

*Phase II
Investigation Report*

*Future Building Site - Little Canada
Little Canada, Minnesota*

*Prepared for
Ramsey Washington Metro Watershed District*

July 2004

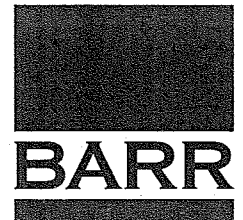
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Phase II Investigation Report - Future B

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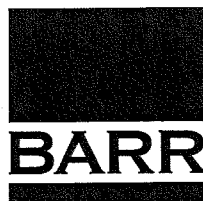


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July 2004



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**Phase II Investigation Report
Future Building Site – Little Canada
Little Canada, MN**

Table of Contents

1.0 Introduction	1
2.0 Investigation Scope and Methods.....	2
2.1 Investigation Scope of Work.....	2
2.2 Field Screening.....	2
2.3 Soil Sampling	3
2.4 Groundwater Sampling	3
3.0 Results and Discussion.....	4
3.1 Geology and Hydrogeology	4
3.2 Soil Quality Data.....	4
3.2.1 Field Screening Results.....	4
3.2.2 Analytical Soil Sample Results	4
3.3 Water Quality Data.....	5
3.4 Data Quality	5
3.5 Discussion	6
References	7

List of Tables

- Table 1 Analytical Sample Parameter Summary
- Table 2 Analytical Soil Results
- Table 3 Analytical Groundwater Results

List of Figures

- Figure 1 Property Location Map
- Figure 2 Property Layout Map
- Figure 3 Soil Boring Locations

List of Appendices

- Appendix A Soil Boring Logs
- Appendix B Analytical Laboratory Report

1.0 Introduction

Ramsey-Washington Metro Watershed District (RWMWD) retained the services of Barr Engineering Company (Barr) to perform a Phase II Environmental Investigation for the property located in the southeast ¼ of the southwest ¼ of Section 5, Township 29, Range 22, near the intersection of Noel Drive and Little Canada Road, Little Canada, Minnesota (Property) as shown on Figure 1. The City of Little Canada purchased the property in March 1978. The Property is vacant and adjacent to Gervais Creek. The Property was once probably part of a horse farm and was mostly all wetland and low land. The Property was filled with off-site material in the late 1970's and early 1980's, with some of the fill coming from street sweepings and other fill possibly coming from the Edgerton/Highway 36 bridge replacement. The city has also used the Property to dump snow. The land has remained vacant and undisturbed since approximately 1997. Location of site features are shown on Figure 2. Additional historical information is summarized in the *Phase I Environmental Property Assessment, Future Building Site – Noel Drive, Little Canada, MN* (Barr, 2004).

The Phase I Environmental Property Assessment identified the following Recognized Environmental Conditions (RECs) associated with the site:

- Visible evidence or documentation of filling or excavation – including street sweepings and possible construction and fill materials from the Edgerton/Highway 36 bridge replacement

This Phase II Investigation Report describes the scope of work performed to assess the areas of concern described above. This report will summarize the scope of work performed in Section 2 and summarize the field observations and a comparison of analytical results to applicable criteria in Section 3.

2.0 Investigation Scope and Methods

A subsurface investigation was conducted on June 28, 2004 at the Property. The field activities were completed in general accordance with Barr Engineering standard operating procedures (SOPs). Deviations from the work plan are discussed below. Locations of site features are shown on Figure 2.

Standard chain-of-custody procedures were maintained for handling of all samples. All drilling and sampling equipment coming into contact with sampled media (either soil or groundwater) was cleaned/decontaminated using phosphate-free detergent wash between sampling locations. Soil and groundwater samples were collected into laboratory-supplied sample containers and stored on ice in coolers pending delivery to the analytical laboratory.

A Barr employee was onsite during all investigation activities to observe the soil boring advancement, to classify and screen soil samples, and to collect soil and groundwater samples for laboratory analysis.

2.1 Investigation Scope of Work

Ten soil borings were advanced using direct-push technology (Geoprobe). The drilling contractor was Matrix Environmental of Osseo, Minnesota. Continuous soil samples were collected from each soil boring for field screening and soil classification using a macro-core sampler. The locations of the Geoprobe borings are shown on Figure 3. Copies of the soil borings are included in Appendix A. Soil and groundwater analytical sampling locations and depths are summarized in Table 1. Soil boring locations were based on field measurements and were not located using standard survey methods.

2.2 Field Screening

Soil samples were field screened based on odor, sheen, staining, and organic vapor concentrations. Organic vapor concentrations were measured using the Minnesota Pollution Control Agency (MPCA) guidance for the polyethylene bag headspace method (e.g. "baggie method") and a photoionization detector (PID) equipped with an 11.7eV lamp.

The soil samples were also field characterized in terms of lithology, color, and moisture. Field screening results, soil descriptions, and other observations are summarized in the soil boring logs contained in Appendix A.

2.3 Soil Sampling

Analytical soil samples were collected from each of the 10 borings and submitted to Legend Technical Services in St. Paul, Minnesota (Legend) for laboratory analyses. Table 1 summarizes the locations and depths of the samples collected and the parameters for which they were analyzed. The resulting soil analytical data are summarized in Table 2.

Analytical sample identifiers are based on sample location and sample depth interval (i.e. sample GP3 14-15 was collected at soil boring GP3 between 14 and 15 feet).

Samples were analyzed for a subset of the following parameters: polycyclic aromatic hydrocarbons (PAHs) by Method 8270, volatile organic compounds (VOCs) by Method 8260, and lead by Method 6010. The parameters analyzed for each sample location and interval, were selected based on historical land use information and field screening.

2.4 Groundwater Sampling

Groundwater samples were collected from two of the boring locations (GP1 and GP6) for submittal to Legend for laboratory analyses. Table 1 summarizes the samples collected and the parameters for which they were analyzed. The resulting groundwater analytical data are summarized in Table 3.

Well purging and sampling was completed using a variable rate peristaltic pump and polyethylene tubing. Groundwater samples were filtered in the field using a 0.45-micron filter. Samples were analyzed for lead by Method 6010.

3.0 Results and Discussion

3.1 Geology and Hydrogeology

Soil boring logs for the June 2004 investigation are included in Appendix A. Soils immediately beneath the Property consist of heterogeneous fill material that is typically clayey sand, silty sand, or sand. Heterogeneous fill materials were observed in all borings of the Property. Asphalt was found mixed throughout the soils in all borings. Clay layers were encountered in several of the soil borings (GP2, GP7, GP9). Some borings had specific layers of asphalt (chunks) at depth (GP1, GP3, GP7). Debris was encountered at depth in two soil borings (GP6 and GP7). Boring GP7 had a piece of glass at 12.5 feet bgs and GP6 encountered asphalt and brick at 7.5 feet and 9.0 feet bgs, respectively.

3.2 Soil Quality Data

This section summarizes the field screening and analytical results for soil at the Property. Analytical data are compared to MPCA screening guidelines—Tier I Residential Soil Reference Values (Tier I SRVs), Tier II Industrial Soil Reference Values (Tier II SRVs), and Tier I Residential Soil Leaching Values (Tier I SLVs). Soil analytical data are presented in Table 2. Copies of the analytical laboratory reports are included in Appendix B. Field screening results are summarized on the soil boring logs (Appendix A).

3.2.1 Field Screening Results

Field screening results for all soil borings are summarized on the soil boring logs contained in Appendix A. Field screening results, with the exception of headspace measurements, are qualitative. Except for soil borings GP-1 and GP-8, none of the borings had measured organic vapor concentrations greater than background concentrations (0.1-0.8 ppm). Soil borings GP-1 and GP-8 contained soil with evident light to moderate odors and slightly elevated organic vapor concentrations (4.0 ppm and 17.0 ppm, respectively) therefore, were selected for VOC analysis.

3.2.2 Analytical Soil Sample Results

Tier I and Tier II SRV Criteria

Analytical soil results were compared to the Tier I and Tier II SRV criteria, which are risk-based screening criteria for residential and industrial land uses respectively. No Tier I or II SRV screening criteria were exceeded in samples analyzed as part of this investigation.

Tier I SLV Criteria

Analytical soil results were also compared to the Tier I SLV criteria, which are a risk-based screening criteria for soils to address leaching potential to groundwater. No Tier I SLV screening criteria were exceeded in the samples analyzed as part of this investigation.

3.3 Water Quality Data

Groundwater analytical data were compared to the U.S. EPA 2002 Drinking Water Standards and Health Advisories, Maximum Contaminant Levels (MCL). The MCL for lead is an action limit only. No MCL screening criteria were exceeded in the samples analyzed as part of this investigation.

3.4 Data Quality

All laboratory data for the analysis of the samples collected in June 2004 at the Property were provided by Legend Technical Services, St. Paul, Minnesota. The chemical parameters analyzed by Legend included volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs) and Lead. The data quality evaluation involved the review aspects of laboratory analytical performance and is summarized below. The laboratory analytical reports are provided in Appendix B.

This evaluation was performed in accordance with the Barr Engineering Standard Operating Procedure for data review, which is based on "The National Functional Guidelines for Superfund Organic Methods Data Review and "The National Functional Guidelines for Inorganic Data Review" (EPA 2004/2002).

The individual aspects of the data quality evaluation are: USEPA recommended holding times, evaluation of laboratory method blank samples, surrogate standard recoveries (for organic analyses), laboratory accuracy and precision (laboratory control samples and duplicates).

All samples were analyzed within the appropriate USEPA recommended holding times. The laboratory reporting limit for VOCs was slightly elevated due to initial sample volumes being less than 25 grams. This did not adversely affect the data as the adjusted reporting limits are below all applicable soil criteria. No target compounds were detected in any of the laboratory method blank samples associated with the analytical event. All surrogate standard recoveries met acceptance criteria for the VOC and PAH analysis. All laboratory accuracy and precision data, as measured by the laboratory control sample percent recoveries and relative percent differences on duplicates, also met applicable acceptance criteria.

All the analytical data was reviewed and determined useable as presented in the data tables.

3.5 Discussion

Sampling and analyses of soil and groundwater completed for the Property located near the corner of Noel Drive and Little Canada Road, Little Canada, Minnesota document that no concentrations of organic compounds (PAHs or VOCs) are present in soil and/or groundwater at the Property. Low concentrations of lead were present but did not exceed established criteria for either soil or groundwater.

The measured concentrations of the parameters analyzed do not preclude development of this Property.

References

Barr Engineering Company, 2004. Phase I, Environmental Property Assessment – Future Building Site—Little Canada; Little Canada, Minnesota. Prepared for Ramsey-Washington Metro Watershed District, June 2004.

Braun Intertec Corporation, 2004. A Geotechnical Evaluation Report for Barr Engineering Company, Future Building, Noel Drive at Little Canada Road, Little Canada, Minnesota. Prepared for Barr Engineering Company, May 2004.

Subterranean Engineering, Inc., 1978. Soil Investigation, Maintenance Building, Little Canada Road & Noel Drive, Little Canada, Minnesota. Prepared for the City of Little Canada, August 1978.

Tables

Table 1**Analytical Sample Parameter Summary**

Sample ID	Sample Depth	Media (Soil / Water)	Analytical Parameters
GP-1	0-2'	Soil	Lead
GP-1	4.5'	Soil	VOC
GP-1	14-15'	Soil	Lead
GP-1	16-20'	Groundwater	Lead
GP-2	4-5'	Soil	Lead
GP-2	17'	Soil	Lead
GP-3	1-2'	Soil	Lead
GP-3	3-4'	Soil	PAH
GP-3	11-13'	Soil	Lead
GP-3	18.5-19'	Soil	PAH
GP-4	1-2'	Soil	Lead
GP-5	2-3'	Soil	Lead
GP-5	16-19'	Soil	Lead
GP-6	7-8'	Soil	Lead
GP-6	17-21'	Groundwater	Lead
GP-6	18-19'	Soil	Lead
GP-7	4-5'	Soil	Lead
GP-7	8.5-9.5'	Soil	PAH
GP-7	9.5-10'	Soil	Lead
GP-8	4-5'	Soil	Lead
GP-8	13.5-14'	Soil	VOC
GP-9	2-3'	Soil	Lead
GP-9	8-9'	Soil	Lead
GP10	0-2'	Soil	Lead
GP10 0-2	15-16'	Soil	Lead

PAH – Polycyclic Aromatic hydrocarbons

VOC – Volatile Organic Compounds

Lead

Table 2
Soil Data Summary
Ramsey-Washington Metro - Little Canada Phase II
(concentrations in mg/kg, unless noted otherwise)

Location	MN Tier I SRV	MN Tier II IND SRV	MN Tier I SLV	GP-1 4.5'	GP-3 18.5-19'	GP-3 3-4'	GP-7 8.5-9.5'	GP-8 13.5-14'
Date	9/1/1999	9/1/1999	11/2/1999	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004
Exceedance Key	Bold	<u>Underline</u>	Box					
VOCs								
1,1,1,2-Tetrachloroethane	31	51	1.4	<0.34	--	--	--	<0.39
1,1,1-Trichloroethane	140	472	3.5	<0.34	--	--	--	<0.39
1,1,2,2-Tetrachloroethane	3.5	6.5	0.01	<0.34	--	--	--	<0.39
1,1,2-Trichloroethane	9	14	0.01	<0.34	--	--	--	<0.39
1,1-Dichloro-1-propene	--	--	--	<0.34	--	--	--	<0.39
1,1-Dichloroethane	34	55	0.18	<0.34	--	--	--	<0.39
1,1-Dichloroethylene	0.6	1	0.02	<0.34	--	--	--	<0.39
1,2,3-Trichlorobenzene	--	--	--	<0.34	--	--	--	<0.39
1,2,3-Trichloropropane	--	--	0.35	<0.34	--	--	--	<0.39
1,2,4-Trichlorobenzene	200	985	0.31	<0.34	--	--	--	<0.39
1,2,4-Trimethylbenzene	5	5	--	<0.34	--	--	--	<0.39
1,2-Dibromo-3-chloropropane	--	--	0.001	<0.34	--	--	--	<0.39
1,2-Dibromoethane	0.14	0.25	0.00001	<0.34	--	--	--	<0.39
1,2-Dichlorobenzene	26	75	7.8	<0.34	--	--	--	<0.39
1,2-Dichloroethane	4	6	0.01	<0.34	--	--	--	<0.39
1,2-Dichloroethylene, cis	8	22	0.14	<0.34	--	--	--	<0.39
1,2-Dichloroethylene, trans	11	33	0.27	<0.34	--	--	--	<0.39
1,2-Dichloropropane	4	6	0.011	<0.34	--	--	--	<0.39
1,3,5-Trimethylbenzene	4	10	--	<0.34	--	--	--	<0.39
1,3-Dichloro-1-propene trans	--	--	0.005	<0.34	--	--	--	<0.39
1,3-Dichloro-1-propene, cis	--	--	0.005	<0.34	--	--	--	<0.39
1,3-Dichlorobenzene	26	200	--	<0.34	--	--	--	<0.39
1,3-Dichloropropane	--	--	--	<0.34	--	--	--	<0.39
1,4-Dichlorobenzene	30	50	0.13	<0.34	--	--	--	<0.39
2,2-Dichloropropane	--	--	--	<0.34	--	--	--	<0.39
Acetone	320	1000	0.7	<2.7	--	--	--	<3.1
Allyl chloride	--	--	0.032	<0.34	--	--	--	<0.39
Benzene	1.5	4	0.034	<0.34	--	--	--	<0.39
Bromobenzene	--	--	--	<0.34	--	--	--	<0.39
Bromochloromethane	--	--	0.15	<0.34	--	--	--	<0.39
Bromodichloromethane	10	17	0.013	<0.34	--	--	--	<0.39
Bromoform	370	650	0.14	<0.34	--	--	--	<0.39
Bromomethane	0.7	2	0.5	<0.34	--	--	--	<0.39
Butyl benzene	30	92	--	<0.34	--	--	--	<0.39
Butylbenzene sec	25	70	--	<0.34	--	--	--	<0.39
Butylbenzene tert-	30	90	--	<0.34	--	--	--	<0.39
Carbon tetrachloride	0.3	0.9	0.023	<0.34	--	--	--	<0.39
Chlorobenzene	11	32	1.1	<0.34	--	--	--	<0.39
Chlorodibromomethane	12	20	0.03	<0.34	--	--	--	<0.39
Chloroethane	1000	3000	--	<0.34	--	--	--	<0.39
Chloroform	2.5	4	0.17	<0.34	--	--	--	<0.39
Chloromethane	13	21	0.006	<0.34	--	--	--	<0.39
Chlorotoluene o-	436	436	--	<0.34	--	--	--	<0.39
Chlorotoluene p-	--	--	--	<0.34	--	--	--	<0.39
Cumene (isopropyl benzene)	30	87	18	<0.34	--	--	--	<0.39
Cymene p- (Toluene isopropyl p-)	--	--	--	<0.34	--	--	--	<0.39
Dibromomethane (methylene bromide)	260	1860	--	<0.34	--	--	--	<0.39
Dichlorodifluoromethane	16	50	38	<0.34	--	--	--	<0.39
Dichlorofluoromethane	--	--	--	<0.34	--	--	--	<0.39
Ethyl benzene	200	200	4.7	<0.34	--	--	--	<0.39
Ethyl ether	--	--	1.2	<0.34	--	--	--	<0.39

Table 2
Soil Data Summary
Ramsey-Washington Metro - Little Canada Phase II
(concentrations in mg/kg, unless noted otherwise)

Location	MN Tier I SRV	MN Tier II IND SRV	MN Tier I SLV	GP-1 4.5'	GP-3 18.5-19'	GP-3 3-4'	GP-7 8.5-9.5'	GP-8 13.5-14'
Date	9/1/1999	9/1/1999	11/2/1999	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004
Exceedance Key	Bold	<u>Underline</u>	Box					
Hexachlorobutadiene	6	37	25	<0.34	--	--	--	<0.39
Methyl ethyl ketone	1400	4300	6.4	<2.7	--	--	--	<3.1
Methyl isobutyl ketone	140	420	0.42	<0.34	--	--	--	<0.39
Methyl tertiary butyl ether (MTBE)	--	--	0.027	<0.34	--	--	--	<0.39
Methylene chloride	97	158	0.07	<2.0	--	--	--	<2.3
Naphthalene	10	28	7.5	<0.34	--	--	--	<0.39
Propylbenzene	30	93	--	<0.34	--	--	--	<0.39
Styrene	210	600	1.9	<0.34	--	--	--	<0.39
Tetrachloroethylene	72	131	0.07	<0.34	--	--	--	<0.39
Tetrahydrofuran	--	--	0.16	<0.34	--	--	--	<0.39
Toluene	107	305	6.4	<0.34	--	--	--	<0.39
Trichloroethylene	29	46	0.14	<0.34	--	--	--	<0.39
Trichlorofluoromethane	67	195	22	<0.34	--	--	--	<0.39
Trichlorotrifluoroethane	3745	5430	2580	<0.34	--	--	--	<0.39
Vinyl chloride	0.25	0.4	0.001	<0.34	--	--	--	<0.39
Xylene m & p	110 M	248 M	45 M	<0.67	--	--	--	<0.77
Xylene o-	110 M	248 M	45 M	<0.34	--	--	--	<0.39
SVOCs								
2-Chloronaphthalene	--	--	--	--	<0.38	<1.4	<0.41	--
2-Methylnaphthalene	--	--	--	--	<0.38	<1.4	<0.41	--
Acenaphthene	1200	5260	50	--	<0.38	<1.4	<0.41	--
Acenaphthylene	--	--	--	--	<0.38	<1.4	<0.41	--
Anthracene	7880	45400	942	--	<0.38	<1.4	<0.41	--
Benzo(a)anthracene	2 T	4 T	10.2 T	--	<0.38	<1.4	<0.41	--
Benzo(a)pyrene	2 T	4 T	10.2 T	--	<0.38	<1.4	<0.41	--
Benzo(b)fluoranthene	2 T	4 T	10.2 T	--	<0.38	<1.4	<0.41	--
Benzo(g,h,i)perylene	--	--	--	--	<0.38	<1.4	<0.41	--
Benzo(k)fluoranthene	2 T	4 T	10.2 T	--	<0.38	<1.4	<0.41	--
Chrysene	2 T	4 T	10.2 T	--	<0.38	<1.4	<0.41	--
Dibenz(a,h)anthracene	2 T	4 T	10.2 T	--	<0.38	<1.4	<0.41	--
Fluoranthene	1080	6800	295	--	<0.38	<1.4	<0.41	--
Fluorene	1140	4120	47	--	<0.38	<1.4	<0.41	--
Indeno(1,2,3-cd)pyrene	2 T	4 T	10.2 T	--	<0.38	<1.4	<0.41	--
Naphthalene	10	28	7.5	--	<0.38	<1.4	<0.41	--
Phenanthrene	--	--	--	--	<0.38	<1.4	<0.41	--
Pyrene	890	5800	272	--	<0.38	<1.4	<0.41	--

Table 2
Soil Data Summary
Ramsey-Washington Metro - Little Canada Phase II
(concentrations in mg/kg, unless noted otherwise)

Location	MN Tier I SRV 9/1/1999	MN Tier II IND SRV 9/1/1999	MN Tier I SLV 11/2/1999	GP-1 0-2'	GP-1 14-15'	GP-2 17'	GP-2 4-5'	GP-3 11-13'	GP-3 1-2'	GP-4 1-2'	GP-5 16-19'	GP-5 2-3'	GP-6 18-19'	GP-6 7-8'	GP-7 4-5'	GP-7 9.5-10'
Date				6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004
Exceedance Key	Bold	Underline	Box													
Lead	400	700	525	12	6.4	4.1	7.1	2.0	19	6.9	8.1	8.2	2.3	7.3	10	23

Table 2
Soil Data Summary
Ramsey-Washington Metro - Little Canada Phase II
(concentrations in mg/kg, unless noted otherwise)

Location	MN Tier I	MN Tier II	MN Tier I	GP-8 4-5'	GP-9 2-3'	GP-9 8-9'	GP-10 0-2'	GP-10 15-16'
Date	SRV 9/1/1999	IND SRV 9/1/1999	SLV 11/2/1999	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004
Exceedance Key	Bold	Underline	Box					
Lead	400	700	525	4.8	5.6	7.8	10	2.1

Table 2
Soil Data Summary
Ramsey-Washington Metro - Little Canada Phase II
(concentrations in mg/kg, unless noted otherwise)

Location	MN Tier I SRV 9/1/1999	MN Tier II IND SRV 9/1/1999	MN Tier I SLV 11/2/1999	GP-1 0-2'	GP-1 14-15'	GP-1 4.5'	GP-2 17'	GP-2 4-5'	GP-3 11-13'	GP-3 1-2'	GP-3 18.5-19'	GP-3 3-4'	GP-4 1-2'	GP-5 16-19'	GP-5 2-3'	GP-6 18-19'
Date				6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004
Exceedance Key	Bold	Underline	Box													
General Parameters																
Solids, %	--	--	--	91	90	94	84	89	93	88	87	94	92	88	93	91

Table 2
Soil Data Summary
Ramsey-Washington Metro - Little Canada Phase II
(concentrations in mg/kg, unless noted otherwise)

Location	MN Tier I SRV 9/1/1999	MN Tier II IND SRV 9/1/1999	MN Tier I SLY 11/2/1999	GP-6 7-8' 6/28/2004	GP-7 4-5' 6/28/2004	GP-7 8.5-9.5' 6/28/2004	GP-7 9.5-10' 6/28/2004	GP-8 13.5-14' 6/28/2004	GP-8 4-5' 6/28/2004	GP-9 2-3' 6/28/2004	GP-9 8-9' 6/28/2004	GP-10 0-2' 6/28/2004	GP-10 15-16' 6/28/2004
Date													
Exceedance Key	Bold	Underline	Box										
Solids, %	--	--	--	94	95	81	87	87	91	94	83	89	86
<u>General Parameters</u>													

Table 3
Groundwater Data Summary
Ramsey-Washington Metro - Little Canada Phase II
(concentrations in ug/L)

Location	USEPA MCL	GP-1 16-20'	GP-6 17-21'
Date	7/1/2002	6/28/2004	6/28/2004
Dup	U		
Lead	TT (7)	<3.0	<3.0

TT - Treatment technique.

(7) - Lead action level is 15 ug/L.

Table 4
Blank Data Summary-Soil
Ramsey-Washington Metro - Little Canada Phase II
(concentrations in mg/kg)

Location Date	Lab Blank-Soil 6/28/2004	Trip Blank - Soil 6/28/2004
Exceedance Key		
VOCs		
1,1,1,2-Tetrachloroethane	<0.25	<0.25
1,1,1-Trichloroethane	<0.25	<0.25
1,1,2,2-Tetrachloroethane	<0.25	<0.25
1,1,2-Trichloroethane	<0.25	<0.25
1,1-Dichloro-1-propene	<0.25	<0.25
1,1-Dichloroethane	<0.25	<0.25
1,1-Dichloroethylene	<0.25	<0.25
1,2,3-Trichlorobenzene	<0.25	<0.25
1,2,3-Trichloropropane	<0.25	<0.25
1,2,4-Trichlorobenzene	<0.25	<0.25
1,2,4-Trimethylbenzene	<0.25	<0.25
1,2-Dibromo-3-chloropropane	<0.25	<0.25
1,2-Dibromoethane	<0.25	<0.25
1,2-Dichlorobenzene	<0.25	<0.25
1,2-Dichloroethane	<0.25	<0.25
1,2-Dichloroethylene, cis	<0.25	<0.25
1,2-Dichloroethylene, trans	<0.25	<0.25
1,2-Dichloropropane	<0.25	<0.25
1,3,5-Trimethylbenzene	<0.25	<0.25
1,3-Dichloro-1-propene trans	<0.25	<0.25
1,3-Dichloro-1-propene, cis	<0.25	<0.25
1,3-Dichlorobenzene	<0.25	<0.25
1,3-Dichloropropane	<0.25	<0.25
1,4-Dichlorobenzene	<0.25	<0.25
2,2-Dichloropropane	<0.25	<0.25
Acetone	<2.0	<2.0
Allyl chloride	<0.25	<0.25
Benzene	<0.25	<0.25
Bromobenzene	<0.25	<0.25
Bromochloromethane	<0.25	<0.25
Bromodichloromethane	<0.25	<0.25
Bromoform	<0.25	<0.25
Bromomethane	<0.25	<0.25
Butyl benzene	<0.25	<0.25
Butylbenzene sec	<0.25	<0.25
Butylbenzene tert-	<0.25	<0.25
Carbon tetrachloride	<0.25	<0.25
Chlorobenzene	<0.25	<0.25
Chlorodibromomethane	<0.25	<0.25
Chloroethane	<0.25	<0.25
Chloroform	<0.25	<0.25
Chloromethane	<0.25	<0.25
Chlorotoluene o-	<0.25	<0.25
Chlorotoluene p-	<0.25	<0.25
Cumene (isopropyl benzene)	<0.25	<0.25
Cymene p- (Toluene isopropyl p-)	<0.25	<0.25
Dibromomethane (methylene bromide)	<0.25	<0.25
Dichlorodifluoromethane	<0.25	<0.25
Dichlorofluoromethane	<0.25	<0.25
Ethyl benzene	<0.25	<0.25

Table 4
Blank Data Summary-Soil
Ramsey-Washington Metro - Little Canada Phase II
(concentrations in mg/kg)

Location Date	Lab Blank-Soil 6/28/2004	Trip Blank - Soil 6/28/2004
Exceedance Key		
Ethyl ether	<0.25	<0.25
Hexachlorobutadiene	<0.25	<0.25
Methyl ethyl ketone	<2.0	<2.0
Methyl isobutyl ketone	<0.25	<0.25
Methyl tertiary butyl ether (MTBE)	<0.25	<0.25
Methylene chloride	<1.5	<1.5
Naphthalene	<0.25	<0.25
Propylbenzene	<0.25	<0.25
Styrene	<0.25	<0.25
Tetrachloroethylene	<0.25	<0.25
Tetrahydrofuran	<0.25	<0.25
Toluene	<0.25	<0.25
Trichloroethylene	<0.25	<0.25
Trichlorofluoromethane	<0.25	<0.25
Trichlorotrifluoroethane	<0.25	<0.25
Vinyl chloride	<0.25	<0.25
Xylene m & p	<0.50	<0.50
Xylene o-	<0.25	<0.25
<u>SVOCs</u>		
2-Chloronaphthalene	<0.33	--
2-Methylnaphthalene	<0.33	--
Acenaphthene	<0.33	--
Acenaphthylene	<0.33	--
Anthracene	<0.33	--
Benzo(a)anthracene	<0.33	--
Benzo(a)pyrene	<0.33	--
Benzo(b)fluoranthene	<0.33	--
Benzo(g,h,i)perylene	<0.33	--
Benzo(k)fluoranthene	<0.33	--
Chrysene	<0.33	--
Dibenz(a,h)anthracene	<0.33	--
Fluoranthene	<0.33	--
Fluorene	<0.33	--
Indeno(1,2,3-cd)pyrene	<0.33	--
Naphthalene	<0.33	--
Phenanthrene	<0.33	--
Pyrene	<0.33	--
<u>Metals</u>		
Lead	<1.0	--

Table 5
Blank Data Summary-Water
Ramsey-Washington Metro - Little Canada Phase II
(concentrations in ug/L)

Location	Lab Blank
Date	6/28/2004
<u>Metals</u>	
Lead	<3.0

Figures

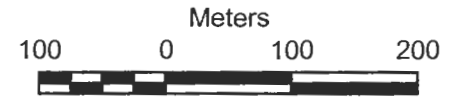
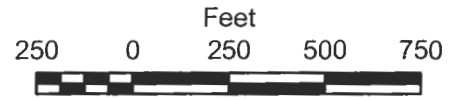


Figure 1
PROPERTY LOCATION MAP
Future Building Site - Noel Drive
Little Canada, Minnesota

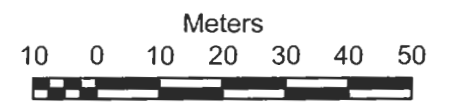


Figure 2

PROPERTY LAYOUT MAP
Future Building Site - Noel Drive
Little Canada, Minnesota



⊕ Soil Boring Location (Located with field measurements, not by survey)

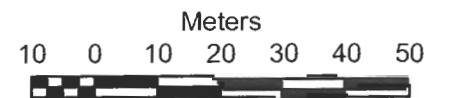


Figure 3

SOIL BORING LOCATIONS
Future Building Site - Noel Drive
Little Canada, Minnesota

Appendices

Appendix A

Soil Boring Logs

Client Ramsey-Washington Metro Watershed Dist. Drill Contractor Matrix Environmental, LLC

LOG OF GEOPROBE GP1

SHEET 1 OF 1

Project Name Noel Drive-Little Canada Drill Method Direct Push

Number 23/62-876 Drilling Started 6/28/04 Ended 6/28/04

Elevation N/A

Location Little Canada, Minnesota Logged By RTK/KAM

Total Depth 20.0

DEPTH FEET	SAMP. LENGTH & RECOVERY	SAMP. NUMBER	Headspace ppm	Discoloration- Odor- Sheen	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
0								FILL: Silty sand, with clay from 1-2 ft bgs. Brown with rust and gray mottles. Trace gravel. Grass at surface.	0
0-2'			3.2	None Trace/Hydrocarbon None	Dry	SM		Soil sample collected at 0-2' and analyzed for lead.	
4.5'								FILL: Brown to gray, silty clay with asphalt. Petroleum odor at 4.5 ft bgs and lens of asphalt at 7.5-8 ft bgs.	4.5
4.5'								Soil sample collected at 4.5' and analyzed for VOCs.	
4-7'			4.0	None None None	Moist	CL ML			
7-14'			2.4	None None None	Moist	SP		FILL: Gray poorly graded sand, fine to medium grained. Moist. Asphalt present throughout.	
14-15'								FILL: Gray to black silty sand, fine to medium grained. Moist.	
14-15'								Soil sample collected at 14-15' and analyzed for lead.	
16-20'			0.8	None None None	Moist Wet Below 17.1'	SP		SAND: Gray sand, fine to medium grained with trace coarse grained sand. Moist to wet.	
16-20'								Water sample collected at 16-20' and analyzed for lead.	
20'								END OF BORING	20

ENVIRO LOG 5 (6/27/04) 2362876.GPJ BARRLOG.GDT 7/22/04



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Remarks

Additional data may have been collected in the field which is not included on this log.

Client Ramsey-Washington Metro Watershed Dist. Drill Contractor Matrix Environmental, LLC

LOG OF GEOPROBE GP2

SHEET 1 OF 1

Project Name Noel Drive-Little Canada

Drill Method Direct Push

Number 23/62-876

Drilling Started 6/28/04 Ended 6/28/04

Elevation N/A

Location Little Canada, Minnesota

Logged By RTK/KAM

Total Depth 20.0

DEPTH FEET	SAMP. LENGTH & RECOVERY	SAMP. NUMBER	Headspace pptn	Discoloration- Odor- Sheen	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
						CL		FILL: Brown sandy clay, fine to medium grained sand. Grass at surface.	
			2.6	Black Slight None	Dry-moist	SM		FILL: Brown to black silty sand. Black staining at 4 ft bgs with slight petroleum odor. Soil sample collected at 4-5' and analyzed for lead.	
5						SC SM		FILL: Brown to dark brown silty to clayey sand. Fine grain with up to 10% medium-coarse grained sand, trace fine gravel. Approx. 30-40% fines. Trace of old wood.	5
			0.3	None None None	Moist				
10						SP SM		SAND WITH SILT: Pale brown to brown, fine grained sand with trace medium-coarse grained sand. Approx. 10% fines.	10
			1.3	None None None	Moist				
15						SC		CLAYEY SAND: Gray, clayey, very fine grained sand with approx. 60% fines.	15
			0.8	None None None	Moist-wet	SP		SAND: Yellowish brown, fine to medium grained sand with trace coarse grained sand and gravel. Approx. 5% fines, coarse grained sand and gravel increases with depth to 50% coarse grained sand and 10% gravel at terminus of boring.	
20								Soil sample collected at 17' and analyzed for lead. END OF BORING	20

ENVIRO LOG 5 (5/27/04) 2362876.GPJ BARRLOG.GDT 7/22/04

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Remarks Poor recovery at 5-10 ft bgs due to rock obstructing cutting shoe.

Additional data may have been collected in the field which is not included on this log.

Client Ramsey-Washington Metro Watershed Dist. Drill Contractor Matrix Environmental, LLC

LOG OF GEOPROBE GP3
SHEET 1 OF 1

Project Name Noel Drive-Little Canada Drill Method Direct Push

Number 23/62-876 Drilling Started 6/28/04 Ended 6/28/04 Elevation N/A

Location Little Canada, Minnesota Logged By RTK/KAM Total Depth 20.0

DEPTH FEET	SAMP. LENGTH & RECOVERY	SAMP. NUMBER	Headspace ppm	Discoloration- Odor- Sheen	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
			1.8	BK/GY Slight None	Dry-Moist	SM	[Cross-hatched]	FILL: Grass at surface. Brown, silty sand with organic silt, grass roots. Grass at surface.	
						SC		FILL: Yellow to brown, clayey fine grained sand with silt. Approx. 50% fines.	
5						GM	[Cross-hatched]	Soil sample collected at 1-2' and analyzed for lead. FILL: Broken, old asphalt/street sweepings.	5
			0.7	None Slight None	Moist	SC	[Cross-hatched]	Soil sample collected at 3-4' and analyzed for PAHs.	
						SC	[Cross-hatched]	FILL: Yellow brown clayey sand grades to silty sand. Fine grained with 10% medium grained, trace coarse grained sand. Lens of gray clay at 9.2-9.3 ft bgs contains, a stick.	
10						SM	[Cross-hatched]	FILL: Dark brown, fine grained, silty sand. Fines increase with depth from 15% to 30%. Roots present.	10
			0.4	None None None	Moist-wet	SM	[Cross-hatched]	Soil sample collected at 11-13' and analyzed for lead.	
						SP	[Cross-hatched]	FILL: Yellow-brown, poorly-graded, fine-grained sand. Trace, medium to coarse grained sand. Approx. 5% fines.	
15						SM	[Cross-hatched]	FILL: Yellow brown, silty sand mixed with gravel and possible asphalt at 17.5 ft bgs.	15
			0.5	None None None	Wet	SC SM	[Dotted]	SILTY to CLAYEY SAND: Yellow brown. Soil below 17.5 ft bgs is native soil, fine to medium grained sand with approx. 20% fines.	
20								Soil sample collected at 18.5-19' and analyzed for PAHs.	20
								END OF BORING	

ENVIRO LOG 5 (5/27/04) 2362876.GPJ BARRLOG.GDT 7/22/04

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Remarks

Additional data may have been collected in the field which is not included on this log.

Client Ramsey-Washington Metro Watershed Dist. Drill Contractor Matrix Environmental, LLC

LOG OF GEOPROBE GP4
SHEET 1 OF 1

Project Name Noel Drive-Little Canada Drill Method Direct Push

Number 23/62-876 Drilling Started 6/28/04 Ended 6/28/04

Elevation N/A

Location Little Canada, Minnesota Logged By RTK/KAM

Total Depth 20.0

DEPTH FEET	SAMP. LENGTH & RECOVERY	SAMP. NUMBER	Headspace ppm	Discoloration- Odor- Sheen	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
0						OL/OH		FILL: Very dark brown, organic clay. Roots present. Grass at surface.	0
0			0.3	None None None	Moist	SC/CL		FILL: Brown clayey sand to sandy clay. Fine to medium grain with 5% coarse gravel and 50% fines. Slightly more sandy at 5 ft bgs. A 1" lens of grayish-brown organic soil at 3.2 ft bgs. Soil sampled collected at 1-2' and analyzed for lead.	0
5						OL/OH		FILL: Gray to brown organic soil. Some plant matter and trace fine gravel.	5
5			0.4	None None None	Moist	SC/CL		FILL: Brown clayey sand to sandy clay. Fine to medium grain with 5% coarse gravel, 50% fines. Soil sample collected at 8-8.5' - sample on hold at lab.	5
10						OL/OH		FILL: Gray to black, sandy peat with some silty sand. Plant material present, wet.	10
10			0.3	None None None	Moist	SP		SAND: Light gray, poorly graded, fine grained sand. 5% medium-coarse grained with trace fine gravel. Laminated, with some roots present at 18 ft bgs.	10
15						OL/OH		SANDY PEAT: Gray to black, sandy peat with some silty sand. Plant material present, wet. Soil sample collected at 14.5-15' - sample on hold at lab.	15
15			0.3	None None None	Moist-wet				15
20								END OF BORING	20

ENVIRO LOG 5 (5/27/04) 2362876.GPJ BARRLOG.GDT 7/22/04



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Remarks

Additional data may have been collected in the field which is not included on this log.

LOG OF GEOPROBE GP5

SHEET 1 OF 1

Client Ramsey-Washington Metro Watershed Dist. Drill Contractor Matrix Environmental, LLC

Project Name Noel Drive-Little Canada Drill Method Direct Push

Number 23/62-876 Drilling Started 6/28/04 Ended 6/28/04

Elevation N/A

Location Little Canada, Minnesota Logged By RTK/KAM

Total Depth 20.0

DEPTH FEET	SAMP. LENGTH & RECOVERY SAMP. NUMBER	Headspace ppm	Discoloration- Odor- Sheen	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET	
					OL	LITHOLOGY	FILL: Gray, organic silt with trace plant matter. Grass at surface.		
		1.3	None None None	Dry-moist	SC		FILL: Gray, broken old asphalt or street sweepings. Soil sample collected at 2-3' and analyzed for lead.		
5					SC		FILL: Brown/gray, clayey, fine grained sand with up to 10% medium to coarse grained. Trace fine gravel with some old asphalt/street sweepings at 5 ft bgs.		
		1.7	None None None	Moist			FILL: Grayish brown, clayey to silty sand. Medium to coarse grain sand with trace fine gravel. Broken old asphalt/street sweepings mixed throughout. Lens of sandy clay at 11'. Soil sample collected at 12' - sample on hold at lab.	5	
10					SC				10
		2.4	None None None	Moist					
15							FILL: Gray to brown/black, poorly graded sand with silt. Up to 50% fine grained sand with 10% fines. Old asphalt/street sweepings from 15-16 ft bgs. Possible native soils below 16 ft bgs. Soil sample collected at 16-19' and analyzed for lead.	15	
		0.5	None None None	Moist-wet	SC				
20							END OF BORING	20	

ENVIRO LOG 5 (5/27/04) 2362876.GPJ BARRLOG.GDT 7/22/04



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Remarks

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Client Ramsey-Washington Metro Watershed Dist. Drill Contractor Matrix Environmental, LLC

LOG OF GEOPROBE GP6

SHEET 1 OF 1

Project Name Noel Drive-Little Canada Drill Method Direct Push

Number 23/62-876 Drilling Started 6/28/04 Ended 6/28/04

Elevation N/A

Location Little Canada, Minnesota Logged By RTK/KAM

Total Depth 21.0

DEPTH FEET	SAMP. LENGTH & RECOVERY	SAMP. NUMBER	Headspace ppm	Discoloration- Odor- Sheen	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
						SP		FILL: Brown, medium to coarse grained sand, trace gravel. Grass at surface.	
			0.4	None None None	Moist	CL		FILL: Brown, sandy clay. Medium grained sand, 50% fines. Dark brown color at 4 ft bgs depth.	
5			0.4	None None None	Moist	SC		FILL: Brown to black, clayey sand. Fine to medium grained sand, less than 50% fines. Sand and gravel/street sweepings from 10-12.5 ft bgs. Piece of glass at 12.5 ft bgs. Slight organic/peat-like odor from 12.5-15 ft bgs. Soil sample collected at 7-8' and analyzed for lead. Soil sample collected at 12.5-13' - sample on hold at lab.	5
10			0.5	None Slight None	Moist	CL		FILL: Brown/black, sandy clay. Fine to medium grained sand with trace coarse grained sand.	10
15			0.8	None None None	Moist-wet	SP		SAND: Gray and brown, poorly graded sand. Fine grained with trace gravel. Sandy peat layer at 17.5 ft bgs. Water sample collected at 17-21' and analyzed for lead. Soil sample collected at 18-19' and analyzed for lead.	15
20								END OF BORING	20

ENVIRO LOG 5 (5/27/04) 2362876.GPJ_BARRLOG.GDT 7/22/04



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Remarks Poor recovery at 5-10 ft bgs due to rock obstructing cutting shoe.

Additional data may have been collected in the field which is not included on this log.

Client Ramsey-Washington Metro Watershed Dist. Drill Contractor Matrix Environmental, LLC
 Project Name Noel Drive-Little Canada Drill Method Direct Push
 Number 23/62-876 Drilling Started 6/28/04 Ended 6/28/04
 Location Little Canada, Minnesota Logged By RTK/KAM

LOG OF GEOPROBE GP7
SHEET 1 OF 1

Elevation N/A
Total Depth 20.0

DEPTH FEET	SAMP. LENGTH & RECOVERY	SAMP. NUMBER	Headspace ppm	Discoloration-Odor-Sheen	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
			0.5	None None None	Moist	CL		FILL: Brown, sandy clay. Fine to medium grained sand. Roots present. Grass at surface.	
5						SM		FILL: Brown, silty sand, fine to medium grained. About 10% fines.	5
			0.7	None None None	Moist	SC SM		Soil sample collected at 4-5' and analyzed for lead. FILL: Brown to light brown, clayey to silty sand. Fine to medium grained. Asphalt at 7.5 ft bgs and brick at 9 ft bgs. Soil sample collected at 8.5-9.5' and analyzed for PAHs. Soil sample collected at 9.5-10' and analyzed for lead.	
10								POORLY GRADED SAND WITH SILT: Pale brown/ brown to gray. Fine grained with trace medium to coarse grained. About 5% fines. Thin, dark colored laminations starting at 10' mark, natural soil. 2" lens of clay at 19'. Soil sample collected at 19-19.5' - sample on hold at lab.	10
15			0.6	None None None	Moist	SP			15
			0.6	None None None	Moist-wet				
20								END OF BORING	20

ENVIRO LOG 5 (5/27/04) 2362876.GPJ BARRLOG.GDT 7/22/04

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Remarks

Additional data may have been collected in the field which is not included on this log.

Client Ramsey-Washington Metro Watershed Dist. Drill Contractor Matrix Environmental, LLC

LOG OF GEOPROBE GP8

SHEET 1 OF 1

Project Name Noel Drive-Little Canada Drill Method Direct Push

Number 23/62-876 Drilling Started 6/28/04 Ended 6/28/04

Elevation N/A

Location Little Canada, Minnesota Logged By RTK/KAM

Total Depth 20.0

DEPTH FEET	SAMP. LENGTH & RECOVERY	SAMP. NUMBER	Headspace ppm	Discoloration- Odor- Sheen	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
			4.0	None None None	Moist	OL		FILL: Brown to light brown organic silt. Grass and roots present. Grass at surface.	
						SC SM		FILL: Brown, medium to fine grained clayey to silty sand.	
5						SP		FILL: Brown, poorly graded sand. 2" lens of gray clay at 4.5 ft bgs.	5
			17.4	None Slight/Hydrocarbon None	Moist	SC		Soil sample collected at 4-5' and analyzed for lead. FILL: Light brown, clayey sand with asphalt. Color grades to gray then black near 7 ft bgs.	
						SC SM		FILL: Dark gray to black, clayey sand with silt. Fine to medium grained sand with coarse grain increasing with depth.	10
			8.2	None Slight/Hydrocarbon None	Moist	SM		FILL: Gray to dark gray, silty sand with asphalt. Fine to medium grained with rootlets and light colored laminations near 14-15 ft bgs.	
15						SC		CLAYEY SAND: Brown, fine grained, clayey sand with up to 15% medium to coarse grained sand, trace gravel.	15
			0.5	None None None	Moist-wet	SM		SILTY SAND: Gray to gray brown, fine grained. Approx. 15% fines. Medium to coarse grained sand increase with depth to 25% and fines decrease to 5-7%. Soil sample collected at 16-17' - sample on hold at lab.	20
								END OF BORING	20

ENVIRO LOG 5 (5/27/04) 2362876.GPJ BARRLOG.GDT 7/22/04



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Remarks

Additional data may have been collected in the field which is not included on this log.

LOG OF GEOPROBE GP9

SHEET 1 OF 1

Client Ramsey-Washington Metro Watershed Dist. Drill Contractor Matrix Environmental, LLC

Project Name Noel Drive-Little Canada Drill Method Direct Push

Number 23/62-876 Drilling Started 6/28/04 Ended 6/28/04 Elevation N/A

Location Little Canada, Minnesota Logged By RTK/KAM Total Depth 20.0

DEPTH FEET	SAMP. LENGTH & RECOVERY	SAMP. NUMBER	Headspace ppm	Discoloration- Odor- Sheen	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
						OL/OH		FILL: Brown organic silt with trace roots, grass. Grass at surface.	
			0.4	None None None	Moist	SP SC		FILL: Brown to light brown, poorly graded sand with clay. Medium to coarse grained sand with approx. 10% fines. Soil sample collected at 2-3' and analyzed for lead.	
5						SC		FILL: Dark brown to black, clayey sand with asphalt. Fine to medium grained sand. Solid piece of asphalt at 6 ft bgs. Soil sample collected at 8-9' and analyzed for lead.	5
			0.5	None None None	Moist	SC			
10						SM		FILL: Brown to light brown silty sand. Medium grained sand, with about 15% fines.	10
			0.5	None None None	Moist	SM			
15						CL		CLAY WITH SAND: Brownish-gray clay with sand. Fine to medium grained sand with trace coarse grained sand and gravel.	15
			0.4	None None None	Moist-wet	SM		SILTY SAND: Brownish-gray silty sand grades to dark brown. At 19.5 ft bgs, a 1 inch band of rust colored silty sand. Fines approx. 15%, up to 20% coarse grained sand, fine gravel in the dark brown material. Soil sample collected at 16.5-17.5' - sample on hold at lab.	20
20								END OF BORING	20

ENVIRO LOG 5 (5/27/04) 2362876.GPJ BARRLOG.GDT 7/22/04



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Remarks

Additional data may have been collected in the field which is not included on this log.

Client Ramsey-Washington Metro Watershed Dist. Drill Contractor Matrix Environmental, LLC

LOG OF GEOPROBE GP10
SHEET 1 OF 1

Project Name Noel Drive-Little Canada Drill Method Direct Push

Number 23/62-876 Drilling Started 6/28/04 Ended 6/28/04

Elevation N/A

Location Little Canada, Minnesota Logged By RTK/KAM

Total Depth 20.0

DEPTH FEET	SAMP. LENGTH & RECOVERY	SAMP. NUMBER	Headspace ppm	Discoloration- Odor- Sheen	MOISTURE	ASTM	LITHOLOGY	DESCRIPTION	DEPTH FEET
			0.6	None None None	Moist	SC SM	LITHOLOGY	FILL: Light brown to brown, sand with clay and silt. Fine to medium grained sand with about 10% fines. Grass at surface.	
								Soil sample collected at 0-2' and analyzed for lead.	
5						SP		FILL: Gray sand grading to black with asphalt. Fine to medium grained sand with trace gravel.	5
						SP		FILL: Dark brown to black sand with asphalt gravel. Fine to medium grained.	
			0.7	None None None	Moist			FILL: Brown fine grained sand grades to reddish gray with depth. Fine to medium grained sand. Dark reddish color at 14.5 ft bgs.	
10						SP		Soil sample collected at 8-10' - sample on hold at lab.	10
			0.4	None None None	Moist				
15								SILTY SAND: Reddish gray sand with silt. Medium to coarse grained sand with 15% fines.	15
			0.5	None None None	Wet	SM		Soil sample collected at 15-16' and analyzed for lead.	15
20								END OF BORING	20

ENVIRO LOG 5 (5/27/04) 2362876.GPJ BARRLOG.GDT 7/22/04



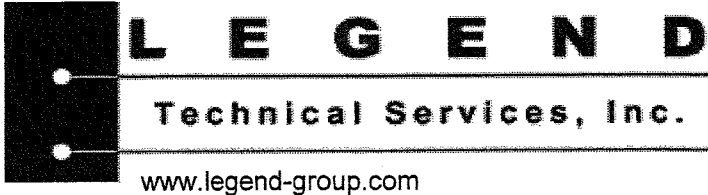
Barr Engineering
4700 W 77th Street
Minneapolis, MN 55435
Telephone: 952-832-2600
Fax: 952-832-2601

Remarks

Additional data may have been collected in the field which is not included on this log.

Appendix B

Analytical Laboratory Report



775 Vandalia Street
St. Paul, MN 55114
Tel: 651.642.1150
Fax: 651.642.1239

July 08, 2004

Ms. Marta Nelson
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

RECEIVED
JUL 14 2004
BARR
ENGINEERING CO

Work Order Number: 0401544
RE: 23/62-876KAL060

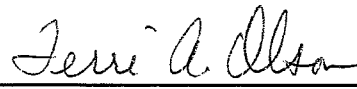
Enclosed are the results of analyses for samples received by the laboratory on 06/29/04. If you have any questions concerning this report, please feel free to contact me.

All samples will be retained by LEGEND for 30 days from the date of this report and then discarded unless other arrangements are made.

Minnesota Certification # 027-123-295

Prepared by,
LEGEND TECHNICAL SERVICES, INC


Chris Bremer
Laboratory Director


Terri Olson
QA/QC Coordinator

LEGEND Technical Services, Inc

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Barr Engineering Co.
 4700 W 77th St
 Minneapolis MN, 55435

Project: 23/62-876KAL060
 Project Number: 23/62-876KAL060
 Project Manager: Ms. Marta Nelson

Date Reported:
 July 08, 2004

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GP-7 8.5-9.5	0401544-01	Soil	06/28/04 15:41	06/29/04 16:45
GP-6 7-8'	0401544-03	Soil	06/28/04 14:57	06/29/04 16:45
GP-8 4-5'	0401544-05	Soil	06/28/04 16:40	06/29/04 16:45
GP-2 4-5'	0401544-06	Soil	06/28/04 10:51	06/29/04 16:45
GP-10 15-16'	0401544-07	Soil	06/28/04 17:55	06/29/04 16:45
GP-5 2-3'	0401544-08	Soil	06/28/04 13:46	06/29/04 16:45
GP-1 0-2'	0401544-09	Soil	06/28/04 09:58	06/29/04 16:45
GP-10 0-2'	0401544-10	Soil	06/28/04 17:34	06/29/04 16:45
GP-9 8-9'	0401544-12	Soil	06/28/04 17:10	06/29/04 16:45
GP-1 14-15'	0401544-14	Soil	06/28/04 10:01	06/29/04 16:45
GP-9 2-3'	0401544-15	Soil	06/28/04 17:15	06/29/04 16:45
GP-1 16-20'	0401544-17	Groundwater	06/28/04 09:40	06/29/04 16:45
GP-6 17-21'	0401544-18	Groundwater	06/28/04 15:00	06/29/04 16:45

Shipping container information

Default Cooler

Temperature: 10.2

Received on ice: Yes
 Received on melt water: No
 Custody seals: No

Temperature blank was present
 Ambient: No

Received on blue ice: No
 Acceptable (IH/ISO only): No

Case Narrative:

Barr Engineering Co.
4700 W 77th St
Minneapolis MN, 55435

Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta Nelson

Date Reported:
July 08, 2004

DISSOLVED METALS ANALYSIS LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
GP-1 16-20' (0401544-17) Groundwater Sampled: 06/28/04 09:40 Received: 06/29/04 16:45										
Lead	<0.0030	0.0030	0.00046	mg/L	1	B4G0710	07/07/04	07/07/04	EPA 6010B	
GP-6 17-21' (0401544-18) Groundwater Sampled: 06/28/04 15:00 Received: 06/29/04 16:45										
Lead	<0.0030	0.0030	0.00046	mg/L	1	B4G0710	07/07/04	07/07/04	EPA 6010B	

Barr Engineering Co.
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Project: 23/62-876KAL060
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Date Reported:
July 08, 2004

TOTAL METALS ANALYSIS LEGEND Technical Services, Inc

Analyte	Reporting Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GP-6 7-8' (0401544-03) Soil Sampled: 06/28/04 14:57 Received: 06/29/04 16:45										
Lead	7.3	1.1	0.024	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	
GP-8 4-5' (0401544-05) Soil Sampled: 06/28/04 16:40 Received: 06/29/04 16:45										
Lead	4.8	1.1	0.025	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	
GP-2 4-5' (0401544-06) Soil Sampled: 06/28/04 10:51 Received: 06/29/04 16:45										
Lead	7.1	1.1	0.026	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	
GP-10 15-16' (0401544-07) Soil Sampled: 06/28/04 17:55 Received: 06/29/04 16:45										
Lead	2.1	1.2	0.027	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	
GP-5 2-3' (0401544-08) Soil Sampled: 06/28/04 13:46 Received: 06/29/04 16:45										
Lead	8.2	1.1	0.025	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	
GP-1 0-2' (0401544-09) Soil Sampled: 06/28/04 09:58 Received: 06/29/04 16:45										
Lead	12	1.1	0.025	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	
GP-10 0-2' (0401544-10) Soil Sampled: 06/28/04 17:34 Received: 06/29/04 16:45										
Lead	10	1.1	0.026	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	
GP-9 8-9' (0401544-12) Soil Sampled: 06/28/04 17:10 Received: 06/29/04 16:45										
Lead	7.8	1.2	0.028	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	
GP-1 14-15' (0401544-14) Soil Sampled: 06/28/04 10:01 Received: 06/29/04 16:45										
Lead	6.4	1.1	0.026	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	

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July 08, 2004

TOTAL METALS ANALYSIS LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
GP-9 2-3' (0401544-15) Soil Sampled: 06/28/04 17:15 Received: 06/29/04 16:45										
Lead	5.6	1.1	0.024	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	

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Project: 23/62-876KAL060
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Date Reported:
July 08, 2004

PAH 8270C
LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
GP-7 8.5-9.5 (0401544-01) Soil Sampled: 06/28/04 15:41 Received: 06/29/04 16:45										
2-Chloronaphthalene	<0.41	0.41	0.054	mg/kg dry	1	B4F3014	06/30/04	07/01/04	8270C	
2-Methylnaphthalene	<0.41	0.41	0.070	mg/kg dry	1	"	"	"	"	
Acenaphthene	<0.41	0.41	0.053	mg/kg dry	1	"	"	"	"	
Acenaphthylene	<0.41	0.41	0.053	mg/kg dry	1	"	"	"	"	
Anthracene	<0.41	0.41	0.059	mg/kg dry	1	"	"	"	"	
Benzo (a) anthracene	<0.41	0.41	0.060	mg/kg dry	1	"	"	"	"	
Benzo (a) pyrene	<0.41	0.41	0.059	mg/kg dry	1	"	"	"	"	
Benzo (b) fluoranthene	<0.41	0.41	0.063	mg/kg dry	1	"	"	"	"	
Benzo (g,h,i) perylene	<0.41	0.41	0.070	mg/kg dry	1	"	"	"	"	
Benzo (k) fluoranthene	<0.41	0.41	0.059	mg/kg dry	1	"	"	"	"	
Chrysene	<0.41	0.41	0.068	mg/kg dry	1	"	"	"	"	
Dibenz (a,h) anthracene	<0.41	0.41	0.069	mg/kg dry	1	"	"	"	"	
Fluoranthene	<0.41	0.41	0.070	mg/kg dry	1	"	"	"	"	
Fluorene	<0.41	0.41	0.042	mg/kg dry	1	"	"	"	"	
Indeno (1,2,3-cd) pyrene	<0.41	0.41	0.068	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.41	0.41	0.056	mg/kg dry	1	"	"	"	"	
Phenanthrene	<0.41	0.41	0.067	mg/kg dry	1	"	"	"	"	
Pyrene	<0.41	0.41	0.063	mg/kg dry	1	"	"	"	"	
Surrogate: 2-Fluorobiphenyl	87.8			38.1-115 %		"	"	"	"	
Surrogate: Nitrobenzene-d5	71.5			39.4-115 %		"	"	"	"	
Surrogate: Terphenyl-d14	119			36.1-115 %		"	"	"	"	S-04

Barr Engineering Co.
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Minneapolis MN, 55435

Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta Nelson

Date Reported:
July 08, 2004

PERCENT SOLIDS LEGEND Technical Services, Inc

Analyte	Reporting Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
GP-7 8.5-9.5 (0401544-01) Soil Sampled: 06/28/04 15:41 Received: 06/29/04 16:45										
% Solids	81			%	1	B4G0111	07/01/04	07/01/04	% calculation	
GP-6 7-8' (0401544-03) Soil Sampled: 06/28/04 14:57 Received: 06/29/04 16:45										
% Solids	94			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-8 4-5' (0401544-05) Soil Sampled: 06/28/04 16:40 Received: 06/29/04 16:45										
% Solids	91			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-2 4-5' (0401544-06) Soil Sampled: 06/28/04 10:51 Received: 06/29/04 16:45										
% Solids	89			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-10 15-16' (0401544-07) Soil Sampled: 06/28/04 17:55 Received: 06/29/04 16:45										
% Solids	86			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-5 2-3' (0401544-08) Soil Sampled: 06/28/04 13:46 Received: 06/29/04 16:45										
% Solids	93			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-1 0-2' (0401544-09) Soil Sampled: 06/28/04 09:58 Received: 06/29/04 16:45										
% Solids	91			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-10 0-2' (0401544-10) Soil Sampled: 06/28/04 17:34 Received: 06/29/04 16:45										
% Solids	89			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-9 8-9' (0401544-12) Soil Sampled: 06/28/04 17:10 Received: 06/29/04 16:45										
% Solids	83			%	1	B4F3007	06/30/04	06/30/04	% calculation	

Barr Engineering Co.
4700 W 77th St
Minneapolis MN, 55435Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta NelsonDate Reported:
July 08, 2004**PERCENT SOLIDS**
LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
GP-1 14-15' (0401544-14) Soil Sampled: 06/28/04 10:01 Received: 06/29/04 16:45										
% Solids	90			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-9 2-3' (0401544-15) Soil Sampled: 06/28/04 17:15 Received: 06/29/04 16:45										
% Solids	94			%	1	B4F3007	06/30/04	06/30/04	% calculation	

Barr Engineering Co.
4700 W 77th St
Minneapolis MN, 55435

Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta Nelson

Date Reported:
July 08, 2004

DISSOLVED METALS ANALYSIS - Quality Control LEGEND Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4G0710 - EPA 200.7/3005A Digestion										
Blank (B4G0710-BLK1)										
Prepared & Analyzed: 07/07/04										
Lead	<0.0030	0.0030	mg/L							
LCS (B4G0710-BS1)										
Prepared & Analyzed: 07/07/04										
Lead	0.397	0.0030	mg/L	0.400		99.2	80-120			
LCS Dup (B4G0710-BSD1)										
Prepared & Analyzed: 07/07/04										
Lead	0.405	0.0030	mg/L	0.400		101	80-120	2.00	20	
Matrix Spike (B4G0710-MS1)										
Source: 0401544-17 Prepared & Analyzed: 07/07/04										
Lead	0.385	0.0030	mg/L	0.400	<0.0030	96.2	75-125			
Matrix Spike Dup (B4G0710-MSD1)										
Source: 0401544-17 Prepared & Analyzed: 07/07/04										
Lead	0.393	0.0030	mg/L	0.400	<0.0030	98.2	75-125	2.06	20	

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July 08, 2004

TOTAL METALS ANALYSIS - Quality Control LEGEND Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4F3001 - EPA 3050B										
Blank (B4F3001-BLK1) Prepared: 06/30/04 Analyzed: 07/01/04										
Lead	<1.0	1.0	mg/kg wet							
LCS (B4F3001-BS1) Prepared: 06/30/04 Analyzed: 07/01/04										
Lead	40.1	1.0	mg/kg wet	40.0		100	80-120			
LCS Dup (B4F3001-BSD1) Prepared: 06/30/04 Analyzed: 07/01/04										
Lead	40.6	1.0	mg/kg wet	40.0		102	80-120	1.24	20	
Matrix Spike (B4F3001-MS1) Source: 0401543-04 Prepared: 06/30/04 Analyzed: 07/01/04										
Lead	51.5	1.1	mg/kg dry	45.5	8.10	95.4	75-125			
Matrix Spike Dup (B4F3001-MSD1) Source: 0401543-04 Prepared: 06/30/04 Analyzed: 07/01/04										
Lead	48.5	1.1	mg/kg dry	45.5	8.10	88.8	75-125	6.00	20	

Barr Engineering Co.
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PAH 8270C - Quality Control
LEGEND Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
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Batch B4F3014 - EPA 3545 ASE Extraction

Prepared & Analyzed: 06/30/04

Blank (B4F3014-BLK1)

2-Chloronaphthalene	<0.33	0.33	mg/kg wet							
1-Methylnaphthalene	<0.33	0.33	mg/kg wet							
Acenaphthene	<0.33	0.33	mg/kg wet							
Acenaphthylene	<0.33	0.33	mg/kg wet							
Anthracene	<0.33	0.33	mg/kg wet							
Benzo (a) anthracene	<0.33	0.33	mg/kg wet							
Benzo (a) pyrene	<0.33	0.33	mg/kg wet							
Benzo (b) fluoranthene	<0.33	0.33	mg/kg wet							
Benzo (g,h,i) perylene	<0.33	0.33	mg/kg wet							
Benzo (k) fluoranthene	<0.33	0.33	mg/kg wet							
Chrysene	<0.33	0.33	mg/kg wet							
Dibenz (a,h) anthracene	<0.33	0.33	mg/kg wet							
Fluoranthene	<0.33	0.33	mg/kg wet							
Fluorene	<0.33	0.33	mg/kg wet							
Indeno (1,2,3-cd) pyrene	<0.33	0.33	mg/kg wet							
Naphthalene	<0.33	0.33	mg/kg wet							
Phenanthrene	<0.33	0.33	mg/kg wet							
Pyrene	<0.33	0.33	mg/kg wet							
Surrogate: 2-Fluorobiphenyl	5.68		mg/kg wet	6.67		85.2	38.1-115			
Surrogate: Nitrobenzene-d5	5.62		mg/kg wet	6.67		84.3	39.4-115			
Surrogate: Terphenyl-d14	5.35		mg/kg wet	6.67		80.2	36.1-115			

LCS (B4F3014-BS1)

Prepared & Analyzed: 06/30/04

Acenaphthene	5.08	0.33	mg/kg wet	6.67		76.2	37.5-115			
Pyrene	3.78	0.33	mg/kg wet	6.67		56.7	30.2-115			
Surrogate: 2-Fluorobiphenyl	5.34		mg/kg wet	6.67		80.1	38.1-115			

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July 08, 2004

PAH 8270C - Quality Control LEGEND Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
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Batch B4F3014 - EPA 3545 ASE Extraction

LCS (B4F3014-BS1)

Prepared & Analyzed: 06/30/04

Surrogate: Nitrobenzene-d5	5.77		mg/kg wet	6.67		86.5	39.4-115			
Surrogate: Terphenyl-d14	4.85		mg/kg wet	6.67		72.7	36.1-115			

Matrix Spike (B4F3014-MS1)

Source: 0401525-01 Prepared: 06/30/04 Analyzed: 07/01/04

Acenaphthene	4.65	0.35	mg/kg dry	7.10	<0.35	65.5	30-115			
Pyrene	3.51	0.35	mg/kg dry	7.10	<0.35	49.4	30-115			
Surrogate: 2-Fluorobiphenyl	5.08		mg/kg dry	7.10		71.5	38.1-115			
Surrogate: Nitrobenzene-d5	5.38		mg/kg dry	7.10		75.8	39.4-115			
Surrogate: Terphenyl-d14	4.90		mg/kg dry	7.10		69.0	36.1-115			

Matrix Spike Dup (B4F3014-MSD1)

Source: 0401525-01 Prepared: 06/30/04 Analyzed: 07/01/04

Acenaphthene	3.62	0.35	mg/kg dry	7.08	<0.35	51.1	30-115	24.9	40	
Pyrene	2.79	0.35	mg/kg dry	7.08	<0.35	39.4	30-115	22.9	37.8	
Surrogate: 2-Fluorobiphenyl	3.89		mg/kg dry	7.08		54.9	38.1-115			
Surrogate: Nitrobenzene-d5	4.26		mg/kg dry	7.08		60.2	39.4-115			
Surrogate: Terphenyl-d14	3.87		mg/kg dry	7.08		54.7	36.1-115			

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Date Reported:
July 08, 2004

PERCENT SOLIDS - Quality Control LEGEND Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4F3007 - General Preparation										
Duplicate (B4F3007-DUP1)		Source: 0401525-01		Prepared & Analyzed: 06/30/04						
% Solids	92.0		%		94.0			2.15	20	
Duplicate (B4F3007-DUP2)		Source: 0401543-11		Prepared & Analyzed: 06/30/04						
% Solids	92.0		%		91.0			1.09	20	
Duplicate (B4F3007-DUP3)		Source: 0401544-15		Prepared & Analyzed: 06/30/04						
% Solids	95.0		%		94.0			1.06	20	
Batch B4G0111 - General Preparation										
Duplicate (B4G0111-DUP1)		Source: 0401524-01		Prepared & Analyzed: 07/01/04						
% Solids	95.0		%		96.0			1.05	20	
Duplicate (B4G0111-DUP2)		Source: 0401485-05		Prepared & Analyzed: 07/01/04						
% Solids	83.0		%		83.0			0.00	20	
Duplicate (B4G0111-DUP3)		Source: 0401561-01		Prepared & Analyzed: 07/01/04						
% Solids	59.0		%		63.0			6.56	20	

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Project: 23/62-876KAL060
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Date Reported:
July 08, 2004

Notes and Definitions

- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- < Less than value listed
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- NA Not applicable. The %RPD is not calculated from values less than the reporting limit.

#0401544

Chain of Custody

4700 West 77th Street
 Minneapolis, MN 55435-4803
 (952) 832-2600



Project Number

2.3 ✓ 62 - 876 KAL 060

No 16272

Sample Identification	Collection Date	Collection Time	Matrix				Type
			Water	Soil	Other	Grab	
1. GP-7 2.5-9.5	6/23/04	1541	X			X	OC
2. GP-10 8-10		1752					Comp.
3. GP-6 7-8'		1457					Grab
4. GP-8 16-17'		1636					Other
5. GP-8 4-5'		1640					Soil
6. GP-2 4-5'		1651					Water
7. GP-10 15-16'		1755					
8. GP-5 2-3'		1346					
9. GP-1 0-2'		958					
10. GP-10 0-2'		1734					
11. GP-8 13-15'		1673					
12. GP-9 8-9'		1710					
13. GP-5 12'		1430					
14. GP-1 14-15'		1001					
15. GP-9 2-3'		1715					
16. GP-4 8-8.5'		1211					

Sampled By:

Robert Ferret

Remarks:

Number of Containers/Preservative													Total No. of Containers						
Volatile Organic (Unpres.)	Volatile Organic (Pres.)	Semivolatile Organic	Total Metals (HNO ₃)	Dissolved Metals (HNO ₃)	General (Unpreserved)	Cyanide (NaOH, Asc. Acid)	Nutrients (H ₂ SO ₄)	Oil and Grease (H ₂ SO ₄)	TOC (H ₂ SO ₄)	Sulfide (Zn Acetate)	Dioxin	Whitpak		Total Phenol (H ₂ SO ₄)	Methane	(HCL)/DRO, 1L Glass	Lugols, Glass, Amber	Formalin, Glass	Swamp Rating (Unpres.)
																			1
																			2
																			2
																			2
																			2
																			2
																			2
																			2
																			2
																			2
																			2
																			2
																			2

Reinquired By: Robert Ferret

Date: 6/29/04

Time: 2:00p

Received by: VY Ag Jeger

Date: 6/29/04

Time: 6:45

Project Manager: EKK
 Project Contact: Marla Nelson
 Laboratory: Kayenal
 Remarks/Analysis Required: Method 6010 for all lead
 PAH Method 8270
 Hold
 Lead
 Hold
 Lead
 Hold
 Lead
 Hold
 Lead
 Hold
 Lead
 Hold

Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator
 Air Bill Number: 0418.10.202
 Rev. 06/01/01

0401544

Chain of Custody

4700 West 77th Street
 Minneapolis, MN 55435-4803
 (952) 832-2600

BARR

Project Number

23 ✓ 62 - 876 KAL 060

NO 16273

Sample Identification	Collection		Matrix				Type
	Date	Time	Water	Soil	Other	Grab	
1. 6A-1 16-20'	6/28/04	940	X			X	QC
2. 6A-6 17-21'	6/28/04	1500	X			X	
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							

Sampled By: *Fobert Kencar*
 Remarks:

Number of Containers/Preservative												
Volatiles Organic (Unpres.)												
Volatiles Organic (Pres.)												
Semivolatile Organic												
Total Metals (HNO ₃)												
Dissolved Metals (HNO ₃)												
General (Unpreserved)												
Cyanide (NaOH, Asc. Acid)												
Nutrients (H ₂ SO ₄)												
Oil and Grease (H ₂ SO ₄)												
TOC (H ₂ SO ₄)												
Sulfide (Zn Acetate)												
Dioxin												
Whirlpak												
Total Phenol (H ₂ SO ₄)												
Methane												
(HCL)/DRO, 1L Glass												
Lugols, Glass, Amber												
Formalin, Glass												
Sieve (e.g. Plastic (Waters))												
Total No. of Containers	2											

Relinquished By: *Fobert Kencar* Date: *6/29/04* Time: *2:00 pm*
 Relinquished By: _____ Date: _____ Time: _____
 Received by: *Legend* Date: *6/29/04* Time: *10:45*
 Received by: _____ Date: _____ Time: _____

Air Bill Number: _____

LEGEND

Technical Services, Inc.

www.legend-group.com

775 Vandalia Street
St. Paul, MN 55114
Tel: 651.642.1150
Fax: 651.642.1239

July 14, 2004

Ms. Marta Nelson
Barr Engineering Co.
4700 W 77th St
Minneapolis, MN 55435

RECEIVED

JUL 19 2004

BARR
ENGINEERING CO.

Work Order Number: 0401543
RE: 23/62-876KAL060

Enclosed are the results of analyses for samples received by the laboratory on 06/29/04. If you have any questions concerning this report, please feel free to contact me.

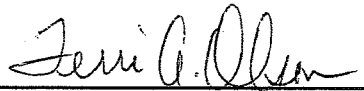
All samples will be retained by LEGEND for 30 days from the date of this report and then discarded unless other arrangements are made.

Minnesota Certification # 027-123-295

Prepared by,
LEGEND TECHNICAL SERVICES, INC



Chris Bremer
Laboratory Director



Terri Olson
QA/QC Coordinator

LEGEND Technical Services, Inc

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Barr Engineering Co.
4700 W 77th St
Minneapolis MN, 55435

Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta Nelson

Date Reported:
July 14, 2004

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GP-1 4.5	0401543-02	Soil	06/28/04 10:15	06/29/04 16:45
GP-5 16-19	0401543-04	Soil	06/28/04 14:15	06/29/04 16:45
GP-8 13.5-14	0401543-07	Soil	06/28/04 16:50	06/29/04 16:45
GP-3 11-13	0401543-08	Soil	06/28/04 11:33	06/29/04 16:45
GP-7 9.5-10	0401543-09	Soil	06/28/04 16:06	06/29/04 16:45
GP-3 1-2'	0401543-10	Soil	06/28/04 11:24	06/29/04 16:45
GP-6 18-19	0401543-11	Soil	06/28/04 15:07	06/29/04 16:45
GP-2 17'	0401543-12	Soil	06/28/04 10:54	06/29/04 16:45
GP-7 4-5'	0401543-13	Soil	06/28/04 15:35	06/29/04 16:45
GP-3 18.5-19	0401543-14	Soil	06/28/04 11:23	06/29/04 16:45
GP-3 3-4	0401543-15	Soil	06/28/04 11:16	06/29/04 16:45
GP-4 1-2'	0401543-16	Soil	06/28/04 12:30	06/29/04 16:45
Trip Blank	0401543-17	Soil	06/28/04 17:21	06/29/04 16:45

Shipping container information

Default Cooler

Temperature: 10.2

Received on ice: Yes
Received on melt water: No
Custody seals: No

Temperature blank was present
Ambient: No

Received on blue ice: No
Acceptable (IH/ISO only): No

Case Narrative:

Barr Engineering Co.
 4700 W 77th St
 Minneapolis MN, 55435

Project: 23/62-876KAL060
 Project Number: 23/62-876KAL060
 Project Manager: Ms. Marta Nelson

Date Reported:
 July 14, 2004

TOTAL METALS ANALYSIS

LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
GP-5 16-19 (0401543-04) Soil Sampled: 06/28/04 14:15 Received: 06/29/04 16:45										
Lead	8.1	1.1	0.026	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	
GP-3 11-13 (0401543-08) Soil Sampled: 06/28/04 11:33 Received: 06/29/04 16:45										
Lead	2.0	1.1	0.025	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	
GP-7 9.5-10 (0401543-09) Soil Sampled: 06/28/04 16:06 Received: 06/29/04 16:45										
Lead	23	1.1	0.026	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	
GP-3 1-2' (0401543-10) Soil Sampled: 06/28/04 11:24 Received: 06/29/04 16:45										
Lead	19	1.1	0.026	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	
GP-6 18-19 (0401543-11) Soil Sampled: 06/28/04 15:07 Received: 06/29/04 16:45										
Lead	2.3	1.1	0.025	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	
GP-2 17' (0401543-12) Soil Sampled: 06/28/04 10:54 Received: 06/29/04 16:45										
Lead	4.1	1.2	0.027	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	
GP-7 4-5' (0401543-13) Soil Sampled: 06/28/04 15:35 Received: 06/29/04 16:45										
Lead	10	1.1	0.024	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	
GP-4 1-2' (0401543-16) Soil Sampled: 06/28/04 12:30 Received: 06/29/04 16:45										
Lead	6.9	1.1	0.025	mg/kg dry	1	B4F3001	06/30/04	07/01/04	EPA 6010B	

Barr Engineering Co.
4700 W 77th St
Minneapolis MN, 55435

Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta Nelson

Date Reported:
July 14, 2004

PAH 8270C LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
GP-3 18.5-19 (0401543-14) Soil Sampled: 06/28/04 11:23 Received: 06/29/04 16:45										
2-Chloronaphthalene	<0.38	0.38	0.051	mg/kg dry	1	B4F3014	06/30/04	07/01/04	8270C	
2-Methylnaphthalene	<0.38	0.38	0.066	mg/kg dry	1	"	"	"	"	
Acenaphthene	<0.38	0.38	0.049	mg/kg dry	1	"	"	"	"	
Acenaphthylene	<0.38	0.38	0.049	mg/kg dry	1	"	"	"	"	
Anthracene	<0.38	0.38	0.055	mg/kg dry	1	"	"	"	"	
Benzo (a) anthracene	<0.38	0.38	0.056	mg/kg dry	1	"	"	"	"	
Benzo (a) pyrene	<0.38	0.38	0.055	mg/kg dry	1	"	"	"	"	
Benzo (b) fluoranthene	<0.38	0.38	0.059	mg/kg dry	1	"	"	"	"	
Benzo (g,h,i) perylene	<0.38	0.38	0.066	mg/kg dry	1	"	"	"	"	
Benzo (k) fluoranthene	<0.38	0.38	0.055	mg/kg dry	1	"	"	"	"	
Chrysene	<0.38	0.38	0.063	mg/kg dry	1	"	"	"	"	
Dibenz (a,h) anthracene	<0.38	0.38	0.064	mg/kg dry	1	"	"	"	"	
Fluoranthene	<0.38	0.38	0.066	mg/kg dry	1	"	"	"	"	
Fluorene	<0.38	0.38	0.039	mg/kg dry	1	"	"	"	"	
Indeno (1,2,3-cd) pyrene	<0.38	0.38	0.063	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.38	0.38	0.052	mg/kg dry	1	"	"	"	"	
Phenanthrene	<0.38	0.38	0.062	mg/kg dry	1	"	"	"	"	
Pyrene	<0.38	0.38	0.059	mg/kg dry	1	"	"	"	"	
Surrogate: 2-Fluorobiphenyl	72.6			38.1-115 %		"	"	"	"	
Surrogate: Nitrobenzene-d5	69.8			39.4-115 %		"	"	"	"	
Surrogate: Terphenyl-d14	75.7			36.1-115 %		"	"	"	"	

GP-3 3-4 (0401543-15) Soil Sampled: 06/28/04 11:16 Received: 06/29/04 16:45

2-Chloronaphthalene	<1.4	1.4	0.19	mg/kg dry	4	B4F3014	06/30/04	07/01/04	8270C	
2-Methylnaphthalene	<1.4	1.4	0.24	mg/kg dry	4	"	"	"	"	
Acenaphthene	<1.4	1.4	0.18	mg/kg dry	4	"	"	"	"	
Acenaphthylene	<1.4	1.4	0.18	mg/kg dry	4	"	"	"	"	
Anthracene	<1.4	1.4	0.20	mg/kg dry	4	"	"	"	"	
Benzo (a) anthracene	<1.4	1.4	0.21	mg/kg dry	4	"	"	"	"	
Benzo (a) pyrene	<1.4	1.4	0.20	mg/kg dry	4	"	"	"	"	
Benzo (b) fluoranthene	<1.4	1.4	0.22	mg/kg dry	4	"	"	"	"	
Benzo (g,h,i) perylene	<1.4	1.4	0.24	mg/kg dry	4	"	"	"	"	

Barr Engineering Co.
4700 W 77th St
Minneapolis MN, 55435

Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta Nelson

Date Reported:
July 14, 2004

PAH 8270C
LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
GP-3 3-4 (0401543-15) Soil Sampled: 06/28/04 11:16 Received: 06/29/04 16:45										
Benzo (k) fluoranthene	<1.4	1.4	0.20	mg/kg dry	4	B4F3014	06/30/04	07/01/04	8270C	
Chrysene	<1.4	1.4	0.23	mg/kg dry	4	"	"	"	"	
Dibenz (a,h) anthracene	<1.4	1.4	0.24	mg/kg dry	4	"	"	"	"	
Fluoranthene	<1.4	1.4	0.24	mg/kg dry	4	"	"	"	"	
Fluorene	<1.4	1.4	0.14	mg/kg dry	4	"	"	"	"	
Indeno (1,2,3-cd) pyrene	<1.4	1.4	0.23	mg/kg dry	4	"	"	"	"	
Naphthalene	<1.4	1.4	0.19	mg/kg dry	4	"	"	"	"	
Phenanthrene	<1.4	1.4	0.23	mg/kg dry	4	"	"	"	"	
Pyrene	<1.4	1.4	0.22	mg/kg dry	4	"	"	"	"	
Surrogate: 2-Fluorobiphenyl	63.7			38.1-115 %		"	"	"	"	
Surrogate: Nitrobenzene-d5	65.0			39.4-115 %		"	"	"	"	
Surrogate: Terphenyl-d14	86.9			36.1-115 %		"	"	"	"	

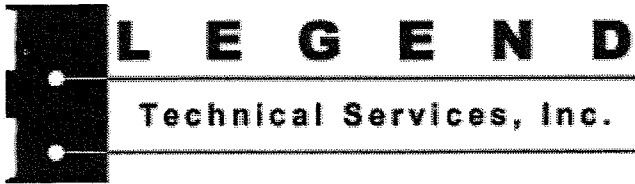
Barr Engineering Co.
4700 W 77th St
Minneapolis MN, 55435

Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta Nelson

Date Reported:
July 14, 2004

PERCENT SOLIDS LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
GP-1 4.5 (0401543-02) Soil Sampled: 06/28/04 10:15 Received: 06/29/04 16:45										
% Solids	94			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-5 16-19 (0401543-04) Soil Sampled: 06/28/04 14:15 Received: 06/29/04 16:45										
% Solids	88			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-8 13.5-14 (0401543-07) Soil Sampled: 06/28/04 16:50 Received: 06/29/04 16:45										
% Solids	87			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-3 11-13 (0401543-08) Soil Sampled: 06/28/04 11:33 Received: 06/29/04 16:45										
% Solids	93			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-7 9.5-10 (0401543-09) Soil Sampled: 06/28/04 16:06 Received: 06/29/04 16:45										
% Solids	87			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-3 1-2' (0401543-10) Soil Sampled: 06/28/04 11:24 Received: 06/29/04 16:45										
% Solids	88			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-6 18-19 (0401543-11) Soil Sampled: 06/28/04 15:07 Received: 06/29/04 16:45										
% Solids	91			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-2 17' (0401543-12) Soil Sampled: 06/28/04 10:54 Received: 06/29/04 16:45										
% Solids	84			%	1	B4F3007	06/30/04	06/30/04	% calculation	
GP-7 4-5' (0401543-13) Soil Sampled: 06/28/04 15:35 Received: 06/29/04 16:45										
% Solids	95			%	1	B4F3007	06/30/04	06/30/04	% calculation	



775 Vandalia Street
 St Paul, MN 55114
 651.642.1150

Barr Engineering Co.
 4700 W 77th St
 Minneapolis MN, 55435

Project: 23/62-876KAL060
 Project Number: 23/62-876KAL060
 Project Manager: Ms. Marta Nelson

Date Reported:
 July 14, 2004

PERCENT SOLIDS
LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
GP-3 18.5-19 (0401543-14) Soil Sampled: 06/28/04 11:23 Received: 06/29/04 16:45										
% Solids	87			%	1	B4G0807	07/08/04	07/08/04	% calculation	
GP-3 3-4 (0401543-15) Soil Sampled: 06/28/04 11:16 Received: 06/29/04 16:45										
% Solids	94			%	1	B4G0807	07/08/04	07/08/04	% calculation	
GP-4 1-2' (0401543-16) Soil Sampled: 06/28/04 12:30 Received: 06/29/04 16:45										
% Solids	92			%	1	B4F3007	06/30/04	06/30/04	% calculation	

Barr Engineering Co.
4700 W 77th St
Minneapolis MN, 55435

Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta Nelson

Date Reported:
July 14, 2004

VOC GCMS 8260B LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
GP-1 4.5 (0401543-02) Soil Sampled: 06/28/04 10:15 Received: 06/29/04 16:45 W-05										
1,1,1,2-Tetrachloroethane	<0.34	0.34	0.022	mg/kg dry	1	B4G1304	07/10/04	07/10/04	EPA 8260B	
1,1,1-Trichloroethane	<0.34	0.34	0.032	mg/kg dry	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.34	0.34	0.012	mg/kg dry	1	"	"	"	"	
1,1,2-Trichloroethane	<0.34	0.34	0.013	mg/kg dry	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<0.34	0.34	0.048	mg/kg dry	1	"	"	"	"	
1,1-Dichloroethane	<0.34	0.34	0.023	mg/kg dry	1	"	"	"	"	
1,1-Dichloroethene	<0.34	0.34	0.023	mg/kg dry	1	"	"	"	"	
1,1-Dichloropropene	<0.34	0.34	0.026	mg/kg dry	1	"	"	"	"	
1,2,3-Trichlorobenzene	<0.34	0.34	0.0082	mg/kg dry	1	"	"	"	"	
1,2,3-Trichloropropane	<0.34	0.34	0.024	mg/kg dry	1	"	"	"	"	
1,2,4-Trichlorobenzene	<0.34	0.34	0.026	mg/kg dry	1	"	"	"	"	
1,2,4-Trimethylbenzene	<0.34	0.34	0.011	mg/kg dry	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<0.34	0.34	0.027	mg/kg dry	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.34	0.34	0.026	mg/kg dry	1	"	"	"	"	
1,2-Dichlorobenzene	<0.34	0.34	0.015	mg/kg dry	1	"	"	"	"	
1,2-Dichloroethane	<0.34	0.34	0.020	mg/kg dry	1	"	"	"	"	
1,2-Dichloropropane	<0.34	0.34	0.018	mg/kg dry	1	"	"	"	"	
1,3,5-Trimethylbenzene	<0.34	0.34	0.016	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.34	0.34	0.019	mg/kg dry	1	"	"	"	"	
1,3-Dichloropropane	<0.34	0.34	0.0097	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.34	0.34	0.016	mg/kg dry	1	"	"	"	"	
2,2-Dichloropropane	<0.34	0.34	0.061	mg/kg dry	1	"	"	"	"	
2-Butanone	<2.7	2.7	0.031	mg/kg dry	1	"	"	"	"	
2-Chlorotoluene	<0.34	0.34	0.019	mg/kg dry	1	"	"	"	"	
4-Chlorotoluene	<0.34	0.34	0.013	mg/kg dry	1	"	"	"	"	
Acetone	<2.7	2.7	0.043	mg/kg dry	1	"	"	"	"	
Allyl chloride	<0.34	0.34	0.026	mg/kg dry	1	"	"	"	"	
Benzene	<0.34	0.34	0.011	mg/kg dry	1	"	"	"	"	
Bromobenzene	<0.34	0.34	0.023	mg/kg dry	1	"	"	"	"	
Bromochloromethane	<0.34	0.34	0.016	mg/kg dry	1	"	"	"	"	
Bromodichloromethane	<0.34	0.34	0.015	mg/kg dry	1	"	"	"	"	
Bromoform	<0.34	0.34	0.032	mg/kg dry	1	"	"	"	"	

LEGEND Technical Services, Inc

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Barr Engineering Co.
 4700 W 77th St
 Minneapolis MN, 55435

Project: 23/62-876KAL060
 Project Number: 23/62-876KAL060
 Project Manager: Ms. Marta Nelson

Date Reported:
 July 14, 2004

VOC GCMS 8260B
LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
GP-1 4.5 (0401543-02) Soil Sampled: 06/28/04 10:15 Received: 06/29/04 16:45										
Bromomethane	<0.34	0.34	0.075	mg/kg dry	1	B4G1304	07/10/04	07/10/04	EPA 8260B	W-05
Carbon tetrachloride	<0.34	0.34	0.027	mg/kg dry	1	"	"	"	"	
Chlorobenzene	<0.34	0.34	0.022	mg/kg dry	1	"	"	"	"	
Chloroethane	<0.34	0.34	0.047	mg/kg dry	1	"	"	"	"	
Chloroform	<0.34	0.34	0.020	mg/kg dry	1	"	"	"	"	
Chloromethane	<0.34	0.34	0.027	mg/kg dry	1	"	"	"	"	
cis-1,2-Dichloroethene	<0.34	0.34	0.020	mg/kg dry	1	"	"	"	"	
cis-1,3-Dichloropropene	<0.34	0.34	0.024	mg/kg dry	1	"	"	"	"	
Dibromochloromethane	<0.34	0.34	0.020	mg/kg dry	1	"	"	"	"	
Dibromomethane	<0.34	0.34	0.031	mg/kg dry	1	"	"	"	"	
Dichlorodifluoromethane	<0.34	0.34	0.018	mg/kg dry	1	"	"	"	"	
Dichlorofluoromethane	<0.34	0.34	0.0063	mg/kg dry	1	"	"	"	"	
Ethyl ether	<0.34	0.34	0.031	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.34	0.34	0.022	mg/kg dry	1	"	"	"	"	
Hexachlorobutadiene	<0.34	0.34	0.023	mg/kg dry	1	"	"	"	"	
Isopropylbenzene	<0.34	0.34	0.015	mg/kg dry	1	"	"	"	"	
m,p-Xylene	<0.67	0.67	0.051	mg/kg dry	1	"	"	"	"	
Methyl isobutyl ketone	<0.34	0.34	0.066	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.34	0.34	0.022	mg/kg dry	1	"	"	"	"	
Methylene chloride	<2.0	2.0	0.027	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.34	0.34	0.0065	mg/kg dry	1	"	"	"	"	
n-Butylbenzene	<0.34	0.34	0.015	mg/kg dry	1	"	"	"	"	
n-Propylbenzene	<0.34	0.34	0.013	mg/kg dry	1	"	"	"	"	
o-Xylene	<0.34	0.34	0.022	mg/kg dry	1	"	"	"	"	
p-Isopropyltoluene	<0.34	0.34	0.013	mg/kg dry	1	"	"	"	"	
sec-Butylbenzene	<0.34	0.34	0.016	mg/kg dry	1	"	"	"	"	
Styrene	<0.34	0.34	0.023	mg/kg dry	1	"	"	"	"	
tert-Butylbenzene	<0.34	0.34	0.016	mg/kg dry	1	"	"	"	"	
Tetrachloroethene	<0.34	0.34	0.019	mg/kg dry	1	"	"	"	"	
Tetrahydrofuran	<0.34	0.34	0.024	mg/kg dry	1	"	"	"	"	
Toluene	<0.34	0.34	0.019	mg/kg dry	1	"	"	"	"	
rans-1,2-Dichloroethene	<0.34	0.34	0.031	mg/kg dry	1	"	"	"	"	

LEGEND Technical Services, Inc

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Barr Engineering Co.
4700 W 77th St
Minneapolis MN, 55435

Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta Nelson

Date Reported:
July 14, 2004

VOC GCMS 8260B LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
GP-1 4.5 (0401543-02) Soil Sampled: 06/28/04 10:15 Received: 06/29/04 16:45 W-05										
trans-1,3-Dichloropropene	<0.34	0.34	0.018	mg/kg dry	1	B4G1304	07/10/04	07/10/04	EPA 8260B	
Trichloroethene	<0.34	0.34	0.026	mg/kg dry	1	"	"	"	"	
Trichlorofluoromethane	<0.34	0.34	0.023	mg/kg dry	1	"	"	"	"	
Vinyl chloride	<0.34	0.34	0.020	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	109			75-125 %		"	"	"	"	
Surrogate: Dibromofluoromethane	97.6			75-125 %		"	"	"	"	
Surrogate: Toluene-d8	97.6			75.5-125 %		"	"	"	"	
GP-8 13.5-14 (0401543-07) Soil Sampled: 06/28/04 16:50 Received: 06/29/04 16:45 W-05										
1,1,1,2-Tetrachloroethane	<0.39	0.39	0.025	mg/kg dry	1	B4G1304	07/10/04	07/10/04	EPA 8260B	
1,1,1-Trichloroethane	<0.39	0.39	0.037	mg/kg dry	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.39	0.39	0.014	mg/kg dry	1	"	"	"	"	
1,1,2-Trichloroethane	<0.39	0.39	0.015	mg/kg dry	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<0.39	0.39	0.056	mg/kg dry	1	"	"	"	"	
1,1-Dichloroethane	<0.39	0.39	0.026	mg/kg dry	1	"	"	"	"	
1,1-Dichloroethene	<0.39	0.39	0.026	mg/kg dry	1	"	"	"	"	
1,1-Dichloropropene	<0.39	0.39	0.029	mg/kg dry	1	"	"	"	"	
1,2,3-Trichlorobenzene	<0.39	0.39	0.0094	mg/kg dry	1	"	"	"	"	
1,2,3-Trichloropropane	<0.39	0.39	0.028	mg/kg dry	1	"	"	"	"	
1,2,4-Trichlorobenzene	<0.39	0.39	0.029	mg/kg dry	1	"	"	"	"	
1,2,4-Trimethylbenzene	<0.39	0.39	0.012	mg/kg dry	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<0.39	0.39	0.031	mg/kg dry	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.39	0.39	0.029	mg/kg dry	1	"	"	"	"	
1,2-Dichlorobenzene	<0.39	0.39	0.017	mg/kg dry	1	"	"	"	"	
1,2-Dichloroethane	<0.39	0.39	0.023	mg/kg dry	1	"	"	"	"	
1,2-Dichloropropane	<0.39	0.39	0.020	mg/kg dry	1	"	"	"	"	
1,3,5-Trimethylbenzene	<0.39	0.39	0.019	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.39	0.39	0.022	mg/kg dry	1	"	"	"	"	
1,3-Dichloropropane	<0.39	0.39	0.011	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.39	0.39	0.019	mg/kg dry	1	"	"	"	"	
2,2-Dichloropropane	<0.39	0.39	0.070	mg/kg dry	1	"	"	"	"	
2-Butanone	<3.1	3.1	0.036	mg/kg dry	1	"	"	"	"	

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Technical Services, Inc.

775 Vandalia Street
St Paul, MN 55114
651.642.1150

Barr Engineering Co.
4700 W 77th St
Minneapolis MN, 55435

Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta Nelson

Date Reported:
July 14, 2004

VOC GCMS 8260B LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
GP-8 13.5-14 (0401543-07) Soil Sampled: 06/28/04 16:50 Received: 06/29/04 16:45 W-05										
2-Chlorotoluene	<0.39	0.39	0.022	mg/kg dry	1	B4G1304	07/10/04	07/10/04	EPA 8260B	
4-Chlorotoluene	<0.39	0.39	0.015	mg/kg dry	1	"	"	"	"	
Acetone	<3.1	3.1	0.049	mg/kg dry	1	"	"	"	"	
Allyl chloride	<0.39	0.39	0.029	mg/kg dry	1	"	"	"	"	
Benzene	<0.39	0.39	0.013	mg/kg dry	1	"	"	"	"	
Bromobenzene	<0.39	0.39	0.026	mg/kg dry	1	"	"	"	"	
Bromochloromethane	<0.39	0.39	0.019	mg/kg dry	1	"	"	"	"	
Bromodichloromethane	<0.39	0.39	0.017	mg/kg dry	1	"	"	"	"	
Bromoform	<0.39	0.39	0.037	mg/kg dry	1	"	"	"	"	
Bromomethane	<0.39	0.39	0.087	mg/kg dry	1	"	"	"	"	
Carbon tetrachloride	<0.39	0.39	0.031	mg/kg dry	1	"	"	"	"	
Chlorobenzene	<0.39	0.39	0.025	mg/kg dry	1	"	"	"	"	
Chloroethane	<0.39	0.39	0.054	mg/kg dry	1	"	"	"	"	
Chloroform	<0.39	0.39	0.023	mg/kg dry	1	"	"	"	"	
Chloromethane	<0.39	0.39	0.031	mg/kg dry	1	"	"	"	"	
cis-1,2-Dichloroethene	<0.39	0.39	0.023	mg/kg dry	1	"	"	"	"	
cis-1,3-Dichloropropene	<0.39	0.39	0.028	mg/kg dry	1	"	"	"	"	
Dibromochloromethane	<0.39	0.39	0.023	mg/kg dry	1	"	"	"	"	
Dibromomethane	<0.39	0.39	0.036	mg/kg dry	1	"	"	"	"	
Dichlorodifluoromethane	<0.39	0.39	0.020	mg/kg dry	1	"	"	"	"	
Dichlorofluoromethane	<0.39	0.39	0.0073	mg/kg dry	1	"	"	"	"	
Ethyl ether	<0.39	0.39	0.036	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.39	0.39	0.025	mg/kg dry	1	"	"	"	"	
Hexachlorobutadiene	<0.39	0.39	0.026	mg/kg dry	1	"	"	"	"	
Isopropylbenzene	<0.39	0.39	0.017	mg/kg dry	1	"	"	"	"	
m,p-Xylene	<0.77	0.77	0.059	mg/kg dry	1	"	"	"	"	
Methyl isobutyl ketone	<0.39	0.39	0.076	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.39	0.39	0.025	mg/kg dry	1	"	"	"	"	
Methylene chloride	<2.3	2.3	0.031	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.39	0.39	0.0074	mg/kg dry	1	"	"	"	"	
n-Butylbenzene	<0.39	0.39	0.017	mg/kg dry	1	"	"	"	"	
n-Propylbenzene	<0.39	0.39	0.015	mg/kg dry	1	"	"	"	"	

LEGEND Technical Services, Inc

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Barr Engineering Co.
4700 W 77th St
Minneapolis MN, 55435

Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta Nelson

Date Reported:
July 14, 2004

VOC GCMS 8260B LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
GP-8 13.5-14 (0401543-07) Soil										
Sampled: 06/28/04 16:50 Received: 06/29/04 16:45										
o-Xylene	<0.39	0.39	0.025	mg/kg dry	1	B4G1304	07/10/04	07/10/04	EPA 8260B	W-05
p-Isopropyltoluene	<0.39	0.39	0.015	mg/kg dry	1	"	"	"	"	
sec-Butylbenzene	<0.39	0.39	0.019	mg/kg dry	1	"	"	"	"	
Styrene	<0.39	0.39	0.026	mg/kg dry	1	"	"	"	"	
tert-Butylbenzene	<0.39	0.39	0.019	mg/kg dry	1	"	"	"	"	
Tetrachloroethene	<0.39	0.39	0.022	mg/kg dry	1	"	"	"	"	
Tetrahydrofuran	<0.39	0.39	0.028	mg/kg dry	1	"	"	"	"	
Toluene	<0.39	0.39	0.022	mg/kg dry	1	"	"	"	"	
trans-1,2-Dichloroethene	<0.39	0.39	0.036	mg/kg dry	1	"	"	"	"	
trans-1,3-Dichloropropene	<0.39	0.39	0.020	mg/kg dry	1	"	"	"	"	
Trichloroethene	<0.39	0.39	0.029	mg/kg dry	1	"	"	"	"	
Trichlorofluoromethane	<0.39	0.39	0.026	mg/kg dry	1	"	"	"	"	
Vinyl chloride	<0.39	0.39	0.023	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	108			75-125 %		"	"	"	"	
Surrogate: Dibromofluoromethane	97.2			75-125 %		"	"	"	"	
Surrogate: Toluene-d8	97.8			75.5-125 %		"	"	"	"	

Trip Blank (0401543-17) Soil										
Sampled: 06/28/04 17:21 Received: 06/29/04 16:45										
1,1,1,2-Tetrachloroethane	<0.25	0.25	0.016	mg/kg wet	1	B4G1304	07/10/04	07/10/04	EPA 8260B	
1,1,1-Trichloroethane	<0.25	0.25	0.024	mg/kg wet	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.25	0.25	0.0088	mg/kg wet	1	"	"	"	"	
1,1,2-Trichloroethane	<0.25	0.25	0.0099	mg/kg wet	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<0.25	0.25	0.036	mg/kg wet	1	"	"	"	"	
1,1-Dichloroethane	<0.25	0.25	0.017	mg/kg wet	1	"	"	"	"	
1,1-Dichloroethene	<0.25	0.25	0.017	mg/kg wet	1	"	"	"	"	
1,1-Dichloropropene	<0.25	0.25	0.019	mg/kg wet	1	"	"	"	"	
1,2,3-Trichlorobenzene	<0.25	0.25	0.0061	mg/kg wet	1	"	"	"	"	
1,2,3-Trichloropropane	<0.25	0.25	0.018	mg/kg wet	1	"	"	"	"	
1,2,4-Trichlorobenzene	<0.25	0.25	0.019	mg/kg wet	1	"	"	"	"	
1,2,4-Trimethylbenzene	<0.25	0.25	0.0080	mg/kg wet	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<0.25	0.25	0.020	mg/kg wet	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.25	0.25	0.019	mg/kg wet	1	"	"	"	"	

LEGEND Technical Services, Inc

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Barr Engineering Co. 4700 W 77th St Minneapolis MN, 55435	Project: 23/62-876KAL060 Project Number: 23/62-876KAL060 Project Manager: Ms. Marta Nelson	Date Reported: July 14, 2004
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VOC GCMS 8260B
LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
Trip Blank (0401543-17) Soil Sampled: 06/28/04 17:21 Received: 06/29/04 16:45										
1,2-Dichlorobenzene	<0.25	0.25	0.011	mg/kg wet	1	B4G1304	07/10/04	07/10/04	EPA 8260B	
1,2-Dichloroethane	<0.25	0.25	0.015	mg/kg wet	1	"	"	"	"	
1,2-Dichloropropane	<0.25	0.25	0.013	mg/kg wet	1	"	"	"	"	
1,3,5-Trimethylbenzene	<0.25	0.25	0.012	mg/kg wet	1	"	"	"	"	
1,3-Dichlorobenzene	<0.25	0.25	0.014	mg/kg wet	1	"	"	"	"	
1,3-Dichloropropane	<0.25	0.25	0.0072	mg/kg wet	1	"	"	"	"	
1,4-Dichlorobenzene	<0.25	0.25	0.012	mg/kg wet	1	"	"	"	"	
2,2-Dichloropropane	<0.25	0.25	0.045	mg/kg wet	1	"	"	"	"	
2-Butanone	<2.0	2.0	0.023	mg/kg wet	1	"	"	"	"	
2-Chlorotoluene	<0.25	0.25	0.014	mg/kg wet	1	"	"	"	"	
4-Chlorotoluene	<0.25	0.25	0.010	mg/kg wet	1	"	"	"	"	
Acetone	<2.0	2.0	0.032	mg/kg wet	1	"	"	"	"	
Allyl chloride	<0.25	0.25	0.019	mg/kg wet	1	"	"	"	"	
Benzene	<0.25	0.25	0.0084	mg/kg wet	1	"	"	"	"	
Bromobenzene	<0.25	0.25	0.017	mg/kg wet	1	"	"	"	"	
Bromochloromethane	<0.25	0.25	0.012	mg/kg wet	1	"	"	"	"	
Bromodichloromethane	<0.25	0.25	0.011	mg/kg wet	1	"	"	"	"	
Bromoform	<0.25	0.25	0.024	mg/kg wet	1	"	"	"	"	
Bromomethane	<0.25	0.25	0.056	mg/kg wet	1	"	"	"	"	
Carbon tetrachloride	<0.25	0.25	0.020	mg/kg wet	1	"	"	"	"	
Chlorobenzene	<0.25	0.25	0.016	mg/kg wet	1	"	"	"	"	
Chloroethane	<0.25	0.25	0.035	mg/kg wet	1	"	"	"	"	
Chloroform	<0.25	0.25	0.015	mg/kg wet	1	"	"	"	"	
Chloromethane	<0.25	0.25	0.020	mg/kg wet	1	"	"	"	"	
cis-1,2-Dichloroethene	<0.25	0.25	0.015	mg/kg wet	1	"	"	"	"	
cis-1,3-Dichloropropene	<0.25	0.25	0.018	mg/kg wet	1	"	"	"	"	
Dibromochloromethane	<0.25	0.25	0.015	mg/kg wet	1	"	"	"	"	
Dibromomethane	<0.25	0.25	0.023	mg/kg wet	1	"	"	"	"	
Dichlorodifluoromethane	<0.25	0.25	0.013	mg/kg wet	1	"	"	"	"	
Dichlorofluoromethane	<0.25	0.25	0.0047	mg/kg wet	1	"	"	"	"	
Ethyl ether	<0.25	0.25	0.023	mg/kg wet	1	"	"	"	"	
Ethylbenzene	<0.25	0.25	0.016	mg/kg wet	1	"	"	"	"	

LEGEND Technical Services, Inc

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Barr Engineering Co.
4700 W 77th St
Minneapolis MN, 55435

Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta Nelson

Date Reported:
July 14, 2004

VOC GCMS 8260B LEGEND Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
Trip Blank (0401543-17) Soil Sampled: 06/28/04 17:21 Received: 06/29/04 16:45										
Hexachlorobutadiene	<0.25	0.25	0.017	mg/kg wet	1	B4G1304	07/10/04	07/10/04	EPA 8260B	
Isopropylbenzene	<0.25	0.25	0.011	mg/kg wet	1	"	"	"	"	
m,p-Xylene	<0.50	0.50	0.038	mg/kg wet	1	"	"	"	"	
Methyl isobutyl ketone	<0.25	0.25	0.049	mg/kg wet	1	"	"	"	"	
Methyl tert-butyl ether	<0.25	0.25	0.016	mg/kg wet	1	"	"	"	"	
Methylene chloride	<1.5	1.5	0.020	mg/kg wet	1	"	"	"	"	
Naphthalene	<0.25	0.25	0.0048	mg/kg wet	1	"	"	"	"	
n-Butylbenzene	<0.25	0.25	0.011	mg/kg wet	1	"	"	"	"	
n-Propylbenzene	<0.25	0.25	0.010	mg/kg wet	1	"	"	"	"	
o-Xylene	<0.25	0.25	0.016	mg/kg wet	1	"	"	"	"	
p-Isopropyltoluene	<0.25	0.25	0.010	mg/kg wet	1	"	"	"	"	
sec-Butylbenzene	<0.25	0.25	0.012	mg/kg wet	1	"	"	"	"	
Styrene	<0.25	0.25	0.017	mg/kg wet	1	"	"	"	"	
tert-Butylbenzene	<0.25	0.25	0.012	mg/kg wet	1	"	"	"	"	
Tetrachloroethene	<0.25	0.25	0.014	mg/kg wet	1	"	"	"	"	
Tetrahydrofuran	<0.25	0.25	0.018	mg/kg wet	1	"	"	"	"	
Toluene	<0.25	0.25	0.014	mg/kg wet	1	"	"	"	"	
trans-1,2-Dichloroethene	<0.25	0.25	0.023	mg/kg wet	1	"	"	"	"	
trans-1,3-Dichloropropene	<0.25	0.25	0.013	mg/kg wet	1	"	"	"	"	
Trichloroethene	<0.25	0.25	0.019	mg/kg wet	1	"	"	"	"	
Trichlorofluoromethane	<0.25	0.25	0.017	mg/kg wet	1	"	"	"	"	
Vinyl chloride	<0.25	0.25	0.015	mg/kg wet	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	109			75-125 %		"	"	"	"	
Surrogate: Dibromofluoromethane	96.0			75-125 %		"	"	"	"	
Surrogate: Toluene-d8	97.0			75.5-125 %		"	"	"	"	

Barr Engineering Co. 4700 W 77th St Minneapolis MN, 55435	Project: 23/62-876KAL060 Project Number: 23/62-876KAL060 Project Manager: Ms. Marta Nelson	Date Reported: July 14, 2004
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TOTAL METALS ANALYSIS - Quality Control
LEGEND Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4F3001 - EPA 3050B										
Prepared: 06/30/04 Analyzed: 07/01/04										
Blank (B4F3001-BLK1)										
Lead	<1.0	1.0	mg/kg wet							
Prepared: 06/30/04 Analyzed: 07/01/04										
LCS (B4F3001-BS1)										
Lead	40.1	1.0	mg/kg wet	40.0		100	80-120			
Prepared: 06/30/04 Analyzed: 07/01/04										
LCS Dup (B4F3001-BSD1)										
Lead	40.6	1.0	mg/kg wet	40.0		102	80-120	1.24	20	
Prepared: 06/30/04 Analyzed: 07/01/04										
Matrix Spike (B4F3001-MS1)										
Lead	51.5	1.1	mg/kg dry	45.5	8.10	95.4	75-125			
Prepared: 06/30/04 Analyzed: 07/01/04										
Matrix Spike Dup (B4F3001-MSD1)										
Lead	48.5	1.1	mg/kg dry	45.5	8.10	88.8	75-125	6.00	20	

Barr Engineering Co.
4700 W 77th St
Minneapolis MN, 55435

Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta Nelson

Date Reported:
July 14, 2004

PAH 8270C - Quality Control LEGEND Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
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Batch B4F3014 - EPA 3545 ASE Extraction

Prepared & Analyzed: 06/30/04

Blank (B4F3014-BLK1)

2-Chloronaphthalene	<0.33	0.33	mg/kg wet							
2-Methylnaphthalene	<0.33	0.33	mg/kg wet							
Acenaphthene	<0.33	0.33	mg/kg wet							
Acenaphthylene	<0.33	0.33	mg/kg wet							
Anthracene	<0.33	0.33	mg/kg wet							
Benzo (a) anthracene	<0.33	0.33	mg/kg wet							
Benzo (a) pyrene	<0.33	0.33	mg/kg wet							
Benzo (b) fluoranthene	<0.33	0.33	mg/kg wet							
Benzo (g,h,i) perylene	<0.33	0.33	mg/kg wet							
Benzo (k) fluoranthene	<0.33	0.33	mg/kg wet							
Chrysene	<0.33	0.33	mg/kg wet							
Dibenz (a,h) anthracene	<0.33	0.33	mg/kg wet							
Fluoranthene	<0.33	0.33	mg/kg wet							
Fluorene	<0.33	0.33	mg/kg wet							
Indeno (1,2,3-cd) pyrene	<0.33	0.33	mg/kg wet							
Naphthalene	<0.33	0.33	mg/kg wet							
Phenanthrene	<0.33	0.33	mg/kg wet							
Pyrene	<0.33	0.33	mg/kg wet							
Surrogate: 2-Fluorobiphenyl	5.68		mg/kg wet	6.67		85.2	38.1-115			
Surrogate: Nitrobenzene-d5	5.62		mg/kg wet	6.67		84.3	39.4-115			
Surrogate: Terphenyl-d14	5.35		mg/kg wet	6.67		80.2	36.1-115			

LCS (B4F3014-BS1)

Prepared & Analyzed: 06/30/04

Acenaphthene	5.08	0.33	mg/kg wet	6.67		76.2	37.5-115			
Pyrene	3.78	0.33	mg/kg wet	6.67		56.7	30.2-115			
Surrogate: 2-Fluorobiphenyl	5.34		mg/kg wet	6.67		80.1	38.1-115			

Barr Engineering Co. 4700 W 77th St Minneapolis MN, 55435	Project: 23/62-876KAL060 Project Number: 23/62-876KAL060 Project Manager: Ms. Marta Nelson	Date Reported: July 14, 2004
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PAH 8270C - Quality Control
LEGEND Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
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Batch B4F3014 - EPA 3545 ASE Extraction

LCS (B4F3014-BS1) Prepared & Analyzed: 06/30/04

Surrogate: Nitrobenzene-d5	5.77	mg/kg wet	6.67	86.5	39.4-115
Surrogate: Terphenyl-dl4	4.85	mg/kg wet	6.67	72.7	36.1-115

Matrix Spike (B4F3014-MS1) Source: 0401525-01 Prepared: 06/30/04 Analyzed: 07/01/04

Acenaphthene	4.65	0.35 mg/kg dry	7.10	<0.35	65.5 30-115
Pyrene	3.51	0.35 mg/kg dry	7.10	<0.35	49.4 30-115
Surrogate: 2-Fluorobiphenyl	5.08	mg/kg dry	7.10		71.5 38.1-115
Surrogate: Nitrobenzene-d5	5.38	mg/kg dry	7.10		75.8 39.4-115
Surrogate: Terphenyl-dl4	4.90	mg/kg dry	7.10		69.0 36.1-115

Matrix Spike Dup (B4F3014-MSD1) Source: 0401525-01 Prepared: 06/30/04 Analyzed: 07/01/04

Acenaphthene	3.62	0.35 mg/kg dry	7.08	<0.35	51.1 30-115	24.9	40
Pyrene	2.79	0.35 mg/kg dry	7.08	<0.35	39.4 30-115	22.9	37.8
Surrogate: 2-Fluorobiphenyl	3.89	mg/kg dry	7.08		54.9 38.1-115		
Surrogate: Nitrobenzene-d5	4.26	mg/kg dry	7.08		60.2 39.4-115		
Surrogate: Terphenyl-dl4	3.87	mg/kg dry	7.08		54.7 36.1-115		

Barr Engineering Co. 4700 W 77th St Minneapolis MN, 55435	Project: 23/62-876KAL060 Project Number: 23/62-876KAL060 Project Manager: Ms. Marta Nelson	Date Reported: July 14, 2004
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PERCENT SOLIDS - Quality Control
LEGEND Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4F3007 - General Preparation										
Duplicate (B4F3007-DUP1)										
		Source: 0401525-01			Prepared & Analyzed: 06/30/04					
% Solids	92.0		%		94.0			2.15	20	
Batch B4F3007 - General Preparation										
Duplicate (B4F3007-DUP2)										
		Source: 0401543-11			Prepared & Analyzed: 06/30/04					
% Solids	92.0		%		91.0			1.09	20	
Batch B4F3007 - General Preparation										
Duplicate (B4F3007-DUP3)										
		Source: 0401544-15			Prepared & Analyzed: 06/30/04					
% Solids	95.0		%		94.0			1.06	20	
Batch B4G0807 - General Preparation										
Duplicate (B4G0807-DUP1)										
		Source: 0401543-15			Prepared & Analyzed: 07/08/04					
% Solids	94.0		%		94.0			0.00	20	
Batch B4G0807 - General Preparation										
Duplicate (B4G0807-DUP2)										
		Source: 0401644-03			Prepared & Analyzed: 07/08/04					
% Solids	85.0		%		83.0			2.38	20	

Barr Engineering Co.
 4700 W 77th St
 Minneapolis MN, 55435

Project: 23/62-876KAL060
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 Project Manager: Ms. Marta Nelson

Date Reported:
 July 14, 2004

VOC GCMS 8260B - Quality Control

LEGEND Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4G1304 - Volatiles										
Prepared & Analyzed: 07/10/04										
Blank (B4G1304-BLK1)										
1,1,1,2-Tetrachloroethane	<0.25	0.25	mg/kg wet							
1,1,1-Trichloroethane	<0.25	0.25	mg/kg wet							
1,1,2,2-Tetrachloroethane	<0.25	0.25	mg/kg wet							
1,1,2-Trichloroethane	<0.25	0.25	mg/kg wet							
1,1,2-Trichlorotrifluoroethane	<0.25	0.25	mg/kg wet							
1,1-Dichloroethane	<0.25	0.25	mg/kg wet							
1,1-Dichloroethene	<0.25	0.25	mg/kg wet							
1,1-Dichloropropene	<0.25	0.25	mg/kg wet							
1,2,3-Trichlorobenzene	<0.25	0.25	mg/kg wet							
1,2,3-Trichloropropane	<0.25	0.25	mg/kg wet							
1,2,4-Trichlorobenzene	<0.25	0.25	mg/kg wet							
1,2,4-Trimethylbenzene	<0.25	0.25	mg/kg wet							
1,2-Dibromo-3-chloropropane	<0.25	0.25	mg/kg wet							
1,2-Dibromoethane (EDB)	<0.25	0.25	mg/kg wet							
1,2-Dichlorobenzene	<0.25	0.25	mg/kg wet							
1,2-Dichloroethane	<0.25	0.25	mg/kg wet							
1,2-Dichloropropane	<0.25	0.25	mg/kg wet							
1,3,5-Trimethylbenzene	<0.25	0.25	mg/kg wet							
1,3-Dichlorobenzene	<0.25	0.25	mg/kg wet							
1,3-Dichloropropane	<0.25	0.25	mg/kg wet							
1,4-Dichlorobenzene	<0.25	0.25	mg/kg wet							
1,2-Dichloropropane	<0.25	0.25	mg/kg wet							
2-Butanone	<2.0	2.0	mg/kg wet							
2-Chlorotoluene	<0.25	0.25	mg/kg wet							

Barr Engineering Co.
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Date Reported:
July 14, 2004

VOC GCMS 8260B - Quality Control LEGEND Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
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Batch B4G1304 - Volatiles

Prepared & Analyzed: 07/10/04

Blank (B4G1304-BLK1)

4-Chlorotoluene	<0.25	0.25	mg/kg wet							
Acetone	<2.0	2.0	mg/kg wet							
Allyl chloride	<0.25	0.25	mg/kg wet							
Benzene	<0.25	0.25	mg/kg wet							
Bromobenzene	<0.25	0.25	mg/kg wet							
Bromochloromethane	<0.25	0.25	mg/kg wet							
Bromodichloromethane	<0.25	0.25	mg/kg wet							
Bromoform	<0.25	0.25	mg/kg wet							
Bromomethane	<0.25	0.25	mg/kg wet							
Carbon tetrachloride	<0.25	0.25	mg/kg wet							
Chlorobenzene	<0.25	0.25	mg/kg wet							
Chloroethane	<0.25	0.25	mg/kg wet							
Chloroform	<0.25	0.25	mg/kg wet							
Chloromethane	<0.25	0.25	mg/kg wet							
cis-1,2-Dichloroethene	<0.25	0.25	mg/kg wet							
cis-1,3-Dichloropropene	<0.25	0.25	mg/kg wet							
Dibromochloromethane	<0.25	0.25	mg/kg wet							
Dibromomethane	<0.25	0.25	mg/kg wet							
Dichlorodifluoromethane	<0.25	0.25	mg/kg wet							
Dichlorofluoromethane	<0.25	0.25	mg/kg wet							
Ethyl ether	<0.25	0.25	mg/kg wet							
Ethylbenzene	<0.25	0.25	mg/kg wet							
Hexachlorobutadiene	<0.25	0.25	mg/kg wet							
Isopropylbenzene	<0.25	0.25	mg/kg wet							

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July 14, 2004

VOC GCMS 8260B - Quality Control
LEGEND Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
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Batch B4G1304 - Volatiles

Blank (B4G1304-BLK1)

Prepared & Analyzed: 07/10/04

m,p-Xylene	<0.50	0.50	mg/kg wet							
Methyl isobutyl ketone	<0.25	0.25	mg/kg wet							
Methyl tert-butyl ether	<0.25	0.25	mg/kg wet							
Methylene chloride	<1.5	1.5	mg/kg wet							
Naphthalene	<0.25	0.25	mg/kg wet							
n-Butylbenzene	<0.25	0.25	mg/kg wet							
n-Propylbenzene	<0.25	0.25	mg/kg wet							
o-Xylene	<0.25	0.25	mg/kg wet							
p-Isopropyltoluene	<0.25	0.25	mg/kg wet							
sec-Butylbenzene	<0.25	0.25	mg/kg wet							
Styrene	<0.25	0.25	mg/kg wet							
tert-Butylbenzene	<0.25	0.25	mg/kg wet							
Tetrachloroethene	<0.25	0.25	mg/kg wet							
Tetrahydrofuran	<0.25	0.25	mg/kg wet							
Toluene	<0.25	0.25	mg/kg wet							
trans-1,2-Dichloroethene	<0.25	0.25	mg/kg wet							
trans-1,3-Dichloropropene	<0.25	0.25	mg/kg wet							
Trichloroethene	<0.25	0.25	mg/kg wet							
Trichlorofluoromethane	<0.25	0.25	mg/kg wet							
Vinyl chloride	<0.25	0.25	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	52.2		ug/L	50.0		104	75-125			
Surrogate: Dibromofluoromethane	50.4		ug/L	50.0		101	75-125			
Surrogate: Toluene-d8	48.3		ug/L	50.0		96.6	75.5-125			

LCS (B4G1304-BS1)

Prepared & Analyzed: 07/10/04

1,1-Dichloroethene	45.9		ug/L	50.0		91.8	80-120			
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LEGEND Technical Services, Inc

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Barr Engineering Co.
4700 W 77th St
Minneapolis MN, 55435

Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta Nelson

Date Reported:
July 14, 2004

VOC GCMS 8260B - Quality Control LEGEND Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
Batch B4G1304 - Volatiles										
LCS (B4G1304-BS1)										
Prepared & Analyzed: 07/10/04										
Benzene	50.1		ug/L	50.0		100	80-120			
Chlorobenzene	48.2		ug/L	50.0		96.4	80-120			
Toluene	50.3		ug/L	50.0		101	80-120			
Trichloroethene	50.6		ug/L	50.0		101	80-120			
Surrogate: 4-Bromofluorobenzene	52.0		ug/L	50.0		104	75-125			
Surrogate: Dibromofluoromethane	50.3		ug/L	50.0		101	75-125			
Surrogate: Toluene-d8	48.6		ug/L	50.0		97.2	75.5-125			
Matrix Spike (B4G1304-MS1)										
Source: 0401644-01 Prepared & Analyzed: 07/10/04										
1,1-Dichloroethene	44.2		ug/L	50.0	<	88.4	75-120			
Benzene	50.0		ug/L	50.0	<	100	80-120			
Chlorobenzene	49.2		ug/L	50.0	<	98.4	80-120			
Toluene	50.7		ug/L	50.0	<	101	80-120			
Trichloroethene	50.7		ug/L	50.0	<	101	80-120			
Surrogate: 4-Bromofluorobenzene	54.4		ug/L	50.0		109	75-125			
Surrogate: Dibromofluoromethane	48.7		ug/L	50.0		97.4	75-125			
Surrogate: Toluene-d8	48.4		ug/L	50.0		96.8	75.5-125			
Matrix Spike Dup (B4G1304-MSD1)										
Source: 0401644-01 Prepared & Analyzed: 07/10/04										
1,1-Dichloroethene	43.7		ug/L	50.0	<	87.4	75-120	1.14	20	
Benzene	49.5		ug/L	50.0	<	99.0	80-120	1.01	20	
Chlorobenzene	49.5		ug/L	50.0	<	99.0	80-120	0.608	20	
Toluene	50.9		ug/L	50.0	<	102	80-120	0.394	20	
Trichloroethene	50.1		ug/L	50.0	<	100	80-120	1.19	20	
Surrogate: 4-Bromofluorobenzene	55.6		ug/L	50.0		111	75-125			
Surrogate: Dibromofluoromethane	48.9		ug/L	50.0		97.8	75-125			
Surrogate: Toluene-d8	48.7		ug/L	50.0		97.4	75.5-125			

Barr Engineering Co.
4700 W 77th St
Minneapolis MN, 55435Project: 23/62-876KAL060
Project Number: 23/62-876KAL060
Project Manager: Ms. Marta Nelson**Date Reported:**
July 14, 2004**Notes and Definitions**

- W-05 The initial sample weight was less than 20 grams.
- < Less than value listed
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- NA Not applicable. The %RPD is not calculated from values less than the reporting limit.

Chain of Custody

4700 West 77th Street
 Minneapolis, MN 55435-4803
 (952) 832-2600



Project Number

23 ✓ 62 - 876 KAL 060

NO 16268

Sample Identification	Collection		Matrix			Type
	Date	Time	Water	Soil	Other	
1. GP-9 16.5-17.5	6/28/04	1721	X			X
2. GP-1 4.5		1015				
3. GP-6 12.5-13		1445				
4. GP-5 16-19		1415				
5. GP-4 14.5-15		1236				
6. GP-7 19-19.5		1600				
7. GP-8 13.5-14		1650				
8. GP-3 11-13		1133				
9. GP-7 9.5-10		1606				
10. GP-3 1-2		1124				
11. GP-6 18-19		1527				
12. GP-2 17		1054				
13. GP-7 4-5		1535				
14. GP-3 18.5-19		1123				
15. GP-3 3-4		1116				
16. GP-4 1-2		1230				

Sample Identification	Date	Time	Number of Containers/Preservative													Total No. Of Containers							
			Volatile Organic (Unpres.)	Volatile Organic (Pres.)	Semivolatile Organic	Total Metals (HNO ₃)	Dissolved Metals (HNO ₃)	General (Unpreserved)	Cyanide (NaOH, Asc. Acid)	Nutrients (H ₂ SO ₄)	Oil and Grease (H ₂ SO ₄)	TOC (H ₂ SO ₄)	Sulfide (Zn Acetate)	Dioxin	Whitipak		Total Phenol (H ₂ SO ₄)	Methane	(HCL)/DRO, 1L Glass	Lugols, Glass, Amber	Formalin, Glass	Swag Cap Plastic (Unpres)	
1			1	1																			2
2			1																				2
3																							
4																							
5																							
6																							
7			1																				2
8																							
9																							
10																							
11																							
12																							
13																							
14			1																				2
15			1																				2
16																							2

Relinquished By: *Robert Kerner* Date: *6/29/04* Time: *2:00 pm*
 Relinquished By: _____ Date: _____ Time: _____
 Samples Shipped VIA Air Freight Fed. Exp. Sampler Other

#0401543

Project Manager: *FKK*
 Project Contact: *Marta Nelson*
 Laboratory: *Legene*
 Remarks/Analysis Required: *Method 6010 for all Lead*

Hold
 VOCs ~~Blank~~ by 8260
 Hold
 Lead
 Hold
 ↓
 VOCs ~~Blank~~ by 8260
 Lead
 Lead
 ↓
 PAHs by Method 8270
 PAHs
 Lead

Received by: *by default* Date: *6/29/04* Time: *16:45*
 Received by: _____ Date: _____ Time: _____
 Air Bill Number: _____

Sampled By: *-17 - Trip Blank. Robert Kerner*
 Remarks:

Distribution: White-Original Accompanies Shipment to Lab, Yellow - Field Copy; Pink - Lab Coordinator *DNIC 10.82*