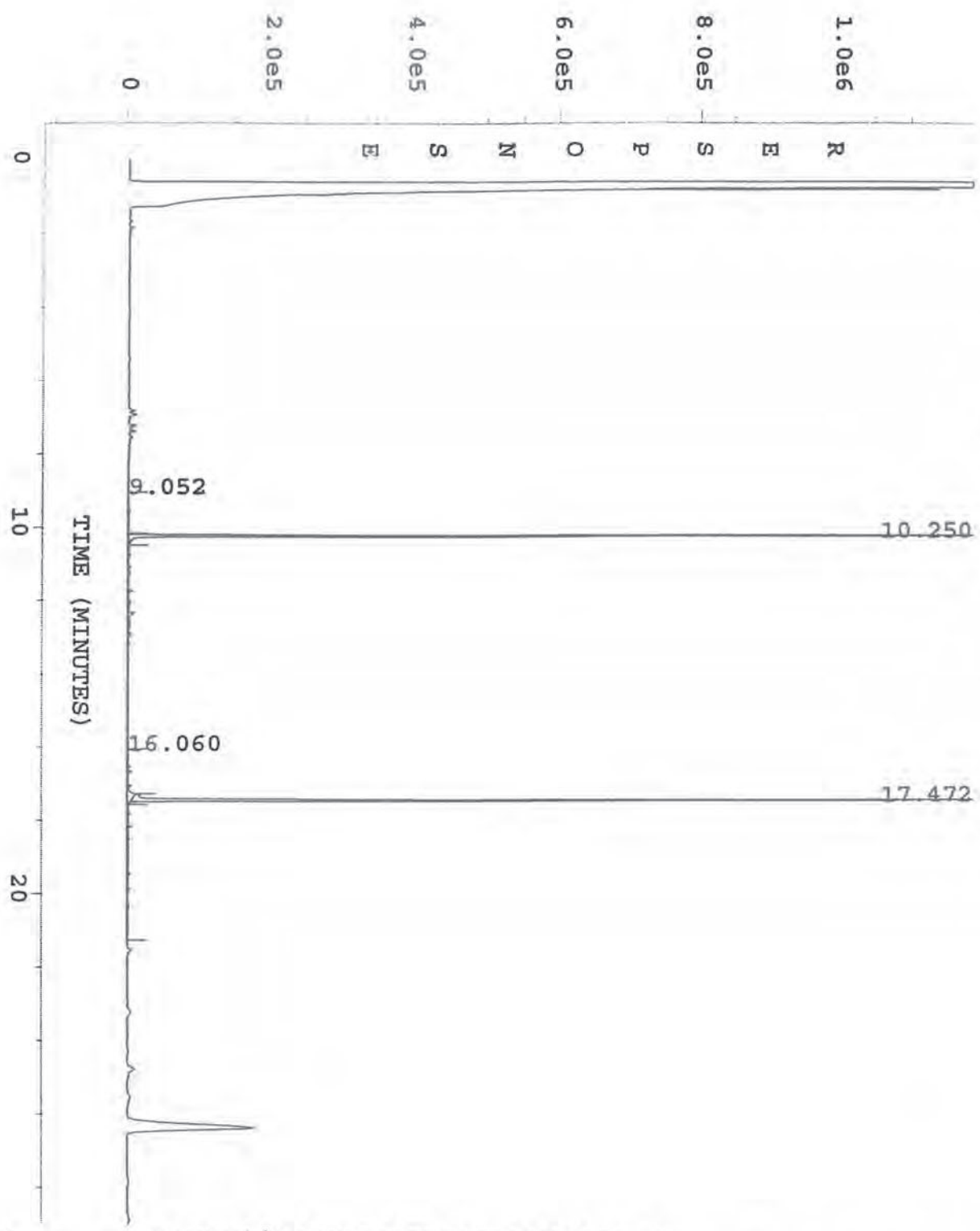
Data File Name : C:\HPCHEM\1\DATA\OCT13\064F1401.D
Operator : TF
Instrument : PHIL
Sample Name : 710175-01 S
Run Time Bar Code:
Acquired on : 13 Oct 97 11:20 PM
Report Created on: 14 Oct 97 08:11 AM

Page Number : 1
Vial Number : 64
Injection Number : 1
Sequence Line : 14
Instrument Method: TPHER.MTH
Analysis Method : TPHE.MTH



Data File Name : C:\HPCHEM\1\DATA\OCT13\065F1401.D
Operator : TF
Instrument : PHIL
Sample Name : 710175-02 S
Run Time Bar Code:
Acquired on : 13 Oct 97 11:58 PM
Report Created on: 14 Oct 97 08:11 AM

Page Number : 1
Vial Number : 65
Injection Number : 1
Sequence Line : 14
Instrument Method: TPHER.MTH
Analysis Method : TPHE.MTH



user modified

Data File Name : C:\HPCHEM\1\DATA\OCT13\066F1301.D
Operator : TF
Instrument : PHIL
Sample Name : ~~710675 13 W~~ 710175-03
Run Time Bar Code:
Acquired on : 13 Oct 97 10:41 PM
Report Created on: 14 Oct 97 08:10 AM

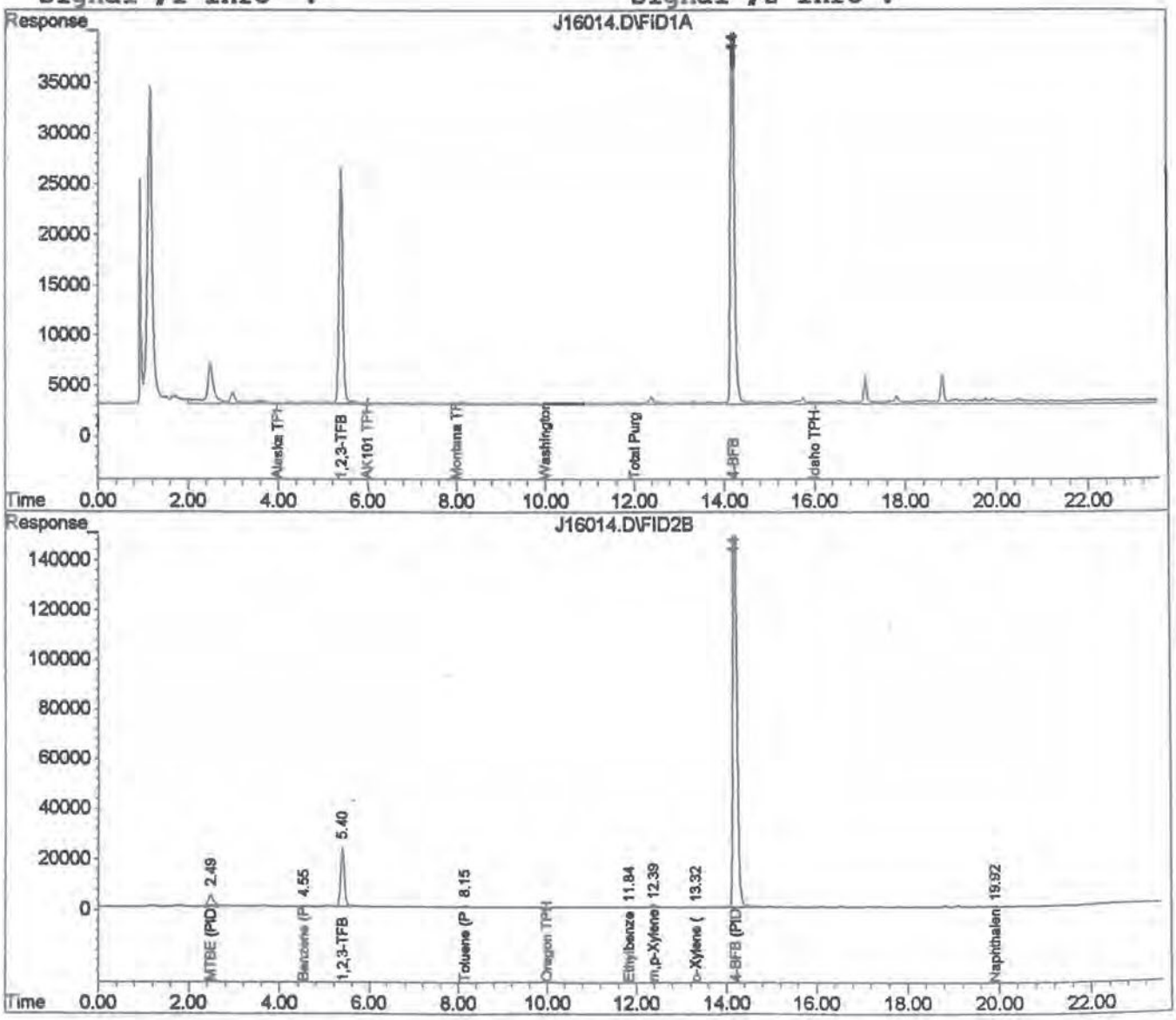
Page Number : 1
Vial Number : 66
Injection Number : 1
Sequence Line : 13
Instrument Method: TPHER.MTH
Analysis Method : TPHE.MTH

Data File : C:\HPCHEM\2\DATA\J16014.D\FID1A.CH Vial: 14
Acq On : 16 Oct 1997 12:00 pm Operator: LAC
Sample : b710175-03 Inst : GC #4
Misc : 5 mL Multiplr: 1.00
IntFile : events.e

Data File : C:\HPCHEM\2\DATA\J16014.D\FID2B.CH Vial: 14
Acq On : 16 Oct 97 12:00 pm Operator: LAC
Sample : b710175-03 Inst : GC #4
Misc : 5 mL Multiplr: 1.00
IntFile : events2.e
Quant Time: Oct 16 12:24 1997 Quant Results File: TPHG.RES

Quant Method : C:\HPCHEM\2\METHODS\TPHG.M (Chemstation Integrator)
Title : TPH-G Water Method
Last Update : Mon Sep 22 07:14:09 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPHG.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



NORTH CREEK ANALYTICAL

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CHAIN OF CUSTODY REPORT

Work Order #: B710175

CLIENT: GeoEngineers

ADDRESS: 8410 154th Ave NE
Redmond, WA 98052

PHONE: 861-6000 FAX:

PROJECT NAME: Family Fun Center

PROJECT NUMBER: 5925-002-37

SAMPLED BY: GRJ

REPORT TO: Lisa Bong

ATTENTION:

BILLING TO:

P.O. NUMBER:

NCA QUOTE #:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: (10) 5 3 2 1

Fuels & Hydrocarbon Analyses: (5) 3 2 1

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

NCA SAMPLE NUMBER	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	Analysis Request: NWTPH-G	NWTPH-D extended w/ silica gel cleanup	PP Metals (Dissolved)	Barium (Dissolved)	pH	MATRIX (W, S, O)	# OF CONTAINERS	COMMENTS & PRESERVATIVES USED
[illegible]	1. HA-11	10/08/97 15:30		X				S	1	B710175-01
[illegible]	2. HA-12	15:45		X				S	1	-02
[illegible]	3. GCW-16	16:45	X	X	X	X	X	W	5	-03
	4.									
	5.									
	6.									
	7.									
	8.									
	9.									
	10.									

RELINQUISHED BY: Gary Stevens
PRINT NAME: [signature] FIRM: GEI DATE: 10/09/97 TIME: 8:00

RECEIVED BY: K Barker
PRINT NAME: K BARKER FIRM: NCA DATE: 10/9/97 TIME:

RELINQUISHED BY: K Barker
PRINT NAME: K BARKER FIRM: NCA DATE: 10/9/97 TIME: ~~11:50~~ 12:50 (DB)

RECEIVED BY: Dana
PRINT NAME: DANA HEINZ FIRM: NCA-B DATE: 10/9/97 TIME: 2:50.

ADDITIONAL REMARKS:
O-extended w/ silica gel cleanup

3.1° w/cust.

PAGE 1 of

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