



Limited Site Investigation Report

Leak #15,656 at Former Alex Exhaust
in Alexandria, Minnesota

Project No. 04660027

AECOM

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February 12, 2009

Ms. Arlene Furuseth
Project Leader
Minnesota Pollution Control Agency
714 Lake Avenue, Suite 220
Detroit Lakes, MN 56501

Subject: Limited Site Investigation Report for Leak 15,656 at Former Alex Exhaust; AECOM Project 04660027

Dear Ms. Furuseth,

The attached Limited Site Investigation Report Form (MPCA Guidance Document 4-06) was prepared by AECOM to document the findings of work requested by you in fiscal year 2009 for the above referenced site. This Report was prepared by AECOM under the Minnesota Pollution Control Agency (MPCA) Multi-Site Contract Work Order No. B22942.

AECOM recommends site closure for Leak #15,656. The recommendation for site closure is based on investigation and contaminated soil removal activities completed to date. No water well receptors were identified within 500 feet of the release source. There does not appear to be a risk to the municipal water supply from Leak 15,656 based on the well receptor survey data collected. No additional vapor intrusion characterization appears warranted. No free product or contaminated groundwater was identified migrating along the utility corridors. No surface soil contamination was identified in the upper 2 feet of the site soils.

AECOM has appreciated the opportunity to provide continued service on this release in FY09. If you have questions concerning the project, we welcome the opportunity to discuss these considerations with you. You may contact Tim Grape by calling 763-852-4218 during normal office hours, or by email at: tim.grape@aecom.com. It would be a pleasure to hear from you.

Respectfully,

Timothy J. Grape, PG
Project Manager

Robert L. DeGroot, PG PE
Principal Engineer

TJG/dn
Encs.

Investigation Report Form

Guidance Document 4-06

Complete this form to document site investigation activities, including Limited Site Investigations (LSIs) and Remedial Investigations (RIs). Do not revise or delete any text or questions from this report form. Include any additional information that is important for making a site management decision. If only an LSI is necessary, some questions do not need to be answered and have been identified in the form. Highlighted text contains instructions and references to related guidance documents for that section or question. Refer to Minnesota Pollution Control Agency (MPCA) Guidance Document 1-01 *Petroleum Remediation Program General Policy* for the overall site investigation objectives and to other MPCA guidance documents for details on investigation requirements and methods.

MPCA Site ID: Leak00**15,656** Date: **February 5, 2009**

Responsible Party Information

Name: **Referred to Fund Financed on March 15, 2006 (MPCA Project Leader: Arlene Furuseth)**

Phone #: **(218) 846-0732**

Mailing Address: **714 Lake Avenue, Suite 220**

City: **Detroit Lakes** Zip Code: **56501**

Alternate Contact (if any) for Responsible Party: Phone #:

Leak Site Information

Leak Site Name: **Former Alex Exhaust** Property Owner: **Mr. Ben Zacher**

Phone #: **(320) 760-1712**

Leak Site Address: **905 - 3rd Avenue East**

City: **Alexandria** Zip Code: **56308** County: **Douglas**

Environmental Professional Information

By signing this document, I/we acknowledge that we are submitting this document on behalf of and as agents of the responsible person or volunteer for this leak site. I/we acknowledge that if information in this document is inaccurate or incomplete, it will delay the completion of remediation and may harm the environment and may result in a reduction in Petrofund reimbursement. In addition, I/we acknowledge on behalf of the responsible person or volunteer for this leak site that if this document is determined to contain a false material statement, representation, or certification, or if it omits material information, the responsible person or volunteer may be found to be in violation of Minn. Stat. § 115.075 (2007) or Minn. R. 7000.0300 (Duty of Candor), and that the responsible person or volunteer may be liable for civil penalties.

MPCA staff are instructed to reject unsigned reports and reports that have been altered.

Name and Title of Report Author(s)	Signature	Date Signed
Timothy J. Grape, PG **Project Manager**		02/16/09

Name and Title of Report Reviewer(s)	Signature	Date Signed
Robert L. DeGroot, PG PE **Principal Engineer**		2/16/09

Name(s) of Field Technician(s): **Ryan Doherty, Matt Beckman**

Company and Mailing Address:

AECOM
161 Cheshire Lane North, Suite 500
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Project Manager E-mail Address: **tim.grape@aecom.com**

Phone: **(763) 852-4200**
Fax: **(763) 473-0400**

Emergency and High Priority Sites

A. Is an existing drinking water well impacted or likely to be impacted within a two-year travel time? ☐ *Yes* ☒ *No*

B. Is a hydrogeologically sensitive aquifer impacted that is tapped by water wells that are within 500 feet from the release source? **If *YES***, explain below. ☐ *Yes* ☒ *No*

C. Has the public water supply risk assessment concluded that the site is a high priority site with respect to a public water supply well (see Guidance Document 4-18 *Public Water Supply Risk Assessment at Petroleum Remediation Sites*)? ☒ *Yes* ☐ *No*

The public water supply system is identified as the City of Alexandria – North Well Field.

D. Is there an existing surface water impact as indicated by 1) a petroleum sheen on the surface water or 2) a petroleum sheen or volatile organic compounds in the part per million range observed in a ground water sample collected close to the surface water? ☐ *Yes* ☒ *No*

E. Has free product been detected at the site? **If *YES***, attach Guidance Document 2-03 *Free Product Recovery Report Worksheet* in Section 6. ☐ *Yes* ☒ *No*

F. Are there any existing field-detectable vapor impacts (photoionization detector, explosimeter, odors, etc.) to a receptor? ☐ *Yes* ☒ *No*

G. Did the vapor intrusion assessment detect contaminants in excess of acute intrusion screening values (see Guidance Document 4-01a *Vapor Intrusion Assessments Performed during Site Investigations*)? ☒ *Yes* ☐ *No*

If you answered ***YES*** to any of questions A through G above, describe below the actions taken to date to reduce or eliminate the risk posed by the release.

C. The site is considered a high priority site with respect to a public water supply (City of Alexandria). The site is located within a Drinking Water Source Management Area (DWSMA) and Source Water Protection Area (SWPA). The water supply for Alexandria is obtained from wells set in glacial deposits. The aquifer is considered to exhibit a high susceptibility to contamination due to the local geological setting. The release site is located down-gradient of the North Well Field for the City of Alexandria. It is unlikely that impacts from Leak #15,656 would contaminate the City wells based on the extent and magnitude of impacts at the site and its location (down-gradient) in regards to the City well field. The Source Water Assessment for Alexandria is attached in Appendix L.

G. Benzene and ethylbenzene were detected above their respective acute intrusion screening values (ISVs) in two exterior soil gas samples (VP-1(3') and VP-2(8')) collected at the site. Benzene concentrations in samples VP-1 and VP-2 are 15,700 µg/m^3 and 33,500 µg/m^3, respectively. Ethylbenzene concentrations in VP-1 and VP-2 are 18,400 and 18,000, respectively. The acute ISV for benzene is 1,000 µg/m^3 and the acute ISV for ethylbenzene is 10,000 µg/m^3. Results of the soil gas sampling are summarized on Table 20. VP-2 was conducted in the former dispenser area approximately 30 feet south of the site building. VP-1 was conducted near the site building and the former UST basin area east of the site building. The existing site building is occupied on a limited basis (less than 8 hours a day) and used as a part-time automobile repair shop according to the property owner (Ben Zacher). The site building is slab-on-grade construction. No additional vapor intrusion assessment is recommended for this receptor based on the receptor usage as an auto repair facility, the limited occupancy of the building and the building construction.

Section 1: Site Assessment

Site and Release Information

Complete Guidance Document 1-03a *Spatial Data Reporting Form*, Guidance Document 2-05 *Release Information Worksheet* if 3-02 *General Excavation Report Worksheet* was not completed, and include in Section 6.

1.1 Describe the land use and pertinent geographic features (e.g., topographic changes, surface waters, etc.) within 1,000 feet of the site. Illustrate these features using the Site Location Map, aerial photographs, and Sanborn Fire Insurance Maps™ for the various time periods they are available in Section 4.

Land use within 1,000 feet of the site consists of commercial properties to the west, commercial and residential properties to the south, a former trailer court, now vacant property, to the east and a railroad line directly north of the site beyond which lies a residential area. Lake Agnes is located approximately 2,000 feet northwest of the project site. The site location is illustrated on Figure 1.

The site building (formerly Alex Exhaust) was vacant in 2007 during investigation activities. The site building is currently occupied on a part-time basis (less than 8 hours a day) and utilized as an auto repair facility according to the property owner, Mr. Ben Zacher. The Lloyd's Café building located directly west of the release site property was vacant during the investigation activities conducted in 2007 but is currently operating as a café/restaurant.

1.2 Briefly describe the history of the site and any past site investigation work that may have been completed. If a Phase I or Phase II report has been prepared for this site, include a copy in Section 6.

The release site was operated as a Cenex service station up until the early 1960's according to the current property owner, Mr. Ben Zacher. A fuel distribution system consisting of four

underground storage tanks (USTs) was removed from the site on May 16, 1998 according to Mr. Dennis Stark, City of Alexandria Fire Marshal. No analytical testing or petroleum release documentation was collected during the UST removal to the best of Mr. Stark's knowledge.

The site was called in to the Minnesota State Duty Officer on February 25, 2004 based on evidence of petroleum contamination observed in a soil boring conducted at the site for the Minnesota Department of Transportation (Mn/DOT) TH-29/27 highway reconstruction project.

Approximately 1,200 cubic yards of petroleum contaminated soil was excavated from the Mn/DOT road right-of-way just south of the release site during the 2004-2005 construction seasons. The petroleum contaminated soil was land-spread at an MPCA approved land-spread facility. STS/AECOM prepared a Documentation Report dated December 30, 2005 documenting the excavation and disposal of petroleum contaminated soil near the release site. A copy of the STS/AECOM Documentation Report is attached in Appendix D.

STS/AECOM performed a Limited Site Investigation (LSI) at the site in February of 2007. The LSI consisted of six temporary well/soil borings (B-1 through B-6) and four soil vapor probes (VP-1 through VP-4). The full extent of the groundwater contamination was not defined by the 2007 LSI. Two additional soil borings (B-7 and B-8) were conducted east and southeast of the site respectively by STS/AECOM on February 27-28, 2008. A third boring (B-9) was conducted southwest of the site by STS/AECOM on December 12, 2008. The results of the three additional soil borings (B-7 through B-9) along with the initial LSI borings (B-1 through B-6) are included in this LSI Report.

1.3 List other potential petroleum sources within 500 feet of the site and identify them on the Potential Receptor Map in Section 4.

Two petroleum leak sites are located within 500 feet of the project site. Leak 2873 (Alexandria Tire and Auto) is located at 801 - 3rd Avenue East approximately 500 feet west of the site. Leak 2873 was closed by the MPCA on January 6, 1992. Leak 12940 (Geyer Rental) is located at 315 Nokomis Street approximately 500 feet southwest of the project site. Leak 12940 is an open MPCA petroleum leak site. In addition, Alexandria Concrete Co. (901 - 4th Avenue East) is located due south across 3rd Avenue (TH-27) from the release site. Alexandria Concrete Co. is a registered tank site (tank site #11717) with approximately seven active petroleum aboveground storage tanks (ASTs) and three removed petroleum underground storage tanks (USTs).

1.4 Describe the status of the tank system(s) including current and former tanks, piping, and dispensers. Summarize the status and characteristics of all past and present tanks in Table 1 and identify all components on a Site Map.

STS/AECOM contacted the City of Alexandria Fire Marshal (Mr. Dennis Stark) to determine if there were any records of UST removals from this property. Mr. Stark provided STS/AECOM with site photographs (Appendix N) documenting the removal of the USTs from

the site property on May 16, 1988. The tanks consisted of one 2,000 gallon UST and three 3,000 gallon USTs according to Mr. Stark's records. There was no record as to the UST contents or if any evidence of leakage from the tanks or analytical testing was conducted at the time of the UST removals.

1.5 Briefly describe the known or suspected source(s) of the release and how it was discovered.

The suspected source of release is from a former UST fuel distribution system from a Cenex service station that, according to the current site owner (Mr. Ben Zacher), operated on the property up until the early 1960's. The release was discovered on February 25, 2004 during a Phase II ESA conducted for the Minnesota Department of Transportation (Mn/DOT) Trunk Highway 29/27 (TH-29/27) reconstruction project.

1.6 When did the release occur (if known)? **Unknown**

1.7 What was the volume and type(s) of petroleum product released (if known)?
Unknown gallons Released product type(s): **Petroleum - unspecified**

When a tank has been excavated, refer to Guidance Documents 3-01 *Excavation of Petroleum Contaminated Soil and Tank Removal Sampling* and 3-02 *General Excavation Report Worksheet* for reporting requirements. If a tank has been excavated or if contaminated soil was removed for off-site treatment prior to this investigation, include Guidance Document 3-02 in Section 6.

1.8 Was soil excavated for off-site treatment? ☒ *Yes* ☐ *No*

Date(s) soil was excavated: **Petroleum contaminated soil was excavated by Mn/DOT during TH-29/27 highway reconstruction activities during the 2004-2005 construction seasons.**

Total volume removed: **Approximately 1,200 cubic yards**

Volume of total soil removed that was petroleum saturated: **0** cubic yards

Soil treatment method:
☒ Land treatment
☐ Thermal treatment
☐ Composting/Biopiling
☐ Other ( )
Name and location of treatment facility:

If you checked "Other", describe how the soil was treated and attach applicable documentation at the end of the reporting form.

Approximately 1,200 cubic yards of petroleum contaminated soil was excavated from the Mn/DOT road right-of-way directly south of the Alex Exhaust site building (see Figure 3). The contaminated soil was land-spread at an MPCA approved land-spread facility located in the SW ¼ of the NE ¼ of Section 12, Township 124 North, Range 38 West, Barsness

Township, Pope County, Minnesota. A copy of the MPCA Land Treatment Approval Letter dated October 7, 2005, a Land Treatment Site Location Diagram and the uniform load tally sheets for the contaminated soil hauled to the land treatment facility are included in the STS Documentation Report attached in Appendix D.

Site-Specific Geology and Hydrogeology

1.9 Discuss the soil borings drilled and provide rationale for their locations. Include boring logs in Section 6. Boring logs must include all the information required in Guidance Document 4-01 *Soil and Ground Water Assessments Performed during Site Investigations*.

At the time of the initial STS site investigation activities (February, 2007), no knowledge as to the exact location of former USTs or fuel distribution system components had been identified for this site. Therefore, soil boring locations were selected based upon the site layout and contaminated soil location information obtained from excavation activities for the Mn/DOT TH-29/27 reconstruction. It was later determined that the former UST basin was located east of the site building (Figure 3) based on site photographs obtained from the City Fire Marshall.

Soil boring B-1 was advanced in the suspected release "source area" near where heavy soil impacts were identified during the Mn/DOT highway reconstruction activities. This area is also a likely location for former gasoline dispensers based on the site layout and site building location. Soil boring B-3 was advanced southeast of the former UST basin area. Soil borings B-2 through B-9 were advanced around the release area to define the lateral extent of soil and groundwater contamination.

1.10 Indicate the locations and depths of soil samples submitted for grain size analysis.

Grain size analysis was conducted on the following soil samples:

- **B-7 (16.5' to 18'),**
- **B-8 (18'-20'),**
- **B-9 (16'-18').**

The grain size analysis results including a grain size curve are attached in Appendix I.

1.11 Discuss in detail the site geology based on soil boring data, grain size analyses, cross sections, geologic logs of nearby water wells, and available published information. Include detailed descriptions of more porous lenses or stringers within tighter soil types.

Soil types observed in the borings conducted consisted mainly of silty, sandy clay with trace gravel and 2 to 4 foot clayey sand layers at depths of 20 to 30 feet below ground surface. A review of local municipal well logs indicated similar stratigraphy with clay tills and intermittent layers of sand and gravel at depths of 75 to 100+ feet.

Bedrock underlying the quaternary soils in the area consists of meta-sedimentary rocks including greywacke, slate, conglomerate, quartzite, felsic-intermediate volcanoclastic rocks

and banded iron-formation (Geologic Map of Minnesota, Bedrock Geology, by P.K. Sims, 1970). The estimated depth to bedrock in the area is greater than 200 feet based on a review of local well logs and the Minnesota Geological Survey (MGS) Depth to Bedrock Map S-14 (Olsen and Mossler, 1982).

1.12 Discuss in detail the local and regional hydrogeology based on geologic logs of nearby water wells and available published information.

The aquifer utilized for drinking water (municipal wells and domestic wells) in and around the City of Alexandria is a Quaternary Buried Artesian Aquifer (QBAA). The Quaternary soils in the area are over 200 feet thick and are comprised primarily of interbedded clay and sand. The municipal and domestic wells in the area are generally less than 200 feet deep.

The bedrock hydrogeology in the area consists of Precambrian igneous and metamorphic rocks (MGS Bedrock Hydrogeology, by Roman Kanivetsky, 1978). This bedrock unit is generally not considered an aquifer except locally in faults and fractures.

1.13 Discuss site ground water flow direction using soil boring data, monitoring well data if collected, plume geometry, and available published information.

Groundwater depths observed in the temporary well soil borings completed by STS/AECOM ranged from approximately 25 feet in boring B-5 to 8 feet in boring B-9. The groundwater depths observed in the temporary well borings are likely not representative of the actual stabilized groundwater table elevation. Temporary wells TW-1 through TW-6 were left in overnight in an attempt to obtain stabilized groundwater readings, however the water levels did not appear to stabilize in the allotted 24 hour rest period, likely due to the low permeability of the clay soils present. Permanent monitoring wells are required to obtain an accurate groundwater flow direction at the project site.

Groundwater flow direction obtained from monitoring wells associated with Leak #12940 located approximately 500 feet southwest of the site indicate a shallow groundwater flow direction of southwest in the area.

1.14 Describe any evidence of a fluctuating water table or a seasonal high water table (e.g., mottling, saturated soil color or gleyed soils, monitoring well observations). Also, from other sources of information describe the range of natural water table fluctuations in the area.

No evidence of a fluctuating or seasonal high water table was observed during investigation activities. Water level elevation data for monitoring wells MW-1 through MW-3 associated with nearby Leak 12940 indicate a potential groundwater level fluctuation of up to 6 feet in the area.

Extent and Magnitude of Soil Contamination

1.15 Were soil borings conducted in or adjacent to the following source areas?

Dispensers	☒*yes* ☐*no* ☐*not present*	Piping	☒*yes* ☐*no* ☐*not present*
Transfer areas	☐*yes* ☐*no* ☒*not present*	Remote fill pipes	☐*yes* ☐*no* ☒*not present*
UST basins*	☐*yes* ☒*no* ☐*not present*	Valves	☐*yes* ☐*no* ☒*not present*
AST basins	☐*yes* ☐*no* ☒*not present*	Known spill areas	☐*yes* ☐*no* ☒*not present*

* **The location of the UST basin was determined after the first round of soil borings was conducted. Soil borings B-1, B-3 and B-4 were conducted around the UST basin area.**

1.16 Horizontal Definition: Based on requirements described in Guidance Document 4-01, were a sufficient number of soil borings completed to define the horizontal extent of soil contamination in all directions? ☒ *Yes* ☐ *No*

1.17 Vertical Definition: Based on requirements described in Guidance Document 4-01, were all soil borings completed to the required depth? ☒ *Yes* ☐ *No*

1.18 Site Stratigraphy: Based on requirements described in Guidance Document 4-01, was the stratigraphy boring completed to the required depth? ☒ *Yes** ☐ *No*

If you answered ***NO*** to any of the four previous questions, explain why the borings were not conducted in the required locations or to the required depths. See Guidance Document 4-01 *Soil and Ground Water Assessments Performed during Site Investigations* regarding exceptions and MPCA approval for depth of drilling.

***Soil boring B-1 was advanced to a depth of 40 feet. The deepest measured soil contamination at the site based on visual/olfactory and PID evidence of contamination was at 15 feet. Elevated (>10 PID units) PID readings were observed at depth in soil borings B-2 and B-3, however no visual or olfactory evidence of soil contamination was observed at depth for these samples. The PID readings observed at depth in borings B-2 and B-3 were likely false positives. The deepest soil sample with analytical impacts was the soil sample from boring B-4 collected at a depth of 13 feet.**

1.19 Describe the vertical and horizontal extent and magnitude of soil contamination based on field observations, soil headspace measurements (Table 2), and soil analytical results (Tables 3 and 4). If non-petroleum contaminants are present, discuss the possible sources of these compounds. Provide a map and two cross sections that illustrate both soil headspace and laboratory analytical results in Section 4. Include laboratory analytical reports and soil sampling methodology in Section 6.

The vertical extent of soil contamination based on visual/olfactory and PID screening data was approximately 15 feet. An elevated PID reading of 45 was observed at a depth of 22.5 to 25 feet in boring B-2 and a PID reading of 21 was observed at a depth of 27.5 to 30 feet in boring B-3, however no visual or olfactory evidence of contamination was observed at either

of these locations. In addition, the deepest contamination observed in the analytical soil samples was at a depth of 13 feet in boring B-4.

The horizontal extent of soil contamination was limited to soil borings B-1, B-3, B-4 and B-5 based on visual/olfactory, PID headspace and analytical data. Soil sample B-1(6') had an ethylbenzene concentration of 10 mg/kg which is above the Tier 1 Soil Leaching Value (SLV) of 4.7 mg/kg. No other SLV or Tier 1 Soil Reference Values (SRVs) were detected in the soil samples collected from the soil borings. The horizontal extent of soil contamination is illustrated on Figure 5 attached. Soil sample laboratory analytical reports are attached in Appendix F. Soil sample analytical data is summarized on Tables 3 and 4.

1.20 Is contaminated soil in contact with ground water? ☒ *Yes* ☐ *No*

If *YES*, or if ground water contamination appears likely, then complete the **Aquifer Determination** section below.

If *NO*, complete question 1.21.

1.21 a) What is the distance separating the deepest contamination from the surface of the water table?

See question 1.20

b) Was this distance measured during site activities, referenced from geologic information, or estimated based on professional opinion during a site visit?

c) In your judgment, is there a sufficient distance separating the petroleum contaminated soil from the underlying aquifer to prevent contamination of the aquifer? ☐ *Yes* ☐ *No*

Please explain in detail. In your explanation, consider the site-specific geology, the data in this section, and the nature of the petroleum release (i.e., volume, age, released product type).

If *YES*, the **Aquifer Determination** is not necessary as part of the LSI.

If *NO*, complete the **Aquifer Determination** section below.

1.22 Is contaminated surface soil (0-2 feet) present at the site? ☐ *Yes* ☒ *No*

If *YES*, delineate the extent of contaminated surface soil, identify the extent(s) of contaminated surface soil on a Site Map, and propose a corrective action in Section 3 to mitigate the impacts. If borings were used to define the extent, complete Table 5. See Guidance Document 3-01 *Excavation of Petroleum Contaminated Soil and Tank Removal Sampling* for more information regarding contaminated surface soil identification, delineation, and excavation.

Aquifer Determination

Complete this section if ground water has been contaminated or may become contaminated based on questions 1.20 and 1.21. Aquifer determination is made during the LSI. It is based upon the stratigraphy and a hydraulic conductivity measurement calculated from grain size analyses. The site stratigraphy gives the context within which the hydraulic conductivity measurement can be interpreted. Please refer to Guidance Document 4-01 *Soil and Ground Water Assessments Performed during Site Investigations* for methods and requirements. Provide the results of grain size analyses, calculations, and other information used for the determination of hydraulic conductivity in Section 6. Determine the aquifer thickness (b) from geologic logs of soil borings, water well logs, and available published information.

1.23 Calculate an average hydraulic conductivity value (K). **K = 10^{-5} cm/s = 0.02835 ft/day**

Indicate the calculation method (e.g. Hazen, Masch and Denny, Kozeny-Carmen, etc.).

Three grain size analysis tests were run on representative soils samples (B-7 (17.5’-20’), B-8 (20’-22.5’) and B-9 (16’-18’)) collected from the saturated zone of selected soil borings. The results of the grain size analyses confirmed that the typical site soils consist of sandy clay. The above referenced calculation methods cannot be effectively applied to clay soils. For example, the Hazen Approximation Method is only applicable for sandy soils where the percent passing the 200 sieve is less than 5 percent and the effective grain size (d_{10}) is between 0.1 mm and 0.3 mm. The percent passing the 200 sieve for the samples analyzed ranged from 36.6 percent to 56.2 percent. The average hydraulic conductivity was thus referenced from Applied Hydrogeology 3rd Edition by C.W. Fetter, 1994 based on an average soil type of sandy clay.

1.24 Calculate a range for aquifer transmissivity (T) using the equation T = Kb, where b is the thickness of the aquifer.
T_{High} = **7.1** ft^2/day (assuming an aquifer thickness (b) of 250 ft.)
T_{Low} = **1.4** ft^2/day (assuming an aquifer thickness (b) of 50 ft.)

If the transmissivity of a contaminated hydrogeologic unit is greater than 50 ft^2/day, it is considered an aquifer for the purpose of the Petroleum Remediation Program. If the hydrogeologic unit meets the definition of an aquifer, then monitoring wells are required if any of the following conditions are met: 1) ground water is impacted at or above Minnesota Department of Health (MDH) Health Risk Limits (HRLs) or 1,000 µg/L GRO or DRO; 2) ground water is impacted below the HRLs but levels are likely to reach the HRLs; or 3) there is an insufficient distance separating the petroleum contaminated soil (or an impacted non-aquifer) from an underlying aquifer. If monitoring wells were installed complete the **Aquifer Characterization** section below as part of an RI.

Aquifer Characterization

<u>NO MONITORING WELLS WERE INSTALLED FOR LEAK 15,656</u>

1.25 Discuss the drilling and installation of monitoring wells including the rationale for their locations. Summarize their construction in Table 9. Attach boring logs, well construction diagrams, and well logs in Section 6.

1.26 Is there a clean or nearly clean (below HRLs) down-gradient monitoring well located along the longitudinal axis of the contaminant plume (approximately 20 degrees plus or minus the axis)? ☐ *Yes* ☐ *No*

1.27 Is there a worst case well completed through the source area(s) of the release? ☐ *Yes* ☐ *No*

If you answered ***NO*** to any of the above two questions, please explain why a well was not completed in the required location.

1.28 Provide an estimate of the longitudinal length of the dissolved contaminant plume: feet

1.29 Calculate ground water flow velocity (based on Darcy's Law) using the average hydraulic conductivity (K), average horizontal hydraulic gradient (dh/dl), and effective porosity (n). Provide documentation and show calculations in Section 6.

Hydraulic conductivity (K) = ft/day
(Method if different than that used in 1.23:)
Porosity (n) = method/reference
Average horizontal gradient (dh/dl) = (unitless)
Calculated ground water velocity (v) = ft/day

1.30 Using the calculated ground water flow velocity from question 1.29, is there a receptor(s) located within a five-year travel time from the source area? ☐ *Yes* ☐ *No*

If *YES*, describe the location and type of receptor(s).

1.31 Were any deep monitoring wells completed at the site? ☐ *Yes* ☐ *No*

If *YES*, list them and indicate their depths:

Contact the MPCA project hydrologist before installing a deep monitoring well. A deep monitoring well **may** be necessary if: 1) contamination exists more than 10 feet below the water table or 2) the impacted aquifer is a drinking water aquifer or is hydraulically connected to the aquifer(s) presently used by a water supply well located within 500 feet of the release source.

If contamination is present at depth in the aquifer or in deeper aquifers, additional deep wells may be required. Provide the following information if deep wells were installed:

Vertical gradient (dv/dl)
Inferred ground water flow direction

Provide the following information for the deep aquifer unit if it appears to be hydrogeologically distinct from the upper unit.

Porosity (n):
Hydraulic conductivity (K) ft/day

Submit this RI report after completing a minimum of *two quarterly sampling events*. Quarterly ground water monitoring and sampling should continue until MPCA response is received.

Extent and Magnitude of Ground Water Contamination

1.32 Describe the extent and magnitude of ground water contamination based on the analytical results of samples collected as part of an LSI (Tables 6, 7, and 8) and, if applicable, monitoring well samples collected as part of an RI (Tables 10, 11, and 12). Provide Site Maps that illustrate both the laboratory analytical results and, if applicable, ground water gradients in Section 4.

Petroleum contamination was identified in groundwater samples collected from temporary well soil borings B-1, B-2, B-3, B-4, B-5 and B-8. No petroleum contamination was identified in groundwater samples collected from soil borings B-6, B-7 and B-9.

The worst case groundwater contamination was observed in groundwater samples TW-1 (B-1), TW-2 (B-2), TW-3 (B-3) and TW-4 (B-4). Benzene was detected above the Minnesota Department of Health (MDH) established Health Risk Limit (HRL) for this compound (5 µg/l) in groundwater samples TW-1 (150 µg/l), TW-2 (38 µg/l), TW-3 (160 µg/l) and TW-4 (26 µg/l). Gasoline range organics (GRO) and diesel range organics (DRO) were detected above the MPCA established health based value (HBV) for total petroleum hydrocarbons of 200 µg/l in groundwater samples TW-1 (11,000/2,800 µg/l), TW-2 (3,900/1,000 µg/l), TW-3 (5,800/1,200 µg/l) and TW-4 (1,300/400 µg/l). 1,3,5-trimethylbenzene was detected above the established HBV for this compound (300 µg/l) in groundwater sample TW-1 (380 µg/l). 1,2-dichloroethane was detected above the established HRL for this compound (4 µg/l) in sample TW-1 (370 µg/l).

Low level petroleum impacts indicative of the outer plume fringe were observed in groundwater samples TW-5 (B-5) and B-8. DRO was detected at 300 µg/l in TW-5 and 200 µg/l in B-8. No other compounds were detected in the groundwater samples from TW-5 and B-8. Boring B-5 was conducted approximately 80 feet northwest of the release area and boring B-8 was conducted approximately 200 feet southeast of the release area. The extent of horizontal groundwater impacts are illustrated on Figure 6. Groundwater laboratory analytical reports are attached in Appendix F. Groundwater analytical data is summarized on Tables 7 and 8.

1.33 If non-petroleum contaminants are present, discuss the possible sources of these compounds.

1,2-Dichlorobenzene was detected in groundwater sample TW-2. Possible sources of 1,2-dichlorobenzene include: automobile body polish and cleaners, deodorants/air fresheners, drain pipe solvents and insecticides. 1,2-Dichloroethane (1,2-DCA) was detected in groundwater sample TW-1. 1,2-DCA was historically used as an anti-knock additive in leaded fuels.

1.34 Provide a discussion on QA/QC, including information on the samples collected and laboratory analyses performed. Include laboratory analytical reports and ground water sampling methodology in Section 6.

A field equipment rinsate blank was collected and analyzed for VOC, GRO and DRO for the February 8, 2007 investigation event. A blind duplicate, field equipment rinsate blank and trip blank were collected for the February 27-28, 2008 and December 12, 2008 monitoring events. Tetrahydrofuran was detected at a concentration of 12 µg/l in the field blank collected during the February 8, 2007 investigation event. This compound was not detected in any of the other groundwater samples analyzed from this site. No other VOC, GRO or DRO compounds were detected in any of the other field equipment blanks or trip blanks analyzed. The blind duplicate analytical results correlated with the original sample results for B-7(W) and B-9(W).

1.35 Laboratory certification number: **Northeast Technical Services = 027-137-157**
Pace Analytical = 027-053-137

Evaluation of Natural Attenuation

Refer to the Guidance Document 4-03 *Assessment of Natural Attenuation at Petroleum Release Sites*. **Note**: Evaluation of natural attenuation is not required unless requested by MPCA staff.

NO EVALUATION OF NATURAL ATTENUATION WAS CONDUCTED

1.36 Discuss the results of the natural attenuation assessment (Table 13). Specifically, compare the concentrations of the inorganic parameters inside and outside the plume and whether the data indicate natural biodegradation is occurring at the site.

1.37 If active remediation is anticipated, discuss reasons why natural attenuation (including biodegradation) can not adequately remediate the contaminants to acceptable risk levels.

Extent and Recovery of Free Product

If free product is encountered during the investigation, include Guidance Document 2-03 *Free Product Recovery Report Worksheet* in Section 6. See Guidance Document 2-02 *Free Product: Evaluation and Recovery* for additional information.

NO FREE PRODUCT WAS ENCOUNTERED DURING INVESTIGATION ACTIVITIES

1.38 If free product was encountered during the site investigation, describe the work completed to delineate the extent of the free product zone and what efforts were or are being completed to recover it. Tabulate the volume of product recovered in Table 14. Illustrate the estimated horizontal extent of the free product zone on a Site Map in Section 4.

Section 2: Risk Assessment

Well Receptors

List all properties located within 500 feet of the site in Table 15. Identify all properties listed in Table 15 on the Potential Receptor Map in Section 4.

List all wells located within 500 feet of the site and any municipal or industrial wells within ½ mile in Table 16. All water wells within 500 feet of the release source must be listed even if construction information was not obtained or available. Include all available water supply well logs obtained from Minnesota Geological Survey, MDH, drillers, or county well management authorities, and any other well construction documentation in Section 6. Identify all wells listed in Table 16 on the Well Receptor Survey Map in Section 4.

2.1 Were all property owners within 500 feet of the site successfully contacted to determine if water wells are present? ☒ *Yes* ☐ *No*

If *NO*, please explain.

A walking well/potential receptor survey was conducted by STS on February 6, 2007 and a follow-up survey was conducted by STS/AECOM on December 12, 2008. For both survey events, the property owners within 500 ft. of the release source were contacted to determine if water wells, basements, or sumps were present on their property. The STS/AECOM personnel conducting the survey also conducted a visual observation of the properties for the presence of water wells. No water wells were identified within 500 feet of the release source during either of the surveys conducted.

A list of the properties surveyed within the 500 foot site radius is presented on Table 15 and illustrated on Figure 8.

2.2 Discuss any physical limitation to the inspection of properties within the 500-foot survey radius.

Property access for the Alexandria Concrete facility located at 924 - 3rd Avenue East directly south of the release site was not granted by the property owner. No wells were identified on the property based on a review of the County Well Index and the Site Manager (Mr. Larry Okerland) did not know of any wells on the property.

2.3 Discuss the results of the ground water receptor survey. Comment on the risks to water supply wells identified within 500 feet from the site as well as the risk posed by or to any municipal or industrial wells found within ½ mile. Specifically indicate whether identified water supply wells use the impacted aquifer. (Note: an impacted aquifer separated from another aquifer by a clay lens may not be considered a separate aquifer).

No water supply wells were identified within 500 ft. of the release source based on the walking well surveys conducted by STS/AECOM, a review of the Minnesota Department of Health

(MDH) County Well Index (CWI) and a review of the MPCA Petroleum Remediation Program (PRP) Maps Online.

One municipal water well (City Well #7A – Unique #214756) was identified within 1/2 mile of the release site. The location of this well is illustrated on Figure 9 and the water well log is attached in Appendix K. City Well #7A was drilled to a depth of 129 feet and is set in the Quaternary Buried Artesian Aquifer. The well log does not indicate a record of stratigraphy or what depth the well screen section is set at. Leak 15,656 is located down-gradient of City Well #7A, there is no indication of vertical petroleum contaminant migration at the release site and it is unlikely that impacts associated with Leak 15,656 would contaminate City Well #7A based on the extent and magnitude of impacts identified, the location of the well in respect to the release site and the local groundwater flow direction (southwest).

2.4 If water samples were collected from nearby water wells, discuss the analytical results below and tabulate them in Tables 11 and 12.

No water samples were collected from nearby water wells. No water wells were identified within 500 feet of the release.

2.5 Is municipal water available in the area? ☒ *Yes* ☐ *No*

2.6 Based on the public water supply risk assessment, is the site located in a Source Water Assessment Area or Drinking Water Supply Management Area (see Guidance Document 4-18 *Public Water Supply Risk Assessment at Petroleum Remediation Sites*)? ☒ *Yes* ☐ *No*

If *YES*, provide the name of the area and include the required documentation in Section 6.

2.7 Are there any plans for ground water development in the impacted aquifer within ½ mile of the site or one mile down-gradient of the site if the aquifer is fractured? ☐ *Yes* ☒ *No*

Provide the name, title and telephone number of the person that was contacted for this information.

Name: **Keith Avery**
Title: **Water Plant Superintendent for Alexandria Light and Power**
Telephone: **(320) 763-6501**

Mr. Keith Avery was contacted by STS/AECOM on June 20, 2007 and again on January 23, 2009 to determine if there were any plans for groundwater development in the North Well Field area (within 1/2 mile of the release site). Mr. Avery indicated that there were currently no plans for groundwater development for the City of Alexandria municipal water supply and that City Well #7A was still being utilized as a capacity supply well. Mr. Avery also indicated that City Well #16 (Unique #749302) was installed in May of 2007 in the North well field area to replace City Well #11 and City Well #17 (Unique #762288) was installed in the North well

field area to replace City Well #12. Both of these new wells are greater than 1/2 mile from the release site. The well logs for City Well #16 and City Well #17 are attached in Appendix K.

Surface Water Receptors

2.8 Are there any surface waters or wetlands located within ¼ mile of the site? ☐ *Yes* ☒ *No*

If *YES*, list them along with their distance and direction from the site in Table 17.

Also, list below any potential pathways such as ditches, drain tiles, storm sewers, etc., that may lead to the identified surface water features.

2.9 If surface water is present down-gradient of the site, is there a clean down-gradient soil boring or monitoring well located between the site and the surface water? ☐*Yes* ☐*No* ☒*NA*

If *YES*, identify the clean down-gradient boring or well, distance to the surface water feature, and discuss the contamination risk potential.

If *NO*, and ground water from a down-gradient boring or well is contaminated, we assume that contamination discharges to the surface water. Therefore, provide the following information:

Name of receiving water:	
Plume width, (W):	feet
Plume thickness, (H):	feet
Hydraulic conductivity, (K):	gal/day/ft^2
Horizontal gradient, (dh/dl):	(unitless)
Discharge, (Q) = H*W*K*(dh/dl)/1440	gal/min

Utilities and Subsurface Structures

2.10 Compare the relationship between the distribution of contaminant phases (soil, ground water, vapor, and non-aqueous phase liquid) to the location of all underground utility lines, utility service lines, and nearby basements and sumps. Include all identified utilities in Table 18. Show all utilities, utility service lines, and other subsurface structures on applicable cross sections in Section 4.

AECOM obtained a copy of the utility plan sheets from the City Engineer (Widseth Smith and Nolting (WSN)) for the release site area. Main utility lines including sanitary sewer, storm sewer and water along Trunk Highway 27 in the vicinity of the project site were replaced during Mn/DOT highway reconstruction activities in 2004 and 2005. Petroleum contaminated soil was generally encountered at depths of 5 to 12 feet below ground during the replacement of these utility lines. Contaminated soil encountered during the utility line replacements was excavated and disposed of off-site. Approximately 1,200 cubic yards of petroleum contaminated soil was excavated and disposed of from Mn/DOT right of way in

front of the former Alex Exhaust building. No free product was observed during the utility line replacements in the vicinity of the project site. Groundwater was not encountered in the excavations to a depth of approximately 12 feet during the utility replacement work near the project site. Groundwater levels encountered in the site soil borings generally indicate a depth to groundwater of 16 to 20 feet below ground surface. A copy of the Documentation Report for State Project 2102-50 TH 29/27 prepared by STS (dated 12/30/2005) is attached in Appendix D. Utility locations are shown on Figures 3, 7 and 7A.

2.11 Is there any evidence that free product or contaminated ground water may be traveling off site within the utility corridors? ☐ *Yes* ☒ *No*

No free product was observed during investigation activities or during utility line replacements in the Mn/DOT right-of-way. The depth of the utility lines (8 to 12 feet) appears to be just above the site groundwater levels (16 to 20 feet).

If *YES*, a utility backfill investigation is required (refer to Guidance Document 4-01). Discuss the investigation rationale and results.

2.12 Is there a history of field-detectable vapor impacts in the vicinity of the site? ☐ *Yes* ☒ *No*

If *YES*, describe:

Conduct a vapor survey if the vapor receptor survey and risk evaluation indicate a risk of vapor impact or an infiltration risk from contaminated ground water or free product to utilities or subsurface structures. See Guidance Document 4-02 *Potential Receptor Surveys and Risk Evaluation Procedures at Petroleum Release Sites*. Identify all vapor monitoring locations on the Vapor Survey Map by labeling each monitoring location with a number that corresponds to vapor monitoring locations listed in Table 19. Vapor monitoring methods, including instruments used, must be discussed in Section 6.

2.13 Provide a detailed description of each vapor monitoring location and indicate if vapors were detected.

The storm sewer manhole located approximately 50 feet southwest of the release area was monitored for vapors by STS/AECOM on February 8, 2007 with a PID meter. No PID readings above 1 PID unit were observed at the storm sewer manhole. The location of the vapor monitoring point is illustrated on Figure 4.

Vapor Intrusion Receptors

When vapor intrusion receptors are present, a preliminary vapor intrusion risk assessment must be completed (see Guidance Document 4-01a *Vapor Intrusion Assessments Performed during Site Investigations*). If completed, include the Vapor Intrusion Assessment Map in Section 4 that identifies all vapor intrusion samples and receptors at and within the 100-foot preliminary assessment area.

2.14 Was a preliminary vapor intrusion risk assessment completed? ☒ *Yes* ☐ *No*

If *NO*, explain why.

2.15 Do any of the soil gas samples from locations near inhabited buildings exceed the ISVs by ten times (10X) for petroleum related compounds? ☒ *Yes* ☐ *No*

Soil gas concentrations in soil vapor probes VP-1 and VP-2 conducted in the source area(s) and near the site building had vapor concentrations exceeding ten times the ISVs.

If you answered ***YES***, is additional characterization of the vapor intrusion pathway needed for these buildings (e.g. sub-slab soil gas, an indoor building survey, or indoor air sampling)? **If *YES***, complete question 3.4. **If *NO***, explain why. ☐ *Yes* ☒ *No*

VOC exceedances of 100 times the Intrusion Screening Values (ISVs) were detected in two exterior soil gas samples (VP-1(3') and VP-2(8')) collected at the site. VP-2 was conducted in the former dispenser area approximately 30 feet south of the site building. VP-1 was conducted near the site building and the former UST basin area east of the site building. The VOC compounds detected above 100 times the ISVs in VP-1 and VP-2 were benzene, cyclohexane, n-hexane, 1,2,4- and 1,3,5-trimethylbenzene and total xylenes. Results of the soil gas sampling are summarized on Table 20. The existing site building is occupied on a limited basis (less than 8 hours a day) and used as a part-time automobile repair shop according to the property owner (Ben Zacher). The site building is slab-on-grade construction with garage bay doors.

No additional characterization of the vapor intrusion assessment is recommended for this receptor based on the receptor usage as an auto repair facility, the limited occupancy of the building (less than 8 hours a day) and the building construction (slab-on-grade, garage bay doors).

2.16 Have sufficient data been collected to propose a Conceptual Corrective Action Design for buildings that are likely to be impacted by petroleum vapors? ☐ *Yes* ☒ *No*

If *YES*, describe your justification for corrective action.

2.17 Based on the horizontal extent of impacted ground water or free product from the release, is additional soil gas sampling required beyond the 100-foot preliminary assessment area near inhabited buildings? ☐ *Yes* ☒ *No*

If *YES*, describe your proposal for additional vapor intrusion sampling.

If *NO*, explain why.

No free product has been identified from the release and the horizontal extent of groundwater

impacts is limited in extent. Elevated vapor concentrations were observed in the source area(s), however the vapor concentrations in the surrounding vapor probes (VP-3 and VP-4) had vapor concentrations less than ten times the ISVs.

2.18 Were recommended field sampling procedures and laboratory QA/QC from Guidance Document 4-01a followed? ☒ *Yes** ☐ *No*

If ***NO***, explain why and discuss implications on data quality.

*** The vapor intrusion assessment was conducted in 2007 prior to the October, 2008 Guidance Document Revisions. The field sampling procedures and laboratory QA/QC was conducted in general accordance with Guidance Document 4-01a dated April, 2005.**

Site Conceptual Model Discussion

2.19 Provide a detailed site conceptual model (SCM). The SCM should integrate site-specific geology, hydrogeology, and the contaminant distribution with respect to identified exposure pathways (well receptors, surface water receptors, utilities and subsurface receptors, and vapor intrusion receptors). For additional information on SCM development, see Guidance Document 1-01 *Petroleum Remediation Program General Policy*.

Well Receptors

No well receptors were identified within 500 feet of the release source based on the walking well surveys conducted and reviews of published well information including CWI and the MPCA PRP Maps Online. One municipal well (City Well #7A, Unique #214756) is located approximately 2,000 feet northwest of the release area in an up-gradient direction. This municipal well is drilled to a depth of 129 feet below ground surface, however no well construction information is available on the well log for this well. In general, the municipal wells for the City of Alexandria are set below 100 feet in a Quaternary Buried Artesian Aquifer. There does not appear to be a risk to City Well #7A from Leak 15,656 impacts based on the well distance and location from the source area and the lack of identified vertical contaminant migration at the site.

The upper 25 feet of saturated Quaternary soil where petroleum impacts from Leak 15,656 were observed does not constitute an aquifer based on the soil type observed in the soil borings (sandy, silty clay) and the results of the three grain size analysis performed from the saturated zone. The transmissivity value calculated for the upper saturated unit was less than 50 ft^2/day and no water supply wells were identified within 500 feet of the release site.

Surface Water Receptors

No surface water receptors were identified within 1/4 mile of the release area. The likelihood of impacts associated with Leak 15,656 contaminating a surface water are minimal based on the extent and magnitude of groundwater impacts present, the lack of nearby surface waters, and the tight clay soils in the area which limit groundwater flow and contaminant migration.

Utilities and Subsurface Receptors

Soil contamination was observed around the subsurface utilities (storm sewer, sanitary sewer and watermain) during the Mn/DOT highway reconstruction work. Contaminated soil excavated to access utility lines and from immediately around the utility lines was removed and disposed of by Mn/DOT. Approximately 1,200 cubic yards of contaminated soil was removed from the Mn/DOT road right-of-way utility work. Imported sand backfill was placed around the utility lines and the remainder of the trench was backfilled with native on-site soils (clay). Residual soil contamination likely remains around the utility lines especially those running to the former Alex Exhaust facility that are outside the Mn/DOT road right-of-way.

No evidence of free product or contaminated groundwater migrating along utility lines was observed during investigation activities. The utility lines in the area are generally set above the groundwater table.

Vapor Intrusion Receptors

A receptor specific vapor probe (VP-1) conducted near the on-site building had exceedances of 100 times the established ISVs for VOC compounds. The site building is currently inhabited on a part-time (less than 8 hours a day) basis and is used as an automobile repair facility. The site building is slab-on-grade construction and has garage bay doors. No additional vapor intrusion characterization appears warranted for the on-site building receptor based on the building occupancy, usage and construction type.

Site usage as an automobile repair facility creates an interior source for petroleum vapors. Sampling of interior air would likely not be able to distinguish between vapor intrusion (sub-slab/exterior source) and interior vapors.

A soil vapor probe conducted adjacent to the Lloyd’s Café building (903 - 3rd Avenue) showed no soil vapor results exceeding 100 times the ISVs. This building is of slab-on-grade construction with no basement.

2.20 Discuss any other site concerns not included in the above discussion

See above discussion in Section 2.19.

Section 3: Site Management Decision

The site management decision should be based on the Program's objectives described in Guidance Document 1-01 *Petroleum Remediation Program General Policy*.

3.1 Recommendation for site:
☒ site closure
☐ additional ground water monitoring
☐ additional field-detectable vapor monitoring
☐ additional soil gas/vapor intrusion investigation

☐ corrective action

3.2 If closure is recommended, summarize significant investigative events and describe how site-specific exposure pathways identified in question 2.19 have been adequately addressed.

Site closure is recommended for Leak 15,656 based on site investigation and corrective action activities completed to date. The release source (UST fuel distribution system) was removed from the site in 1988. Approximately 1,200 cubic yards of petroleum contaminated soil associated with Leak 15,656 was removed from the Mn/DOT road right-of-way including utility lines. No water well receptors were identified within 500 feet of the release source. There does not appear to be a risk to the municipal water supply from Leak 15,656 based on the well receptor survey data collected. No free product or contaminated groundwater was identified migrating along the utility corridors. No additional vapor intrusion characterization appears warranted. No surface soil contamination was identified in the upper 2 feet of the site soils. No risk to surface water was identified.

Following is a brief history of significant site events:

- **May 16, 1988** — **Four gasoline USTs removed from site, no record of site impacts or removal documentation (Excavation Report),**
- **February 5, 2004** — **Release discovered during soil boring for Mn/DOT TH 29/27 Highway reconstruction and called in to State Duty Officer,**
- **Summer, 2005** — **Approximately 1,200 cubic yards of petroleum contaminated soil associated with Leak 15,656 was excavated and disposed of during Mn/DOT highway reconstruction activities,**
- **February 7-8, 2007** — **STS/AECOM conducted Limited Site Investigation including six soil borings and four soil vapor probes,**
- **February 27-28, 2008** — **STS/AECOM conducted two additional soil borings to define horizontal extent of contamination. STS/AECOM could not conduct all borings necessary for site definition due to property access issues,**

- **December 12, 2008** **STS/AECOM conducted a single temporary well/soil boring (B-9) to define the down-gradient horizontal extent of groundwater impacts.**

3.3 If additional ground water or field-detectable vapor monitoring is recommended, indicate the proposed monitoring locations, sampling frequency, and target analytes. Conduct quarterly ground water monitoring and sampling until the MPCA responds to this report.

No additional groundwater or vapor monitoring is recommended.

3.4 If additional vapor intrusion investigation is recommended, provide details of proposed activities such as completing an indoor building survey, sub-slab vapor sampling, indoor air sampling, or locations for additional soil gas sampling.

No additional vapor intrusion investigation is recommended.

3.5 If corrective action is recommended, provide a conceptual approach by completing Guidance Document 4-19 *Conceptual Corrective Action Design Worksheet* and include in Section 6. See Guidance Document 4-10 *Elements of the Corrective Action Design* for more information on the corrective action design process and other requirements. (Note: MPCA staff will review this report at a higher-than-normal priority to determine if corrective action is required.)

No corrective action is recommended.

Section 4: Figures

Attach the following figures in order of discussion in the text. All figures must include a north arrow, scale, and legend. Approximate scales are not acceptable.

☒ **Figure 1 - Site Location Diagram -** using a U.S. Geological Survey 7.5 minute quadrangle map.

☒ **Figure 2 - Aerial Photograph**

☒ One or more Site Maps showing:
- **Figure 3 - Soil Boring/Utility Location Diagram**
- **Figure 4 - Soil Vapor Sampling Location Diagram**
- **Figure 5 - Horizontal Extent of Soil Contamination**
- **Figure 6 - Horizontal Extent of Groundwater Contamination**

☒ **Figure 7 - Cross-Section Alignment Location Diagram**
Figure 7A – Cross Section Diagram A-A’ & B-B’
At least two (2) geologic cross sections depicting stratigraphy, soil headspace results, laboratory analytical results, water table elevation, and underground utilities.

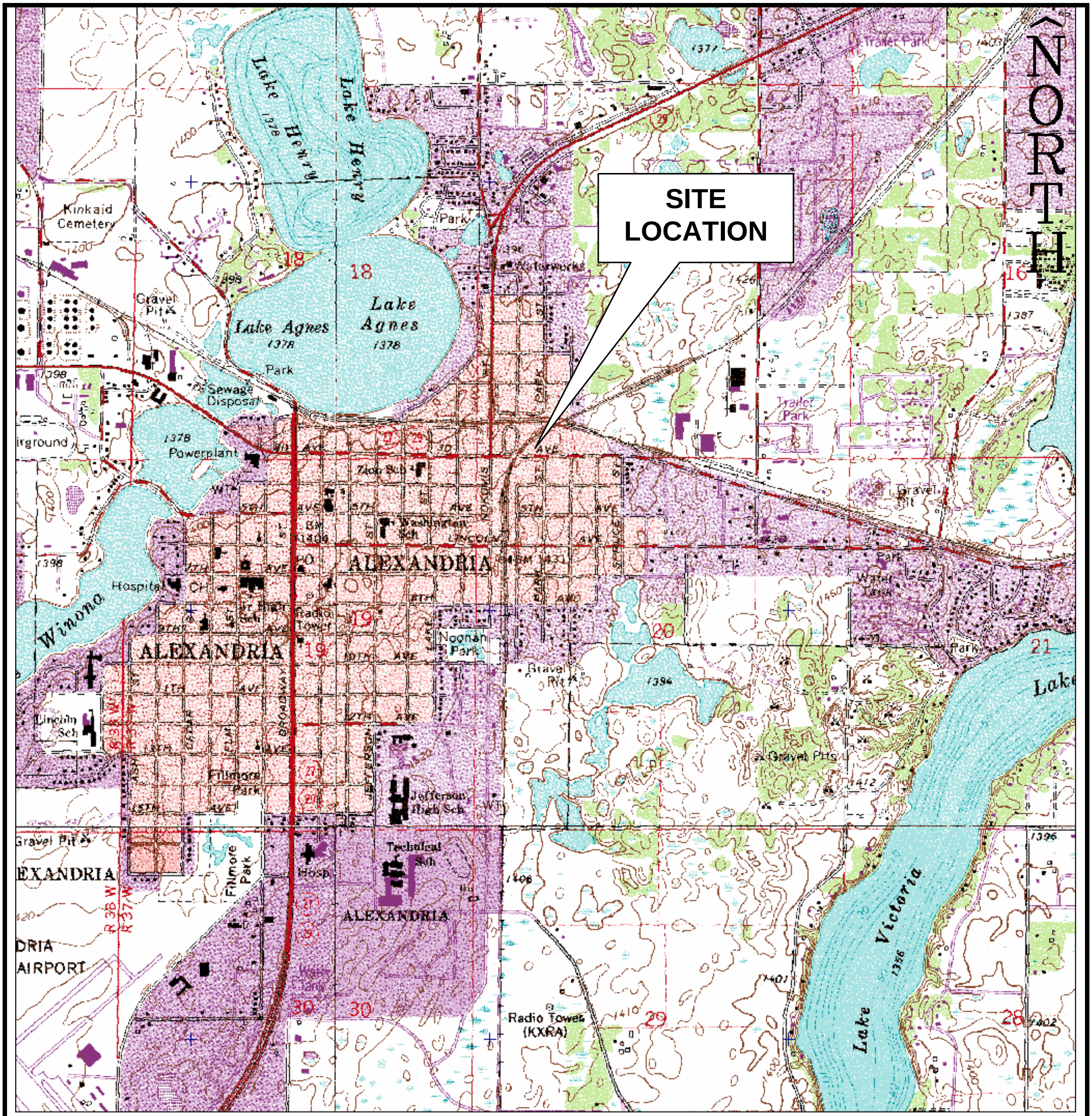
☐ Ground water gradient contour maps (for sites with monitoring wells) for each gauging event.

☒ **Figure 8 - Potential Receptor Map** Potential Receptor Map (scale 1 inch = 50 to 100 feet), centered on the release area, showing property boundaries and roads, and potential receptors such as buildings, water wells, underground utilities (distinguish between water, storm sewer, and sanitary sewer), surface waters, ditches, and any other pertinent items within 500 feet of the release source.

☒ **Figure 9 - Potential Well Receptor Survey** Well Receptor Survey Map showing ½-mile radius, 500-foot radius, water supply wells, and other potential sources of contamination on a U.S. Geological Survey 7.5 minute quadrangle map.

☐ Vapor Survey Map showing utilities and buildings with basements and monitoring locations within 500 feet (if a survey was required). If the survey area has been expanded beyond 500 feet, adjust the map to encompass the entire surveyed area.

☒ **Figure 4** - Vapor Intrusion Assessment Map showing all vapor intrusion samples and receptors at and within the 100-foot preliminary assessment area. If the assessment area has been expanded beyond 100 feet, adjust the map to encompass the entire assessment area.



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS

700 ft Scale: 1 : 24,000 Detail: 13-1 Datum: WGS84

161 Cheshire Lane North
Plymouth, Minnesota 55441
T 763.852-4200
F 763.473-0400
www.aecom.com

SITE LOCATION DIAGRAM
Alex Exhaust
MPCA Leak #15,656
905 - 3rd Avenue East
Alexandria, Minnesota

DRAWN BY	**TJG**
CHECKED BY	**RLD**
APPROVED BY	**RLD**
CADFILE	SCALE **1" = 2000'**
AECOM PROJ. **04660027**	FIGURE NO. **1**

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Plymouth, Minnesota 55441
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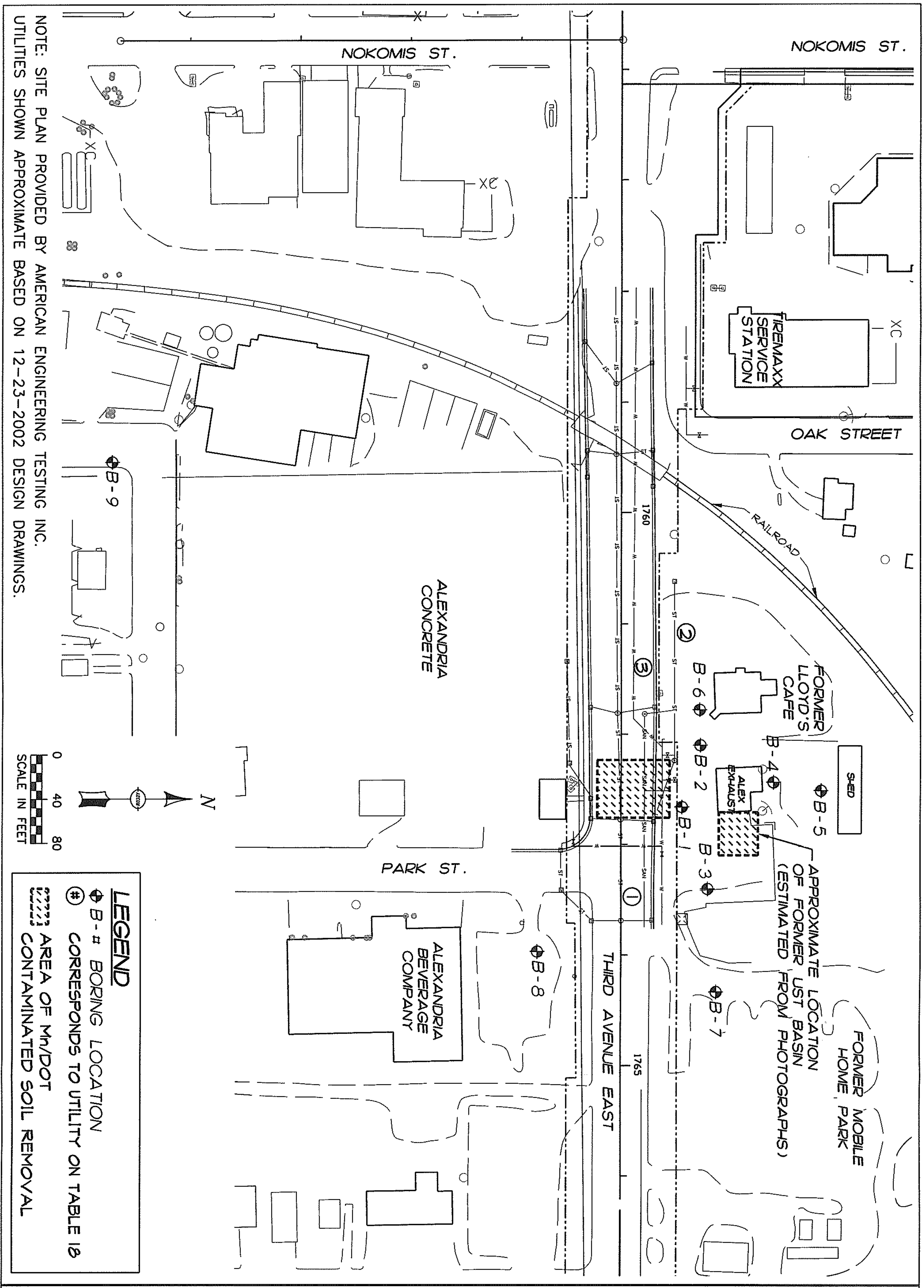
AERIAL PHOTOGRAPH - MDH CWI (2003)
Alex Exhaust
MPCA Leak #15,656
905 - 3rd Avenue East
Alexandria, Minnesota

DRAWN BY	**TJG**
CHECKED BY	**RLD**
APPROVED BY	**RLD**
CADFILE	SCALE **As Shown**
AECOM PROJ. **04660027**	FIGURE NO. **2**

FIGFRAME.DOC



NOTE: SITE PLAN PROVIDED BY AMERICAN ENGINEERING TESTING INC.
UTILITIES SHOWN APPROXIMATE BASED ON 12-23-2002 DESIGN DRAWINGS.

AECOM
161 Cheshire Lane N., Suite 500
Minneapolis, MN 55441 USA
(763) 852-4200
www.aecom.com
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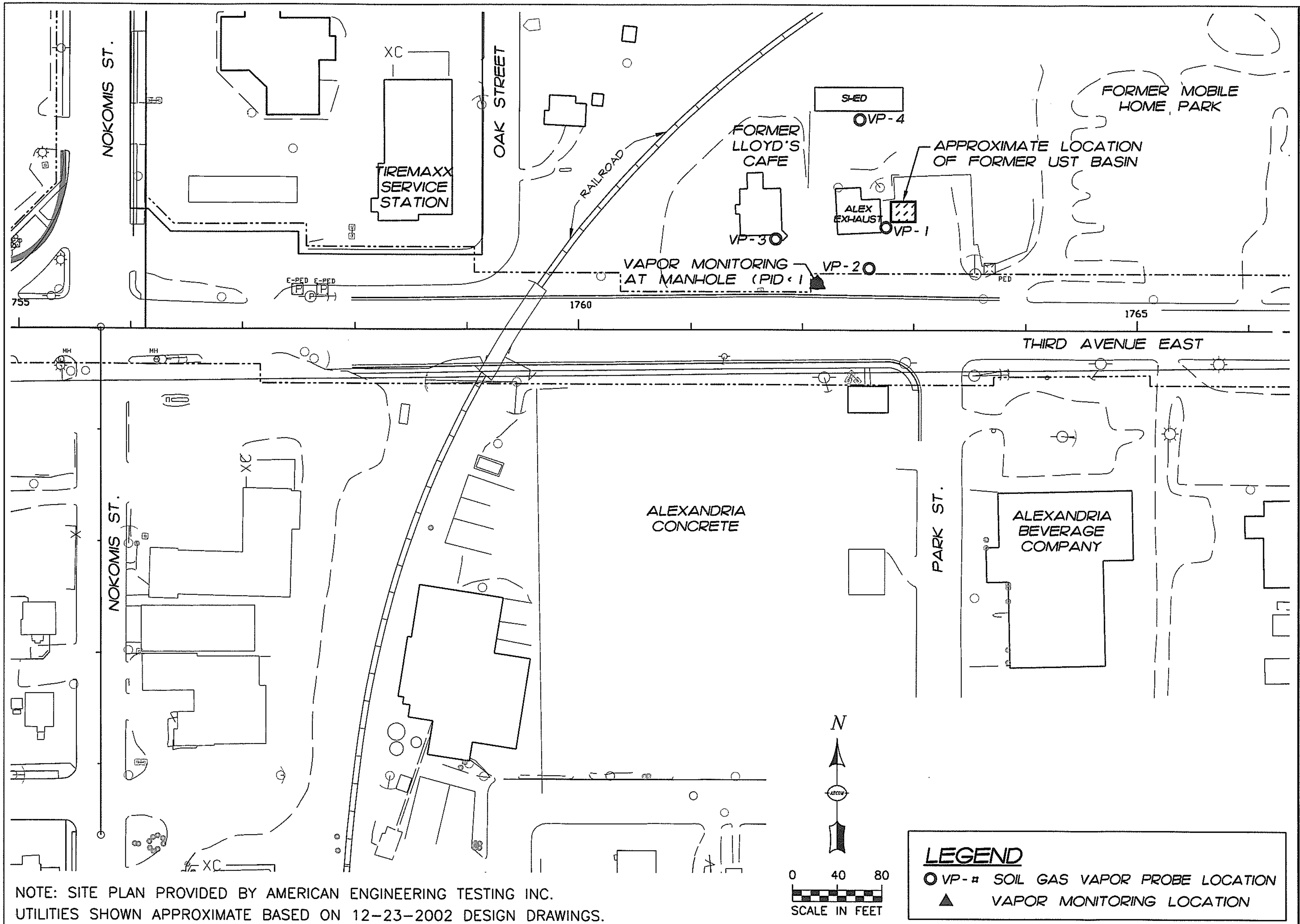
SOIL BORING / UTILITY LOCATION DIAGRAM
ALEX EXHAUST
905 3rd AVENUE EAST
ALEXANDRIA, MINNESOTA
FOR: MPCA

Drawn: TAK 1/20/2009
Checked: TJG 1/20/2009
Approved: RLD 1/20/2009
PROJECT NUMBER 04660027
FIGURE NUMBER 3



NOTE: SITE PLAN PROVIDED BY AMERICAN ENGINEERING TESTING INC.
UTILITIES SHOWN APPROXIMATE BASED ON 12-23-2002 DESIGN DRAWINGS.

AECOM

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Minneapolis, MN 55441 USA
(763) 852-4200
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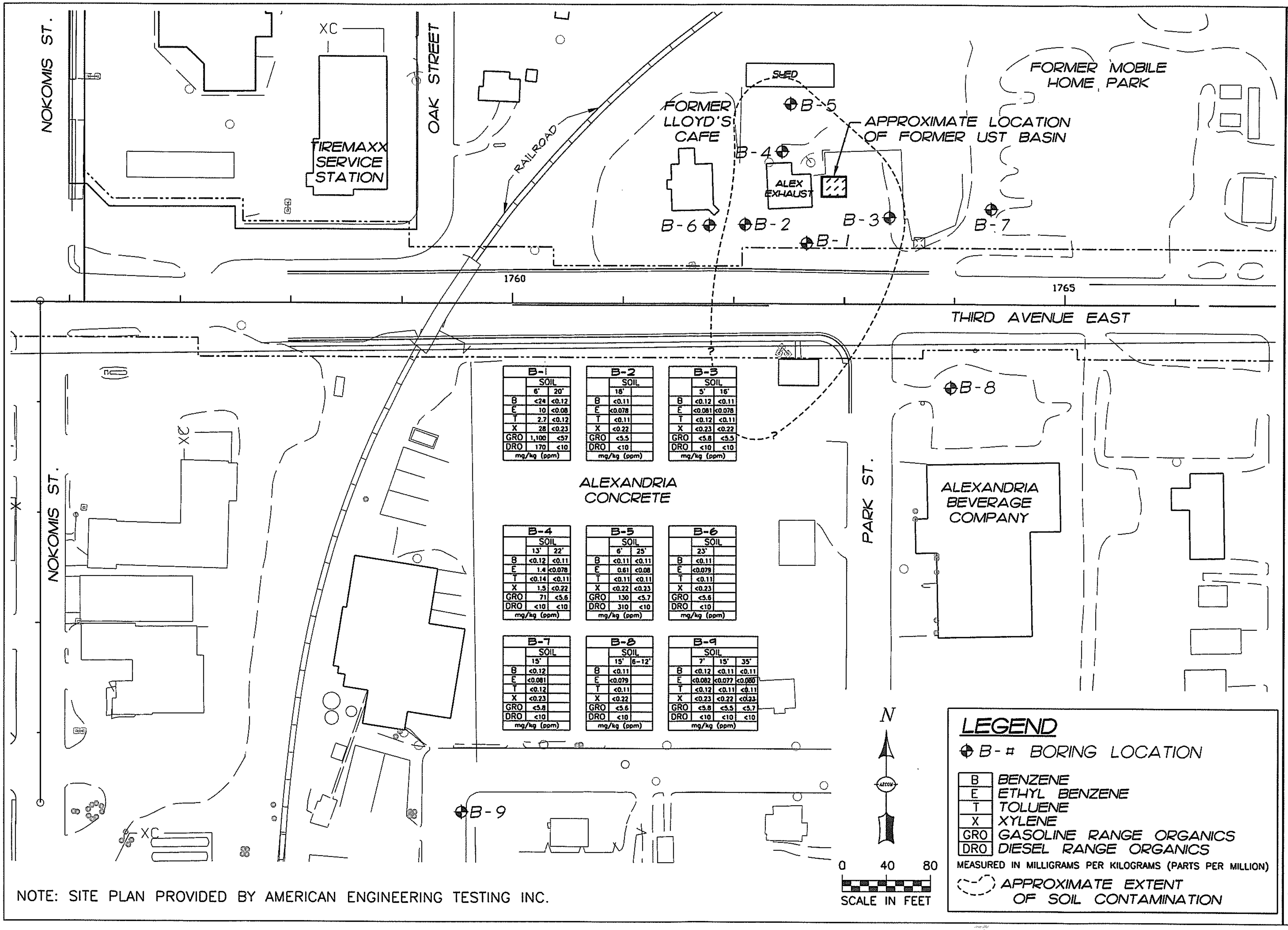
SOIL VAPOR SAMPLING LOCATION DIAGRAM
ALEX EXHAUST
905 3rd AVENUE EAST
ALEXANDRIA, MINNESOTA
FOR: MPCA

Drawn :	TAK	1/20/2009
Checked:	TJG	1/20/2009
Approved:	RLD	1/20/2009
PROJECT NUMBER	04660027	
FIGURE NUMBER	4	



B-1	SOIL	
	6'	20'
B	<24	<0.12
E	10	<0.08
T	2.7	<0.12
X	28	<0.23
GRO	1,100	<57
DRO	170	<10
mg/kg (ppm)		

B-2	SOIL	
	18'	
B	<0.11	
E	<0.078	
T	<0.11	
X	<0.22	
GRO	<5.5	
DRO	<10	
mg/kg (ppm)		

B-3	SOIL	
	5'	16'
B	<0.12	<0.11
E	<0.081	<0.078
T	<0.12	<0.11
X	<0.23	<0.22
GRO	<5.8	<5.5
DRO	<10	<10
mg/kg (ppm)		

B-4	SOIL	
	13'	22'
B	<0.12	<0.11
E	1.4	<0.078
T	<0.14	<0.11
X	1.5	<0.22
GRO	71	<5.6
DRO	<10	<10
mg/kg (ppm)		

B-5	SOIL	
	6'	25'
B	<0.11	<0.11
E	0.61	<0.08
T	<0.11	<0.11
X	<0.22	<0.23
GRO	130	<5.7
DRO	310	<10
mg/kg (ppm)		

B-6	SOIL	
	23'	
B	<0.11	
E	<0.079	
T	<0.11	
X	<0.23	
GRO	<5.6	
DRO	<10	
mg/kg (ppm)		

B-7	SOIL	
	15'	
B	<0.12	
E	<0.081	
T	<0.12	
X	<0.23	
GRO	<5.8	
DRO	<10	
mg/kg (ppm)		

B-8	SOIL	
	15'	6-12'
B	<0.11	
E	<0.079	
T	<0.11	
X	<0.22	
GRO	<5.6	
DRO	<10	
mg/kg (ppm)		

B-9	SOIL		
	7'	15'	35'
B	<0.12	<0.11	<0.11
E	<0.082	<0.077	<0.080
T	<0.12	<0.11	<0.11
X	<0.23	<0.22	<0.23
GRO	<5.8	<5.5	<5.7
DRO	<10	<10	<10
mg/kg (ppm)			

NOTE: SITE PLAN PROVIDED BY AMERICAN ENGINEERING TESTING INC.

LEGEND

⊕ B-# BORING LOCATION

B	BENZENE
E	ETHYL BENZENE
T	TOLUENE
X	XYLENE
GRO	GASOLINE RANGE ORGANICS
DRO	DIESEL RANGE ORGANICS

MEASURED IN MILLIGRAMS PER KILOGRAMS (PARTS PER MILLION)

APPROXIMATE EXTENT OF SOIL CONTAMINATION

AECOM

161 Cheshrie Lane N., Suite 500
Minneapolis, MN 55441 USA
(763) 852-4200
www.aecom.com

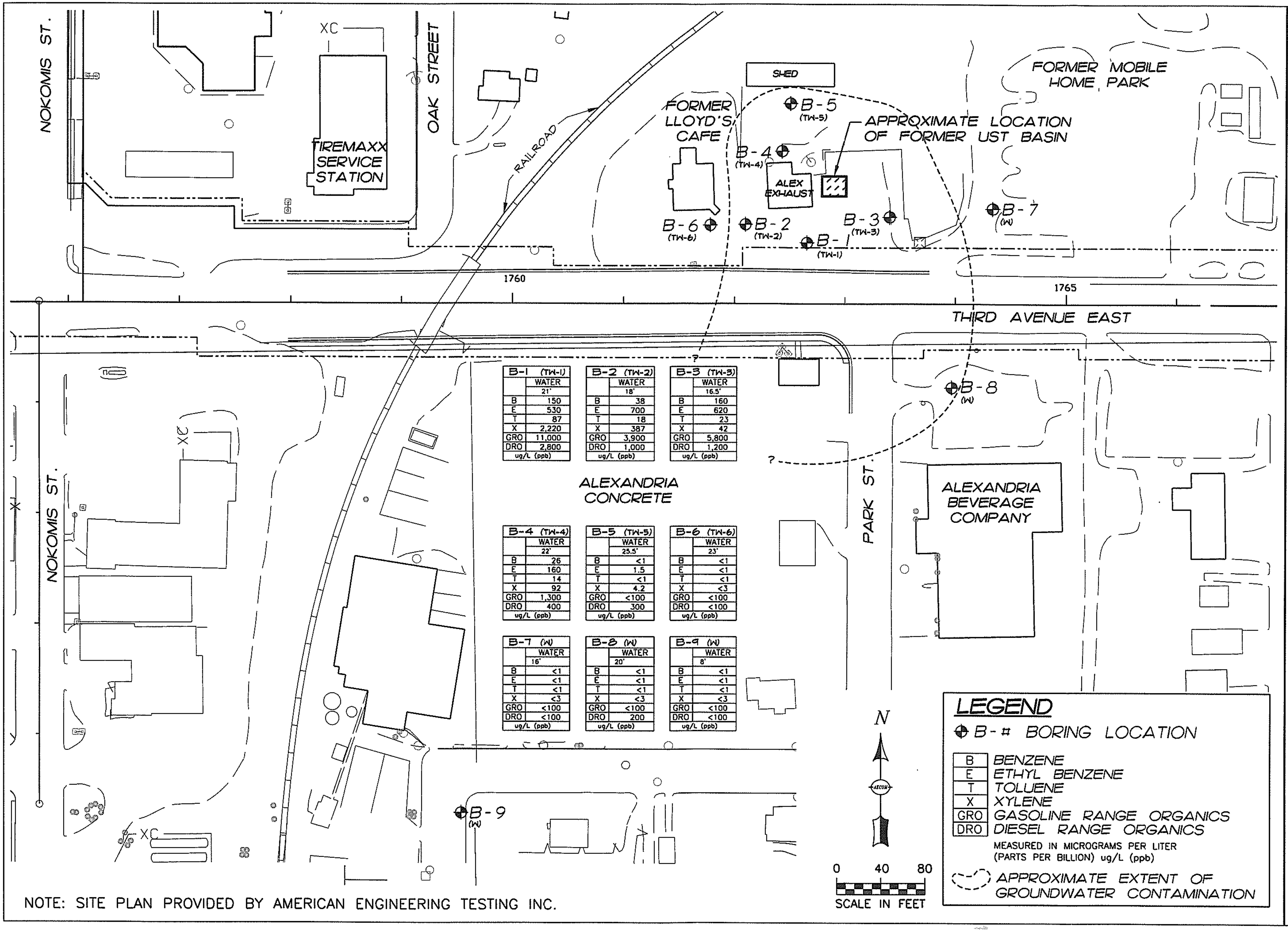
HORIZONTAL EXTENT OF SOIL CONTAMINATION
ALEX EXHAUST
905 3rd AVENUE EAST
ALEXANDRIA, MINNESOTA
FOR: MPCA

Drawn :	TAK	1/20/2009
Checked:	TJG	1/20/2009
Approved:	RLD	1/20/2009

PROJECT NUMBER 04660027

FIGURE NUMBER 5

:\PROJECTS\04660027\G04660027-ENV-01.dwg, FIG.6, 1/28/2009 11:13:57 AM, STS_PLOTSTAMP, STS_PLOTSTAMP



B-1 (TW-1)	
	WATER
	21'
B	150
E	530
T	87
X	2,220
GRO	11,000
DRO	2,800
ug/L (ppb)	

B-2 (TW-2)	
	WATER
	18'
B	38
E	700
T	18
X	387
GRO	3,900
DRO	1,000
ug/L (ppb)	

B-3 (TW-3)	
	WATER
	16.5'
B	160
E	620
T	23
X	42
GRO	5,800
DRO	1,200
ug/L (ppb)	

B-4 (TW-4)	
	WATER
	22'
B	26
E	160
T	14
X	92
GRO	1,300
DRO	400
ug/L (ppb)	

B-5 (TW-5)	
	WATER
	25.5'
B	<1
E	1.5
T	<1
X	4.2
GRO	<100
DRO	300
ug/L (ppb)	

B-6 (TW-6)	
	WATER
	23'
B	<1
E	<1
T	<1
X	<3
GRO	<100
DRO	<100
ug/L (ppb)	

B-7 (W)	
	WATER
	16'
B	<1
E	<1
T	<1
X	<3
GRO	<100
DRO	<100
ug/L (ppb)	

B-8 (W)	
	WATER
	20'
B	<1
E	<1
T	<1
X	<3
GRO	<100
DRO	200
ug/L (ppb)	

B-9 (W)	
	WATER
	8'
B	<1
E	<1
T	<1
X	<3
GRO	<100
DRO	<100
ug/L (ppb)	

LEGEND

⊕ B-# BORING LOCATION

B	BENZENE
E	ETHYL BENZENE
T	TOLUENE
X	XYLENE
GRO	GASOLINE RANGE ORGANICS
DRO	DIESEL RANGE ORGANICS

MEASURED IN MICROGRAMS PER LITER (PARTS PER BILLION) ug/L (ppb)

APPROXIMATE EXTENT OF GROUNDWATER CONTAMINATION

NOTE: SITE PLAN PROVIDED BY AMERICAN ENGINEERING TESTING INC.

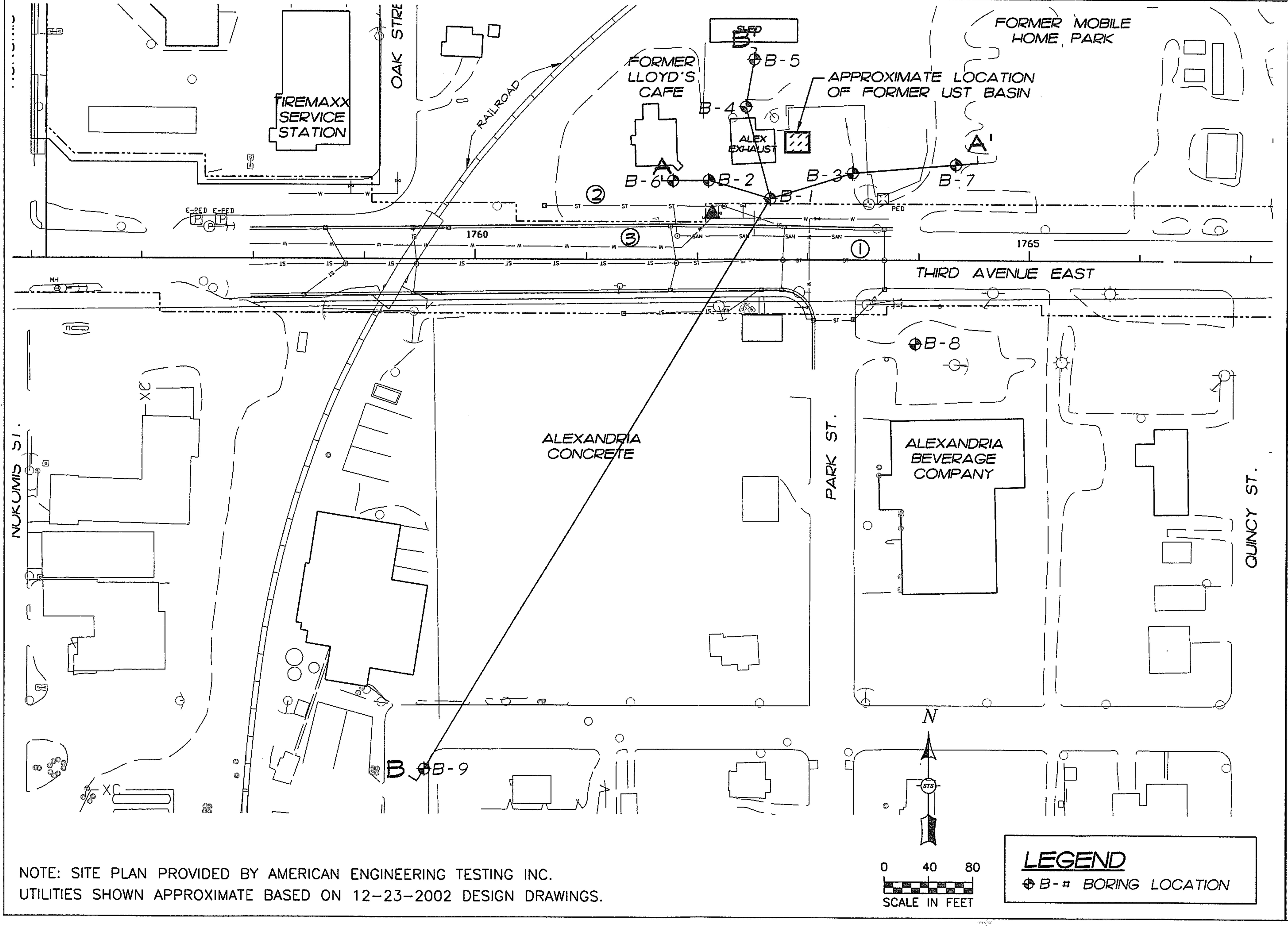
AECOM

161 Cheshrie Lane N., Suite 500
Minneapolis, MN 55441 USA
(763) 852-4200
www.aecom.com

HORIZONTAL EXTENT OF GROUNDWATER CONTAMINATION
ALEX EXHAUST
905 3rd AVENUE EAST
ALEXANDRIA, MINNESOTA
FOR: MPCA

Drawn :	TAK	1/20/2009
Checked:	TJG	1/20/2009
Approved:	RLD	1/20/2009
PROJECT NUMBER	04660027	
FIGURE NUMBER	6	

:\PROJECTS\04660027\G04660027-ENV-01.dwg, FIG.7, 1/26/2009 4:48:10 PM, STS_PLOTSTAMP, STS_PLOTSTAMP



NOTE: SITE PLAN PROVIDED BY AMERICAN ENGINEERING TESTING INC.
UTILITIES SHOWN APPROXIMATE BASED ON 12-23-2002 DESIGN DRAWINGS.

AECOM

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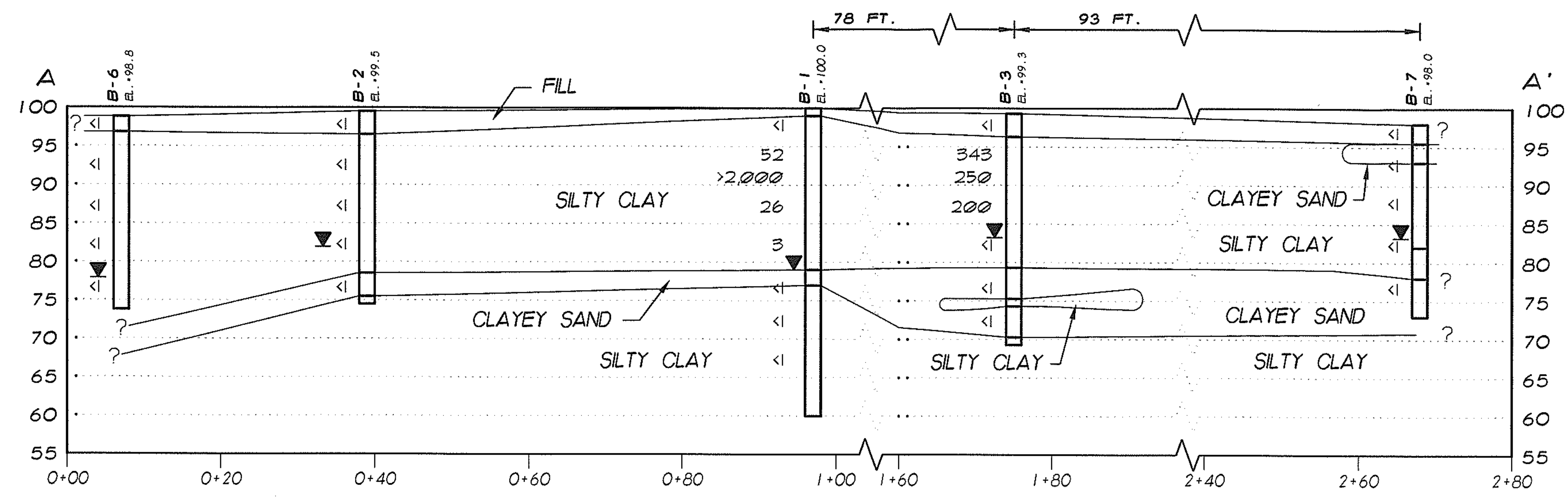
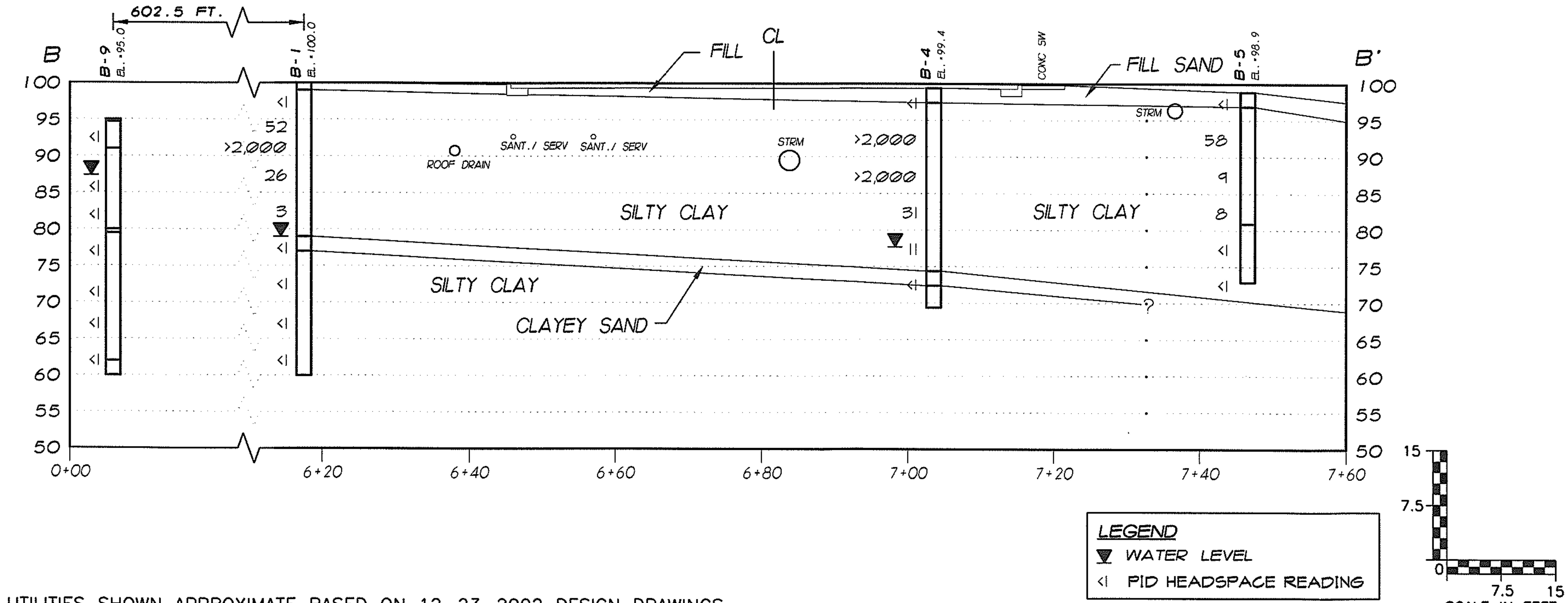
CROSS SECTION ALIGNMENT LOCATION DIAGRAM
ALEX EXHAUST
905 3rd AVENUE EAST
ALEXANDRIA, MINNESOTA
FOR: MPCA

Drawn:	TAK	1/20/2009
Checked:	TJG	1/20/2009
Approved:	RLD	1/20/2009
PROJECT NUMBER	04660027	
FIGURE NUMBER	7	





UTILITIES SHOWN APPROXIMATE BASED ON 12-23-2002 DESIGN DRAWINGS.

AECOM

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CROSS SECTION DIAGRAM A-A' & B-B'
ALEX EXHAUST
905 3rd AVENUE EAST
ALEXANDRIA, MINNESOTA
FOR: MPCA

Drawn:	TAK	1/20/2009
Checked:	TJG	1/20/2009
Approved:	RLD	1/20/2009
PROJECT NUMBER	04660027	
FIGURE NUMBER	7A	

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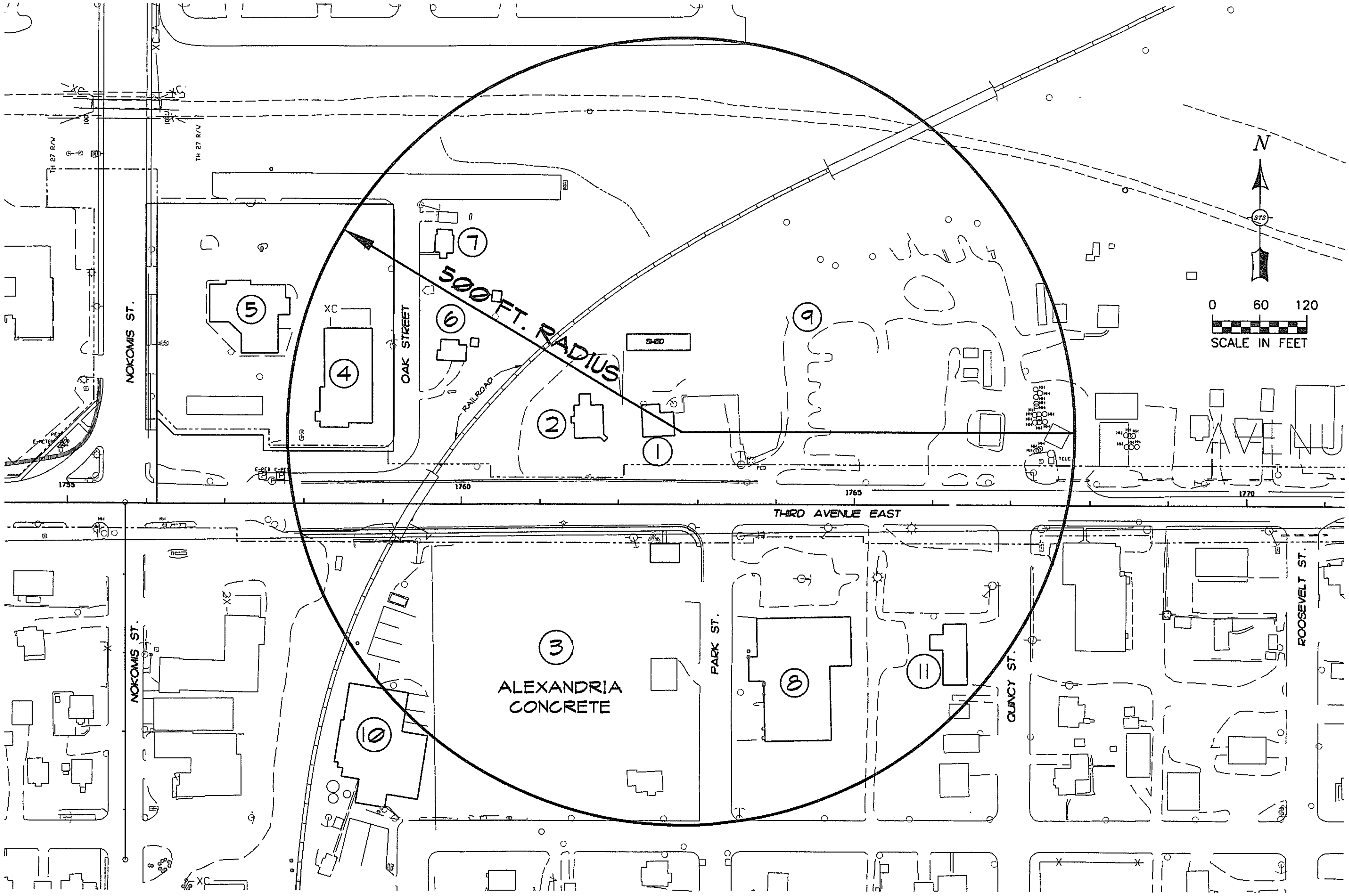

LEGEND

(#) CORRESPONDS TO PROPERTIES LISTED ON TABLE 15

NOTE:SITE PLAN PROVIDED BY AMERICAN ENGINEERING TESTING INC.

AECOM

161 Cheshrie Lane N., Suite 500
Minneapolis, MN 55441 USA
(763) 852-4200
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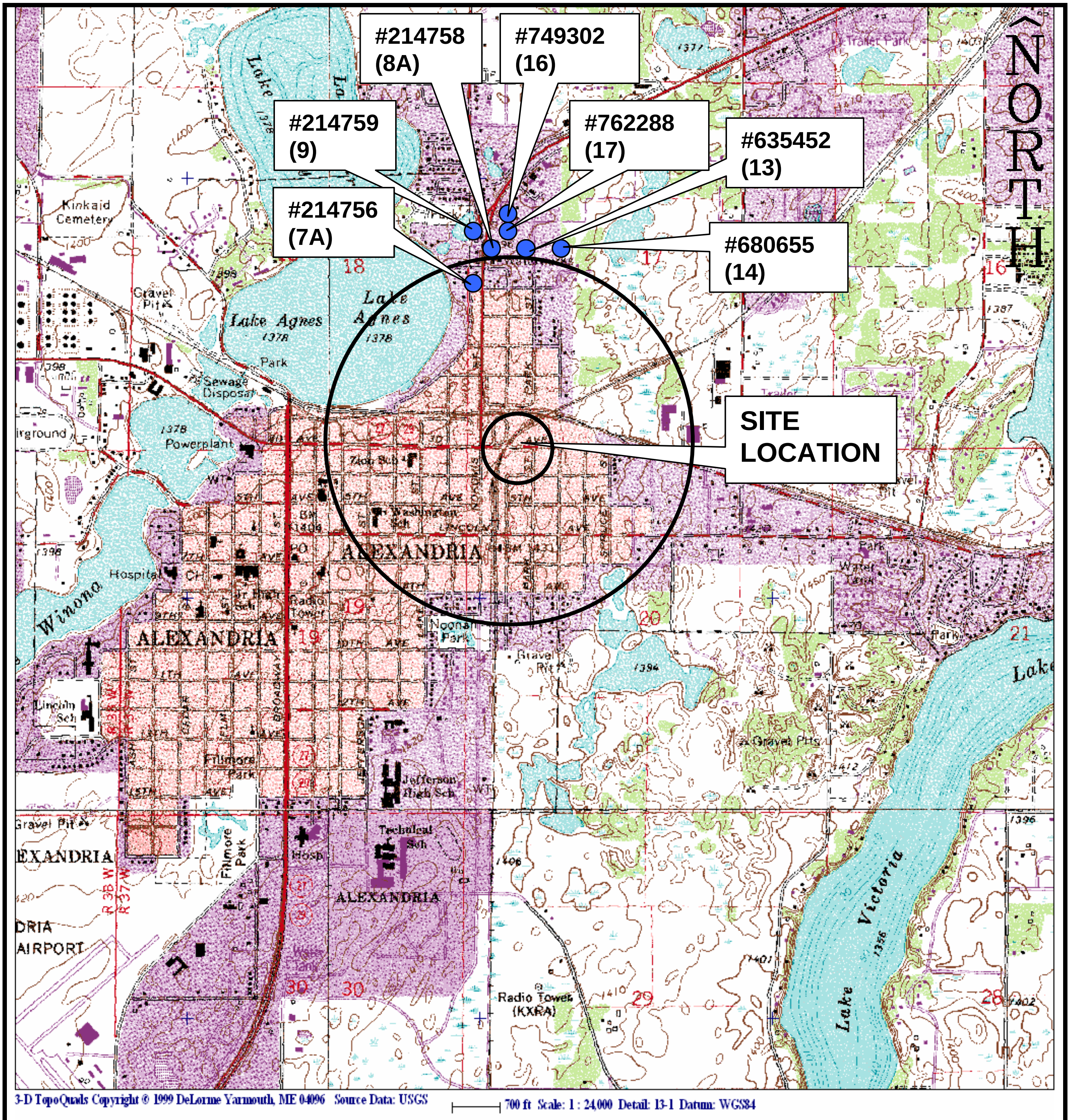
POTENTIAL RECEPTOR MAP (500 FT. RADIUS)
ALEX EXHAUST
905 3rd AVENUE EAST
ALEXANDRIA, MINNESOTA
FOR: MPCA

Drawn :	TAK	1/20/2009
Checked:	TJG	1/20/2009
Approved:	RLD	1/20/2009
PROJECT NUMBER	04660027	
FIGURE NUMBER	8	



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS

700 ft Scale: 1 : 24,000 Detail: 13-1 Datum: WGS84

● Existing Municipal Water Well (#Unique Well Number (City of Alexandria #))

AECOM
161 Cheshire Lane
North
Plymouth, Minnesota
55441
T 763.852-4200
F 763.473-0400
www.aecom.com

POTENTIAL WELL RECEPTOR SURVEY
500 Foot and 1/2 Mile Radius
Alex Exhaust
MPCA LEAK #15656
905 - 3rd Avenue East
Alexandria, Minnesota

DRAWN BY	**TJG**
CHECKED BY	**RLD**
APPROVED BY	**RLD**
CADFILE	SCALE **1" = 2000'**
STS PROJ. **04660027**	FIGURE NO. **9**

Section 5: Tables

Table 1
Tank Information

Tank #	Tank Material[1]	UST or AST	Capacity (gallons)	Contents (product type)	Year Installed	Tank Status[2]	Tank Condition
1	S	UST	2,000	Unknown	Unknown	Removed (5/16/88)	Fair (see photographs in Appendix F)
2	S	UST	3,000	Unknown	Unknown	Removed (5/16/88)	Fair (see photographs in Appendix F)
3	S	UST	3,000	Unknown	Unknown	Removed (5/16/88)	Fair (see photographs in Appendix F)
4	S	UST	3,000	Unknown	Unknown	Removed (5/16/88)	Fair (see photographs in Appendix F)

Notes:

[1] "F" for fiberglass or "S" for steel

[2] Indicate; removed (date), abandoned in place (date), or currently in use.

Tank Information was obtained from the City of Alexandria Fire Marshall (Mr. Dennis Stark)

Table 2
Results of Soil Headspace Screening
(PID Units)

Depth (ft.)	**Soil Boring**								
	B-1	**B-2**	**B-3**	**B-4**	**B-5**	**B-6**	**B-7**	**B-8**	**B-9**
0-2.5	<1	<1	<1	<1	<1	<1	<1	<1	<1
2.5-5	**52**	<1	**343**	<1	<1	<1	<1	<1	<1
5-7.5	**>2000**	<1	**250**	**>2000**	**58**	<1	<1	<1	<1
7.5-10	**>2000**	<1	**205**	**>2000**	**55**	<1	<1	<1	<1
10-12.5	**26**	<1	**202**	**>2000**	9	<1	<1	<1	<1
12.5-15	**26**	<1	**200**	**>2000**	8	<1	<1	<1	<1
15-17.5	3	<1	<1	**31**	8	<1	<1	<1	<1
17.5-20	3	<1	<1	**29**	<1	<1	<1	<1	<1
20-22.5	<1	<1	<1	**11**	<1	<1	<1	<1	<1
22.5-25	<1	**45**	<1	10	<1	<1	<1	<1	<1
25-27.5	<1	EOB = 25'	<1	<1	<1	EOB= 25'	EOB= 25'	<1	<1
27.5-30	<1		**21**	<1	EOB = 26'			<1	<1
30-32.5	<1		EOB = 30'	EOB = 30'				EOB = 30'	<1
32.5-35	<1								<1
35-37.5	<1								EOB = 35'
37.5-40	<1								
	EOB = 40'								

Notes:

EOB = End of Boring

BOLD = Elevated PID Headspace (greater than 10 PID units)

Table 3
Analytical Results of Soil Samples
(Results are in mg/kg)

Boring ID	Sampled Depth (ft.)	Date Sampled	Benzene	Toluene	Ethyl-Benzene	Xylenes	GRO	DRO	Lab Type
B-1	6	02/08/07	<2.4	**2.7**	**10**	**28**	**1100**	**170**	Fixed
B-1	20	02/08/07	<0.12	<0.12	<0.08	<0.23	<57	<10	Fixed
B-2	18	02/07/07	<0.11	<0.11	<0.078	<0.22	<5.5	<10	Fixed
B-3	5	02/07/07	<0.12	<0.12	<0.081	<0.23	<5.8	<10	Fixed
B-3	16	02/07/07	<0.11	<0.11	<0.078	<0.22	<5.5	<10	Fixed
B-4	13	02/07/07	<0.12	<0.14	**1.4**	**1.5**	**71**	<10	Fixed
B-4	22	02/07/07	<0.11	<0.11	<0.078	<0.22	<5.6	<10	Fixed
B-5	6	02/07/07	<0.11	<0.11	**0.61**	<0.22	**130**	**310**	Fixed
B-5	25	02/07/07	<0.11	<0.11	<0.08	<0.23	<5.7	<10	Fixed
B-6	23	02/07/07	<0.11	<0.11	<0.079	<0.23	<5.6	<10	Fixed
B-7	15	02/27/08	<0.12	<0.12	<0.081	<0.23	<5.8	<10	Fixed
B-8	15	02/27/08	<0.11	<0.11	<0.079	<0.22	<5.6	<10	Fixed
B-9	7	12/12/08	<0.12	<0.12	<0.082	<0.23	<5.8	<10	Fixed
B-9	15	12/12/08	<0.11	<0.11	<0.077	<0.22	<5.5	<10	Fixed
B-9	35	12/12/08	<0.11	<0.11	<0.080	<0.23	<5.7	<10	Fixed
SLV	--	***June-05***	***0.034****	***6.4***	***4.7***	***45***	***NE***	***NE***	--
SRV	--	***May-07***	***6***	***107***	***200***	***45***	***NE***	***NE***	--

Notes:

A less than (<) sign indicates the analytical result is below the lab's detection limit.

BOLD = Result is above detection limits.

☐ = Compound detected above SLV

SLV = MPCA Tier 1 Soil Leaching Value.

SRV 1= MPCA Tier 1 (Chronic, Residential Property) Soil Reference Value.

NE = None established.

* = Laboratory reporting limits exceed SLV.

Table 4

Other Contaminants Detected in Soils (Petroleum or Non-petroleum Derived)[1]

SOIL SAMPLES WERE ANALYZED FOR BTEX, GRO AND DRO ONLY

Boring ID	Sampled Depth	Date sampled	Naphthalene mg/kg	1,2,4-TMB mg/kg	1,3,5-TMB mg/kg	Lab Type
SLV						
SRV						

Notes:

Table 5
Contaminated Surface Soil Results

NO SURFACE SOILS WITH A HEADSPACE GREATER THAN 10 PID UNITS WERE OBSERVED

Sample ID	Headspace 10 ppm or Greater[1] (Y/N)	Petroleum Saturated (Y/N)

[1] As measured with a photoionization detector (PID).

Notes:

Table 6
Water Level Measurements and Depths of Water Samples Collected from Borings

	Soil Boring								
	B-1 (TW-1)	**B-2 (TW-2)**	**B-3 (TW-3)**	**B-4 (TW-4)**	**B-5 (TW-5)**	**B-6 (TW-6)**	**B-7**	**B-8**	**B-9**
Static Water Level Depth[1] (ft)	21	17.6	16.1	21.7	25.2	22.5	15.8	19.7	7.6
Sampled Depth (ft.)	~21	~18	~16.5	~22	~25.5	~23	~16	~20	~8
Sampling Method[2]	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump

Notes:

Table 7

Analytical Results of Water Samples from Borings[1]

(Analytical Results in μg/l)

Boring ID	Date Sampled	Sampled Depth (ft)	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	GRO	DRO	Lab Type
B-1 (TW-1)	02/08/07	21	**150**	87	530	2,220	<20	**11,000**	**2,800**	Fixed
B-2 (TW-2)	02/07/07	18	**38**	18	**700**	387	<1	**3,900**	**1,000**	Fixed
B-3 (TW-3)	02/07/07	16.5	**160**	23	620	42	<10	**5,800**	**1,200**	Fixed
B-4 (TW-4)	02/07/07	22	**26**	14	160	92	<1	**1,300**	**400**	Fixed
B-5 (TW-5)	02/07/07	25.5	<1	<1	1.5	4.2	<1	<100	**300**	Fixed
B-6 (TW-6)	02/07/07	23	<1	<1	<1	<3	<1	<100	<100	Fixed
B-7(W)	02/27/08	16	<1	<1	<1	<3	<1	<100	<100	Fixed
B-77 (W) (Duplicate of B-7 (W))	02/27/08	16	<1	<1	<1	<3	<1	<100	<100	Fixed
B-8 (W)	02/28/08	20	<1	<1	<1	<3	<1	<100	**200**	Fixed
B-9 (W)	12/12/08	8	<1	<1	<1	<3	<1	<100	<100	Fixed
B-99 (W) Duplicate of B-9 (W)	12/12/08	8	<1	<1	<1	<3	<1	<100	<100	Fixed
Field Blank	02/08/07	--	<1	<1	<1	<3	<1	<100	<100	Fixed
Trip Blank	02/27/08	--	<1	<1	<1	<3	<1	<100	NA	Fixed
Field Blank	02/28/08	--	<1	<1	<1	<3	<1	<100	<100	Fixed
Trip Blank	12/12/08	--	<1	<1	<1	<3	<1	<100	NA	Fixed
Field Blank	12/12/08	--	<1	<1	<1	<3	<1	<100	<100	Fixed
HRL	***07/01/07***	***--***	***5***	***1000***	***700***	***10,000***	***NE***	***NE***	***NE***	***per MDH, MPCA***
HBV	***03/25/05***	***--***	***NE***	***NE***	***NE***	***NE***	***70***	***200***	***200***	

Notes:

A less than (<) sign indicates the analytical result is below the lab's quantitation limit shown

BOLD type indicates the sample concentration equals or exceeds the HRL/HBV

HRL = Minnesota Department of Health's "Health Risk Limit for drinking water"

HBV = Health Based Value, based on MPCA Drinking Water Criteria for "TPH"

NE = Not Established

Table 8

Other Contaminants Detected in Water Samples Collected from Borings (Petroleum or Non-petroleum Derived)

(Analytical Results in µg/l)

Well Number	Date Sampled	Sampled Depth (ft)	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	1,2-Dichlorobenzene	1,2-Dichloroethane	Naphthalene	n-Propylbenzene	Isopropylbenzene	p-Isopropyltoluene	sec-butylbenzene	Tetrahydrofuran
B-1 (TW-1)	02/08/07	21	1200	**380**	<20	**370**	210	180	61	<20	23	<100
B-2 (TW-2)	02/07/07	18	200	150	2.3	<2	77	83	38	1.9	4.2	<5
B-3 (TW-3)	02/07/07	16.5	<10	75	<10	<20	30	130	65	<10	12	<50
B-4 (TW-4)	02/07/07	22	53	21	<1	<2	18	19	9.2	1.2	1.8	<5
B-5 (TW-5)	02/07/07	25.5	8	2.5	<1	<2	<2	1.1	<1	<1	<1	<5
B-6 (TW-6)	02/07/07	23	<1	<1	<1	<2	<2	<1	<1	<1	<1	<5
B-7(W)	02/27/08	16	<1	<1	<1	<2	<2	<1	<1	<1	<1	<5
B-77 (W) (Duplicate of B-7 (W))	02/27/08	16	<1	<1	<1	<2	<2	<1	<1	<1	<1	<5
B-8 (W)	02/28/08	20	<1	<1	<1	<2	<2	<1	<1	<1	<1	<5
B-9 (W)	12/12/08	8	<1	<1	<1	<2	<2	<1	<1	<1	<1	<5
B-99 (W) Duplicate of B-9 (W)	12/12/08	8	<1	<1	<1	<2	<2	<1	<1	<1	<1	<5
Field Blank	02/08/07	--	<1	<1	<1	<2	<2	<1	<1	<1	<1	12
Trip Blank	02/27/08	--	<1	<1	<1	<2	<2	<1	<1	<1	<1	<5
Field Blank	02/28/08	--	<1	<1	<1	<2	<2	<1	<1	<1	<1	<5
Trip Blank	12/12/08	--	<1	<1	<1	<2	<2	<1	<1	<1	<1	<5
Field Blank	12/12/08	--	<1	<1	<1	<2	<2	<1	<1	<1	<1	<5
HRL	***07/01/07***	**--**	NE	NE	600	4	300	NE	300*	NE	NE	NE
HBV	***03/25/05***	**--**	NE	300	NE	NE	NE	NE	NE	NE	NE	100

Notes:

A less than (<) sign indicates the analytical result is below the lab's quantitation limit shown
BOLD type indicates the sample concentration equals or exceeds the HRL/HBV
HRL = Minnesota Department of Health's "Health Risk Limit for drinking water"
HBV = Health Based Value, based on MPCA Drinking Water Criteria for "TPH"
NE = Not Established

Table 9

Monitoring Well Completion Information[1]

NO MONITORING WELLS WERE INSTALLED FOR THIS RELEASE

Well Number	MDH Unique Well Number	Date Installed	Surface Elevation	Top of Riser Elevation	Bottom of Well (Elevation)	Screen Interval (Elev. - Elev.)	Well Stickup	Total Well Depth from Surface (ft)
1					0.0		0.00	
2					0.0		0.00	
3					0.0		0.00	
4					0.0		0.00	
5					0.0		0.00	
6					0.0		0.00	
7					0.0		0.00	
8					0.0		0.00	
9					0.0		0.00	
10					0.0		0.00	

[1] Include well construction diagrams and MDH well logs in Section 6.

Notes: (location and elevation of benchmark)

Table 10
Water Level Measurements in Monitoring Wells

NO MONITORING WELLS WERE INSTALLED FOR THIS RELEASE

Well Number (Unique Number)	Date	Depth to Water from Top of Riser	Product Thickness	Depth to Water Below Grade	Relative Groundwater Elevation	Water Level Above Screen (Y/N)
1						
2						
3						
4						

[1] Describe the methods used to measure water levels in Section 6.

Notes:

Table 11

Analytical Results of Water Samples Collected from Wells[1]

(all units expressed in ug/l - ppb)

NO MONITORING WELLS WERE INSTALLED FOR THIS RELEASE

Well #	Date Sampled	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE	GRO	DRO	Lab Type[2]
MW-1									
MW-2									
MW-3									
MW-4									
Trip Blank									
Field Blank									
Lab Blank									
HRL(ug/L)									

[1] Report results in ug/L. Use less than symbols to show detection limit.

[2] Indicate "mobile" or "fixed" in the lab type column.

Table 12
Other Contaminants Detected in Water Samples Collected from Wells (Petroleum or Non-petroleum Derived)

NO MONITORING WELLS WERE INSTALLED FOR THIS RELEASE

Well Number	Date Sampled	1,2 DCA	EDB				
MW-1							
MW-2							
MW-3							
Field Blank							
Trip Blank							
Lab Blank							
HRL (ug/L)							

[1] Report results in ug/L. Use less than symbols to show detection limit.

[2] Indicate "mobile" or "fixed" in the lab type column.

Table 13
Natural Attenuation Parameters

NO MONITORING WELLS WERE INSTALLED FOR THIS RELEASE

Well Number	Sample Date	Temp. °C	pH	Dissolved Oxygen (mg/L)	Nitrate (mg/L)	(Fe II) (mg/L)	(H_2S, HS^-) (mg/L)
MW-1							
MW-2							
MW-3							
MW-4							

Describe the methods and procedures used in Section 6.

Notes:

Table 14
Free Product Recovery

NO FREE PRODUCT HAS BEEN ENCOUNTERED

Recovery Location ID	Recovery Date	Pre-Recovery Measurements				Recovery Method	Event Recovery[3]		Cumulative Recovery[4]		Comments
		Depth to FP[1] (ft)	Depth to GW[2] (ft)	FP Thickness (ft)	FP Volume (gal)		FP (gal)	GW (gal)	FP (gal)	GW (gal)	
MW-1											
MW-2											
MW-3											
MW-4											

[1] FP = Free Product

[2] GW = Ground Water

[3] Volume recovered during individual recovery event for that location.

[4] Cumulative volume recovered at each recovery location (i.e., keep a running total for each recovery point).

Describe the methods and procedures used in Section 6. Add additional rows as needed.

Notes:

Table 15
Properties Located within 500 feet of the Release Source

Prop ID	Property Address	Distance From Site (ft)	Water Supply Well			Public Water Supply		Basement (Y/N)	Sump (Y/N)	Possible Petroleum Sources (Y/N)	Comments (including property use)
			Well Present (Y/N)	How Determined	Well Use	Utilized (Y/N)	Confirmed by City (Y/N)				
1	905 3rd Avenue East	0 - Project Site Address	N	Visual + Telephone Conversation with Property Owner	NA	NA	Y	N	N	Y	Former Service Station/Automobile Repair Shop
2	903 3rd Avenue East	~80' west	N	Visual + Telephone Conversation with Property Owner	NA	NA	Y	N	N	N	Lloyd's Café
3	924 3rd Avenue East	~140' south	N	Visual + Telephone Conversation with Site Manager	NA	NA	Y	N	N	Y	Alexandria Concrete Company, Inc.
4	801 3rd Avenue East	~400' northwest	N	Visual + Personal Contact	NA	NA	Y	N	N	Y	Alexandria Tire and Auto/TireMaxx Service Center
5	209 Nokomis Street	~500' northwest	N	Visual + Personal Contact	NA	NA	Y	N	N	Y	Gas Station/Burger King Restaurant
6	207 Oak Street	~250' northwest	N	Visual + Personal Contact	NA	NA	Y	Y	N	N	Single Family Residence
7	203 Oak Street	~380' northwest	N	Visual + Personal Contact	NA	NA	Y	Y	N	N	Single Family Residence
8	1102 3rd Avenue East	~200' southeast	N	Visual + Personal Contact	NA	NA	Y	N	N	N	Alexandria Beverage Company
9	1023 3rd Avenue East	~60' east	N	Visual + Telephone Conversation with Property Owner	NA	NA	Y	N	N	N	Former Mobile Home Park (vacant lot)
10	901 4th Avenue East	~500' southwest	N	Visual + Telephone Conversation with Site Manager	NA	NA	Y	N	N	Y	Morrelle London Aggregate, LLC
11	312 Quincy Street	~300' southeast	N	Visual + Personal Contact	NA	NA	Y	N	N	N	Alex Rubbish

Notes:

NA = Not applicable

Table 16
Water Supply Wells Located Within 500 Feet of the Release Source and Municipal or Industrial Wells Within ½ Mile

Property ID	MDH Unique Well Number	Ground Elevation	Total Depth (ft)	Base of Casing (ft)	Static Elevation	Aquifer	Use	Owner	Distance & Direction from source (ft)
City Well 7A*	214756	1405	129	No Record	1367	QBAA	Municipal	City of Alexandria	Approximately 2,500 feet north

Notes:

No water supply wells were identified within 500 feet of the release source
* This municipal well is located approximately 2,500 feet north of the release site

Table 17
Surface Water Receptor Information

NO SURFACE WATERS WERE IDENTIFIED WITHIN 1/4 MILE OF THE RELEASE SITE

Map ID[1]	Name and Type[2]	Distance and Direction from Plume Edge (ft)	Clean Boring/Well Between?[3] (Y/N)

[1] Map ID should correspond to a surface water feature ID on the Potential Receptor Map.
[2] Type includes, but is not limited to, lake, retention pond, infiltration pond, ditch, intermittent stream, river, creek, rain garden, etc.
[3] If the surface water feature is up-gradient or cross-gradient from the site, indicate so with “NA” for not applicable.

Notes:

Table 18
Utility Receptor Information

Utility ID	Description	Construction Material	Depth to Top of Structure	Diameter	Flow Direction (for liquids)	Year Installed	Backfill Material	Distance to Water Table
1	Sanitary sewer main between Park Street and Nokomis	PVC	8 ft	8 inch	East	2005	Imported Sand/Native soil	~16 feet
2	Storm Sewer Main between Park Street and Nokomis	Concrete	10 ft.	30 inch	East	2005	Imported Sand/Native soil	~16 feet
3	Watermain between Park Street and Nokomis	Copper	8ft.	12 inch	East	2005	Imported Sand/Native soil	~16 feet

Notes:
Utility ID # corresponds to Utility Location on Figure 3

Utility ID	Name, title, and telephone number for public entity contacted to obtain information or other source of information
1,2,3	Tim Schoonhoven, City Engineer (WSN), (320) 762-8149

Notes:

Table 19
Vapor Survey Results

Location ID	Description	Monitoring Date	PID reading (PID units)	Percent of the LEL
VM-1	Storm Sewer Manhole	2/8/2007	<1	NA

Notes:
NA = Not Analyzed

Table 20
Results of Soil Gas Sampling for Vapor Intrusion Screening
Results and ISV Standards are Reported in μg/m^3

Sample ID	**VP-1**		**VP-2 (Worst Case)**		**VP-3**		**VP-4**		**Field Blank**		***100x Intrusion Screening Value***
Date	**2/8/2007**		**2/8/2007**		**2/8/2007**		**2/8/2007**		**2/8/2007**		
Depth (feet)	**3**		**8**		**3**		**3**		**Ambient**		
PID (PID units)	**>2,000**		**>2,000**		**<1**		**136**		**NA**		
COMPOUNDS	**Result**	**Report Limit**	**Result**	**Report Limit**	**Result**	**Report Limit**	**Result**	**Report Limit**	**Result**	**Report Limit**	
Acetone	ND	312	ND	300	**48.6**	3.6	**48.4**	3.1	**5.7**	0.6	***40,000***
Benzene	**15,700**	422	**33,500**	406	**29.1**	0.98	**21.9**	4.2	ND	0.81	***450***
2-Butanone (MEK)	ND	390	ND	375	**11**	0.91	ND	3.9	**1.7**	0.75	***500,000***
Carbon Disulfide	ND	410	ND	394	**3.7**	0.95	**6.8**	4.1	ND	0.79	***70,000***
Chloromethane	ND	273	ND	262	ND	0.63	ND	2.7	**0.83**	0.52	***6,000***
Cyclohexane	**1,080,000**	4420	**918,000**	4250	**98.5**	1.0	**27**	4.4	ND	0.85	***600,000***
Dichlorodifluoromethane	ND	650	ND	625	**29.7**	1.5	ND	6.5	**2.2**	1.2	***20,000***
Ethylbenzene	**18,400**	572	**18,000**	550	**15**	1.3	**7.2**	5.7	ND	1.1	***100,000***
4-Ethyltoluene	**4,050**	1620	**5,100**	1560	**11**	3.8	ND	16.2	ND	3.1	***NE***
n-Heptane	**288,000**	5400	ND	519	**36.2**	1.3	**21.1**	5.4	ND	1.0	***NE***
n-Hexane	**540,000**	4680	**829,000**	4500	**42.1**	1.1	**32.5**	4.7	ND	0.9	***200,000***
Methylene Chloride	ND	462	ND	444	**2.1**	1.1	ND	4.6	ND	0.89	***2,000***
Naphthalene	ND	1760	ND	1690	**4.3**	4.1	ND	17.6	ND	3.4	***900***
Propylene	ND	228	ND	219	**167**	2.6	**267**	2.3	ND	0.44	***300,000***
Styrene	ND	556	ND	544	**2.9**	1.3	ND	5.7	ND	1.1	***100,000***
Tetrachloroethene	ND	910	ND	875	**3.2**	2.1	ND	9.1	ND	1.8	***2,000***
Toluene	**4,100**	500	**3,740**	481	**39.1**	1.2	**25**	5.0	ND	0.96	***500,000***
1,2,4-Trimethylbenzene	**5,930**	1620	**6,970**	1560	**31.3**	3.8	ND	16.2	ND	3.1	***700***
1,3,5-Trimethylbenzene	**2,370**	1620	**4,190**	1560	**8.9**	3.8	ND	16.2	ND	3.1	***600***
Xylenes (Total-m,o,p)	**36,380**	1712	**31,360**	1650	**48.6**	4.0	**14.1**	17.1	ND	3.3	***20,000***

Notes:

NA = Not Applicable
ND = Not Detected
NE = Not Established
☐ =Concentration exceeds 100 times the ISV
Bold = Concentration detected above laboraotry reporting limit

Section 6: Appendices

Attach all required or applicable appendices in the following order. Indicate those appendices that are included in this report by marking the check box. All reproduced data must be legible. Reports missing required documentation are subject to rejection.

☐	*Appendix A*	Guidance Document 3-02 *General Excavation Report Worksheet*.
☒	*Appendix B*	Guidance Document 1-03a *Spatial Data Reporting Form*.
☒	*Appendix C*	Guidance Document 2-05 *Release Information Worksheet*.
☒	*Appendix D*	Copy of the Documentation Report for Mn/DOT S.P. 2102-50, TH 29/27 prepared by STS, dated December 30, 2005
☒	*Appendix E*	Geologic Logs of Soil Borings, Including Construction Diagrams of Temporary and Permanent Wells, and Copies of the Minnesota Department of Health Well Record.
☒	*Appendix F*	Laboratory Analytical Reports for Soil, Soil Gas/Sub-slab Vapor/Indoor Air/Ambient Air, and Ground Water. Include laboratory QA/QC data, Chromatograms, and laboratory certification number.
☒	*Appendix G*	Methodologies and Procedures, Including Field Screening of Soil, Other Field Analyses, Soil Boring, Soil Sampling, Soil Gas/Sub-Slab/Indoor air/Ambient Air Sampling, Vapor Monitoring, Well Installation, and Water Sampling.
☒	*Appendix H*	Field or sampling data sheets (sampling forms, field crew notes, etc.).
☒	*Appendix I*	Grain Size Analysis, Hydraulic Conductivity Measurements, and Other Calculations.
☐	*Appendix J*	Guidance Document 2-03 *Free Product Recovery Report Worksheet.*
☒	*Appendix K*	Copies of Water Supply Well Logs with Legible Unique Numbers.
☒	*Appendix L*	Results of the Public Water Supply Risk Assessment. If the site is within a designated source water protection area, include a copy of the MDH Source Water Assessment and a map from the MPCA Petroleum Remediation Program Maps Online website.
☐	*Appendix M*	Guidance Document 4-19 *Conceptual Corrective Action Design Worksheet*.
☒	*Appendix N*	Site Photographs of the UST Removal – May 1988

APPENDIX A

No General Excavation Report Worksheet was Prepared for Leak 15,656 - USTs were removed in 1988

APPENDIX B

Guidance Document 1-03a – Spatial Data Reporting Form

Spatial Data Reporting Form

Guidance Document 1-03a
(For complete instructions, see Guidance Document 1-03.)

Part 1. Background

Has a site location data point been submitted for this site (circle/highlight)? **YES** or NO
If yes, you do not need to complete Part 2 of this form but should complete Part 3 if there are additional site features to report. This form can be submitted electronically if desired (e.g., as an e-mail attachment to the project manager).

MPCA Site ID: LEAK000**15,656**
Site Name: **Alex Exhaust**
Data Collection Date: **February 6, 2007 and January 23, 2009**
Name of Person Who Collected Data: **Matt Beckman, Tim Grape**
Organization Name: **STS /AECOM**
Organization Type: **Environmental Consulting Firm**

Part 2. Site Location (use one of the three spatial data reporting formats provided)

Point Description: **Center of main site building – Alex Exhaust shop**
Collection Method: **Digital Orthoquad interpolation**
Datum (circle/highlight): **WGS84**

1) Longitude (dd mm ss.ss):	Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.364030	**Latitude (dd.dddddd): 45.889612**
3) UTM - X (Easting):	UTM - Y (Northing):
UTM Zone:	

Part 3. Other Site Features

Point Description: **Soil Boring/Temporary Well B-1**
Collection Method: **Handheld GPS Unit (Garmin Map 76)**
Datum (circle/highlight): **WGS84**
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.36395 Latitude (dd.dddddd): 45.88951
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **Soil Boring/Temporary Well B-2**
Collection Method: **Handheld GPS Unit (Garmin Map 76)**
Datum (circle/highlight): **WGS84**
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.36419 Latitude (dd.dddddd): 45.88958
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **Soil Boring/Temporary Well B-3**
Collection Method: **Handheld GPS Unit (Garmin Map 76)**
Datum (circle/highlight): **WGS84**
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.36380 Latitude (dd.dddddd): 45.88958
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **Soil Boring/Temporary Well B-4**
Collection Method: **Handheld GPS Unit (Garmin Map 76)**
Datum (circle/highlight): **WGS84**
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.36398 Latitude (dd.dddddd): 45.88972
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **Soil Boring/Temporary Well B-5**
Collection Method: **Handheld GPS Unit (Garmin Map 76)**
Datum (circle/highlight): **WGS84**
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.36396 Latitude (dd.dddddd): 45.88982
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **Soil Boring/Temporary Well B-6**
Collection Method: **Handheld GPS Unit (Garmin Map 76)**
Datum (circle/highlight): **WGS84**
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.36419 Latitude (dd.dddddd): 45.88957
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **Soil Boring/Temporary Well B-7**
Collection Method: **Digital Orthoquad Interpolation**
Datum (circle/highlight): **WGS84**
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.363330 Latitude (dd.dddddd): 45.889554
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **Soil Boring/Temporary Well B-8**
Collection Method: **Digital Orthoquad Interpolation**
Datum (circle/highlight): **WGS84**
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.363485 Latitude (dd.dddddd): 45.889169
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

Point Description: **Soil Boring/Temporary Well B-9**
Collection Method: **Digital Orthoquad Interpolation**
Datum (circle/highlight): **WGS84**
1) Longitude (dd mm ss.ss): Latitude (dd mm ss.ss):
2) Longitude (dd.dddddd): 95.364487 Latitude (dd.dddddd): 45.888105
3) UTM - X (Easting): UTM - Y (Northing):
UTM Zone:

APPENDIX C

Guidance Document 2-05 - Release Information Worksheet

Minnesota Pollution Control Agency

Release Information Worksheet

Guidance Document 2-05
Petroleum Remediation Program

The Release Information Worksheet is necessary in order to meet the Public Record Provision of the Energy Policy Act of 2005. Complete the worksheet below to document tank and release information. This form may be included as an appendix in Guidance Document 4-06 or 4-08, or it may be submitted independently. Please type or print clearly. Do not revise or delete text or questions from this form.

A. General information

Site name/city: Alex Exhaust/Alexandria MPCA Site ID#: LEAK000 15,656

B. Tank material (check all that apply):

☒ Steel ☐ Fiberglass

C. Piping material (check all that apply):

☒ Steel ☐ Fiberglass ☐ Flexible plastic ☐ Copper ☐ Other (specify): ______

D. Identify the known or suspected source(s) of the release or contamination encountered (check all that apply):

☒ Piping ☒ Tank ☒ Dispenser ☐ Submersible turbine pump ☐ Delivery problem

☐ Other (specify): ______

E. Identify the cause of the release (tank and/or piping) (check all that apply):

☐ Overfill ☐ Mechanical or physical damage ☐ Install problem ☐ Corrosion ☐ Spill ☒ Unknown

☐ Other (specify): ______

F. Identify how the release was detected (check all that apply):

☐ Removal ☐ Line leak detection ☐ Tank leak detection ☐ Visual/Olfactory ☒ Site assessment

☐ Other (specify): ______

G. Has the site ever stored E85 in any former or current tank? ☐ Yes ☒ No

H. Has the site ever stored leaded gasoline in any former or current tank? ☒ Yes ☐ No

Web pages and phone numbers:

MPCA staff:	http://www.pca.state.mn.us/pca/staff/index.cfm
MPCA phone:	**651-296-6300 or 1-800-657-3864**
Petroleum Remediation Program Web page:	http://www.pca.state.mn.us/programs/lust_p.html
MPCA Info. Request:	http://www.pca.state.mn.us/about/inforequest.html
MPCA VIC Program:	http://www.pca.state.mn.us/cleanup/vic.html
MPCA Petroleum Brownfields Program:	http://www.pca.state.mn.us/programs/vpic_p.html
PetroFund Web page:	http://www.state.mn.us/cgi-bin/portal/mn/jsp/content.do?id=-536881377&agency=Commerce
PetroFund phone:	**651-215-1775 or 1-800-638-0418**
State Duty Officer:	**651-649-5451 or 1-800-422-0798**

APPENDIX D

Documentation Report Mn/DOT S.P. 2102-50, TH 29/27 by STS,
dated December 30, 2005

STS CONSULTANTS, LTD.

Documentation Report - Mn/DOT S.P. 2102-50, TH 29/27 in Alexandria, Minnesota

Minnesota Department of Transportation
St. Paul, Minnesota

STS Project 99473-XA

STS CONSULTANTS

STS Consultants, Ltd.
10900 - 73rd Ave. N., Suite 150
Maple Grove, MN 55369-5547
763-315-6300 Phone
763-315-1836 Fax

December 30, 2005

Ms. Nancy Radle
Minnesota Department of Transportation
395 John Ireland Drive, Mail Stop 620
St. Paul, MN 55155-1899

Re: Documentation Report - Mn/DOT S.P. 2102-50, TH 29/27 in Alexandria, Minnesota; Mn/DOT Agreement No. 86381; STS Project 99473-XA

Dear Ms. Radle:

STS Consultants, Ltd. (STS) has completed the Documentation Report for the above referenced site. The work was completed under contract to the Minnesota Department of Transportation (Mn/DOT). STS provided soil monitoring for contaminated soil on a part-time, on-call basis.

Approximately 50 cubic yards of contaminated soil from the project site was disposed of at the Onyx FCR Landfill in Buffalo, Minnesota. Approximately 1,200 cubic yards of contaminated soil from the project site was land spread at a Minnesota Pollution Control Agency (MPCA) approved land spread facility located in the SW 1/4 of the NE 1/4 of Section 12, Township 124 North, Range 38 West, Barsness Township, Pope County, Minnesota.

STS recommends that Mn/DOT obtain documentation from the contractor, Riley Brothers Construction, after landfarm treatment has been completed. Specifically Mn/DOT should obtain MPCA Guidance Document 3-07 "Soil Monitoring Results for Land Treated Petroleum Contaminated Soil" (Form D) for the project records.

We appreciate having the opportunity to be of assistance to you on this project. If you have any questions please contact Bill Tepley at 763-315-6335 or Tim Grape at 763-315-6318.

Sincerely,

STS CONSULTANTS, LTD.

Timothy J. Grape, PG
Project Geologist

William B. Tepley

William B. Tepley
Senior Project Manager

TJG/dn
Encs.

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Project Description

The Minnesota Department of Transportation (Mn/DOT) reconstructed approximately 1.5 miles of right-of-way property along Trunk Highway 29 and Trunk Highway 27 (Mn/DOT S.P. 2102-50, TH-29/27) in the City of Alexandria, Minnesota (see Figure 1) during the 2004 and 2005 construction season. Mn/DOT reconstructed the highway along the project site on TH-29 from Broadway Street to Nokomis Street and TH-27 from Nokomis Street East to McKay Avenue North.

The general contractor for the TH-29/27 reconstruction work was Riley Brothers Construction (Riley) out of Morris, Minnesota. The work included removal and disposal of the petroleum impacted soil.

STS was retained by Mn/DOT to perform soil monitoring to segregate petroleum contaminated soils, complete soil analytical sampling/testing and documentation reporting for the Mn/DOT S.P. 2102-50, TH-29/27 construction project in Alexandria, Minnesota. These services were provided to Mn/DOT under the scope of work outlined in Agreement Number 86381.

1.2 Background Information

American Engineering Testing, Inc. (AET) completed a limited Phase I Environmental Site Assessment (ESA) for Mn/DOT in June, 2003. The results of the Phase I ESA identified forty-eight sites with a potential to impact the highway reconstruction project. A follow-up drilling investigation (Drilling Investigation, AET #03-01630, dated June 5, 2003) was conducted by AET on the forty-eight sites identified in the Phase I ESA. The results of the drilling investigation identified petroleum impacts to the soil and groundwater at four specific areas of the project site. The four areas of concern described by AET were as follows:

Area 1: The intersection of Broadway Street and TH-27/29.

Area 2: North of the intersection of Broadway Street and TH-27/29.

Area 3: Northeast corner of the intersection of Nokomis Street and TH-27/29.

Area 4: Northwest corner of the intersection of Park Street and TH-27.

A fifth area (Area 5) of petroleum impacted soil was encountered during reconstruction activities located along TH-27 east of the railroad bridge between Nokomis Street and Park Street (Figure 3). This area was not identified in the AET Drilling Investigation.

AET recommended that petroleum impacted soils encountered during highway construction activities be excavated and disposed in accordance with Minnesota Pollution Control Agency (MPCA) guidelines. The four areas of concern identified by AET and the fifth area identified during reconstruction activities are shown on Figure 2 and Figure 3.

A copy of the AET Drilling Investigation Report cover page, conclusions and recommendations sections, soil/groundwater conditions and pertinent diagrams are included in Appendix A.

1.3 Scope of Work

STS was retained by Mn/DOT to perform monitoring and documentation services on a part-time, on-call basis during reconstruction activities on TH-29/27 during the 2004 and 2005 construction season. The scope of work and deliverables for the project are defined in Mn/DOT Agreement No. 86381. STS was contacted directly by the Mn/DOT Field Inspector (Mr. Jesse Miller) when the contractor was working in areas where petroleum impacts were identified by AET or when petroleum impacts were observed in the soil during reconstruction activities.

STS screened soils to segregate contaminated from non-contaminated soils during excavation through areas where contamination had been identified. STS was directed by the Mn/DOT project manager to collect soil samples for disposal evaluation purposes where required.

STS Daily Field Reports, contaminated soil management documentation, laboratory analytical reports and site photographs are attached in the Appendix.

1.4 Involved Parties

The parties involved with contaminated soil excavation and disposal included Mn/DOT, STS, Riley Brothers Construction (excavation contractor), Onyx FCR Landfill and West Central Environmental Consultants (WCEC) (consultant for Riley Brothers for land spreading and landfill soil disposal). Contacts for all the interested parties and their relationship to the project are presented below.

Minnesota Department of Transportation (Mn/DOT)

Mn/DOT was the state funding agency for construction. The contact for Mn/DOT is:

Minnesota Department of Transportation
395 John Ireland Boulevard, Mail Stop 620
St. Paul, MN 55155-1899
Ms. Nancy Radle
651-284-3781

STS Consultants, Ltd. (STS)

STS was the environmental consultant requested by Mn/DOT to conduct contaminated soil excavation monitoring for the project. The contact for STS is:

STS Consultants, Ltd.
10900 - 73rd Avenue North, Suite 150
Maple Grove, MN 55369-5547
Mr. Bill Tepley
763-315-6300

Riley Brothers Construction (Areas 1, 2, 3, 4 and 5)

Riley Brothers Construction (Riley) was the excavating contractor hired by Mn/DOT for the project. The contact for Riley is:

Riley Brothers
P.O. Box 535
Morris, MN 56267
Mr. Joe Riley
320-589-2500

Onyx FCR Landfill (Areas 3 and 5)

Onyx FCR Landfill accepted approximately 50 cubic yards of petroleum impacted soil from the project site. The contact for Onyx FCR Landfill is:

Onyx FCR Landfill
175 County Road 37 NE
Buffalo, MN 55315
Mr. John Gagliano
320-963-3158

West Central Environmental Consultants (Area 4)

West Central Environmental Consultants (WCEC) is the consulting firm for Riley and assisted in permitting and oversight for land spreading of petroleum impacted soil. The contact for WCEC is:

West Central Environmental Consultants
14 Green River Road
P.O. Box 594
Morris, MN 56267
Ms. April Pilarski
320-589-2039

2.0 METHODS AND PROCEDURES

STS field scientist(s) screened soil for evidence of potential contamination and obtained soil samples for chemical analysis for characterization of contaminated soils at the direction of the Mn/DOT project manager. These services were provided to Mn/DOT on a part-time, “on-call” basis. The methods employed by STS personnel for soil screening and chemical soil sampling are discussed below.

2.1 Soil Monitoring

Soil samples were screened with a photoionization detector (PID) for indications of volatile organic compounds (VOCs) and observed for visual or olfactory evidence of contamination. The PID meter was equipped with a 10.6 eV lamp calibrated to isobutylene. Soil samples were screened with the PID meter in general conformance with the most current MPCA field screening procedures in effect at the time the work was completed. Soil with a PID headspace reading above 10 PID meter units and/or visual or olfactory evidence of petroleum contamination was segregated and managed for proper off-site treatment/disposal. The PID meter headspace readings, recorded in PID meter units, are presented in the STS Daily Field Reports in Appendix B. Site photographs obtained during the soil monitoring activities follow the figures in the Appendix.

2.2 Soil Chemical Sampling

Soil samples for chemical analysis were collected with clean disposable nitrile gloves and placed immediately into the sample containers provided by the analytical laboratory. Soil samples were collected in general accordance with the MPCA “Soil Sample Collection and Analysis Procedures” as described in MPCA Fact Sheet 3.22 dated February, 2001 or the most current MPCA sample collection procedures in effect at the time the work was completed. Samples were stored in coolers on ice until delivery to the analytical laboratory under chain of custody record. Laboratory analytical reports are included in Appendix C.

3.0 DOCUMENTATION

3.1 Soil Monitoring and Chemical Sampling

Area 1 – Intersection of Broadway Street and TH-29/27

STS completed soil monitoring at Area 1 on May 18, 19 and 20, 2004. No visual, olfactory or PID evidence of petroleum soil contamination was observed by STS during the excavation of the first area (Area 1) identified by AET as having petroleum impacts in the soil at depth. Area 1 is located near the intersection of Broadway Street and TH 29/27 (Figure 2). PID readings of the excavated material were below background levels, see STS Daily Field Reports dated 5/18/04, 5/19/04 and 5/20/04 in Appendix B. The location of Area 1 is shown on Figure 2.

No analytical samples were collected from Area 1 by STS, per the direction of the Mn/DOT project manager.

Area 2 – North of the Intersection of Broadway Street and TH-29/27

STS completed soil monitoring at Area 2 on May 19, 2004. No visual, olfactory or PID evidence of petroleum soil contamination was observed by STS during excavation of the second area (Area 2) identified by AET as having petroleum impacts in the soil. Area 2 was located north of the intersection of Broadway Street and TH 29/27 (Figure 2). PID readings of the excavated material were below background levels, see STS Daily Field Report dated 5/19/04 in Appendix B. The location of Area 2 is shown on Figure 2.

No analytical samples were collected from Area 2 by STS, per the direction of the Mn/DOT project manager.

Area 3 – Northeast Corner of the Intersection of Nokomis Street and TH-29/27

STS completed monitoring at Area 3 on August 14, 17 and 23, 2004. Petroleum contaminated soils were encountered between stations 1757+20 and 1757+00 near the intersection of Nokomis Street and TH 29 on the south side of TH 29/27 (Figure 3). This area (Area 3) was near the third area identified by AET as having petroleum impacts in the soil. Soil headspace readings from the contaminated soil ranged from 10 to 50 PID units, see STS Daily Field Reports dated 8/14/04, 8/17/04 and 8/23/04 in Appendix B. Riley temporarily stockpiled approximately 25 cubic yards of contaminated soil identified by PID headspace readings at this location. The approximate location of petroleum impacted soil identified in Area 3 and the temporary stockpile location are shown on Figure 3. Site Photographs 1 and 2 in Appendix F document excavation of the contaminated soil at Area 3.

STS collected one soil sample (R-1) of the petroleum contaminated soil stockpiled from the material encountered between stations 1757+20 and 1757+00 on the south side of the road near the intersection of Nokomis Street and TH 29 on the south side of TH 29/27 (Area 3). Soil sample R-1 was submitted to Pace Analytical (Pace) on August 24, 2004 for analysis of benzene, toluene, ethylbenzene, and xylene (BTEX), gasoline and diesel range organic compounds (GRO/DRO) and lead.

No BTEX compounds were identified in soil sample R-1. GRO and DRO were identified at concentrations of 250 mg/kg and 1600 mg/kg, respectively. No Tier 1 SLV/SRV values have been established for GRO or DRO compounds. The analytical laboratory completed lead analysis on both the discrete sample and the composite sample submitted for R-1. Low concentrations of lead were identified in both the discrete sample (6.52 mg/kg) and the composite sample (9.8 mg/kg). Both concentrations were below established MPCA Tier 1 SLV/SRV values for lead. The analytical results for R-1 are summarized on Table 1 in the Appendix.

Contaminated soil management associated with Area 3 is discussed in Section 4.0 of this report.

Area 4 – Northwest Corner of the Intersection of Park Street and TH-27

STS completed monitoring at Area 4 on May 18, 19, 21, 23 and 31, 2005 and on June 1, 2005. Petroleum contaminated soil was encountered between stations 1762+28 and

1762+80 near the intersection of Park Street and TH-27 (Figure 3). This was the fourth area (Area 4) identified in the AET Drilling Investigation as having petroleum impacts in the soil. Soil headspace readings from the contaminated soil ranged from 100 to greater than 2000 PID units. PID headspace readings are documented on STS Daily Field Reports dated 5/18-19/05, 5/21/05, 5/23/05, 5/31/05 and 6/1/05 in Appendix B. Riley temporarily stockpiled approximately 1,200 cubic yards of contaminated soil identified by PID headspace readings. The stockpile from Area 4 was transferred to a location northeast of the site as shown on Figure 3. The approximate location of the petroleum impacted soil identified by STS is also shown on Figure 3. Site Photographs 3 and 4 in Appendix F show the excavation of contaminated soil and the covered stockpile for Area 4.

No analytical samples were collected from Area 4 by STS, per the direction of the Mn/DOT project manager.

Contaminated soil management associated with Area 4 is discussed in Section 4.0 of this report.

Area 5 – South Side of TH-27 between Nokomis Street and Park Street

Riley encountered petroleum contaminated soil on September 13, 2004 surrounding a 4-inch concrete drain line located near station 1759+75 east of the railroad bridge on TH 27 (see Figure 3). This area was not identified as an area of concern in the Drilling Investigation Report by AET. STS was not on site when the petroleum impacted soil was encountered. Riley temporarily stockpiled approximately 25 cubic yards of contaminated soil identified by staining and/or strong chemical odor at the site at the direction of the Mn/DOT field inspector.

STS arrived on site the following day (September 14, 2004) to collect soil headspace readings and analytical soil samples from the temporary stockpile. Soil headspace readings ranged from 40 to 100 PID units, see STS Daily Field Report dated 9/14/04 in Appendix B.

The approximate location of the petroleum impacted soil excavated by Riley and the temporary stockpile location are shown on Figure 3. Site Photographs 5 and 6 in Appendix F illustrate the 4-inch drain pipe area where contaminated soil was encountered and the temporary stockpile at Area 5.

STS collected a soil sample (R-2) from the contaminated soil stockpiled from the material surrounding the 4-inch concrete drain line located near station 1759+75 east of the railroad bridge on TH 27 (area not identified by AET) on September 14, 2004. Soil sample R-2 was submitted to Northeast Technical Services (NTS) for analysis of unknown petroleum compounds including volatile organic compounds (VOCs), GRO, DRO, polychlorinated biphenyls (PCBs) and the eight (8) Resource, Conservation and Recovery Act (RCRA) metals.

One VOC, 1,2,4-trimethylbenzene, was detected at a concentration of 1.7 mg/kg. GRO and DRO were identified at concentrations of 360 mg/kg and 1200 mg/kg, respectively. The results of the laboratory analysis were compared to the MPCA Soil Leaching Values (SLV) and Soil Reference Values (SRV). No Tier 1 SLV/SRV values have been established for GRO or DRO. No PCB compounds were detected in R-2. Arsenic, barium, total chromium and lead were identified below their respective Tier 1 SLV/SRV values at concentrations of 2.8 mg/kg, 102 mg/kg, 16.2 mg/kg and 8.2 mg/kg, respectively. The analytical results for R-2 and the SLVs/SRVs are summarized on Table 1 in the Appendix.

Contaminated soil management associated with Area 5 is discussed in Section 4.0 of this report.

4.0 CONTAMINATED SOIL MANAGEMENT

Area 1 –Intersection of Broadway Street and TH-29/27

No contaminated soil was identified by STS in Area 1 during highway reconstruction activities. Therefore, no contaminated soil management from this area was required.

Area 2 – North of the Intersection of Broadway Street and TH-29/27

No contaminated soil was identified by STS in Area 2 during highway reconstruction activities. Therefore, no contaminated soil management from this area was required.

Area 3 – Northeast Corner of the Intersection of Nokomis Street and TH-29/27

Soils were stockpiled on the site at the location shown on Figure 3. STS observed the removal of the stockpile on August 23, 2004. The soils were transported to a location owned by Riley in Morris, Minnesota. On December 2 and 3, 2004, the soil was transferred from the temporary stockpile location to Onyx FCR Landfill in Buffalo, Minnesota for final disposal. STS was not on site to observe the transfer of contaminated soil from the Riley temporary stockpile location in Morris, Minnesota to the Onyx Landfill facility in Buffalo, Minnesota.

Copies of the Onyx Industrial Waste Approval Letter, shipping manifests, load tickets and invoice summary for the contaminated soil are attached in Appendix D.

Area 4 – Northwest Corner of the Intersection of Park Street and TH-27

Approximately 1,200 cubic yards of petroleum impacted soil excavated from Area 4 was temporarily stockpiled northeast of the site (see Figure 3). The 1,200 cubic yards of impacted soil was hauled to an MPCA approved land spread facility on October 18 and 19, 2005. The land spread facility is located in the SW 1/4 of the NE 1/4 of Section 12, Township 124 North, Range 38 West, Barsness Township, Pope County, Minnesota (Figure 4).

Uniform Vehicle Load Tally Sheets completed by the Mn/DOT inspector for the contaminated material hauled to the land spread facility and a copy of the MPCA approval for the land spread facility (Pre-approval ID #PRE0632, dated October 7, 2005) are attached in Appendix E. STS was not on-site to observe the transfer of impacted material to the land spread facility.

Area 5 – South Side of TH-27 between Nokomis Street and Park Street

The approximately 25 cubic yards of contaminated soil encountered at Area 5 was stockpiled on the site at the location shown on Figure 3. After STS observed the stockpile on September 14, 2004, Riley hauled the soil to a location owned by Riley in Morris, Minnesota. On December 2 and 3, 2004, the soil was transferred from the temporary stockpile location to Onyx FCR Landfill in Buffalo, Minnesota for final disposal. STS was not on site to observe the transfer of contaminated soil from the site to the Riley site in Morris or from the Morris location to the Onyx Landfill facility in Buffalo, Minnesota.

Copies of the Onyx Industrial Waste Approval Letter, shipping manifests, load tickets and invoice summary for the contaminated soil are attached in Appendix D.

5.0 CONCLUSION

Contaminated soil was encountered in three areas during construction of the TH-29/27 project site. These areas included:

- Area 3 – Northeast Corner of the Intersection of Nokomis Street and TH-29/27
- Area 4 – Northwest Corner of the Intersection of Park Street and TH-27
- Area 5 – South Side of TH-27 between Nokomis Street and Park Street

A total of approximately 1,250 cubic yards of petroleum impacted soil from the TH-29/27 project was excavated, transported off-site and landfilled or land applied for soil treatment.

Approximately 25 cubic yards of petroleum impacted soil removed from Area 3 was disposed of at the Onyx FCR Landfill in Buffalo, Minnesota. Approximately 1,200 cubic yards of petroleum impacted soil removed from Area 4 was land applied for treatment at an MPCA approved, 2.98 acres land spread facility located in the SW 1/4 of the NE 1/4 of Section 12, Township 124 North, Range 38 West, Barsness Township, Pope County, Minnesota. Approximately 25 cubic yards of petroleum impacted soil removed from Area 5 was disposed of at the Onyx FCR Landfill in Buffalo, Minnesota.

Impacted soils likely exist beyond the construction limits of the project based on the AET Drilling Investigation (June 5, 2003), PID headspace readings and visual/olfactory observations obtained by STS during reconstruction activities.

Mn/DOT is not responsible for the releases and therefore is not required to define the extent or address petroleum impacted soil outside the project construction limits, based on Minnesota Statute 115C.021 Division 3A. The responsible parties for the releases would be responsible for additional investigation of these areas, if required by the MPCA.

6.0 RECOMMENDATIONS

Approximately 1,200 cubic yards of petroleum contaminated soil from the TH-29/27 reconstruction project was land spread at an MPCA approved land spread facility in Barsness Township, Pope County, Minnesota (Figure 4).

STS recommends that Mn/DOT obtain documentation of completed soil land spread treatment from Riley. A copy of the MPCA Guidance Document 3-07 “Soil Monitoring Results for Land Treated Petroleum Contaminated Soil” (Form D) should be submitted to Mn/DOT upon successful completion of treatment of the contaminated soil spread at the site in Pope County.

7.0 GENERAL QUALIFICATIONS

The information presented in this report is based on the data obtained by STS at the specific locations screened for this report, the results of previous investigation activities completed by others and from other information discussed in this report. Therefore, if new information is disclosed or an alteration of the informal and verbal information occurs, it could result in the redirection of the conclusions presented in this report. STS was on-site on a part-time, on-call basis and our observations are limited to the time we were present on-site.

Variations in soil conditions can occur, as can variations in results of chemical analyses on the samples collected. This report was prepared using currently acceptable engineering practices to assist the client in the evaluation of this property. No warranty, expressed or implied, is made.

Mn/DOT TH-29/27
STS Project 99473-XA

Figures

Photographs

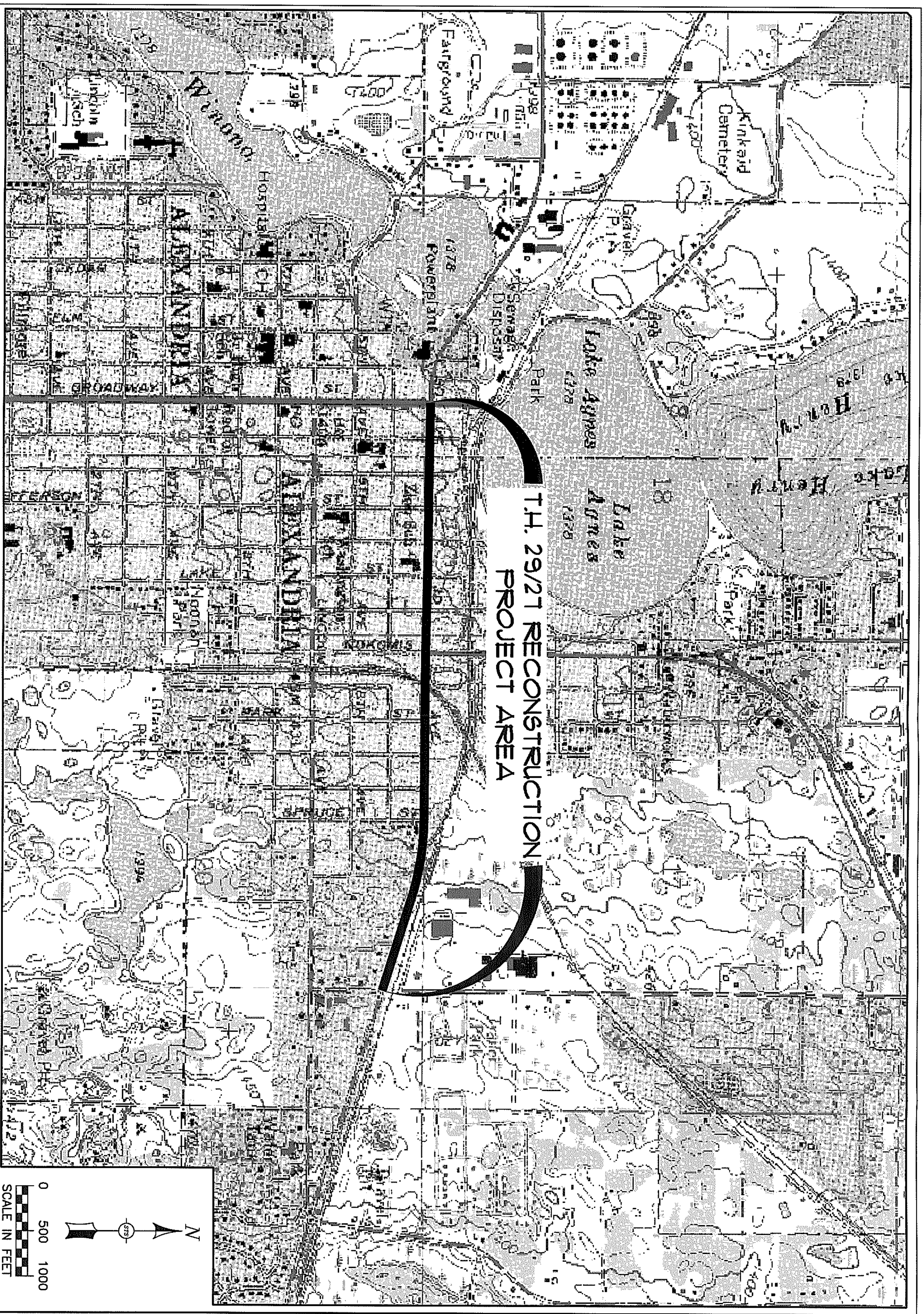
Table

APPENDICES

Appendix A	AET Drilling Investigation Excerpts (Drilling Investigation S.P. 2102-50, AET # 03-01630, dated June 5, 2003)
Appendix B	STS Daily Field Reports
Appendix C	Laboratory Analytical Reports
Appendix D	Contaminated Soil Disposal Documentation for FCR Landfill • FCR Industrial Waste Approval Letter • Shipping Manifests • Load Tickets • Invoice Summary
Appendix E	Land Spread Disposal Documentation • MPCA Approval Letter for Land Spreading Contaminated Soil • Uniform Vehicle Tally Sheets

Mn/DOT TH-29/27
STS Project 99473-XA

FIGURES



STS CONSULTANTS
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Maple Grove, MN 55369
763-315-6300
www.stsconsultants.com

PROJECT LOCATION DIAGRAM
CONTAMINATED SOIL EXCAVATION MONITORING
MINNESOTA DEPARTMENT OF TRANSPORTATION
S.P. 2102-50, TH 29/27
ALEXANDRIA, MINNESOTA

Drawn:	TAK	11/14/2005
Checked:	TJG	11/14/2005
Approved:	RLD	11/14/2005
PROJECT NUMBER	699473XA	
FIGURE NUMBER	1	

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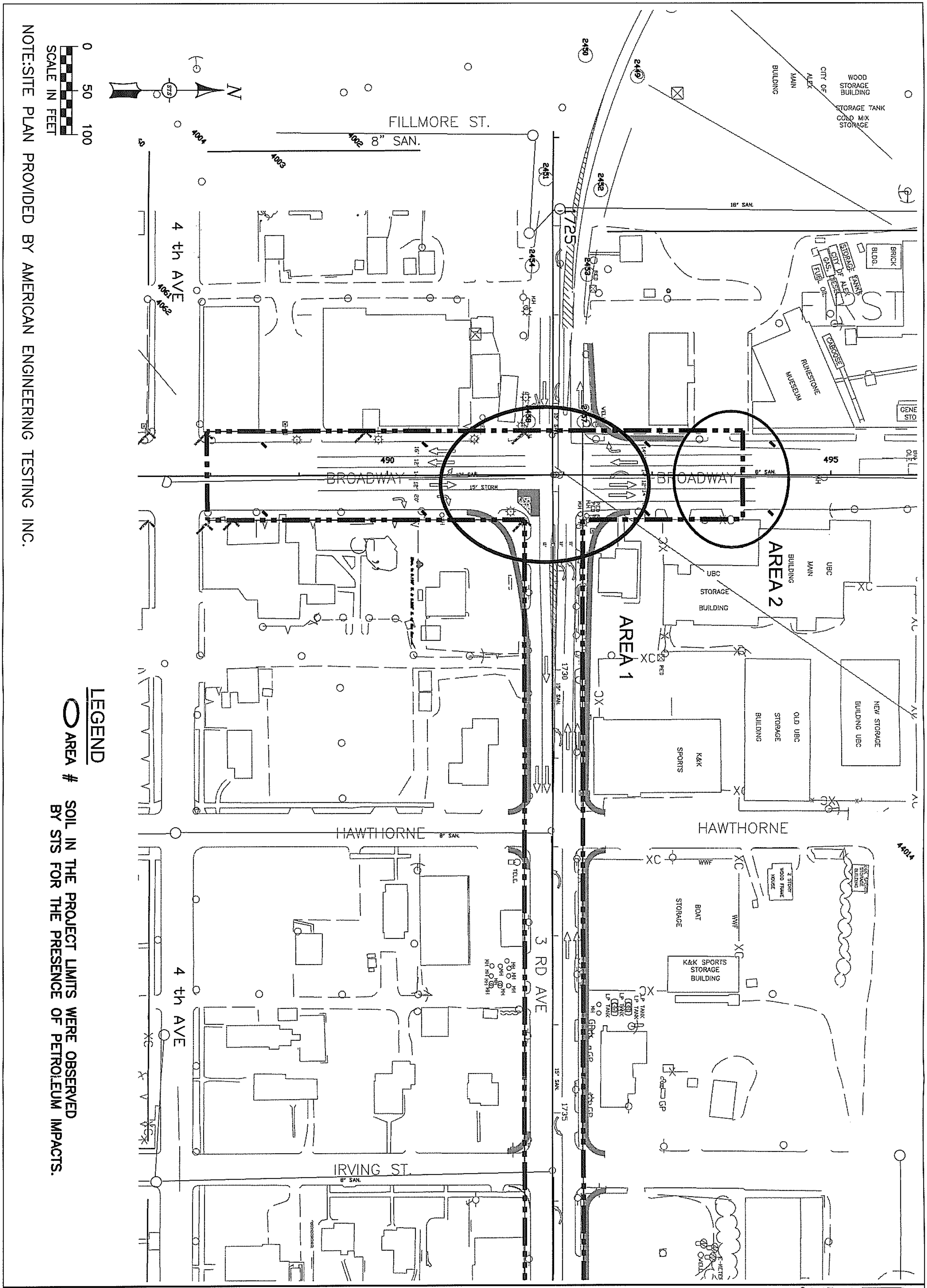

IMPACTED SOIL MONITORING DIAGRAM
AREAS 1 & 2
TRUNK HIGHWAY 29/27 CONSTRUCTION PROJECT
ALEXANDRIA, MINNESOTA
FOR: MnDOT S.P. 2102-50

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Drawn:	TAK	4/22/2005
Checked:	MM	4/22/2005
Approved:	BM	4/22/2005
PROJECT NUMBER	699473XA	
FIGURE NUMBER	2	

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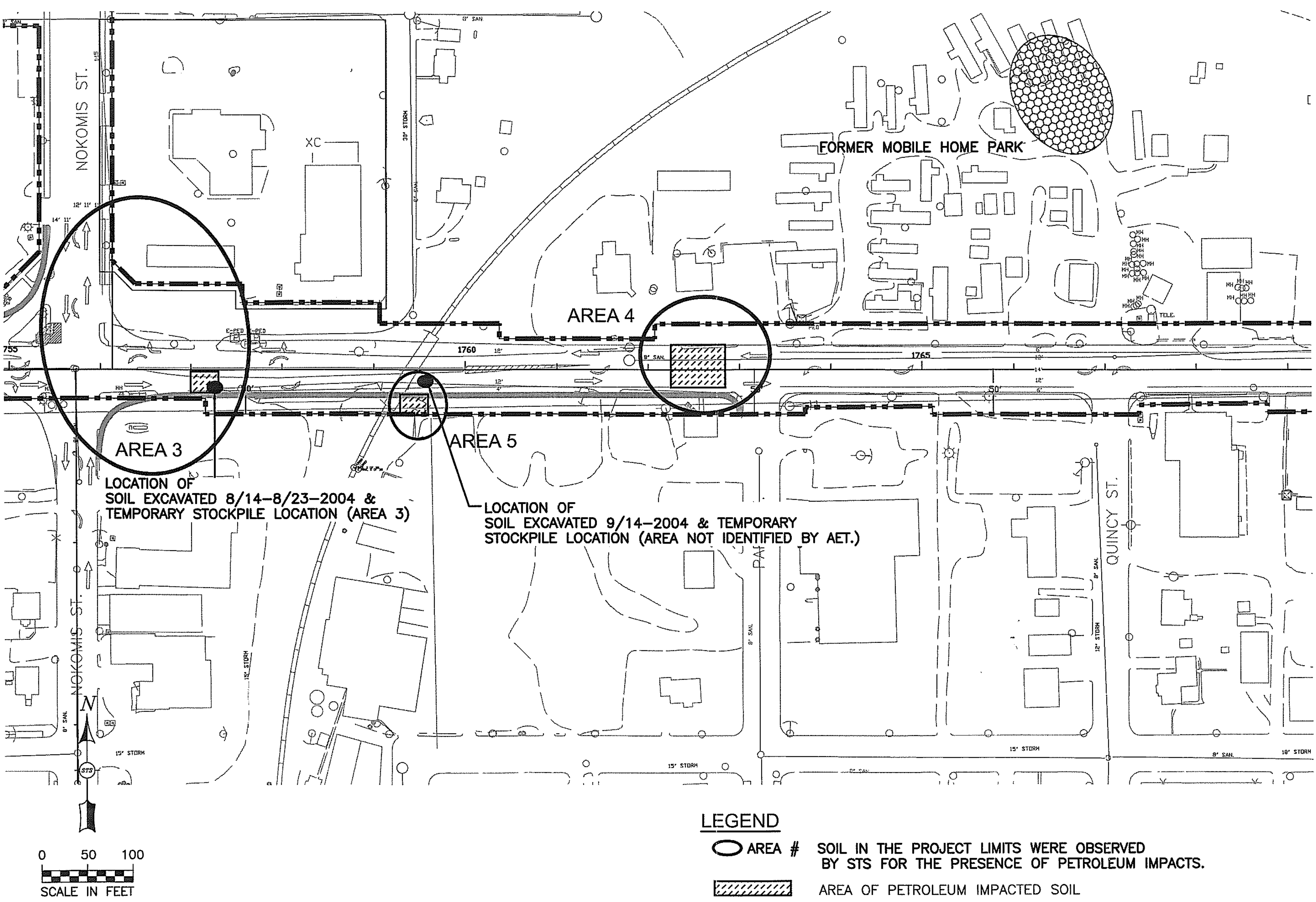

NOTE:SITE PLAN PROVIDED BY AMERICAN ENGINEERING TESTING INC.

LEGEND

○ AREA #	SOIL IN THE PROJECT LIMITS WERE OBSERVED BY STS FOR THE PRESENCE OF PETROLEUM IMPACTS.
▨	AREA OF PETROLEUM IMPACTED SOIL
⬭	AREA OF TEMPORARY STOCKPILE LOCATION FOR AREA 4

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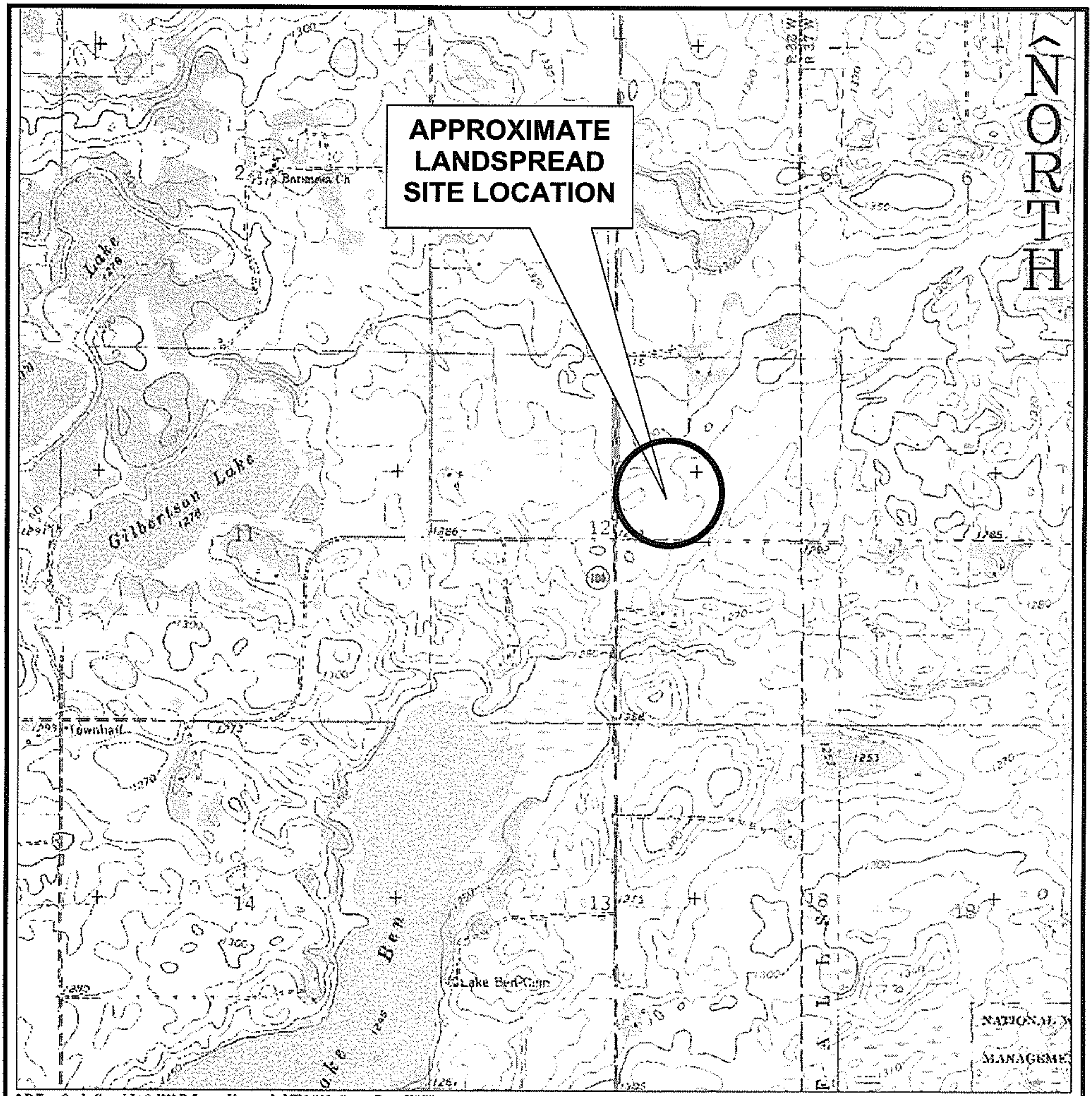
IMPACTED SOIL MONITORING DIAGRAM
AREAS 3, 4 & 5
TRUNK HIGHWAY 29/27 CONSTRUCTION PROJECT
ALEXANDRIA, MINNESOTA
FOR: MnDOT S.P. 2102-50

Drawn:	TAK	4/22/2005
Checked:	MM	4/22/2005
Approved:	BM	4/22/2005
PROJECT NUMBER	699473XA	
FIGURE NUMBER	3	



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS

700 ft Scale: 1 : 24,000 Detail: 13-1 Datum: WGS84

STS Consultants, Ltd.
Consulting Engineers

LANDSPREAD SITE LOCATION DIAGRAM

Mn/DOT TH-29/27 Highway Reconstruction
SW ¼, NE ¼, Section 12, T 124N, R38 W
Barsness Township
Pope County, Minnesota

DRAWN BY	TJG
CHECKED BY	WBT
APPROVED BY	RLD
CADFILE	SCALE 1" = 2000'
STS PROJ. 99473-XA	FIGURE NO. 4

Mn/DOT TH-29/27
STS Project 99473-XA

PHOTOGRAPHS

PHOTOGRAPHIC LOG

Client Name:	**Site Location:**	**Project No.**
Mn/DOT	Trunk Highway 29/27 Alexandria, Minnesota	99473-XA

Photo No.	**Date:**
1	8/23/04

Direction Photo Taken:

West

Description:

Excavation of petroleum impacted soil at Area 3.

Photo No.	**Date:**
2	8/23/04

Direction Photo Taken:

South

Description:

This photograph illustrates contaminated soil encountered in Area 3, note the gray soil staining along the excavation base and sidewall.

PHOTOGRAPHIC LOG

Client Name: Mn/DOT	**Site Location:** Trunk Highway 29/27 Alexandria, Minnesota	**Project No.** 99473-XA

Photo No. 3	**Date:** 5/31/05

Direction Photo Taken:

North to Northwest

Description:

Excavation of petroleum impacted soil at Area 4 in front of Alex Exhaust.

Photo No. 4	**Date:** 5/31/05

Direction Photo Taken:

East

Description:

Covered temporary stockpile of approximately 1,200 cubic yards of contaminated soil from Area 4.

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Mn/DOT	Trunk Highway 29/27 Alexandria, Minnesota	99473-XA

Photo No. 5 **Date:** 9/14/04

Direction Photo Taken:

North

Description:

Four inch drain pipe identified during reconstruction activities in Area 5. Contaminated soil was identified around the pipe.

Photo No. 6 **Date:** 9/14/04

Direction Photo Taken:

East

Description:

Temporary stockpile of contaminated soil excavated from Area 5 around 4 inch drain pipe.

TABLE

TABLE 1
Summary of Soil Analytical Results
Mn/DOT S.P. 2102-50, Trunk Highway 29/27 in Alexandria, Minnesota
STS Project 99473-XA
Concentrations in mg/kg

	R-1	**R-2**	**Methanol Blank**	**SLV**	**SRV**
Volatile Organics Compounds - VOCs EPA 8260	(VOCs not analyzed)	(only compounds detected are shown)		**Varies**	**Varies**
1,2,4-Trimethylbenzene	--	**1.7**	ND	**NE**	**8**
Benzene, Toluene, Ethylbenzene, Xylenes - BTEX	(only compounds detected are shown)	(compounds not analyzed)		**Varies**	**Varies**
Gasoline Range Organics - GRO	**250**	**360**	--	**NE**	**NE**
Diesel Range Organics - DRO	**1600**	**1200**	--	**NE**	**NE**
Metals - EPA 6010	(Only metals detected are listed)		--	***Varies***	***Varies***
Arsenic	--	**2.8**	--	**15.1**	**5**
Barium	--	**102**	--	**842**	**1200**
Chromium*	**--**	**16.2**	--	**18**	**87*** **
Lead	**6.52/9.8 * ***	**8.2**	--	**525**	**400**
Polychlorinated Biphenyls - PCBs EPA 8082	(No detections for compounds analyzed)		- -	***Varies***	***Varies***

Notes:
R-1 = Stockpile sample collected from Area 3 on 8/23/04
R-2 = Stockpile sample collected from Area 5 on 9/14/04
* = denotes value for total chromium (chromium (III) + chromium (VI))
* * = 6.52/9.8 represent values for composite/discrete samples submitted
*** = Denotes SRV Value for Chromium VI
- - = compound not analyzed.
SLV = Soil Leaching Value - MPCA Tier 1, 1999
SRV = Soil Reference Value - MPCA Tier 1, 2005
NE = Not Established
Bold = Concentration above laboratory detection limits

Mn/DOT TH-29/27
STS Project 99473-XA

APPENDICES

Mn/DOT TH-29/27
STS Project 99473-XA

Appendix A

AET Drilling Investigation Excerpts
(Drilling Investigation S.P. 2102-50,
AET # 03-01630, dated June 5, 2003)

DRILLING INVESTIGATION

S.P. 2102-50

TH29/27 from Broadway Street to McKay Avenue

Alexandria, Minnesota

AET #03-01630

Date:

June 5, 2003

Prepared for:

Minnesota Department of Transportation (Mn/DOT)
Office of Environmental Services, MS 620
395 John Ireland Boulevard
St. Paul, Minnesota 55155-1899

Laboratory Analytical Methods

Select soil and/or groundwater samples were analyzed for the following parameters:

X Diesel Range Organics (DRO) - EPA 8015(mod)/WIDRO

X Gasoline Range Organics (GRO) - EPA 8015(mod)/WIGRO

X Benzene, ethylbenzene, toluene and xylenes (BTEX) – EPA 8260 Compound List by SW8260B

X Lead – EPA 6010

DRILLING INVESTIGATION RESULTS

Investigation Overview

Soil borings and sampling were conducted by AET from March 26 through April 8, 2003. A total of 75 push probes were planned and 77 push probes were completed for the project, numbered sequentially from GP-1 to GP-75 with GP-62B and GP-62C added during field activities, (Figures 2A to 2F).

The borings were completed to depths ranging from 16 to 20 feet borings.

Soil and Groundwater Conditions

The soil borings encountered fill, underlain by coarse alluvial sand in push probes GP-1 to GP-37, alternating layers of fine alluvium silt and coarse alluvial sand in push probes GP-38 to GP-39, and clay till with some layers of coarse alluvial sand in push probes GP-40 to GP-75. Groundwater was encountered in borings GP-2 to GP-9, GP-11 to GP-13 at 15 to 19 feet bgs. Groundwater was not encountered in the remaining borings.

Lead
The soil lead analytical results show all soil samples with concentrations below 100 mg/kg.

Groundwater Analytical Results

Based on the field screening results, the following groundwater samples were submitted for DRO, GRO and BETX analytical testing: GP-3 (16-20 feet), GP-4 (16-20 feet), GP-7 (16-20 feet) and GP-13 (17.5-20.5 feet). Table 4 summarizes the groundwater laboratory analytical results.

DRO
Concentrations of DRO were detected in groundwater samples collected from borings GP-3, GP-4, GP-7 and GP-13 ranging from 1.4 to 6.4 ug/L. The highest concentration (6.4 ug/L) was detected in boring GP-13.

GRO
Concentrations of GRO were detected in groundwater samples collected from borings GP-3, GP-4, GP-7 and GP-13 ranging from 2300 to 84,000 ug/L. The highest concentration (84,000 ug/L) was detected in boring GP-13.

BETX
Concentrations of BETX were detected in groundwater samples collected from borings GP-3, GP-4, GP-7 and GP-13.

CONCLUSIONS

The results of the drilling investigation show petroleum impacts to the subsurface soil and groundwater in the project area. The impacts are located at four areas in the project area. The first area is located at the intersection of Broadway Street and TH29/27 and includes petroleum impacts identified in borings GP-3, GP-7, GP-13, GP-14, GP-16 and GP-17. The second area is located north of the intersection of Broadway and TH29/27 and includes petroleum impacts identified in boring GP-4. The third area is located at the northeast corner of the intersection of Nokomis Street and TH29/27 and includes petroleum impacts identified in boring GP-54. The fourth area is located at the northwest corner of the intersection of Park Street and TH27 and includes petroleum impacts identified in boring GP-62A. Figures 2A, 2C and 2D show the boring locations where petroleum impacts were encountered.

RECOMMENDATIONS

Based on the results and conclusions of this investigation, we recommend that no further assessment is necessary for the project area. We recommend the identified petroleum impacted soils be excavated and disposed according to MPCA guidelines during construction of the utilities.

CLOSURE

The services performed by American Engineering Testing, Inc. for this project have been conducted in a manner consistent with that level of skill and care ordinarily exercised by other members of the profession currently practicing in this area, under similar budgetary and time constraints.

If conditions differing from our original findings are identified, AET should be immediately contacted to review these conditions and determine if there are any material impacts on any of our conclusions and recommendations.

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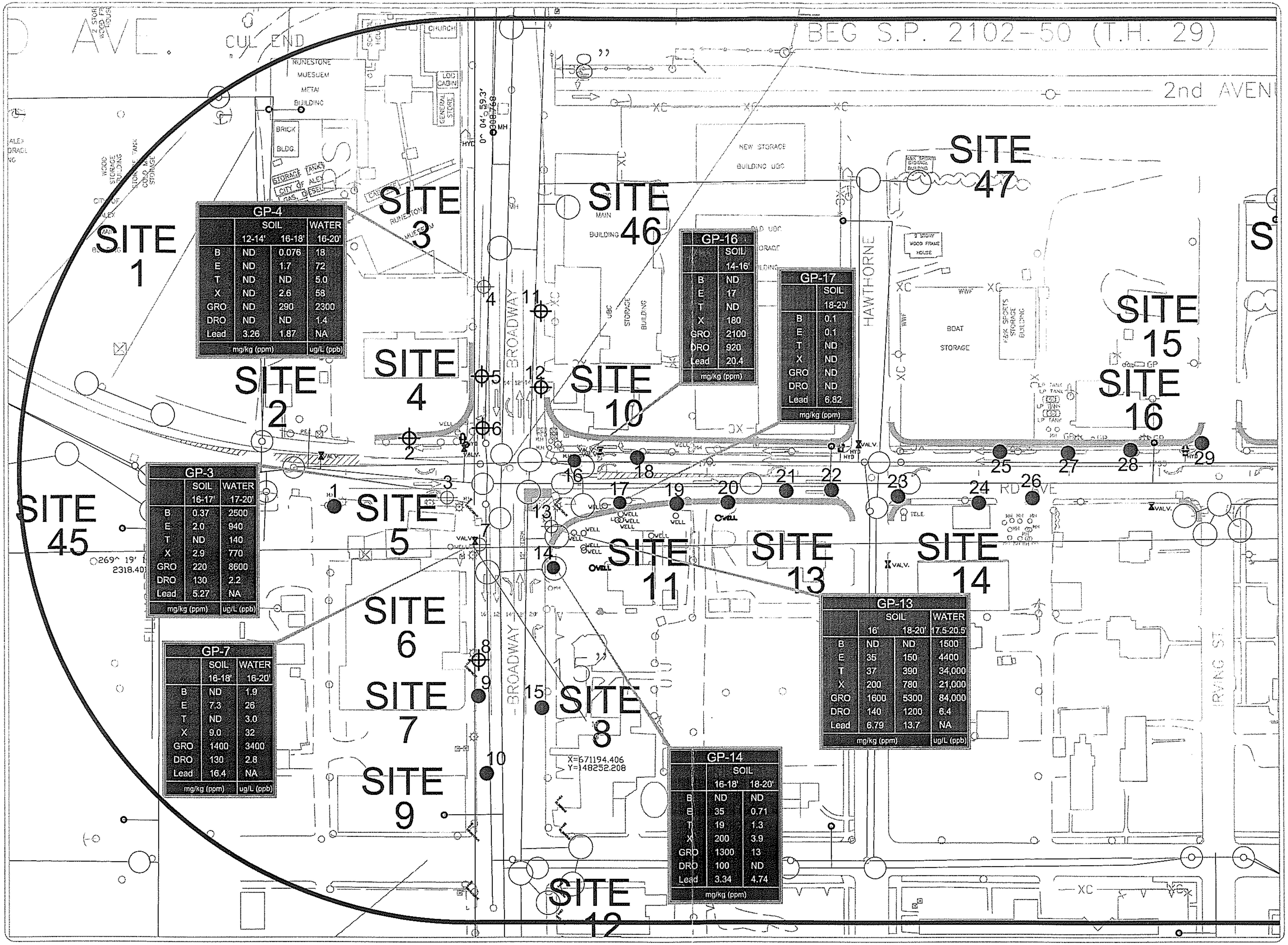

GP-4

	SOIL		WATER
	12-14'	16-18'	16-20'
B	ND	0.076	18
E	ND	1.7	72
T	ND	ND	5.0
X	ND	2.6	58
GRO	ND	290	2300
DRO	ND	ND	1.4
Lead	3.26	1.87	NA
	mg/kg (ppm)		ug/L (ppb)

GP-3

	SOIL	WATER
	16-17'	17-20'
B	0.37	2500
E	2.0	940
T	ND	140
X	2.9	770
GRO	220	8600
DRO	130	2.2
Lead	5.27	NA
	mg/kg (ppm)	ug/L (ppb)

GP-7

	SOIL	WATER
	16-18'	16-20'
B	ND	1.9
E	7.3	26
T	ND	3.0
X	9.0	32
GRO	1400	3400
DRO	130	2.8
Lead	16.4	NA
	mg/kg (ppm)	ug/L (ppb)

GP-16

	SOIL
	14-16'
B	ND
E	17
T	ND
X	180
GRO	2100
DRO	920
Lead	20.4
	mg/kg (ppm)

GP-17

	SOIL
	18-20'
B	0.1
E	0.1
T	ND
X	ND
GRO	ND
DRO	ND
Lead	6.82
	mg/kg (ppm)

GP-13

	SOIL		WATER
	16'	18-20'	17.5-20.5'
B	ND	ND	1500
E	35	150	4400
T	37	390	34,000
X	200	780	21,000
GRO	1600	5300	84,000
DRO	140	1200	6.4
Lead	6.79	13.7	NA
	mg/kg (ppm)		ug/L (ppb)

GP-14

	SOIL	
	16-18'	18-20'
B	ND	ND
E	35	0.71
T	19	1.3
X	200	3.9
GRO	1300	13
DRO	100	ND
Lead	3.34	4.74
	mg/kg (ppm)	

AMERICAN ENGINEERING TESTING, INC.
550 Cleveland Avenue N.
St. Paul, MN 55114
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Fax No. (651) 647-2744

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- GEOTECHNICAL
- ENVIRONMENTAL

LEGEND

SITE #: Site Ranking Number

● Soil Boring Location

⊕ Soil Boring/Temporary Well Location

Red indicates laboratory analysis showed detectable concentrations of an analyte.

AET JOB NUMBER: 03-01630

DRAWN BY: BJS

CHECKED BY: KK

SCALE: 1" = 100'

SOIL BORING LOCATION MAP
MN/DOT S. P. 2102-50
TH 29 / TH 27 FROM
BROADWAY STREET TO
IRVING STREET
ALEXANDRIA, MINNESOTA

2A

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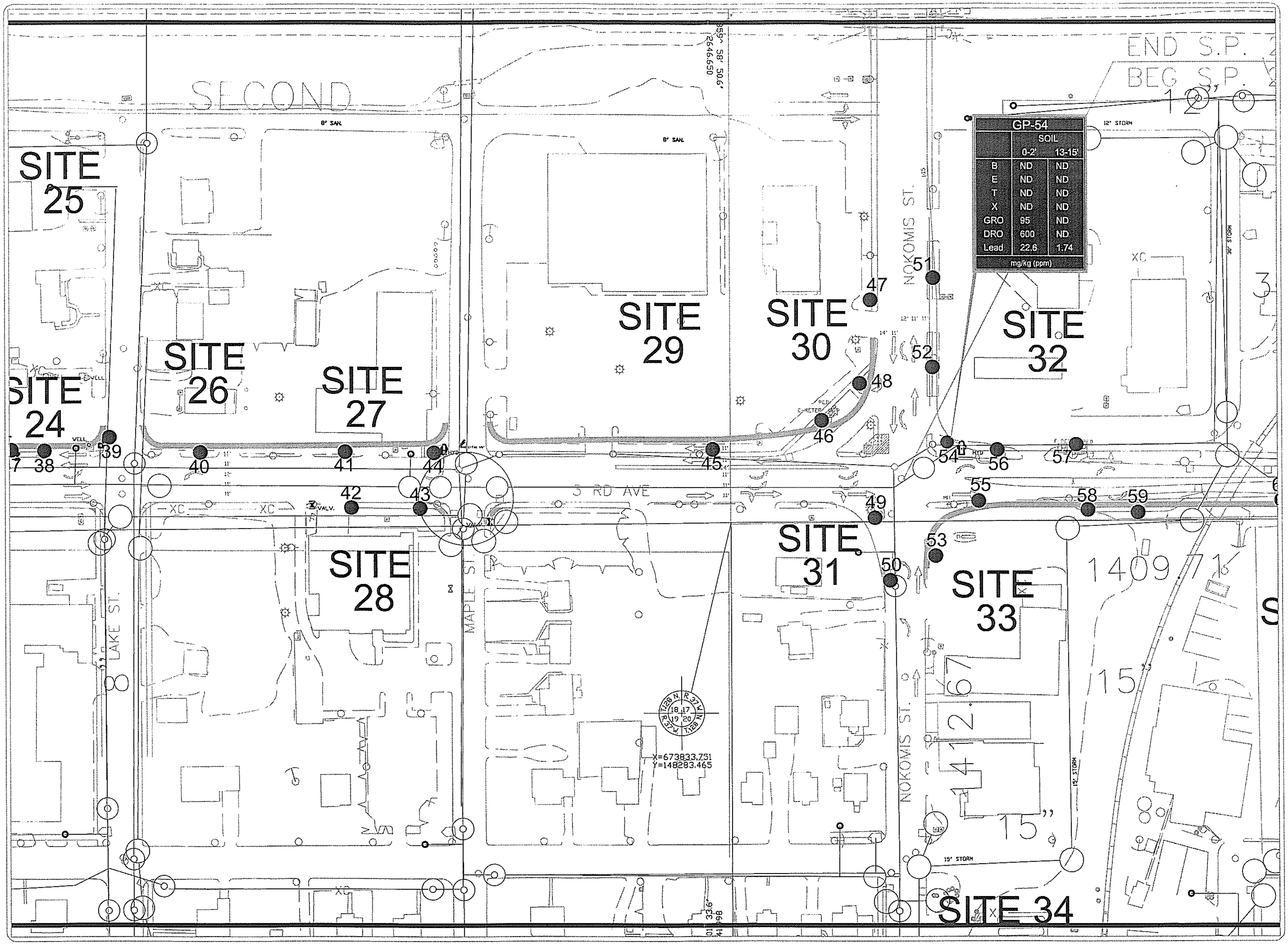

GP-54

	SOIL	
	0-2'	13-15'
B	ND	ND
E	ND	ND
T	ND	ND
X	ND	ND
GRO	95	ND
DRO	600	ND
Lead	22.6	1.74

mg/kg (ppm)

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ENGINEERING
TESTING, INC.

550 Cleveland Avenue N
St. Paul, MN 55114
Phone No. (651) 659-9001
Fax No. (651) 647-2744

CONSULTANTS
- MATERIALS
- GEOTECHNICAL
- ENVIRONMENTAL

LEGEND

SITE #: Site Ranking Number
● Soil Boring Location
⌖ Soil Boring/Temporary Well Location

Red indicates laboratory analysis showed detectable concentrations of an analyte.

AET JOB
NUMBER:
03-01630

DRAWN BY: BJS

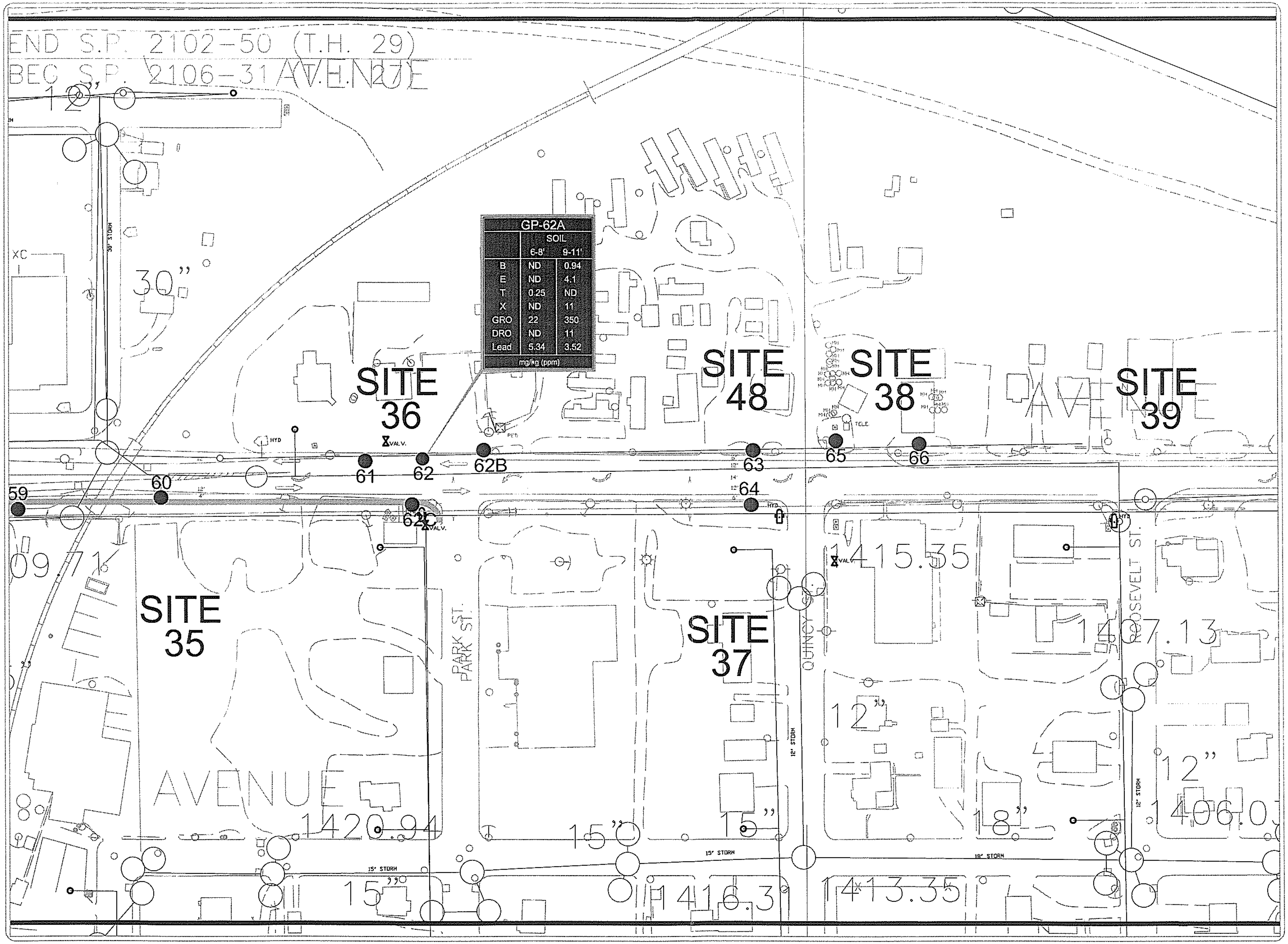
CHECKED BY: KK

SCALE: 1" = 100'

SOIL BORING LOCATION
MAP
MN/DOT S. P. 2102-50
TH 29 / TH 27 FROM
LAKE STREET TO
NOKOMIS STREET
ALEXANDRIA, MINNESOTA

2C

X:\PROJECTS\699437XA\G99437XA-01.dwg, RR-Roosevelt (2D), 3/31/2005 10:07:58 AM, STS_PLOTSTAMP,STS_PLOTSTAMP



GP-62A	SOIL	
	6-8'	9-11'
B	ND	0.94
E	ND	4.1
T	0.25	ND
X	ND	11
GRO	22	350
DRO	ND	11
Lead	5.34	3.52

mg/kg (ppm)

AMERICAN ENGINEERING TESTING, INC
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SOIL BORING LOCATION MAP
MN/DOT S. P. 2102-50
TH 29 / TH 27 FROM
NOKOMIS STREET TO
ROOSEVELT STREET
ALEXANDRIA, MINNESOTA

2D

Mn/DOT TH-29/27
STS Project 99473-XA

Appendix B

STS Daily Field Reports

STS Consultants, Ltd.

Day/Date Tuesday 5/18/04

ENVIRONMENTAL FIELD REPORT

1 of 1

Project Name Trunk Highway 29 - Alexandria
Location Alexandria MN
Contractor Riley Brothers - Dennis

Project Number 99473-XA
Task Number —
Weather/Temp. Sunny 60° 70°
Client MnDOT

Arrive Job	0800	Travel Time	2.0	Contractor Arrive Job	—
Depart Job	1900	Project Coordination	—	Contractor Depart Job	—
Hours on Job	11.0	**Total Chargeable Hours**	13.0	Contractor Hours on Job	—
		Mileage	135		

Summary of Technical and/or Engineering services performed, including Field Test Data, Locations, Elevations and Depths are Estimated.

5/18/04

Onsite 0800 - Met Brad Sisla MnDOT Inspector and Dennis ?? - Riley Brothers. Riley was preparing for excavation for Sanitary sewer line along TH-29 between Fillmore St. and Broadway. 3.0 hr standby time - new sanitary line was to be replaced where existing water line was - moved Sanitary to south side of TH-29. Riley began excavating for sewer line at first junction east of Fillmore intersec

No impacted (>10 PID units) soil was observed from station 1725+00 to 1725+75

Called Andrew Nichols - MnDOT - informed him of site progress. Andrew said he delivered analytical reports to our office and asked if we would set up profile with Elk River Landfill for disposal of impacted soils.

Equipment and Supplies used: Photovac PID 10.6 eV

Print Name Timothy J. Grape
Signature
Title Senior Environmental Technician

Delays:

MnDOT TH-29 Alex. Intersection of Broadway/TH

5/18/04

Sample	Depth	PID	Station/Location	Soil type/comments
1	Surf.	0	1725 + 00	fine-crs sand/SW
2	Surf.	0	1725 + 10	↓
3	2'	0	1725 + 00	fine Sand
4	2'	0	1725 + 10	↓
5	4'	0	1725 + 10	
6	6'	0	1725 + 10	
7	8'	0	1725 + 10	
8	2	0	1725 + 25	
9	4	0	1725 + 25	
10	6	0	1725 + 25	
11	8	0	1725 + 25	
12	4', 6', 8'	0	1725 + 35	
13	4', 6', 8'	0	1725 + 40	
14	4', 6', 8'	0	1725 + 45	
15	4', 6', 8'	0	1725 + 50	
16	4', 6', 8'	0	1725 + 55	
17	4', 6', 8'	0	1725 + 60	
18	4', 6', 8'	0	1725 + 65	
19	4', 6', 8'	0	1725 + 70	
20	4', 6', 8	0	1725 + 75	
21				
22				
23				
24				
25				
26				
27				

1.5 [illegible] South 22nd Ave right 1st Apt Complex

STS Consultants, Ltd.

Day/Date Wednesday 5/19/04

ENVIRONMENTAL FIELD REPORT

1 of 1

Project Name Trunk Highway 29- Alexandria
Location Alexandria, MN
Contractor Riley Brothers

Project Number 99473-XA
Task Number —
Weather/Temp. Cloudy/60°
Client MnDOT

Arrive Job 0700
Depart Job 1830
Hours on Job 11.5

Travel Time —
Project Coordination —
Total Chargeable Hours 11.5
Mileage —

Contractor Arrive Job
Contractor Depart Job
Contractor Hours on Job

Summary of Technical and/or Engineering services performed, including Field Test Data, Locations, Elevations and Depths are Estimated.

5/19/04

Onsite 0700 Riley Bros. continued excavation for sanitary sewer along Broadway at ~1725+80. Observed excavation materials for presence of petroleum impacts - visual/olfactory as well as PID headspace readings @ every 2' depth at 5' intervals along stationing. PID readings are summarized in a table on the back of this Field Report.

Brad (MnDOT) informed me that Joe Riley (Riley Bros.) was planning on hauling impacted soil from TH-29 to a land farm site in Glenwood, MN. I called Andrew Nichols (MnDOT) and informed him of Joe's intentions for impacted soil. Andrew reaffirmed his intent to have impacted soil disposed of at a licensed landfill facility. Andrew asked me to get price quote confirmation from Buffalo FCR and Elk River landfills and that Jessy Miller would settle the disposal location for impacted soil with Joe Riley.
Completed Storm Sewer to "T" at Station 1727+40-
* No elevated PID readings or visual/olfactory evidence of contamination was observed.

Equipment and Supplies used:

Photovac PID 10.6eV lamp.

Print Name Timothy J. Grape
Signature Timothy J Grape
Title Senior Environmental Technician
STS Consultants, Ltd.

Delays:

(763) 574-0095
Eye-clinic Thurs. 4:50

MnDOT TH-29
5/19/04

Fillmore to Broadway

Elk River = Tom/Joe → -2307
(952) 882-2337
Cell # (612) 834-0451

Sample	Depth	PID	Station
1	4',6',8'	- 0	1725+80
2	4,6,8,10	0	1725+85
3	4',6',8,10'	- 0	1725+90
4	4,6,8,10'	000.1	1725+95
5	4,6,8,10	-0-	1726+00
6	4,6,8,10	2,0,0,0	1726+05
7	4,6,8,10	-0	1726+10
8	4,6,8,10	-0-	1726+15
9	4,6,8,10	-0	1726+20
10	4,6,8,10	-0	1726+25
11	4,6,8,10	-0-	1726+30
12	4,6,8,10	-0-	1726+35
13	4,6,8,10	-0-	1726+40
14	4,6,8,10	-0	1726+45
15	4,6,8,10	-0	1726+50
16	4,6,8,10	-0-	1726+55
17	4,6,8,10	-0-	1726+60
18	4,6,8,10	-0-	1726+65
19	4,6,8,10	-0-	1726+70
20	4,6,8,10	-0-	1726+75
21	4,6,8,10	0	1726+80
22	4,6,8,10	0	1726+85
23	4,6,8,10	0	1726+90
24	4,6,8,10	0	1726+95
25	4,6,8,10	0	1727+00
26	4,6,8,10	0	1727+05
27	4,6,8,10	0	1727+10
28	4,6,8,10	0	1727+15
29	4,6,8,10	0	1727+20
30	4,6,8,10,12	0	1727+25
31	4,6,8,10,12	0	1727+30
32	4,6,8,10,12	0	1727+35
33	6,8,10,12,14	0	1727+40

MnDOT Fax # → (320) 763-8442

STS Consultants, Ltd.

Day/Date Thursday 5/20/01

ENVIRONMENTAL FIELD REPORT

1 of 1

Project Name MnDOT Trunk Highway 29

Location Alexandria, MN

Contractor Riley Bros.

Project Number 97943-XA

Task Number —

Weather/Temp. Partly Sunny/60°

Client MnDOT

Arrive Job 0700

Depart Job 1030

Hours on Job 3.5

Travel Time 2.0

Project Coordination —

Total Chargeable Hours 5.5

Mileage 135

Contractor Arrive Job

Contractor Depart Job

Contractor Hours on Job

Summary of Technical and/or Engineering services performed, including Field Test Data, Locations, Elevations and Depths are Estimated.

5/20/04 Onsite 0700. Riley Bros. Installed new sanitary line along Broadway South Of TH-29 approximately 75' from "T" at TH-29 to southern property extent of Tire One Store.

I observed excavated Soils for the presence of petroleum impacts and collected PID headspace readings on excavated soils (see back of Field Report for PID readings).

No elevated PID readings were observed and no visual or olfactory evidence Of petroleum contamination was observed in the excavated Soils.

Riley Bros. Stopped excavating Sanitary line ~1000 due to the presence Of the Storm Sewer - returned to Fillmore Street to tie in Storm Sewer. Called Jessie Miller (MNDOT) to discuss the need for me onsite. Jessie said he didn't think our Services would be

Equipment and Supplies used: required for the remainder of the week.

Photovac PID 10.6eV lamp

Print Name Timothy J. Grape

Signature Timothy J Grape

Title Senior Environmental Technician

STS Consultants, Ltd.

Delays:

Sanitary Sewer - from
TH-29 - South on Broadway
West side of Bwy.

MnDOT TH-29
Alexandria, MN

99473-XA
5/20/04
320 808-3669

Sample	Depth	PID	Station	
1	8,10,12	--0	1727+40	Brdwy
2	6,8,10,12,14	--0--	1727+40	Brdwy
3	8,10,12,14	---0-	5' south	Brdwy
4	6,8,10,12	---0	10' south	Brdwy
5	6,8,10,12	--0	15' south	Brdwy
6	6,8,10,12	---0	20' south	
7	6,8,10,12	---0	25' south	
8	6,8,10,12	---0	30' south	
9	4,6,8,10	---1	35' south	
10	4,6,8,10	---2	40' south	
11	4,6,8,10	---	4[illegible]	
12	4,6,8,10	---0	50	
13	4,6,8,10	---1	55	
14	4,6,8,10	---1	60	
15	4,6,8,10	---0	[illegible]	
16	4,6,8,10	---0	[illegible]	
17	4,6,8,10	---0	[illegible]	

STS Consultants, Ltd.

Day/Date Saturday 8/14/04

ENVIRONMENTAL FIELD REPORT

1 of 1

Project Name MnDOT TH-29 - Alexandria

Location TH-29 & Nokomis St. intersection

Contractor Riley Bros.

Project Number 99473-XA

Task Number —

Weather/Temp. Sunny / 80°

Client

Arrive Job	0830	Travel Time	4.0	Contractor Arrive Job	
Depart Job	0930	Project Coordination	—	Contractor Depart Job	
Hours on Job	1.0	**Total Chargeable Hours**	5.0	Contractor Hours on Job	
		Mileage	270		

Summary of Technical and/or Engineering services performed, including Field Test Data, Locations, Elevations and Depths are Estimated.

8/14/04 Onsite ~ 0830. Spoke with Loren with Riley Bros. Loren said their objective for the day was to complete the storm sewer service on Nokomis St. South of TH-29 (intersection). Loren also said they had not observed any odors or staining while excavating in the area.

Collected PID Headspace samples - no elevated PID's or visual/olfactory evidence of petroleum contamination observed. Talked to Dennis (Riley) and MnDOT sup. - agreed that they wouldn't need me onsite today - maybe Monday. Station 1731+25

Sample	PID	Depth	S Type
1	<1	4'	Clay
2	<1	6'	Clay
3	<1	8'	Clay

Equipment and Supplies used: Photovac PID 10.6eV

Print Name **Timothy J. Grape**

Signature Timothy J Grape

Title **Assistant Project Geologist**
STS Consultants, Ltd.

Delays:

STS Consultants, Ltd.

Day/Date Tuesday Aug 17, 2004

ENVIRONMENTAL FIELD REPORT

1 of 1

Project Name TH-29 Alexandria
Location East of TH-29 / Nokomis intersection
Contractor Riley Bros. Constr.

Project Number 99473-XA
Task Number —
Weather/Temp. Sunny / 80°
Client MnDOT

Arrive Job 1300
Depart Job 1630
Hours on Job 3.5

Travel Time 4.0
Project Coordination 0.5
Total Chargeable Hours 7.5
Mileage 250

Contractor Arrive Job
Contractor Depart Job
Contractor Hours on Job

Summary of Technical and/or Engineering services performed, including Field Test Data, Locations, Elevations and Depths are Estimated.

8/17/04

Onsite 1300. Riley Bros. encountered soil with petroleum like odors while excavating trench for water service to Minnesota Lighting facility. Observed gray soil staining in brown clay ~ 20' South of existing Center line to a depth of approximately 4' below ground surface. Impacted soil area consisted of ~ 2' sand and gravel over clay - impacted area approximately 5' wide. Collected headspace soil samples and screened with PID meter. PID readings ranged from 10 to 40 PID units for stained materials.

Observed storm sewer excavation along TH-29 west of Texaco between American Eng. borings 54 and 50. No evidence of impacts observed from 0' to 4'.

Spoke with Matt Johnson of WCEC - he was representing the owner of Minnesota Lighting Prop. Matt observed excavation area talked to Glen from Smith & Nolting.

Equipment and Supplies used: HnU PID 10.2eV lamp Calibrated to 100ppm Isobutylene

Print Name **Timothy J. Grape**
Signature Timothy J Grape
Title **Assistant Project Geologist**
STS Consultants, Ltd.

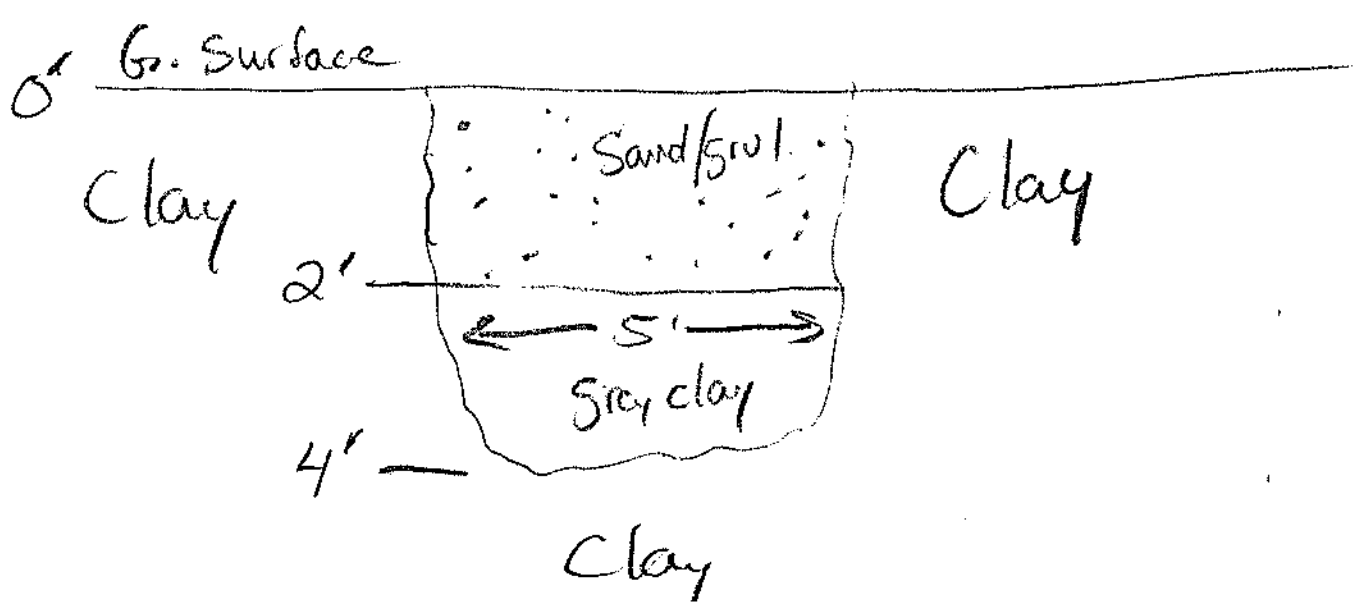
Delays:

Susan Kerwit

TH-29 Alexandria 8/17/04

Sample	Depth	PID	Soil type	Comments
S-1	0'-2'	30	Sand/grvl	odor - Petrol/Staining
S-1A	2'-4'	20	Clay - grey	odor - Petrol/Staining
S-2	0'-2'	25	Sand/grvl	odor - Petrol/Staining
S-2A	2'-4	40	Clay grey	odor - Petrol/Staining
S-3	2'-4	10	Clay - grey	slight odor
S-4	0'-2'	<1	Clay - grey	no visual/olfactory
S-4A	2'-4'	<1	Clay/org. blk	
S-5	0'-2'	<1	Clay - brn	
S-5A	2'-4'	<1	Clay/org. blk	
S-6	0'-2'	<1	Clay - brn	
S-6A	2'-4'	<1	clay/org. blk	
S-7	0'-2'	<1	Clay - brn	
S-7A	2'-4'	<1	clay/org. - blk	
S-8	3'-4'	<1	Clay blk	Septic/methane odor

Impacted area Soil Profile



STS Consultants, Ltd.

Day/Date Monday 8/23/04

ENVIRONMENTAL FIELD REPORT

1 of 1

Project Name T.H.-29 Alexandria, MN
Location Nokomis & TH-29
Contractor Riley Bros Contracting

Project Number 99473-XA
Task Number —
Weather/Temp. Cloudy/70°
Client MNDOT

Arrive Job 1630
Depart Job 2000
Hours on Job 3.5

Travel Time 4.5
Project Coordination 1.0
Total Chargeable Hours 9.0
Mileage 250

Contractor Arrive Job
Contractor Depart Job
Contractor Hours on Job

Summary of Technical and/or Engineering services performed, including Field Test Data, Locations, Elevations and Depths are Estimated.

8/23/04

Riley Bros was excavating for subcut East Side of Nokomis & TH-29 Intersection. Encountered stained soil with petroleum odor between Station 1757+20 + 1757+00 South side of road North of Minnesota Lighting Fireplace & Flooring. Called Andrew Nichols (MNDOT) + discussed sampling impacted soils. Andrew requested STS sample the impacted soil for BTEX, GRO, DRO and lead for normal turnaround.

PID readings summarized on back.
Removed ~25 10 cy. truck loads of impacted material - hauled to permitted land spread site in Morris, MN.

Observed subcut through the area. Riley removed impacted

Equipment and Supplies used: HNU PID 10.2 eV

Print Name **Timothy J. Grape**
Signature Timothy J Grape
Title **Assistant Project Geologist**
STS Consultants, Ltd.

Delays:

99473-XA
8/23/04

Ben
(602)810-2672

Sample ID	Depth	PID	Location	
	1'	30		
	3'	50		
	1'	25		
	8'	45		
	1'	15		
	3'	20		
	1'	1		
	3'	<1		
	1'	<1		
	3'	<1		
	Base (3')	50	Left in place	
	South sidewall (2')	50	↓	

STS Consultants, Ltd.

Day/Date Tuesday 9/14/04

ENVIRONMENTAL FIELD REPORT

1 of 1

Project Name MnDOT TH-29
Location Alexandria, MN
Contractor Riley Bros

Project Number 99473-XA
Task Number
Weather/Temp. Sunny / 80°
Client

Arrive Job 1030
Depart Job 1300
Hours on Job 2.5

Travel Time 4.5
Project Coordination 1.0
Total Chargeable Hours 8.0
Mileage 245

Contractor Arrive Job
Contractor Depart Job
Contractor Hours on Job

Summary of Technical and/or Engineering services performed, including Field Test Data, Locations, Elevations and Depths are Estimated.

9/14/04 Riley encountered a 4" concrete drain line @ Station 8-1759+75 East of the rail road bridge (railroad corridor) and petroleum odors in soil surrounding the line. Prior to my arrival onsite Riley Segregated ~ 25 to 30 cy. of clay soil with petroleum odors/staining.

Upon arrival I collected headspace soil samples from the stockpiled material (ranged from 40 to 100 PID units) and observed the 4" pipe area. Water with a slight petroleum sheen was observed comming from the pipe - the soil around the pipe area was stained and had petroleum odors. The pipe apparently ran to the storm sewer at TH-29 and appears to be comming from the South from "Alexandria Concrete" property. Called Andrew Nichols (MnDOT) @ 1200 - he was in the process of calling the State Duty officer. Andrew said not to collect a water sample from the line - just soil sample from stockpile for VOC, DRO, GRO and Lead.
Analytical Sample = R-2 (VOC, GRO, DRO) R-2 Comp - Lead

Equipment and Supplies used: Photovac PID

Told Riley to haul impacted stockpiled material (~25-30cy) to their permitted facility and stockpile on plastic separate from other material onsite

Print Name **Timothy J. Grape**
Signature
Title **Assistant Project Geologist**
STS Consultants, Ltd.

Delays:

STS Consultants, Ltd.

Day/Date Wednesday/May 18, 2005

ENVIRONMENTAL FIELD REPORT

1 of 1

Project Name MnDOT TH ~~[illegible]~~ 27/TH ~~[illegible] Virginia~~ 29 Alexandria

Location ~~Virginia~~ Alexandria, Minnesota

Contractor Riley Brothers

Project Number 99~~[illegible]~~473-XA

Task Number

Weather/Temp. Rain /50°

Client MnDOT

Arrive Job

Depart Job

Hours on Job

Travel Time 4.75

Project Coordination 0.5

Total Chargeable Hours 5.25

Mileage 32.0

Contractor Arrive Job

Contractor Depart Job

Contractor Hours on Job

Summary of Technical and/or Engineering services performed, including Field Test Data, Locations, Elevations and Depths are Estimated.

After speaking with Bill Tepley (STS) on the phone I drove from Virginia, Minnesota to Alexandria, Minnesota. I was told to be onsite at 0700 tomorrow to screen soil with a PID.

Equipment and Supplies used (circle items used on-site):

PID (eV lamp), Water Level Tape, Whale Pumps, Free Product Indicator, Peristaltic Pump, Stabilization Parameters, GEM 500, Explosimeter, Survey Equipment, Disposable Bailers, Tubing (ft.), Chemetrics - QED Filters

Print Name Gayle Blizil

Signature Gayle Blizil

Title Assistant Project Engineer, EIT
STS Consultants, Ltd.

Delays:

STS Consultants, Ltd.

Day/Date Thursday / May 19, 2005

ENVIRONMENTAL FIELD REPORT

2 of 2

Project Name MnDOT TH 27/TH 29

Location Alexandria, Minnesota

Contractor Riley Brothers Construction

Project Number 99473-XA

Task Number

Weather/Temp. Partly cloudy / 65°

Client MnDOT

Arrive Job

Depart Job

Hours on Job

Travel Time

Project Coordination

Total Chargeable Hours

Mileage

Contractor Arrive Job

Contractor Depart Job

Contractor Hours on Job

Summary of Technical and/or Engineering services performed, including Field Test Data, Locations, Elevations and Depths are Estimated.

obvious to the nose and eye that it was still contaminated. I took some photos during the excavation, and some more of the stockpiles of contaminated soil before I left the site. The stockpiles were not covered at the time of the photos because they were still moving contaminated soil to them. I reminded MnDOT and Riley Bros. that those stockpiles would need to be covered. Bill Tepley (STS) sent analytical data from previous borings to CFR in Buffalo as a possible disposal option. Before I left the site I was told by Brad + Mitch (MnDOT) and Dennis (Riley Bros.) that they wouldn't need us onsite until Monday and that they would call either myself or Tim Grape (STS) on Saturday to let us know what time we were needed Monday. I left the site and drove back to STS.

Equipment and Supplies used (circle items used on-site):

[✓ PID (10.2 eV lamp)], Water Level Tape, Whale Pumps, Free Product Indicator, Peristaltic Pump, Stabilization Parameters, GEM 500, Explosimeter, Survey Equipment, Disposable Bailers, Tubing (ft.), Chemetrics - QED Filters

Print Name Gayle Blizil

Signature Gayle Blizil

Title Assistant Project Engineer, EIT
STS Consultants, Ltd.

Delays:

STS Consultants, Ltd.

Day/Date Thursday/ May 19, 2005

ENVIRONMENTAL FIELD REPORT

1 of 2

Project Name MnDOT TH ~~[illegible]~~ 27 /TH ~~[illegible]~~ ~~Virginia~~ 29 Alexandria

Location ~~Virginia,~~ Alexandria Minnesota

Contractor Riley Brothers

Project Number 99~~[illegible]~~473-XA

Task Number

Weather/Temp. Fog/55°

Client MnDOT

Arrive Job 0700

Depart Job 1630

Hours on Job 9.0

Travel Time 2.25

Project Coordination 0.25

Total Chargeable Hours 11.5

Mileage 132.0

Contractor Arrive Job

Contractor Depart Job

Contractor Hours on Job

Summary of Technical and/or Engineering services performed, including Field Test Data, Locations, Elevations and Depths are Estimated.

Spoke with Jesse Miller (MnDOT) and he said someone from MnDOT was bringing me a site map, etc. that Bill Tepley (STS) had faxed to their office. I screened 2 samples from the poly-covered stockpile. One had a PID reading of 2.5 while the other had a reading of 15. Jesse told me when they had found contamination in the past Riley Brothers had gotten a permit to store it (covered) in Morris until they brought it to the landfill. I found out that MnDOT is paying for the disposal, and they have scale tickets showing how much was hauled offsite. It sounds like they would like to continue doing it the same way. They continued excavating (S/lane of 3rd AVE) westward from just east of Park ST toward the area where they expected possible contamination. North of London Boulder (current site office) they stopped excavation when they hit grey/green petroleum smelling soil. I screened it with a PID and it was 240. some "normal looking" brown soil below it also had a reading of 100. I instructed Riley that the soil needed to be separated from the non-impacted soil. As they continued excavating it was visually apparant the contamination was at least 15' deep and virtually crossed the ~30' hole N+S. There was a strong petroleum odor. I screened the soil now and then, but it

Equipment and Supplies used (circle items used on-site):

[✓ PID (10.2eV lamp)], Water Level Tape, Whale Pumps, Free Product Indicator, Peristaltic Pump, Stabilization Parameters, GEM 500, Explosimeter, Survey Equipment, Disposable Bailers, Tubing (ft.), Chemetrics - QED Filters

Print Name Gayle Blizil

Signature Gayle Blizil

Title Assistant Project Engineer, EIT

STS Consultants, Ltd.

Delays:

STS Project Number: ______________________

Date: 5/19/05

Sample I.D.	Depth	PID Headspace	Location	Description
SP-1		2.5		Brn silty sand, t-clay
SP-2		15		DK brn clayey, silty sand
Water Baggie		0.5		
S-1	~10	240	S side 3rd / E. front of London Boulder	Grn/grey silty sand petro
S-2	~15	100	↓	Lt. brn silty sand petro
S-3	~10	150	15' W of above	brn/grey silty sand petro

STS Consultants, Ltd.

Day/Date Saturday / May 21, 2005

ENVIRONMENTAL FIELD REPORT

1 of 1

Project Name MnDOT TH 27/TH 29

Location Alexandria, Minnesota

Contractor Riley Brothers Construction

Project Number 99473-XA

Task Number

Weather/Temp. Sprinkling / 60°

Client MnDOT

Arrive Job 0700

Depart Job 0800

Hours on Job 1.0

Travel Time 4.0

Project Coordination 0.5

Total Chargeable Hours 5.5

Mileage

Contractor Arrive Job

Contractor Depart Job

Contractor Hours on Job

Summary of Technical and/or Engineering services performed, including Field Test Data, Locations, Elevations and Depths are Estimated.

I got the PID and drove to Alexandria. Yesterday I was told by Jesse Miller (MnDOT) that they needed me at 0700 today. I arrived onsite at 0700 and no one was there. I called Jesse and he said he would call Brad and get back to me. Jesse called back and said Mitch (MnDOT) was on his way to the site and I should listen to him for directions on whether to go or stay. I asked when they would need us if they were not working today. Jesse said probably Monday, but that I should follow Mitch's direction. While I waited for Mitch I spoke with Denny (Riley Brothers) and he told me he had sent all of his guys home for the day. I waited for Mitch anyway to confirm there would be no work today, and to confirm the time on Monday. Mitch said 0800 Monday morning, so I returned to STS.

Equipment ~~and~~ Supplies used (circle items used on-site):

+ sed

[✓ PID (10.2 eV lamp)], Water Level Tape, Whale Pumps, Free Product Indicator, Peristaltic Pump, Stabilization Parameters, GEM 500, Explosimeter, Survey Equipment, Disposable Bailers, Tubing (ft.), Chemetrics - QED Filters

Print Name Gayle Blizil

Signature Gayle Blizil

Title Assistant Project Engineer, EIT

STS Consultants, Ltd.

Delays:

STS Consultants, Ltd.

Day/Date Monday / May 23, 2005

ENVIRONMENTAL FIELD REPORT

1 of 1

Project Name MnDOT TH 27/TH 29
Location Alexandria, Minnesota
Contractor Riley Brothers Construction

Project Number 99473-XA
Task Number
Weather/Temp. Sunny / 70°
Client MnDOT

Arrive Job 0800
Depart Job 1845
Hours on Job 10.25

Travel Time 4.0
Project Coordination 0.25
Total Chargeable Hours 14.5
Mileage 252.0

Contractor Arrive Job
Contractor Depart Job
Contractor Hours on Job

Summary of Technical and/or Engineering services performed, including Field Test Data, Locations, Elevations and Depths are Estimated.

Picture #17 5/23/05 morning , #18 end of contamination S side 3rd AVE

When I arrived onsite the soil appeared contaminated by both site and smell, so they were moving it to the contaminated stockpile. I screened soil with the PID, and when staining cleared up so did PID readings. I observed them excavate the S. side of 3rd AVE a few feet further and screened another sample to make sure they were out of the contamination. Dennis (Riley Bros.) said they would move to the N. side with the sanitary sewer after they installed one more manhole. Dennis told me they were looking into the possibility of thin-speading the contaminated soil. 4.5 hours standby time. They started excavating the N side of 3rd AVE to install the (at Park St moving W) sanitary sewer. They hit contamination almost immediately. There was petroleum odor in the air and the soil was stained. I screened the soil with a PID. The contamination began at ~4' and ran all the way to the bottom of the excavation. The highest PID reading I got today was 75. They ran out of the contaminated area ~20' W of the W side of London Boulder building. I estimate the stockpile contains ~900 yd³ of contaminated soil so far (Pic #20 + 21), it will be covered tonight. They will need someone here when they install the water main, probably on Wednesday. Brad said they will call STS tomorrow. I drove back to STS.

Equipment and Supplies used (circle items used on-site):
[✓ PID (102 eV lamp)], Water Level Tape, Whale Pumps, Free Product Indicator, Peristaltic Pump, Stabilization Parameters, GEM 500, Explosimeter, Survey Equipment, Disposable Bailers, Tubing (ft.), Chemetrics - QED Filters

Print Name Gayle Blizil
Signature Gayle Blizil
Title Assistant Project Engineer, EIT
STS Consultants, Ltd.

Delays:

STS Project Number: ____________________

Date: 5/23/05

Sample I.D.	Depth	PID Headspace	Location	Description
S-10		1.5		Lt brn clay
S-11		2.5		
S-12		1.0	~20' W, London Boulder building (S side 3rd AVE)	
S-13	~4'	2.0	Center of intersection	
S-14	~4'	2.0	E edge of London Boulder	Brn silty sand
S-15	~4'	1.0	15' W of E edge London Boulder	''
S-16	~6'	35	''	Green/gray silty sand, petro odor
S-17	~10'	75	Center of London Boulder	
S-18	~8'	2	~20' W of London Boulder	Brn w/gray specks silty sand

1side 3rd+ Park

Trucks

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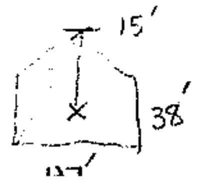
dBT @1700

150-200yd^3

~50yd^3

@ 1515 after S side 3rd AVE

#20,21 Pile



STS Consultants, Ltd.

Day/Date Tuesday 5/31/05

ENVIRONMENTAL FIELD REPORT

1 of 1

Project Name TH-29 - Alexandria
Location Alexandria, MN
Contractor Riley Bros.

Project Number 99473-XA
Task Number —
Weather/Temp. Sunny / 60°
Client MNDOT

Arrive Job 0800
Depart Job 1600
Hours on Job 6.0

Travel Time 4.5
Project Coordination 0.5
Total Chargeable Hours 13.0
Mileage 245

Contractor Arrive Job
Contractor Depart Job
Contractor Hours on Job

Summary of Technical and/or Engineering services performed, including Field Test Data, Locations, Elevations and Depths are Estimated.

5/31/05 Met Jesse Miller (MNDOT) and Dennis (Riley Bros.) onsite ~0800. Riley had hauled ~5 - 15cy. truckloads of impacted (visually stained + petroleum odor) soil to the stockpile area located North of TH-29/27 between Quincy & Park Street. Riley was excavating to a depth of ~15' for the water main on the north side of TH-29/27 (3rd Ave) in front of Alex Exhaust and Sand blasting building ~ Station 1762+28 to 1763+00

A total of approximately 26 - 15 c.y. loads of petroleum impacted soil were hauled to the stockpile location from the water main excavation between Station 1762+28 and 1763+00.

Called Jason with WCEC to discuss soil disposal options. Jason said he was working on permits for landspreading the impacted soil for Riley Bros. (320) 589-2039 - WCEC #
Called Andrew Nichols @ to update him on the days activities

Equipment and Supplies used: Photovac PID 10.6eV

Print Name **Timothy J. Grape**
Signature
Title **Assistant Project Geologist**
STS Consultants, Ltd.

Delays:

TH-29 Alexandria

STS Project Number: 99423-XA

Date: 5/31/05

Sample I.D.	Depth	PID Headspace	Station/ Location	Description
1	~5'	130	1762+30	Grey Sandy Clay - odors
2	~6'	160	↓	↓
3	~8'	103		
4	~10'	>2000		
5	~5'	95	1762+50	
6	~7	110	↓	
7	~9	175		
8	~11	>2,000		
9	~5	220	1762+75	
10	~7	316	↓	
11	~9	450		
12	~11	670		
13	~5'	300	1762+80	
14	~7'	470	↓	
15	~9	510		
16	~11'	690		
17	~5'	<1	1762+00	
17A	~10'	<1	1762+00	

of ~15 CY loads of impacted Soil Removal of stockpile

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STS Consultants, Ltd.

Day/Date Wednesday 6/1/05

ENVIRONMENTAL FIELD REPORT

1 of 1

Project Name TH-29 - Alexandria
Location Alexandria MN
Contractor Riley Bros.

Project Number 99473-XA
Task Number —
Weather/Temp. Cloudy - 60°
Client MNDOT

Arrive Job 1300
Depart Job 1630
Hours on Job 3.5

Travel Time 4.0
Project Coordination —
Total Chargeable Hours 7.5
Mileage 240

Contractor Arrive Job
Contractor Depart Job
Contractor Hours on Job

Summary of Technical and/or Engineering services performed, including Field Test Data, Locations, Elevations and Depths are Estimated.

6/1/05 Onsite - 1300 Riley was excavating in front of Alex Exhaust (NW corner of Park St. and Hwy 29) for a Storm Sewer Catch basin

No impacted soils were removed during excavation for the storm sewer catch basin

Called Andrew Nichols (MNDOT) and informed him that total amount of stockpiled soil was ~ 1500-2000 yds and that WCEC was working on a permit to land spread the impacted soil

Equipment and Supplies used: Photovac PID - 10.6 eV lamp - baggies, Shovel

Print Name Timothy J. Grape
Signature Timothy J Grape
Title Assistant Project Geologist
STS Consultants, Ltd.

Delays: —

MnDOT - TH-29 Alexandria

STS Project Number: 99473 XA

Date: 6/1/08

Sample I.D.	Depth	PID Headspace	Station Location	Description
1	2	<1	1762+28	Brn Sandy Clay (CL)
2	4	<1	↓	↓
3	6	<1	↓	↓
4	8	<1	↓	↓
5	10	<1	↓	↓
6	2	<1	1762+15	↓
7	4	<1	↓	↓
8	6	<1	↓	↓
9	8	<1	↓	↓
10	10	<1	↓	↓
11	2	<1	1762+00	↓
12	4	<1	↓	↓
13	6	<1	↓	↓
14	8	<1	↓	↓
15	10	<1	↓	↓

Mn/DOT TH-29/27
STS Project 99473-XA

Appendix C

Laboratory Analytical Reports

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

September 07, 2004

Mr. Tim Grape
STS Consultants,Ltd.
10900 73rd Ave. North
Suite 150
Maple Grove, MN 55369

RE: Lab Project Number: 1093998
Client Project ID: TH-29 ALEXANDRIA MNDOT

Dear Mr. Grape:

Enclosed are the analytical results for sample(s) received by the laboratory on August 24, 2004. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

Diane Anderson

Diane J. Anderson
Diane.Anderson@pacelabs.com
Project Manager

Minnesota Certification #: 027-053-137

Wisconsin Certification #: 9999407970

Illinois Certification #: 200011

Enclosures

Lab Project Number: 1093998
Client Project ID: TH-29 ALEXANDRIA MNDOT

Solid results are reported on a dry weight basis

Lab Sample No: 105982797
Project Sample Number: 1093998-001
Date Collected: 08/23/04 18:00
Client Sample ID: R-1
Matrix: Soil
Date Received: 08/24/04 15:05

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Metals								
Percent Moisture	Method:							
Percent Moisture	15.2	%		08/25/04	U01			
Metals, Trace ICP	Prep/Method: EPA 3050 / EPA 6010							
Lead	9.80	mg/kg	0.266	09/01/04 21:59	BDA	7439-92-1		
Date Digested	08/31/04			08/31/04				
GC Semivolatiles								
WI DRO in Soil	Prep/Method: TPH DRO WI extraction / TPH DRO Wisconsin							
Diesel Range Organics	1600	mg/kg	95.	08/31/04 04:09	KSK		1	
Date Extracted	08/25/04			08/25/04				
GC Volatiles								
WI GRO and PVOC, soil	Prep/Method: TPH GRO/PVOC WI ext. / TPH GRO/PVOC WI							
Benzene	ND	mg/kg	0.059	09/03/04 12:29	KAL	71-43-2		
Ethylbenzene	ND	mg/kg	0.059	09/03/04 12:29	KAL	100-41-4		
Toluene	ND	mg/kg	0.059	09/03/04 12:29	KAL	108-88-3		
Xylene (Total)	ND	mg/kg	0.18	09/03/04 12:29	KAL	1330-20-7		
Gasoline Range Organics	250	mg/kg	5.9	09/03/04 12:29	KAL			
a,a,a-Trifluorotoluene (S)	117	%		09/03/04 12:29	KAL	98-08-8		

Lab Sample No: 105982805
Project Sample Number: 1093998-002
Date Collected: 08/23/04 18:15
Client Sample ID: R-1 COMP
Matrix: Soil
Date Received: 08/24/04 15:05

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
Metals								
Percent Moisture	Method:							
Percent Moisture	12.6	%		08/25/04	U01			
Metals, Trace ICP	Prep/Method: EPA 3050 / EPA 6010							
Lead	6.52	mg/kg	0.254	09/01/04 22:04	BDA	7439-92-1		
Date Digested	08/31/04			08/31/04				

PARAMETER FOOTNOTES

ND	Not detected at or above adjusted reporting limit
NC	Not Calculable
J	Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL	Adjusted Method Detection Limit
(S)	Surrogate
[1]	Low boiling point components are present in sample.

QUALITY CONTROL DATA

Lab Project Number: 1093998
Client Project ID: TH-29 ALEXANDRIA MNDOT

QC Batch: 114922
QC Batch Method: TPH DRO WI extraction
Associated Lab Samples: 105982797

Analysis Method: TPH DRO Wisconsin
Analysis Description: WI DRO in Soil

METHOD BLANK: 105986368
Associated Lab Samples: 105982797

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Diesel Range Organics	mg/kg	ND	10.	

LABORATORY CONTROL SAMPLE & LCSD: 105986376 105986384

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Diesel Range Organics	mg/kg	200.00	121.5	140.6	61	70	15	1,2

QUALITY CONTROL DATA

Lab Project Number: 1093998
Client Project ID: TH-29 ALEXANDRIA MNDOT

QC Batch: 115279
QC Batch Method: TPH GRO/PVOC WI ext.
Associated Lab Samples: 105982797

Analysis Method: TPH GRO/PVOC WI
Analysis Description: WI GRO and PVOC, soil

METHOD BLANK: 106006570
Associated Lab Samples: 105982797

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	mg/kg	ND	0.050	
Ethylbenzene	mg/kg	ND	0.050	
Toluene	mg/kg	ND	0.050	
Xylene (Total)	mg/kg	ND	0.15	
Gasoline Range Organics	mg/kg	ND	5.0	
a,a,a-Trifluorotoluene (S)	%	94		

LABORATORY CONTROL SAMPLE & LCSD: 106006588 106006596

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	RPD	Footnotes
Benzene	mg/kg	5.000	4.543	4.494	91	90	1	
Ethylbenzene	mg/kg	5.000	4.576	4.555	92	91	0	
Toluene	mg/kg	5.000	4.707	4.694	94	94	0	
Xylene (Total)	mg/kg	15.00	14.45	14.35	96	96	1	
Gasoline Range Organics	mg/kg	50.00	51.32	49.96	103	100	3	
a,a,a-Trifluorotoluene (S)					99	94		

QUALITY CONTROL DATA

Lab Project Number: 1093998
Client Project ID: TH-29 ALEXANDRIA MNDOT

QC Batch: 114938
Analysis Method:
QC Batch Method:
Analysis Description: Percent Moisture
Associated Lab Samples: 105982797 105982805

METHOD BLANK: 105986996
Associated Lab Samples: 105982797 105982805

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Percent Moisture	%	0	1.	

SAMPLE DUPLICATE: 105987002

Parameter	Units	105985527 Result	DUP Result	RPD	Footnotes
Percent Moisture	%	19.10	19.20	1	

SAMPLE DUPLICATE: 105987010

Parameter	Units	105983613 Result	DUP Result	RPD	Footnotes
Percent Moisture	%	14.90	14.90	0	

QUALITY CONTROL DATA

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Lab Project Number: 1093998
Client Project ID: TH-29 ALEXANDRIA MNDOT

QC Batch: 115237
Analysis Method: EPA 6010
QC Batch Method: EPA 3050
Analysis Description: Metals, Trace ICP
Associated Lab Samples: 105982797 105982805

METHOD BLANK: 106004443
Associated Lab Samples: 105982797 105982805

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Lead	mg/kg	ND	0.300	

LABORATORY CONTROL SAMPLE: 106004450

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Lead	mg/kg	1.000	0.9175	92	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 106007974 106007982

Parameter	Units	105990485 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Lead	mg/kg	7.326	57.34	51.59	41.38	77	78	22	

SAMPLE DUPLICATE: 106007990

Parameter	Units	105990477 Result	DUP Result	RPD	Footnotes
Lead	mg/kg	3.960	3.860	2	

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Lab Project Number: 1093998
Client Project ID: TH-29 ALEXANDRIA MNDOT

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D)	Laboratory Control Sample (Duplicate)
MS(D)	Matrix Spike (Duplicate)
DUP	Sample Duplicate
ND	Not detected at or above adjusted reporting limit
NC	Not Calculable
J	Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL	Adjusted Method Detection Limit
RPD	Relative Percent Difference
(S)	Surrogate
[1]	The LCS recovery is outside of laboratory control limits. Since sample volume received was insufficient for reanalysis, the sample results for this QC batch were accepted based on LCSD recovery.
[2]	Confirmed by second analysis and/or re-extraction.

CHAIN OF CUSTODY RECORD

№ 34826

1093998

RECORD NUMBER 1 THROUGH 1

Contact Person Tim Grape
Phone No. (612)759-5042 Office 6 (mpls)
Project No. 99473-XA PO No.
Project Name TH-29 Alexandria MNDOT

Special Handling Request
☐ Rush
☐ Verbal
☐ Other

Laboratory Pace
Contact Person Diane Anderson
Phone No.
Results Due Standard

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
									PID/FID					
							Y	N	Ambient	Sample	PH	Special Cond.		
R-1	8/23	1800	X		3	Soil	1	2					BTEX, GRO, DRO, [redacted]	5982797
R-1 Comp	8/23	1815		X	1	Soil	—	1					Lead	5982805
MeOH Blank	8/23	—	—	—	1	MeOH	1	—					Hold for BTEX if detected above	813

Collected by: Tim Grape Date 8/23/04 Time Above
Received by: Date Time
Received by: Date Time
Received by: Date Time
Received for lab by: Date Time

Delivery by: STS Date 8/24/04 Time 1505
Relinquished by: Date 8/24/04 Time 1505
Relinquished by: Date 8/24/04 Time 15:05
Relinquished by: Date Time
Relinquished by: Date Time

Laboratory Comments Only: Seals Intact Upon Receipt? ☐ Yes ☐ No ☐ N/A

Final Disposition:

Comments (Weather Conditions, Precautions, Hazards):
Sample was ~~cold~~ received on ice.

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

6/99cp10k

STS Consultants Ltd.
Consulting Engineers

Sample ID: S042601435 **Project #:** 4930
Sampler: Client **Type:** Grab
Client: STS Consultants
Status: Normal **Matrix:** Soil
Study: Consultant
NTS COC No: 43982
Descript: 99473-XA MNDOT TH-29
Sampled: 9/14/2004 12:00 PM
Location: R-2
Completed:

Notes:

DRO extraction date: 09/16/04

Analyte	Analysis Date	Result	Units	RL	Method
DRO, Soil	9/20/2004	1200	mg/Kg	200	WI Method
GRO, Soil	9/18/2004	360	mg/Kg	100	WI Method
PCB, Solid	10/1/2004	# 9999	See Report	0.01	Method 8082
Percent Total Solids	9/16/2004	87	%	0.01	SM 2540G
VOC, Soil	9/24/2004	# 9999	See Report	0.5	SW846 8021B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Sample ID: S042601440 **Project #:** 4930
Client: STS Consultants
Study: Consultant
Descript: 99473-XA MNDOT TH-29
Location: R-2 Comp RCRA Metals

Sampler: Client **Type:** Grab
Status: Normal **Matrix:** Soil
NTS COC No: 43982
Sampled: 9/14/2004 12:15 PM
Completed: 10/14/2004

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
Arsenic, Solid	10/4/2004	2.8	mg/Kg	0.3	7060A
Barium, Solid	10/4/2004	102	mg/Kg	2.5	6010B
Cadmium, Solid	10/4/2004	<2.3	mg/Kg	2.3	7131
Chromium, Solid	10/4/2004	16.2	mg/Kg	2.5	6010B
Lead, Solid	10/4/2004	8.2	mg/Kg	4.6	7421
Mercury, Solid	9/22/2004	<0.2	mg/Kg	0.2	7471
Percent Total Solids	9/23/2004	86	%	0.01	SM 2540G
Selenium, Solid	10/4/2004	<0.3	mg/Kg	0.3	7740
Silver, Solid	10/4/2004	<5	mg/Kg	5	6010B

Approved By:

Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc. makes no warranty except that the analysis has been made upon the samples received in accordance with generally accepted testing laboratory principles and practices. The results of the analysis may not be characteristic of the whole from which the sample was taken. This warranty is in lieu of all other warranties either expressed or implied.

Sample ID: S042601442 **Project #:** 4930
Sampler: Client
Type: Grab
Client: STS Consultants
Status: Normal
Matrix: Soil
Study: Consultant
NTS COC No: 43982
Descript: 99473-XA MNDOT TH-29
Sampled: 9/14/2004
Location: Trip Blank
Completed: 09/28/2004

Notes:

Analyte	Analysis Date	Result	Units	RL	Method
VOC, Soil	9/24/2004	# 9999	See Report	0.5	SW846 8021B

Approved By: ____________________
Project Manager:

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc.

315 Chestnut Street, P.O. Box 1142, Virginia, Minnesota 55792, (218) 741-4290

Analytical Report

Lab Number:	**S042601435**	**Date Collected:**	09/14/2004
Sample Description:	**STS**	**Date Received:**	09/16/2004
	MDOT TH-29	**Date VOC Analyzed:**	09/24/2004
	R-2	**Date Reported:**	09/28/2004
		Reported By:	CSD
COC #:	**43982**	**VOC QC Pack:**	2-092404-1
NTS Project #:	**4930**		
Matrix: Soil		**MDH Laboratory #**	027-137-157

Parameter	**Units**	**DF**	**Result**	**RL**	**MDL**
Allyl Chloride	ug/Kg	20	< 3000	3000	38
Bromobenzene	ug/Kg	20	< 1000	1000	5.9
Bromochloromethane	ug/Kg	20	< 1000	1000	1.1
Bromodichloromethane	ug/Kg	20	< 1000	1000	0.8
Bromoform	ug/Kg	20	< 2000	2000	9.2
Bromomethane	ug/Kg	20	< 4000	4000	82
Carbon Tetrachloride	ug/Kg	20	< 1000	1000	1.2
Chlorobenzene	ug/Kg	20	< 1500	1500	35
Chloroethane	ug/Kg	20	< 3000	3000	74
Chloroform	ug/Kg	20	< 1000	1000	1.4
Chloromethane	ug/Kg	20	< 6500	6500	159
2-Chlorotoluene	ug/Kg	20	< 1000	1000	1.6
4-Chlorotoluene	ug/Kg	20	< 1000	1000	2.8
Dibromochloromethane	ug/Kg	20	< 1000	1000	0.8
1,2-Dibromo-3-chloropropane	ug/Kg	20	< 2000	2000	48
1,2-Dibromoethane	ug/Kg	20	< 1000	1000	0.8
Dibromomethane	ug/Kg	20	< 1000	1000	0.9
1,2-Dichlorobenzene	ug/Kg	20	< 1000	1000	10
1,3-Dichlorobenzene	ug/Kg	20	< 1000	1000	1.8
1,4-Dichlorobenzene	ug/Kg	20	< 1000	1000	7.5
Dichlorodifluoromethane	ug/Kg	20	< 7000	7000	165
1,1-Dichloroethane	ug/Kg	20	< 1200	1200	0.9
1,2-Dichloroethane	ug/Kg	20	< 1000	1000	0.9
1,1-Dichloroethylene	ug/Kg	20	< 3000	3000	62
Cis-1,2-Dichloroethylene	ug/Kg	20	< 1500	1500	28
Trans-1,2-Dichloroethylene	ug/Kg	20	< 2000	2000	27
Dichlorofluoromethane	ug/Kg	20	< 2000	2000	40
1,2-Dichloropropane	ug/Kg	20	< 1000	1000	0.9
1,3-Dichloropropane	ug/Kg	20	< 1000	1000	1.0
2,2-Dichloropropane	ug/Kg	20	< 2500	2500	54

Analytical Report

Lab Number:	**S042601435**	**Date Collected:**	09/14/2004
Sample Description:	**STS**	**Date Received:**	09/16/2004
	MDOT TH-29	**Date VOC Analyzed:**	09/24/2004
	R-2	**Date Reported:**	09/28/2004
		Reported By:	CSD
COC #:	**43982**	**VOC QC Pack:**	2-092404-1
NTS Project #:	**4930**		
Matrix: Soil		**MDH Laboratory #**	027-137-157

Parameter	**Units**	**DF**	**Result**	**RL**	**MDL**	
1,1-Dichloropropene	ug/Kg	20	< 1000	1000	10	
Cis-1,3-Dichloropropene	ug/Kg	20	< 1000	1000	9.3	
Trans-1,3-Dichloropropene	ug/Kg	20	< 1000	1000	3.5	
Hexachlorobutadiene	ug/Kg	20	< 2000	2000	40	
Methylene Chloride	ug/Kg	20	< 2000	2000	25	
1,1,1,2-Tetrachloroethane	ug/Kg	20	< 1000	1000	1.1	
1,1,2,2-Tetrachloroethane	ug/Kg	20	< 2500	2500	55	a
Tetrachloroethylene	ug/Kg	20	< 1000	1000	2.7	
1,2,3-Trichlorobenzene	ug/Kg	20	< 2000	2000	13	
1,2,4-Trichlorobenzene	ug/Kg	20	< 2000	2000	1.8	
1,1,1-Trichloroethane	ug/Kg	20	< 1200	1200	1.1	
1,1,2-Trichloroethane	ug/Kg	20	< 1000	1000	1.0	
Trichloroethylene	ug/Kg	20	< 2500	2500	56	
Trichlorofluoromethane	ug/Kg	20	< 3000	3000	69	
1,2,3-Trichloropropane	ug/Kg	20	< 1000	1000	4.4	
1,1,2-Trichlorotrifluoroethane	ug/Kg	20	< 3000	3000	65	
Vinyl Chloride	ug/Kg	20	< 5000	5000	118	
Acetone	ug/Kg	20	< 30,000	30,000	129	
Benzene	ug/Kg	20	< 1000	1000	4.9	
n-Butylbenzene	ug/Kg	20	< 1000	1000	5.0	
sec-Butylbenzene	ug/Kg	20	2400	1000	5.1	
tert-Butylbenzene	ug/Kg	20	< 1000	1000	4.1	
Isopropylbenzene (Cumene)	ug/Kg	20	< 1000	1000	2.1	
Ethyl Benzene	ug/Kg	20	< 1000	1000	0.4	
Ethyl Ether	ug/Kg	20	< 2000	2000	6.2	
p-Isopropyltoluene	ug/Kg	20	< 1000	1000	2.5	
Methyl Ethyl Ketone	ug/Kg	20	< 16,000	16,000	93	
Methyl Isobutyl Ketone	ug/Kg	20	< 10,000	10,000	35	
Methyl tert-butyl ether	ug/Kg	20	< 1000	1000	6.7	
n-Propylbenzene	ug/Kg	20	< 1000	1000	0.8	

Northeast Technical Services, Inc.
315 Chestnut Street, P.O. Box 1142, Virginia, Minnesota 55792, (218) 741-4290

Analytical Report

Lab Number:	**S042601435**	**Date Collected:**	09/14/2004
Sample Description:	**STS** **MDOT TH-29** **R-2**	**Date Received:**	09/16/2004
		Date VOC Analyzed:	09/24/2004
		Date Reported:	09/28/2004
		Reported By:	CSD
COC #:	**43982**	**VOC QC Pack:**	2-092404-1
NTS Project #:	**4930**		
Matrix: Soil		**MDH Laboratory #**	027-137-157

Parameter	Units	DF	Result	RL	MDL
Naphthalene	ug/Kg	20	< 2000	2000	26
Styrene	ug/Kg	20	< 3000	3000	4.2
Tetrahydrofuran	ug/Kg	20	< 2500	2500	54
Toluene	ug/Kg	20	< 1000	1000	1.6
1,2,4-Trimethylbenzene	ug/Kg	20	1700	1000	0.7
1,3,5-Trimethylbenzene	ug/Kg	20	< 1000	1000	1.1
m-Xylene & p-Xylene	ug/Kg	20	< 2000	2000	2.3
o-Xylene	ug/Kg	20	< 1000	1000	2.0
Fluorobenzene (Surrogate Recovery)	%		99		
1,4-Dichlorobutane (Surrogate Recovery)	%		98		
Moisture	%		13		

* Note: Heavy hydrocarbons detected.

VOCs analyzed according to SW846 8021 (MDH 465 Compound List).
MDL = Method Detection Limit
RL = Reporting Limit (Practical quantitation limit)
DF = Dilution Factor

Report approved by: ______________________ Analytical Chemist

Northeast Technical Services, Inc.

315 Chestnut Street, P.O. Box 1142, Virginia, Minnesota 55792, (218) 741-4290

Analytical Report

Lab Number:	**S042601442**	**Date Collected:**	09/14/2004
Sample Description:	**STS**	**Date Received:**	09/16/2004
	MDOT TH-29	**Date VOC Analyzed:**	09/24/2004
	Trip Blank	**Date Reported:**	09/28/2004
		Reported By:	CSD
COC #:	**43982**	**VOC QC Pack:**	2-092404-1
NTS Project #:	**4930**		
Matrix: Soil		**MDH Laboratory #**	027-137-157

Parameter	Units	DF	Result	RL	MDL
Allyl Chloride	ug/Kg	1.0	< 150	150	38
Bromobenzene	ug/Kg	1.0	< 50	50	5.9
Bromochloromethane	ug/Kg	1.0	< 50	50	1.1
Bromodichloromethane	ug/Kg	1.0	< 50	50	0.8
Bromoform	ug/Kg	1.0	< 100	100	9.2
Bromomethane	ug/Kg	1.0	< 200	200	82
Carbon Tetrachloride	ug/Kg	1.0	< 50	50	1.2
Chlorobenzene	ug/Kg	1.0	< 75	75	35
Chloroethane	ug/Kg	1.0	< 150	150	74
Chloroform	ug/Kg	1.0	< 50	50	1.4
Chloromethane	ug/Kg	1.0	< 330	325	159
2-Chlorotoluene	ug/Kg	1.0	< 50	50	1.6
4-Chlorotoluene	ug/Kg	1.0	< 50	50	2.8
Dibromochloromethane	ug/Kg	1.0	< 50	50	0.8
1,2-Dibromo-3-chloropropane	ug/Kg	1.0	< 100	100	48
1,2-Dibromoethane	ug/Kg	1.0	< 50	50	0.8
Dibromomethane	ug/Kg	1.0	< 50	50	0.9
1,2-Dichlorobenzene	ug/Kg	1.0	< 50	50	10
1,3-Dichlorobenzene	ug/Kg	1.0	< 50	50	1.8
1,4-Dichlorobenzene	ug/Kg	1.0	< 50	50	7.5
Dichlorodifluoromethane	ug/Kg	1.0	< 350	350	165
1,1-Dichloroethane	ug/Kg	1.0	< 60	60	0.9
1,2-Dichloroethane	ug/Kg	1.0	< 50	50	0.9
1,1-Dichloroethylene	ug/Kg	1.0	< 150	150	62
Cis-1,2-Dichloroethylene	ug/Kg	1.0	< 75	75	28
Trans-1,2-Dichloroethylene	ug/Kg	1.0	< 100	100	27
Dichlorofluoromethane	ug/Kg	1.0	< 100	100	40
1,2-Dichloropropane	ug/Kg	1.0	< 50	50	0.9
1,3-Dichloropropane	ug/Kg	1.0	< 50	50	1.0
2,2-Dichloropropane	ug/Kg	1.0	< 130	125	54

Northeast Technical Services, Inc.

315 Chestnut Street, P.O. Box 1142, Virginia, Minnesota 55792, (218) 741-4290

Analytical Report

Lab Number:	**S042601442**	**Date Collected:**	09/14/2004
Sample Description:	**STS**	**Date Received:**	09/16/2004
	MDOT TH-29	**Date VOC Analyzed:**	09/24/2004
	Trip Blank	**Date Reported:**	09/28/2004
		Reported By:	CSD
COC #:	**43982**	**VOC QC Pack:**	2-092404-1
NTS Project #:	**4930**		
Matrix: Soil		**MDH Laboratory #**	027-137-157

Parameter	**Units**	**DF**	**Result**	**RL**	**MDL**	
1,1-Dichloropropene	ug/Kg	1.0	< 50	50	10	
Cis-1,3-Dichloropropene	ug/Kg	1.0	< 50	50	9.3	
Trans-1,3-Dichloropropene	ug/Kg	1.0	< 50	50	3.5	
Hexachlorobutadiene	ug/Kg	1.0	< 100	100	40	
Methylene Chloride	ug/Kg	1.0	< 100	100	25	
1,1,1,2-Tetrachloroethane	ug/Kg	1.0	< 50	50	1.1	
1,1,2,2-Tetrachloroethane	ug/Kg	1.0	< 130	125	55	a
Tetrachloroethylene	ug/Kg	1.0	< 50	50	2.7	
1,2,3-Trichlorobenzene	ug/Kg	1.0	< 100	100	13	
1,2,4-Trichlorobenzene	ug/Kg	1.0	< 100	100	1.8	
1,1,1-Trichloroethane	ug/Kg	1.0	< 60	60	1.1	
1,1,2-Trichloroethane	ug/Kg	1.0	< 50	50	1.0	
Trichloroethylene	ug/Kg	1.0	< 130	125	56	
Trichlorofluoromethane	ug/Kg	1.0	< 150	150	69	
1,2,3-Trichloropropane	ug/Kg	1.0	< 50	50	4.4	
1,1,2-Trichlorotrifluoroethane	ug/Kg	1.0	< 150	150	65	
Vinyl Chloride	ug/Kg	1.0	< 250	250	118	
Acetone	ug/Kg	1.0	< 1500	1500	129	
Benzene	ug/Kg	1.0	< 50	50	4.9	
n-Butylbenzene	ug/Kg	1.0	< 50	50	5.0	
sec-Butylbenzene	ug/Kg	1.0	< 50	50	5.1	
tert-Butylbenzene	ug/Kg	1.0	< 50	50	4.1	
Isopropylbenzene (Cumene)	ug/Kg	1.0	< 50	50	2.1	
Ethyl Benzene	ug/Kg	1.0	< 50	50	0.4	
Ethyl Ether	ug/Kg	1.0	< 100	100	6.2	
p-Isopropyltoluene	ug/Kg	1.0	< 50	50	2.5	
Methyl Ethyl Ketone	ug/Kg	1.0	< 800	800	93	
Methyl Isobutyl Ketone	ug/Kg	1.0	< 500	500	35	
Methyl tert-butyl ether	ug/Kg	1.0	< 50	50	6.7	
n-Propylbenzene	ug/Kg	1.0	< 50	50	0.8	

Northeast Technical Services, Inc.

315 Chestnut Street, P.O. Box 1142, Virginia, Minnesota 55792, (218) 741-4290

Analytical Report

Lab Number:	**S042601442**	**Date Collected:**	09/14/2004
Sample Description:	**STS**	**Date Received:**	09/16/2004
	MDOT TH-29	**Date VOC Analyzed:**	09/24/2004
	Trip Blank	**Date Reported:**	09/28/2004
		Reported By:	CSD
COC #:	**43982**	**VOC QC Pack:**	2-092404-1
NTS Project #:	**4930**		
Matrix: Soil		**MDH Laboratory #**	027-137-157

Parameter	**Units**	**DF**	**Result**	**RL**	**MDL**
Naphthalene	ug/Kg	1.0	< 100	100	26
Styrene	ug/Kg	1.0	< 150	150	4.2
Tetrahydrofuran	ug/Kg	1.0	< 130	125	54
Toluene	ug/Kg	1.0	< 50	50	1.6
1,2,4-Trimethylbenzene	ug/Kg	1.0	< 50	50	0.7
1,3,5-Trimethylbenzene	ug/Kg	1.0	< 50	50	1.1
m-Xylene & p-Xylene	ug/Kg	1.0	< 100	100	2.3
o-Xylene	ug/Kg	1.0	< 50	50	2.0
Fluorobenzene (Surrogate Recovery)	%		100		
1,4-Dichlorobutane (Surrogate Recovery)	%		98		

VOCs analyzed according to SW846 8021 (MDH 465 Compound List).
MDL = Method Detection Limit
RL = Reporting Limit (Practical quantitation limit)
DF = Dilution Factor

Report approved by: ____________________ Analytical Chemist

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
35 W. Lincoln Way ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Page: 1 of 1

Report Date: 6 Oct 04
Lab Number: 04-N5807
Work Order #:22-0246
Account #: 022015
Sample Matrix: SOIL
Date Sampled: 14 Sep 04
Date Received: 17 Sep 04
PO #: 43982
Chain of Custody Number: 43982
Temp at Receipt: 3.0 C

RENEE STONE
NORTHEAST TECHNICAL SERVICES
PO BOX 1142
VIRGINIA MN 55792-1142

Project Number: 4930
Sample Description: S042601435
R-2

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
608/8081/8082 Extraction					27 Sep 04	JAD
PCB-1016	< 40	ug/Kg	40	SW8082	1 Oct 04	JG
PCB-1221	< 40	ug/Kg	40	SW8082	1 Oct 04	JG
PCB-1232	< 40	ug/Kg	40	SW8082	1 Oct 04	JG
PCB-1242	< 40	ug/Kg	40	SW8082	1 Oct 04	JG
PCB-1248	< 40	ug/Kg	40	SW8082	1 Oct 04	JG
PCB-1254	< 30	ug/Kg	30	SW8082	1 Oct 04	JG
PCB-1260	< 20	ug/Kg	20	SW8082	1 Oct 04	JG
PCB-1262	< 30	ug/Kg	30	SW8082	1 Oct 04	JG
PCB-1268	< 30	ug/Kg	30	SW8082	1 Oct 04	JG

2,4,5,6-TETRACHLORO-m-XYLENE (SURROGATE) RECOVERY: 67 %

DECACHLOROBIPHENYL (SURROGATE) RECOVERY: 87 %

Approved by: R. Dan O'Connell
Dan O'Connell, Organic
Laboratory Manager New Ulm, MN

RL = Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
! = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 027-015-125 WI LAB # 999447680 ND MICRO # 1013-M ND WW/DW # R-040 IA LAB #: 132

QUALITY ASSURANCE REPORT: VOLATILE ORGANIC COMPOUNDS

Date: 09/24/04
QC Pack: 2-092404-1

Sample I.D.:
S042611727

	DF	Sample Conc ug/Kg		CCV 1 % Rec	CCV 2 % Rec	Matrix Spike %	Matrix Spike Duplicate (%)	RPD %
Allyl Chloride	1.0	<	150	100	102	104	103	0.7
Bromobenzene	1.0	<	50	103	101	102	101	0.8
Bromochloromethane	1.0	<	50	101	101	103	101	2.1
Bromodichloromethane	1.0	<	50	104	102	102	102	0.3
Bromoform	1.0	<	100	97	102	103	98	5.3
Bromomethane	1.0	<	200	96	105	102	103	1.2
Carbon Tetrachloride	1.0	<	50	108	104	106	105	1.2
Chlorobenzene	1.0	<	75	104	102	102	102	0.6
Chloroethane	1.0	<	150	99	99	104	104	0.6
Chloroform	1.0	<	50	104	102	103	103	0.7
Chloromethane	1.0	<	330	102	96	98	100	2.7
2-Chlorotoluene	1.0	<	50	102	100	98	96	2.5
4-Chlorotoluene	1.0	<	50	107	100	107	100	7.4
Dibromochloromethane	1.0	<	50	102	102	104	98	5.2
1,2-Dibromo-3-chloropropane	1.0	<	100	91	98	104	91	12.6
1,2-Dibromoethane	1.0	<	50	101	98	108	96	11.3
Dibromomethane	1.0	<	50	102	98	104	99	5.1
1,2-Dichlorobenzene	1.0	<	50	102	101	101	100	1.1
1,3-Dichlorobenzene	1.0	<	50	103	101	102	101	0.8
1,4-Dichlorobenzene	1.0	<	50	105	101	99	98	1.7
Dichlorodifluoromethane	1.0	<	350	101	93	95	100	4.8
1,1-Dichloroethane	1.0	<	60	105	104	106	103	3.4
1,2-Dichloroethane	1.0	<	50	100	99	101	99	2.8
1,1-Dichloroethylene	1.0	<	150	108	102	104	103	1.1
Cis-1,2-Dichloroethylene	1.0	<	75	105	102	103	102	0.5
Trans-1,2-Dichloroethylene	1.0	<	100	106	102	103	103	0.4
Dichlorofluoromethane	1.0	<	100	107	101	104	104	0.5
1,2-Dichloropropane	1.0	<	50	106	101	104	103	1.0
1,3-Dichloropropane	1.0	<	50	102	101	102	100	1.9
2,2-Dichloropropane	1.0	<	130	90	110	112	110	1.6
1,1-Dichloropropene	1.0	<	50	106	103	104	103	0.7
Cis-1,3-Dichloropropene	1.0	<	50	99	102	104	102	1.7
Trans-1,3-Dichloropropene	1.0	<	50	97	101	101	100	1.1
Hexachlorobutadiene	1.0	<	100	101	104	107	107	0.1
Methylene Chloride	1.0	<	100	103	103	104	104	0.5
1,1,1,2-Tetrachloroethane	1.0	<	50	100	100	102	101	0.4
1,1,2,2-Tetrachloroethane	1.0	<	130	82	95	95	92	3.2
Tetrachloroethylene	1.0	<	50	107	103	105	104	1.1
1,2,3-Trichlorobenzene	1.0	<	100	98	98	101	99	1.7
1,2,4-Trichlorobenzene	1.0	<	100	99	99	102	101	1.1

QUALITY ASSURANCE REPORT: VOLATILE ORGANIC COMPOUNDS

Date: 09/24/04
QC Pack: 2-092404-1

Sample I.D.:
S042611727

	DF	Sample Conc ug/Kg		CCV 1 % Rec	CCV 2 % Rec	Matrix Spike %	Matrix Spike Duplicate (%)	RPD %
1,1,1-Trichloroethane	1.0	<	60	107	103	105	104	0.8
1,1,2-Trichloroethane	1.0	<	50	102	102	103	100	3.2
Trichloroethylene	1.0	<	130	118	103	104	103	0.5
Trichlorofluoromethane	1.0	<	150	109	105	108	107	1.0
1,2,3-Trichloropropane	1.0	<	50	97	99	100	96	3.9
1,1,2-Trichlorotrifluoroethane	1.0	<	150	103	103	104	104	0.3
Vinyl Chloride	1.0	<	250	107	103	108	110	1.4
Acetone	1.0	<	1500	170	131	117	101	14.4
Benzene	1.0	<	50	105	102	104	103	0.5
n-Butylbenzene	1.0	<	50	102	101	106	105	1.1
sec-Butylbenzene	1.0	<	50	105	103	105	105	0.6
tert-Butylbenzene	1.0	<	50	106	103	105	104	1.0
Isopropylbenzene (Cumene)	1.0	<	50	105	104	104	103	1.0
Ethyl Benzene	1.0	<	50	106	103	104	103	0.7
Ethyl Ether	1.0	<	100	99	99	99	98	1.4
p-Isopropyltoluene	1.0	<	50	104	102	105	104	0.5
Methyl Ethyl Ketone	1.0	<	800	111	107	129	113	10.0
Methyl Isobutyl Ketone	1.0	<	500	98	102	101	99	2.0
Methyl tert-butyl ether	1.0	<	50	98	98	97	97	0.7
n-Propylbenzene	1.0	<	50	105	103	105	104	0.7
Naphthalene	1.0	<	100	96	98	97	95	1.9
Styrene	1.0	<	150	106	102	101	100	0.9
Tetrahydrofuran	1.0	<	130	97	97	92	91	1.3
Toluene	1.0	<	50	108	104	102	101	0.9
1,2,4-Trimethylbenzene	1.0	<	50	104	102	103	103	0.5
1,3,5-Trimethylbenzene	1.0	<	50	107	104	107	108	0.5
m-Xylene & p-Xylene	1.0	<	100	105	103	104	103	0.5
o-Xylene	1.0	<	50	105	102	103	102	1.1

Northeast Technical Services, Inc.
Data Qualifier List

b	Analyte detected in the method blank.
c	Elevated Reporting Limit.
d	Analyte value from diluted sample.
f	Surrogate results not within control limits.
h	Extraction or Analysis performed past hold time.
j	Estimated value. The analyte has been detected above the detection limit and below the reporting limit.
n	Matrix Spike recovery not within control limits.
p	pH > 2. Analysis performed past 7 day hold time.
a	Laboratory Control Spike not within control limits.
r	Duplicate analysis not within control limits.
e	Estimated value. Sample result above calibration range.

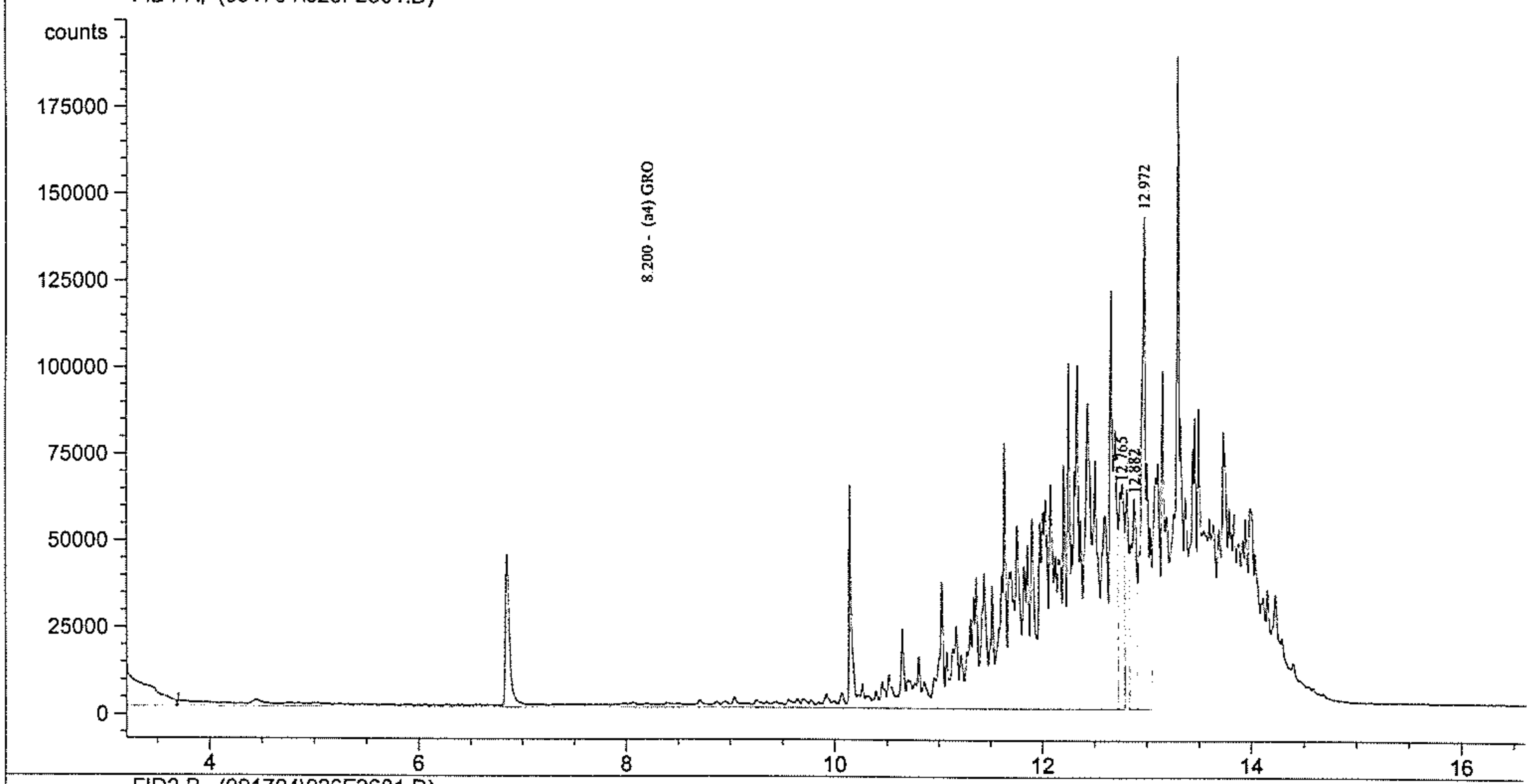
~~Data~~ File D:\HPCHEM\4\DATA\091704\026F2601.D

```
=====================================================================
Injection Date  : 09/18/2004 12:05:47 AM
Sample Name     :                                 Vial :   1
Acq. Operator   : csd
                                        Inj Volume : Manually
Acq. Method     : D:\HPCHEM\4\METHODS\!GC4GRO5.M
Last changed    : 04/16/2004 6:26:58 AM by csd
Analysis Method : D:\HPCHEM\4\METHODS\091604SL.M
Last changed    : 09/20/2004 10:35:01 AM by csd
                  (modified after loading)
```

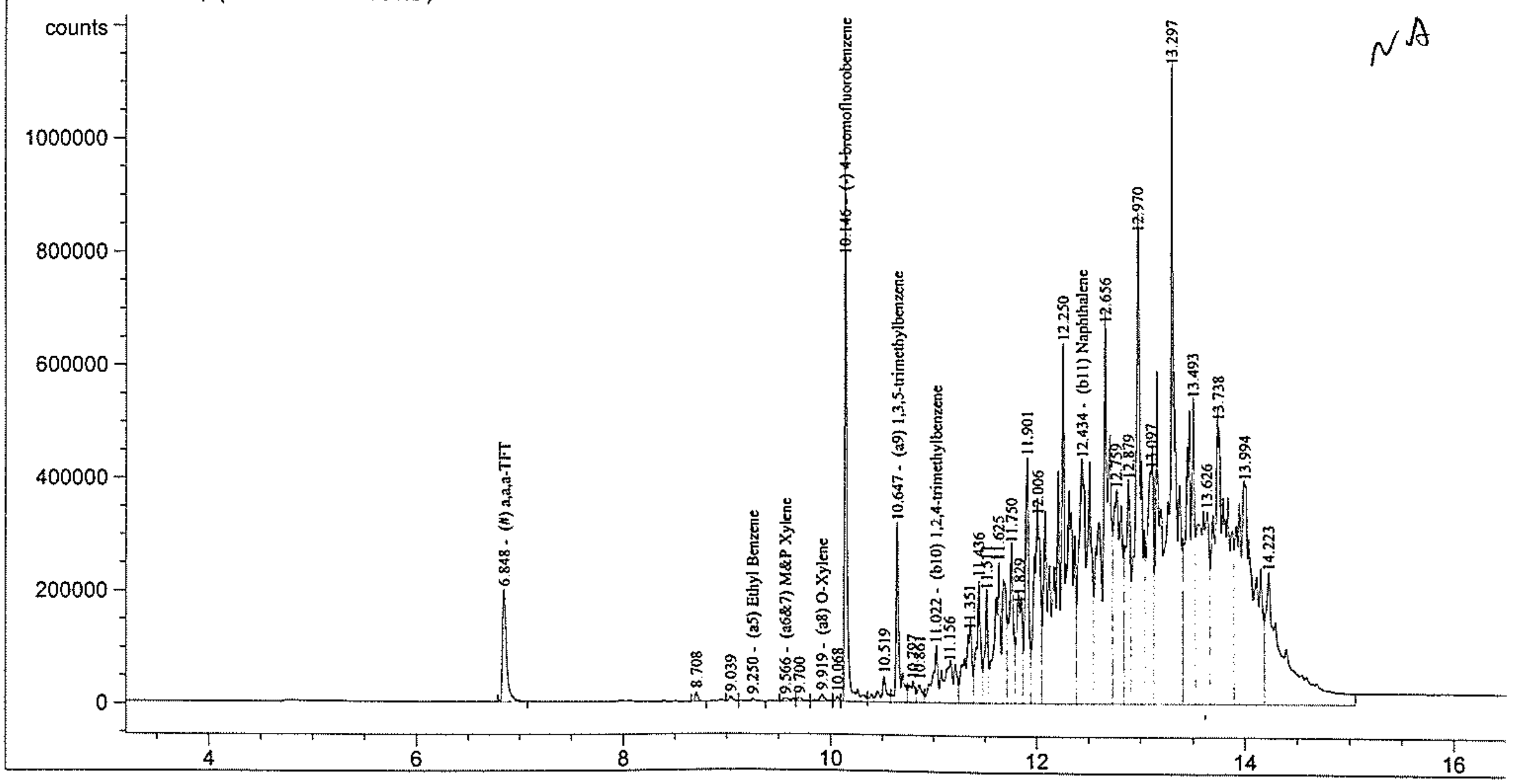
042601435 STD

S 5uL 30.2uL

FID1 A, (091704\026F2601.D)



FID2 B, (091704\026F2601.D)



NA

```
=====================================================================
Injection Date  : 09/20/2004 11:26:34 AM         Seq. Line :    5
Sample Name     : 042601435 df=20                     Vial :    5
Acq. Operator   : csd                                  Inj :    1
                                             Inj Volume : 2 µl
Acq. Method     : D:\HPCHEM\7\METHODS\!GC7ACQ1.M
Last changed    : 08/20/2004 3:57:47 PM by csd
Analysis Method : D:\HPCHEM\7\METHODS\D090204L.M
Last changed    : 09/07/2004 10:09:53 AM by csd
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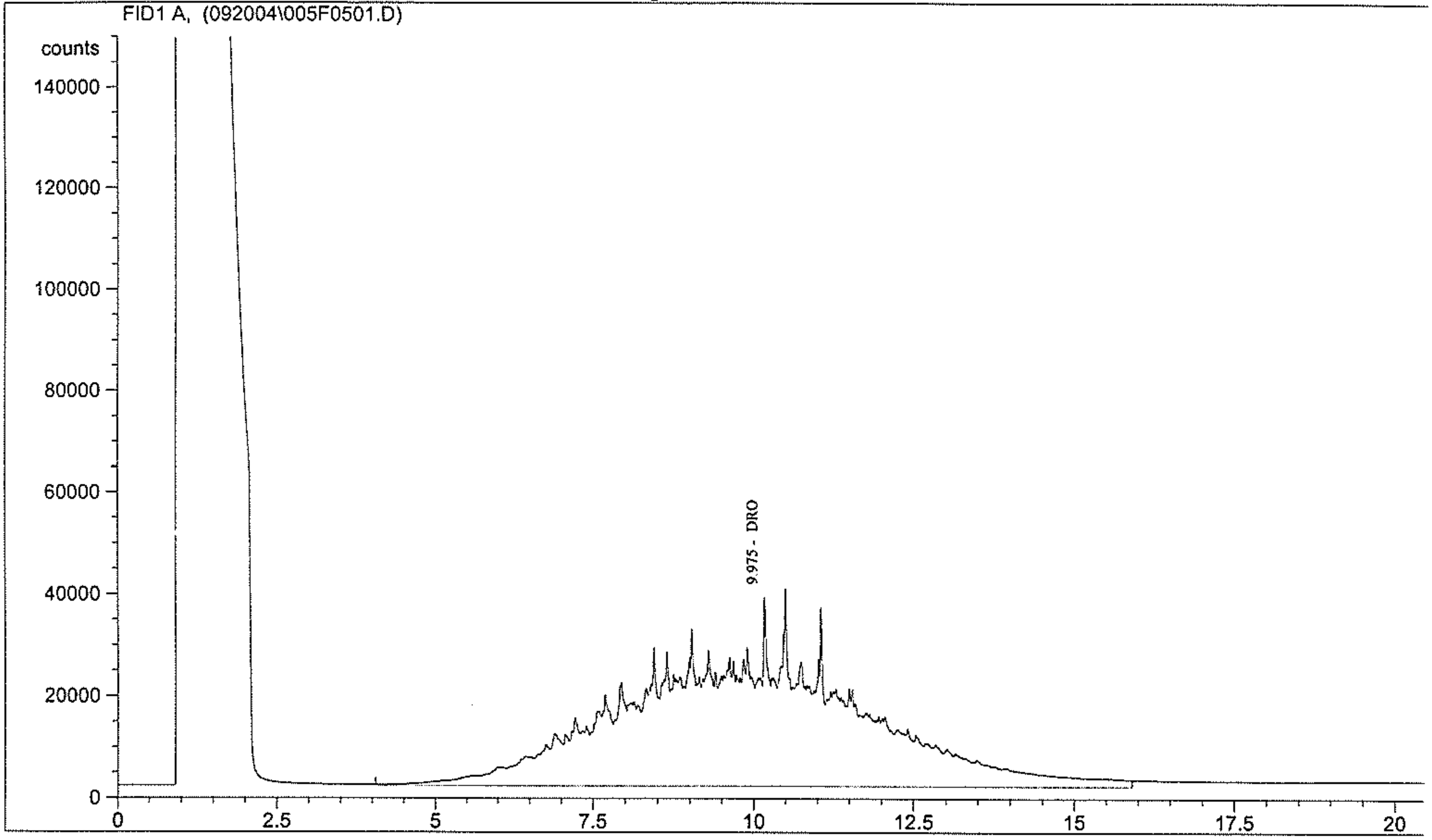


```
=====================================================================
                     External Standard Report
=====================================================================

Sorted By             :      Signal
Calib. Data Modified  :      09/07/2004 10:09:49 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Sample Amount         :      1.00000  [ppm]   (not used in calc.)

Signal 1: FID1 A,

RetTime  Type     Area     Amt/Area    Amount   Grp   Name
 [min]          counts*s                [ppm]
-------|------|----------|----------|----------|--|------------------
  9.975 HHA+   7.07658e6  1.92371e-7   1.36133    DRO

Totals :                               1.36133

 Results obtained with enhanced integrator!
=====================================================================
                          *** End of Report ***
```

CHAIN OF CUSTODY RECORD

№ 34873

43982
4930

RECORD NUMBER 1 THROUGH 1

Contact Person Tim Grape
Phone No. (763) 315-6318 Office Ce Cumpls
Project No. 99473-XA PO No.
Project Name MnDOT TH-29

Special Handling Request
☐ Rush
☐ Verbal
☐ Other

Laboratory NTS
Contact Person Renee Stone
Phone No.
Results Due Standard

<table>
<tr><th rowspan="3">Sample I.D.</th><th rowspan="3">Date</th><th rowspan="3">Time</th><th rowspan="3">Grab</th><th rowspan="3">Composite</th><th rowspan="3">No. of Containers</th><th rowspan="3">Sample Type (Water, soil, air, sludge, etc.)</th><th colspan="2" rowspan="2">Preservation</th><th colspan="4">Field Data</th><th rowspan="3">Analysis Request</th><th rowspan="3">Comments on Sample (Include Major Contaminants)</th></tr>
<tr><th colspan="2">PID/FID</th><th rowspan="2">PH</th><th rowspan="2">Special Cond.</th></tr>
<tr><th>Y</th><th>N</th><th>Ambient</th><th>Sample</th></tr>
<tr><td>R-2</td><td>9/14</td><td>1200</td><td>X</td><td></td><td></td><td>Soil</td><td></td><td></td><td></td><td></td><td></td><td></td><td>VOC, DRO, GRO</td><td>*Hold for PCB, PAH, [redacted]</td></tr>
<tr><td>R-2 Comp</td><td>9/14</td><td>1215</td><td></td><td>X</td><td></td><td>Soil</td><td>—</td><td>1</td><td></td><td></td><td></td><td></td><td>Lead</td><td>*Hold for RCRA Metals</td></tr>
<tr><td>Trip Blank</td><td></td><td></td><td></td><td></td><td></td><td>MeOH</td><td>1</td><td>—</td><td></td><td></td><td></td><td></td><td>VOC</td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>PCB and RCRA off hold</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>per T. Grape.</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Deleted Dup. Number for R-2 Comp. RS</td></tr>
</table>

504/260
1435
1439/1440
1442

Collected by: Tim Grape Date 9/14/04 Time Above
Received by: Date Time
Received by: Date Time
Received by: Date Time
Received for lab by: Date 9/15/04 Time 16:45
9-16-04 10:00

Delivery by: NTS Date 9/15/04 Time 1645
Relinquished by: Date 9/15/04 Time 1645
Relinquished by: Date 9/15/04 Time 1930
Relinquished by: Date Time
Relinquished by: Date Time

Laboratory Comments Only: Seals Intact Upon Receipt? ☐ Yes ☐ No ☐ N/A

Final Disposition:

Comments (Weather Conditions, Precautions, Hazards):
4.9°C

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

6/99cp10k

STS Consultants Ltd.
Consulting Engineers

Mn/DOT TH-29/27
STS Project 99473-XA

Appendix D

Contaminated Soil Disposal Documentation for FCR Landfill

- FCR Industrial Waste Approval Letter
- Shipping Manifests
- Load Tickets
- Invoice Summary

ONYX

FCR LANDFILL, INC.
175 County Rd 37 NE
Buffalo, MN 55313

John
612-490-7828

Fax Cover Sheet

Date:	1/6/05	**Time Sent:**	
To:	Jessey Miller, MN DOT	**From:**	Toni Kopponen
Fax No.:	320-589-7310	**Telephone:** **Fax No.:**	320/963-3158 320/963-3051
Re:	Special profile #04-0478-33A profile sheet & acceptance letter		
Pages:	3		

Total Number of Pages Transmitted (including cover)

Message:

Please see the following. These are our legal documents when we approve the waste for disposal at our landfill. Please see the profile sheet as submitted and approved. As shown, the contact for this generating location is Andrew Nichols with MN DOT. Please call Andrew Nichols with any questions. Thank you.

If you do not receive all of these pages, please call (320)963-3158 as soon as possible.

04 0478 33A

ONYX

Special Waste Profile Sheet

PROFILE #

Original Submitted ( )
Recertification ( )

One time project [X]

Designated Facility: ONYX FCR Landfill, Inc. Sales Representative: ____

A. Generator

Name Minnesota Department of Transportation
Site Address TH 29
City, State, Zip Alexandria, MN 56308
Contact Andrew Nichols
Phone (651) 284-3772
Fax (651) 284-3754
County Douglas

B. Billing

Name Minnesota Department of Transportation
Site Address RR 3 Box 333
City, State, Zip Morris, MN 56267
Contact Dan Kuhn
Phone (320) 589-7307
Fax (320) 589-7310

Jessey Millar 320-589-73

C. Description of Waste

Name of Waste Petroleum Contaminated Soil
Estimated Volume 100 Yards
Frequency NA
Physical State Solid
Flash Point (° F) NA
Process Generating Waste Road Construction
Color NA
pH NA
Free Liquids No
Total Solids NA

D. Other Waste Data or Comments

Soil contamination due to suspected leaky underground storage tanks.
USTs previously contained diesel fuel and gasoline.

E. Sample Information

Check all that apply:

( ) Sample submitted with profile (X) Laboratory Analysis submitted ( ) Material Safety Data Sheet Submitted

Laboratory Name: Pace Analytical Services, Inc. and Northeast Technical Services Sample Date: 06-23-04 and 9-14-04 Sample ID: R-1 and R-2

F. Generator Certifications

1. This waste is not a hazardous waste as defined in Minnesota Rules Chapter 7045 or 40 CFR 261.
2. This waste does not contain regulated quantities of PCBs.
3. This waste does not contain regulated quantities of herbicides or pesticides.
4. This waste does not contain infectious wastes as defined in Minnesota Rules Chapter.
5. All information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 – Appendix 1 and was obtained by using this or an equivalent sampling method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed.

Generator's Signature Nancy Radle Title Hydrogeologist
Print Name Nancy Radle Date Nov. 24, 2004

G. Landfill Approval

My approval is based upon the laboratory analysis of a representative sample and/or material safety data sheets submitted by the generator.

Landfill Signature ____ Date 11/29-04
Approvals Signature ____ Date 11-29-04
Waste Category 33A Analytical Protocol bTC Disposal Operation 6 Recert. Date 070

ONYX

INDUSTRIAL WASTE APPROVAL LETTER

Onyx FCR Landfill, Inc.
175 County Road 37 NE
Buffalo, MN 55313
(320) 963-3158
FAX (320) 963-3051

December 9, 2004

Andrew Nichols
MNDOT
TH 29
Alexandria, MN 56308

Re: ***Material:*** ***Petroleum Contaminated Soil***
Profile#: ***04-0478-33A***
Generator: ***MNDOT***

Dear Mr. Nichols:

Please be advised that the above-described materials are acceptable for disposal at Onyx FCR Landfill, Inc. as per the parameters of our Minnesota Pollution Control Agency approved- Industrial Waste Management Plan.

Onyx FCR Landfill takes pride in its responsible waste management practices. For this reason, we reserve the right, as a condition for acceptance for disposal of any customer's waste stream, to conduct random sampling of those waste streams, at our sole expense. Samples collected under our random sampling procedure are obtained by certified laboratory, using established sampling protocols. Samples are analyzed by a state certified lab; results are made available to the customer upon receipt. In order to obtain truly representative samples of certain waste streams, it may be necessary for the laboratory technician to obtain access to the customer facility. Onyx will at all times remain sensitive to customer concerns regarding our sampling procedures.

Acceptance is subject to the following conditions:

1. *The materials are petroleum contaminated soil as submitted on the waste profile sheet.*
2. *The material will be absent of free liquids.*
3. *A waste manifest with the correct profile ID will accompany each shipment to* Onyx FCR Landfill.
4. *All hauling shall be in compliance with State and Federal D.O.T. regulations.*

Thank you for thinking of Onyx FCR Landfill, Inc., we appreciate and need your business. If at any time you have questions, please feel free to call me at (612) 490-7828.

Sincerely, J. P. Gagliano

John P. Gagliano
Industrial Waste Consultant

Onyx FCR Landfill, Inc.
175 Cty. Rd. 37 N.E.
Buffalo, MN 55313
Phone 320-963-3158 / 1-800-963-3158

INVOICE

INVOICE NO.	007059
PAGE	1
DATE	Dec-25-04
CUSTOMER NO.	000683
SITE NO.	0001
REFERENCE NO.	

TO:

MN DOT
RR 3 BOX 333
MORRIS, MN 56267-

SERVICE DATE	CODE	DESCRIPTION	REFERENCE	QTY.	AMOUNT
		Balance forward			$0.00
		(0001) MN DOT MORRIS / ALEXANDRIA, MN RR 3 BOX 333, MORRIS MN			
02 Dec	C7	C-SOIL $12.00 Contract: 04047833A	G1149993 0	15.30 TN	$183.60
02 Dec	C7	C-SOIL $12.00 Contract: 04047833A	G1150117 0	16.41 TN	$196.92
03 Dec	C7	C-SOIL $12.00 Contract: 04047833A	G1150184 0	20.35 TN	$244.20
03 Dec	C7	C-SOIL $12.00 Contract: 04047833A	G1150276 0	20.51 TN	$246.12
23 Dec	PF	PROFILE FEE $60.00 PROFILE FEE FOR ID #04047833A	2858	1.00	$60.00
		NSWM TAX IND WST			$33.38
		--------- Material Summary ---------			
		C-SOIL		72.57 TN	$870.84

Account Status

Payment due upon receipt of this invoice. 1.5% per month (18% per annum) late charge on balances over 30 days from date of invoice.
Payments received after invoice date are not reflected.
To ensure proper credit, please include your account number on your check and include the bottom portion of this invoice. When making payment on multiple accounts, please include the account numbers and the amounts of payment.

CURRENT	31 - 60 DAYS	61 - 90 DAYS	OVER 90 DAYS
$964.22	$0.00	$0.00	$0.00

We reserve the right to suspend service without notice on any past due account.

TOTAL THIS INVOICE	$964.22
PLEASE PAY THIS AMOUNT	$964.22

Please remit to:

Onyx FCR Landfill, Inc.
175 Cty. Rd. 37 N.E.
Buffalo, MN 55313

INVOICE NO.	007059
PAGE	1
DATE	Dec-25-04
CUSTOMER NO.	000683
SITE NO.	0001
REFERENCE NO.	

AMOUNT OF REMITTANCE

PLEASE RETURN THIS PORTION WITH REMITTANCE

REMARKS

WE APPRECIATE YOUR BUSINESS.

ONYX FCR LANDFILL, INC. 6 G1
175 COUNTY RD 37
BUFFALO, MN 55313
PERMIT # SW 60 2 December 2004 1:59 pm

Ticket: 150117 2 December 2004 1:59 pm
000683 - 00 01 MN DOT MORRIS / ALEXANDRIA, MN

Reference: 71,120.00
of Lading: Stored Tare Weight 38,300.00 LB
Vehicle: RE336 Net Weight 32,820.00 LB 16.41 TN
RILEY BROTHERS CONSTRUCTION/7 AXLES

Contract: 040478833A 040478833A

Quantity	Unit	Description	Rate	Tax	Total
16.41	TN	C7 [DO] C-Soil/33A,Pet-Ldd Gas			

Net Amount:

THANK YOU FOR YOUR BUSINESS !!!

Signature:

Weighmaster: CH Driver

ONYX

ONYX NON-HAZARDOUS WASTE MANIFEST

Cust. #: ______ Site: ______

GENERATOR

Name MN Department of Transportation
Address 610 South Hwy 9
Morris, MN 56267 Attn: Dan Kuhn
Phone No. 320-589-7307

Generating Location TH 29
Alexandria, MN 56308
Attn: Andrew Nichols
Profile No. 0 4 - 0 4 7 8 - 3 3 A

CODES:
D – DRUM
B – BAG
C – CARTON
P – POUNDS
Y – YARDS
T – TONS
O – OTHER

WASTE CODE	WASTE DESCRIPTION	QUANTITY	UNITS
Y	Petroleum Contaminated Soil (total)	approx. 50	yards
	Load total		

I hereby certify that the above listed material(s), is (are) not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law. That each waste has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Jason Kirwin
AUTHORIZED AGENT'S NAME (PRINT)
11-30-04
DATE
SIGNATURE

CONTRACTOR/CONSULTANT/AGENT

Name Jason Kirwin - WCEC
Phone No. 320-589-2039
Address PO Box 594 Morris, MN 56267

TRANSPORTER

Name Riley Brothers Construction
Address 46369 - 208th Street
Morris, MN 56267
Phone No. 320-589-2500
Driver's Name Janey Eystad
Vehicle's No. 336

I hereby certify that the above named material was picked up at the Generator site listed above and delivered without incident to the disposal facility listed below.

12-2-04
SHIPMENT DATE
DRIVER'S SIGNATURE
12-2004
DELIVERY DATE
DRIVER'S SIGNATURE

DISPOSAL FACILITY

Site Name Onyx FCR Landfill, Inc.
Phone No. 800-963-3158
Address 175 Co. Rd. 37 N.E., Buffalo, MN 55313
Permit No. SW60

I hereby certify that the above material has been accepted and that information presented on this document are true and accurate.

K Langanki
NAME
12-2-04
DATE
K Langanki
SIGNATURE

White Copy – Generator retains at time of loading
Yellow Copy – Hauler retains after delivery to landfill
Pink Copy – Landfill retains
Gold Copy – Facility mails to customer

Ticket No. 150717 Tons 16.41
Yards ______

ONYX FCR LANDFILL, INC. 6 01
175 COUNTY RD 37
BUFFALO, MN 55313
PERMIT # SW 60 2 December 2004 8:38 am

Ticket: 149993 2 December 2004 8:53 am
000683 - 00 01 MN DOT MORRIS / ALEXANDRIA, MN

Reference: 68,900.00
of Lading: Tare Weight 38,300.00 LB
Vehicle: RE336 Net Weight 30,600.00 LB 15.30 TN
RILEY BROTHERS CONSTRUCTION/7 AXLES

Contract: 04047833A 04047833A

Quantity	Unit	Description	Rate	Tax	Total
15.30	TN	C7 [DD] C-Soil/33A,Pet-Ldd Gas			

Net Amount:

THANK YOU FOR YOUR BUSINESS !!!

Signature:

Weighmaster: CH Driver

ONYX

ONYX NON-HAZARDOUS WASTE MANIFEST

Cust. #: 683 Site: 1

GENERATOR

Name MN Department of Transportation

Address 610 South Hwy 9
Morris, MN 56267 Attn: Dan Kuhn

Phone No. 320-589-7307

Generating Location TH 29
Alexandria, MN 56308
Attn: Andrew Nichols

Profile No. 04-0478-33A

CODES:
D – DRUM
B – BAG
C – CARTON
P – POUNDS
Y – YARDS
T – TONS
O – OTHER

WASTE CODE	WASTE DESCRIPTION	QUANTITY	UNITS
Y	Petroleum Contaminated Soil (total)	approx. 50	yards
	Load total		

I hereby certify that the above listed material(s), is (are) not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law. That each waste has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Jason Kirwin
AUTHORIZED AGENT'S NAME (PRINT)

11-30-04
DATE

SIGNATURE

CONTRACTOR/CONSULTANT/AGENT

Name Jason Kirwin – WCEC

Phone No. 320-589-2039

Address PO Box 594 Morris, MN 56267

TRANSPORTER

Name Riley Brothers Construction

Phone No. 320-589-2500

Address 46369 - 208th Street
Morris, MN 56267

Driver's Name Janey Eystad

Vehicle's No. 336

I hereby certify that the above named material was picked up at the Generator site listed above and delivered without incident to the disposal facility listed below.

12-2-04
SHIPMENT DATE

DRIVER'S SIGNATURE

12-2-04
DELIVERY DATE

DRIVER'S SIGNATURE

DISPOSAL FACILITY

Site Name **Onyx FCR Landfill, Inc.**

Phone No. **800-963-3158**

Address **175 Co. Rd. 37 N.E., Buffalo, MN 55313**

Permit No. **SW60**

I hereby certify that the above material has been accepted and that information presented on this document are true and accurate.

K Langanki
NAME

12-2-04
DATE

K Langanki
SIGNATURE

Ticket No. 149993

Tons 15.30

Yards

White Copy – Generator retains at time of loading
Yellow Copy – Hauler retains after delivery to landfill
Pink Copy – Landfill retains
Gold Copy – Facility mails to customer

ONYX

ONYX NON-HAZARDOUS WASTE MANIFEST

Cust. #: 683 Site: 1

GENERATOR

Name MN Department of Transportation

Address 610 South Hwy 9
Morris, MN 56267 Attn: Dan Kuhn

Phone No. 320-589-7307

Generating Location TH 29
Alexandria, MN 56308
Attn: Andrew Nichols

Profile No. 04-0478-33A

CODES:
D – DRUM
B – BAG
C – CARTON
P – POUNDS
Y – YARDS
T – TONS
O – OTHER

WASTE CODE	WASTE DESCRIPTION	QUANTITY	UNITS
Y	Petroleum Contaminated Soil (total)	approx. 50	yards
	Load total		

I hereby certify that the above listed material(s), is (are) not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law. That each waste has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Jason Kirwin
AUTHORIZED AGENT'S NAME (PRINT)

11-30-04
DATE

SIGNATURE

CONTRACTOR/CONSULTANT/AGENT

Name Jason Kirwin – WCEC

Phone No. 320-589-2039

Address PO Box 594 Morris, MN 56267

TRANSPORTER

Name Riley Brothers Construction

Phone No. 320-589-2500

Address 46369 – 208th Street
Morris, MN 56267

Driver's Name GORDON SCRIBNER

Vehicle's No. 336/13

I hereby certify that the above named material was picked up at the Generator site listed above and delivered without incident to the disposal facility listed below.

12/3/04
SHIPMENT DATE

DRIVER'S SIGNATURE

12/3/04
DELIVERY DATE

DRIVER'S SIGNATURE

DISPOSAL FACILITY

Site Name Onyx FCR Landfill, Inc.

Phone No. 800-963-3158

Address 175 Co. Rd. 37 N.E., Buffalo, MN 55313

Permit No. SW60

I hereby certify that the above material has been accepted and that information presented on this document are true and accurate.

K Langanki
NAME

12-3-04
DATE

SIGNATURE

White Copy – Generator retains at time of loading
Yellow Copy – Hauler retains after delivery to landfill
Pink Copy – Landfill retains
Gold Copy – Facility mails to customer

Ticket No. 150184

Tons 20.35

Yards

ONYX FCR LANDFILL, INC. V 61
175 COUNTY RD 37
BUFFALO, MN 55313
PERMIT # SW 60 3 December 2004 8:37 am

Ticket: 150184 3 December 2004 8:37 am
000683 - 00 01 MN DOT MORRIS / ALEXANDRIA, MN

Reference: 79,000.00
of Lading: Stored Tare Weight 38,300.00 LB
Vehicle: RE336 Net Weight 40,700.00 LB 20.35 TN
RILEY BROTHERS CONSTRUCTION/7 AXLES

Contract: 04047833A 04047833A

Quantity	Unit	Description	Rate	Tax	Total
20.35	TN	C7 [DO] C-Soil/33A,Pet-Ldd Gas			

Net Amount:

THANK YOU FOR YOUR BUSINESS !!!

Signature:

Weighmaster: CH Driver

ONYX

ONYX NON-HAZARDOUS WASTE MANIFEST

Cust. #: ______ Site: ______

GENERATOR

Name MN Department of Transportation

Address 610 South Hwy 9
Morris, MN 56267 Attn: Dan Kuhn

Phone No. 320-589-7307

Generating Location TH 29
Alexandria, MN 56308
Attn: Andrew Nichols

Profile No. 04-04.78-33A

CODES:
- D – DRUM
- B – BAG
- C – CARTON
- P – POUNDS
- Y – YARDS
- T – TONS
- O – OTHER

WASTE CODE	WASTE DESCRIPTION	QUANTITY	UNITS
Y	Petroleum Contaminated Soil (total)	approx. 50	yards
	Load total		

I hereby certify that the above listed material(s), is (are) not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law. That each waste has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Jason Kirwin
AUTHORIZED AGENT'S NAME (PRINT)

11-30-04
DATE

SIGNATURE

CONTRACTOR/CONSULTANT/AGENT

Name Jason Kirwin – WCEC

Phone No. 320-589-2039

Address PO Box 594 Morris, MN 56267

TRANSPORTER

Name Riley Brothers Construction

Phone No. 320-589-2500

Address 46369 – 208th Street
Morris, MN 56267

Driver's Name GORDON SCRIBNER

Vehicle's No. 328/13

I hereby certify that the above named material was picked up at the Generator site listed above and delivered without incident to the disposal facility listed below.

12/3/04
SHIPMENT DATE

DRIVER'S SIGNATURE

X 12/3/04
DELIVERY DATE

X
DRIVER'S SIGNATURE

DISPOSAL FACILITY

Site Name Onyx FCR Landfill, Inc.

Phone No. 800-963-3158

Address 175 Co. Rd. 37 N.E., Buffalo, MN 55313

Permit No. SW60

I hereby certify that the above material has been accepted and that information presented on this document are true and accurate.

K Langanki
NAME

12-3-04
DATE

SIGNATURE

White Copy – Generator retains at time of loading
Yellow Copy – Hauler retains after delivery to landfill
Pink Copy – Landfill retains
Gold Copy – Facility mails to customer

Ticket No. 150276
Tons 20.51
Yards ______

ONYX FCR LANDFILL, INC. V 61
175 COUNTY RD 37
BUFFALO, MN 55313
PERMIT # SW 60 3 December 2004 2:17 pm

Ticket: 150276 3 December 2004 2:17 pm
000683 - 00 01 MN DOT MORRIS / ALEXANDRIA, MN

Reference: 79,320.00
of Lading: Stored Tare Weight 38,300.00 LB
Vehicle: RE336 Net Weight 41,020.00 LB 20.51 TN
RILEY BROTHERS CONSTRUCTION/7 AXLES

Contract: 04047833A 04047833A

Quantity	Unit	Description	Rate	Tax	Total
20.51	TN	C7 [DO] C-Soil/33A,Pet-Ldd Gas			

Net Amount:

THANK YOU FOR YOUR BUSINESS !!!

Signature:

Weighmaster: CH Driver

Mn/DOT TH-29/27
STS Project 99473-XA

Appendix E

Land Spread Disposal Documentation

- MPCA Approval Letter for Land Spreading Contaminated Soil
- Uniform Vehicle Tally Sheets

WCEC
ENVIRONMENTAL CONSULTANTS
14 Green River Road, P. O. Box 594
Morris, MN 56267-0594
320-589-2039 or 800-422-8356
(320) 589-2814 (Fax)

FAX TRANSMITTAL COVER SHEET

DATE: 11-7-05 **PAGES:** 3 (With Cover Sheet)
TO: Tim **FAX #:** 763-315-1836
Company: STS Consultants
FROM: April Pilarski
RE: Riley Bros. Land Farm

PLEASE CALL IF ALL PAGES ARE NOT RECEIVED

HARD COPY TO FOLLOW: _____ YES X NO

MESSAGE:

RECEIVED OCT 1 1 2005

April

Minnesota Pollution Control Agency

4570
JLK

October 7, 2005

Mr. Thomas Lundberg, Project Manager
Minnesota Department of Transportation
1000 Highway 10 West
Detroit Lakes, MN 56501

Mr. Joe Riley
Riley Brothers Construction, Inc.
46369 208th Street
Morris, MN 56267

RE: Land Treatment of Petroleum Contaminated Soil/Soil Corrective Action Plan Approval
Land Treatment Site: Riley Brothers Construction, Inc., Joe Riley, consisting of approximately 2.98 acres in the SW¼ of the NE¼ of Section 12, T 124 N, R 38 W, Barsness Township, Pope County.
Preapproval ID#: PRE0632
Leak Site: Alex Exhaust
Site ID#: LEAK000015656

Dear Mr. Lundberg and Mr. Riley:

The application dated September 20, 2005, to land treat approximately **1,500 cubic yards** of petroleum contaminated soil using **2.80 acres** from the above-referenced leak site at the above-referenced land treatment site is hereby approved by the Minnesota Pollution Control Agency (MPCA). This approval is based upon the MPCA staff's understanding that the appropriate county and local officials have been notified of the proposed land treatment of this soil and is subject to the conditions indicated below. The portions of Minn. R. ch. 7037 referenced in this letter are summarized in the MPCA Guidance Document 3-03 *Land Treatment of Petroleum Contaminated Soil* (April 2005). Minn. R. ch. 7037 indicates that the land treatment site owner and operator are to be responsible for the requirements listed below. However, the generator of the soil is not relieved from responsibility under Minn. Stat. § 115.061 to ensure the proper treatment of petroleum contaminated soil.

1. If soil is to be stored prior to spreading, then the conditions and limitations indicated in Minn. R. 7037.0810 must be followed for soil storage.

2. Soil must be spread to a thickness of no more than 4.0 inches and incorporated into the top four to six inches of native soil in accordance with Minn. R. 7037.2300. All other land treatment procedures and limitations described in Minn. R. 7037.2500 must be followed.

3. The MPCA Guidance Document 3-06 *Notification of Spreading Petroleum Contaminated Soil at a Land Treatment Site* (Form C) (April 2005) must be submitted to the MPCA within ten days following spreading (Minn. R. 7037.2600).

4. The land treated soil must be sampled and reports must be submitted in accordance with Minn. R. 7037.2700 until analyses indicate 10 parts per million total petroleum hydrocarbons or lower. The MPCA Guidance Document 3-07 *Soil Monitoring Results for Land Treated Petroleum Contaminated Soil* (Form D) (April 2005) must be used for reporting.

5. The MPCA's approval of this application does not release you from any duty to comply with county or local ordinances.

6. **The preapproval for spreading of petroleum contaminated soil at this land treatment site expires November 1, 2006.**

We believe these actions will provide treatment of the excavated petroleum contaminated soil from this leak site. The MPCA reserves the right to require additional work if this is determined to be necessary to protect public health and the environment. This letter does not release any person from liability for this contamination. In addition, this letter does not address the adequacy of cleanup or investigative work completed or yet to be completed at the leak site.

In addition, the owner and operator of the land treatment site must comply with all other procedural and operational requirements established in Minn. R. ch. 7037.

Please note that this approval applies only to the process of land treatment of the petroleum contaminated soil. This approval should not be construed to constitute a finding that the volume of contaminated soil excavated at the above-referenced leak site was appropriate.

Please contact me at (218) 828-6072, if you have any questions.

Sincerely,

Steven J. Palzkill, PG
Project Manager
Brainerd Office
Remediation Division

SJP:vms

cc: Paul Anderson, Barsness Township, Starbuck
Steve Lawrence, Pope County Environmental Services Director, Glenwood
April Pilarski, West Central Environmental Consultants, Morris
Petrofund, Minnesota Department of Commerce, St. Paul
Nancy Hennen, MPCA, Marshall
File

MINNESOTA DEPARTMENT OF TRANSPORTATION

MORRIS, MINNESOTA

FACSIMILE TRANSMITTAL

DATE: 12-5-2005 NUMBER OF PAGES: 3 INCLUDING COVER SHEET

TO: Tim (STS) NAME FAX NO.: 763-315-1836

COMPANY: STS

FROM: BRAD CEGLA MNDOT FAX NO.: 320-589-7310

PHONE: 320-589-

ITEM SENT: 2 - Uniform Load Tally Sheets

NOTES:

Mn/DOT 28226 (9-77)
(formerly 2127A)

State Project No. 2102-50
Contractor Riley Bros.

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNIFORM VEHICLE LOAD TALLY SHEET

Pit No. ______
Class Mat. Contaminated S
Course ______
Layer ______

Date 10/19/05
Shift No. ______ (1)
Sheet No. 1 of 1

TRUCK NO.	CAP	(2) STATION ______ TO STATION ______ LANE ______ (3) HOUR (4): 8 · 9 · 10 · 11 · 12 · 1 · 2 · 3 · 4 · 5 · 6	(5) LOADS	(6) C.Y. Or TONS
321	17.36		10	173.6
323	17.36		10	173.6
320	17.36		10	173.6
318	17.36		9	156.2
324	17.36		9	156.2
313	17.36		9	138.9
315	17.36		9	138.9
316	17.36		9	138.9
		1250 ton = 392.5 yd³ (LV) = 740.775 yd³ (BM)		
				1249.9 (tns)
		Refer to Bituminous Manual 5-693.725. (7) TOTALS	72	1250 (tns)

T. Bosworth
FIELD CHECKER

CHECKED BY

(1) Use separate sheets for each shift.
(2) Enter station numbers and lane or ramp.
(3) Enter hour over light vertical hour line.
(4) Show load delivered to nearest 15 min.
(5) Show number of loads.
(6) Show number of C.Y. or tons after calculation.
(7) Show number of loads and number of C.Y. or tons.
(8) Do not erase or overwrite.

Mn/DOT 28226 (9-77)
(formerly 2127A)

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNIFORM VEHICLE LOAD TALLY SHEET

10/18/05

State Project No. 2102-50
Contractor Riley Bros.
Pit No. ______
Class Mat. Contaminated Soils
Course ______
Layer ______
Date 10-13-05
Shift No. ______ (1)
Sheet No. 1 of 1

TRUCK NO.	CAP	(2) STATION ______ TO STATION ______ LANE ______ (3) HOUR (4): 8, 9, 10, 11, 12, 1, 2, 3, 4, 5	(5) LOADS	(6) C.Y. Or TONS
321	17.36	/ / / / / / /	7	121.5
323	17.36	/ / / / / / /	7	121.5
320	17.36	/ / / / / / /	7	121.5
318	17.36	/ / / / / / /	7	121.5
324	17.36	/ / / / / / /	7	121.5
				607.5
		7 8		
321	17.36	/ /	2	34.7
323	17.36	/ /	2	34.7
320	17.36	/ /	2	34.7
318	17.36	/ /	2	34.7
324	17.36	/ /	2	34.7
				173.5
		1 ton = .714 yd³ (LV)		
		1 yd³ (LV) = .83 yd³ (BM)		
		781 ton = 557.634 yd³ (LV) = 462.8 yd³ (BM)		
			~~45~~	781 (tons)
	Refer to Bituminous Manual 5-693.725.	(7) TOTALS	45	781 (tons)

(1) Use separate sheets for each shift.
(2) Enter station numbers and lane or ramp.
(3) Enter hour over light vertical hour line.
(4) Show load delivered to nearest 15 min.
(5) Show number of loads.
(6) Show number of C.Y. or tons after calculation.
(7) Show number of loads and number of C.Y. or tons.
(8) Do not erase or overwrite.

T. Hoffman
FIELD CHECKER
B. [illegible]
CHECKED BY

APPENDIX E

Geologic Logs of Soil Borings

AECOM	OWNER **Minnesota Pollution Control Agency**	LOG OF BORING NUMBER **B-1**
	PROJECT NAME **Alex Exhaust, Leak # 15,656**	ARCHITECT-ENGINEER **AECOM**

SITE LOCATION
Alexandria, Minnesota

SURFACE ELEVATION +100.0 Assumed local

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} 1 2 3 4 5

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT. 10 20 30 40 50

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}	PHOTO-IONIZATION DETECTOR READING (PPM)
		1	MC			1.0 Sandy GRAVEL, brown - GPS Silty CLAY, trace Sand and Gravel, dark brown - CL-ML		<1
5.0		2						52
		3	MC					>2000
10.0		4						>2000
		5	MC					26
15.0		6						26
		7	MC					3
20.0		8						3
		9	MC			21.0 Fine to coarse Clayey SAND, light brown - SC		<1
25.0		10				23.0 Silty CLAY, trace Sand and Gravel, grey - brown - CL-ML		<1
		11	MC					<1
30.0		12						<1
		13	MC					<1
35.0		14						<1
		15	MC					<1
40.0		16				40.0		<1

End of boring 40 feet. Boring drilled to full depth with Hollow stem auger and sampled with 5 foot Macro Core sampler. Soil samples were screened with 10.6 eV lamp photoionization detector (PID) in general accordance with MPCA polyethylene bag headspace screening as outlined in Guidance Document 4-04. Background PID levels at 0-1 units. Sample taken at 6 and 20 feet for laboratory analysis of the following parameters: BTEX/GRO and DRO. Groundwater encountered at 21.0 feet - see sampling information form.

Boring backfilled with high solids bentonite grout upon completion.

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 21.0	BORING STARTED 2/7/07	STS OFFICE	Minneapolis Area - 06
WL	BORING COMPLETED 2/8/07	ENTERED BY MJB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Valnes/Kevin	APP'D BY	STS JOB NO. 04660027

AECOM	OWNER **Minnesota Pollution Control Agency**	LOG OF BORING NUMBER **B-2**
	PROJECT NAME **Alex Exhaust, Leak # 15,656**	ARCHITECT-ENGINEER **AECOM**

SITE LOCATION
Alexandria, Minnesota

○ UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² 1 2 3 4 5

PLASTIC LIMIT % ✕ — WATER CONTENT % ● — LIQUID LIMIT % △ 10 20 30 40 50

⊗ STANDARD PENETRATION BLOWS/FT. 10 20 30 40 50

SURFACE ELEVATION +99.5 Assumed local

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³	PHOTO-IONIZATION DETECTOR READING (PPM)
		1	MC			Silty SAND, dark brown 3.0		<1
5.0		2				Silty CLAY, trace Sand, light brown - CL-ML		<1
		3	MC					<1
10.0		4						<1
		5	MC					<1
15.0		6						<1
		7	MC					<1
20.0		8				21.0		<1
		9	MC			Fine to coarse Clayey SAND, light brown - SC 24.0		<1
25.0		10				25.0 Silty CLAY, trace Sand and Gravel, grey - CL-ML		45

End of boring 25 feet. Boring drilled to full depth with Hollow stem auger and sampled with 5 foot Macro Core sampler. Soil samples were screened with 10.6 eV lamp photoionization detector (PID) in general accordance with MPCA polyethylene bag headspace screening as outlined in Guidance Document 4-04. Background PID levels at 0-1 units. Sample taken at 18 feet for laboratory analysis of the following parameters: BTEX/GRO and DRO. Groundwater encountered at 17.6 feet - see sampling information form.

Boring backfilled with high solids bentonite grout upon completion.

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 17.6	BORING STARTED 2/7/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 2/8/07	ENTERED BY MJB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Valnes/Kevin	APP'D BY	STS JOB NO. 04660027

AECOM

OWNER
Minnesota Pollution Control Agency

LOG OF BORING NUMBER **B-3**

PROJECT NAME
Alex Exhaust, Leak # 15,656

ARCHITECT-ENGINEER
AECOM

SITE LOCATION
Alexandria, Minnesota

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} 1 2 3 4 5

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT %
10 20 30 40 50

STANDARD PENETRATION BLOWS/FT.
10 20 30 40 50

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}	PHOTO-IONIZATION DETECTOR READING (PPM)
						SURFACE ELEVATION +99.3 Assumed local		
		1	MC			Silty SAND, little Gravel, dark brown		
						3.0		<1
5.0		2				Silty CLAY, trace Sand, light brown - CL-ML		343
		3	MC					250
10.0		4						205
		5	MC					202
15.0		6						200
		7	MC					<1
20.0		8				20.0		<1
		9	MC			Fine to coarse Clayey SAND, light brown - SC		<1
		10				24.0		
25.0						25.0 Silty CLAY, trace Sand and Gravel, grey - CL-ML		<1
		11	MC			Sandy CLAY, saturated, grey - SC		<1
		12				29.0		
30.0						30.0 Silty CLAY, trace Sand and Gravel, grey - CL-ML		21

End of boring 30 feet. Boring drilled to full depth with Hollow stem auger and sampled with 5 foot Macro Core sampler. Soil samples were screened with 10.6 eV lamp photoionization detector (PID) in general accordance with MPCA polyethylene bag headspace screening as outlined in Guidance Document 4-04. Background PID levels at 0-1 units. Sample taken at 5 and 16 feet for laboratory analysis of the following parameters: BTEX/GRO and DRO. Groundwater encountered at 16.1 feet - see sampling information form.

Boring backfilled with high solids bentonite grout upon completion.

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 16.1	BORING STARTED 2/7/07	STS OFFICE	Minneapolis Area - 06
WL	BORING COMPLETED 2/8/07	ENTERED BY MJB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Valnes/Kevin	APP'D BY	STS JOB NO. 04660027

AECOM	OWNER **Minnesota Pollution Control Agency**	LOG OF BORING NUMBER	**B-4**
	PROJECT NAME **Alex Exhaust, Leak # 15,656**	ARCHITECT-ENGINEER **AECOM**	

SITE LOCATION
Alexandria, Minnesota

-O- UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} 1 2 3 4 5

PLASTIC LIMIT % X — WATER CONTENT % ● — LIQUID LIMIT % △ 10 20 30 40 50

⊗ STANDARD PENETRATION BLOWS/FT. 10 20 30 40 50

SURFACE ELEVATION +99.4 Assumed local

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY		DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}	PHOTO-IONIZATION DETECTOR READING (PPM)
		1	MC			2.0	Silty SAND, little Gravel, brown - SM		<1
5.0		2					Silty CLAY, trace Sand, light brown - CL-ML		<1
		3	MC						>2000
10.0		4							>2000
		5	MC						>2000
15.0		6							>2000
		7	MC						31
20.0		8							29
		9	MC						11
25.0		10				25.0			10
		11	MC			27.0	Fine to coarse Clayey SAND, light brown - SC		<1
30.0		12				30.0	Silty CLAY, trace Sand and Gravel, grey - brown - CL-ML		<1

End of boring 30 feet. Boring drilled to full depth with Hollow stem auger and sampled with 5 foot Macro Core sampler. Soil samples were screened with 10.6 eV lamp photoionization detector (PID) in general accordance with MPCA polyethylene bag headspace screening as outlined in Guidance Document 4-04. Background PID levels at 0-1 units. Sample taken at 13 and 22 feet for laboratory analysis of the following parameters: BTEX/GRO and DRO. Groundwater encountered at 21.7 feet - see sampling information form.

Boring backfilled with high solids bentonite grout upon completion.

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 21.7	BORING STARTED 2/7/07	STS OFFICE	Minneapolis Area - 06
WL	BORING COMPLETED 2/8/07	ENTERED BY MJB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Valnes/Kevin	APP'D BY	STS JOB NO. 04660027

AECOM	OWNER **Minnesota Pollution Control Agency**	LOG OF BORING NUMBER **B-5**
	PROJECT NAME **Alex Exhaust, Leak # 15,656**	ARCHITECT-ENGINEER **AECOM**

SITE LOCATION
Alexandria, Minnesota

SURFACE ELEVATION +98.9 Assumed local

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2}: 1 2 3 4 5

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT %: 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT.: 10 20 30 40 50

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}	PHOTO-IONIZATION DETECTOR READING (PPM)
2.0		1	MC			Silty SAND, little Gravel, dark brown - SM		<1
		2				Silty CLAY, trace Sand and Gravel, dark brown - CL-ML		<1
5.0		3	MC					58
10.0		4						55
		5	MC					9
15.0		6						8
18.0		7	MC					8
20.0		8				Silty CLAY, trace Sand and Gravel, grey - CL-ML		<1
		9	MC					<1
25.0 26 26.0		10						<1

End of boring 26 feet. Boring drilled to full depth with Hollow stem auger and sampled with 5 foot Macro Core sampler. Soil samples were screened with 10.6 eV lamp photoionization detector (PID) in general accordance with MPCA polyethylene bag headspace screening as outlined in Guidance Document 4-04. Background PID levels at 0-1 units. Sample taken at 6 and 25 feet for laboratory analysis of the following parameters: BTEX/GRO and DRO. Groundwater encountered at 25.15 feet - see sampling information form.

Boring backfilled with high solids bentonite grout upon completion.

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 25.2	BORING STARTED 2/7/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 2/8/07	ENTERED BY MJB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Valnes/Kevin	APP'D BY	STS JOB NO. 04660027

AECOM	OWNER **Minnesota Pollution Control Agency**	LOG OF BORING NUMBER **B-6**
	PROJECT NAME **Alex Exhaust, Leak # 15,656**	ARCHITECT-ENGINEER **AECOM**

SITE LOCATION
Alexandria, Minnesota

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2}: 1 2 3 4 5

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT %: 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT.: 10 20 30 40 50

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}	PHOTO-IONIZATION DETECTOR READING (PPM)
						SURFACE ELEVATION +98.8 Assumed local		
		1	MC			Silty SAND, brown - SM 2.0		<1
		2				Silty CLAY, little Sand, light brown - CL-ML		<1
5.0		3	MC					<1
		4						<1
10.0		5	MC					<1
		6						<1
15.0		7	MC					<1
		8						<1
20.0		9	MC					<1
25.0		10				25.0		<1

End of boring 25 feet. Boring drilled to full depth with Hollow stem auger and sampled with 5 foot Macro Core sampler. Soil samples were screened with 10.6 eV lamp photoionization detector (PID) in general accordance with MPCA polyethylene bag headspace screening as outlined in Guidance Document 4-04. Background PID levels at 0-1 units. Sample taken at 23 feet for laboratory analysis of the following parameters: BTEX/GRO and DRO. Groundwater encountered at 20.9 feet - see sampling information form.

Boring backfilled with high solids bentonite grout upon completion.

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 20.9	BORING STARTED 2/7/07	STS OFFICE **Minneapolis Area - 06**	
WL	BORING COMPLETED 2/8/07	ENTERED BY MJB	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Valnes/Kevin	APP'D BY	STS JOB NO. 04660027

AECOM	OWNER **MPCA**	LOG OF BORING NUMBER **B-7**
	PROJECT NAME **Alex Exhaust**	ARCHITECT-ENGINEER **AECOM**

SITE LOCATION
Alexandria, MN

SURFACE ELEVATION +98.0 Assumed local

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} 1 2 3 4 5

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT. 10 20 30 40 50

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}	PHOTO-IONIZATION DETECTOR READING (PPM)
		1	AS	Brown silty CLAY (CL) with trace sand and gravel		<1
2.5		2	MC	Brown, clayey SAND (SC) with trace coarse sand		<1
5.0		3	MC	Brown/grey silty CLAY (CL) with fine sand seams		<1
		4	MC			<1
10.0		5	MC			<1
		6	MC			<1
15.0 / 16.0		7	MC	Grey/brown CLAY (CL)		<1
		8	MC			<1
20.0		9	MC	Grey sandy clay (CL), moist		<1
		10	MC			<1
25.0						

End of boring at 25 feet. Drilled to full depth with hollow stem auger. Soil samples screened with photoionization detector (PID) in general accordance with MPCA polyethylene bag headspace screening as outlined in Guidance Document 4-04. Installed 2 inch PVC temporary well and set at 25.58 feet. Groundwater encountered at 15.80 feet.

Boring backfilled with high solids bentonite grout upon completion.

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 15.8	BORING STARTED 2/27/08	STS OFFICE **Minneapolis Area - 06**	
WL	BORING COMPLETED 2/27/08	ENTERED BY RD	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Truck Mount/Todd	APP'D BY	STS JOB NO. 04660027

AECOM	OWNER **MPCA**	LOG OF BORING NUMBER **B-8**
	PROJECT NAME **Alex Exhaust**	ARCHITECT-ENGINEER **AECOM**

SITE LOCATION
Alexandria, MN

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}	PHOTO-IONIZATION DETECTOR READING (PPM)	UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} 1 2 3 4 5 PLASTIC LIMIT % ✕ – – WATER CONTENT % ● – – LIQUID LIMIT % △ 10 20 30 40 50 ⊗ STANDARD PENETRATION BLOWS/FT. 10 20 30 40 50
☒						SURFACE ELEVATION +98.4 Assumed local			
		1	AS			Black silty CLAY (CL-ML) with fine sand, tr. organics		<1	
						2.5			
5.0		2	MC			Brown silty CLAY (CL) with trace fine sand		<1	
		3	MC					<1	
10.0		4	MC			10.0		<1	
		5	MC			Brown clayey SAND (SC) with trace silt		<1	
15.0		6	MC			15.0		<1	
		7	MC			Brown CLAY (CL) with sand lenses		<1	
20.0		8	MC					<1	
		9	MC			23.0		<1	
25.0		10	MC			Grey sandy CLAY (CL)		<1	
		11	MC					<1	
30.0		12	MC			30.0		<1	
						End of boring at 30 feet. Drilled to full depth with hollow stem auger. Soil samples screened with photoionization detector (PID) in general accordance with MPCA polyethylene bag headspace screening as outlined in Guidance Document 4-04. Installed 2 inch PVC temporary well and set at 25.05 feet. Groundwater encountered at 19.67 feet. Boring backfilled with high solids bentonite grout upon completion.			

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 19.7	BORING STARTED 2/27/08	STS OFFICE	Minneapolis Area - 06
WL	BORING COMPLETED 2/28/08	ENTERED BY RD	SHEET NO. 1 OF 1
WL	RIG/FOREMAN Truck Mount/Todd	APP'D BY	STS JOB NO. 04660027

BORING_LOG 200705844.GPJ STS.GDT 1/27/09

AECOM

OWNER
MPCA

PROJECT NAME
Alex Exhaust

LOG OF BORING NUMBER **B-9**

ARCHITECT-ENGINEER
AECOM

SITE LOCATION
Alexandria, MN

SURFACE ELEVATION +95.0 Assumed Local

-○- UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} 1 2 3 4 5

PLASTIC LIMIT % ✕ — WATER CONTENT % ● — LIQUID LIMIT % △ 10 20 30 40 50

⊗ STANDARD PENETRATION BLOWS/FT. 10 20 30 40 50

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}	PHOTO-IONIZATION DETECTOR READING (PPM)
0.3		1		Asphalt		
2.0				Brown fine to medium SAND (SP) with trace gravel		<1
		2	MC	Brown silty SAND (SP) with trace clay		
4.0						<1
5.0		3		Brown silty CLAY (CL)		<1
		4	MC			<1
		5				<1
10.0		6	MC			<1
		7				<1
15.0		8	MC			<1
		9		0.5" fine to med SAND (SP) seam at 15.0' and 15.5'		<1
		10	MC			<1
20.0		11				<1
		12	MC			<1
25.0		13	MC			<1
						<1
		14	MC			<1
30.0						<1
33.0		15	MC	Grey silty CLAY (CL)		
35.0						<1

End of boring at 35 feet. Drilled to full depth with geoprobe. Soil samples screened with photoionization detector (PID) in general accordance with MPCA polyethylene bag headspace screening as outlined in Guidance Document 4-04. Installed 1 inch PVC temporary well. Groundwater encountered at 7.64 feet.

Boring backfilled with high solids bentonite grout upon completion.

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 7.64	BORING STARTED 12/12/08	STS OFFICE Minneapolis Area - 06
WL	BORING COMPLETED	ENTERED BY RD / SHEET NO. 1 OF 1
WL	RIG/FOREMAN Bobcat mounted geoprobe/Jake	APP'D BY / STS JOB NO. 04660027

APPENDIX F

Laboratory Analytical Reports for Soil, Groundwater and Soil Vapor

Northeast Technical Services
315 Chestnut Street
PO Box 1142
Virginia, MN 55792
Phone: 218-741-4290
Fax: 218-742-1010

MDH Certification: 027-137-157

Laboratory Results

NTS COC: 84629
Received: 2/29/2008
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200705844/Alex Exhaust
Sampled By: Client
Report Date: 3/11/2008
Rec'd Temperature: 4 °C

Approved by:
Renee Stone

STS Consultants
Attn: Tim Grape
10900 73rd Ave. N.
Suite 150
Maple Grove, MN 55369

NTS Sample: 244235
Description: B-7 (W)
Sample Date: 2/27/2008 12:35:00 PM

Matrix: Aqueous
Sample Type: Grab

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<0.1	mg/L	0.1	1	WI(95) DRO	3/3/2008	MES
GRO	<0.1	mg/L	0.1	1	WI(95) GRO	2/29/2008	MES
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2,4-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES

NTS Sample: 244235
Description: B-7 (W)
Sample Date: 2/27/2008 12:35:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 84629
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200705844/Alex Exhaust
Sampled By: Client
Report Date: 3/11/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
1,3,5-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Acetone	<20	µg/L	20	1	EPA 8260B	3/6/2008	MES
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Benzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromoform	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromomethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Chloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Chloroform	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Chloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Dibromomethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Ethyl Benzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Isopropylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	3/6/2008	MES
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	3/6/2008	MES
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Naphthalene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
n-Propylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES

NTS Sample: 244235
Description: B-7 (W)
Sample Date: 2/27/2008 12:35:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 84629
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200705844/Alex Exhaust
Sampled By: Client
Report Date: 3/11/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
p-Isopropyltoluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
sec-Butylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Styrene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	3/6/2008	MES
Toluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Xylene, M&P	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Xylene, O	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Surrogate 1,2-Dichloroethane-d4	101	%	1	1	EPA 8260B	3/6/2008	MES
Surrogate Bromofluorobenzene	99.8	%	1	1	EPA 8260B	3/6/2008	MES
Surrogate Toluene-d8	99.4	%	1	1	EPA 8260B	3/6/2008	MES

NTS Sample: 244236
Description: B-77 (W)
Sample Date: 2/27/2008 12:50:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 84629
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200705844/Alex Exhaust
Sampled By: Client
Report Date: 3/11/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<0.1	mg/L	0.1	1	WI(95) DRO	3/4/2008	MES
GRO	<0.1	mg/L	0.1	1	WI(95) GRO	2/29/2008	MES
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2,4-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,3,5-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Acetone	<20	µg/L	20	1	EPA 8260B	3/6/2008	MES
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Benzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromoform	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromomethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Chloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES

NTS Sample: 244236
Description: B-77 (W)
Sample Date: 2/27/2008 12:50:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 84629
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200705844/Alex Exhaust
Sampled By: Client
Report Date: 3/11/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Chloroform	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Chloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Dibromomethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Ethyl Benzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Isopropylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	3/6/2008	MES
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	3/6/2008	MES
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Naphthalene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
n-Propylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
p-Isopropyltoluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
sec-Butylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Styrene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	3/6/2008	MES
Toluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Xylene, M&P	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Xylene, O	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Surrogate 1,2-Dichloroethane-d4	101	%	1	1	EPA 8260B	3/6/2008	MES
Surrogate Bromofluorobenzene	96.9	%	1	1	EPA 8260B	3/6/2008	MES
Surrogate Toluene-d8	99.3	%	1	1	EPA 8260B	3/6/2008	MES

NTS Sample: 244237
Description: Trip Blank
Sample Date: 2/21/2008 12:00:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 84629
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200705844/Alex Exhaust
Sampled By: Client
Report Date: 3/11/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
GRO	<0.1	mg/L	0.1	1	WI(95) GRO	2/29/2008	MES	
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES	h
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES	h
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES	h
1,2,4-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES	h
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES	h
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
1,3,5-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Acetone	<20	µg/L	20	1	EPA 8260B	3/6/2008	MES	h
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Benzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Bromobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Bromoform	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Bromomethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES	h
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Chloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Chloroform	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h

Qualifier	Description	Note
h	Extraction or Analysis performed past hold time.	

NTS Sample: 244237
Description: Trip Blank
Sample Date: 2/21/2008 12:00:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 84629
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200705844/Alex Exhaust
Sampled By: Client
Report Date: 3/11/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
Chloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Dibromomethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES	h
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Ethyl Benzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES	h
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES	h
Isopropylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	3/6/2008	MES	h
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	3/6/2008	MES	h
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Naphthalene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES	h
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
n-Propylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
p-Isopropyltoluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
sec-Butylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Styrene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	3/6/2008	MES	h
Toluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES	h
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Xylene, M&P	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES	h
Xylene, O	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES	h
Surrogate 1,2-Dichloroethane-d4	103	%	1	1	EPA 8260B	3/6/2008	MES	h
Surrogate Bromofluorobenzene	99.1	%	1	1	EPA 8260B	3/6/2008	MES	h
Surrogate Toluene-d8	99.8	%	1	1	EPA 8260B	3/6/2008	MES	h

Qualifier	Description	Note
h	Extraction or Analysis performed past hold time.	

NTS Sample: 244238
Description: Field Blank
Sample Date: 2/27/2008 2:05:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 84629
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200705844/Alex Exhaust
Sampled By: Client
Report Date: 3/11/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<0.1	mg/L	0.1	1	WI(95) DRO	3/4/2008	MES
GRO	<0.1	mg/L	0.1	1	WI(95) GRO	2/29/2008	MES
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2,4-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,3,5-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Acetone	<20	µg/L	20	1	EPA 8260B	3/6/2008	MES
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Benzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromoform	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromomethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Chloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES

NTS Sample: 244238
Description: Field Blank
Sample Date: 2/27/2008 2:05:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 84629
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200705844/Alex Exhaust
Sampled By: Client
Report Date: 3/11/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Chloroform	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Chloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Dibromomethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Ethyl Benzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Isopropylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	3/6/2008	MES
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	3/6/2008	MES
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Naphthalene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
n-Propylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
p-Isopropyltoluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
sec-Butylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Styrene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	3/6/2008	MES
Toluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Xylene, M&P	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Xylene, O	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Surrogate 1,2-Dichloroethane-d4	103	%	1	1	EPA 8260B	3/6/2008	MES
Surrogate Bromofluorobenzene	100	%	1	1	EPA 8260B	3/6/2008	MES
Surrogate Toluene-d8	101	%	1	1	EPA 8260B	3/6/2008	MES

NTS Sample: 244239
Description: B-8 (W)
Sample Date: 2/28/2008 9:10:00 AM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 84629
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200705844/Alex Exhaust
Sampled By: Client
Report Date: 3/11/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	0.2	mg/L	0.1	1	WI(95) DRO	3/4/2008	MES
GRO	<0.1	mg/L	0.1	1	WI(95) GRO	3/1/2008	MES
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2,4-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,3,5-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Acetone	<20	µg/L	20	1	EPA 8260B	3/6/2008	MES
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Benzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromoform	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Bromomethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Chloroethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES

NTS Sample: 244239
Description: B-8 (W)
Sample Date: 2/28/2008 9:10:00 AM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 84629
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200705844/Alex Exhaust
Sampled By: Client
Report Date: 3/11/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Chloroform	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Chloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Dibromomethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Ethyl Benzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Isopropylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	3/6/2008	MES
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	3/6/2008	MES
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Naphthalene	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
n-Propylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
p-Isopropyltoluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
sec-Butylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Styrene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	3/6/2008	MES
Toluene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Xylene, M&P	<2	µg/L	2	1	EPA 8260B	3/6/2008	MES
Xylene, O	<1	µg/L	1	1	EPA 8260B	3/6/2008	MES
Surrogate 1,2-Dichloroethane-d4	100	%	1	1	EPA 8260B	3/6/2008	MES
Surrogate Bromofluorobenzene	98.1	%	1	1	EPA 8260B	3/6/2008	MES
Surrogate Toluene-d8	100	%	1	1	EPA 8260B	3/6/2008	MES

NTS Sample: 244240
Description: B-7 (15)
Sample Date: 2/27/2008 1:05:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 84629
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200705844/Alex Exhaust
Sampled By: Client
Report Date: 3/11/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	3/6/2008	MES
Benzene	<120	µg/Kg	120	1	EPA 8021	3/4/2008	MES
Ethyl Benzene	<81	µg/Kg	81	1	EPA 8021	3/4/2008	MES
GRO	<5.8	mg/Kg	5.8	1	WI(95) GRO	3/4/2008	MES
Toluene	<120	µg/Kg	120	1	EPA 8021	3/4/2008	MES
Xylene, Total	<230	µg/Kg	230	1	EPA 8021	3/4/2008	MES
Solids, Total (TS)	87.2	%	1	1	SM 2540G, Mod	3/3/2008	TEM

NTS Sample: 244241
Description: Soil Trip Blank
Sample Date: 2/27/2008 1:10:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 84629
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200705844/Alex Exhaust
Sampled By: Client
Report Date: 3/11/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Benzene	<100	µg/Kg	100	1	EPA 8021	3/4/2008	MES
Ethyl Benzene	<70	µg/Kg	70	1	EPA 8021	3/4/2008	MES
GRO	<5	mg/Kg	5	1	WI(95) GRO	3/4/2008	MES
Toluene	<100	µg/Kg	100	1	EPA 8021	3/4/2008	MES
Xylene, Total	<200	µg/Kg	200	1	EPA 8021	3/4/2008	MES

NTS Sample: 244242
Description: B-8 (15)
Sample Date: 2/27/2008 2:25:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 84629
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200705844/Alex Exhaust
Sampled By: Client
Report Date: 3/11/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	3/6/2008	MES
Benzene	<110	µg/Kg	110	1	EPA 8021	3/4/2008	MES
Ethyl Benzene	<79	µg/Kg	79	1	EPA 8021	3/4/2008	MES
GRO	<5.6	mg/Kg	5.6	1	WI(95) GRO	3/4/2008	MES
Toluene	<110	µg/Kg	110	1	EPA 8021	3/4/2008	MES
Xylene, Total	<220	µg/Kg	220	1	EPA 8021	3/4/2008	MES
Solids, Total (TS)	89.5	%	1	1	SM 2540G, Mod	3/3/2008	TEM

Control Limits

Sample I.D.: 243986

Date: 03/06/08
QC Pack: 9-030608-1

LCS LIMITS	MS LIMITS	RPD Limits		Units	DF	Lab Blank Conc ug/L	LCS % Rec	Matrix Spike %	MSD (%)	RPD %
70-130	70-130	0-30	Allyl Chloride	ug/L	1.0	< 1.0	92	100	103	3.5
70-130	70-130	0-30	Bromobenzene	ug/L	1.0	< 1.0	105	112	113	1.1
70-130	70-130	0-30	Bromochloromethane	ug/L	1.0	< 1.0	104	112	112	0.4
70-130	70-130	0-30	Bromodichloromethane	ug/L	1.0	< 1.0	101	108	109	0.6
50-150	50-150	0-30	Bromoform	ug/L	1.0	< 1.0	102	105	109	3.9
70-130	70-130	0-30	Bromomethane	ug/L	1.0	< 2.0	80	88	93	4.7
70-130	70-130	0-30	Carbon Tetrachloride	ug/L	1.0	< 1.0	102	118	117	1.4
70-130	70-130	0-30	Chlorobenzene	ug/L	1.0	< 1.0	102	114	112	2.0
50-150	50-150	0-30	Chloroethane	ug/L	1.0	< 1.0	90	102	108	5.6
80-120	70-130	0-30	Chloroform	ug/L	1.0	< 1.0	99	108	110	1.2
50-150	50-150	0-30	Chloromethane	ug/L	1.0	< 1.0	91	95	108	12.5
70-130	70-130	0-30	2-Chlorotoluene	ug/L	1.0	< 1.0	106	115	116	1.2
70-130	70-130	0-30	4-Chlorotoluene	ug/L	1.0	< 1.0	104	113	114	0.7
70-130	70-130	0-30	Dibromochloromethane	ug/L	1.0	< 1.0	101	106	105	0.7
70-130	70-130	0-30	1,2-Dibromo-3-chloropropane	ug/L	1.0	< 2.0	97	103	103	0.3
70-130	70-130	0-30	1,2-Dibromoethane	ug/L	1.0	< 1.0	102	106	106	0.1
70-130	70-130	0-30	Dibromomethane	ug/l	1.0	< 1.0	102	109	109	0.0
70-130	70-130	0-30	1,2-Dichlorobenzene	ug/L	1.0	< 1.0	104	111	112	0.8
70-130	70-130	0-30	1,3-Dichlorobenzene	ug/L	1.0	< 1.0	103	113	113	0.1
70-130	70-130	0-30	1,4-Dichlorobenzene	ug/L	1.0	< 1.0	102	114	113	0.4
50-150	50-150	0-30	Dichlorodifluoromethane	ug/L	1.0	< 2.0	78	93	81	13.6
70-130	70-130	0-30	1,1-Dichloroethane	ug/L	1.0	< 1.0	96	106	106	0.6
70-130	70-130	0-30	1,2-Dichloroethane	ug/L	1.0	< 2.0	95	98	104	5.7
80-120	70-130	0-30	1,1-Dichloroethylene	ug/L	1.0	< 1.0	97	108	113	5.0
70-130	70-130	0-30	Cis-1,2-Dichloroethylene	ug/L	1.0	< 1.0	100	110	112	1.8
70-130	70-130	0-30	Trans-1,2-Dichloroethylene	ug/L	1.0	< 1.0	97	109	111	1.8
50-150	50-150	0-30	Dichlorofluoromethane	ug/L	1.0	< 1.0	96	110	114	4.1
80-120	70-130	0-30	1,2-Dichloropropane	ug/L	1.0	< 1.0	96	104	104	0.4
70-130	70-130	0-30	1,3-Dichloropropane	ug/L	1.0	< 1.0	102	107	107	0.2
70-130	70-130	0-30	2,2-Dichloropropane	ug/L	1.0	< 1.0	106	120	121	0.1
70-130	70-130	0-30	1,1-Dichloropropene	ug/L	1.0	< 1.0	98	113	113	0.1
70-130	70-130	0-30	Cis-1,3-Dichloropropene	ug/L	1.0	< 1.0	98	102	103	0.6
70-130	70-130	0-30	Trans-1,3-Dichloropropene	ug/L	1.0	< 1.0	101	107	107	0.0
70-130	70-130	0-30	Hexachlorobutadiene	ug/L	1.0	< 2.0	106	116	117	0.4
70-130	70-130	0-30	Methylene Chloride	ug/L	1.0	< 1.0	98	108	106	1.3
70-130	70-130	0-30	1,1,1,2-Tetrachloroethane	ug/L	1.0	< 1.0	103	112	111	1.1
70-130	70-130	0-30	1,1,2,2-Tetrachloroethane	ug/L	1.0	< 1.0	93	98	100	1.5
70-130	70-130	0-30	Tetrachloroethylene	ug/L	1.0	< 1.0	88	101	99	2.4
70-130	70-130	0-30	1,2,3-Trichlorobenzene	ug/L	1.0	< 2.0	97	104	102	2.2
70-130	70-130	0-30	1,2,4-Trichlorobenzene	ug/L	1.0	< 2.0	99	106	104	1.7

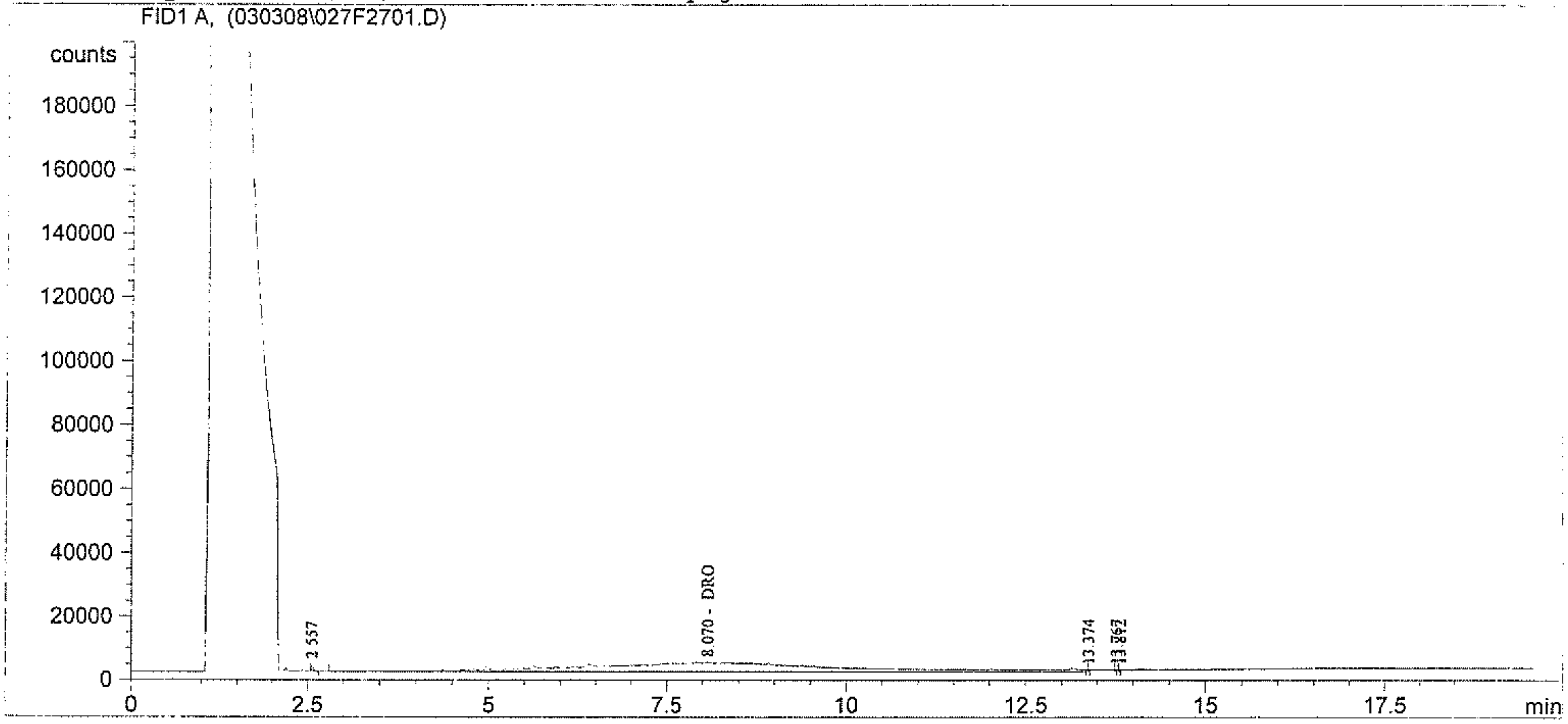
Date: 03/06/08
QC Pack: 9-030608-1

Control Limits

Sample I.D.: 243986

LCS LIMITS	MS LIMITS	RPD Limits		Units	DF	Lab Blank Conc ug/L		LCS % Rec	Matrix Spike %	MSD (%)	RPD %
70-130	70-130	0-30	1,1,1-Trichloroethane	ug/L	1.0	<	1.0	102	114	114	0.3
70-130	70-130	0-30	1,1,2-Trichloroethane	ug/L	1.0	<	1.0	100	107	108	1.7
70-130	70-130	0-30	Trichloroethylene	ug/L	1.0	<	1.0	98	111	109	1.4
50-150	50-150	0-30	Trichlorofluoromethane	ug/L	1.0	<	2.0	107	127	129	1.9
70-130	70-130	0-30	1,2,3-Trichloropropane	ug/L	1.0	<	1.0	89	93	93	0.3
70-130	70-130	0-30	1,1,2-Trichlorotrifluoroethane	ug/L	1.0	<	1.0	97	111	115	3.5
80-120	50-150	0-30	Vinyl Chloride	ug/L	1.0	<	1.0	89	99	104	4.6
70-130	70-130	0-30	Acetone	ug/L	1.0	<	20	97	92	103	10.3
70-130	70-130	0-30	Benzene	ug/L	1.0	<	1.0	97	109	110	1.1
70-130	70-130	0-30	n-Butylbenzene	ug/L	1.0	<	1.0	104	114	114	0.1
70-130	70-130	0-30	sec-Butylbenzene	ug/L	1.0	<	1.0	105	114	114	0.7
70-130	70-130	0-30	tert-Butylbenzene	ug/L	1.0	<	1.0	92	98	99	0.4
70-130	70-130	0-30	Isopropylbenzene (Cumene)	ug/L	1.0	<	1.0	95	103	102	0.8
80-120	70-130	0-30	Ethyl Benzene	ug/L	1.0	<	1.0	104	117	115	1.6
70-130	70-130	0-30	Ethyl Ether	ug/L	1.0	<	2.0	99	100	108	7.9
70-130	70-130	0-30	p-Isopropyltoluene	ug/L	1.0	<	1.0	107	113	114	1.0
70-130	70-130	0-30	Methyl Ethyl Ketone	ug/L	1.0	<	5.0	91	99	102	2.9
70-130	70-130	0-30	Methyl Isobutyl Ketone	ug/L	1.0	<	5.0	97	100	100	0.7
70-130	70-130	0-30	Methyl tert-butyl ether	ug/L	1.0	<	1.0	96	100	103	2.2
70-130	70-130	0-30	n-Propylbenzene	ug/L	1.0	<	1.0	100	107	108	0.7
70-130	70-130	0-30	Naphthalene	ug/L	1.0	<	2.0	95	101	102	0.8
70-130	70-130	0-30	Styrene	ug/L	1.0	<	1.0	100	110	107	2.6
70-130	70-130	0-30	Tetrahydrofuran	ug/L	1.0	<	5.0	88	91	94	1.8
80-120	70-130	0-30	Toluene	ug/L	1.0	<	1.0	101	113	112	0.9
70-130	70-130	0-30	1,2,4-Trimethylbenzene	ug/L	1.0	<	1.0	103	109	110	0.7
70-130	70-130	0-30	1,3,5-Trimethylbenzene	ug/L	1.0	<	1.0	103	109	109	0.4
70-130	70-130	0-30	m-Xylene & p-Xylene	ug/L	1.0	<	2.0	104	115	112	2.0
70-130	70-130	0-30	o-Xylene	ug/L	1.0	<	1.0	107	115	114	0.6

```
=====================================================================
Injection Date  : 3/4/2008 1:53:13 AM            Seq. Line :  27
Sample Name     : 244239                          Location : Vial 27
Acq. Operator   : jc                                   Inj :   1
Acq. Instrument : GC-5                          Inj Volume : 1 µl
Sequence File   : C:\HPCHEM\5\SEQUENCE\030308.S
Acq. Method     : C:\HPCHEM\5\METHODS\!TEST3.M
Last changed    : 4/13/2007 12:23:56 PM
Analysis Method : C:\HPCHEM\5\METHODS\E020108L.M
Last changed    : 2/14/2008 8:13:14 AM by jc
```



```
=====================================================================
                     External Standard Report
=====================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/1/2008 4:48:16 PM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime  Type    Area     Amt/Area    Amount   Grp   Name
 [min]         counts*s              [ppm]
-------|------|----------|----------|----------|--|------------------
  8.070 HHA+   8.13442e5  1.80838e-7 1.47101e-1    DRO

Totals :                             1.47101e-1

 Results obtained with enhanced integrator!
=====================================================================
                          *** End of Report ***
```

RECEIVED MAR 13 2008

Leak 15,656

Chain of Custody Record

№ 4353 84629 STS | AECOM

Contact Person Tim Grape
Phone No. 763-315-6318 Office 6
Project No. 200705844 PO No.
Project Name Alex Exhaust

Special Handling Request
☐ Rush
☐ Verbal
☐ Other

Record Number — Through —
Laboratory NTS
Contact Person Renee Stone
Phone No. 218-742-1042
Results Due std.

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation Y	Preservation N	Field Data PID/FID Ambient	Field Data PID/FID Sample	Field Data PH	Field Data Special Cond.	Analysis Request	Comments on Sample (Include Major Contaminants)
B-7(W)	2/27/08	1235	X		7	water	7	0					DRO, GRO, VOC	244235
B-77(W)	2/27/08	1250	X		7	water	7	0					DRO, GRO, VOC	244236
Trip Blank	2/21/08	1200	X		3	water	3	0					VOC, GRO	244237
Field Blank	2/27/08	1405	X		7	water	7	0					DRO, GRO, VOC	244238
B-8(W)	2/28/08	910	X		7	water	7	0					DRO, GRO, VOC	244239
B-7(15')	2/27/08	1305	X		3	soil	1	2					BTEX/GRO, DRO	244240
Soil Trip Blank	2/27/08	1310	X		1	soil	1						BTEX/GRO	244241
B-8(15')	2/27/08	1425	X		3	soil	1						BTEX/GRO, DRO	244242

Collected by: Ryan Doherty Date above Time above
Received by: Date 2/28/08 Time 1405
Received by: Date 2/28/08 Time 1403
Received by: Date Time
Received for lab by: A Koski Date 2-29-08 Time 8:30

Delivery by: Ryan Doherty Date 2/28/08 Time
Relinquished by: Ryan Doherty Date 2/28/08 Time 1405
Relinquished by: Date 2-28-08 Time 1356
Relinquished by: Date Time
Relinquished by: Date Time

Laboratory Comments Only: Seals Intact Upon Receipt? ☐ Yes ☐ No ☐ N/A 4.0 °C on ice

Final Disposition:

Comments (Weather Conditions, Precautions, Hazards):

Distribution: Original and Canary - Laboratory Pink - STS Project File Instructions to Laboratory: Forward completed original to STS with analytical results.

Northeast Technical Services
315 Chestnut Street
PO Box 1142
Virginia, MN 55792
Phone: 218-741-4290
Fax: 218-742-1010

MDH Certification: 027-137-157

Laboratory Results

NTS COC: 92138
Received: 12/17/2008
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200805033/Alex Exhaust
Sampled By: Client
Report Date: 12/22/2008
Rec'd Temperature: 2 °C

Approved by:
Renee Stone

STS Consultants
Attn: Tim Grape
10900 73rd Ave. N.
Suite 150
Maple Grove, MN 55369

RECEIVED DEC 2 9 2008

NTS Sample: 330479
Description: B-9 (W)
Sample Date: 12/12/2008 12:00:00 PM

Matrix: Aqueous
Sample Type: Grab

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<0.1	mg/L	0.1	1	WI(95) DRO	12/18/2008	CSD
GRO	<0.1	mg/L	0.1	1	WI(95) GRO	12/18/2008	CSD
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2,4-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES

NTS Sample: 330479
Description: B-9 (W)
Sample Date: 12/12/2008 12:00:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 92138
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200805033/Alex Exhaust
Sampled By: Client
Report Date: 12/22/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
1,3,5-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Acetone	<20	µg/L	20	1	EPA 8260B	12/18/2008	MES
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Benzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromoform	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromomethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Chloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Chloroform	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Chloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Dibromomethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Ethyl Benzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Isopropylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	12/18/2008	MES
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	12/18/2008	MES
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Naphthalene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
n-Propylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES

NTS Sample: 330479
Description: B-9 (W)
Sample Date: 12/12/2008 12:00:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 92138
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200805033/Alex Exhaust
Sampled By: Client
Report Date: 12/22/2008

Analyte	**Result**	**Units**	**RL**	**DIL**	**Method**	**Analysis Dat**	**Analyst**
p-Isopropyltoluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
sec-Butylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Styrene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	12/18/2008	MES
Toluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Xylene, M&P	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Xylene, O	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Surrogate 1,2-Dichloroethane-d4	102	%	1	1	EPA 8260B	12/18/2008	MES
Surrogate Bromofluorobenzene	102	%	1	1	EPA 8260B	12/18/2008	MES
Surrogate Toluene-d8	93	%	1	1	EPA 8260B	12/18/2008	MES

NTS Sample: 330480
Description: B-99 (W)
Sample Date: 12/12/2008 12:15:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 92138
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200805033/Alex Exhaust
Sampled By: Client
Report Date: 12/22/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<0.1	mg/L	0.1	1	WI(95) DRO	12/18/2008	CSD
GRO	<0.1	mg/L	0.1	1	WI(95) GRO	12/18/2008	CSD
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2,4-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,3,5-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Acetone	<20	µg/L	20	1	EPA 8260B	12/18/2008	MES
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Benzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromoform	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromomethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Chloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES

NTS Sample: 330480
Description: B-99 (W)
Sample Date: 12/12/2008 12:15:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 92138
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200805033/Alex Exhaust
Sampled By: Client
Report Date: 12/22/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Chloroform	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Chloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Dibromomethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Ethyl Benzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Isopropylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	12/18/2008	MES
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	12/18/2008	MES
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Naphthalene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
n-Propylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
p-Isopropyltoluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
sec-Butylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Styrene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	12/18/2008	MES
Toluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Xylene, M&P	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Xylene, O	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Surrogate 1,2-Dichloroethane-d4	102	%	1	1	EPA 8260B	12/18/2008	MES
Surrogate Bromofluorobenzene	103	%	1	1	EPA 8260B	12/18/2008	MES
Surrogate Toluene-d8	94.4	%	1	1	EPA 8260B	12/18/2008	MES

NTS Sample: 330481
Description: Field Blank (W)
Sample Date: 12/12/2008 2:45:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 92138
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200805033/Alex Exhaust
Sampled By: Client
Report Date: 12/22/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<0.1	mg/L	0.1	1	WI(95) DRO	12/18/2008	CSD
GRO	<0.1	mg/L	0.1	1	WI(95) GRO	12/18/2008	CSD
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2,4-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,3,5-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Acetone	<20	µg/L	20	1	EPA 8260B	12/18/2008	MES
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Benzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromoform	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromomethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Chloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES

NTS Sample: 330481 **Matrix: Aqueous** **NTS COC: 92138**
Description: Field Blank (W) **Sample Type: Grab** **Client: 0605 e-mail - STS Consultants**
Sample Date: 12/12/2008 2:45:00 PM **Project: 4930 - 200805033/Alex Exhaust**
Sampled By: Client
Report Date: 12/22/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Chloroform	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Chloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Dibromomethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Ethyl Benzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Isopropylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	12/18/2008	MES
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	12/18/2008	MES
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Naphthalene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
n-Propylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
p-Isopropyltoluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
sec-Butylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Styrene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	12/18/2008	MES
Toluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Xylene, M&P	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Xylene, O	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Surrogate 1,2-Dichloroethane-d4	100	%	1	1	EPA 8260B	12/18/2008	MES
Surrogate Bromofluorobenzene	104	%	1	1	EPA 8260B	12/18/2008	MES
Surrogate Toluene-d8	94.8	%	1	1	EPA 8260B	12/18/2008	MES

NTS Sample: 330482
Description: Trip Blank (W)
Sample Date: 12/12/2008

Matrix: Aqueous
Sample Type: Grab

NTS COC: 92138
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200805033/Alex Exhaust
Sampled By: Client
Report Date: 12/22/2008

Analyte	**Result**	**Units**	**RL**	**DIL**	**Method**	**Analysis Dat**	**Analyst**
GRO	<0.1	mg/L	0.1	1	WI(95) GRO	12/18/2008	CSD
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2,4-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,3,5-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Acetone	<20	µg/L	20	1	EPA 8260B	12/18/2008	MES
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Benzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromoform	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Bromomethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Chloroethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Chloroform	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES

NTS Sample: 330482
Description: Trip Blank (W)
Sample Date: 12/12/2008

Matrix: Aqueous
Sample Type: Grab

NTS COC: 92138
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200805033/Alex Exhaust
Sampled By: Client
Report Date: 12/22/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Chloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Dibromomethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Ethyl Benzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Isopropylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	12/18/2008	MES
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	12/18/2008	MES
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Naphthalene	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
n-Propylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
p-Isopropyltoluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
sec-Butylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Styrene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	12/18/2008	MES
Toluene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Xylene, M&P	<2	µg/L	2	1	EPA 8260B	12/18/2008	MES
Xylene, O	<1	µg/L	1	1	EPA 8260B	12/18/2008	MES
Surrogate 1,2-Dichloroethane-d4	101	%	1	1	EPA 8260B	12/18/2008	MES
Surrogate Bromofluorobenzene	104	%	1	1	EPA 8260B	12/18/2008	MES
Surrogate Toluene-d8	95.1	%	1	1	EPA 8260B	12/18/2008	MES

NTS Sample: 330483
Description: B-9 (7)
Sample Date: 12/12/2008 12:45:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 92138
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200805033/Alex Exhaust
Sampled By: Client
Report Date: 12/22/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	12/18/2008	CSD
Benzene	<120	µg/Kg	120	1	EPA 8021	12/18/2008	CSD
Ethyl Benzene	<82	µg/Kg	82	1	EPA 8021	12/18/2008	CSD
GRO	<5.8	mg/Kg	5.8	1	WI(95) GRO	12/18/2008	CSD
Toluene	<120	µg/Kg	120	1	EPA 8021	12/18/2008	CSD
Xylene, Total	<230	µg/Kg	230	1	EPA 8021	12/18/2008	CSD
Solids, Total (TS)	85.2	%	1	1	SM 2540G, Mod	12/18/2008	CSD

NTS Sample: 330484
Description: B-9 (15)
Sample Date: 12/12/2008 1:30:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 92138
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200805033/Alex Exhaust
Sampled By: Client
Report Date: 12/22/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	12/18/2008	CSD
Benzene	<110	µg/Kg	110	1	EPA 8021	12/18/2008	CSD
Ethyl Benzene	<77	µg/Kg	77	1	EPA 8021	12/18/2008	CSD
GRO	<5.5	mg/Kg	5.5	1	WI(95) GRO	12/18/2008	CSD
Toluene	<110	µg/Kg	110	1	EPA 8021	12/18/2008	CSD
Xylene, Total	<220	µg/Kg	220	1	EPA 8021	12/18/2008	CSD
Solids, Total (TS)	90.5	%	1	1	SM 2540G, Mod	12/18/2008	CSD

NTS Sample: 330485
Description: B-9 (35)
Sample Date: 12/12/2008 2:30:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 92138
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200805033/Alex Exhaust
Sampled By: Client
Report Date: 12/22/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	12/18/2008	CSD
Benzene	<110	µg/Kg	110	1	EPA 8021	12/18/2008	CSD
Ethyl Benzene	<80	µg/Kg	80	1	EPA 8021	12/18/2008	CSD
GRO	<5.7	mg/Kg	5.7	1	WI(95) GRO	12/18/2008	CSD
Toluene	<110	µg/Kg	110	1	EPA 8021	12/18/2008	CSD
Xylene, Total	<230	µg/Kg	230	1	EPA 8021	12/18/2008	CSD
Solids, Total (TS)	89.1	%	1	1	SM 2540G, Mod	12/18/2008	CSD

NTS Sample: 330486
Description: MeOH Trip Blank
Sample Date: 12/12/2008

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 92138
Client: 0605 e-mail - STS Consultants
Project: 4930 - 200805033/Alex Exhaust
Sampled By: Client
Report Date: 12/22/2008

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Benzene	<100	µg/Kg	100	1	EPA 8021	12/18/2008	CSD
Ethyl Benzene	<70	µg/Kg	70	1	EPA 8021	12/18/2008	CSD
GRO	<5	mg/Kg	5	1	WI(95) GRO	12/18/2008	CSD
Toluene	<100	µg/Kg	100	1	EPA 8021	12/18/2008	CSD
Xylene, Total	<200	µg/Kg	200	1	EPA 8021	12/18/2008	CSD

92138

STS | AECOM

Chain of Custody Record

№ 4295

Record Number ___ Through ___

Contact Person Tim Grape
Phone No. 763-315-6318 Office Mpls.
Project No. 200805033 PO No.
Project Name Alex Exhaust

Special Handling Request
☐ Rush
☐ Verbal
☐ Other

Laboratory NTS
Contact Person Renee Stone
Phone No. 218-742-1042
Results Due Standard

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation Y	Preservation N	Field Data PID/FID Ambient	Field Data PID/FID Sample	Field Data PH	Field Data Special Cond.	Analysis Request	Comments on Sample (Include Major Contaminants)
B-9(W)	12/12/08	1200	X		7	Water	7	0					DRO, GRO, VOC	330479
B-99(W)	↓	1215	↓		↓	↓	↓	↓					↓	330480
Field Blank (W)	↓	1445	↓		↓	↓	↓	↓					↓	330481
Trip Blank (W)	↓	–	↓		6	↓	6	0					GRO, VOC	330482
B-9(7')	12/12/08	1245	X		2	Soil	1	1					GRO, BTEX, DRO	330483
B-9 (15')	↓	1330	↓		↓	↓	↓	↓					↓	330484
B-9 (35')	↓	1430	↓		↓	↓	↓	↓					↓	330485
Trip Blank Soil	↓	–	↓		1	↓	↓	0					GRO, BTEX	330486

Collected by: Ryan Doherty	Date 12/12/08	Time above	Delivery by: NTS	Date	Time
Received by:	Date 12-15-08	Time ~~17~~ 1545	Relinquished by: Ryan Doherty	Date 12/15/08	Time
Received by: B. Mathew	Date 12/17/08	Time 9:55	Relinquished by:	Date 12/17/08	Time 0738
Received by:	Date	Time	Relinquished by: B. Mathew	Date 12/17/08	Time 14:30
Received for lab by: Koski	Date 12-17-08	Time 14.30	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? ☐ Yes ☐ No ☐ N/A 2.0°C

Final Disposition:

Comments (Weather Conditions, Precautions, Hazards):

Distribution: Original and Canary - Laboratory Pink - STS Project File Instructions to Laboratory: Forward completed original to STS with analytical results.

Northeast Technical Services
315 Chestnut Street
PO Box 1142
Virginia, MN 55792
Phone: 218-741-4290
Fax: 218-742-1010

MDH Certification: 027-137-157

Laboratory Results

NTS COC: 75269
Received: 2/12/2007
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007
Rec'd Temperature: 3.2 °C

Approved by:
Renee Stone

STS Consultants
Attn: Tim Grape
10900 73rd Ave. N.
Suite 150
Maple Grove, MN 55369

NTS Sample: 143516
Description: B-2 (18)
Sample Date: 2/7/2007 1:20:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/15/2007	CSD
Benzene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<78	µg/Kg	78	1	EPA 8021	2/16/2007	CSD
GRO	<5.5	mg/Kg	5.5	1	WI(95) GRO	2/16/2007	CSD
Toluene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<220	µg/Kg	220	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	89.5	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: 143517
Description: B-3 (5)
Sample Date: 2/7/2007 11:40:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/15/2007	CSD
Benzene	<120	µg/Kg	120	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<81	µg/Kg	81	1	EPA 8021	2/16/2007	CSD
GRO	<5.8	mg/Kg	5.8	1	WI(95) GRO	2/16/2007	CSD
Toluene	<120	µg/Kg	120	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<230	µg/Kg	230	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	87.7	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: **143518**
Description: **B-3 (16)**
Sample Date: **2/7/2007 11:45:00 AM**

Matrix: **Non-Aqueous**
Sample Type: **Grab**

NTS COC: **75269**
Client: **0605 - STS Consultants**
Project: **4930 - 200600839/Alex Exhaust**
Sampled By: **Client**
Report Date: **2/21/2007**

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/15/2007	CSD
Benzene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<78	µg/Kg	78	1	EPA 8021	2/16/2007	CSD
GRO	<5.5	mg/Kg	5.5	1	WI(95) GRO	2/16/2007	CSD
Toluene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<220	µg/Kg	220	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	90.9	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: **143519**
Description: **B-4 (13)**
Sample Date: **2/7/2007 10:10:00 AM**

Matrix: **Non-Aqueous**
Sample Type: **Grab**

NTS COC: **75269**
Client: **0605 - STS Consultants**
Project: **4930 - 200600839/Alex Exhaust**
Sampled By: **Client**
Report Date: **2/21/2007**

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/15/2007	CSD
Benzene	<120	µg/Kg	120	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	1400	µg/Kg	81	1	EPA 8021	2/16/2007	CSD
GRO	71	mg/Kg	5.8	1	WI(95) GRO	2/16/2007	CSD
Toluene	140	µg/Kg	120	1	EPA 8021	2/16/2007	CSD
Xylene, Total	1500	µg/Kg	230	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	87.7	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: 143520
Description: B-4 (22)
Sample Date: 2/7/2007 10:15:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/15/2007	CSD
Benzene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<78	µg/Kg	78	1	EPA 8021	2/16/2007	CSD
GRO	<5.6	mg/Kg	5.6	1	WI(95) GRO	2/16/2007	CSD
Toluene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<220	µg/Kg	220	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	89.6	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: 143521
Description: B-5 (6)
Sample Date: 2/7/2007 4:05:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
DRO	310	mg/Kg	100	10	WI(95) DRO	2/16/2007	CSD	q
Benzene	<110	µg/Kg	240	2	EPA 8021	2/16/2007	CSD	
Ethyl Benzene	610	µg/Kg	170	2	EPA 8021	2/16/2007	CSD	
GRO	130	mg/Kg	12	2	WI(95) GRO	2/16/2007	CSD	
Toluene	<110	µg/Kg	240	2	EPA 8021	2/16/2007	CSD	
Xylene, Total	<220	µg/Kg	480	2	EPA 8021	2/16/2007	CSD	
Solids, Total (TS)	82.8	%		1	SM 2540G	2/14/2007	TEM	

Qualifier	Description	Note
q	Qualified Data.	Heavy hydrocarbons outside the DRO window.

NTS Sample: 143522
Description: B-5 (25)
Sample Date: 2/7/2007 4:10:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/16/2007	CSD
Benzene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<80	µg/Kg	80	1	EPA 8021	2/16/2007	CSD
GRO	<5.7	mg/Kg	5.7	1	WI(95) GRO	2/16/2007	CSD
Toluene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<230	µg/Kg	230	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	87.8	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: 143523
Description: B-6 (23)
Sample Date: 2/7/2007 2:20:00 PM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/16/2007	CSD
Benzene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<79	µg/Kg	79	1	EPA 8021	2/16/2007	CSD
GRO	<5.6	mg/Kg	5.6	1	WI(95) GRO	2/16/2007	CSD
Toluene	<110	µg/Kg	110	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<230	µg/Kg	230	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	89.2	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: **143524**
Description: **MeOH Blank**
Sample Date: **2/7/2007 11:05:00 AM**

Matrix: **Non-Aqueous**
Sample Type: **Grab**

NTS COC: **75269**
Client: **0605 - STS Consultants**
Project: **4930 - 200600839/Alex Exhaust**
Sampled By: **Client**
Report Date: **2/21/2007**

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Benzene	<100	µg/Kg	100	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<70	µg/Kg	70	1	EPA 8021	2/16/2007	CSD
GRO	<5	mg/Kg	5	1	WI(95) GRO	2/16/2007	CSD
Toluene	<100	µg/Kg	100	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<200	µg/Kg	200	1	EPA 8021	2/16/2007	CSD

NTS Sample: 143525
Description: B-1 (6)
Sample Date: 2/8/2007 10:00:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	170	mg/Kg	50	5	WI(95) DRO	2/16/2007	CSD
Benzene	<2400	µg/Kg	2400	20	EPA 8021	2/16/2007	CSD
Ethyl Benzene	10000	µg/Kg	1700	20	EPA 8021	2/16/2007	CSD
GRO	1100	mg/Kg	120	20	WI(95) GRO	2/16/2007	CSD
Toluene	2700	µg/Kg	2400	20	EPA 8021	2/16/2007	CSD
Xylene, Total	28000	µg/Kg	4800	20	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	89.5	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: 143526
Description: B-1 (20)
Sample Date: 2/8/2007 10:05:00 AM

Matrix: Non-Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<10	mg/Kg	10	1	WI(95) DRO	2/16/2007	CSD
Benzene	<120	µg/Kg	120	1	EPA 8021	2/16/2007	CSD
Ethyl Benzene	<80	µg/Kg	80	1	EPA 8021	2/16/2007	CSD
GRO	<57	mg/Kg	57	1	WI(95) GRO	2/16/2007	CSD
Toluene	<120	µg/Kg	120	1	EPA 8021	2/16/2007	CSD
Xylene, Total	<230	µg/Kg	230	1	EPA 8021	2/16/2007	CSD
Solids, Total (TS)	88.7	%		1	SM 2540G	2/14/2007	TEM

NTS Sample: 143527
Description: TW-1
Sample Date: 2/8/2007 10:45:00 AM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: I - Improper sample preservation noted, analysis performed. VOC pH=7

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
DRO	2.8	mg/L	0.1	1	WI(95) DRO	2/14/2007	CSD	i
GRO	11	mg/L	2	20	WI(95) GRO	2/14/2007	MES	i
1,1,1,2-Tetrachloroethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,1,1-Trichloroethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,1,2,2-Tetrachloroethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichloroethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichlorotrifluoroethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethylene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,1-Dichloropropene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichlorobenzene	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichloropropane	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
1,2,4-Trichlorobenzene	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
1,2,4-Trimethylbenzene	1200	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,2-Dibromo-3-chloropropane	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
1,2-Dibromoethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,2-Dichlorobenzene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,2-Dichloroethane	370	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
1,2-Dichloropropane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,3,5-Trimethylbenzene	380	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,3-Dichlorobenzene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,3-Dichloropropane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
1,4-Dichlorobenzene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
2,2-Dichloropropane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
2-Chlorotoluene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
4-Chlorotoluene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Acetone	<400	µg/L	400	20	EPA 8260B	2/13/2007	KJD	
Allyl Chloride	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Benzene	150	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Bromobenzene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Bromochloromethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Bromodichloromethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Bromoform	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Bromomethane	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
Carbon Tetrachloride	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Chlorobenzene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Chloroethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 7.,pH=7
n	Matrix Spike recovery not within control limits.	

NTS Sample: **143527**
Description: **TW-1**
Sample Date: **2/8/2007** **10:45:00 AM**

Matrix: **Aqueous**
Sample Type: **Grab**

NTS COC: **75269**
Client: **0605 - STS Consultants**
Project: **4930 - 200600839/Alex Exhaust**
Sampled By: **Client**
Report Date: **2/21/2007**

Notes: I - Improper sample preservation noted, analysis performed. VOC pH=7

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
Chloroform	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Chloromethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Cis-1,2-Dichloroethylene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Cis-1,3-Dichloropropene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Dibromochloromethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Dibromomethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Dichlorodifluoromethane	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
Dichlorofluoromethane	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Ethyl Benzene	530	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Ethyl Ether	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
Hexachlorobutadiene	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
Isopropylbenzene	61	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Methyl Ethyl Ketone	<200	µg/L	200	20	EPA 8260B	2/13/2007	KJD	
Methyl Isobutyl Ketone	<200	µg/L	200	20	EPA 8260B	2/13/2007	KJD	
Methyl Tert-butyl Ether	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Methylene Chloride	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Naphthalene	210	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
n-Butylbenzene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
n-Propylbenzene	180	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
p-Isopropyltoluene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
sec-Butylbenzene	23	µg/L	20	20	EPA 8260B	2/13/2007	KJD	n
Styrene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
tert-Butylbenzene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Tetrachloroethylene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Tetrahydrofuran	<100	µg/L	100	20	EPA 8260B	2/13/2007	KJD	
Toluene	87	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Trans-1,2-Dichloroethylene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Trans-1,3-Dichloropropene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Trichloroethylene	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Trichlorofluoromethane	<40	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
Vinyl Chloride	<20	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Xylene, M&P	1800	µg/L	40	20	EPA 8260B	2/13/2007	KJD	
Xylene, O	420	µg/L	20	20	EPA 8260B	2/13/2007	KJD	
Surrogate 1,2-Dichloroethane-d4	99	%	20	20	EPA 8260B	2/13/2007	KJD	
Surrogate Bromofluorobenzene	103	%	20	20	EPA 8260B	2/13/2007	KJD	
Surrogate Toluene-d8	97.3	%	20	20	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 7.,pH=7
n	Matrix Spike recovery not within control limits.	

NTS Sample: 143528
Description: TW-2
Sample Date: 2/7/2007 2:30:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: i - Improper sample preservation noted, analysis performed. VOC pH = 7.

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
DRO	1	mg/L	0.1	1	WI(95) DRO	2/15/2007	CSD	i
GRO	3.9	mg/L	0.5	5	WI(95) GRO	2/14/2007	MES	i
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,4-Trimethylbenzene	200	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichlorobenzene	2.3	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3,5-Trimethylbenzene	150	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Acetone	<20	µg/L	20	1	EPA 8260B	2/13/2007	KJD	
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Benzene	38	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromoform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromomethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 7.,pH=7
m	Mercury detected in the field blank is in excess of the method limit.	

NTS Sample: 143528
Description: TW-2
Sample Date: 2/7/2007 2:30:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: i - Improper sample preservation noted, analysis performed. VOC pH = 7.

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
Chloroform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Dibromomethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Ethyl Benzene	700	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Isopropylbenzene	38	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD	
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD	
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Naphthalene	77	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
n-Propylbenzene	83	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
p-Isopropyltoluene	1.9	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
sec-Butylbenzene	4.2	µg/L	1	1	EPA 8260B	2/13/2007	KJD	m
Styrene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	2/13/2007	KJD	
Toluene	18	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Xylene, M&P	360	µg/L	20	10	EPA 8260B	2/13/2007	KJD	
Xylene, O	27	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Surrogate 1,2-Dichloroethane-d4	97.4	%	1	1	EPA 8260B	2/13/2007	KJD	
Surrogate Bromofluorobenzene	104	%	1	1	EPA 8260B	2/13/2007	KJD	
Surrogate Toluene-d8	97.8	%	1	1	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 7.,pH=7
m	Mercury detected in the field blank is in excess of the method limit.	

NTS Sample: 143529
Description: TW-3
Sample Date: 2/7/2007 1:00:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	1.2	mg/L	0.1	1	WI(95) DRO	2/14/2007	CSD
GRO	5.8	mg/L	1	10	WI(95) GRO	2/14/2007	MES
1,1,1,2-Tetrachloroethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,1,1-Trichloroethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,1,2,2-Tetrachloroethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,1,2-Trichloroethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,1,2-Trichlorotrifluoroethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethylene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,1-Dichloropropene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,2,3-Trichlorobenzene	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD
1,2,3-Trichloropropane	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD
1,2,4-Trichlorobenzene	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD
1,2,4-Trimethylbenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,2-Dibromo-3-chloropropane	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD
1,2-Dibromoethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,2-Dichlorobenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,2-Dichloroethane	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD
1,2-Dichloropropane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,3,5-Trimethylbenzene	75	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,3-Dichlorobenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,3-Dichloropropane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
1,4-Dichlorobenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
2,2-Dichloropropane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
2-Chlorotoluene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
4-Chlorotoluene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Acetone	<200	µg/L	200	10	EPA 8260B	2/13/2007	KJD
Allyl Chloride	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Benzene	160	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Bromobenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Bromochloromethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Bromodichloromethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Bromoform	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Bromomethane	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD
Carbon Tetrachloride	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Chlorobenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD
Chloroethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD

Qualifier	Description	Note
n	Matrix Spike recovery not within control limits.	

NTS Sample: 143529
Description: TW-3
Sample Date: 2/7/2007 1:00:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
Chloroform	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Chloromethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Cis-1,2-Dichloroethylene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Cis-1,3-Dichloropropene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Dibromochloromethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Dibromomethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Dichlorodifluoromethane	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD	
Dichlorofluoromethane	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Ethyl Benzene	620	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Ethyl Ether	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD	
Hexachlorobutadiene	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD	
Isopropylbenzene	65	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Methyl Ethyl Ketone	<100	µg/L	100	10	EPA 8260B	2/13/2007	KJD	
Methyl Isobutyl Ketone	<100	µg/L	100	10	EPA 8260B	2/13/2007	KJD	
Methyl Tert-butyl Ether	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Methylene Chloride	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Naphthalene	30	µg/L	20	10	EPA 8260B	2/13/2007	KJD	
n-Butylbenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
n-Propylbenzene	130	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
p-Isopropyltoluene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
sec-Butylbenzene	12	µg/L	10	10	EPA 8260B	2/13/2007	KJD	n
Styrene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
tert-Butylbenzene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Tetrachloroethylene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Tetrahydrofuran	<50	µg/L	50	10	EPA 8260B	2/13/2007	KJD	
Toluene	23	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Trans-1,2-Dichloroethylene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Trans-1,3-Dichloropropene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Trichloroethylene	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Trichlorofluoromethane	<20	µg/L	20	10	EPA 8260B	2/13/2007	KJD	
Vinyl Chloride	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Xylene, M&P	42	µg/L	20	10	EPA 8260B	2/13/2007	KJD	
Xylene, O	<10	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Surrogate 1,2-Dichloroethane-d4	96.6	%	10	10	EPA 8260B	2/13/2007	KJD	
Surrogate Bromofluorobenzene	106	%	10	10	EPA 8260B	2/13/2007	KJD	
Surrogate Toluene-d8	98.9	%	10	10	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
n	Matrix Spike recovery not within control limits.	

NTS Sample: 143530
Description: TW-4
Sample Date: 2/7/2007 11:25:00 AM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: i - Improper sample preservation noted, analysis performed. VOC pH = 6.

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
DRO	0.4	mg/L	0.1	1	WI(95) DRO	2/14/2007	CSD	i
GRO	1.3	mg/L	0.1	1	WI(95) GRO	2/14/2007	MES	i
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,4-Trimethylbenzene	53	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3,5-Trimethylbenzene	21	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Acetone	<20	µg/L	20	1	EPA 8260B	2/13/2007	KJD	
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Benzene	26	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromoform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromomethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 7.,pH=5
n	Matrix Spike recovery not within control limits.	

NTS Sample: 143530
Description: TW-4
Sample Date: 2/7/2007 11:25:00 AM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Notes: i - Improper sample preservation noted, analysis performed. VOC pH = 6.

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
Chloroform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Dibromomethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Ethyl Benzene	160	µg/L	10	10	EPA 8260B	2/13/2007	KJD	
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Isopropylbenzene	9.2	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD	
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD	
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Naphthalene	18	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
n-Propylbenzene	19	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
p-Isopropyltoluene	1.2	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
sec-Butylbenzene	1.8	µg/L	1	1	EPA 8260B	2/13/2007	KJD	n
Styrene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	2/13/2007	KJD	
Toluene	14	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Xylene, M&P	68	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Xylene, O	24	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Surrogate 1,2-Dichloroethane-d4	96.5	%	1	1	EPA 8260B	2/13/2007	KJD	
Surrogate Bromofluorobenzene	103	%	1	1	EPA 8260B	2/13/2007	KJD	
Surrogate Toluene-d8	97.3	%	1	1	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 7.,pH=5
n	Matrix Spike recovery not within control limits.	

NTS Sample: 143531
Description: TW-5
Sample Date: 2/7/2007 12:05:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	0.3	mg/L	0.1	1	WI(95) DRO	2/14/2007	CSD
GRO	<0.1	mg/L	0.1	1	WI(95) GRO	2/14/2007	MES
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2,4-Trimethylbenzene	8	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,3,5-Trimethylbenzene	2.5	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Acetone	<20	µg/L	20	1	EPA 8260B	2/13/2007	KJD
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Benzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromoform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromomethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Chloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD

NTS Sample: 143531
Description: TW-5
Sample Date: 2/7/2007 12:05:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Chloroform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Chloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dibromomethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Ethyl Benzene	1.5	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Isopropylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Naphthalene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
n-Propylbenzene	1.1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
p-Isopropyltoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
sec-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Styrene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	2/13/2007	KJD
Toluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Xylene, M&P	2.3	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Xylene, O	1.9	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Surrogate 1,2-Dichloroethane-d4	92.7	%	1	1	EPA 8260B	2/13/2007	KJD
Surrogate Bromofluorobenzene	106	%	1	1	EPA 8260B	2/13/2007	KJD
Surrogate Toluene-d8	98.2	%	1	1	EPA 8260B	2/13/2007	KJD

NTS Sample: 143532
Description: TW-6
Sample Date: 2/7/2007 3:35:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst	
DRO	<0.1	mg/L	0.1	1	WI(95) DRO	2/14/2007	CSD	i
GRO	<0.1	mg/L	0.1	1	WI(95) GRO	2/14/2007	MES	
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2,4-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3,5-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Acetone	<20	µg/L	20	1	EPA 8260B	2/13/2007	KJD	
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Benzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromoform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Bromomethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD	
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	
Chloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD	

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 3.

NTS Sample: 143532
Description: TW-6
Sample Date: 2/7/2007 3:35:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Chloroform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Chloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dibromomethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Ethyl Benzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Isopropylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Naphthalene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
n-Propylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
p-Isopropyltoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
sec-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Styrene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Tetrahydrofuran	<5	µg/L	5	1	EPA 8260B	2/13/2007	KJD
Toluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Xylene, M&P	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Xylene, O	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Surrogate 1,2-Dichloroethane-d4	101	%	1	1	EPA 8260B	2/13/2007	KJD
Surrogate Bromofluorobenzene	106	%	1	1	EPA 8260B	2/13/2007	KJD
Surrogate Toluene-d8	97.9	%	1	1	EPA 8260B	2/13/2007	KJD

Qualifier	Description	Note
i	Improper sample preservation noted, analysis performed.	DRO sample pH 3.

NTS Sample: 143533
Description: Field Blank
Sample Date: 2/8/2007 4:35:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
DRO	<0.1	mg/L	0.1	1	WI(95) DRO	2/14/2007	CSD
GRO	<0.1	mg/L	0.1	1	WI(95) GRO	2/14/2007	MES
1,1,1,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,1-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,2,2-Tetrachloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,2-Trichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1,2-Trichlorotrifluoroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,1-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2,3-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2,3-Trichloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2,4-Trichlorobenzene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2,4-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2-Dibromo-3-chloropropane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2-Dibromoethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,2-Dichloroethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
1,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,3,5-Trimethylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,3-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,3-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
1,4-Dichlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
2,2-Dichloropropane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
2-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
4-Chlorotoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Acetone	<20	µg/L	20	1	EPA 8260B	2/13/2007	KJD
Allyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Benzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromodichloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromoform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Bromomethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Carbon Tetrachloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Chlorobenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Chloroethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD

NTS Sample: 143533
Description: Field Blank
Sample Date: 2/8/2007 4:35:00 PM

Matrix: Aqueous
Sample Type: Grab

NTS COC: 75269
Client: 0605 - STS Consultants
Project: 4930 - 200600839/Alex Exhaust
Sampled By: Client
Report Date: 2/21/2007

Analyte	Result	Units	RL	DIL	Method	Analysis Dat	Analyst
Chloroform	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Chloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Cis-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Cis-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dibromochloromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dibromomethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Dichlorodifluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Dichlorofluoromethane	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Ethyl Benzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Ethyl Ether	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Hexachlorobutadiene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Isopropylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Methyl Ethyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD
Methyl Isobutyl Ketone	<10	µg/L	10	1	EPA 8260B	2/13/2007	KJD
Methyl Tert-butyl Ether	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Methylene Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Naphthalene	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
n-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
n-Propylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
p-Isopropyltoluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
sec-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Styrene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
tert-Butylbenzene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Tetrachloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Tetrahydrofuran	12	µg/L	5	1	EPA 8260B	2/13/2007	KJD
Toluene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trans-1,2-Dichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trans-1,3-Dichloropropene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trichloroethylene	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Trichlorofluoromethane	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Vinyl Chloride	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Xylene, M&P	<2	µg/L	2	1	EPA 8260B	2/13/2007	KJD
Xylene, O	<1	µg/L	1	1	EPA 8260B	2/13/2007	KJD
Surrogate 1,2-Dichloroethane-d4	96	%	1	1	EPA 8260B	2/13/2007	KJD
Surrogate Bromofluorobenzene	104	%	1	1	EPA 8260B	2/13/2007	KJD
Surrogate Toluene-d8	98.4	%	1	1	EPA 8260B	2/13/2007	KJD

QUALITY ASSURANCE REPORT: VOLATILE ORGANIC COMPOUNDS 8260

Date: 02/13/07

Sample I.D.: 143547

QC Pack: 9-021307-1

	Units	DF	Lab Blank Conc ug/L		LCS % Rec	Matrix Spike %	Matrix Spike Duplicate (%)	RPD %
Allyl Chloride	ug/L	1.0	<	1.0	105	109	102	6.6
Bromobenzene	ug/L	1.0	<	1.0	114	119	117	1.9
Bromochloromethane	ug/L	1.0	<	1.0	118	120	116	3.8
Bromodichloromethane	ug/L	1.0	<	1.0	116	119	117	1.3
Bromoform	ug/L	1.0	<	1.0	108	99	101	2.4
Bromomethane	ug/L	1.0	<	2.0	95	95	91	4.4
Carbon Tetrachloride	ug/L	1.0	<	1.0	124	132	125	5.9
Chlorobenzene	ug/L	1.0	<	1.0	109	114	111	2.7
Chloroethane	ug/L	1.0	<	1.0	102	105	99	5.6
Chloroform	ug/L	1.0	<	1.0	118	126	120	4.9
Chloromethane	ug/L	1.0	<	1.0	100	99	94	5.2
2-Chlorotoluene	ug/L	1.0	<	1.0	119	129	125	2.8
4-Chlorotoluene	ug/L	1.0	<	1.0	115	123	119	3.6
Dibromochloromethane	ug/L	1.0	<	1.0	107	106	105	0.6
1,2-Dibromo-3-chloropropane	ug/L	1.0	<	2.0	87	72	76	5.4
1,2-Dibromoethane	ug/L	1.0	<	1.0	109	102	104	1.3
Dibromomethane	ug/l	1.0	<	1.0	117	111	111	0.0
1,2-Dichlorobenzene	ug/L	1.0	<	1.0	110	111	109	2.1
1,3-Dichlorobenzene	ug/L	1.0	<	1.0	110	115	111	3.3
1,4-Dichlorobenzene	ug/L	1.0	<	1.0	108	112	108	3.6
Dichlorodifluoromethane	ug/L	1.0	<	3.0	83	90	77	14.8
1,1-Dichloroethane	ug/L	1.0	<	1.0	117	123	118	4.6
1,2-Dichloroethane	ug/L	1.0	<	1.0	111	109	109	0.8
1,1-Dichloroethylene	ug/L	1.0	<	1.0	119	122	116	5.1
Cis-1,2-Dichloroethylene	ug/L	1.0	<	1.0	123	128	124	3.4
Trans-1,2-Dichloroethylene	ug/L	1.0	<	1.0	118	125	117	6.5
Dichlorofluoromethane	ug/L	1.0	<	1.0	105	108	101	6.3
1,2-Dichloropropane	ug/L	1.0	<	1.0	113	115	112	2.3
1,3-Dichloropropane	ug/L	1.0	<	1.0	108	105	105	0.2
2,2-Dichloropropane	ug/L	1.0	<	1.0	127	124	119	3.8
1,1-Dichloropropene	ug/L	1.0	<	1.0	121	128	122	5.0
Cis-1,3-Dichloropropene	ug/L	1.0	<	1.0	107	108	107	0.9
Trans-1,3-Dichloropropene	ug/L	1.0	<	1.0	103	101	101	0.0
Hexachlorobutadiene	ug/L	1.0	<	2.0	122	124	122	2.2
Methylene Chloride	ug/L	1.0	<	1.0	133	134	131	2.6
1,1,1,2-Tetrachloroethane	ug/L	1.0	<	1.0	115	118	117	0.9
1,1,2,2-Tetrachloroethane	ug/L	1.0	<	1.0	107	95	98	2.8
Tetrachloroethylene	ug/L	1.0	<	1.0	119	127	124	2.2
1,2,3-Trichlorobenzene	ug/L	1.0	<	2.0	99	82	86	5.0
1,2,4-Trichlorobenzene	ug/L	1.0	<	2.0	104	96	97	1.0

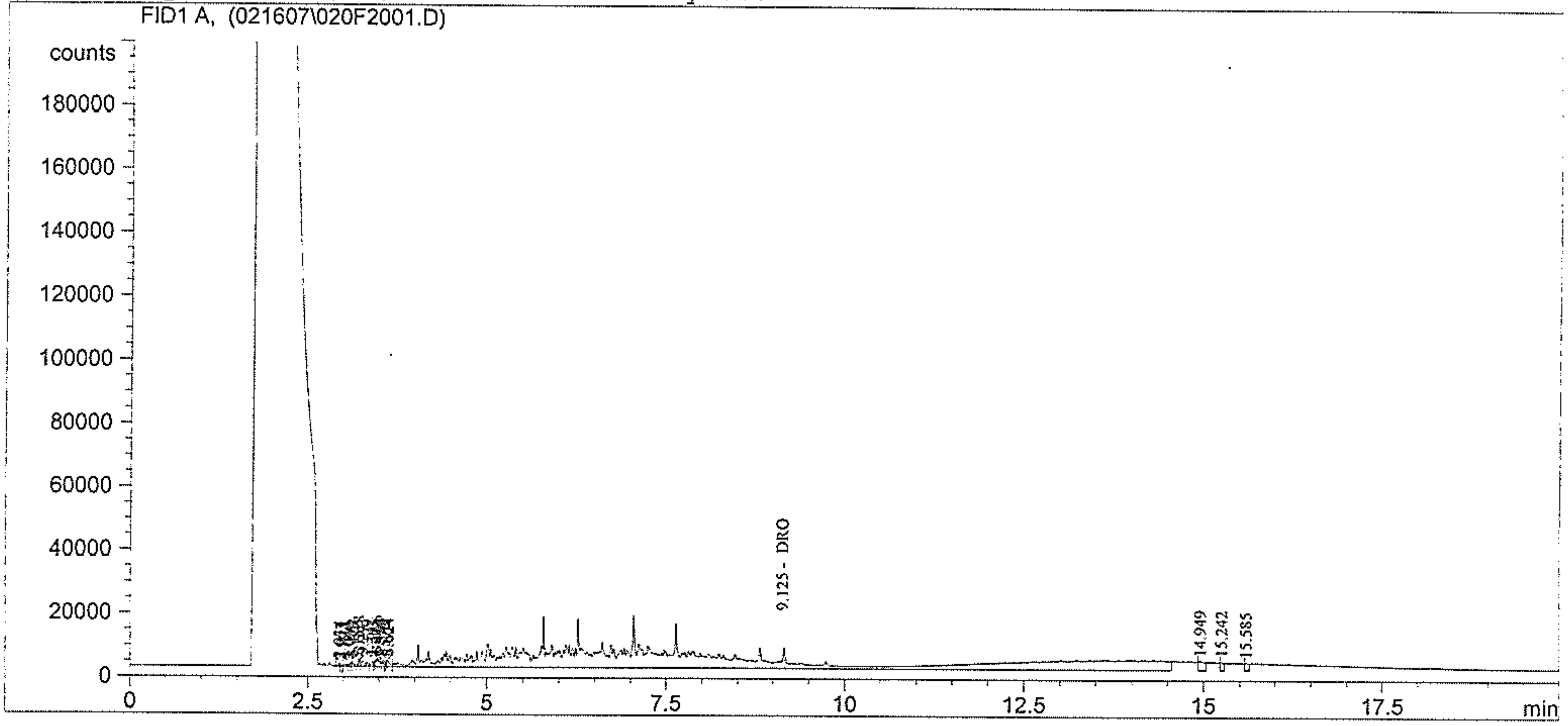
QUALITY ASSURANCE REPORT: VOLATILE ORGANIC COMPOUNDS 8260

Date: 02/13/07

Sample I.D.: 143547 **QC Pack:** 9-021307-1

	Units	DF	Lab Blank Conc ug/L		LCS % Rec	Matrix Spike %	Matrix Spike Duplicate (%)	RPD %
1,1,1-Trichloroethane	ug/L	1.0	<	1.0	122	129	121	6.1
1,1,2-Trichloroethane	ug/L	1.0	<	1.0	111	104	103	1.3
Trichloroethylene	ug/L	1.0	<	1.0	120	126	120	4.6
Trichlorofluoromethane	ug/L	1.0	<	3.0	111	111	92	19.5
1,2,3-Trichloropropane	ug/L	1.0	<	1.0	104	88	91	3.0
1,1,2-Trichlorotrifluoroethane	ug/L	1.0	<	1.0	112	116	105	9.3
Vinyl Chloride	ug/L	1.0	<	1.0	100	100	94	5.7
Acetone	ug/L	1.0	<	20	157	95	97	2.1
Benzene	ug/L	1.0	<	1.0	118	124	119	3.7
n-Butylbenzene	ug/L	1.0	<	1.0	121	128	122	4.6
sec-Butylbenzene	ug/L	1.0	<	1.0	121	131	126	4.2
tert-Butylbenzene	ug/L	1.0	<	1.0	105	115	110	5.2
Isopropylbenzene (Cumene)	ug/L	1.0	<	1.0	108	115	111	3.3
Ethyl Benzene	ug/L	1.0	<	1.0	116	125	121	2.8
Ethyl Ether	ug/L	1.0	<	2.0	106	99	96	2.5
p-Isopropyltoluene	ug/L	1.0	<	1.0	121	130	124	4.4
Methyl Ethyl Ketone	ug/L	1.0	<	5.0	113	81	82	2.0
Methyl Isobutyl Ketone	ug/L	1.0	<	5.0	103	80	83	3.2
Methyl tert-butyl ether	ug/L	1.0	<	1.0	103	93	93	0.4
n-Propylbenzene	ug/L	1.0	<	1.0	115	127	121	4.8
Naphthalene	ug/L	1.0	<	2.0	90	70	76	8.4
Styrene	ug/L	1.0	<	1.0	112	116	114	1.7
Tetrahydrofuran	ug/L	1.0	<	5.0	106	84	85	0.9
Toluene	ug/L	1.0	<	1.0	114	122	120	2.1
1,2,4-Trimethylbenzene	ug/L	1.0	<	1.0	118	126	121	3.5
1,3,5-Trimethylbenzene	ug/L	1.0	<	1.0	118	126	122	3.3
m-Xylene & p-Xylene	ug/L	1.0	<	1.0	116	121	118	2.9
o-Xylene	ug/L	1.0	<	1.0	117	124	122	2.4

```
=====================================================================
Injection Date  : 2/16/2007 5:01:36 PM           Seq. Line :  20
Sample Name     : 143521                          Location : Vial 20
Acq. Operator   : csd                                  Inj :   1
Acq. Instrument : GC-7                          Inj Volume : 1 µl
Acq. Method     : D:\HPCHEM\7\METHODS\!TEST3.M
Last changed    : 12/29/2006 2:46:30 PM by csd
Analysis Method : C:\HPCHEM\3\METHODS\D021407L.M
Last changed    : 2/15/2007 8:39:53 AM by csd
```



```
=====================================================================
                     External Standard Report
=====================================================================

Sorted By                :      Signal
Calib. Data Modified     :      Thursday, February 15, 2007 8:39:45 AM
Multiplier               :      1.0000
Dilution                 :     10.0000
Use Multiplier & Dilution Factor with ISTDs

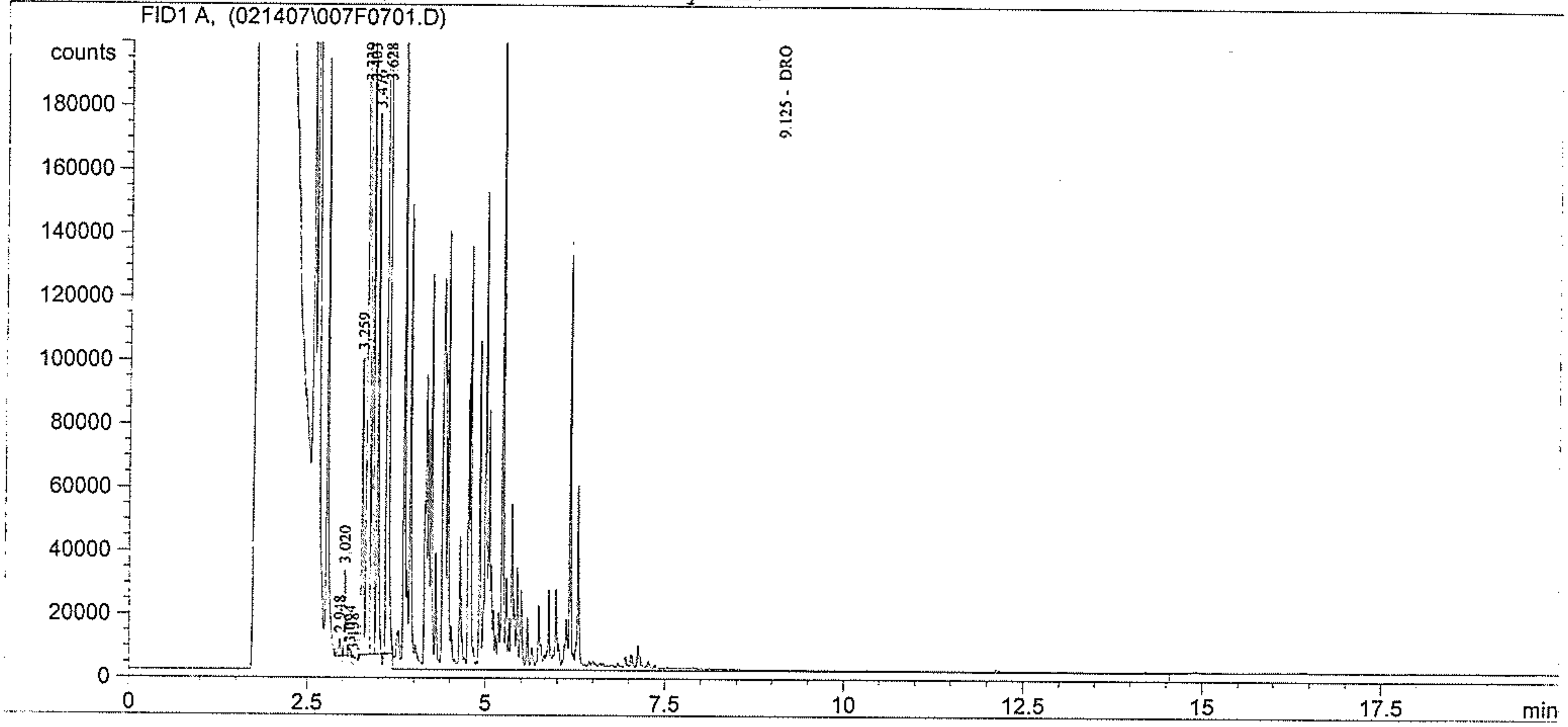
Signal 1: FID1 A,

RetTime  Type     Area      Amt/Area     Amount    Grp   Name
 [min]          counts*s                 [ppm]
-------|------|----------|----------|----------|--|------------------
  9.125 HHA+   1.86062e6  4.24440e-7    7.89721    DRO

Totals :                                7.89721

 Results obtained with enhanced integrator!
=====================================================================
                        *** End of Report ***
```

```
=====================================================================
Injection Date  : 2/14/2007 11:14:23 AM          Seq. Line :   7
Sample Name     : 143527                          Location : Vial 7
Acq. Operator   : csd                                  Inj :   1
Acq. Instrument : GC-7                          Inj Volume : 1 µl
Acq. Method     : D:\HPCHEM\7\METHODS\!TEST3.M
Last changed    : 12/29/2006 2:46:30 PM by csd
Analysis Method : C:\HPCHEM\3\METHODS\D021307L.M
Last changed    : 2/14/2007 8:22:26 AM by csd
```



```
=====================================================================
                     External Standard Report
=====================================================================

Sorted By              :      Signal
Calib. Data Modified   :      2/14/2007 8:22:24 AM
Multiplier             :      1.0000
Dilution               :      1.0000
Use Multiplier & Dilution Factor with ISTDs

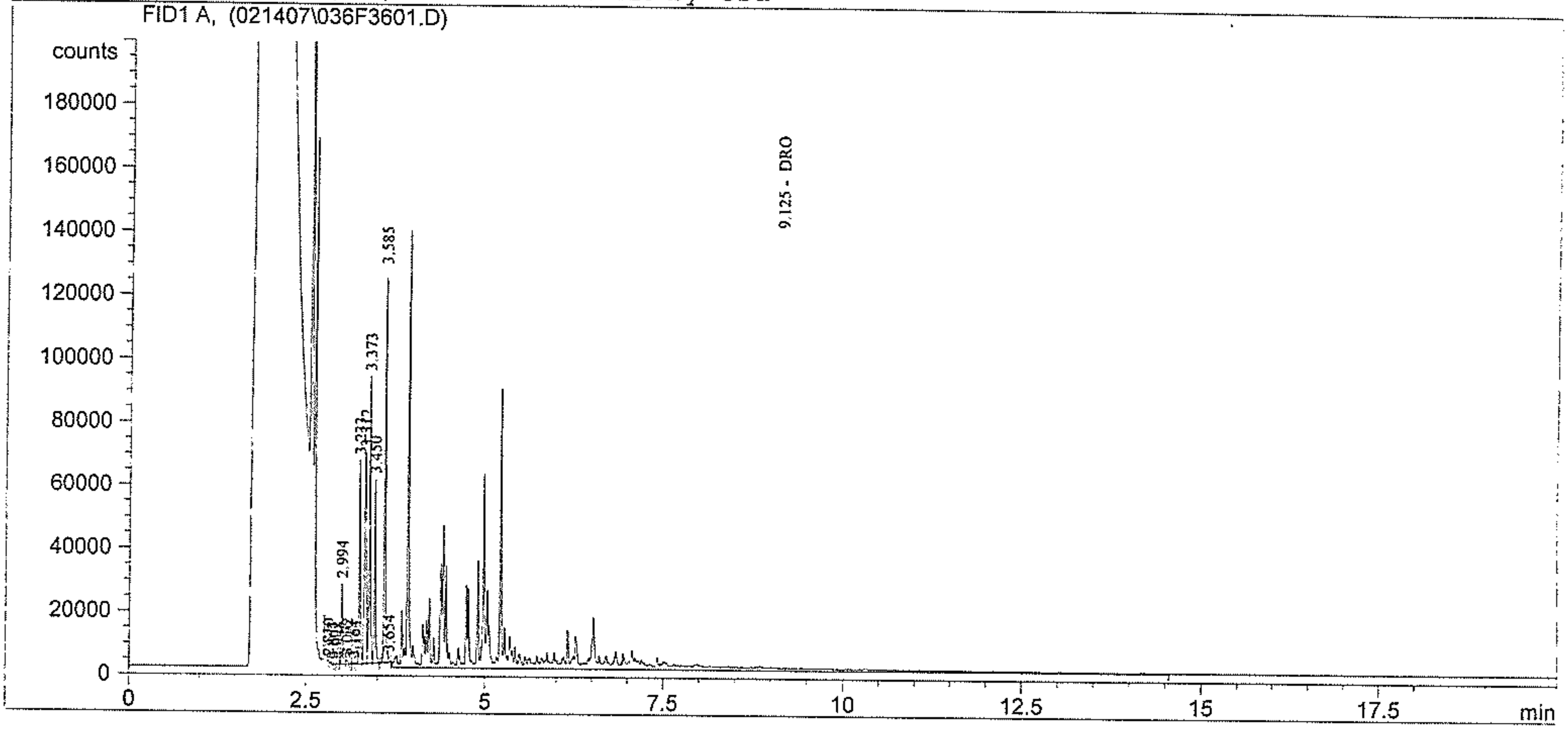
Signal 1: FID1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          counts*s                 [ppm]
-------|------|----------|----------|----------|--|------------------
  9.125 HHA+   4.17115e6  4.60728e-7    1.92177    DRO

Totals :                                1.92177

 Results obtained with enhanced integrator!
=====================================================================
                          *** End of Report ***
```

```
=====================================================================
Injection Date   : 2/15/2007 12:29:49 AM          Seq. Line :  36
Sample Name      : 143528                          Location : Vial 36
Acq. Operator    : csd                                  Inj :   1
Acq. Instrument  : GC-7                          Inj Volume : 1 µl
Sequence File    : C:\HPCHEM\3\SEQUENCE\021407.S
Acq. Method      : D:\HPCHEM\7\METHODS\!TEST3.M
Last changed     : 12/29/2006 2:46:30 PM by csd
Analysis Method  : C:\HPCHEM\3\METHODS\D021407L.M
Last changed     : 2/15/2007 8:39:53 AM by csd
```



```
=====================================================================
                      External Standard Report
=====================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 15, 2007 8:39:45 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

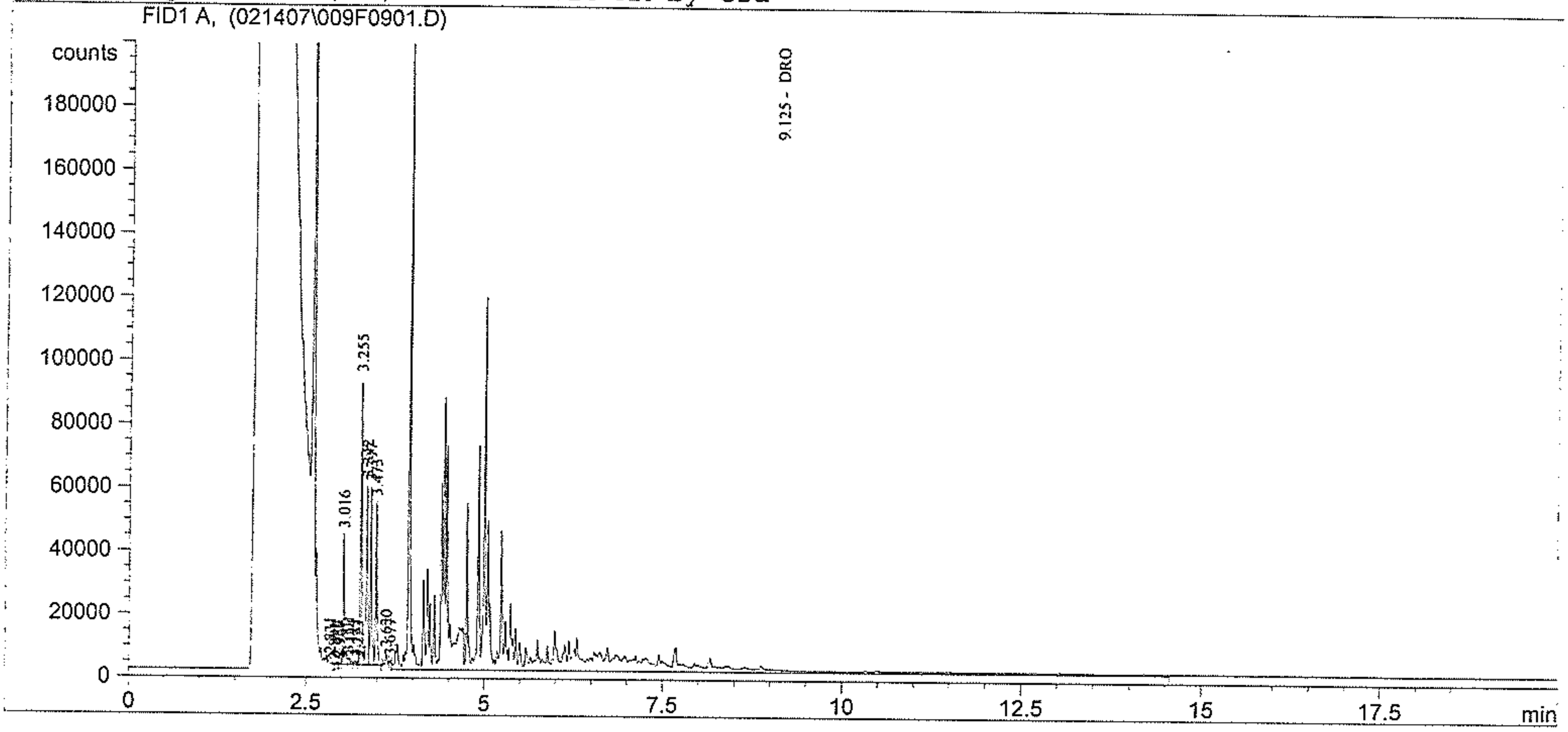
RetTime  Type    Area      Amt/Area     Amount    Grp   Name
 [min]         counts*s                 [ppm]
-------|------|----------|----------|----------|--|------------------
  9.125 HHA+   1.65398e6  4.21209e-7 6.96670e-1    DRO

Totals :                               6.96670e-1

 Results obtained with enhanced integrator!
=====================================================================
                        *** End of Report ***
```

```
Data File C:\HPCHEM\3\DATA\021407\009F0901.D                    Sample Name: 143529

     =================================================================
     Injection Date  : 2/14/2007 12:09:15 PM          Seq. Line :    9
     Sample Name     : 143529                          Location : Vial 9
     Acq. Operator   : csd                                  Inj :    1
     Acq. Instrument : GC-7                          Inj Volume : 1 µl
     Acq. Method     : D:\HPCHEM\7\METHODS\!TEST3.M
     Last changed    : 12/29/2006 2:46:30 PM by csd
     Analysis Method : C:\HPCHEM\3\METHODS\D021307L.M
     Last changed    : 2/14/2007 8:22:26 AM by csd
```



```
    =================================================================
                        External Standard Report
    =================================================================

    Sorted By              :      Signal
    Calib. Data Modified   :      2/14/2007 8:22:24 AM
    Multiplier             :      1.0000
    Dilution               :      1.0000
    Use Multiplier & Dilution Factor with ISTDs

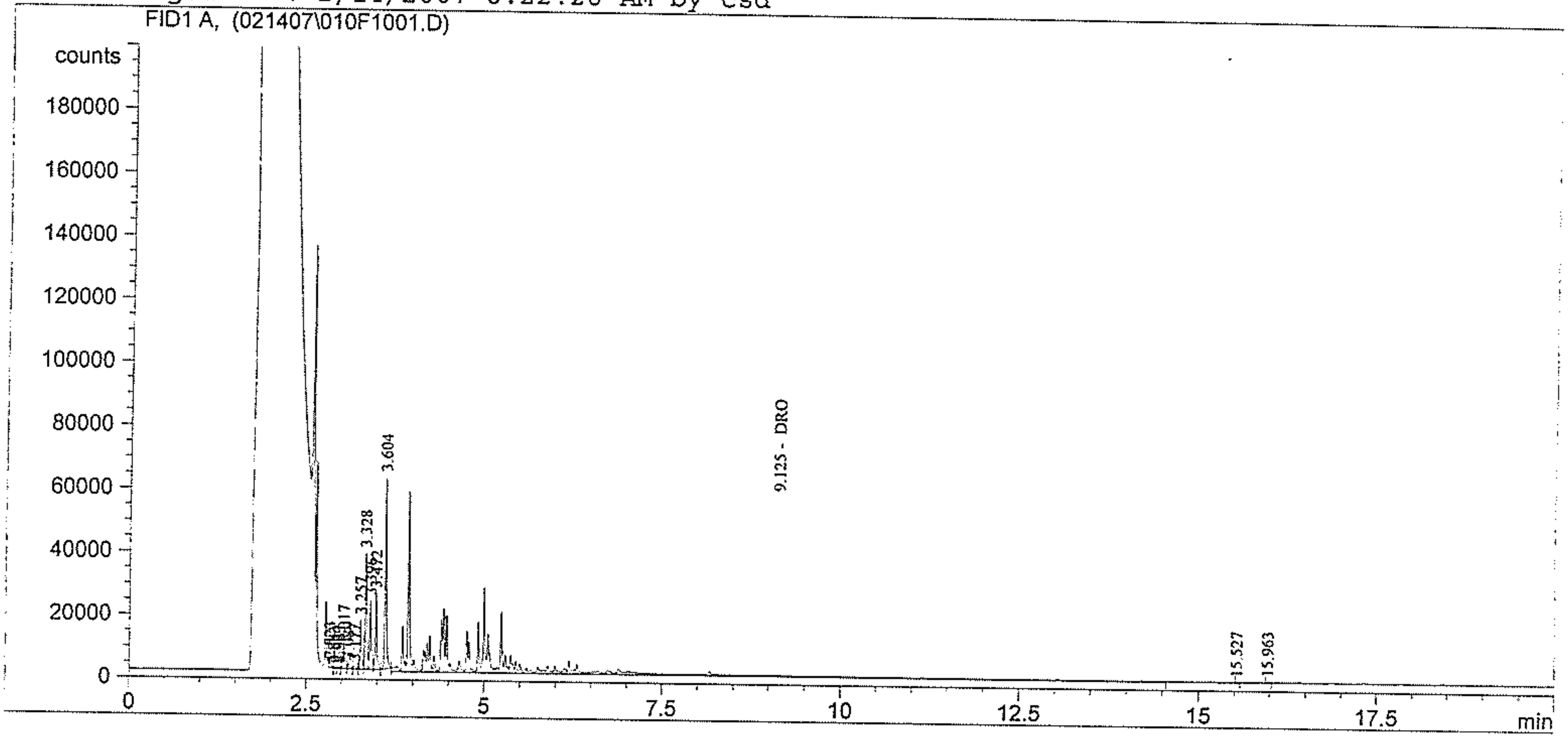
    Signal 1: FID1 A,

    RetTime  Type     Area      Amt/Area    Amount    Grp   Name
     [min]          counts*s                 [ppm]
    -------|------|----------|----------|----------|--|------------------
      9.125 HHA+   2.51131e6  4.54166e-7    1.14055     DRO

    Totals :                                1.14055

     Results obtained with enhanced integrator!
    =================================================================
                          *** End of Report ***
```

```
=====================================================================
Injection Date   : 2/14/2007 12:36:36 PM          Seq. Line :  10
Sample Name      : 143530                          Location : Vial 10
Acq. Operator    : csd                                  Inj :   1
Acq. Instrument  : GC-7                          Inj Volume : 1 µl
Acq. Method      : D:\HPCHEM\7\METHODS\!TEST3.M
Last changed     : 12/29/2006 2:46:30 PM by csd
Analysis Method  : C:\HPCHEM\3\METHODS\D021307L.M
Last changed     : 2/14/2007 8:22:26 AM by csd
```



```
=====================================================================
                     External Standard Report
=====================================================================

Sorted By              :      Signal
Calib. Data Modified   :      2/14/2007 8:22:24 AM
Multiplier             :      1.0000
Dilution               :      1.0000
Use Multiplier & Dilution Factor with ISTDs

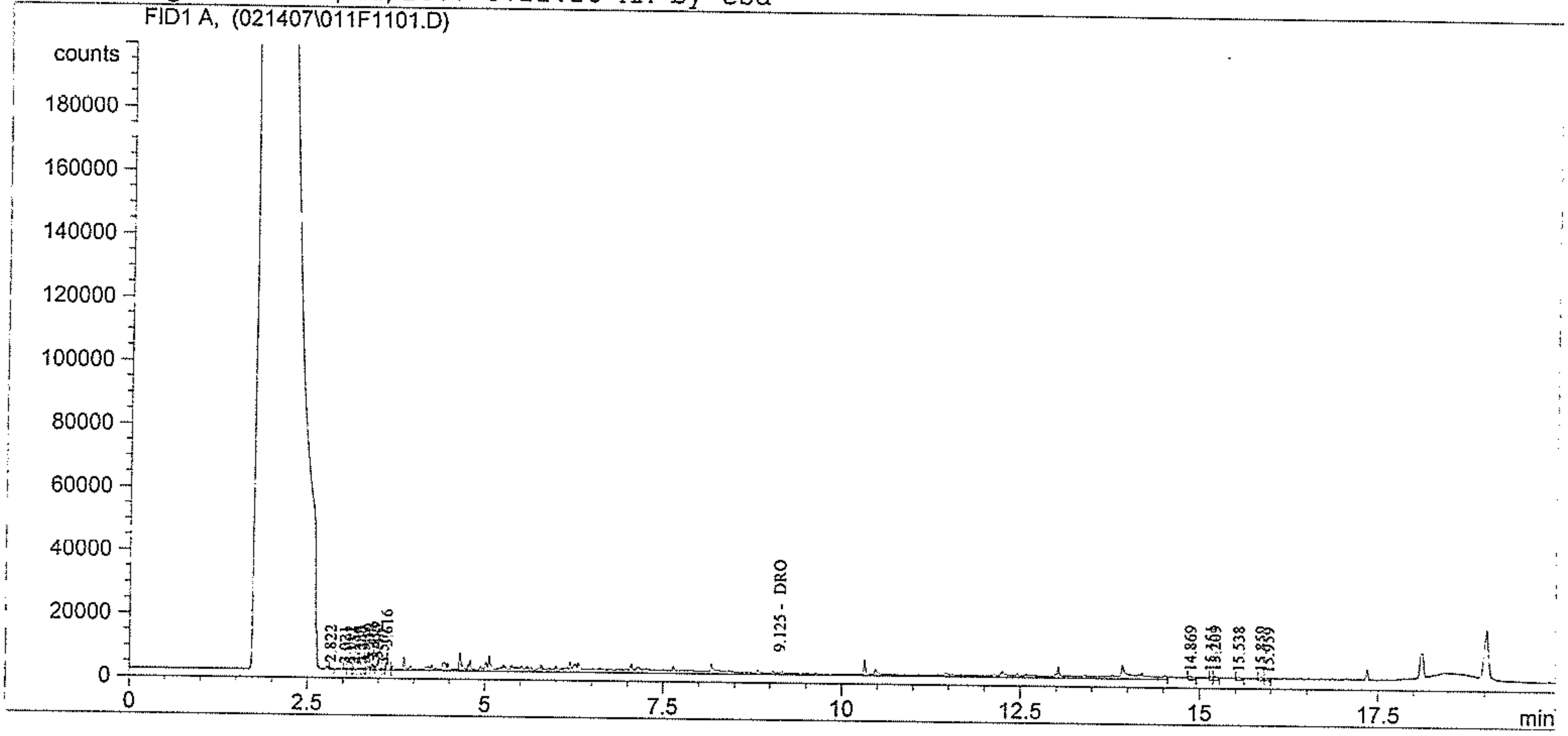
Signal 1: FID1 A,

RetTime  Type    Area      Amt/Area    Amount    Grp   Name
 [min]         counts*s                 [ppm]
-------|------|----------|----------|----------|--|------------------
  9.125 HHA+   7.28104e5  4.13778e-7 3.01274e-1    DRO

Totals :                               3.01274e-1

 Results obtained with enhanced integrator!
=====================================================================
                         *** End of Report ***
```

```
=====================================================================
Injection Date  : 2/14/2007 1:04:03 PM           Seq. Line :  11
Sample Name     : 143531                          Location : Vial 11
Acq. Operator   : csd                                  Inj :  1
Acq. Instrument : GC-7                          Inj Volume : 1 µl
Acq. Method     : D:\HPCHEM\7\METHODS\!TEST3.M
Last changed    : 12/29/2006 2:46:30 PM by csd
Analysis Method : C:\HPCHEM\3\METHODS\D021307L.M
Last changed    : 2/14/2007 8:22:26 AM by csd
```



```
=====================================================================
                     External Standard Report
=====================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2007 8:22:24 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs

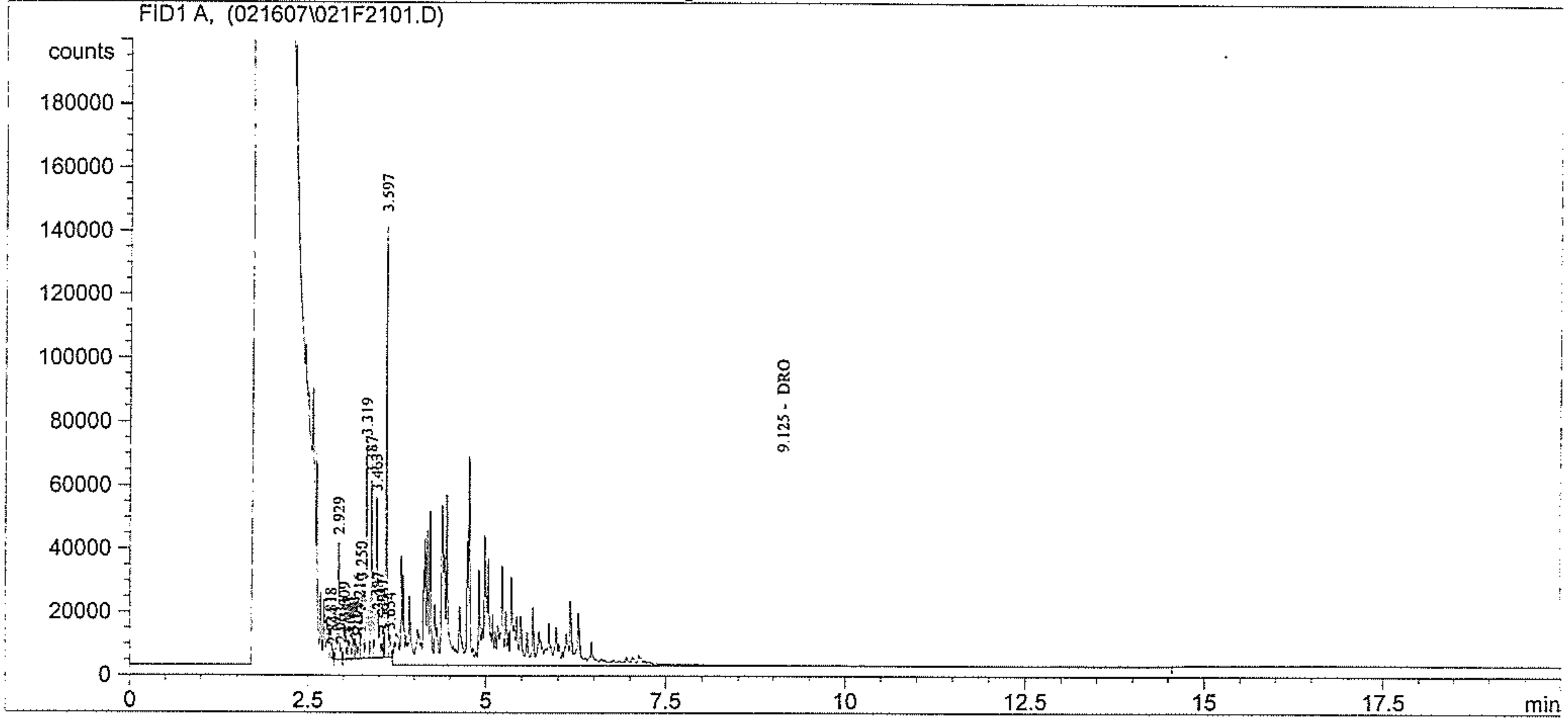
Signal 1: FID1 A,

RetTime  Type     Area      Amt/Area     Amount    Grp   Name
 [min]          counts*s                 [ppm]
-------|------|----------|----------|----------|--|------------------
  9.125 HHA+   5.99612e5  4.01590e-7 2.40798e-1    DRO

Totals :                             2.40798e-1

 Results obtained with enhanced integrator!
=====================================================================
                        *** End of Report ***
```

```
=====================================================================
Injection Date  : 2/16/2007 5:29:31 PM              Seq. Line :  21
Sample Name     : 143525                             Location : Vial 21
Acq. Operator   : csd                                     Inj :  1
Acq. Instrument : GC-7                             Inj Volume : 1 µl
Acq. Method     : D:\HPCHEM\7\METHODS\!TEST3.M
Last changed    : 12/29/2006 2:46:30 PM by csd
Analysis Method : C:\HPCHEM\3\METHODS\D021407L.M
Last changed    : 2/15/2007 8:39:53 AM by csd
```



```
=====================================================================
                      External Standard Report
=====================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 15, 2007 8:39:45 AM
Multiplier            :      1.0000
Dilution              :      5.0000
Use Multiplier & Dilution Factor with ISTDs

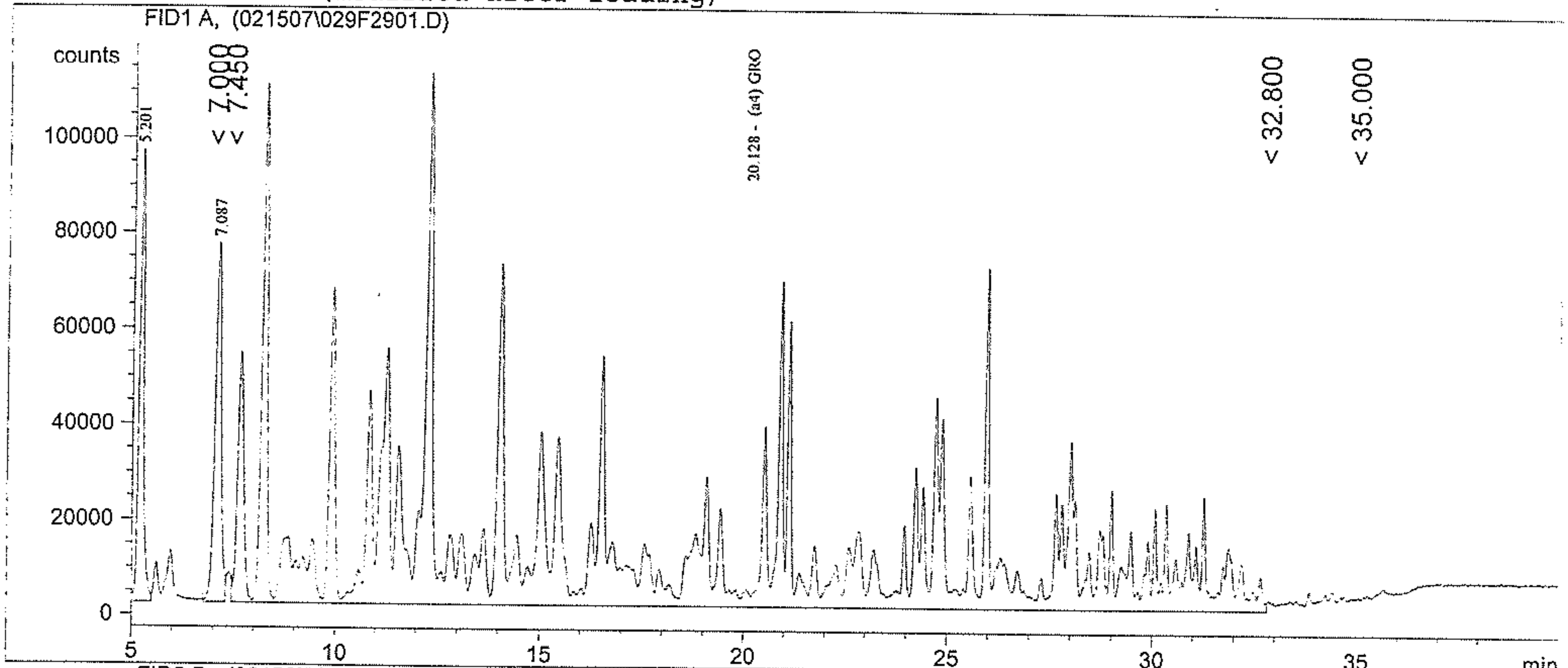
Signal 1: FID1 A,

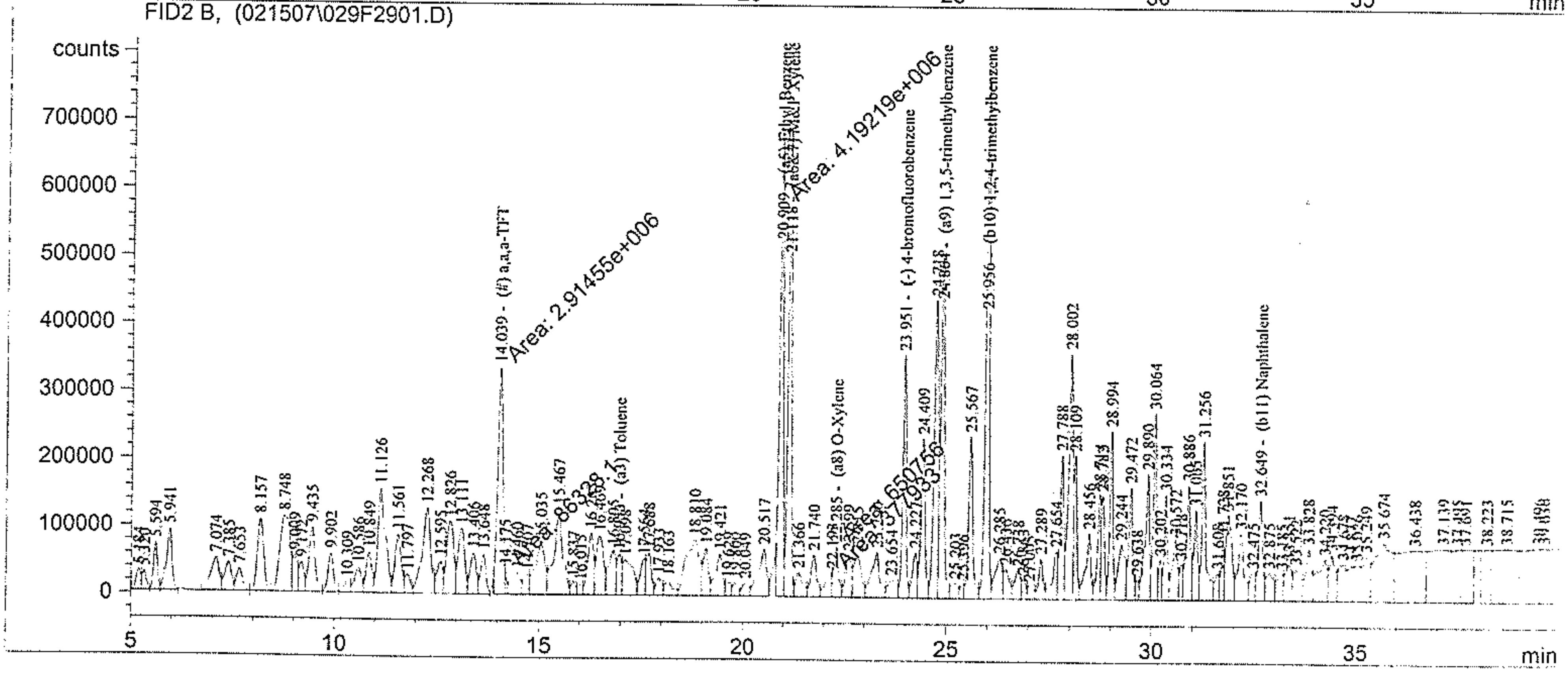
RetTime  Type     Area     Amt/Area     Amount   Grp   Name
 [min]          counts*s                [ppm]
-------|------|----------|----------|----------|--|------------------
  9.125 HHA+   1.94413e6  4.25552e-7   4.13664    DRO

Totals :                               4.13664

 Results obtained with enhanced integrator!
=====================================================================
                         *** End of Report ***
```

```
=====================================================================
Injection Date   : 2/16/2007 9:26:45 AM            Seq. Line :   29
Sample Name      : 143519                           Location : Vial 29
Acq. Operator    : csd                                   Inj :    1
Acq. Instrument  : GC-4                           Inj Volume : Manually
Acq. Method      : D:\HPCHEM\4\METHODS\!GRO2.M
Last changed     : 2/5/2007 11:36:30 AM by csd
Analysis Method  : C:\HPCHEM\1\METHODS\021507SL.M
Last changed     : 2/16/2007 10:10:28 AM by csd
                   (modified after loading)
```





```
=====================================================================
                  External Standard Report
=====================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/16/2007 8:27:46 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Sample Amount         :     24.60000  [ppb]   (not used in calc.)
Use Multiplier & Dilution Factor with ISTDs
```

```
=====================================================================
Injection Date  : 2/16/2007 2:57:59 AM          Seq. Line :  21
Sample Name     : 143521                         Location : Vial 21
Acq. Operator   : csd                                 Inj :   1
Acq. Instrument : GC-4                         Inj Volume : Manually
Acq. Method     : D:\HPCHEM\4\METHODS\!GRO2.M
Last changed    : 2/5/2007 11:36:30 AM by csd
Analysis Method : C:\HPCHEM\1\METHODS\021507SL.M
Last changed    : 2/16/2007 8:35:54 AM by csd
                  (modified after loading)
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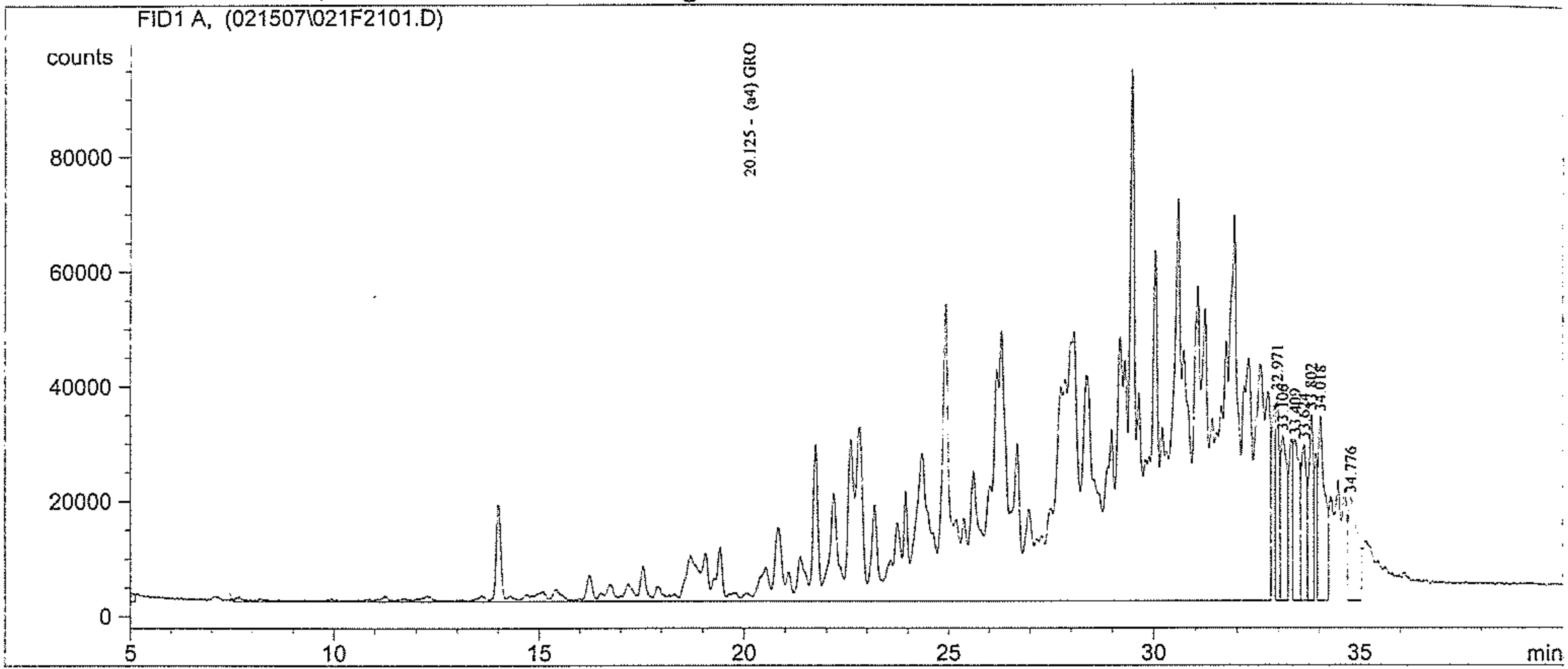
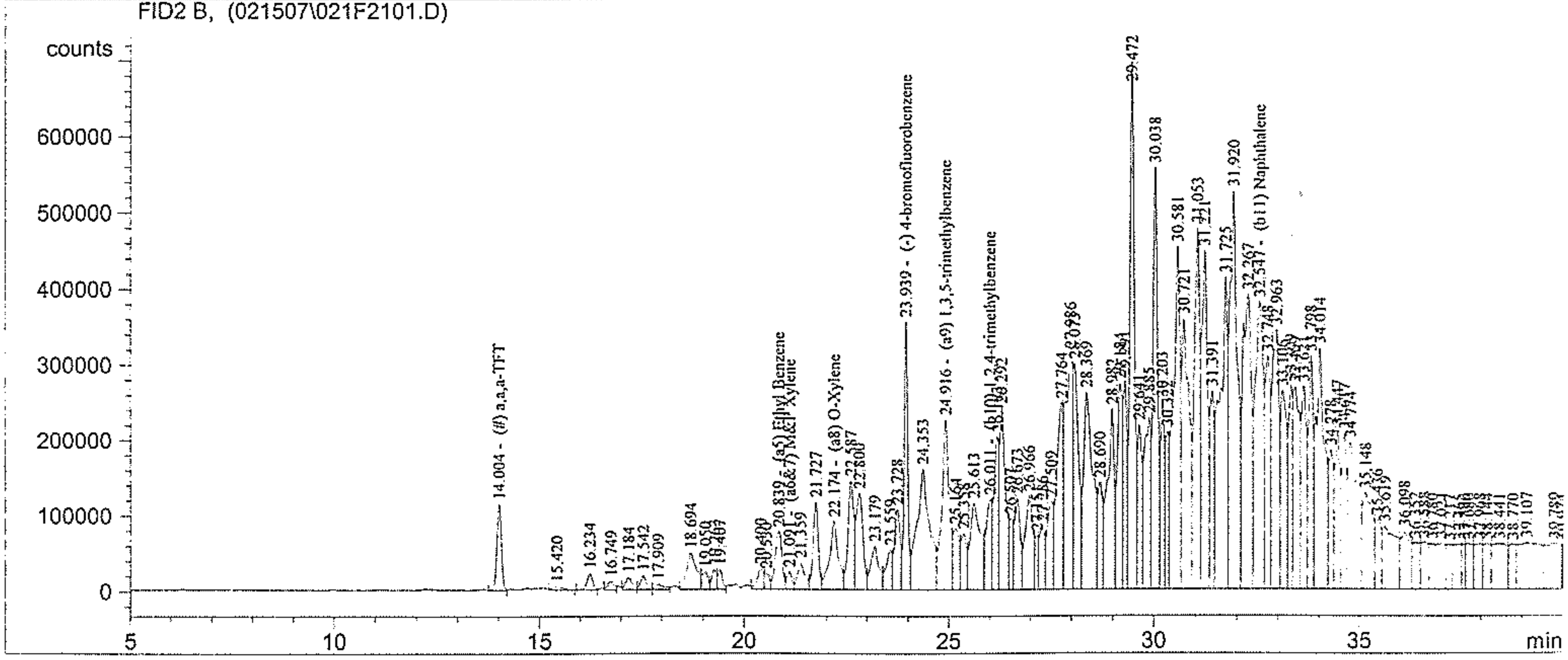


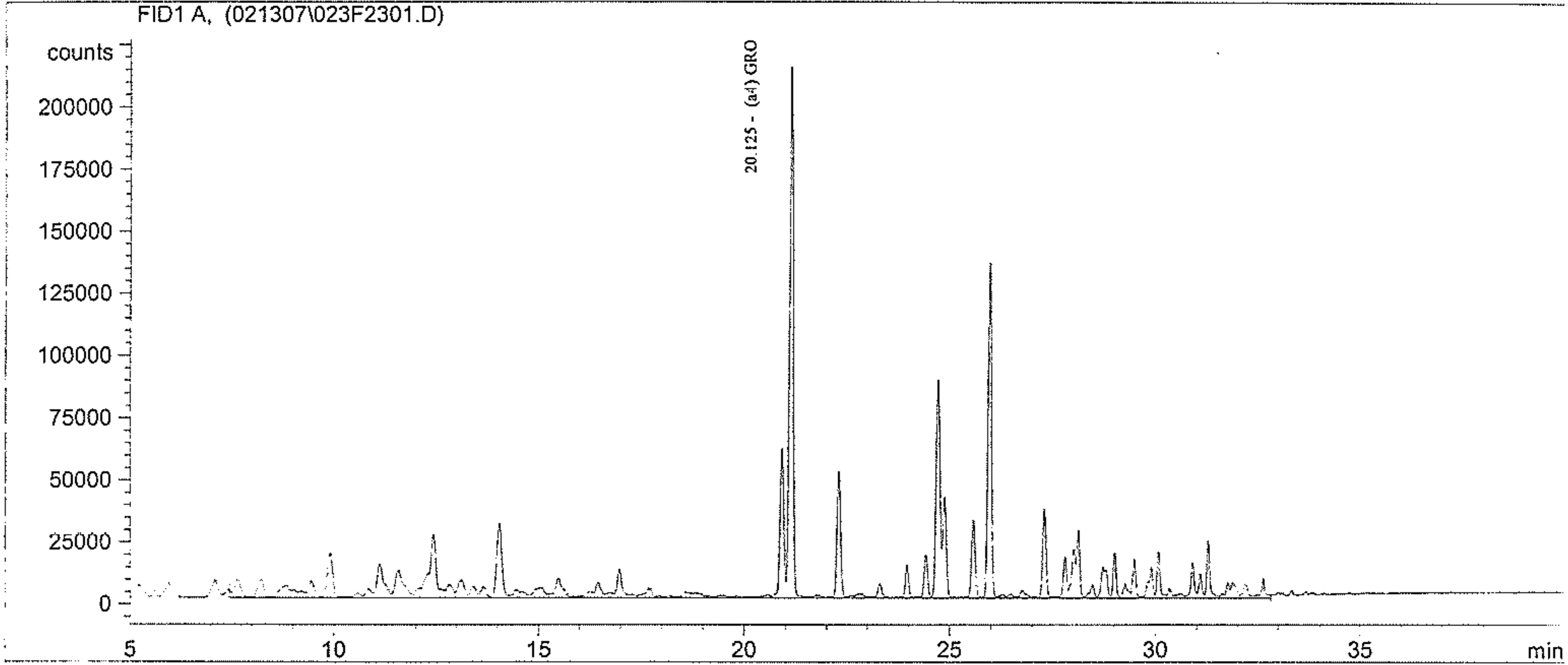


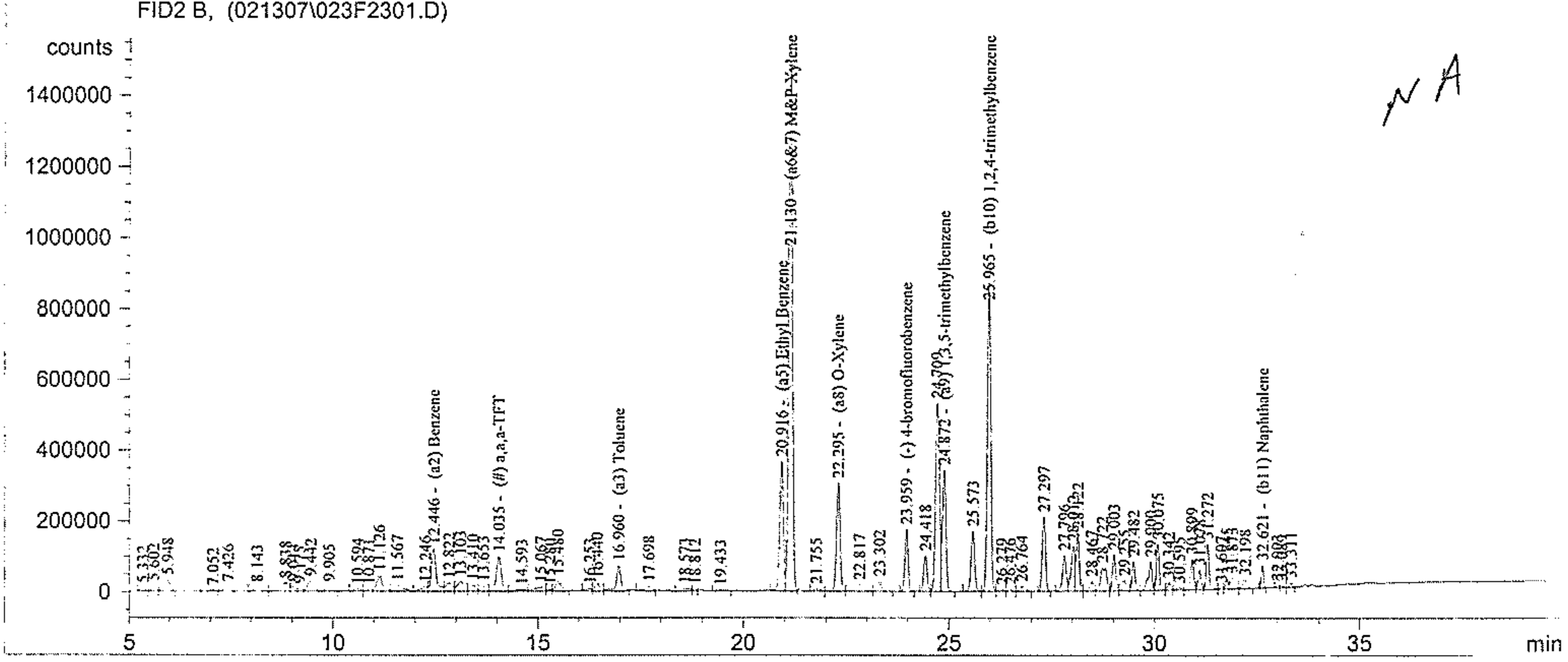
```
=====================================================================
                    External Standard Report
=====================================================================

Sorted By              :     Signal
Calib. Data Modified   :     2/16/2007 8:27:46 AM
Multiplier             :     1.0000
Dilution               :     2.0000
Sample Amount          :    27.00000  [ppb]   (not used in calc.)
Use Multiplier & Dilution Factor with ISTDs
```

```
ta File C:\HPCHEM\1\DATA\021307\023F2301.D                          Sample Name:

   =================================================================
   Injection Date  : 2/14/2007 8:35:48 AM          Seq. Line :  23
   Sample Name     : 143527                         Location : Vial 23
   Acq. Operator   : mes                                 Inj :   1
   Acq. Instrument : GC-4                         Inj Volume : Manually
   Acq. Method     : D:\HPCHEM\4\METHODS\!GRO2.M
   Last changed    : 2/5/2007 11:36:30 AM by csd
   Analysis Method : C:\HPCHEM\1\METHODS\021307LL.M
   Last changed    : 2/14/2007 9:21:58 AM by csd
```



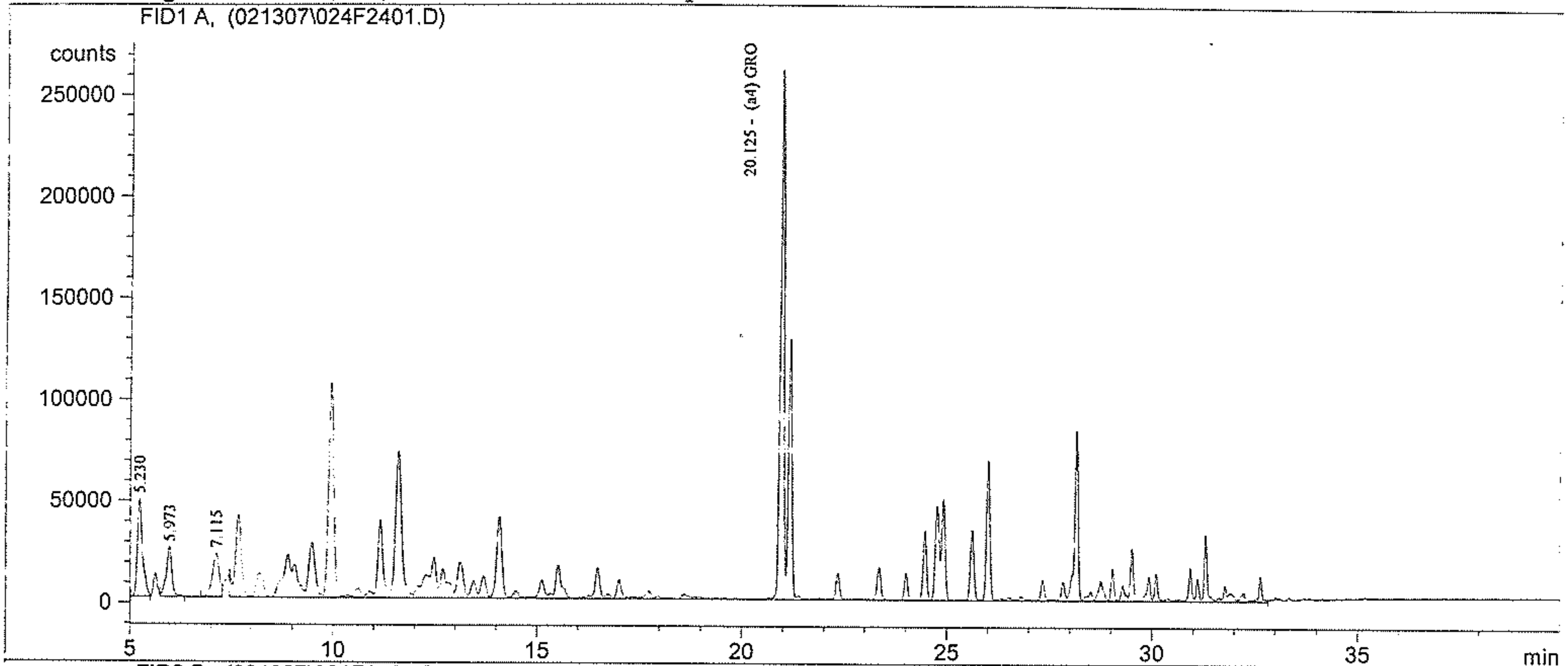


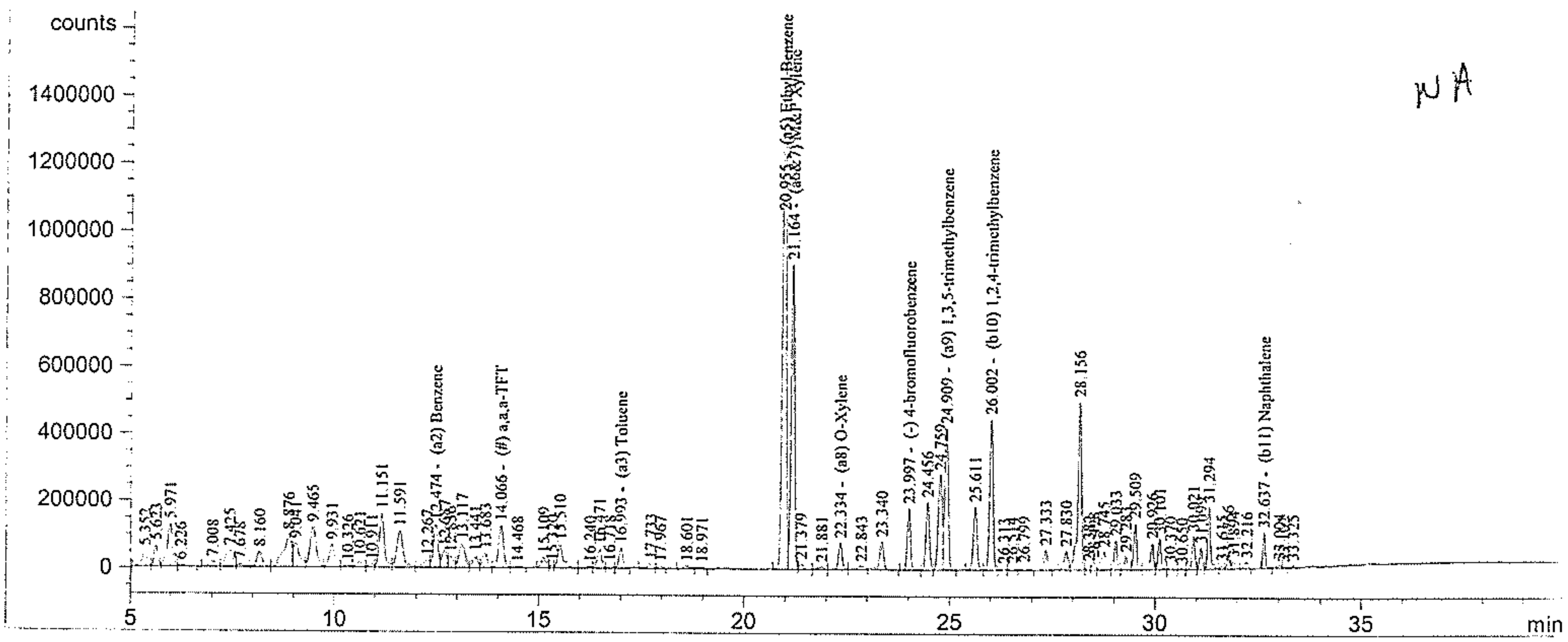
NA

```
=================================================================
                   External Standard Report
=================================================================

Sorted By              :       Signal
Calib. Data Modified   :       2/14/2007 9:21:49 AM
Multiplier             :       1.0000
Dilution               :      20.0000
Use Multiplier & Dilution Factor with ISTDs
```

```
=====================================================================
Injection Date  : 2/14/2007 9:25:22 AM              Seq. Line :  24
Sample Name     : 143528                             Location : Vial 24
Acq. Operator   : mes                                     Inj :   1
Acq. Instrument : GC-4                             Inj Volume : Manually
Acq. Method     : D:\HPCHEM\4\METHODS\!GRO2.M
Last changed    : 2/5/2007 11:36:30 AM by csd
Analysis Method : C:\HPCHEM\1\METHODS\021307LL.M
Last changed    : 2/14/2007 9:21:58 AM by csd
```



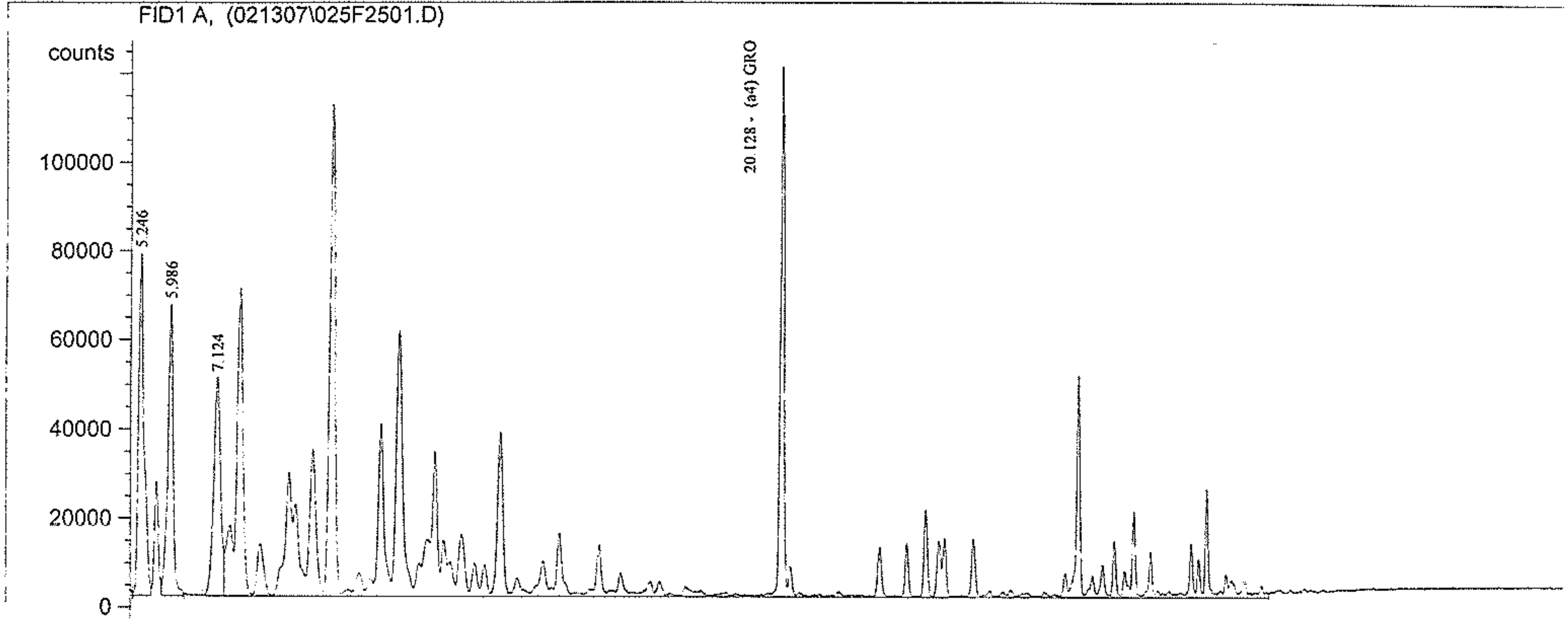


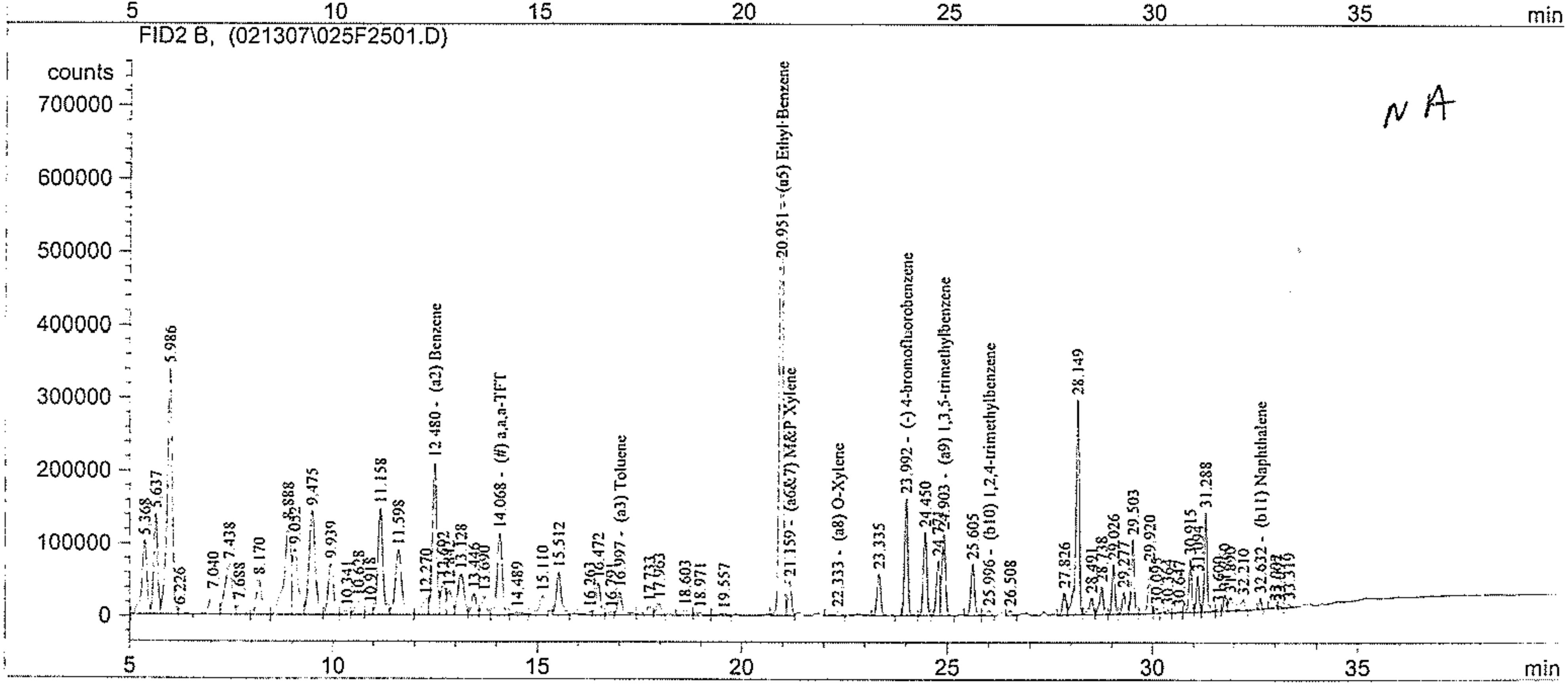
NA

```
=====================================================================
                    External Standard Report
=====================================================================

Sorted By             :       Signal
Calib. Data Modified  :       2/14/2007 9:21:49 AM
Multiplier            :       1.0000
Dilution              :       5.0000
Use Multiplier & Dilution Factor with ISTDs
```

```
=====================================================================
Injection Date  : 2/14/2007 10:14:56 AM          Seq. Line :  25
Sample Name     : 143529                          Location : Vial 25
Acq. Operator   : mes                                  Inj :   1
Acq. Instrument : GC-4                          Inj Volume : Manually
Acq. Method     : D:\HPCHEM\4\METHODS\!GRO2.M
Last changed    : 2/5/2007 11:36:30 AM by csd
Analysis Method : C:\HPCHEM\1\METHODS\021307LL.M
Last changed    : 2/14/2007 9:21:58 AM by csd
```



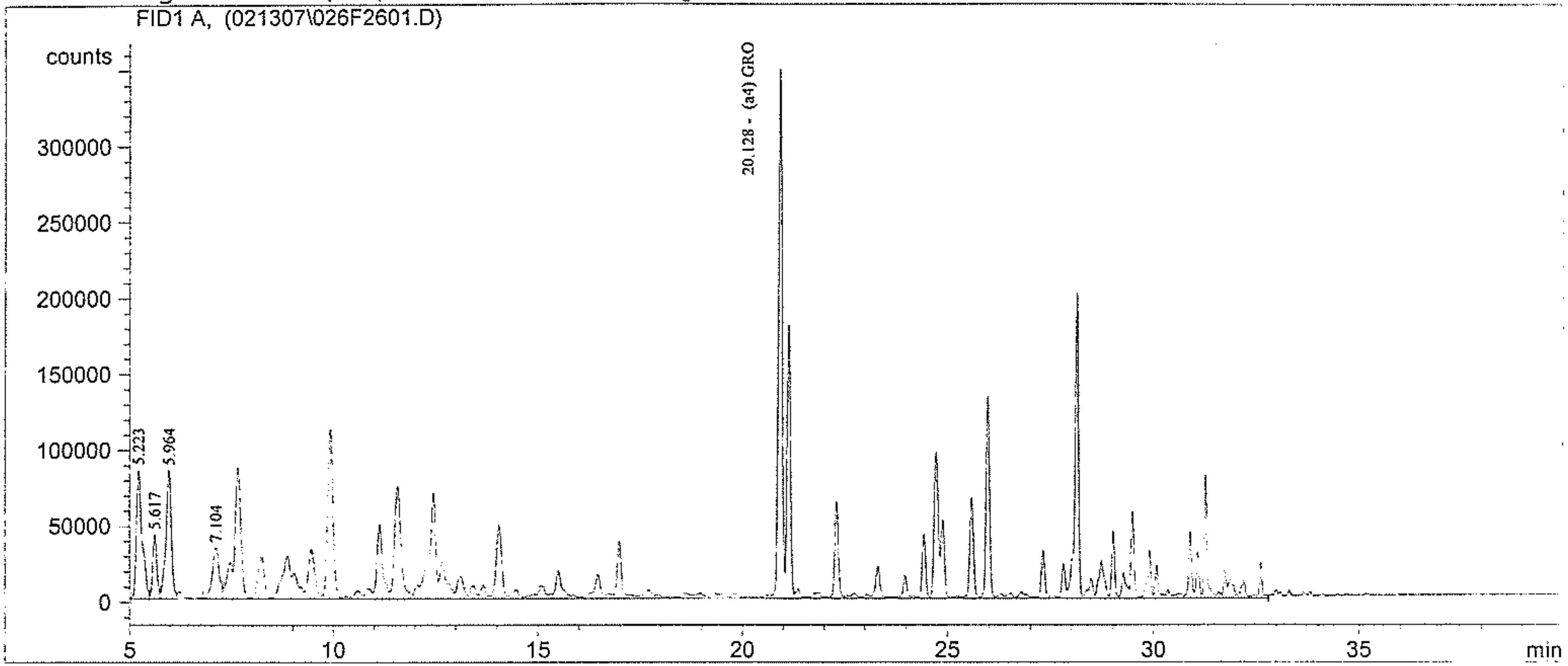


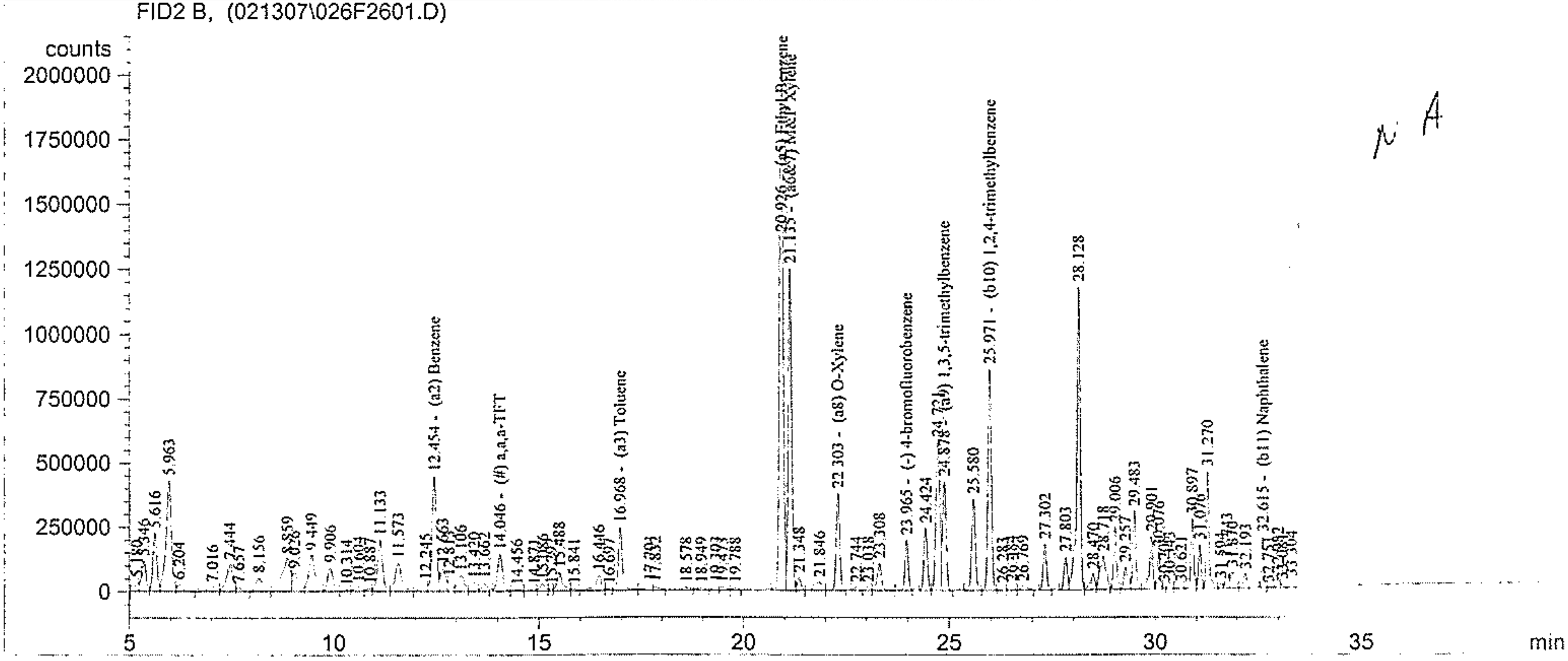
NA

```
=====================================================================
                    External Standard Report
=====================================================================

Sorted By              :      Signal
Calib. Data Modified   :      2/14/2007 9:21:49 AM
Multiplier             :      1.0000
Dilution               :     10.0000
Use Multiplier & Dilution Factor with ISTDs
```

```
=====================================================================
Injection Date   : 2/14/2007 11:04:27 AM          Seq. Line :  26
Sample Name      : 143530                          Location : Vial 26
Acq. Operator    : mes                                  Inj :   1
Acq. Instrument  : GC-4                          Inj Volume : Manually
Acq. Method      : D:\HPCHEM\4\METHODS\!GRO2.M
Last changed     : 2/5/2007 11:36:30 AM by csd
Analysis Method  : C:\HPCHEM\1\METHODS\021307LL.M
Last changed     : 2/14/2007 9:21:58 AM by csd
```



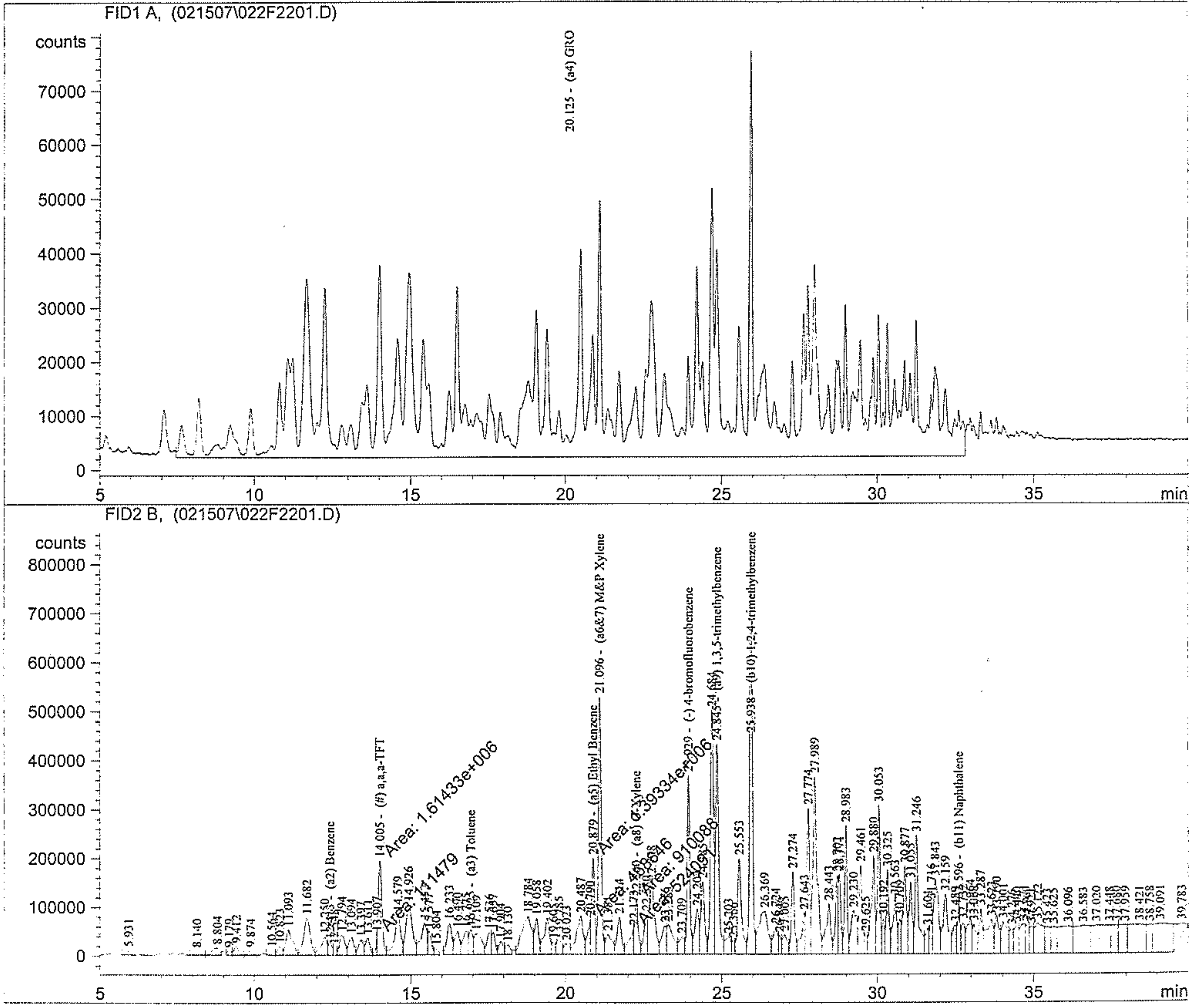


N A

```
=====================================================================
                     External Standard Report
=====================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2007 9:21:49 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs
```

```
=====================================================================
Injection Date  : 2/16/2007 3:46:36 AM         Seq. Line :  22
Sample Name     : 143525                        Location : Vial 22
Acq. Operator   : csd                                Inj :   1
Acq. Instrument : GC-4                        Inj Volume : Manually
Acq. Method     : D:\HPCHEM\4\METHODS\!GRO2.M
Last changed    : 2/5/2007 11:36:30 AM by csd
Analysis Method : C:\HPCHEM\1\METHODS\021507SL.M
Last changed    : 2/16/2007 8:35:54 AM by csd
                  (modified after loading)
```



```
=====================================================================
                     External Standard Report
=====================================================================

Sorted By              :      Signal
Calib. Data Modified   :      2/16/2007 8:27:46 AM
Multiplier             :      1.0000
Dilution               :     20.0000
Sample Amount          :     23.30000  [ppb]    (not used in calc.)
Use Multiplier & Dilution Factor with ISTDs
```

State Contract # S-972(5)

CHAIN OF CUSTODY RECORD

№ 38722 75269

Contact Person Tim Grape
Phone No. 763 315 2300 Office Mpls
Project No. 200606839 PO No.
Project Name Alex Exhaust

Special Handling Request
☐ Rush
☐ Verbal
☐ Other

RECORD NUMBER 38721 THROUGH 38722
Laboratory NTS
Contact Person Renee Stone
Phone No.
Results Due Standard

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
									PID/FID					
							Y	N	Ambient	Sample	PH	Special Cond.		
B-2 (18')	2/7	1330	X		3	Soil	1	2					BTEX/GRO, DRO, dry wt	143516
B-3 (5')	2/7	1140	X		3		1	2						143517
B-3 (16')	2/7	1145	X		3		1	2						143518
B-4 (13')	2/7	1010	X		3									143519
B-4 (22')	2/7	1015	X		3									143520
B-5 (6')	2/7	1605	X		3									143521
B-5 (25')	2/7	1610	X		3									143522
B-6 (23')	2/7	1430	X		3									143523
Methanol Blank	2/8	1105	X		1	MeOH	1						BTEX/GRO	143524

Collected by: Mathew Beckman	Date See	Time Above	Delivery by:	Date	Time
Received by:	Date 2/9/07	Time 1600	Relinquished by: Mathew Beckman	Date 2/9/07	Time 1602
Received by:	Date	Time	Relinquished by:	Date 2/12/07	Time
Received by: Jim Matyka	Date 2.12.7	Time 910A	Relinquished by: Jim Matyka	Date 2.12.7	Time 12P
Received for lab by:	Date 2-12-07	Time 12:00	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? ☐ Yes ☐ No ☐ N/A 3.2°C on ice

Final Disposition:

Comments (Weather Conditions, Precautions, Hazards):

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

6/99cp10k

STS Consultants Ltd.
Consulting Engineers

CHAIN OF CUSTODY RECORD

№ 38721 75269

RECORD NUMBER 38721 THROUGH 38722

Contact Person Jim Frape
Phone No. 763 315 6300 Office Mpls
Project No. 200601534 PO No.
Project Name Alex Exhaust

Special Handling Request
☐ Rush
☐ Verbal
☐ Other

Laboratory NTS
Contact Person
Phone No.
Results Due

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
									PID/FID					
							Y	N	Ambient	Sample	PH	Special Cond.		
TW-1	2/8	1015	X		7	water	7						VOC, GRO, DRO	143527
TW-2	2/7	1430	X		7	↓	7						↓ ↓ ↓	143528
TW-3	2/7	1300	X		7	↓	7						↓ ↓ ↓	143529
TW-4	2/7	1125	X		7	↓	7						↓ ↓ ↓	143530
TW-5	2/8	1205	X		7	↓	7						↓ ↓ ↓	143531
TW-6	2/7	1535	X		7	↓	7						↓ ↓ ↓	143532
B-1 6'	2/8	1000	X		3	soil	1	2					BTEX/GRO, DRO, Dry Wt	143525
B-1 20'	2/8	1005	X		3	↓	1	2					↓ ↓ ↓	143526
F.B.	2/8	1635	X		7	water	7						VOC, GRO, DRO	143533

Collected by: Mathew Beckman Date See Time Above
Received by: Dan Toma Date 2/9/07 Time 1600
Received by: Date Time
Received by: Jim Malyfa Date 2.12.7 Time 910A
Received for lab by: Date 2-12-07 Time 12:00

Delivery by: Date Time
Relinquished by: Mathew Beckman Date 2/9/07 Time 1602
Relinquished by: D Toma Date 2/12/07 Time
Relinquished by: Jim Malyfa Date 2.12.7 Time 12P
Relinquished by: Date Time

Laboratory Comments Only: Seals Intact Upon Receipt? ☐ Yes ☐ No ☐ N/A 3.2°C on ice

Final Disposition:

Comments (Weather Conditions, Precautions, Hazards):

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

6/99cp10k

STS Consultants Ltd.
Consulting Engineers

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700
Fax: (612)607-6444

February 22, 2007

Mr. Tim Grape
STS Consultants,Ltd.
10900 73rd Ave. N.
Suite 150
Maple Grove, MN 55369

RE: Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Dear Mr. Grape:

Enclosed are the analytical results for sample(s) received by the laboratory on February 09, 2007. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Seth Jacobson

seth.jacobson@pacelabs.com
Project Manager

Illinois Certification #: 200011
Iowa Certification #: 368
Minnesota Certification #: 027-053-137
Wisconsin Certification #: 999407970

Enclosures

PROJECT NARRATIVE

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Method: **TO-15**
Description: TO15 MSV AIR
Client: STS Consultants, Ltd.
Date: February 22, 2007

General Information:
5 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

QC Batch: AIR/5173

IC: The initial calibration for this compound was outside of method control limits. The result is estimated.

- BLANK (Lab ID: 309344)
  - 1,2,4-Trichlorobenzene
- DUP (Lab ID: 310336)
  - 1,2,4-Trichlorobenzene
- FB (Lab ID: 1046203005)
  - 1,2,4-Trichlorobenzene
- LCS (Lab ID: 309345)
  - 1,2,4-Trichlorobenzene

SS: This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

- DUP (Lab ID: 310336)
  - Acetone
- FB (Lab ID: 1046203005)
  - Acetone
- LCS (Lab ID: 309345)
  - Acetone
  - Tetrahydrofuran

QC Batch: AIR/5188

IC: The initial calibration for this compound was outside of method control limits. The result is estimated.

- BLANK (Lab ID: 310368)
  - 1,2,4-Trichlorobenzene
- DUP (Lab ID: 310337)
  - 1,2,4-Trichlorobenzene
- LCS (Lab ID: 310369)
  - 1,2,4-Trichlorobenzene
- VP-3 (Lab ID: 1046203003)
  - 1,2,4-Trichlorobenzene

SS: This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

- LCS (Lab ID: 310369)
  - Acetone
- VP-3 (Lab ID: 1046203003)
  - Acetone

PROJECT NARRATIVE

Project: 200606839   ALEX EXHAUST
Pace Project No.: 1046203

Method: **TO-15**
Description: TO15 MSV AIR
Client: STS Consultants, Ltd.
Date: February 22, 2007

QC Batch: AIR/5198

IC: The initial calibration for this compound was outside of method control limits. The result is estimated.

- BLANK (Lab ID: 310879)
  - 1,2,4-Trichlorobenzene
- DUP (Lab ID: 310881)
  - 1,2,4-Trichlorobenzene
- DUP (Lab ID: 310882)
  - 1,2,4-Trichlorobenzene
- LCS (Lab ID: 310880)
  - 1,2,4-Trichlorobenzene
- VP-1 (Lab ID: 1046203001)
  - 1,2,4-Trichlorobenzene
- VP-2 (Lab ID: 1046203002)
  - 1,2,4-Trichlorobenzene
- VP-4 (Lab ID: 1046203004)
  - 1,2,4-Trichlorobenzene

SS: This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

- LCS (Lab ID: 310880)
  - Acetone
- VP-4 (Lab ID: 1046203004)
  - Acetone

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: AIR/5173

CC: The continuing calibration for this compound is outside of method control limits. The result is estimated.

- LCS (Lab ID: 309345)
  - 1,2,4-Trimethylbenzene
  - Naphthalene

QC Batch: AIR/5188

CC: The continuing calibration for this compound is outside of method control limits. The result is estimated.

- LCS (Lab ID: 310369)
  - 1,2,4-Trimethylbenzene
  - Hexachloro-1,3-butadiene
  - Naphthalene
- VP-3 (Lab ID: 1046203003)
  - Naphthalene

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

PROJECT NARRATIVE

Project:	200606839 ALEX EXHAUST
Pace Project No.:	1046203

Method:	**TO-15**
Description:	TO15 MSV AIR
Client:	STS Consultants, Ltd.
Date:	February 22, 2007

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: AIR/5173

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 309345)
  - Ethyl acetate

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- LCS (Lab ID: 309345)
  - Hexachloro-1,3-butadiene

QC Batch: AIR/5188

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- LCS (Lab ID: 310369)
  - 1,2,4-Trichlorobenzene
  - Ethyl acetate
  - Hexachloro-1,3-butadiene

QC Batch: AIR/5198

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- LCS (Lab ID: 310880)
  - Hexachloro-1,3-butadiene

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- LCS (Lab ID: 310880)
  - Naphthalene

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: AIR/5188

D6: The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 310337)
  - Acetone

Additional Comments:

Sample Comments:

K1: The Total Hydrocarbon (THC) pattern occured in the first half of the chromatogram (before toluene).

- VP-1 (Lab ID: 1046203001)
- VP-2 (Lab ID: 1046203002)

K3: The Total Hydrocarbon (THC) pattern is evenly distributed throughout the chromatogram (before and after toluene).

- VP-3 (Lab ID: 1046203003)

PROJECT NARRATIVE

Project:	200606839 ALEX EXHAUST
Pace Project No.:	1046203

Method: **TO-15**
Description: TO15 MSV AIR
Client: STS Consultants, Ltd.
Date: February 22, 2007

Sample Comments:

K1: The Total Hydrocarbon (THC) pattern occured in the first half of the chromatogram (before toluene).
- VP-4 (Lab ID: 1046203004)

K3: The Total Hydrocarbon (THC) pattern is evenly distributed throughout the chromatogram (before and after toluene).
- FB (Lab ID: 1046203005)

Analyte Comments:

QC Batch: AIR/5188

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- DUP (Lab ID: 310337)
  - Acetone

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- DUP (Lab ID: 310337)
  - Propylene

QC Batch: AIR/5198

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- VP-1 (Lab ID: 1046203001)
  - Cyclohexane

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- VP-1 (Lab ID: 1046203001)
  - n-Hexane

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- VP-2 (Lab ID: 1046203002)
  - Cyclohexane

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- VP-2 (Lab ID: 1046203002)
  - n-Hexane

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- VP-4 (Lab ID: 1046203004)
  - Propylene

E: Analyte concentration exceeded the calibration range. The reported result is estimated.
- DUP (Lab ID: 310881)
  - Propylene

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414

Phone: (612)607-1700
Fax: (612)607-6444

SAMPLE SUMMARY

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1046203001	**VP-1**	Air	02/08/07 14:45	02/09/07 13:00
1046203002	**VP-2**	Air	02/08/07 14:20	02/09/07 13:00
1046203003	**VP-3**	Air	02/08/07 15:00	02/09/07 13:00
1046203004	**VP-4**	Air	02/08/07 15:30	02/09/07 13:00
1046203005	**FB**	Air	02/08/07 15:45	02/09/07 13:00

SAMPLE ANALYTE COUNT

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Lab ID	Sample ID	Method	Analytes Reported
1046203001	**VP-1**	TO-15	58
1046203002	**VP-2**	TO-15	58
1046203003	**VP-3**	TO-15	58
1046203004	**VP-4**	TO-15	58
1046203005	**FB**	TO-15	58

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-1 **Lab ID: 1046203001** Collected: 02/08/07 14:45 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	ND	ug/m3	312	650		02/14/07 03:23	67-64-1	
Benzene	**15700**	ug/m3	422	650		02/14/07 03:23	71-43-2	
Bromodichloromethane	ND	ug/m3	910	650		02/14/07 03:23	75-27-4	
Bromoform	ND	ug/m3	1360	650		02/14/07 03:23	75-25-2	
Bromomethane	ND	ug/m3	514	650		02/14/07 03:23	74-83-9	
1,3-Butadiene	ND	ug/m3	292	650		02/14/07 03:23	106-99-0	
2-Butanone (MEK)	ND	ug/m3	390	650		02/14/07 03:23	78-93-3	
Carbon disulfide	ND	ug/m3	410	650		02/14/07 03:23	75-15-0	
Carbon tetrachloride	ND	ug/m3	845	650		02/14/07 03:23	56-23-5	
Chlorobenzene	ND	ug/m3	611	650		02/14/07 03:23	108-90-7	
Chloroethane	ND	ug/m3	351	650		02/14/07 03:23	75-00-3	
Chloroform	ND	ug/m3	644	650		02/14/07 03:23	67-66-3	
Chloromethane	ND	ug/m3	273	650		02/14/07 03:23	74-87-3	
Cyclohexane	**1080000**	ug/m3	4420	6500		02/14/07 03:58	110-82-7	E
Dibromochloromethane	ND	ug/m3	1100	650		02/14/07 03:23	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	1040	650		02/14/07 03:23	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	780	650		02/14/07 03:23	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	780	650		02/14/07 03:23	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	780	650		02/14/07 03:23	106-46-7	
Dichlorodifluoromethane	ND	ug/m3	650	650		02/14/07 03:23	75-71-8	
1,1-Dichloroethane	ND	ug/m3	533	650		02/14/07 03:23	75-34-3	
1,2-Dichloroethane	ND	ug/m3	533	650		02/14/07 03:23	107-06-2	
1,1-Dichloroethene	ND	ug/m3	526	650		02/14/07 03:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	526	650		02/14/07 03:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	526	650		02/14/07 03:23	156-60-5	
1,2-Dichloropropane	ND	ug/m3	611	650		02/14/07 03:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	598	650		02/14/07 03:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	598	650		02/14/07 03:23	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	910	650		02/14/07 03:23	76-14-2	
Ethyl acetate	ND	ug/m3	474	650		02/14/07 03:23	141-78-6	
Ethylbenzene	**18400**	ug/m3	572	650		02/14/07 03:23	100-41-4	
4-Ethyltoluene	**4050**	ug/m3	1620	650		02/14/07 03:23	622-96-8	
n-Heptane	**288000**	ug/m3	5400	6500		02/14/07 03:58	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	1430	650		02/14/07 03:23	87-68-3	L2
n-Hexane	**540000**	ug/m3	4680	6500		02/14/07 03:58	110-54-3	E
2-Hexanone	ND	ug/m3	540	650		02/14/07 03:23	591-78-6	
Methylene Chloride	ND	ug/m3	462	650		02/14/07 03:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	540	650		02/14/07 03:23	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	474	650		02/14/07 03:23	1634-04-4	
Naphthalene	ND	ug/m3	1760	650		02/14/07 03:23	91-20-3	
Propylene	ND	ug/m3	228	650		02/14/07 03:23	115-07-1	
Styrene	ND	ug/m3	566	650		02/14/07 03:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	910	650		02/14/07 03:23	79-34-5	
Tetrachloroethene	ND	ug/m3	910	650		02/14/07 03:23	127-18-4	
Tetrahydrofuran	ND	ug/m3	390	650		02/14/07 03:23	109-99-9	
Toluene	**4100**	ug/m3	500	650		02/14/07 03:23	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	644	650		02/14/07 03:23	120-82-1	IC

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-1 **Lab ID: 1046203001** Collected: 02/08/07 14:45 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1,1-Trichloroethane	ND	ug/m3	715	650		02/14/07 03:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	715	650		02/14/07 03:23	79-00-5	
Trichloroethene	ND	ug/m3	715	650		02/14/07 03:23	79-01-6	
Trichlorofluoromethane	ND	ug/m3	715	650		02/14/07 03:23	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	1040	650		02/14/07 03:23	76-13-1	
1,2,4-Trimethylbenzene	**5930**	ug/m3	1620	650		02/14/07 03:23	95-63-6	
1,3,5-Trimethylbenzene	**2370**	ug/m3	1620	650		02/14/07 03:23	108-67-8	
Vinyl acetate	ND	ug/m3	462	650		02/14/07 03:23	108-05-4	
Vinyl chloride	ND	ug/m3	338	650		02/14/07 03:23	75-01-4	
m&p-Xylene	**31200**	ug/m3	1140	650		02/14/07 03:23	1330-20-7	
o-Xylene	**5180**	ug/m3	572	650		02/14/07 03:23	95-47-6	

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-2 **Lab ID: 1046203002** Collected: 02/08/07 14:20 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	ND	ug/m3	300	625		02/14/07 02:10	67-64-1	
Benzene	**33500**	ug/m3	406	625		02/14/07 02:10	71-43-2	
Bromodichloromethane	ND	ug/m3	875	625		02/14/07 02:10	75-27-4	
Bromoform	ND	ug/m3	1310	625		02/14/07 02:10	75-25-2	
Bromomethane	ND	ug/m3	494	625		02/14/07 02:10	74-83-9	
1,3-Butadiene	ND	ug/m3	281	625		02/14/07 02:10	106-99-0	
2-Butanone (MEK)	ND	ug/m3	375	625		02/14/07 02:10	78-93-3	
Carbon disulfide	ND	ug/m3	394	625		02/14/07 02:10	75-15-0	
Carbon tetrachloride	ND	ug/m3	812	625		02/14/07 02:10	56-23-5	
Chlorobenzene	ND	ug/m3	588	625		02/14/07 02:10	108-90-7	
Chloroethane	ND	ug/m3	338	625		02/14/07 02:10	75-00-3	
Chloroform	ND	ug/m3	619	625		02/14/07 02:10	67-66-3	
Chloromethane	ND	ug/m3	262	625		02/14/07 02:10	74-87-3	
Cyclohexane	**918000**	ug/m3	4250	6250		02/14/07 02:47	110-82-7	E
Dibromochloromethane	ND	ug/m3	1060	625		02/14/07 02:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	1000	625		02/14/07 02:10	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	750	625		02/14/07 02:10	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	750	625		02/14/07 02:10	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	750	625		02/14/07 02:10	106-46-7	
Dichlorodifluoromethane	ND	ug/m3	625	625		02/14/07 02:10	75-71-8	
1,1-Dichloroethane	ND	ug/m3	512	625		02/14/07 02:10	75-34-3	
1,2-Dichloroethane	ND	ug/m3	512	625		02/14/07 02:10	107-06-2	
1,1-Dichloroethene	ND	ug/m3	506	625		02/14/07 02:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	506	625		02/14/07 02:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	506	625		02/14/07 02:10	156-60-5	
1,2-Dichloropropane	ND	ug/m3	588	625		02/14/07 02:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	575	625		02/14/07 02:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	575	625		02/14/07 02:10	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	875	625		02/14/07 02:10	76-14-2	
Ethyl acetate	ND	ug/m3	456	625		02/14/07 02:10	141-78-6	
Ethylbenzene	**18000**	ug/m3	550	625		02/14/07 02:10	100-41-4	
4-Ethyltoluene	**5100**	ug/m3	1560	625		02/14/07 02:10	622-96-8	
n-Heptane	ND	ug/m3	519	625		02/14/07 02:10	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	1380	625		02/14/07 02:10	87-68-3	L2
n-Hexane	**829000**	ug/m3	4500	6250		02/14/07 02:47	110-54-3	E
2-Hexanone	ND	ug/m3	519	625		02/14/07 02:10	591-78-6	
Methylene Chloride	ND	ug/m3	444	625		02/14/07 02:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	519	625		02/14/07 02:10	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	456	625		02/14/07 02:10	1634-04-4	
Naphthalene	ND	ug/m3	1690	625		02/14/07 02:10	91-20-3	
Propylene	ND	ug/m3	219	625		02/14/07 02:10	115-07-1	
Styrene	ND	ug/m3	544	625		02/14/07 02:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	875	625		02/14/07 02:10	79-34-5	
Tetrachloroethene	ND	ug/m3	875	625		02/14/07 02:10	127-18-4	
Tetrahydrofuran	ND	ug/m3	375	625		02/14/07 02:10	109-99-9	
Toluene	**3740**	ug/m3	481	625		02/14/07 02:10	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	619	625		02/14/07 02:10	120-82-1	IC

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-2 **Lab ID: 1046203002** Collected: 02/08/07 14:20 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1,1-Trichloroethane	ND	ug/m3	688	625		02/14/07 02:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	688	625		02/14/07 02:10	79-00-5	
Trichloroethene	ND	ug/m3	688	625		02/14/07 02:10	79-01-6	
Trichlorofluoromethane	ND	ug/m3	688	625		02/14/07 02:10	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	1000	625		02/14/07 02:10	76-13-1	
1,2,4-Trimethylbenzene	**6970**	ug/m3	1560	625		02/14/07 02:10	95-63-6	
1,3,5-Trimethylbenzene	**4190**	ug/m3	1560	625		02/14/07 02:10	108-67-8	
Vinyl acetate	ND	ug/m3	444	625		02/14/07 02:10	108-05-4	
Vinyl chloride	ND	ug/m3	325	625		02/14/07 02:10	75-01-4	
m&p-Xylene	**28600**	ug/m3	1100	625		02/14/07 02:10	1330-20-7	
o-Xylene	**2760**	ug/m3	550	625		02/14/07 02:10	95-47-6	

ANALYTICAL RESULTS

Project: 200606839   ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-3   **Lab ID: 1046203003**   Collected: 02/08/07 15:00   Received: 02/09/07 13:00   Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	**48.6**	ug/m3	3.6	7.55		02/13/07 17:19	67-64-1	SS
Benzene	**29.1**	ug/m3	0.98	1.51		02/12/07 19:02	71-43-2	
Bromodichloromethane	ND	ug/m3	2.1	1.51		02/12/07 19:02	75-27-4	
Bromoform	ND	ug/m3	3.2	1.51		02/12/07 19:02	75-25-2	
Bromomethane	ND	ug/m3	1.2	1.51		02/12/07 19:02	74-83-9	
1,3-Butadiene	ND	ug/m3	0.68	1.51		02/12/07 19:02	106-99-0	
2-Butanone (MEK)	**11.0**	ug/m3	0.91	1.51		02/12/07 19:02	78-93-3	
Carbon disulfide	**3.7**	ug/m3	0.95	1.51		02/12/07 19:02	75-15-0	
Carbon tetrachloride	ND	ug/m3	2.0	1.51		02/12/07 19:02	56-23-5	
Chlorobenzene	ND	ug/m3	1.4	1.51		02/12/07 19:02	108-90-7	
Chloroethane	ND	ug/m3	0.82	1.51		02/12/07 19:02	75-00-3	
Chloroform	ND	ug/m3	1.5	1.51		02/12/07 19:02	67-66-3	
Chloromethane	ND	ug/m3	0.63	1.51		02/12/07 19:02	74-87-3	
Cyclohexane	**98.5**	ug/m3	1.0	1.51		02/12/07 19:02	110-82-7	
Dibromochloromethane	ND	ug/m3	2.6	1.51		02/12/07 19:02	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	2.4	1.51		02/12/07 19:02	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	1.8	1.51		02/12/07 19:02	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	1.8	1.51		02/12/07 19:02	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	1.8	1.51		02/12/07 19:02	106-46-7	
Dichlorodifluoromethane	**29.7**	ug/m3	1.5	1.51		02/12/07 19:02	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.2	1.51		02/12/07 19:02	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.2	1.51		02/12/07 19:02	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.2	1.51		02/12/07 19:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.2	1.51		02/12/07 19:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.2	1.51		02/12/07 19:02	156-60-5	
1,2-Dichloropropane	ND	ug/m3	1.4	1.51		02/12/07 19:02	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	1.4	1.51		02/12/07 19:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.4	1.51		02/12/07 19:02	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	2.1	1.51		02/12/07 19:02	76-14-2	
Ethyl acetate	ND	ug/m3	1.1	1.51		02/12/07 19:02	141-78-6	
Ethylbenzene	**15.0**	ug/m3	1.3	1.51		02/12/07 19:02	100-41-4	
4-Ethyltoluene	**11.0**	ug/m3	3.8	1.51		02/12/07 19:02	622-96-8	
n-Heptane	**36.2**	ug/m3	1.3	1.51		02/12/07 19:02	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	3.3	1.51		02/12/07 19:02	87-68-3	
n-Hexane	**42.1**	ug/m3	1.1	1.51		02/12/07 19:02	110-54-3	
2-Hexanone	ND	ug/m3	1.3	1.51		02/12/07 19:02	591-78-6	
Methylene Chloride	**2.1**	ug/m3	1.1	1.51		02/12/07 19:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	1.3	1.51		02/12/07 19:02	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	1.1	1.51		02/12/07 19:02	1634-04-4	
Naphthalene	**4.3**	ug/m3	4.1	1.51		02/12/07 19:02	91-20-3	CC
Propylene	**167**	ug/m3	2.6	7.55		02/13/07 17:19	115-07-1	
Styrene	**2.9**	ug/m3	1.3	1.51		02/12/07 19:02	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	2.1	1.51		02/12/07 19:02	79-34-5	
Tetrachloroethene	**3.2**	ug/m3	2.1	1.51		02/12/07 19:02	127-18-4	
Tetrahydrofuran	ND	ug/m3	0.91	1.51		02/12/07 19:02	109-99-9	
Toluene	**39.1**	ug/m3	1.2	1.51		02/12/07 19:02	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	1.5	1.51		02/12/07 19:02	120-82-1	IC

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-3 **Lab ID: 1046203003** Collected: 02/08/07 15:00 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1,1-Trichloroethane	ND	ug/m3	1.7	1.51		02/12/07 19:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.7	1.51		02/12/07 19:02	79-00-5	
Trichloroethene	ND	ug/m3	1.7	1.51		02/12/07 19:02	79-01-6	
Trichlorofluoromethane	ND	ug/m3	1.7	1.51		02/12/07 19:02	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	2.4	1.51		02/12/07 19:02	76-13-1	
1,2,4-Trimethylbenzene	**31.3**	ug/m3	3.8	1.51		02/12/07 19:02	95-63-6	
1,3,5-Trimethylbenzene	**8.9**	ug/m3	3.8	1.51		02/12/07 19:02	108-67-8	
Vinyl acetate	ND	ug/m3	1.1	1.51		02/12/07 19:02	108-05-4	
Vinyl chloride	ND	ug/m3	0.79	1.51		02/12/07 19:02	75-01-4	
m&p-Xylene	**36.9**	ug/m3	2.7	1.51		02/12/07 19:02	1330-20-7	
o-Xylene	**11.7**	ug/m3	1.3	1.51		02/12/07 19:02	95-47-6	

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-4 **Lab ID: 1046203004** Collected: 02/08/07 15:30 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	**48.4**	ug/m3	3.1	6.5		02/13/07 17:49	67-64-1	SS
Benzene	**21.9**	ug/m3	4.2	6.5		02/13/07 17:49	71-43-2	
Bromodichloromethane	ND	ug/m3	9.1	6.5		02/13/07 17:49	75-27-4	
Bromoform	ND	ug/m3	13.6	6.5		02/13/07 17:49	75-25-2	
Bromomethane	ND	ug/m3	5.1	6.5		02/13/07 17:49	74-83-9	
1,3-Butadiene	ND	ug/m3	2.9	6.5		02/13/07 17:49	106-99-0	
2-Butanone (MEK)	ND	ug/m3	3.9	6.5		02/13/07 17:49	78-93-3	
Carbon disulfide	**6.8**	ug/m3	4.1	6.5		02/13/07 17:49	75-15-0	
Carbon tetrachloride	ND	ug/m3	8.4	6.5		02/13/07 17:49	56-23-5	
Chlorobenzene	ND	ug/m3	6.1	6.5		02/13/07 17:49	108-90-7	
Chloroethane	ND	ug/m3	3.5	6.5		02/13/07 17:49	75-00-3	
Chloroform	ND	ug/m3	6.4	6.5		02/13/07 17:49	67-66-3	
Chloromethane	ND	ug/m3	2.7	6.5		02/13/07 17:49	74-87-3	
Cyclohexane	**27.0**	ug/m3	4.4	6.5		02/13/07 17:49	110-82-7	
Dibromochloromethane	ND	ug/m3	11.0	6.5		02/13/07 17:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	10.4	6.5		02/13/07 17:49	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	7.8	6.5		02/13/07 17:49	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	7.8	6.5		02/13/07 17:49	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	7.8	6.5		02/13/07 17:49	106-46-7	
Dichlorodifluoromethane	ND	ug/m3	6.5	6.5		02/13/07 17:49	75-71-8	
1,1-Dichloroethane	ND	ug/m3	5.3	6.5		02/13/07 17:49	75-34-3	
1,2-Dichloroethane	ND	ug/m3	5.3	6.5		02/13/07 17:49	107-06-2	
1,1-Dichloroethene	ND	ug/m3	5.3	6.5		02/13/07 17:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	5.3	6.5		02/13/07 17:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	5.3	6.5		02/13/07 17:49	156-60-5	
1,2-Dichloropropane	ND	ug/m3	6.1	6.5		02/13/07 17:49	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	6.0	6.5		02/13/07 17:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	6.0	6.5		02/13/07 17:49	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	9.1	6.5		02/13/07 17:49	76-14-2	
Ethyl acetate	ND	ug/m3	4.7	6.5		02/13/07 17:49	141-78-6	
Ethylbenzene	**7.2**	ug/m3	5.7	6.5		02/13/07 17:49	100-41-4	
4-Ethyltoluene	ND	ug/m3	16.2	6.5		02/13/07 17:49	622-96-8	
n-Heptane	**21.1**	ug/m3	5.4	6.5		02/13/07 17:49	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	14.3	6.5		02/13/07 17:49	87-68-3	L2
n-Hexane	**32.5**	ug/m3	4.7	6.5		02/13/07 17:49	110-54-3	
2-Hexanone	ND	ug/m3	5.4	6.5		02/13/07 17:49	591-78-6	
Methylene Chloride	ND	ug/m3	4.6	6.5		02/13/07 17:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	5.4	6.5		02/13/07 17:49	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	4.7	6.5		02/13/07 17:49	1634-04-4	
Naphthalene	ND	ug/m3	17.6	6.5		02/13/07 17:49	91-20-3	
Propylene	**267**	ug/m3	2.3	6.5		02/13/07 17:49	115-07-1	E
Styrene	ND	ug/m3	5.7	6.5		02/13/07 17:49	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	9.1	6.5		02/13/07 17:49	79-34-5	
Tetrachloroethene	ND	ug/m3	9.1	6.5		02/13/07 17:49	127-18-4	
Tetrahydrofuran	ND	ug/m3	3.9	6.5		02/13/07 17:49	109-99-9	
Toluene	**25.0**	ug/m3	5.0	6.5		02/13/07 17:49	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	6.4	6.5		02/13/07 17:49	120-82-1	IC

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: VP-4 **Lab ID: 1046203004** Collected: 02/08/07 15:30 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1,1-Trichloroethane	ND	ug/m3	7.2	6.5		02/13/07 17:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	7.2	6.5		02/13/07 17:49	79-00-5	
Trichloroethene	ND	ug/m3	7.2	6.5		02/13/07 17:49	79-01-6	
Trichlorofluoromethane	ND	ug/m3	7.2	6.5		02/13/07 17:49	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	10.4	6.5		02/13/07 17:49	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/m3	16.2	6.5		02/13/07 17:49	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	16.2	6.5		02/13/07 17:49	108-67-8	
Vinyl acetate	ND	ug/m3	4.6	6.5		02/13/07 17:49	108-05-4	
Vinyl chloride	ND	ug/m3	3.4	6.5		02/13/07 17:49	75-01-4	
m&p-Xylene	**14.1**	ug/m3	11.4	6.5		02/13/07 17:49	1330-20-7	
o-Xylene	ND	ug/m3	5.7	6.5		02/13/07 17:49	95-47-6	

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: FB **Lab ID: 1046203005** Collected: 02/08/07 15:45 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Acetone	**5.7**	ug/m3	0.60	1.25		02/12/07 17:59	67-64-1	SS
Benzene	ND	ug/m3	0.81	1.25		02/12/07 17:59	71-43-2	
Bromodichloromethane	ND	ug/m3	1.8	1.25		02/12/07 17:59	75-27-4	
Bromoform	ND	ug/m3	2.6	1.25		02/12/07 17:59	75-25-2	
Bromomethane	ND	ug/m3	0.99	1.25		02/12/07 17:59	74-83-9	
1,3-Butadiene	ND	ug/m3	0.56	1.25		02/12/07 17:59	106-99-0	
2-Butanone (MEK)	**1.7**	ug/m3	0.75	1.25		02/12/07 17:59	78-93-3	
Carbon disulfide	ND	ug/m3	0.79	1.25		02/12/07 17:59	75-15-0	
Carbon tetrachloride	ND	ug/m3	1.6	1.25		02/12/07 17:59	56-23-5	
Chlorobenzene	ND	ug/m3	1.2	1.25		02/12/07 17:59	108-90-7	
Chloroethane	ND	ug/m3	0.68	1.25		02/12/07 17:59	75-00-3	
Chloroform	ND	ug/m3	1.2	1.25		02/12/07 17:59	67-66-3	
Chloromethane	**0.83**	ug/m3	0.52	1.25		02/12/07 17:59	74-87-3	
Cyclohexane	ND	ug/m3	0.85	1.25		02/12/07 17:59	110-82-7	
Dibromochloromethane	ND	ug/m3	2.1	1.25		02/12/07 17:59	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/m3	2.0	1.25		02/12/07 17:59	106-93-4	
1,2-Dichlorobenzene	ND	ug/m3	1.5	1.25		02/12/07 17:59	95-50-1	
1,3-Dichlorobenzene	ND	ug/m3	1.5	1.25		02/12/07 17:59	541-73-1	
1,4-Dichlorobenzene	ND	ug/m3	1.5	1.25		02/12/07 17:59	106-46-7	
Dichlorodifluoromethane	**2.2**	ug/m3	1.2	1.25		02/12/07 17:59	75-71-8	
1,1-Dichloroethane	ND	ug/m3	1.0	1.25		02/12/07 17:59	75-34-3	
1,2-Dichloroethane	ND	ug/m3	1.0	1.25		02/12/07 17:59	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.0	1.25		02/12/07 17:59	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.0	1.25		02/12/07 17:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.0	1.25		02/12/07 17:59	156-60-5	
1,2-Dichloropropane	ND	ug/m3	1.2	1.25		02/12/07 17:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/m3	1.2	1.25		02/12/07 17:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/m3	1.2	1.25		02/12/07 17:59	10061-02-6	
Dichlorotetrafluoroethane	ND	ug/m3	1.8	1.25		02/12/07 17:59	76-14-2	
Ethyl acetate	ND	ug/m3	0.91	1.25		02/12/07 17:59	141-78-6	
Ethylbenzene	ND	ug/m3	1.1	1.25		02/12/07 17:59	100-41-4	
4-Ethyltoluene	ND	ug/m3	3.1	1.25		02/12/07 17:59	622-96-8	
n-Heptane	ND	ug/m3	1.0	1.25		02/12/07 17:59	142-82-5	
Hexachloro-1,3-butadiene	ND	ug/m3	2.8	1.25		02/12/07 17:59	87-68-3	
n-Hexane	ND	ug/m3	0.90	1.25		02/12/07 17:59	110-54-3	
2-Hexanone	ND	ug/m3	1.0	1.25		02/12/07 17:59	591-78-6	
Methylene Chloride	ND	ug/m3	0.89	1.25		02/12/07 17:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/m3	1.0	1.25		02/12/07 17:59	108-10-1	
Methyl-tert-butyl ether	ND	ug/m3	0.91	1.25		02/12/07 17:59	1634-04-4	
Naphthalene	ND	ug/m3	3.4	1.25		02/12/07 17:59	91-20-3	
Propylene	ND	ug/m3	0.44	1.25		02/12/07 17:59	115-07-1	
Styrene	ND	ug/m3	1.1	1.25		02/12/07 17:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/m3	1.8	1.25		02/12/07 17:59	79-34-5	
Tetrachloroethene	ND	ug/m3	1.8	1.25		02/12/07 17:59	127-18-4	
Tetrahydrofuran	ND	ug/m3	0.75	1.25		02/12/07 17:59	109-99-9	
Toluene	ND	ug/m3	0.96	1.25		02/12/07 17:59	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/m3	1.2	1.25		02/12/07 17:59	120-82-1	IC

ANALYTICAL RESULTS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Sample: FB **Lab ID: 1046203005** Collected: 02/08/07 15:45 Received: 02/09/07 13:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
1,1,1-Trichloroethane	ND	ug/m3	1.4	1.25		02/12/07 17:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/m3	1.4	1.25		02/12/07 17:59	79-00-5	
Trichloroethene	ND	ug/m3	1.4	1.25		02/12/07 17:59	79-01-6	
Trichlorofluoromethane	ND	ug/m3	1.4	1.25		02/12/07 17:59	75-69-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/m3	2.0	1.25		02/12/07 17:59	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/m3	3.1	1.25		02/12/07 17:59	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/m3	3.1	1.25		02/12/07 17:59	108-67-8	
Vinyl acetate	ND	ug/m3	0.89	1.25		02/12/07 17:59	108-05-4	
Vinyl chloride	ND	ug/m3	0.65	1.25		02/12/07 17:59	75-01-4	
m&p-Xylene	ND	ug/m3	2.2	1.25		02/12/07 17:59	1330-20-7	
o-Xylene	ND	ug/m3	1.1	1.25		02/12/07 17:59	95-47-6	

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

QC Batch: AIR/5173
Analysis Method: TO-15
QC Batch Method: TO-15
Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 1046203005

METHOD BLANK: 309344
Associated Lab Samples: 1046203005

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	
1,1,2,2-Tetrachloroethane	ug/m3	ND	1.4	
1,1,2-Trichloroethane	ug/m3	ND	1.1	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	1.6	
1,1-Dichloroethane	ug/m3	ND	0.82	
1,1-Dichloroethene	ug/m3	ND	0.81	
1,2,4-Trichlorobenzene	ug/m3	ND	0.99	IC
1,2,4-Trimethylbenzene	ug/m3	ND	2.5	
1,2-Dibromoethane (EDB)	ug/m3	ND	1.6	
1,2-Dichlorobenzene	ug/m3	ND	1.2	
1,2-Dichloroethane	ug/m3	ND	0.82	
1,2-Dichloropropane	ug/m3	ND	0.94	
1,3,5-Trimethylbenzene	ug/m3	ND	2.5	
1,3-Butadiene	ug/m3	ND	0.45	
1,3-Dichlorobenzene	ug/m3	ND	1.2	
1,4-Dichlorobenzene	ug/m3	ND	1.2	
2-Butanone (MEK)	ug/m3	ND	0.60	
2-Hexanone	ug/m3	ND	0.83	
4-Ethyltoluene	ug/m3	ND	2.5	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	0.83	
Acetone	ug/m3	ND	0.48	
Benzene	ug/m3	ND	0.65	
Bromodichloromethane	ug/m3	ND	1.4	
Bromoform	ug/m3	ND	2.1	
Bromomethane	ug/m3	ND	0.79	
Carbon disulfide	ug/m3	ND	0.63	
Carbon tetrachloride	ug/m3	ND	1.3	
Chlorobenzene	ug/m3	ND	0.94	
Chloroethane	ug/m3	ND	0.54	
Chloroform	ug/m3	ND	0.99	
Chloromethane	ug/m3	ND	0.42	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	
cis-1,3-Dichloropropene	ug/m3	ND	0.92	
Cyclohexane	ug/m3	ND	0.68	
Dibromochloromethane	ug/m3	ND	1.7	
Dichlorodifluoromethane	ug/m3	ND	1.0	
Dichlorotetrafluoroethane	ug/m3	ND	1.4	
Ethyl acetate	ug/m3	ND	0.73	
Ethylbenzene	ug/m3	ND	0.88	
Hexachloro-1,3-butadiene	ug/m3	ND	2.2	
m&p-Xylene	ug/m3	ND	1.8	
Methyl-tert-butyl ether	ug/m3	ND	0.73	
Methylene Chloride	ug/m3	ND	0.71	

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

METHOD BLANK: 309344

Associated Lab Samples: 1046203005

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
n-Heptane	ug/m3	ND	0.83	
n-Hexane	ug/m3	ND	0.72	
Naphthalene	ug/m3	ND	2.7	
o-Xylene	ug/m3	ND	0.88	
Propylene	ug/m3	ND	0.35	
Styrene	ug/m3	ND	0.87	
Tetrachloroethene	ug/m3	ND	1.4	
Tetrahydrofuran	ug/m3	ND	0.60	
Toluene	ug/m3	ND	0.77	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	
trans-1,3-Dichloropropene	ug/m3	ND	0.92	
Trichloroethene	ug/m3	ND	1.1	
Trichlorofluoromethane	ug/m3	ND	1.1	
Vinyl acetate	ug/m3	ND	0.71	
Vinyl chloride	ug/m3	ND	0.52	

LABORATORY CONTROL SAMPLE: 309345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	58.3	63.0	108	60-134	
1,1,2,2-Tetrachloroethane	ug/m3	74	89.7	121	55-141	
1,1,2-Trichloroethane	ug/m3	59.4	62.1	105	64-129	
1,1,2-Trichlorotrifluoroethane	ug/m3	81.8	85.9	105	55-137	
1,1-Dichloroethane	ug/m3	43.6	49.7	114	59-136	
1,1-Dichloroethene	ug/m3	41.9	44.2	105	60-137	
1,2,4-Trichlorobenzene	ug/m3	80.6	144	179	50-150	IC
1,2,4-Trimethylbenzene	ug/m3	53	65.2	123	63-137	CC
1,2-Dibromoethane (EDB)	ug/m3	82.8	98.2	119	61-136	
1,2-Dichlorobenzene	ug/m3	64.8	86.5	133	60-139	
1,2-Dichloroethane	ug/m3	43.6	50.2	115	56-141	
1,2-Dichloropropane	ug/m3	49.4	58.4	118	57-131	
1,3,5-Trimethylbenzene	ug/m3	52.5	62.8	120	61-134	
1,3-Butadiene	ug/m3	24.3	25.8	106	53-140	
1,3-Dichlorobenzene	ug/m3	67.3	79.9	119	59-136	
1,4-Dichlorobenzene	ug/m3	64.2	78.5	122	59-130	
2-Butanone (MEK)	ug/m3	32.4	35.1	108	54-133	
2-Hexanone	ug/m3	45.8	46.3	101	54-139	
4-Ethyltoluene	ug/m3	55	60.6	110	61-138	
4-Methyl-2-pentanone (MIBK)	ug/m3	45.8	47.7	104	53-139	
Acetone	ug/m3	24.4	28.0	115	50-139	SS
Benzene	ug/m3	34.4	39.4	114	64-125	
Bromodichloromethane	ug/m3	70.9	77.5	109	61-131	
Bromoform	ug/m3	110	133	120	66-138	
Bromomethane	ug/m3	40.3	43.1	107	55-135	
Carbon disulfide	ug/m3	33.3	36.4	109	50-150	

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

LABORATORY CONTROL SAMPLE: 309345

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/m3	67.8	71.0	105	58-135	
Chlorobenzene	ug/m3	49.6	49.1	99	62-139	
Chloroethane	ug/m3	27.1	30.9	114	56-140	
Chloroform	ug/m3	48.7	50.1	103	50-150	
Chloromethane	ug/m3	21	21.9	104	56-144	
cis-1,2-Dichloroethene	ug/m3	42.7	51.2	120	62-135	
cis-1,3-Dichloropropene	ug/m3	48.9	63.4	130	64-133	
Cyclohexane	ug/m3	35.7	45.0	126	54-139	
Dibromochloromethane	ug/m3	95.3	112	117	50-150	
Dichlorodifluoromethane	ug/m3	50.8	51.0	100	60-130	
Dichlorotetrafluoroethane	ug/m3	71.8	75.6	105	59-130	
Ethyl acetate	ug/m3	35.9	48.8	136	60-132	L1
Ethylbenzene	ug/m3	46.4	61.7	133	65-140	
Hexachloro-1,3-butadiene	ug/m3	115	184	160	50-150	L3
m&p-Xylene	ug/m3	92.7	114	123	60-132	
Methyl-tert-butyl ether	ug/m3	38.1	44.2	116	50-150	
Methylene Chloride	ug/m3	37.1	48.0	129	56-138	
n-Heptane	ug/m3	43.3	58.3	134	62-135	
n-Hexane	ug/m3	35.8	45.2	126	62-134	
Naphthalene	ug/m3	55.3	88.3	160	70-130	CC
o-Xylene	ug/m3	46.8	57.9	124	64-132	
Propylene	ug/m3	18.4	22.2	121	56-125	
Styrene	ug/m3	45.9	53.7	117	69-134	
Tetrachloroethene	ug/m3	67.6	79.7	118	60-137	
Tetrahydrofuran	ug/m3	31.5	35.2	112	52-139	SS
Toluene	ug/m3	41	46.3	113	69-130	
trans-1,2-Dichloroethene	ug/m3	39.9	46.7	117	50-150	
trans-1,3-Dichloropropene	ug/m3	50.8	67.2	132	70-142	
Trichloroethene	ug/m3	56.8	60.9	107	60-134	
Trichlorofluoromethane	ug/m3	57.7	62.2	108	56-141	
Vinyl acetate	ug/m3	38.3	47.8	125	61-142	
Vinyl chloride	ug/m3	26.3	29.0	110	66-132	

SAMPLE DUPLICATE: 310336

Parameter	Units	1046203005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2,2-Tetrachloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethene	ug/m3	ND	ND	0	25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND	0	25	IC
1,2,4-Trimethylbenzene	ug/m3	ND	ND	0	25	
1,2-Dibromoethane (EDB)	ug/m3	ND	ND	0	25	
1,2-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,2-Dichloroethane	ug/m3	ND	ND	0	25	

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

SAMPLE DUPLICATE: 310336

Parameter	Units	1046203005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloropropane	ug/m3	ND	ND	0	25	
1,3,5-Trimethylbenzene	ug/m3	ND	ND	0	25	
1,3-Butadiene	ug/m3	ND	ND	0	25	
1,3-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,4-Dichlorobenzene	ug/m3	ND	ND	0	25	
2-Butanone (MEK)	ug/m3	1.7	1.7	5	25	
2-Hexanone	ug/m3	ND	ND	0	25	
4-Ethyltoluene	ug/m3	ND	ND	0	25	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	ND	0	25	
Acetone	ug/m3	5.7	7.3	24	25	SS
Benzene	ug/m3	ND	ND	0	25	
Bromodichloromethane	ug/m3	ND	ND	0	25	
Bromoform	ug/m3	ND	ND	0	25	
Bromomethane	ug/m3	ND	ND	0	25	
Carbon disulfide	ug/m3	ND	ND	0	25	
Carbon tetrachloride	ug/m3	ND	ND	0	25	
Chlorobenzene	ug/m3	ND	ND	0	25	
Chloroethane	ug/m3	ND	ND	0	25	
Chloroform	ug/m3	ND	ND	0	25	
Chloromethane	ug/m3	0.83	0.93	12	25	
cis-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
cis-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Cyclohexane	ug/m3	ND	ND	0	25	
Dibromochloromethane	ug/m3	ND	ND	0	25	
Dichlorodifluoromethane	ug/m3	2.2	2.5	13	25	
Dichlorotetrafluoroethane	ug/m3	ND	ND	0	25	
Ethyl acetate	ug/m3	ND	ND	0	25	
Ethylbenzene	ug/m3	ND	ND	0	25	
Hexachloro-1,3-butadiene	ug/m3	ND	ND	0	25	
m&p-Xylene	ug/m3	ND	ND	0	25	
Methyl-tert-butyl ether	ug/m3	ND	ND	0	25	
Methylene Chloride	ug/m3	ND	ND	0	25	
n-Heptane	ug/m3	ND	ND	0	25	
n-Hexane	ug/m3	ND	ND	0	25	
Naphthalene	ug/m3	ND	ND	0	25	
o-Xylene	ug/m3	ND	ND	0	25	
Propylene	ug/m3	ND	ND	0	25	
Styrene	ug/m3	ND	ND	0	25	
Tetrachloroethene	ug/m3	ND	ND	0	25	
Tetrahydrofuran	ug/m3	ND	ND	0	25	
Toluene	ug/m3	ND	ND	0	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
trans-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Trichloroethene	ug/m3	ND	ND	0	25	
Trichlorofluoromethane	ug/m3	ND	ND	0	25	
Vinyl acetate	ug/m3	ND	ND	0	25	
Vinyl chloride	ug/m3	ND	ND	0	25	

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

QC Batch: AIR/5188
Analysis Method: TO-15
QC Batch Method: TO-15
Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 1046203003

METHOD BLANK: 310368
Associated Lab Samples: 1046203003

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	
1,1,2,2-Tetrachloroethane	ug/m3	ND	1.4	
1,1,2-Trichloroethane	ug/m3	ND	1.1	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	1.6	
1,1-Dichloroethane	ug/m3	ND	0.82	
1,1-Dichloroethene	ug/m3	ND	0.81	
1,2,4-Trichlorobenzene	ug/m3	ND	0.99	IC
1,2,4-Trimethylbenzene	ug/m3	ND	2.5	
1,2-Dibromoethane (EDB)	ug/m3	ND	1.6	
1,2-Dichlorobenzene	ug/m3	ND	1.2	
1,2-Dichloroethane	ug/m3	ND	0.82	
1,2-Dichloropropane	ug/m3	ND	0.94	
1,3,5-Trimethylbenzene	ug/m3	ND	2.5	
1,3-Butadiene	ug/m3	ND	0.45	
1,3-Dichlorobenzene	ug/m3	ND	1.2	
1,4-Dichlorobenzene	ug/m3	ND	1.2	
2-Butanone (MEK)	ug/m3	ND	0.60	
2-Hexanone	ug/m3	ND	0.83	
4-Ethyltoluene	ug/m3	ND	2.5	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	0.83	
Acetone	ug/m3	ND	0.48	
Benzene	ug/m3	ND	0.65	
Bromodichloromethane	ug/m3	ND	1.4	
Bromoform	ug/m3	ND	2.1	
Bromomethane	ug/m3	ND	0.79	
Carbon disulfide	ug/m3	ND	0.63	
Carbon tetrachloride	ug/m3	ND	1.3	
Chlorobenzene	ug/m3	ND	0.94	
Chloroethane	ug/m3	ND	0.54	
Chloroform	ug/m3	ND	0.99	
Chloromethane	ug/m3	ND	0.42	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	
cis-1,3-Dichloropropene	ug/m3	ND	0.92	
Cyclohexane	ug/m3	ND	0.68	
Dibromochloromethane	ug/m3	ND	1.7	
Dichlorodifluoromethane	ug/m3	ND	1.0	
Dichlorotetrafluoroethane	ug/m3	ND	1.4	
Ethyl acetate	ug/m3	ND	0.73	
Ethylbenzene	ug/m3	ND	0.88	
Hexachloro-1,3-butadiene	ug/m3	ND	2.2	
m&p-Xylene	ug/m3	ND	1.8	
Methyl-tert-butyl ether	ug/m3	ND	0.73	
Methylene Chloride	ug/m3	ND	0.71	

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

METHOD BLANK: 310368

Associated Lab Samples: 1046203003

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
n-Heptane	ug/m3	ND	0.83	
n-Hexane	ug/m3	ND	0.72	
Naphthalene	ug/m3	ND	2.7	
o-Xylene	ug/m3	ND	0.88	
Propylene	ug/m3	ND	0.35	
Styrene	ug/m3	ND	0.87	
Tetrachloroethene	ug/m3	ND	1.4	
Tetrahydrofuran	ug/m3	ND	0.60	
Toluene	ug/m3	ND	0.77	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	
trans-1,3-Dichloropropene	ug/m3	ND	0.92	
Trichloroethene	ug/m3	ND	1.1	
Trichlorofluoromethane	ug/m3	ND	1.1	
Vinyl acetate	ug/m3	ND	0.71	
Vinyl chloride	ug/m3	ND	0.52	

LABORATORY CONTROL SAMPLE: 310369

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	58.3	63.0	108	60-134	
1,1,2,2-Tetrachloroethane	ug/m3	74	89.7	121	55-141	
1,1,2-Trichloroethane	ug/m3	59.4	62.1	105	64-129	
1,1,2-Trichlorotrifluoroethane	ug/m3	81.8	85.9	105	55-137	
1,1-Dichloroethane	ug/m3	43.6	49.7	114	59-136	
1,1-Dichloroethene	ug/m3	41.9	44.2	105	60-137	
1,2,4-Trichlorobenzene	ug/m3	80.6	144	179	50-150	IC,L3
1,2,4-Trimethylbenzene	ug/m3	53	65.2	123	63-137	CC
1,2-Dibromoethane (EDB)	ug/m3	82.8	98.2	119	61-136	
1,2-Dichlorobenzene	ug/m3	64.8	86.5	133	60-139	
1,2-Dichloroethane	ug/m3	43.6	50.2	115	56-141	
1,2-Dichloropropane	ug/m3	49.4	58.4	118	57-131	
1,3,5-Trimethylbenzene	ug/m3	52.5	62.8	120	61-134	
1,3-Butadiene	ug/m3	24.3	25.8	106	53-140	
1,3-Dichlorobenzene	ug/m3	67.3	79.9	119	59-136	
1,4-Dichlorobenzene	ug/m3	64.2	78.5	122	59-130	
2-Butanone (MEK)	ug/m3	32.4	35.1	108	54-133	
2-Hexanone	ug/m3	45.8	46.3	101	54-139	
4-Ethyltoluene	ug/m3	55	60.6	110	61-138	
4-Methyl-2-pentanone (MIBK)	ug/m3	45.8	47.7	104	53-139	
Acetone	ug/m3	24.4	28.0	115	50-139	SS
Benzene	ug/m3	34.4	39.4	114	64-125	
Bromodichloromethane	ug/m3	70.9	77.5	109	61-131	
Bromoform	ug/m3	110	133	120	66-138	
Bromomethane	ug/m3	40.3	43.1	107	55-135	
Carbon disulfide	ug/m3	33.3	36.4	109	50-150	

QUALITY CONTROL DATA

Project: 200606839   ALEX EXHAUST
Pace Project No.: 1046203

LABORATORY CONTROL SAMPLE: 310369

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/m3	67.8	71.0	105	58-135	
Chlorobenzene	ug/m3	49.6	49.1	99	62-139	
Chloroethane	ug/m3	27.1	30.9	114	56-140	
Chloroform	ug/m3	48.7	50.1	103	50-150	
Chloromethane	ug/m3	21	21.9	104	56-144	
cis-1,2-Dichloroethene	ug/m3	42.7	51.2	120	62-135	
cis-1,3-Dichloropropene	ug/m3	48.9	63.4	130	64-133	
Cyclohexane	ug/m3	35.7	45.0	126	54-139	
Dibromochloromethane	ug/m3	95.3	112	117	50-150	
Dichlorodifluoromethane	ug/m3	50.8	51.0	100	60-130	
Dichlorotetrafluoroethane	ug/m3	71.8	75.6	105	59-130	
Ethyl acetate	ug/m3	35.9	48.8	136	60-132	L3
Ethylbenzene	ug/m3	46.4	61.7	133	65-140	
Hexachloro-1,3-butadiene	ug/m3	115	184	160	50-150	CC,L3
m&p-Xylene	ug/m3	92.7	114	123	60-132	
Methyl-tert-butyl ether	ug/m3	38.1	44.2	116	50-150	
Methylene Chloride	ug/m3	37.1	48.0	129	56-138	
n-Heptane	ug/m3	43.3	58.3	134	62-135	
n-Hexane	ug/m3	35.8	45.2	126	62-134	
Naphthalene	ug/m3	55.3	88.3	160	70-130	CC
o-Xylene	ug/m3	46.8	57.9	124	64-132	
Propylene	ug/m3	18.4	22.2	121	56-125	
Styrene	ug/m3	45.9	53.7	117	69-134	
Tetrachloroethene	ug/m3	67.6	79.7	118	60-137	
Tetrahydrofuran	ug/m3	31.5	35.2	112	52-139	
Toluene	ug/m3	41	46.3	113	69-130	
trans-1,2-Dichloroethene	ug/m3	39.9	46.7	117	50-150	
trans-1,3-Dichloropropene	ug/m3	50.8	67.2	132	70-142	
Trichloroethene	ug/m3	56.8	60.9	107	60-134	
Trichlorofluoromethane	ug/m3	57.7	62.2	108	56-141	
Vinyl acetate	ug/m3	38.3	47.8	125	61-142	
Vinyl chloride	ug/m3	26.3	29.0	110	66-132	

SAMPLE DUPLICATE: 310337

Parameter	Units	1046237001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2,2-Tetrachloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethene	ug/m3	ND	ND	0	25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND	0	25	IC
1,2,4-Trimethylbenzene	ug/m3	23.7	23.1	2	25	
1,2-Dibromoethane (EDB)	ug/m3	ND	ND	0	25	
1,2-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,2-Dichloroethane	ug/m3	ND	ND	0	25	

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

SAMPLE DUPLICATE: 310337

Parameter	Units	1046237001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloropropane	ug/m3	ND	ND	0	25	
1,3,5-Trimethylbenzene	ug/m3	7.5	7.3	3	25	
1,3-Butadiene	ug/m3	ND	ND	0	25	
1,3-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,4-Dichlorobenzene	ug/m3	ND	ND	0	25	
2-Butanone (MEK)	ug/m3	21.3	23.9	11	25	
2-Hexanone	ug/m3	ND	ND	0	25	
4-Ethyltoluene	ug/m3	8.2	8.2	.4	25	
4-Methyl-2-pentanone (MIBK)	ug/m3	8.0	8.4	6	25	
Acetone	ug/m3	67.2	102	41	25	D6,E
Benzene	ug/m3	20.5	22.0	7	25	
Bromodichloromethane	ug/m3	ND	ND	0	25	
Bromoform	ug/m3	ND	ND	0	25	
Bromomethane	ug/m3	ND	ND	0	25	
Carbon disulfide	ug/m3	4.1	4.0	1	25	
Carbon tetrachloride	ug/m3	ND	ND	0	25	
Chlorobenzene	ug/m3	ND	ND	0	25	
Chloroethane	ug/m3	ND	ND	0	25	
Chloroform	ug/m3	ND	ND	0	25	
Chloromethane	ug/m3	ND	ND	0	25	
cis-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
cis-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Cyclohexane	ug/m3	29.0	30.4	5	25	
Dibromochloromethane	ug/m3	ND	ND	0	25	
Dichlorodifluoromethane	ug/m3	2.1	2.1	.1	25	
Dichlorotetrafluoroethane	ug/m3	ND	ND	0	25	
Ethyl acetate	ug/m3	ND	ND	0	25	
Ethylbenzene	ug/m3	9.6	10.4	9	25	
Hexachloro-1,3-butadiene	ug/m3	ND	ND	0	25	
m&p-Xylene	ug/m3	34.8	37.3	7	25	
Methyl-tert-butyl ether	ug/m3	1.2	1.3	6	25	
Methylene Chloride	ug/m3	ND	ND	0	25	
n-Heptane	ug/m3	7.8	8.6	9	25	
n-Hexane	ug/m3	21.2	22.4	5	25	
Naphthalene	ug/m3	ND	ND	0	25	
o-Xylene	ug/m3	13.5	14.4	6	25	
Propylene	ug/m3	111	104	7	25	E
Styrene	ug/m3	2.3	2.5	7	25	
Tetrachloroethene	ug/m3	ND	ND	0	25	
Tetrahydrofuran	ug/m3	ND	ND	0	25	
Toluene	ug/m3	36.8	39.0	6	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
trans-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Trichloroethene	ug/m3	ND	ND	0	25	
Trichlorofluoromethane	ug/m3	ND	ND	0	25	
Vinyl acetate	ug/m3	ND	ND	0	25	
Vinyl chloride	ug/m3	ND	ND	0	25	

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

QC Batch: AIR/5198
Analysis Method: TO-15
QC Batch Method: TO-15
Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 1046203001, 1046203002, 1046203004

METHOD BLANK: 310879
Associated Lab Samples: 1046203001, 1046203002, 1046203004

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	
1,1,2,2-Tetrachloroethane	ug/m3	ND	1.4	
1,1,2-Trichloroethane	ug/m3	ND	1.1	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	1.6	
1,1-Dichloroethane	ug/m3	ND	0.82	
1,1-Dichloroethene	ug/m3	ND	0.81	
1,2,4-Trichlorobenzene	ug/m3	ND	0.99	IC
1,2,4-Trimethylbenzene	ug/m3	ND	2.5	
1,2-Dibromoethane (EDB)	ug/m3	ND	1.6	
1,2-Dichlorobenzene	ug/m3	ND	1.2	
1,2-Dichloroethane	ug/m3	ND	0.82	
1,2-Dichloropropane	ug/m3	ND	0.94	
1,3,5-Trimethylbenzene	ug/m3	ND	2.5	
1,3-Butadiene	ug/m3	ND	0.45	
1,3-Dichlorobenzene	ug/m3	ND	1.2	
1,4-Dichlorobenzene	ug/m3	ND	1.2	
2-Butanone (MEK)	ug/m3	ND	0.60	
2-Hexanone	ug/m3	ND	0.83	
4-Ethyltoluene	ug/m3	ND	2.5	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	0.83	
Acetone	ug/m3	ND	0.48	
Benzene	ug/m3	ND	0.65	
Bromodichloromethane	ug/m3	ND	1.4	
Bromoform	ug/m3	ND	2.1	
Bromomethane	ug/m3	ND	0.79	
Carbon disulfide	ug/m3	ND	0.63	
Carbon tetrachloride	ug/m3	ND	1.3	
Chlorobenzene	ug/m3	ND	0.94	
Chloroethane	ug/m3	ND	0.54	
Chloroform	ug/m3	ND	0.99	
Chloromethane	ug/m3	ND	0.42	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	
cis-1,3-Dichloropropene	ug/m3	ND	0.92	
Cyclohexane	ug/m3	ND	0.68	
Dibromochloromethane	ug/m3	ND	1.7	
Dichlorodifluoromethane	ug/m3	ND	1.0	
Dichlorotetrafluoroethane	ug/m3	ND	1.4	
Ethyl acetate	ug/m3	ND	0.73	
Ethylbenzene	ug/m3	ND	0.88	
Hexachloro-1,3-butadiene	ug/m3	ND	2.2	L2
m&p-Xylene	ug/m3	ND	1.8	
Methyl-tert-butyl ether	ug/m3	ND	0.73	
Methylene Chloride	ug/m3	ND	0.71	

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

METHOD BLANK: 310879

Associated Lab Samples: 1046203001, 1046203002, 1046203004

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
n-Heptane	ug/m3	ND	0.83	
n-Hexane	ug/m3	ND	0.72	
Naphthalene	ug/m3	ND	2.7	
o-Xylene	ug/m3	ND	0.88	
Propylene	ug/m3	ND	0.35	
Styrene	ug/m3	ND	0.87	
Tetrachloroethene	ug/m3	ND	1.4	
Tetrahydrofuran	ug/m3	ND	0.60	
Toluene	ug/m3	ND	0.77	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	
trans-1,3-Dichloropropene	ug/m3	ND	0.92	
Trichloroethene	ug/m3	ND	1.1	
Trichlorofluoromethane	ug/m3	ND	1.1	
Vinyl acetate	ug/m3	ND	0.71	
Vinyl chloride	ug/m3	ND	0.52	

LABORATORY CONTROL SAMPLE: 310880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	58.3	56.9	98	60-134	
1,1,2,2-Tetrachloroethane	ug/m3	74	82.3	111	55-141	
1,1,2-Trichloroethane	ug/m3	59.4	56.3	95	64-129	
1,1,2-Trichlorotrifluoroethane	ug/m3	81.8	79.8	97	55-137	
1,1-Dichloroethane	ug/m3	43.6	43.2	99	59-136	
1,1-Dichloroethene	ug/m3	41.9	40.6	97	60-137	
1,2,4-Trichlorobenzene	ug/m3	80.6	126	156	50-150	IC
1,2,4-Trimethylbenzene	ug/m3	53	59.9	113	63-137	
1,2-Dibromoethane (EDB)	ug/m3	82.8	90.8	110	61-136	
1,2-Dichlorobenzene	ug/m3	64.8	78.5	121	60-139	
1,2-Dichloroethane	ug/m3	43.6	45.7	105	56-141	
1,2-Dichloropropane	ug/m3	49.4	53.5	108	57-131	
1,3,5-Trimethylbenzene	ug/m3	52.5	57.4	109	61-134	
1,3-Butadiene	ug/m3	24.3	25.9	107	53-140	
1,3-Dichlorobenzene	ug/m3	67.3	72.1	107	59-136	
1,4-Dichlorobenzene	ug/m3	64.2	70.3	110	59-130	
2-Butanone (MEK)	ug/m3	32.4	33.9	105	54-133	
2-Hexanone	ug/m3	45.8	46.8	102	54-139	
4-Ethyltoluene	ug/m3	55	56.0	102	61-138	
4-Methyl-2-pentanone (MIBK)	ug/m3	45.8	48.3	105	53-139	
Acetone	ug/m3	24.4	26.4	108	50-139	SS
Benzene	ug/m3	34.4	36.7	106	64-125	
Bromodichloromethane	ug/m3	70.9	69.4	98	61-131	
Bromoform	ug/m3	110	118	107	66-138	
Bromomethane	ug/m3	40.3	42.4	105	55-135	
Carbon disulfide	ug/m3	33.3	35.2	106	50-150	

QUALITY CONTROL DATA

Project: 200606839   ALEX EXHAUST
Pace Project No.: 1046203

LABORATORY CONTROL SAMPLE: 310880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/m3	67.8	62.1	92	58-135	
Chlorobenzene	ug/m3	49.6	45.9	92	62-139	
Chloroethane	ug/m3	27.1	31.2	115	56-140	
Chloroform	ug/m3	48.7	45.5	93	50-150	
Chloromethane	ug/m3	21	21.2	101	56-144	
cis-1,2-Dichloroethene	ug/m3	42.7	47.7	111	62-135	
cis-1,3-Dichloropropene	ug/m3	48.9	57.8	118	64-133	
Cyclohexane	ug/m3	35.7	41.4	116	54-139	
Dibromochloromethane	ug/m3	95.3	101	106	50-150	
Dichlorodifluoromethane	ug/m3	50.8	44.8	88	60-130	
Dichlorotetrafluoroethane	ug/m3	71.8	71.0	99	59-130	
Ethyl acetate	ug/m3	35.9	47.1	131	60-132	
Ethylbenzene	ug/m3	46.4	57.7	124	65-140	
Hexachloro-1,3-butadiene	ug/m3	115	39.5	34	50-150	L2
m&p-Xylene	ug/m3	92.7	105	114	60-132	
Methyl-tert-butyl ether	ug/m3	38.1	43.3	114	50-150	
Methylene Chloride	ug/m3	37.1	45.3	122	56-138	
n-Heptane	ug/m3	43.3	54.4	125	62-135	
n-Hexane	ug/m3	35.8	44.0	123	62-134	
Naphthalene	ug/m3	55.3	79.0	143	70-130	L3
o-Xylene	ug/m3	46.8	52.8	113	64-132	
Propylene	ug/m3	18.4	19.9	108	56-125	
Styrene	ug/m3	45.9	49.9	109	69-134	
Tetrachloroethene	ug/m3	67.6	74.5	110	60-137	
Tetrahydrofuran	ug/m3	31.5	36.0	114	52-139	
Toluene	ug/m3	41	42.8	104	69-130	
trans-1,2-Dichloroethene	ug/m3	39.9	45.6	114	50-150	
trans-1,3-Dichloropropene	ug/m3	50.8	62.5	123	70-142	
Trichloroethene	ug/m3	56.8	55.8	98	60-134	
Trichlorofluoromethane	ug/m3	57.7	53.5	93	56-141	
Vinyl acetate	ug/m3	38.3	43.8	114	61-142	
Vinyl chloride	ug/m3	26.3	29.5	112	66-132	

SAMPLE DUPLICATE: 310881

Parameter	Units	1046203004 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2,2-Tetrachloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethene	ug/m3	ND	ND	0	25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND	0	25	IC
1,2,4-Trimethylbenzene	ug/m3	ND	12.1J	9	25	
1,2-Dibromoethane (EDB)	ug/m3	ND	ND	0	25	
1,2-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,2-Dichloroethane	ug/m3	ND	ND	0	25	

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

SAMPLE DUPLICATE: 310881

Parameter	Units	1046203004 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloropropane	ug/m3	ND	ND	0	25	
1,3,5-Trimethylbenzene	ug/m3	ND	ND	0	25	
1,3-Butadiene	ug/m3	ND	ND	0	25	
1,3-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,4-Dichlorobenzene	ug/m3	ND	ND	0	25	
2-Butanone (MEK)	ug/m3	ND	ND	0	25	
2-Hexanone	ug/m3	ND	ND	0	25	
4-Ethyltoluene	ug/m3	ND	ND	0	25	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	ND	0	25	
Acetone	ug/m3	48.4	56.0	15	25	
Benzene	ug/m3	21.9	22.5	3	25	
Bromodichloromethane	ug/m3	ND	ND	0	25	
Bromoform	ug/m3	ND	ND	0	25	
Bromomethane	ug/m3	ND	ND	0	25	
Carbon disulfide	ug/m3	6.8	6.7	2	25	
Carbon tetrachloride	ug/m3	ND	ND	0	25	
Chlorobenzene	ug/m3	ND	ND	0	25	
Chloroethane	ug/m3	ND	ND	0	25	
Chloroform	ug/m3	ND	ND	0	25	
Chloromethane	ug/m3	ND	ND	0	25	
cis-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
cis-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Cyclohexane	ug/m3	27.0	27.8	3	25	
Dibromochloromethane	ug/m3	ND	ND	0	25	
Dichlorodifluoromethane	ug/m3	ND	ND	0	25	
Dichlorotetrafluoroethane	ug/m3	ND	ND	0	25	
Ethyl acetate	ug/m3	ND	ND	0	25	
Ethylbenzene	ug/m3	7.2	7.7	7	25	
Hexachloro-1,3-butadiene	ug/m3	ND	ND	0	25	L2
m&p-Xylene	ug/m3	14.1	15.4	9	25	
Methyl-tert-butyl ether	ug/m3	ND	ND	0	25	
Methylene Chloride	ug/m3	ND	ND	0	25	
n-Heptane	ug/m3	21.1	21.7	3	25	
n-Hexane	ug/m3	32.5	32.6	.3	25	
Naphthalene	ug/m3	ND	ND	0	25	
o-Xylene	ug/m3	ND	ND	0	25	
Propylene	ug/m3	267	269	.7	25	E
Styrene	ug/m3	ND	ND	0	25	
Tetrachloroethene	ug/m3	ND	ND	0	25	
Tetrahydrofuran	ug/m3	ND	ND	0	25	
Toluene	ug/m3	25.0	27.1	8	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
trans-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Trichloroethene	ug/m3	ND	ND	0	25	
Trichlorofluoromethane	ug/m3	ND	ND	0	25	
Vinyl acetate	ug/m3	ND	ND	0	25	
Vinyl chloride	ug/m3	ND	ND	0	25	

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

SAMPLE DUPLICATE: 310882

Parameter	Units	1046237003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2,2-Tetrachloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichloroethane	ug/m3	ND	ND	0	25	
1,1,2-Trichlorotrifluoroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethane	ug/m3	ND	ND	0	25	
1,1-Dichloroethene	ug/m3	ND	ND	0	25	
1,2,4-Trichlorobenzene	ug/m3	ND	ND	0	25	IC
1,2,4-Trimethylbenzene	ug/m3	ND	ND	0	25	
1,2-Dibromoethane (EDB)	ug/m3	ND	ND	0	25	
1,2-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,2-Dichloroethane	ug/m3	ND	ND	0	25	
1,2-Dichloropropane	ug/m3	ND	ND	0	25	
1,3,5-Trimethylbenzene	ug/m3	ND	ND	0	25	
1,3-Butadiene	ug/m3	ND	ND	0	25	
1,3-Dichlorobenzene	ug/m3	ND	ND	0	25	
1,4-Dichlorobenzene	ug/m3	ND	ND	0	25	
2-Butanone (MEK)	ug/m3	ND	ND	0	25	
2-Hexanone	ug/m3	ND	ND	0	25	
4-Ethyltoluene	ug/m3	ND	ND	0	25	
4-Methyl-2-pentanone (MIBK)	ug/m3	ND	ND	0	25	
Acetone	ug/m3	ND	ND	0	25	
Benzene	ug/m3	12.2	12.6	4	25	
Bromodichloromethane	ug/m3	ND	ND	0	25	
Bromoform	ug/m3	ND	ND	0	25	
Bromomethane	ug/m3	ND	ND	0	25	
Carbon disulfide	ug/m3	793	842	6	25	
Carbon tetrachloride	ug/m3	ND	ND	0	25	
Chlorobenzene	ug/m3	ND	ND	0	25	
Chloroethane	ug/m3	ND	ND	0	25	
Chloroform	ug/m3	ND	ND	0	25	
Chloromethane	ug/m3	ND	ND	0	25	
cis-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
cis-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Cyclohexane	ug/m3	410	423	3	25	
Dibromochloromethane	ug/m3	ND	ND	0	25	
Dichlorodifluoromethane	ug/m3	14.3	14.6	3	25	
Dichlorotetrafluoroethane	ug/m3	ND	ND	0	25	
Ethyl acetate	ug/m3	ND	ND	0	25	
Ethylbenzene	ug/m3	ND	ND	0	25	
Hexachloro-1,3-butadiene	ug/m3	ND	ND	0	25	L2
m&p-Xylene	ug/m3	ND	ND	0	25	
Methyl-tert-butyl ether	ug/m3	ND	ND	0	25	
Methylene Chloride	ug/m3	ND	ND	0	25	
n-Heptane	ug/m3	ND	ND	0	25	
n-Hexane	ug/m3	99.3	103	4	25	
Naphthalene	ug/m3	ND	ND	0	25	
o-Xylene	ug/m3	ND	ND	0	25	
Propylene	ug/m3	214	188	13	25	

QUALITY CONTROL DATA

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

SAMPLE DUPLICATE: 310882

Parameter	Units	1046237003 Result	Dup Result	RPD	Max RPD	Qualifiers
Styrene	ug/m3	ND	ND	0	25	
Tetrachloroethene	ug/m3	ND	ND	0	25	
Tetrahydrofuran	ug/m3	ND	ND	0	25	
Toluene	ug/m3	ND	ND	0	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND	0	25	
trans-1,3-Dichloropropene	ug/m3	ND	ND	0	25	
Trichloroethene	ug/m3	ND	ND	0	25	
Trichlorofluoromethane	ug/m3	ND	ND	0	25	
Vinyl acetate	ug/m3	ND	ND	0	25	
Vinyl chloride	ug/m3	ND	ND	0	25	

QUALIFIERS

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SAMPLE QUALIFIERS

Sample: 1046203001
[1] The Total Hydrocarbon (THC) pattern occured in the first half of the chromatogram (before toluene).

Sample: 1046203002
[1] The Total Hydrocarbon (THC) pattern occured in the first half of the chromatogram (before toluene).

Sample: 1046203003
[1] The Total Hydrocarbon (THC) pattern is evenly distributed throughout the chromatogram (before and after toluene).

Sample: 1046203004
[1] The Total Hydrocarbon (THC) pattern occured in the first half of the chromatogram (before toluene).

Sample: 1046203005
[1] The Total Hydrocarbon (THC) pattern is evenly distributed throughout the chromatogram (before and after toluene).

ANALYTE QUALIFIERS

CC	The continuing calibration for this compound is outside of method control limits. The result is estimated.
D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
IC	The initial calibration for this compound was outside of method control limits. The result is estimated.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
SS	This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 200606839 ALEX EXHAUST
Pace Project No.: 1046203

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1046203005	**FB**	TO-15	AIR/5173		
1046203003	**VP-3**	TO-15	AIR/5188		
1046203001	**VP-1**	TO-15	AIR/5198		
1046203002	**VP-2**	TO-15	AIR/5198		
1046203004	**VP-4**	TO-15	AIR/5198		

Data File: \\192.168.10.12\chem\10air0.i\021307.b\04427tic.D
Report Date: 27-Feb-2007 15:02

Pace Analytical Services

TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:
Lab Smp Id: 1046203001
Operator : HRG
Sample Location:
Sample Matrix: AIR
Analysis Type: VOA
Inj Date: 14-FEB-2007 03:23

Client SDG: 102205

Sample Date:
Sample Point:
Date Received:
Level: LOW

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/KG) ppbv

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 78-78-4	Butane, 2-methyl-	4.521	36900	NJ
2. 96-14-0	Pentane, 3-methyl-	5.755	22800	NJ
3. 96-37-7	Cyclopentane, methyl-	6.586	21100	NJ
4. 591-76-4	Hexane, 2-methyl-	7.176	17000	NJ
5. 589-34-4	Hexane, 3-methyl-	7.362	16600	NJ
6. 594-82-1	Butane, 2,2,3,3-tetramethyl	7.659	75100	NJ
7. 589-43-5	Hexane, 2,4-dimethyl-	8.565	33000	NJ
8. 565-75-3	Pentane, 2,3,4-trimethyl-	9.018	31500	NJ
9. 560-21-4	Pentane, 2,3,3-trimethyl-	9.179	36800	NJ

```
Data File: \\192.168.10.12\chem\10air0.i\021307.b\04427tic.D
Report Date: 27-Feb-2007 15:02


                            Pace Analytical Services

                              TO15 Analysis (UNIX)
Data file : \\192.168.10.12\chem\10air0.i\021307.b\04427tic.D
Lab Smp Id: 1046203001
Inj Date  : 14-FEB-2007 03:23
Operator  : HRG                          Inst ID: 10air0.i
Smp Info  :
Misc Info : 5198
Comment   : Volatile Organic COMPOUNDS in Air
Method    : \\192.168.10.12\chem\10air0.i\021307.b\LOWTO15_038.m
Meth Date : 27-Feb-2007 11:06 lweinkauf  Quant Type: ISTD
Cal Date  : 07-FEB-2007 16:44            Cal File: 03809.D
Als bottle: 27
Dil Factor: 650.00000
Integrator: HP RTE                       Compound Sublist: all.sub
Target Version:  4.14
Processing Host: AIRGROUP


Concentration Formula: Amt * DF * Uf * CpndVariable

     Name          Value     Description
-------------- ---------- -----------------------
      DF          650.000  Dilution Factor
      Uf            1.000  ng unit correction factor
Cpnd Variable              Local Compound Variable


ISTD                                 RT        AREA       AMOUNT
==============================     ======     ======     ======

*  31 1,4-Difluorobenzene           7.442    4729942     10.000


                           CONCENTRATIONS                           QUANT
    RT       AREA  ON-COL( ppbv)    FINAL( ppbv)  QUAL      LIBRARY    LIB ENTRY     CPND #
   ====      ====   =============   ============  ====      =======    =========     ======

Butane, 2-methyl-                                     CAS #: 78-78-4
  4.521   26836508  56.7374978           36900      91       NBS75K.1      62518         31

Pentane, 3-methyl-                                    CAS #: 96-14-0
  5.755   16622896  35.1439733           22800      91       NBS75K.1      62868         31

Cyclopentane, methyl-                                 CAS #: 96-37-7
  6.586   15365881  32.4864045           21100      86       NBS75K.1        594         31

Hexane, 2-methyl-                                     CAS #: 591-76-4
  7.176   12398995  26.2138413           17000      90       NBS75K.1      63435         31

Hexane, 3-methyl-                                     CAS #: 589-34-4
  7.362   12104979  25.5922354           16600      90       NBS75K.1      63423         31

Butane, 2,2,3,3-tetramethyl-                          CAS #: 594-82-1
  7.659   54638005  115.515167           75100      78       NBS75K.1       3090         31
```

```
Data File: \\192.168.10.12\chem\10air0.i\021307.b\04427tic.D
Report Date: 27-Feb-2007 15:02

                              CONCENTRATIONS                             QUANT
     RT         AREA  ON-COL( ppbv)   FINAL( ppbv)  QUAL      LIBRARY    LIB ENTRY      CPND #
    ====        ====  =============   ============  ====      =======    =========      ======

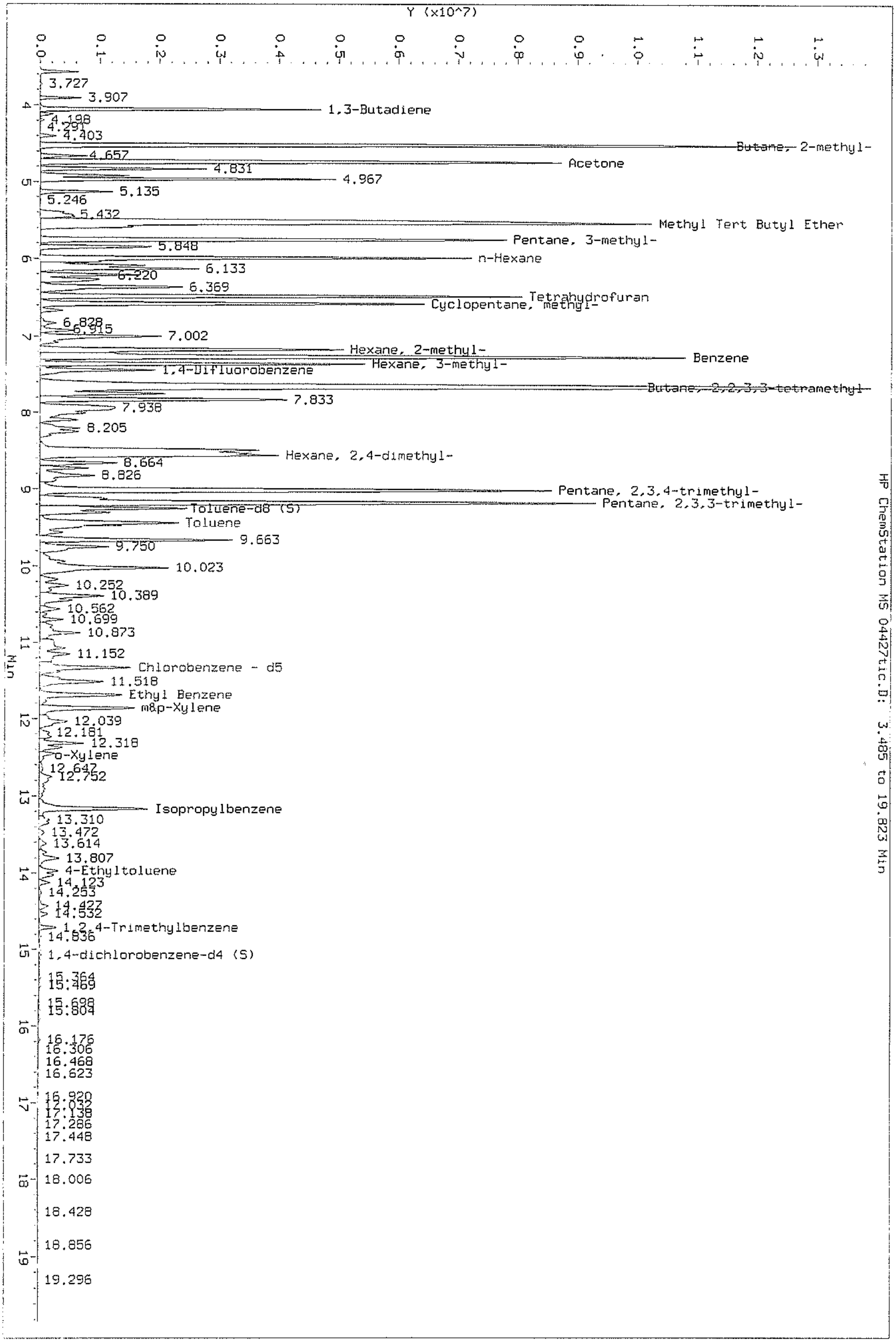
Hexane, 2,4-dimethyl-                                   CAS #: 589-43-5
  8.565   23980518  50.6993896            33000      96       NBS75K.l        3089          31

Pentane, 2,3,4-trimethyl-                               CAS #: 565-75-3
  9.018   22938325  48.4959950            31500      91       NBS75K.l       64229          31

Pentane, 2,3,3-trimethyl-                               CAS #: 560-21-4
  9.179   26769475  56.5957768            36800      83       NBS75K.l        3088          31
```

Data File: \\192.168.10.12\chem\10air0.i\021307.b\04427tic.D
Injection Date: 14-FEB-2007 03:23
Instrument: 10air0.i
Client Sample ID:

10416203061



HP ChemStation MS 04427tic.D: 3.485 to 19.823 Min

Data File: \\192.168.10.12\chem\10air0.i\021307.b\04425tic.D
Report Date: 27-Feb-2007 15:00

Pace Analytical Services

TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:
Lab Smp Id: 1046203002
Operator : HRG
Sample Location:
Sample Matrix: AIR
Analysis Type: VOA
Inj Date: 14-FEB-2007 02:10

Client SDG: 102205

Sample Date:
Sample Point:
Date Received:
Level: LOW

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/KG) ppbv

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 78-78-4	Butane, 2-methyl-	4.514	7470	NJ
2. 96-14-0	Pentane, 3-methyl-	5.767	5870	NJ
3. 96-37-7	Cyclopentane, methyl-	6.592	5960	NJ
4. 540-84-1	Pentane, 2,2,4-trimethyl-	7.665	16400	NJ
5. 142-82-5	Heptane	7.839	4290	NJ
6. 108-87-2	Cyclohexane, methyl-	8.540	7360	NJ
7. 3522-94-9	Hexane, 2,2,5-trimethyl-	9.675	13800	NJ
8.	Unknown	10.035	13400	J
9.	Unknown	10.401	4910	J

```
Data File: \\192.168.10.12\chem\10air0.i\021307.b\04425tic.D
Report Date: 27-Feb-2007 15:00


                                Pace Analytical Services

                                  TO15 Analysis (UNIX)
Data file : \\192.168.10.12\chem\10air0.i\021307.b\04425tic.D
Lab Smp Id: 1046203002
Inj Date  : 14-FEB-2007 02:10
Operator  : HRG                          Inst ID: 10air0.i
Smp Info  :
Misc Info : 5198
Comment   : Volatile Organic COMPOUNDS in Air
Method    : \\192.168.10.12\chem\10air0.i\021307.b\LOWTO15_038.m
Meth Date : 27-Feb-2007 11:06 lweinkauf  Quant Type: ISTD
Cal Date  : 07-FEB-2007 16:44            Cal File: 03809.D
Als bottle: 25
Dil Factor: 625.00000
Integrator: HP RTE                       Compound Sublist: all.sub
Target Version:  4.14
Processing Host: AIRGROUP


Concentration Formula: Amt * DF * Uf * CpndVariable

     Name         Value     Description
-------------- ---------- ----------------------
      DF         625.000  Dilution Factor
      Uf           1.000  ng unit correction factor
Cpnd Variable             Local Compound Variable


ISTD                                  RT       AREA      AMOUNT
==============================      ======    ======     ======

*  31 1,4-Difluorobenzene            7.455   19646425    10.000

*  46 Chlorobenzene - d5            11.344    3498880    10.000


                         CONCENTRATIONS                      QUANT
   RT        AREA  ON-COL( ppbv)    FINAL( ppbv)  QUAL      LIBRARY    LIB ENTRY     CPND #
  ====       ====  =============    ============  ====      =======    =========     ======

Butane, 2-methyl-                                      CAS #: 78-78-4
  4.514   23481969  11.9522855             7470     86      NBS75K.l       62518         31

Pentane, 3-methyl-                                     CAS #: 96-14-0
  5.767   18461128  9.39668535             5870     91      NBS75K.l       62867         31

Cyclopentane, methyl-                                  CAS #: 96-37-7
  6.592   18736922  9.53706385             5960     90      NBS75K.l         594         31

Pentane, 2,2,4-trimethyl-                              CAS #: 540-84-1
  7.665   51549811  26.2387733            16400     78      NBS75K.l       64221         31

Heptane                                                CAS #: 142-82-5
  7.839   13492588  6.86770624             4290     80      NBS75K.l       63439         31
```

```
Data File: \\192.168.10.12\chem\10air0.i\021307.b\04425tic.D
Report Date: 27-Feb-2007 15:00

                          CONCENTRATIONS                              QUANT
   RT         AREA  ON-COL( ppbv)   FINAL( ppbv)  QUAL     LIBRARY   LIB ENTRY    CPND #
   ====       ====  =============   ============  ====     =======   =========    ======

Cyclohexane, methyl-                                    CAS #: 108-87-2
  8.540   23148819  11.7827125              7360    95      NBS75K.l     63236        31

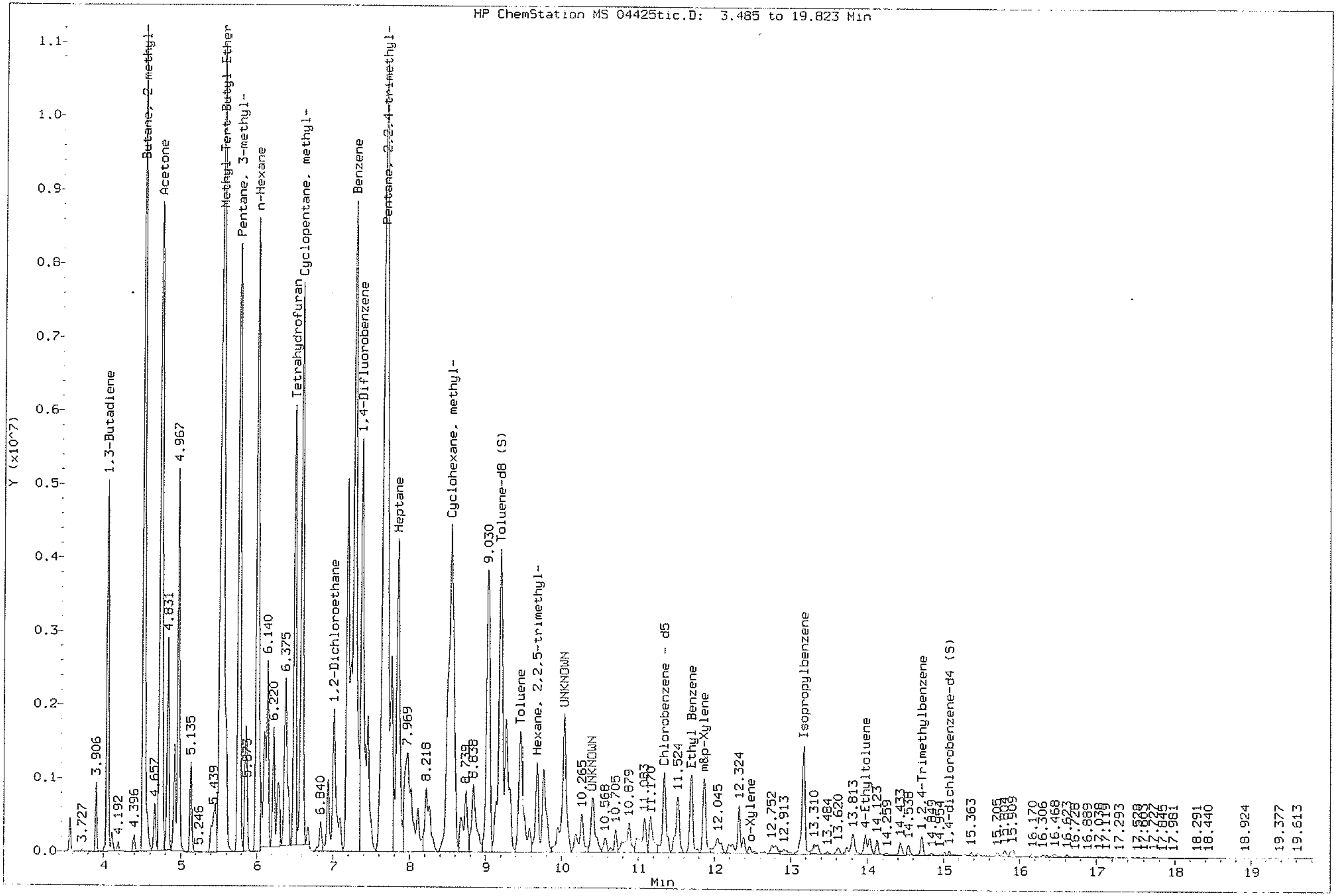
Hexane, 2,2,5-trimethyl-                                CAS #: 3522-94-9
  9.675    7743978  22.1327317             13800    72      NBS75K.l     65126        46

Unknown                                                 CAS #:
 10.035    7492644  21.4144056             13400     0                       0        46

Unknown                                                 CAS #:
 10.401    2750071  7.85985960              4910     0                       0        46
```

Data File: \\192.168.10.12\chem\10air0.i\021307.b\04425tic.D
Injection Date: 14-FEB-2007 02:10
Instrument: 10air0.i
Client Sample ID:

1046203002


HP ChemStation MS 04425tic.D: 3.485 to 19.823 Min

Data File: \\192.168.10.12\chem\10air0.i\021207.b\04315tic.D
Report Date: 27-Feb-2007 14:55

Pace Analytical Services

TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:
Lab Smp Id: 1046203003
Operator : HRG
Sample Location:
Sample Matrix: AIR
Analysis Type: VOA
Inj Date: 12-FEB-2007 19:02

Client SDG: 102205

Sample Date:
Sample Point:
Date Received:
Level: LOW

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/KG) ppbv

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 594-82-1	Butane, 2,2,3,3-tetramethyl	7.653	30.9	NJ
2. 108-87-2	Cyclohexane, methyl-	8.534	11.0	NJ
3. 565-75-3	Pentane, 2,3,4-trimethyl-	9.011	12.8	NJ
4. 560-21-4	Pentane, 2,3,3-trimethyl-	9.179	16.3	NJ
5. 79-92-5	Camphene	13.881	20.1	NJ
6.	Unknown	14.123	9.22	J
7. 124-18-5	Decane	14.538	11.1	NJ
8. 138-86-3	Limonene	15.419	30.8	NJ
9.	Unknown	15.878	21.4	J
10.	Unknown	16.883	13.9	J

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Data File: \\192.168.10.12\chem\10air0.i\021207.b\04315tic.D
Report Date: 27-Feb-2007 14:55


                              Pace Analytical Services

                                TO15 Analysis (UNIX)
Data file : \\192.168.10.12\chem\10air0.i\021207.b\04315tic.D
Lab Smp Id: 1046203003
Inj Date  : 12-FEB-2007 19:02
Operator  : HRG                              Inst ID: 10air0.i
Smp Info  :
Misc Info : 5173
Comment   : Volatile Organic COMPOUNDS in Air
Method    : \\192.168.10.12\chem\10air0.i\021207.b\LOWTO15_038.m
Meth Date : 27-Feb-2007 10:50 lweinkauf  Quant Type: ISTD
Cal Date  : 07-FEB-2007 16:44            Cal File: 03809.D
Als bottle: 15
Dil Factor: 1.51000
Integrator: HP RTE                       Compound Sublist: all.sub
Target Version:  4.14
Processing Host: AIRGROUP


Concentration Formula: Amt * DF * Uf * CpndVariable

     Name          Value     Description
-------------- ---------- -----------------------
      DF            1.510  Dilution Factor
      Uf            1.000  ng unit correction factor
Cpnd Variable              Local Compound Variable


ISTD                                RT       AREA       AMOUNT
==============================    ======    ======     ======

*  31 1,4-Difluorobenzene           7.454    2990427    10.000

*  46 Chlorobenzene - d5           11.331    2571003    10.000


                    CONCENTRATIONS                          QUANT
    RT      AREA  ON-COL( ppbv)   FINAL( ppbv)  QUAL      LIBRARY    LIB ENTRY    CPND #
   ====     ====  ============   ===========   ====      =======    =========    ======

Butane, 2,2,3,3-tetramethyl-                         CAS #: 594-82-1
  7.653    6114374  20.4464857          30.9      72      NBS75K.l     64215        31

Cyclohexane, methyl-                                 CAS #: 108-87-2
  8.534    2187386  7.31462632          11.0      94      NBS75K.l      1326        31

Pentane, 2,3,4-trimethyl-                            CAS #: 565-75-3
  9.011    2545852  8.51333757          12.8      90      NBS75K.l     64228        31

Pentane, 2,3,3-trimethyl-                            CAS #: 560-21-4
  9.179    3232233  10.8085988          16.3      83      NBS75K.l      3088        31

Camphene                                             CAS #: 79-92-5
 13.881    3430197  13.3418614          20.1      97      NBS75K.l     65767        46
```

```
Data File: \\192.168.10.12\chem\10air0.i\021207.b\04315tic.D
Report Date: 27-Feb-2007 14:55

                          CONCENTRATIONS                                 QUANT
   RT      AREA  ON-COL( ppbv)   FINAL( ppbv)  QUAL     LIBRARY    LIB ENTRY     CPND #
  ====     ====  =============   ============  ====     =======    =========     ======

Unknown                                           CAS #:
 14.123   1570202  6.10735073           9.22      0                          0        46

Decane                                            CAS #: 124-18-5
 14.538   1896598  7.37687724           11.1     95     NBS75K.l      66204        46

Limonene                                          CAS #: 138-86-3
 15.419   5248658  20.4148213           30.8     91     NBS75K.l       6647        46

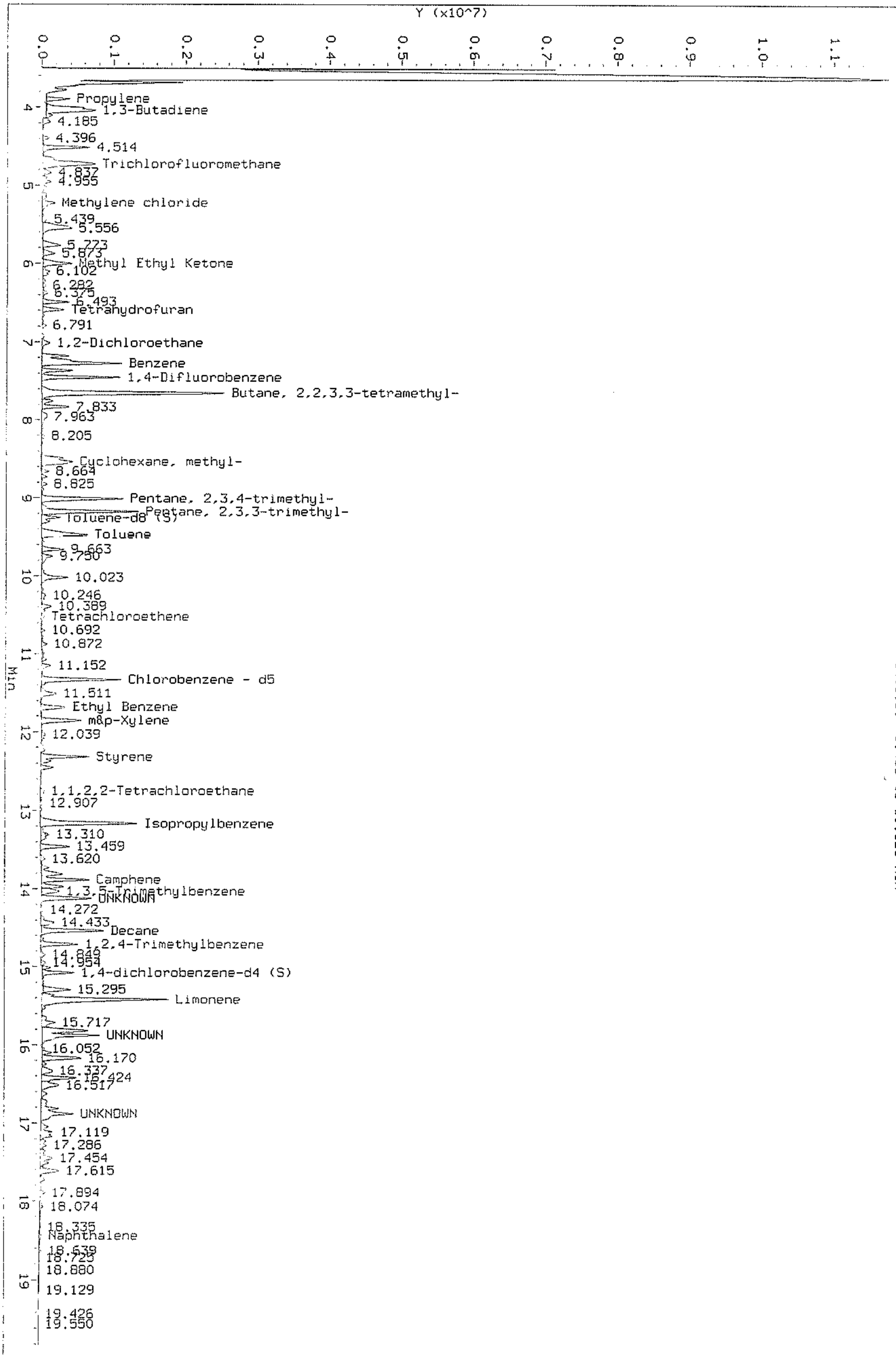
Unknown                                           CAS #:
 15.878   3652300  14.2057355           21.4      0                          0        46

Unknown                                           CAS #:
 16.883   2360820  9.18248501           13.9      0                          0        46
```

Data File: \\192.168.10.12\chem\10air0.i\021207.b\04315tic.D
Injection Date: 12-FEB-2007 19:02
Instrument: 10air0.i
Client Sample ID:

1046203003

HP ChemStation MS 04315tic.D: 3.485 to 19.823 Min



Data File: \\192.168.10.12\chem\10air0.i\021307.b\04409tic.D
Report Date: 27-Feb-2007 14:59

Pace Analytical Services

TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:
Lab Smp Id: 1046203004
Operator : HRG
Sample Location:
Sample Matrix: AIR
Analysis Type: VOA
Inj Date: 13-FEB-2007 17:49

Client SDG: 102205

Sample Date:
Sample Point:
Date Received:
Level: LOW

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/KG) ppbv

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	3.906	15.5	J
2.	Unknown	4.198	12.5	J
3. 78-78-4	Butane, 2-methyl-	4.527	20.7	NJ
4. 107-83-5	Pentane, 2-methyl-	5.531	10.7	NJ
5.	Unknown	7.647	8.93	J
6. 108-87-2	Cyclohexane, methyl-	8.527	8.69	NJ
7. 79-92-5	Camphene	13.887	11.6	NJ
8. 124-18-5	Decane	14.532	8.14	NJ
9. 5989-27-5	D-Limonene	15.413	16.6	NJ
10.	Unknown	19.445	8.88	J

```
Data File: \\192.168.10.12\chem\10air0.i\021307.b\04409tic.D
Report Date: 27-Feb-2007 14:59


                                Pace Analytical Services

                                  TO15 Analysis (UNIX)
Data file : \\192.168.10.12\chem\10air0.i\021307.b\04409tic.D
Lab Smp Id: 1046203004
Inj Date  : 13-FEB-2007 17:49
Operator  : HRG                           Inst ID: 10air0.i
Smp Info  :
Misc Info : 5198
Comment   : Volatile Organic COMPOUNDS in Air
Method    : \\192.168.10.12\chem\10air0.i\021307.b\LOWTO15_038.m
Meth Date : 27-Feb-2007 11:06 lweinkauf  Quant Type: ISTD
Cal Date  : 07-FEB-2007 16:44            Cal File: 03809.D
Als bottle: 9
Dil Factor: 6.50000
Integrator: HP RTE                       Compound Sublist: all.sub
Target Version:  4.14
Processing Host: AIRGROUP


Concentration Formula: Amt * DF * Uf * CpndVariable

     Name         Value     Description
-------------- ---------- -----------------------
      DF           6.500  Dilution Factor
      Uf           1.000  ng unit correction factor
Cpnd Variable             Local Compound Variable


ISTD                                 RT       AREA       AMOUNT
==============================     ======    ======      ======

*  31 1,4-Difluorobenzene           7.448    2064168      10.000

*  46 Chlorobenzene - d5           11.331    2304275      10.000


                   CONCENTRATIONS                          QUANT
   RT      AREA  ON-COL( ppbv)  FINAL( ppbv)  QUAL    LIBRARY   LIB ENTRY   CPND #
  ====     ====  ============   ===========   ====    =======   =========   ======

Unknown                                          CAS #:
  3.906   491452  2.38087397          15.5     0                        0       31

Unknown                                          CAS #:
  4.198   395973  1.91831724          12.5     0                        0       31

Butane, 2-methyl-                                CAS #: 78-78-4
  4.527   656798  3.18190285          20.7     86      NBS75K.l     62517       31

Pentane, 2-methyl-                               CAS #: 107-83-5
  5.531   338714  1.64092148          10.7     87      NBS75K.l       733       31

Unknown                                          CAS #:
  7.647   283504  1.37345187          8.93     0                        0       31
```

```
Data File: \\192.168.10.12\chem\10air0.i\021307.b\04409tic.D
Report Date: 27-Feb-2007 14:59

                          CONCENTRATIONS                          QUANT
    RT       AREA  ON-COL( ppbv)   FINAL( ppbv)  QUAL      LIBRARY    LIB ENTRY     CPND #
   ====      ====  ============    ===========   ====      =======    ========      ======

Cyclohexane, methyl-                                 CAS #: 108-87-2
  8.527     275908  1.33665379           8.69      95        NBS75K.1       1326          31

Camphene                                             CAS #: 79-92-5
 13.887     413345  1.79381661           11.6      97        NBS75K.1      65768          46

Decane                                               CAS #: 124-18-5
 14.532     288482  1.25194131           8.14      91        NBS75K.1       8077          46

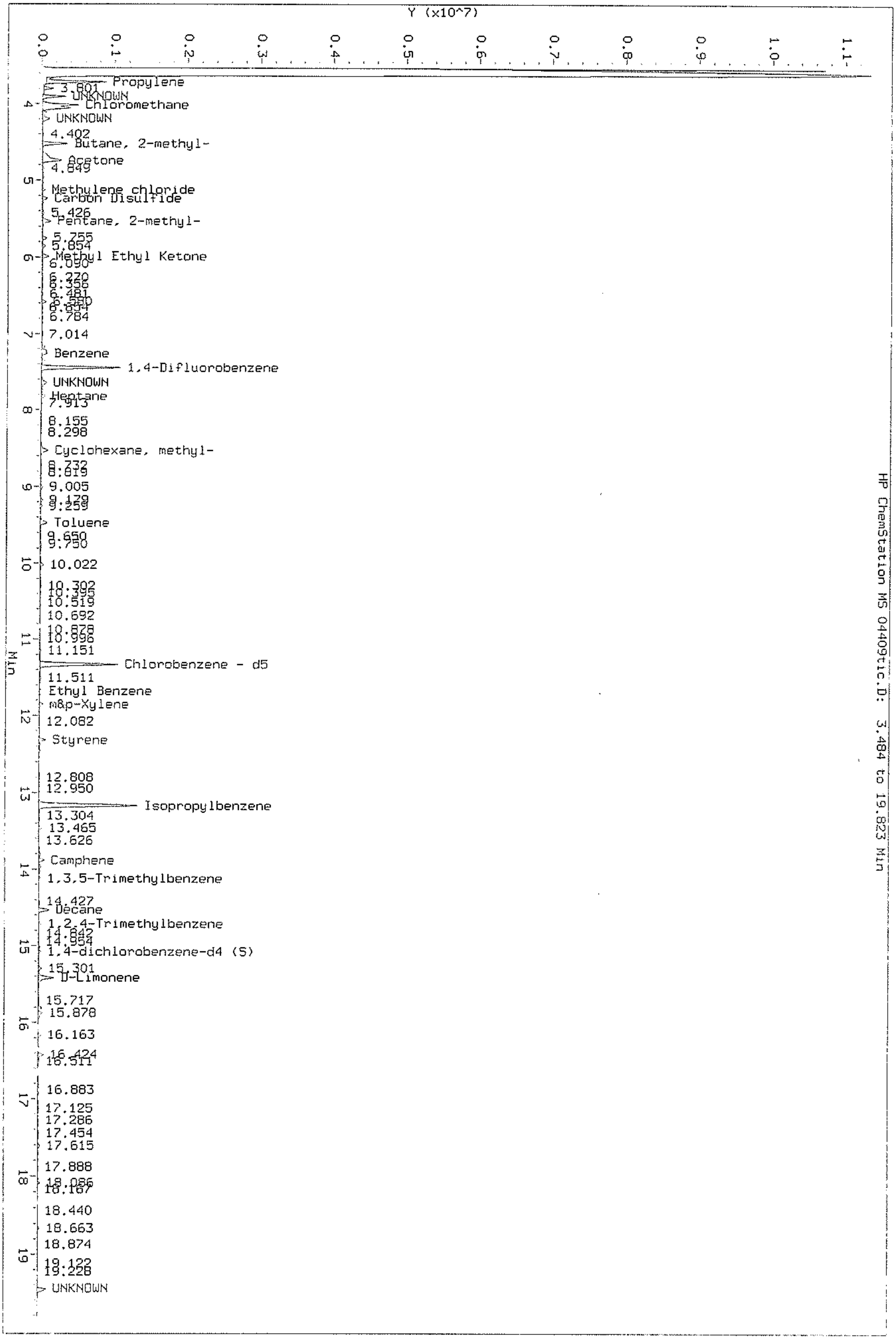
D-Limonene                                           CAS #: 5989-27-5
 15.413     590544  2.56281761           16.6      94        NBS75K.1      65790          46

Unknown                                              CAS #:
 19.445     314764  1.36600013           8.88       0                          0          46
```

Data File: \\192.168.10.12\chem\10air0.i\021307.b\04409tic.D
Injection Date: 13-FEB-2007 17:49
Instrument: 10air0.i
Client Sample ID:

1046203004

HP ChemStation MS 04409tic.D: 3.484 to 19.823 Min



Data File: \\192.168.10.12\chem\10air0.i\021207.b\04313tic.D
Report Date: 27-Feb-2007 14:53

Pace Analytical Services

TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:
Lab Smp Id: 1046203005
Operator : HRG
Sample Location:
Sample Matrix: AIR
Analysis Type: VOA
Inj Date: 12-FEB-2007 17:59

Client SDG: 102205

Sample Date:
Sample Point:
Date Received:
Level: LOW

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/KG) ppbv

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 91-57-6	Naphthalene, 2-methyl-	10.972	1.89	NJ
2. 3891-98-3	Dodecane, 2,6,10-trimethyl-	13.689	3.33	NJ
3. 629-59-4	Tetradecane	15.004	2.78	NJ
4. 629-92-5	Nonadecane	17.324	1.27	NJ
5. 556-67-2	Cyclotetrasiloxane, octamet	18.626	1.73	NJ

```
Data File: \\192.168.10.12\chem\10air0.i\021207.b\04313tic.D
Report Date: 27-Feb-2007 14:53


                                 Pace Analytical Services

                                   TO15 Analysis (UNIX)
Data file : \\192.168.10.12\chem\10air0.i\021207.b\04313tic.D
Lab Smp Id: 1046203005
Inj Date  : 12-FEB-2007 17:59
Operator  : HRG                              Inst ID: 10air0.i
Smp Info  :
Misc Info : 5173
Comment   : Volatile Organic COMPOUNDS in Air
Method    : \\192.168.10.12\chem\10air0.i\021207.b\LOWTO15_038.m
Meth Date : 27-Feb-2007 10:50 lweinkauf  Quant Type: ISTD
Cal Date  : 07-FEB-2007 16:44            Cal File: 03809.D
Als bottle: 13
Dil Factor: 1.25000
Integrator: HP RTE                       Compound Sublist: all.sub
Target Version:  4.14
Processing Host: AIRGROUP


Concentration Formula: Amt * DF * Uf * CpndVariable

     Name        Value     Description
-------------- ---------- ----------------------
      DF          1.250   Dilution Factor
      Uf          1.000   ng unit correction factor
Cpnd Variable             Local Compound Variable


ISTD                                RT       AREA      AMOUNT
==============================    ======    ======     ======

*  46 Chlorobenzene - d5          11.331    2487597    10.000
```

```
                        CONCENTRATIONS                          QUANT
    RT      AREA   ON-COL( ppbv)   FINAL( ppbv)  QUAL    LIBRARY    LIB ENTRY   CPND #
   ====     ====   ============    ===========   ====    =======    =========   ======

Naphthalene, 2-methyl-                                  CAS #: 91-57-6
 10.972    376920  1.51519503           1.89      80     NBS75K.l       8115       46

Dodecane, 2,6,10-trimethyl-                             CAS #: 3891-98-3
 13.689    662342  2.66257532           3.33      87     NBS75K.l      70270       46

Tetradecane                                             CAS #: 629-59-4
 15.004    554054  2.22726496           2.78      96     NBS75K.l      69659       46

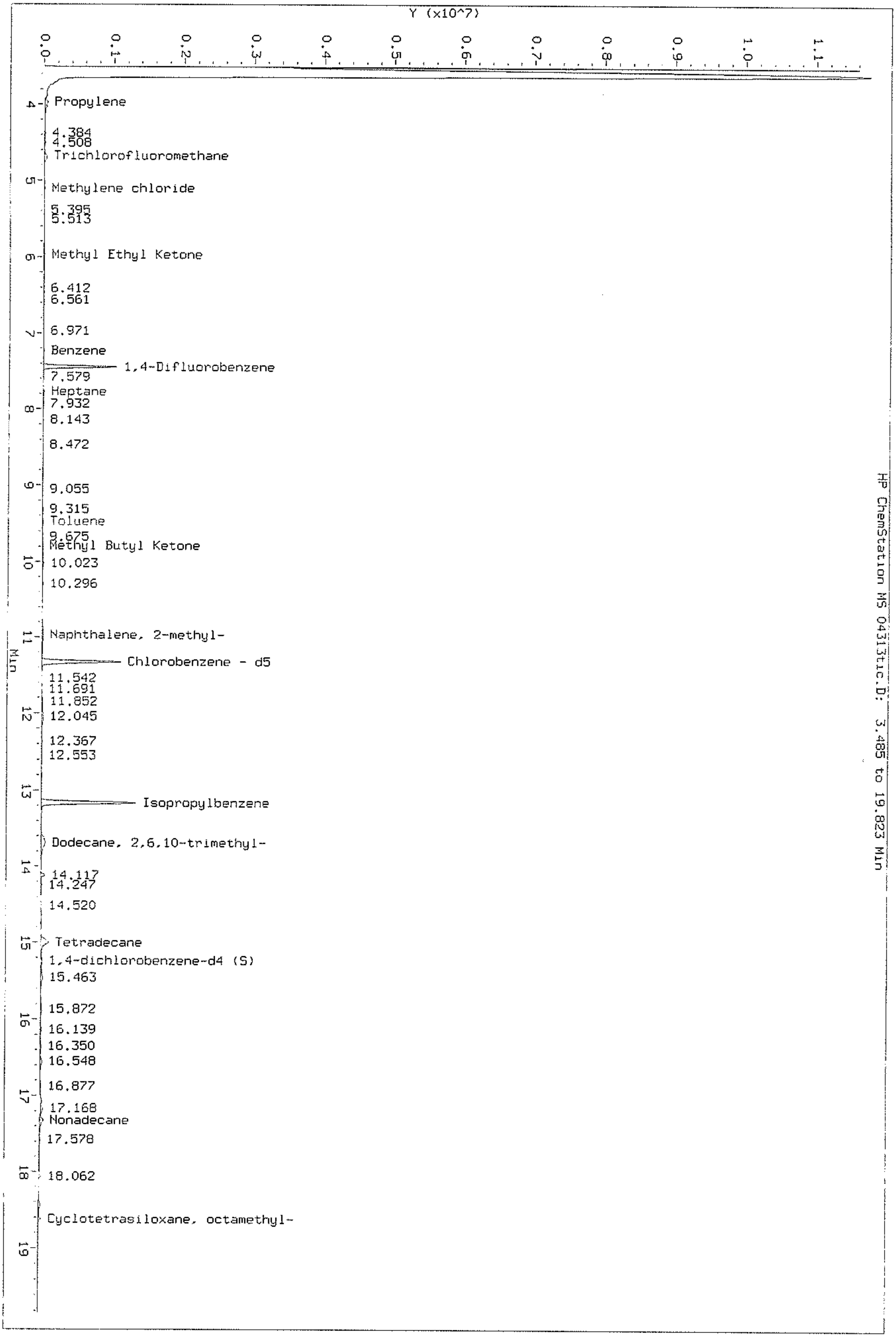
Nonadecane                                              CAS #: 629-92-5
 17.324    253643  1.01963230           1.27      74     NBS75K.l      37469       46

Cyclotetrasiloxane, octamethyl-                         CAS #: 556-67-2
 18.626    344298  1.38405656           1.73      78     NBS75K.l      41966       46
```

Data File: \\192.168.10.12\chem\10air0.i\021207.b\04313tic.D
Injection Date: 12-FEB-2007 17:59
Instrument: 10air0.i
Client Sample ID:

HP ChemStation MS 04313tic.D: 3.485 to 19.823 Min

10-16203005



* State Contract Number S-972(5) *

CHAIN OF CUSTODY RECORD

№ 38720 1046203

RECORD NUMBER 38720 THROUGH 38720

Contact Person Tim Grape
Phone No. 763 315 6300 Office Mpls
Project No. 200606839 PO No.
Project Name Alex Exhaust

Special Handling Request
☐ **Rush**
☐ **Verbal**
☐ **Other**

Laboratory Pace Analytical
Contact Person
Phone No. 612 607 1700
Results Due Standard

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation		Field Data				Analysis Request	Comments on Sample (Include Major Contaminants)
									PID/FID					
							Y	N	Ambient	Sample	PH	Special Cond.		
VP-1	2/8	1445	x		1	air		x					TO-15	001
VP-2 1430	2/8	~~1515~~	x		1	↓		x					↓	002
VP-3	2/8	1500	x		1			x						003
VP-4	2/8	1530	x		1			x						004
F.B.	2/8	1545	x		1			x						005

Collected by: Mathew Beckman Date See Time Above
Delivery by: Shaun Davis Date 2/9/07 Time 1121
Received by: Date Time
Relinquished by: Date Time
Received by: Date Time
Relinquished by: Date Time
Received by: Date Time
Relinquished by: Date Time
Received for lab by: B. Fleck Date 2/9/07 Time 13:00
Relinquished by: Date Time

Laboratory Comments Only: Seals Intact Upon Receipt? ☐ Yes ☐ No ☐ N/A

Final Disposition:

Comments (Weather Conditions, Precautions, Hazards):

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

6/99cp10k

STS Consultants Ltd.
Consulting Engineers

Sample Condition Upon Receipt

Pace Analytical

Client Name: STS Project # 1046203

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other ______

Tracking #: ______

Optional:
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other ______

Thermometer Used 230194010 **Type of Ice:** Wet Blue [✓ None] ☐ Samples on ice, cooling process has begun

Cooler Temperature Amb **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: BF 2/9/07

				Comments:
Chain of Custody Present:	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out:	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished:	☒ Yes	☐ No	☐ N/A	3.
Sampler Name & Signature on COC:	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time:	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72hr):	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested:	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume:	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used:	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used:	☒ Yes	☐ No	☐ N/A	
Containers Intact:	☒ Yes	☐ No	☐ N/A	10.
Filtered volume received for Dissolved tests	☐ Yes	☐ No	☒ N/A	11.
Sample Labels match COC:	☒ Yes	☐ No	☐ N/A	12.
-Includes date/time/ID/Analysis Matrix: AIR CAN				
All containers needing preservation have been checked.	☐ Yes	☐ No	☒ N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes	☐ No	☒ N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐ Yes	☒ No		Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐ Yes	☐ No	☒ N/A	14.
Headspace in VOA Vials (>6mm):	☐ Yes	☒ No	☐ N/A	15.
Trip Blank Present:	☐ Yes	☒ No	☐ N/A	16.
Trip Blank Custody Seals Present	☐ Yes	☒ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): ______				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: ______ Date/Time: ______

Comments/ Resolution: ______

Project Manager Review: DKP **Date:** 2/9/07

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

APPENDIX G

AECOM Methodologies and Procedures

AECOM Standard Methodologies and Procedures

AECOM conducts environmental investigation and review following Minnesota Pollution Control Agency (MPCA) Guidance Documents and generally-accepted professional practices. The following sections provide a summary of standard AECOM procedures used at Leaking Underground Storage Tank (LUST) sites in Minnesota.

1.0 Site Reconnaissance and Background Review

Where appropriate, AECOM conducts literature review and interviews with knowledgeable individuals to develop a project background, and/or complete a reconnaissance of a project setting. These activities are conducted in general conformance with the acceptable procedures for site reconnaissance, interviewing, and acquisition of readily-available public documents, and the on-site activities for these tasks that are described in MPCA Guidance Document 4-02.

These reviews include the historic occupant/land uses associated with properties and their surroundings, and may be conducted to observe for the presence of groundwater wells where indications of presumed UST fill pipes, vents, hatches, piping, dispenser islands, or other site-specific appurtenances indicative of a property history with potential for USTs to be present.

Walking well surveys conducted by AECOM rely on visual observations made during a walking reconnaissance of the indicated search radius. These reviews are limited to the observations possible from public lands, rights-of-way, and transportation corridors (including sidewalks) unless property owner permission is provided to AECOM for closer inspection.

Reviews of County Well Index (CWI) records conducted by AECOM includes the review of well logs found in an indicated search area (township, range, section) in an electronic copy of the CWI database, and may include a visit to the University of Minnesota, Minnesota Geological Survey (MGS) facility for direct review of records on file at that location. These records are often provided with a key map showing the specific locations of wells based on literature review and on-site confirmation conducted by MGS. AECOM also contacts a local water planning official to gain information on current and projected groundwater wells in the area. This official is often the engineer for the municipality, and/or the Public Works Director. In rural areas, the County Planning Office and/or Engineering Office may have an environmental component involved in groundwater planning.

Interviews conducted by AECOM with knowledgeable individuals can include telephone and face-to-face discussions with current/past property owners, neighbors, representatives of the city/county where the site is located, or other individuals with specific knowledge about a site. These interviews are relatively informal in nature, and are documented as such in the AECOM report. Accounts of site history that can be cross-corroborated between sources are given greater credibility when used by AECOM to interpret site findings than individual accounts that are non-specific in nature. In the event non-specific accounts of past environmental incidents or property use are received by AECOM, additional sources of information are sought to determine if the account can be confirmed.

Sites with groundwater impacts require evaluation of municipal water well risk, if the impacts are found in a Source Water Protection (SWP) area or Drinking Water Source Management Area (DWSMA). To determine this, AECOM queries the Minnesota Dept. of Health (MDH) website. Specific information concerning the SWP / DWSMA (if any) involved is gathered by contacting the various officials mentioned above, and/or MDH area hydrologists, etc. listed on the MDH website.

2.0 Site Investigation

Site investigations conducted by AECOM typically include soil borings using the hollow stem auger method to advance soil borings, and the use of rotary drilling to extend these borings into bedrock where required. The placement of borings by AECOM is conducted in conformance with MPCA Guidance Document 4-01 procedures. AECOM extends soil borings in conformance with ASTM D-4700, typical site investigations rely on the use of a motorized drill rig equipped with hollow-stem augers. Samples are retrieved using the split-spoon sampler in conformance with ASTM D-1586. A typical sample interval is 2.5 feet between intervals. A 2 foot split-spoon sampler is used to retrieve a representative soil sample from this interval. Soils are classified in conformance with ASTM D-2487, the visual manual procedure and described in general conformance with the Unified Soil Classification System.

Other methods are used by AECOM for soil sampling, notably direct-push "Geoprobe" sampling equipment advanced using a sampling vehicle that has both push and rotary drilling capabilities. The samplers used are consistent with ASTM D-3550 methodology.

Field screening of soil samples is conducted in conformance with the polyethylene bag head space screening method described in MPCA Guidance Document 4-04. For this purpose, AECOM uses a photoionization detector (PID) equipped with a 10.6 eV lamp and calibrated using 100 ppm isobutylene as a benzene surrogate. In the event a different screening tool (Flame Ionization Detector, Methane Meter, or different PID lamp excitation level) is used, this is noted on the boring log. Boring logs prepared by AECOM typically receive peer review of soil classification by a Professional Geologist, the typed boring logs show the encountered strata with the PID meter readings, and indicate the background PID meter deflections observed in ambient air. Alternate forms of boring logs are used when down-hole instrumentation is involved, such as the use of Laser Induced Fluorescence or Membrane Interface Probe technology.

Soil samples from boreholes are prepared for laboratory analysis in conformance with MPCA Guidance Document 4-04. Soil borings that encounter groundwater often require groundwater sample collection from temporary wells or permanent monitoring wells. This is conducted in conformance with MPCA Guidance Document 4-05. In the event permanent monitoring wells are required, AECOM installs these in conformance with Minnesota Department of Health (MDH) well codes.

2.1 Vapor Intrusion Investigation

AECOM follows the MPCA guidance for Vapor Risk Evaluation and Vapor Intrusion Assessment (Guidance Document 4.01a) for vapor sampling during investigation, and as a supplement to investigations that were completed without evaluation of this exposure pathway. This may include push probes for soil gas sampling using the Post-Run Tubing (PRT) sampler, and/or installation of semi permanent soil gas monitoring points.

Sub-slab samples are collected by first drilling a small (1/2 inch to 1-1/4 inch dia.) hole, and setting a temporary sample line in the hole. This line is equipped with intake protection to avoid soil entry, and a surface seal to prevent ambient air from flowing into the sub-slab air being sampled. AECOM also fabricates sample ports from brass and polyethylene that are grouted to a ¾ inch hole, which allows for repeated sub-slab samples from the same location in a manner that minimizes disruption to the building owner.

Whenever sample points such as those described above are sampled, AECOM purges them prior to sample collection. The purge device used may vary with application, but is generally a multi-gas detector (e.g. Landtech GEM 500) that has an integral, calibrated flow sample pump. This instrument has a steady-flow pump that allows for predictable sample line purging; the unit is allowed to run for the time required to purge the sample line. The instrument sensor readings are observed, and the sample line purging is considered to be confirmed when the readings appear to stabilize. The multi-gas monitor collects measurements of subsurface gas constituents such as oxygen, carbon dioxide, and methane which are useful in interpreting sample results and evaluating subsurface air flux.

AECOM efforts for Quality Assurance (QA) are defined in the Work Plan on a site-specific basis, and may include use of a tracer compound. An example of tracer use is placement of sorbent cloths containing isopropanol around a vapor sample probe. The presence of elevated isopropanol concentrations in collected vapor samples would indicate that atmospheric air followed a "short circuit" path to the vapor collection point, compromising the vapor sample data. Another QA strategy is to review the instrument readings for oxygen and carbon dioxide, and compare the gas ratios to atmospheric norms. Subsurface vapor tends to be oxygen depleted and richer in carbon dioxide, unless subsurface air flux is sufficient to bring fresh air into the subsurface environment. Such increased air flux often occurs due to human alterations such as placement of granular fill and/or structures that penetrate the soil. The presence of such influencing factors, when observed, is taken into account when reviewing the results of vapor monitoring.

Sample collection is by ‘Summa’ canister, following manufacturer and Laboratory prescribed procedures. Quality Assurance efforts include the line purging and vapor screening tools described above, collection of Quality Assurance samples such as a sample line method blank, Ambient Air sample collection, and documentation of sample location conditions such as building interior observations and listing of readily observed materials in the area that could bias sample results. The latter conditions are documented on the form, Indoor Air Quality Building Survey prepared by Minnesota Department of Health.

Analytical results are interpreted by comparing the contaminants released at the site, with the compounds present in the vapor samples. While the presence of air contaminants not released from the site may be a concern, identification of these additional pollutants is not an objective of focused investigatory work. Compounds in air samples that were released from the site are reviewed further. The results of subsurface, sub-slab, and interior air sample analysis are evaluated to determine if a contaminant *migration pathway* appears to be completed. A completed exposure pathway would be inferred if (1) all sample locations had the same compound present, and it was a contaminant found in the release, and (2) the ratios of these compounds is consistent, with variability attributable to application of Henry’s Law and/or natural attenuation processes, where appropriate.

Additional efforts for data reduction may be appropriate in specific cases. When applied to a site, AECOM will document the evaluation method and references that apply.

3.0 Well Sampling

The following methodologies pertain to groundwater samples collected from wells.

3.1 New Wells

New wells installed by AECOM are developed prior to sampling in order to enhance the connection between the well and the aquifer, and allow for collection of groundwater levels and laboratory samples that represent groundwater conditions to the extent practicable.

Well development can include jetting/flushing of the well screen using clean water from a tested source soon after well installation. The jetted water is then removed from the well by purging with a submersible pump and the volumes removed noted on the AECOM Well Development Summary. The well screen is then surged to loosen fines in the well annulus, followed by purging of the well to remove fines with the purge water. This process is repeated as necessary to clear sediment from the well; then the well is purged at a sustainable rate for collection of well stabilization parameters as described below.

3.2 Monitoring Well Sampling

Monitoring wells are sampled by AECOM by purging the well at a sustainable rate (if the well yields water at a pumpable flow rate) and by collecting readings of “well stabilization” parameters during purging at intervals of approximately one standing volume. The standing volume is determined by calculating the volume of water found in the well screen/casing and varies with well diameter.

Well stabilization is considered to occur when the following parameters match within the indicated tolerances:

- pH, ±0.1 unit
- temperature, ±0.5°C
- specific conductivity, ±5% of instrument range
- redox potential (if applicable), ±20 mV
- observed color and turbidity, consistent throughout the last three well volumes

In some cases, monitoring wells yield too slowly to allow continued purging. If this is the case, AECOM will purge the well dry once and then collect the stabilization reading set. Well recovery is monitored by AECOM, and the well may be bailed dry a second time if it recovers approximately 50% in two hours. Additional sets of stabilization readings will be taken for wells that can be bailed repeatedly and recover groundwater each time. Wells that recover too slowly to allow repeated or continued purging will be sampled within approximately three hours of being purged dry, if sufficient water is available for sample bottle filling. Departures from these procedures will be noted on the AECOM Sampling Information Form.

Sample collection is accomplished using a sampler bailer, or through use of a dedicated length of sample tubing connected to a peristaltic pump. Collection of water for field tests is typically run through the submersible pump's purge line prior to laboratory sample collection. A description of the sample collection device used is documented on the AECOM Sampling Information Form.

3.3 Water Supply Well Sampling

AECOM samples water wells by collecting the available information on the well depth, construction, and water level if readily available. The water wells are allowed to run, and purge water is drawn from a tap as close as practicable to the pump effluent. Often, this sample tap is equipped with a hose or other purge line to direct volumes of water away from the well location. Wells that are infrequently used involve collection of the stabilization readings described above to determine when groundwater geochemistry in the well has stabilized sufficiently for sample collection. Wells that are in constant use, or have been run frequently or an extended period prior to sample collection by AECOM may involve a "grab" sample from the sampling tap, as the continued period of operation would be assumed to stabilize well geochemistry prior to this.

Water samples are collected from these wells by removing the purge hose if appropriate, and slowing the rate of water flow through the sampling tap to a steady trickle, without observable air bubbles or other turbulence. Water is allowed to run directly into sample containers prepared by the analytical laboratory and handled appropriately. Water sampling for bacteriological testing is a specialized technique, and includes preparation of the sample location (e.g. flame sterilization for the tap) prior to sample collection. This form of water sampling requires more careful handling of all sampling materials, and provisions for rapid shipment of samples to the testing facility.

4.0 Equipment Decontamination

To minimize the amount of equipment requiring decontamination, AECOM relies on the use of dedicated, disposable sampling equipment where practicable. Such disposable equipment includes tubing, bailers and bailer retrieval cord, and in-well samplers. Items not available as disposable items are decontaminated between uses/wells. AECOM seeks to sample "clean" areas first, and work toward more contaminated locations to minimize the effects of contaminant carry-over.

The topic of equipment decontamination is extensive and beyond the scope of this report. AECOM generally follows "EPA Protocol B" for decontamination of equipment, using a laboratory grade detergent followed by three deionized water rinses. Where available, AECOM uses a running water rinse for the third rinse to maximize the efficiency of decontamination and remove traces of contaminants that may remain in standing rinse water.

Field blanks are often collected from equipment rinsate water generated during the final rinse of equipment such as bailers, sample tubing, etc. The same deionized water used for equipment rinsing is used for preparation of the field blank to allow for quality assurance testing on the field blank collected. When disposable bailers are used, a field blank is prepared by pouring deionized water into the bailer prior to use in a well, and then pouring the bailer's contents into the sample containers.

5.0 Aquifer Parameters

Certain aquifer parameters have to be established for evaluation of groundwater receptor risks. The following aquifer parameters were estimated using generally-accepted techniques for use in the risk estimation that applied to the site.

5.1 Horizontal Gradient

The horizontal gradient (dh/dl) was estimated by taking the difference in head (water elevation) between an up-gradient well and a similarly-constructed down-gradient well, to determine the "dh" value. The linear distance between these points was measured graphically perpendicular to flow lines (from the site map) and/or from actual field measurements. The dh value divided by the length between data points provides the horizontal gradient (unitless factor) for use in groundwater flow calculations.

5.2 Vertical Gradient

The vertical gradient (dh/dv) was estimated by taking the difference in head between wells screened in different portions of an aquifer, or separate aquifers to provide the "dh" value. This value divided by the "dv" value provides an estimated vertical gradient (unitless factor). AECOM assigns the descriptions "upward" or "downward" to describe the resulting gradient.

The dv value was calculated by taking the elevation of the center of the saturated portion of the shallower well, and subtracting the elevation center of the deeper well's sand pack. Therefore, the shallower wells bottom would be the base of borehole containing sand pack where the screen section is located. The top of well for the deeper well would include the upper elevation of the sand pack found above the well screen, and below the well seal/grout in the annulus.

5.3 Pore Velocity

The pore velocity in the impacted aquifer is presented as an estimate, and was based on the estimated values described according to the following formula:

$$\text{Pore velocity} = k \times \frac{dh/dl}{\text{porosity}}$$

For this calculation, aquifer material porosity was estimated per Fetter, in the reference cited in the following section.

5.4 Determination of Hydraulic Conductivity (k)

AECOM evaluated the soil texture found in the aquifer materials (screened portion of monitoring wells, for example) for determining of k as follows:

5.4.1 Estimated by Soil Texture

The predominant soil textures encountered in the impacted aquifer were classified by AECOM and compared with the soil types described by C.W. Fetter in Applied Hydrogeology, 2nd Edition dated 1988 (page 80) and in literature cited by Mr. Fetter. The literature provides values of k in cm/sec which are converted to other units (e.g. ft/day) using conversion formulas as appropriate.

5.4.2 Estimated by Hazen Approximation

MPCA Guidance Document 4-06 refers to use of the "Hazen Approximation" for determination of k. The Hazen Approximation was derived from empirical tests conducted on manufactured sand beds of less than maximum density. According to Fetter, the approximation becomes less accurate with decreasing *effective grain size*. The Hazen method is valid for k values greater than 10^{-3} cm/sec, and with soils that have <5% of fines passing the No. 200 sieve. AECOM performs grain size analysis on soil samples collected from aquifer materials, in conformance with ASTM D-422.

The *effective grain size* (D_{10}) derived from the sieve analysis is used to estimate k (Hazen method) as follows:

$k = C \times (D_{10})^2$

Where k is hydraulic conductivity in centimeters/sec, C is a constant given by definition in the literature, and D_{10} is the effective grain size in centimeters. Fetter provides values for C based on textural soil classifications. Where appreciable difference in C values exist for a textural class, the higher and lower values are used to calculate a range of k values.

5.5 Natural Attenuation

AECOM follows MPCA guidance for evaluation of natural attenuation processes in groundwater. The Conceptual Model used in this evaluation includes the assumption that contaminant concentrations can diminish as the result of advection (dilution and aquifer mixing), diffusion (as contaminant mass is lost to the unsaturated zone by off-gassing of vapor), and bio-degradation. Microbial populations are facultative; microbes suited to a given set of geochemical conditions will become numerous if given time, when faced with an energy source (such as dissolved hydrocarbons), and a metabolism-inducing agent. Bio-attenuation suitability evaluation is estimated through collection of field measurements for this inducing agent (usually an electron acceptor such as dissolved oxygen, or alternative such as nitrate, iron, sulfate, etc.) either directly by measuring oxygen or an ion in solution, or indirectly by measuring oxidation-reduction potential or other geochemical parameters.

The above-described approach is used to develop an *inference* that natural attenuation processes involving microbial activity can occur. Other inferences can include the measurement of respirometry (oxygen, carbon dioxide, methane) parameters to find evidence that metabolic activity is changing the composition of subsurface gases. Other techniques may sample subsurface vapor to determine if the ratio of parent compound and degradation products changes over time, or across distance traveled in the groundwater.

Direct observation of natural attenuation can be made, by comparing analytical results collected over time from the same locations. If multiple (a rule of thumb is six) consecutive sampling events show a generally declining trend in contaminant concentrations, and this is not due to the plume moving out of the monitored area, a conclusion is made that natural attenuation is occurring.

6.0 Risk Estimation

AECOM conducts risk estimation on LUST sites in conformance with MPCA Guidance Document 4-02. The risk estimations rely on probable risks associated with impact severity and extent, and proximity to identified receptors. Receptors of contamination may be human or ecological beings. The pathways of exposure include direct bodily contact with contamination, ingestion of impacted soil and/or groundwater, and inhalation of vapors. Low-risk sites include those with minor impacts, impacts found only in a relatively small area, and sites where impacts are separated from receptors by a considerable distance. Risk-elevating factors include severe impacts, impacts that are extensive or are expanding in scope, and the presence of impacts in/near groundwater receptors in the vicinity.

In the event that elevated receptor risks are evident, additional effort is expended in determining whether impacts to receptors have occurred. In the event receptors are impacted by a release, corrective action is required in conformance with MPCA policies. When site conditions are such that receptor impacts have been addressed, a revised estimation of risk can be performed. Remedial actions (including natural attenuation) can act on remaining contamination such that either the extent or magnitude of impacts (or both) are diminished sufficiently to lower the estimated risks associated with a release site. In some cases, additional risk evaluation effort relies on established toxicological procedures to evaluate risks associated with site conditions. In such cases, a detailed description of methodology will be found in the AECOM text. Other factors that can reduce risk involve breaking an exposure pathway. Examples of this are: covering contaminated soil so that it cannot come into contact with receptors and/or will not leach to groundwater, providing an alternative source of water to receptors at-risk from contaminated groundwater, and preventing exposure to inhalable contaminants by changing the level or duration of exposure.

APPENDIX H

Sampling Information Forms

AECOM

SAMPLING INFORMATION FORM

AECOM
161 Cheshire Lane North, Suite 500
Minneapolis, MN 55441

Sampler's Name Mathew J. Beckman
Weather Overcast/ -10's – 0's
Unusual Conditions
Project Alex Exhaust
Location Alexandria, MN
STS project number: 200606839
Sample ID number TW-1
Date sampled 2/8/2007
Time 1010 am ____ pm X
Describe sampling point Temporary well converted from B-1
Unique Well Number

MONITORING WELL INFORMATION: (If Applicable)

Monitoring point elevation = 100.70
Datum = Assumed local
Water elevation = 79.70
Well depth (prior to sampling) = 25.00 feet below monitoring point (mp)
Depth to water (below mp) = 21.00 feet
Date 2/08/07
Time 1000 am X pm ____
Well diameter 2 inches
Water level above screen? ____ No ____ Yes ____ feet
Volume of water in well = ~0.6 gallons

PURGING INFORMATION:

Purging method: Bailer X Submersible pump ____ Tap ____ Other ____
Tubing type: Teflon ____ Black poly ____ Other ____
Pump intake or bailer set at Waterline feet below monitoring point (mp).
Discharge rate (if applicable) <1 gal/min gpm x 0.1336806 = ____ cfm
At least ____ well volumes evacuated before sampling, totaling ~3 gallons.

SAMPLING INFORMATION

Sampling method: Bailer X Tap ____ Other ____
Tubing type (if applicable): Teflon ____ Other ____
Bailer was: Disposable ____ Laboratory cleaned ____ Field cleaned ____ Other ____
Sample collected from Waterline feet below monitoring point. (mp)
Sample collection discharge rate (if applicable): = <1 L/min gpm
Sample appearance Cloudy/sediment
Odor None observed
Note any sampling observations if necessary

Chemical Analysis VOC, GRO and DRO

Equipment Calibration pH = 7,4,10,7 Conductivity = 700 µs/cm @ 0800

FIELD STABILIZATION

Military time	pH	Redox Pot.	Temperature corrected conductance [ms/cm]	Temperature [^{o}C]	Water Level (nearest 0.01 ft.)	Cumulative volume of water removed [gal.]
1020	7.4	-23	3.59	5.1		~1
1025	7.4	-15	3.51	5.0		~2
1030	7.4	-5	3.49	4.9		~3

AECOM

SAMPLING INFORMATION FORM

AECOM
161 Cheshire Lane North, Suite 500
Minneapolis, MN 55441

Sampler's Name Mathew J. Beckman

Weather Overcast/ -10's – 0's

Unusual Conditions

Project Alex Exhaust

Location Alexandria, MN

STS project number: 200606839

Sample ID number TW-2 Date sampled 2/7/2007

Time 1430 am pm X

Describe sampling point Temporary well converted from B-2

Unique Well Number

MONITORING WELL INFORMATION: (If Applicable)

Monitoring point elevation = 100.67 Datum = Assumed local Water elevation = 83.12

Well depth (prior to sampling) = 25.00 feet below monitoring point (mp)

Depth to water (below mp) = 17.55 feet Date 2/7/07 Time 1340 am pm X

Well diameter 2 inches Water level above screen? No Yes feet

Volume of water in well = ~0.6 gallons

PURGING INFORMATION:

Purging method: Bailer Submersible pump Tap Other X - Peristaltic pump

Tubing type: Teflon Black poly Other

Pump intake or bailer set at Waterline feet below monitoring point (mp).

Discharge rate (if applicable) <1 gal/min gpm x 0.1336806 = cfm

At least 5 well volumes evacuated before sampling, totaling ~3 gallons.

SAMPLING INFORMATION

Sampling method: Bailer Tap Other X - Peristaltic pump

Tubing type (if applicable): Teflon Other

Bailer was: Disposable Laboratory cleaned Field cleaned Other

Sample collected from Waterline feet below monitoring point. (mp)

Sample collection discharge rate (if applicable): = <1 L/min gpm

Sample appearance Cloudy/sediment Odor None observed

Note any sampling observations if necessary

Chemical Analysis VOC, GRO and DRO

Equipment Calibration pH = 7,4,10,7 Conductivity = 700 µs/cm @ 1030

FIELD STABILIZATION

Military time	pH	Redox Pot.	Temperature corrected conductance [ms/cm]	Temperature [^{o}C]	Water Level (nearest 0.01 ft.)	Cumulative volume of water removed [gal.]
1355	7.2	10	4.39	4.2		~1
1405	7.2	12	4.31	4.1		~2
1415	7.2	14	4.28	4.3		~3

AECOM

SAMPLING INFORMATION FORM

AECOM
161 Cheshire Lane North, Suite 500
Minneapolis, MN 55441

Sampler's Name Mathew J. Beckman
Weather Overcast/ -10’s – 0’s
Unusual Conditions ____
Project Alex Exhaust
Location Alexandria, MN
STS project number: 200606839
Sample ID number TW-3 Date sampled 2/7/2007
Time 1300 am ____ pm X
Describe sampling point Temporary well converted from B-3
Unique Well Number ____

MONITORING WELL INFORMATION: (If Applicable)

Monitoring point elevation = 101.1 Datum = Assumed local Water elevation = 84.99
Well depth (prior to sampling) = 25.00 feet below monitoring point (mp)
Depth to water (below mp) = 16.11 feet Date 2/08/07 Time 1200 am X pm ____
Well diameter 2 inches Water level above screen? ____ No ____ Yes ____ feet
Volume of water in well = ~1 gallons

PURGING INFORMATION:

Purging method: Bailer ____ Submersible pump ____ Tap ____ Other X - Peristaltic pump
Tubing type: Teflon ____ Black poly ____ Other PVC
Pump intake or bailer set at Waterline feet below monitoring point (mp).
Discharge rate (if applicable) <1 gal/min gpm x 0.1336806 = ____ cfm
At least ____ well volumes evacuated before sampling, totaling ~3 gallons.

SAMPLING INFORMATION

Sampling method: Bailer ____ Tap ____ Other X - Peristaltic pump
Tubing type (if applicable): Teflon ____ Other ____
Bailer was: Disposable ____ Laboratory cleaned ____ Field cleaned ____ Other ____
Sample collected from Waterline feet below monitoring point. (mp)
Sample collection discharge rate (if applicable): = <1 L/min gpm
Sample appearance Cloudy/sediment Odor None observed
Note any sampling observations if necessary ____

Chemical Analysis VOC, GRO and DRO

Equipment Calibration pH = 7,4,10,7 Conductivity = 700 µs/cm @ 1030

FIELD STABILIZATION

Military time	pH	Redox Pot.	Temperature corrected conductance [ms/cm]	Temperature [^{o}C]	Water Level (nearest 0.01 ft.)	Cumulative volume of water removed [gal.]
1215	7.1	-17	3.51	9.2		~1
1225	7.1	-16	3.49	9.1		~2
1235	7.1	-12	3.50	9.2		~3

AECOM

SAMPLING INFORMATION FORM

AECOM
161 Cheshire Lane North, Suite 500
Minneapolis, MN 55441

Sampler's Name Mathew J. Beckman
Weather Overcast/ -10's – 0's
Unusual Conditions
Project Alex Exhaust
Location Alexandria, MN
STS project number: 200606839
Sample ID number TW-4
Date sampled 2/7/2007
Time 1125 am ______ pm X
Describe sampling point Temporary well converted from B-4
Unique Well Number

MONITORING WELL INFORMATION: (If Applicable)

Monitoring point elevation = 100.08
Datum = Assumed local
Water elevation = 78.36
Well depth (prior to sampling) = 30.00 feet below monitoring point (mp)
Depth to water (below mp) = 21.72 feet
Date 2/7/07
Time 1035 am X pm ____
Well diameter 2 inches
Water level above screen? _____ No _____ Yes ________ feet
Volume of water in well = ~1 gallons

PURGING INFORMATION:

Purging method: Bailer X Submersible pump ________ Tap ________ Other X - Peristaltic pump
Tubing type: Teflon ________ Black poly ________ Other ________
Pump intake or bailer set at Waterline feet below monitoring point (mp).
Discharge rate (if applicable) <1 gal/min gpm x 0.1336806 = ________ cfm
At least ________ well volumes evacuated before sampling, totaling ~3 gallons.

SAMPLING INFORMATION

Sampling method: Bailer X Tap ________ Other X - Peristaltic pump
Tubing type (if applicable): Teflon ________ Other ________
Bailer was: Disposable ________ Laboratory cleaned ________ Field cleaned ________ Other ________
Sample collected from Waterline feet below monitoring point. (mp)
Sample collection discharge rate (if applicable): = <1 L/min gpm
Sample appearance Cloudy/sediment
Odor None observed
Note any sampling observations if necessary

Chemical Analysis VOC, GRO and DRO

Equipment Calibration pH = 7,4,10,7 Conductivity = 700 µs/cm @ 0945

FIELD STABILIZATION

Military time	pH	Redox Pot.	Temperature corrected conductance [ms/cm]	Temperature [^{o}C]	Water Level (nearest 0.01 ft.)	Cumulative volume of water removed [gal.]
1045	7.2	101	3.56	7.2		~1
1055	7.2	100	3.51	7.1		~2
1105	7.2	99	3.49	7.3		~3

AECOM

SAMPLING INFORMATION FORM

AECOM
161 Cheshire Lane North, Suite 500
Minneapolis, MN 55441

Sampler's Name Mathew J. Beckman
Weather Overcast/ -10’s – 0’s
Unusual Conditions
Project Alex Exhaust
Location Alexandria, MN
STS project number: 200606839
Sample ID number TW-5
Date sampled 2/7/2007
Time 1205 am pm X
Describe sampling point Temporary well converted from B-5
Unique Well Number

MONITORING WELL INFORMATION: (If Applicable)

Monitoring point elevation = 99.98
Datum = Assumed local
Water elevation = 74.83
Well depth (prior to sampling) = 26.0 feet below monitoring point (mp)
Depth to water (below mp) = 25.15 feet
Date 2/08/07
Time 1000 am X pm
Well diameter 2 inches
Water level above screen? No Yes feet
Volume of water in well = ~0.6 gallons

PURGING INFORMATION:

Purging method: Bailer X Submersible pump Tap Other
Tubing type: Teflon Black poly Other
Pump intake or bailer set at Waterline feet below monitoring point (mp).
Discharge rate (if applicable) <1 gal/min gpm x 0.1336806 = cfm
At least well volumes evacuated before sampling, totaling ~3 gallons.

SAMPLING INFORMATION

Sampling method: Bailer X Tap Other
Tubing type (if applicable): Teflon Other
Bailer was: Disposable Laboratory cleaned Field cleaned Other
Sample collected from Waterline feet below monitoring point. (mp)
Sample collection discharge rate (if applicable): = <1 L/min gpm
Sample appearance Cloudy/sediment
Odor None observed
Note any sampling observations if necessary No water in well 2/7/07. ~0.5’ of water in well the morning of 2/8/07.

Chemical Analysis VOC, GRO and DRO

Equipment Calibration pH = 7,4,10,7 Conductivity = 700 µs/cm @ 0800

FIELD STABILIZATION

Military time	pH	Redox Pot.	Temperature corrected conductance [ms/cm]	Temperature [^{o}C]	Water Level (nearest 0.01 ft.)	Cumulative volume of water removed [gal.]

AECOM

SAMPLING INFORMATION FORM

AECOM
161 Cheshire Lane North, Suite 500
Minneapolis, MN 55441

Sampler's Name Mathew J. Beckman
Weather Overcast/ -10's – 0's
Unusual Conditions
Project Alex Exhaust
Location Alexandria, MN
STS project number: 200606839
Sample ID number TW-6 Date sampled 2/8/2007
Time 1535 am pm X
Describe sampling point Temporary well converted from B-6
Unique Well Number

MONITORING WELL INFORMATION: (If Applicable)

Monitoring point elevation = 99.86 Datum = Assumed local Water elevation = 77.39
Well depth (prior to sampling) = 25.00 feet below monitoring point (mp)
Depth to water (below mp) = 22.47 feet Date 2/7/07 Time 1445 am X pm
Well diameter 2 inches Water level above screen? No Yes feet
Volume of water in well = ~0.5 gallons

PURGING INFORMATION:

Purging method: Bailer Submersible pump Tap Other X - Peristaltic pump
Tubing type: Teflon Black poly Other
Pump intake or bailer set at Waterline feet below monitoring point (mp).
Discharge rate (if applicable) <1 gal/min gpm x 0.1336806 = cfm
At least well volumes evacuated before sampling, totaling ~3 gallons.

SAMPLING INFORMATION

Sampling method: Bailer Tap Other X - Peristaltic pump
Tubing type (if applicable): Teflon Other
Bailer was: Disposable Laboratory cleaned Field cleaned Other
Sample collected from Waterline feet below monitoring point. (mp)
Sample collection discharge rate (if applicable): = <1 L/min gpm
Sample appearance Cloudy/sediment Odor None observed
Note any sampling observations if necessary

Chemical Analysis VOC, GRO and DRO

Equipment Calibration pH = 7,4,10,7 Conductivity = 700 µs/cm @ 0800

FIELD STABILIZATION

Military time	pH	Redox Pot.	Temperature corrected conductance [ms/cm]	Temperature [^{o}C]	Water Level (nearest 0.01 ft.)	Cumulative volume of water removed [gal.]
1500	7.2	12	3.91	6.9		~1
1510	7.2	13	3.88	6.9		~2
1520	7.2	15	3.86	6.8		~3

AECOM

SAMPLING INFORMATION FORM

AECOM
161 Cheshire Lane North, Suite 500
Minneapolis, MN 55441

Sampler's Name: Ryan Doherty
Weather: Sunny 15-25º
Unusual Conditions
Project Alex Exhaust
Location Alexandria, MN
STS project number 200705844
Sample ID number B-7(W) Date sampled 2/27/08
Time 1235 am pm X
Describe sampling point 30' N of TH 27 (3rd Ave) and 90' E of E side of driveway to old Alex Exhaust
Unique Well Number Not Applicable

MONITORING WELL INFORMATION: (If Applicable)

Monitoring point elevation = 97.95 Datum = Assumed local Water elevation =
Well depth (prior to sampling) = 25.58 feet below monitoring point (mp)
Depth to water (below mp) = 15.8 feet Date 2/27/08 Time 12:20 am pm X
Well diameter = 2 inches Water level above screen? X No Yes feet
Volume of water in well = 1.6 gallons

PURGING INFORMATION:

Purging method: Bailer X Submersible pump Tap Other
Tubing type: Teflon Black poly Other
Pump intake or bailer set at waterline .
Discharge rate (if applicable) gpm.
At least 3 well volumes evacuated before sampling, totaling 4.7 gallons.

SAMPLING INFORMATION

Sampling method: Bailer X Tap Other
Tubing type (if applicable): Teflon Other
Bailer was: Disposable X Laboratory cleaned Field cleaned Other
Sample collected from waterline .
Sample collection discharge rate (if applicable): = <1 gpm
Sample appearance whitish to clear Odor None detected
Note any sampling observations if necessary Took duplicate sample at 1250 and called it B-77(W). Also took Field Blank at 1405

Chemical Analysis DRO, VOC, GRO

Equipment Calibration pH = 7,4,10,7 Conductivity = 1413 µs/cm @ 1215

FIELD STABILIZATION

Military time	pH	Redox Pot.	Temperature corrected conductance [ms/cm]	Temperature [°C]	Water Level (nearest 0.01 ft.)	Cumulative volume of water removed [gal.]
1226	7.76	158	1063	9.7		3
1229	7.75	158	1081	9.5		4
1233	7.74	158	1088	9.5		5

AECOM

SAMPLING INFORMATION FORM

AECOM
161 Cheshire Lane North, Suite 500
Minneapolis, MN 55441

Sampler's Name: Ryan Doherty
Weather: Overcast 20º Light snow
Unusual Conditions
Project Alex Exhaust
Location Alexandria, MN
STS project number 200705844
Sample ID number B-8(W) Date sampled 2/28/08
Time 0910 am X pm
Describe sampling point 61' S of TH 27 (3rd Ave) and 41' E of Park St.
Unique Well Number

MONITORING WELL INFORMATION: (If Applicable)

Monitoring point elevation = 98.39 Datum = Assumed local Water elevation =
Well depth (prior to sampling) = 25.05 feet below monitoring point (mp)
Depth to water (below mp) = 19.67 feet Date 2/28/08 Time 0900 am pm
Well diameter = 2 inches Water level above screen? X No Yes feet
Volume of water in well = .87 gallons

PURGING INFORMATION:

Purging method: Bailer Submersible pump Tap Other Peristaltic pump
Tubing type: Teflon Black poly Other
Pump intake or bailer set at waterline .
Discharge rate (if applicable) gpm.
At least 1 well volumes evacuated before sampling, totaling 1 gallon.

SAMPLING INFORMATION

Sampling method: Bailer Tap Other Peristaltic Pump
Tubing type (if applicable): Teflon Other
Bailer was: Disposable Laboratory cleaned Field cleaned Other
Sample collected from waterline .
Sample collection discharge rate (if applicable): = <1 gpm
Sample appearance slightly cloudy, brown Odor None detected
Note any sampling observations if necessary Temp well set at 2:05pm on Wed 2/27/08. No water in well when last checked at 5:15pm. Water in well this morning, Thurs 2/28/08.

Chemical Analysis DRO, VOC, GRO

Equipment Calibration pH = 7,4,10,7 Conductivity = 1413 µs/cm @ 0830

FIELD STABILIZATION

Military time	pH	Redox Pot.	Temperature corrected conductance [ms/cm]	Temperature [°C]	Water Level (nearest 0.01 ft.)	Cumulative volume of water removed [gal.]
0903	8.5	272	688	10.7		.5
0906	8.39	208	663	9.3		.75
0909	8.30	194	672	8.9		1.0

SIF 2.27-2.28.08

AECOM

SAMPLING INFORMATION FORM

AECOM
161 Cheshire Lane North, Suite 500
Minneapolis, MN 55441

Sampler's Name: Ryan Doherty
Weather: Overcast 10º
Unusual Conditions
Project Alex Exhaust
Location Alexandria, MN
STS project number 04660027
Sample ID number B-9(W) Date sampled 12/12/08
Time 1200
Describe sampling point SE corner of intersection @ 4th St and Oak St
Unique Well Number

TEMPORARY WELL INFORMATION: (If Applicable)

Monitoring point elevation = Datum = Water elevation =
Well depth (prior to sampling) = 23.41 feet below monitoring point (mp)
Depth to water (below mp) = 7.64 feet Date 12/12/08 Time 11:45
Well diameter = 1 inches Water level above screen? No X Yes feet
Volume of water in well = ~1 gallons

PURGING INFORMATION:

Purging method: Bailer Submersible pump Tap Other Peristaltic
Tubing type: Teflon Black poly Other polyethylene
Pump intake or bailer set at waterline feet below monitoring point (mp).
Discharge rate (if applicable) <1 gpm x 0.1336806 = cfm
At least 1 well volumes evacuated before sampling, totaling 1 gallons.

SAMPLING INFORMATION

Sampling method: Bailer Tap Other Peristaltic
Tubing type (if applicable): Teflon Other
Bailer was: Disposable Laboratory cleaned Field cleaned Other
Sample collected from waterline feet below monitoring point. (mp)
Sample collection discharge rate (if applicable): = gpm
Sample appearance clear, slightly silty Odor None detected
Note any sampling observations if necessary Took duplicate and called it B-99 @ 12:15. Took Field Blank at 1445.

Chemical Analysis DRO, GRO, VOC

Equipment Calibration pH = 7,4,10,7 Conductivity = 1413 µs/cm @ 1130

FIELD STABILIZATION

Military time	pH	Oxidation Reduction Potential (mV)	Temperature corrected conductance (EC) (µs/cm)	Temperature [°C]	Water Level (nearest 0.01 ft.)	Cumulative volume of water removed [gal.]
1151	7.89	12	1028	7.5		0.2
1156	7.21	-61	1035	6.2		0.5
1200	7.20	-60	1040	6.1		1.0

APPENDIX I

Grain Size Analyses

AECOM
161 Cheshire Lane North, Suite 500
Minneapolis, MN 55441
(763) 852-4200 (ph) (763) 473-0400 (fx)

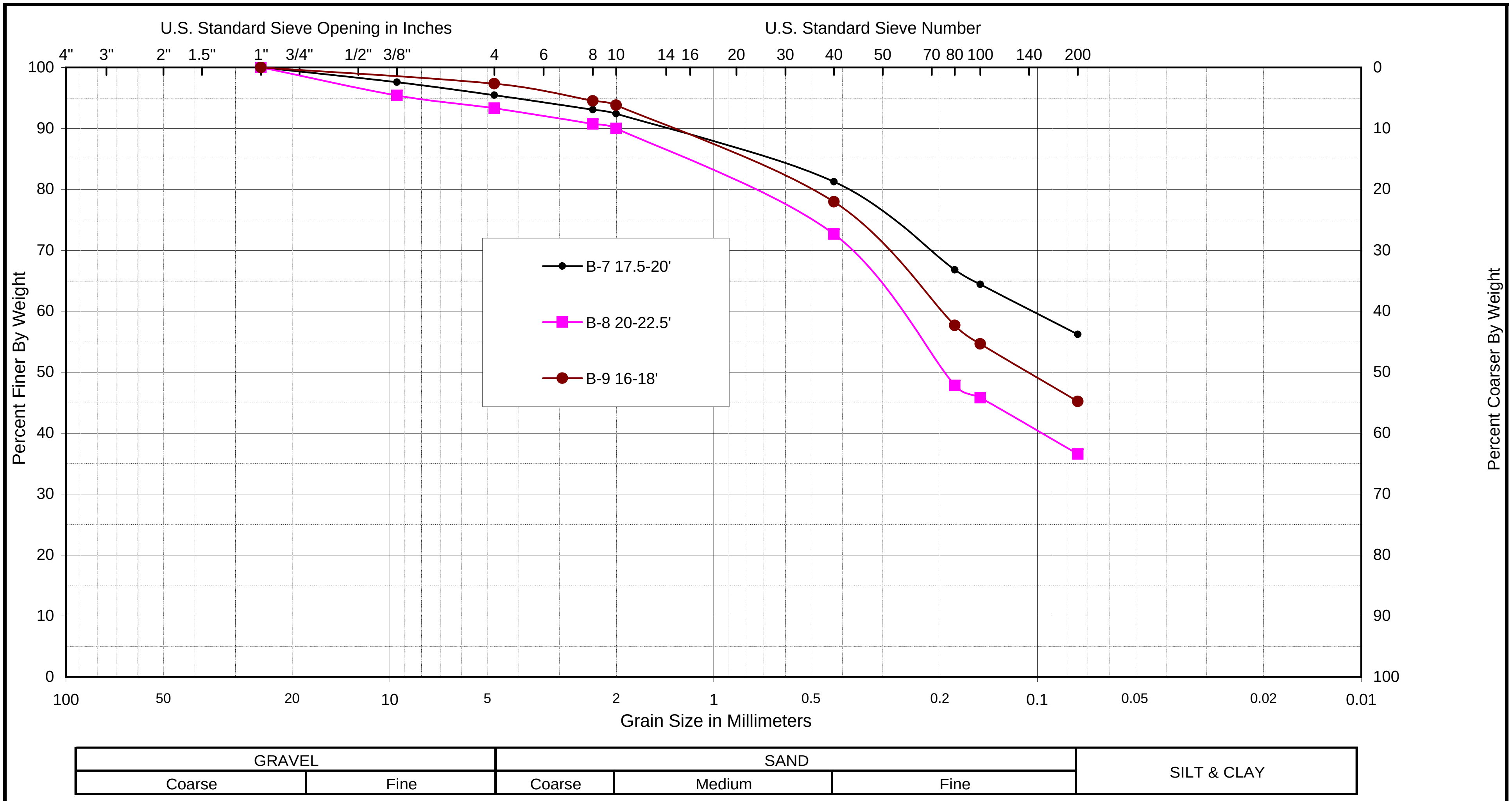
GRADATION ANALYSIS

PROJECT:	Alex Exhaust	STS JOB NO.:	04660027
LOCATION:	Alexandria, MN	REPORT DATE:	20-Jan-09
CLIENT:	MPCA	TESTED BY:	GE
ENGINEER:	AECOM	APPROVED:	RTM

TEST NO.	1	2	3
Sample ID:	B-7	B-8	B-9
Sample Location:	17.5-20'	20-22.5'	16-18'
TARE WEIGHT:			
UNWASHED DRY WT+TARE	407.20	834.60	404.40
WASHED DRY WT+TARE	180.60	546.70	224.00
MINUS #200 WT	226.60	287.90	180.40
PERCENT PASSING # 200	55.6%	34.5%	44.6%

		Sieve No.	Grain Size (mm)	Sum Wt Ret 1	Percent Passing1	Sum Wt Ret 2	Percent Passing2	Sum Wt Ret 3	Percent Passing3
COBBLES & BOULDERS		6"	150		#N/A		#N/A		#N/A
		4"	100		#N/A		#N/A		#N/A
		3"	75		#N/A		#N/A		#N/A
GRAVEL	Coarse	2"	50		#N/A		#N/A		#N/A
		1.5"	38		#N/A		#N/A		#N/A
		1"	25	0.00	100.0	0.00	100.0	0.00	100.0
		3/4"	19		#N/A		#N/A		#N/A
	Fine	5/8"	15.9		#N/A		#N/A		#N/A
		1/2	12.7		#N/A		#N/A		#N/A
		3/8"	9.5	9.80	97.6	38.30	95.4		#N/A
		4	4.75	18.60	95.4	55.70	93.3	10.80	97.3
SAND	Coarse	6	3.35		#N/A		#N/A		#N/A
		8	2.36	28.30	93.1	77.40	90.7	22.30	94.5
		10	2	30.90	92.4	83.50	90.0	25.10	93.8
	Medium	14	1.4		#N/A		#N/A		#N/A
		16	1.18		#N/A		#N/A		#N/A
		20	0.85		#N/A		#N/A		#N/A
		30	0.6		#N/A		#N/A		#N/A
		40	0.425	76.40	81.2	228.30	72.6	89.10	78.0
	Fine	50	0.3		#N/A		#N/A		#N/A
		70	0.212		#N/A		#N/A		#N/A
		80	0.18	135.30	66.8	435.40	47.8	171.20	57.7
		100	0.15	145.00	64.4	452.10	45.8	183.40	54.6
		140	0.106		#N/A		#N/A		#N/A
		200	0.075	178.40	56.2	529.30	36.6	221.70	45.2
SILT & CLAY		HYDROMETER		Size (mm)	% Pass1	Size (mm)	% Pass2	Size (mm)	% Pass3

TEST NO.:		1		2		3		0		0		0		0		0	
% COBBLES & BOULDERS		#N/A		#N/A		#N/A		100.0		100.0		100.0		100.0		100.0	
% GRAVEL	Coarse	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fine	#N/A		#N/A		#N/A		0.0		0.0		0.0		0.0		0.0	
% SAND	Coarse	3.0	39.2	3.3	56.7	3.5	52.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Medium	11.2		17.3		15.8		0.0		0.0		0.0		0.0		0.0	
	Fine	25.0		36.1		32.8		0.0		0.0		0.0		0.0		0.0	
% SILT & CLAY		56.2		36.6		45.2		0.0		0.0		0.0		0.0		0.0	
Soil Description:																	



#	Sample I.D.	Sample Location:	P200	D_{60}	D_{30}	D_{10}	Cu	Cc	**WC%**	CLASSIFICATION / DESCRIPTION
1	B-7	17.5-20'	56.2							Sandy silt/ sandy clay, trace gravel (ML-CL)
2	B-8	20-22.5'	36.6							Clayey sand/ sandy clay, trace gravel (SC-CL)
3	B-9	16-18'	45.2							Clayey and silty sand, trace gravel (SC-SM)

AECOM
161 Cheshire Lane North, Suite 500
Minneapolis, MN 55441
(763) 852-4200 (ph) (763) 473-0400 (fx)

Gradation Analysis
Alex Exhaust
Alexandria, MN
MPCA

GE/RTM	STS Job No. 04660027	20-Jan-09

APPENDIX J

Guidance Document 2-03 – Free Product Recovery Report Worksheet

THIS DOCUMENT NOT APPLICABLE FOR LEAK 15,656

APPENDIX K

Copies of Water Supply Well Logs

Minnesota Unique Well No.

680655

County Douglas
Quad Alexandria East
Quad ID 180A

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 103I

Entry Date 12/26/2002
Update Date 06/22/2005
Received Date

Well Name ALEXANDRIA 14

Township	Range	Dir	Section	Subsections	Elevation
128	37	W	17	BCC	1408 ft.

Elevation Method Calc from DEM (USGS 7.5 min or equiv.)

Well Address
314 OAK ST N
ALEXANDRIA MN

Geological Material	Color	Hardness	From	To
TOP SOIL			0	1
CLAY	YELLOW		1	17
CLAY	BLUE		17	54
ROCK			54	
CLAY	BLUE		54	73
CLAY	LT. BLU		73	87
SAND & GRAVEL			87	127
CLAY	BLUE		127	140

NO REMARKS

Located Minnesota Department of Health **Method** GPS SA Off (averaged)
Unique Number Verification N/A **Date** N/A
System *UTM - Nad83, Zone15, Meters* **X:** 316737 **Y:** 5085295

First Bedrock **Aquifer** Quat. Buried Artes. Aquifer
Last Strat **Depth to Bedrock** ft.

Well Depth	Depth Completed	Date Well Completed
140 ft.	127 ft.	12/02/2002

Drilling Method Non-specified Rotary

Drilling Fluid Bentonite

Well Hydrofractured? ☐ Yes ☑ No
From Ft. to Ft.

Use Community Supply **PWS ID** 1210001 **Source** S10

Casing Type Steel (black or low carbon) **Joint** Welded **Drive Shoe?** ☐ Yes ☑ No **Above/Below** ft.

Casing Diameter	Weight	Hole Diameter
92 in. to 12 ft.	lbs./ft.	20 in. to ft.

Open Hole from ft. to ft.

Screen YES **Make** JOHNSON **Type** stainless steel

Diameter	Slot/Gauze	Length	Set Between
12	100	35	92 ft. and 127 ft.

Static Water Level
53 ft. from Land surface Date Measured 08/22/2002

PUMPING LEVEL (below land surface)
70 ft. after 24 hrs. pumping 720 g.p.m.

Well Head Completion
Pitless adapter manufacturer Model
☐ Casing Protection ☑ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

Grouting Information Well Grouted? ☑ Yes ☐ No

Grout Material: Neat Cement from 0 to 80 ft. 4.5 yrds.

Nearest Known Source of Contamination
50 feet direction Septic tank/drain field type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed 11/18/2002
Manufacturer's name GOULDS Model number 9RCHC HP 28 Volts 230
Length of drop Pipe 70 ft. Capacity 500 g.p.m Type Turbine Material

Abandoned Wells Does property have any not in use and not sealed well(s)? ☐ Yes ☑ No

Variance Was a variance granted from the MDH for this well? ☐ Yes ☑ No

Well Contractor Certification

License Business Name	Lic. Or Reg. No.	Name of Driller
Thein Well Co.	34625	THEIN, R.

County Well Index Online Report **680655** Printed 1/27/2009
HE-01205-07

Minnesota Unique Well No.

685764

County Douglas
Quad
Quad ID

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 103I

Entry Date 12/26/2002
Update Date 03/11/2005
Received Date

Well Name ALEXANDRIA 15

Township Range Dir Section Subsections Elevation ft.
128 37 W 17 B Elevation Method

Well Depth 132 ft.
Depth Completed 132 ft.
Date Well Completed 09/23/2002

Drilling Method Non-specified Rotary

Drilling Fluid Other

Well Hydrofractured? ☐ Yes ☑ No
From Ft. to Ft.

Use Community Supply PWS ID 1210001 Source S11

Well Address
514 OAK ST N
ALEXANDRIA MN 56308

Casing Type Steel (black or low carbon) Joint Unknown Drive Shoe? ☐ Yes ☑ No Above/Below ft.

Casing Diameter	Weight	Hole Diameter
12 in. to 92 ft.	lbs./ft.	21 in. to 132 ft.

Geological Material	Color	Hardness	From	To
TOP SOIL	BLACK	SOFT	0	2
CLAY	BROWN	MEDIUM	2	8
CLAY SAND	BROWN	MEDIUM	8	10
CLAY	BROWN	MEDIUM	10	17
SAND	BROWN	MEDIUM	17	18
CLAY	BROWN	MEDIUM	18	24
SAND	BROWN	MEDIUM	24	30
SAND CLAY	BROWN	MEDIUM	30	34
SAND	BROWN	MEDIUM	34	35
CLAY SAND	BROWN	MEDIUM	35	38
SAND	BROWN	MEDIUM	38	41
SAND CLAY	BROWN	MEDIUM	41	42
SANDY CLAY	BROWN	MEDIUM	42	53
CLAY	GRAY	HARD	53	61
SAND CLAY	GRAY	MEDIUM	61	83
SAND	GRAY	MEDIUM	83	84
CLAY	GRAY	MEDIUM	84	88
SAND	GRAY	MEDIUM	88	132

Open Hole from ft. to ft.

Screen YES Make JOHNSON Type stainless steel

Diameter	Slot/Gauze	Length	Set Between
4	60	40	132 ft. and 92 ft.

Static Water Level
50 ft. from Land surface Date Measured 09/23/2002

PUMPING LEVEL (below land surface)
70 ft. after 24 hrs. pumping 750 g.p.m.

Well Head Completion
Pitless adapter manufacturer Model
☐ Casing Protection ☑ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

REMARKS
M.G.S. NO. 4218.

Grouting Information Well Grouted? ☑ Yes ☐ No

Grout Material: Neat Cement from 0 to 82 ft. 5.5 yrds.

Nearest Known Source of Contamination
_feet _direction _type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed
Manufacturer's name Model number ___ HP _ Volts
Length of drop Pipe _ft. Capacity _g.p.m Type Material

Abandoned Wells Does property have any not in use and not sealed well(s)? ☐ Yes ☑ No

Variance Was a variance granted from the MDH for this well? ☐ Yes ☑ No

Well Contractor Certification

Traut M.J. Well Co.	71536	DEAN/STEVE
License Business Name	Lic. Or Reg. No.	Name of Driller

First Bedrock Aquifer Quat. Buried Artes. Aquifer
Last Strat Depth to Bedrock ft.

County Well Index Online Report

685764

Printed 1/27/2009
HE-01205-07

Minnesota Unique Well No.

749302

County Douglas
Quad
Quad ID

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 103I

Entry Date 09/10/2007
Update Date 10/20/2008
Received Date 08/20/2007

Well Name ALEXANDRIA 16
Township Range Dir Section Subsections Elevation ft.
128 37 W 17 BCC **Elevation Method**

Well Depth	Depth Completed	Date Well Completed
120 ft.	120 ft.	05/14/2007

Drilling Method Non-specified Rotary

Drilling Fluid
Qwik gel

Well Hydrofractured? ☐ Yes ☑ No
From Ft. to Ft.

Use Community Supply **PWS ID** **Source**

Casing Type Steel (black or low carbon) **Joint** No Information **Drive Shoe?** ☐ Yes ☑ No **Above/Below** ft.

Casing Diameter 12 in. to 85 ft.
Weight lbs./ft.
Hole Diameter 18 in. to 120 ft.

Open Hole from ft. to ft.

Screen YES **Make** JOHNSON **Type** stainless steel

Diameter	Slot/Gauze	Length	Set Between
12	45	15	85 ft. and 100 ft.
	50	20	100 ft. and 120 ft.

Well Address
29 SH
ALEXANDRIA MN 56308

Geological Material	Color	Hardness	From	To
TOPSOIL	BLACK	SOFT	0	1
CLAY & FILL	GRAY	MEDIUM	1	5
SAND	BROWN	MEDIUM	5	21
CLAY	GRAY	MEDIUM	21	84
SAND	GRAY	MEDIUM	84	120

Static Water Level
ft. from Date Measured

PUMPING LEVEL (below land surface)
119 ft. after 24 hrs. pumping 1000 g.p.m.

Well Head Completion
Pitless adapter manufacturer Model
☐ Casing Protection ☐ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

REMARKS
DRILLERS - DEAN, STEVE, RICK & ROB.

Grouting Information Well Grouted? ☑ Yes ☐ No

Grout Material: CONCRETE from to 75 ft.

Nearest Known Source of Contamination
_feet _direction _type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Manufacturer's name Model number ___ HP _ Volts
Length of drop Pipe _ft. Capacity _g.p.m Type Material

Abandoned Wells Does property have any not in use and not sealed well(s)? ☐ Yes ☑ No

Variance Was a variance granted from the MDH for this well? ☐ Yes ☑ No

Well Contractor Certification

Steven M Traut Wells, Inc.	1889	SEE REMARKS
License Business Name	Lic. Or Reg. No.	Name of Driller

First Bedrock
Aquifer
Last Strat
Depth to Bedrock ft.

County Well Index Online Report

749302

Printed 1/27/2009
HE-01205-07

Minnesota Unique Well No.

214756

County Douglas
Quad Alexandria East
Quad ID 180A

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 103I

Entry Date 04/07/1988
Update Date 03/11/2005
Received Date

Well Name ALEXANDRIA 7A

Township	Range	Dir	Section	Subsections	Elevation	1403 ft.
128	37	W	18	DAAADD	Elevation Method	Calc from DEM (USGS 7.5 min or equiv.)

Well Depth	Depth Completed	Date Well Completed
129 ft.	129 ft.	09/00/1959

Drilling Method --

Drilling Fluid
--

Well Hydrofractured? ☐ Yes ☐ No
From Ft. to Ft.

Use Community Supply **PWS ID** 1210001 **Source** S03

Casing Type Steel (black or low carbon) **Joint** No Information **Drive Shoe?** ☐ Yes ☐ No **Above/Below** ft.

Casing Diameter	Weight	Hole Diameter
16 in. to ft.	lbs./ft.	

Open Hole from ft. to ft.

Screen **Make** **Type**

Diameter	Slot/Gauze	Length	Set Between

Well Address

ALEXANDRIA MN 56308

Geological Material	Color	Hardness	From	To
NO RECORD			0	129

Static Water Level
38 ft. from Land surface Date Measured 09/00/1959

PUMPING LEVEL (below land surface)
58 ft. after hrs. pumping 440 g.p.m.

Well Head Completion
Pitless adapter manufacturer Model
☐ Casing Protection ☐ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

REMARKS
DRILLER: MINNESOTA WELL DRILLERS MADISON, MINNESOTA

Located Minnesota Geological Survey **Method** GPS SA On (averaged)
Unique Number Verification Information from owner **Date** 04/27/2000
System *UTM - Nad83, Zone15, Meters* **X:** 316350 **Y:** 5085238

Grouting Information Well Grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination
_feet _direction _type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Manufacturer's name Model number___ HP _ Volts
Length of drop Pipe _ft. Capacity _g.p.m Type Material

Abandoned Wells Does property have any not in use and not sealed well(s)? ☐ Yes ☐ No

Variance Was a variance granted from the MDH for this well? ☐ Yes ☐ No

First Bedrock
Last Strat Unknown deposit type
Aquifer Quat. Buried Artes. Aquifer
Depth to Bedrock ft.

Well Contractor Certification

Minnesota Dept. of Natural Resources	MNDNR	
License Business Name	Lic. Or Reg. No.	Name of Driller

County Well Index Online Report

214756

Printed 1/27/2009
HE-01205-07

Minnesota Unique Well No.

214758

County Douglas
Quad Alexandria East
Quad ID 180A

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 103I

Entry Date 04/07/1988
Update Date 03/11/2005
Received Date

Well Name ALEXANDRIA 8A

Township Range Dir Section Subsections Elevation 1400 ft.

128 37 W 17 BCCCDD **Elevation Method** Calc from DEM (USGS 7.5 min or equiv.)

Well Depth	Depth Completed	Date Well Completed
125 ft.	119 ft.	01/00/1962

Drilling Method Cable Tool

Drilling Fluid --

Well Hydrofractured? ☐ Yes ☐ No
From Ft. to Ft.

Use Community Supply **PWS ID** 1210001 **Source** S04

Casing Type Steel (black or low carbon) **Joint** No Information **Drive Shoe?** ☐ Yes ☐ No **Above/Below** 2 ft.

Casing Diameter	Weight	Hole Diameter
16 in. to 101 ft.	lbs./ft.	

Well Address

ALEXANDRIA MN 56308

Geological Material	Color	Hardness	From	To
BLACK DIRT			0	1
CLAY & SAND			1	14
SAND			14	34
CLAY			34	54
SAND & CLAY			54	61
HARDPAN			61	89
SAND			89	119
FINE SAND (BACK-FILLED)			119	125
CLAY			125	125

Open Hole from ft. to ft.

Screen YES **Make** EVERDUR **Type**

Diameter	Slot/Gauze	Length	Set Between
16		20	99 ft. and 119 ft.

Static Water Level
39 ft. from Land surface Date Measured 01/00/1962

PUMPING LEVEL (below land surface)
54 ft. after hrs. pumping 500 g.p.m.

Well Head Completion
Pitless adapter manufacturer Model
☐ Casing Protection ☑ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

NO REMARKS

Grouting Information Well Grouted? ☐ Yes ☐ No

Located Minnesota Geological Survey **Method** GPS SA On (averaged)
Unique Number Verification Information from owner **Date** N/A
System *UTM - Nad83, Zone15, Meters* **X:** 316445 **Y:** 5085317

Nearest Known Source of Contamination
_feet _direction _type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Manufacturer's name Model number ___ HP _ Volts
Length of drop Pipe 85 ft. Capacity _g.p.m Type Material

Abandoned Wells Does property have any not in use and not sealed well(s)? ☐ Yes ☐ No

Variance Was a variance granted from the MDH for this well? ☐ Yes ☐ No

Well Contractor Certification

License Business Name	Lic. Or Reg. No.	Name of Driller
Keys Well Co.	62012	KEMPER, R.

First Bedrock **Aquifer** Quat. Buried Artes. Aquifer
Last Strat Clay **Depth to Bedrock** ft.

County Well Index Online Report **214758**

Printed 1/27/2009
HE-01205-07

Minnesota Unique Well No.

214759

County Douglas
Quad Alexandria East
Quad ID 180A

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 103I

Entry Date 04/07/1988
Update Date 03/11/2005
Received Date

Well Name ALEXANDRIA 9

Township	Range	Dir	Section	Subsections	Elevation	1396 ft.
128	37	W	18	ADDDBD	**Elevation Method**	Calc from DEM (USGS 7.5 min or equiv.)

Well Depth	Depth Completed	Date Well Completed
118 ft.	118 ft.	02/00/1958

Drilling Method --

Drilling Fluid --

Well Hydrofractured? ☐ Yes ☐ No
From Ft. to Ft.

Use Community Supply **PWS ID** 1210001 **Source** S05

Casing Type Steel (black or low carbon) **Joint** No Information **Drive Shoe?** ☐ Yes ☐ No **Above/Below** ft.

Casing Diameter	Weight	Hole Diameter
16 in. to 96 ft.	lbs./ft.	

Open Hole from ft. to ft.

Screen YES **Make** **Type**

Diameter	Slot/Gauze	Length	Set Between
		25	96 ft. and 118 ft.

Well Address

ALEXANDRIA MN 56308

Geological Material	Color	Hardness	From	To
NO RECORD			0	118

Static Water Level
38 ft. from Land surface Date Measured 02/00/1958

PUMPING LEVEL (below land surface)
58 ft. after hrs. pumping 440 g.p.m.

Well Head Completion
Pitless adapter manufacturer Model
☐ Casing Protection ☐ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

REMARKS
USE OF WELL IS PUBLIC SUPPLY

Located Minnesota Geological Survey
Method GPS SA On (averaged)
Unique Number Verification N/A
Date 04/27/2000
System *UTM - Nad83, Zone15, Meters*
X: 316341 **Y:** 5085341

Grouting Information Well Grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination
_feet _direction _type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☑ Not Installed Date Installed
Manufacturer's name Model number __ HP _ Volts
Length of drop Pipe _ft. Capacity 500 g.p.m Type Material

Abandoned Wells Does property have any not in use and not sealed well(s)? ☐ Yes ☐ No

Variance Was a variance granted from the MDH for this well? ☐ Yes ☐ No

First Bedrock
Aquifer Quat. Buried Artes. Aquifer
Last Strat Unknown deposit type
Depth to Bedrock ft.

Well Contractor Certification

License Business Name	Lic. Or Reg. No.	Name of Driller
Thein S.e. Well Co.	12013	62012

County Well Index Online Report **214759**

Printed 1/27/2009
HE-01205-07

Minnesota Unique Well No.

635452

County Douglas
Quad Alexandria East
Quad ID 180A

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 103I

Entry Date 04/17/2001
Update Date 07/06/2007
Received Date

Well Name ALEXANDRIA

Township	Range	Dir	Section	Subsections	Elevation	1400 ft.
128	37	W	17	BCC	Elevation Method	Calc from DEM (USGS 7.5 min or equiv.)

Well Depth	Depth Completed	Date Well Completed
130 ft.	126 ft.	08/04/2000

Drilling Method Non-specified Rotary

Drilling Fluid Bentonite

Well Hydrofractured? ☐ Yes ☑ No
From Ft. to Ft.

Use Community Supply **PWS ID** 1210001 **Source** S09

Casing Type Steel (black or low carbon) **Joint** No Information **Drive Shoe?** ☐ Yes ☑ No **Above/Below** ft.

Casing Diameter	Weight	Hole Diameter
12 in. to 106 ft.	lbs./ft.	20 in. to ft.

Well Address
314 OAK ST N
ALEXANDRIA MN 56308

Geological Material	Color	Hardness	From	To
TOP SOIL			0	1
SANDY CLAY			1	4
SAND & GRAVEL			4	6
SANDY CLAY			6	10
SAND & GRAVEL			10	35
CLAY	BLUE		35	75
SANDY CLAY	BLUE		75	80
SAND & GRAVEL			80	91
SAND W/CLAY LENZE			91	93
SAND & GRAVEL			93	125
CLAY	BLUE		125	130

Open Hole from ft. to ft.

Screen YES **Make** JOHNSON **Type** stainless steel

Diameter	Slot/Gauze	Length	Set Between
12	50	20	106 ft. and 126 ft.

Static Water Level
48 ft. from Land surface Date Measured 08/24/2000

PUMPING LEVEL (below land surface)
58 ft. after 4 hrs. pumping 230 g.p.m.

Well Head Completion
Pitless adapter manufacturer MONITOR/BAKE Model 5PS1214WBW
☐ Casing Protection ☐ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

NO REMARKS

Grouting Information Well Grouted? ☑ Yes ☐ No

Grout Material: Neat Cement from 0 to 90 ft. 2.5 yrds.

Located Minnesota Department of Health
Method Digitization (Screen) - Map (1:12,000)
Unique Number Verification N/A
Date N/A
System *UTM - Nad83, Zone15, Meters* **X:** 316575 **Y:** 5085289

Nearest Known Source of Contamination
50 feet _direction Septic tank/drain field type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed 06/19/2000
Manufacturer's name BERKELEY Model number 7T20-450
HP 20 Volts 460
Length of drop Pipe 60 ft. Capacity 450 g.p.m Type Submersible Material

Abandoned Wells Does property have any not in use and not sealed well(s)? ☐ Yes ☑ No

Variance Was a variance granted from the MDH for this well? ☐ Yes ☑ No

Well Contractor Certification

License Business Name	Lic. Or Reg. No.	Name of Driller
Thein Well Co.	34625	GRABOWSKI, D.

First Bedrock
Aquifer Quat. Buried Artes. Aquifer
Last Strat
Depth to Bedrock ft.

County Well Index Online Report

635452

Printed 1/27/2009
HE-01205-07

Minnesota Unique Well No.

475655

County Douglas
Quad Alexandria East
Quad ID 180A

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING RECORD

Minnesota Statutes Chapter 103I

Entry Date 07/24/1992
Update Date 06/22/2005
Received Date

Well Name ALEXANDRIA 12

Township Range Dir Section Subsections Elevation 1399 **ft.**

128 37 W 17 BBD **Elevation Method** Calc from DEM (USGS 7.5 min or equiv.)

Well Address
MN. HY #29
ALEXANDRIA MN 56308

Geological Material	Color	Hardness	From	To
BLACK SOIL	BLACK		0	1
TAN CLAY	TAN		1	6
STREAK GRAVEL			6	8
YELLOW CLAY	YELLOW		8	15
GRAY CLAY	GRAY		15	41
GREENISH CLAY	GREEN		41	46
GRAY CLAY	GRAY		46	60
LIGHT GRAY CLAY	GRAY		60	88
SAND AND GRAVEL			88	125

Well Depth	Depth Completed	Date Well Completed
125 ft.	125 ft.	05/16/1991

Drilling Method Non-specified Rotary

Drilling Fluid Bentonite

Well Hydrofractured? ☐ Yes ☐ No
From Ft. to Ft.

Use Community Supply **PWS ID** 1210001 **Source** S08

Casing Type Steel (black or low carbon) **Joint** No Information **Drive Shoe?** ☐ Yes ☐ No **Above/Below** ft.

Casing Diameter	Weight	Hole Diameter
12 in. to 90 ft.	lbs./ft.	in. to 125 ft.

Open Hole from ft. to ft.

Screen YES **Make** COOK **Type** stainless steel

Diameter	Slot/Gauze	Length	Set Between
12	50	35	90 ft. and 125 ft.

Static Water Level
41 ft. from Land surface Date Measured 10/31/1991

PUMPING LEVEL (below land surface)
58 ft. after 3 hrs. pumping 770 g.p.m.

Well Head Completion
Pitless adapter manufacturer Model
☐ Casing Protection ☐ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

NO REMARKS

Located Minnesota Department of Health **Method** GPS SA On (averaged)
Unique Number Verification Information from owner **Date** N/A
System *UTM - Nad83, Zone15, Meters* X: 316623 Y: 5085422

Grouting Information Well Grouted? ☑ Yes ☐ No

Grout Material: Neat Cement from 0 to 90 ft.

Nearest Known Source of Contamination
_feet _direction _type
Well disinfected upon completion? ☑ Yes ☐ No

Pump ☐ Not Installed Date Installed 05/16/1991
Manufacturer's name JACUZZI Model number S8MC HP 25 Volts 440
Length of drop Pipe 72 ft. Capacity g.p.m Type Submersible Material

Abandoned Wells Does property have any not in use and not sealed well(s)? ☐ Yes ☑ No

Variance Was a variance granted from the MDH for this well? ☐ Yes ☐ No

First Bedrock **Aquifer** Quat. Buried Artes. Aquifer
Last Strat **Depth to Bedrock** ft.

Well Contractor Certification

Thein Well Co.	34050	PLUCKER, D.
License Business Name	Lic. Or Reg. No.	Name of Driller

County Well Index Online Report

475655

Printed 1/27/2009
HE-01205-07

APPENDIX L

Results of Public Water Supply Assessment

SOURCE WATER ASSESSMENT FOR
Alexandria

ID Number: 1210001

Facility Contact:

Gary Eiden
(320) 763-6501
Alexandria
Keith Avery
c/o MR. KEITH AVERY, WATER PLANT
316 Fillmore Street
Alexandria, MN 56308

MDH Contact:

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Status of the Source Water Protection Plan:

The water supply system is implementing the wellhead protection plan that has been approved by the Minnesota Department of Health under Minnesota Rules 4720.

Source Water Protection Area: - Click Map1 to view SWPA map(s).

Yes - A Source Water Protection Area has been designated for this well.

Description of the source water - The water supply for Alexandria is obtained from 8 primary wells. Well depth (in feet), well status, aquifer(s) used, and sensitivity of the source(s) of drinking water are listed in the following table.

Unique Well No	Well ID	Depth	Well Use	Aquifer	Aquifer Sensitivity	*Well Sensitivity	SWPA
00214756	Well #7A	120.0	Primary	Glacial Deposits	High	See (1)	Yes
00214758	Well #8A	121.0	Primary	Glacial Deposits	High	See (2)	Yes
00214759	Well #9	110.0	Primary	Glacial Deposits	High	See (1)	Yes
00475655	Well #12	125.0	Primary	Glacial Deposits	High	See (2)	Yes
00635452	Well #13	130.0	Primary	Glacial Deposits	High	See (2)	Yes
00680655	Well #14	140.0	Primary	Glacial Deposits	High	See (2)	No
00685764	Well #15	132.0	Primary	Glacial Deposits	High	See (2)	No

00749302	Well #16	0.0	Primary	Glacial Deposits	High	See (1)	No

Well construction assessment - 00214758, 00475655, 00635452, 00680655, 00685764 meet current standards for construction and maintenance. These factors do not contribute to the susceptibility of the source water to contamination; and The Minnesota Department of Health considers 00214756, 00214759, 00749302 potentially vulnerable to contamination because there is insufficient information to document well construction.

Well Sensitivity - Well sensitivity refers to the integrity of the well due to its construction and maintenance. It is based on the results of the well construction assessment. It can be one of the following:

(1) The well is susceptible to contamination because it does not meet current construction standards or no information about well construction is available, regardless of aquifer sensitivity.
(2) The well is not susceptible because it meets well construction standards and does not present a pathway for contamination to readily enter the water supply.

Aquifer Sensitivity - Aquifer sensitivity refers to the degree of geological protection afforded the aquifer(s) used by the public water supply.

High - The aquifer is considered to exhibit a high sensitivity to contamination because of the local geological setting.

Source Water Susceptibility - Source water susceptibility refers to the likelihood that a contaminant will reach the source of drinking water. It reflects the results of assessing well sensitivity, aquifer sensitivity, and water quality data.

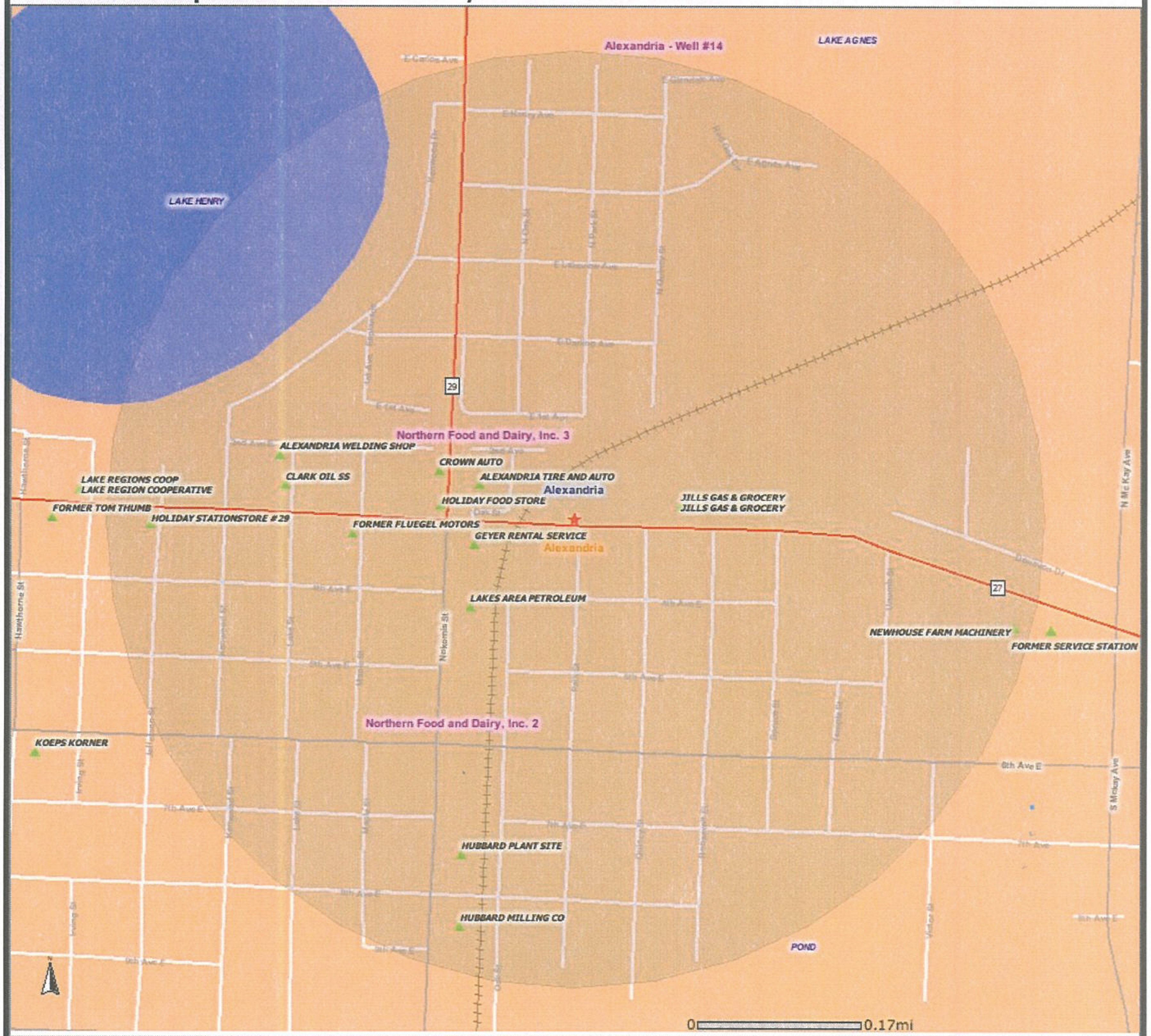
High - The source of drinking water is considered to exhibit a high susceptibility to contamination because of the local geological setting.

The source water is considered to be susceptible because of the tritium content of the well water in glacial deposits.

Contaminants of concern - The following statement summarizes the potential contaminants for which a source of drinking water may be at risk:

One or more contaminants regulated under the federal Safe Drinking Water Act for this public water supply system have been detected in the source water. However, the water supplied to users meets state and federal drinking water standards for potability. For further information, please contact the MDH representative listed at the beginning of this assessment.

PRP Map for Leak 15,656 Source Water Assessment

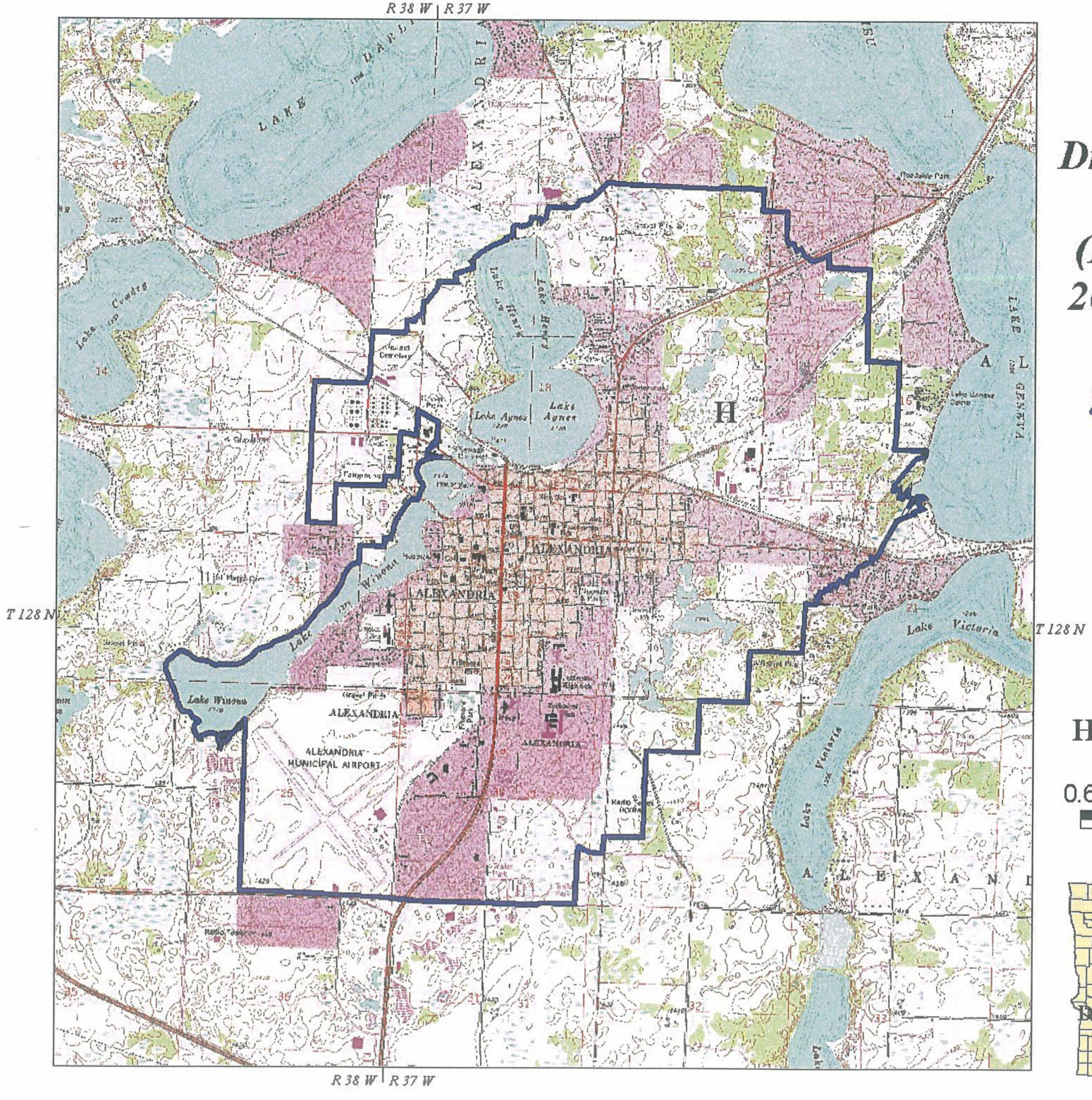


Disclaimer: Map and site information is believed to be accurate but accuracy is not guaranteed. No portion of the information should be considered to be, or used as, a legal document. The information is provided subject to the express condition that the user knowingly waives any and all claims for damages against MPCA that may arise from the use of this data.

Minnesota Pollution Control Agency

Legend

- ▪ Private Wells
- ▲ Petroleum Remediation Program
- 🟧 Wellhead Protection Area
- 🟦 Drinking Water Supply Management Area
- 🟪 Source Water Assessment Area
- ▨ Moderate Vulnerability
- ▨ High Vulnerability



Alexandria

Drinking Water Supply Management Area (DWSMA) MN-00138 20 year Time of Travel

DWSMA Boundary

H = High Vulnerability

0.6 0 0.6 Miles

N

SWP source water protection

MINNESOTA MDH DEPARTMENT of HEALTH

Approved May 29, 2002

APPENDIX M

Guidance Document 4-19 – Conceptual Corrective Action Design Worksheet

THIS DOCUMENT NOT APPLICABLE FOR LEAK 15,656

APPENDIX N

Site Photographs of UST Removal and Site Layout
(UST removal photographs provided by Mr. Dennis Stark, City of Alexandria Fire Marshal)

AECOM

PHOTOGRAPHIC LOG

Client Name: MPCA

Site Location:

Alex Exhaust – Leak 15,656

Project No. 04660027

Photo No. 1

Date: 5/16/88

Direction Photo Taken:

Facing Northwest

Description:

This photograph shows one of the four USTs removed from the former Cenex station in May of 1988.

Photograph provided by Mr. Dennis Stark, City of Alexandria Fire Marshal

Photo No. 2

Date: 5/16/88

Direction Photo Taken:

Facing Northwest

Description:

This photograph shows the four USTs excavated from the release site in May of 1988.

Photograph provided by Mr. Dennis Stark, City of Alexandria Fire Marshal

PHOTOGRAPHIC LOG

Client Name: MPCA	**Site Location:** Alex Exhaust – Leak 15,656	**Project No.** 04660027

Photo No.	**Date:**
3	2/7/07

Direction Photo Taken:

Facing Northwest

Description:

This photograph shows the site configuration in February, 2007. The white building on the right of the photo is the Alex Exhaust building.

Photo No.	**Date:**
4	2/7/07

Direction Photo Taken:

Facing Northwest

Description:

This photograph shows the large shed/garage building north of the Alex Exhaust building.

Web pages and phone numbers

MPCA staff	http://www.pca.state.mn.us/pca/staff/index.cfm
MPCA toll free	**1-800-657-3864**
Petroleum Remediation Program web page	http://www.pca.state.mn.us/programs/lust_p.html
MPCA Info. Request	http://www.pca.state.mn.us/about/inforequest.html
MPCA VIC program	http://www.pca.state.mn.us/cleanup/vic.html
MPCA Petroleum Brownfields Program	http://www.pca.state.mn.us/programs/vpic_p.html
MPCA SRS guidance documents	http://www.pca.state.mn.us/cleanup/riskbasedoc.html http://www.pca.state.mn.us/cleanup/riskbasedoc.html#surfacewaterpathway
MDH HRLs	http://www.health.state.mn.us/divs/eh/groundwater/hrltable.html
MDH DW hotline	**1-800-818-9318**
Petrofund Web Page	http://www.state.mn.us/cgi-bin/portal/mn/jsp/content.do?id=-536881377&agency=Commerce
Petrofund Phone	**651-215-1775 or 1-800-638-0418**
State Duty Officer	**651-649-5451 or 1-800-422-0798**

800.859.7871
www.aecom.com