Appendix D: Site #11 – 2206 Forest

Fields of Opportunities

STATE OF IOWA

DEPARTMENT OF NATURAL RESOURCES
JEFFREY R. VONK, DIRECTOR

THOMAS J. VILSACK, GOVERNOR
SALLY J. PEDERSON, LT. GOVERNOR

March 16, 2005

Mr. Steven Boyt
4825 Woodland Avenue, Unit #5
West Des Moines, IA 50266-5459

SUBJECT: Des Moines USTFields Site Check Report –
Former Gas Station property at 2208 (also listed as 2206) Forest Avenue in Des Moines, Iowa

Dear Mr. Boyt:

The department received a Site Check Report and Electromagnetic Survey (environmental investigations) for the above-referenced site. The investigation was funded through an EPA grant and completed by Barker Lemar Engineering as part of the Des Moines USTFields project (a description of the project was provided to you in our January 20, 2004 letter). A gas station was reportedly in operation at this site from the 1930's through 1960. The purpose of the investigation was to determine if petroleum contamination is present in soil or groundwater due to the historical operation of a service station on the property.

Soil contamination was not detected in any of the soil samples collected. Minimal levels of Total Extractable Hydrocarbons (diesel) were detected in one of the groundwater samples. However, concentrations were below the action limits established by this department (see 567—135.14(455B) Iowa Administrative Code). Contamination was not detected in any of the other groundwater samples. Therefore, no further action will be required at this time. We will update our records to indicate a petroleum release was not verified.

For your convenience, we are providing you a copy of the site check report. Additional information concerning the Des Moines UST Fields project is available for public viewing at the DNR Records Center, Wallace State Office Building, 502 East Ninth Street, Des Moines, Iowa. You are welcome to review these files during regular business hours (8 a.m. - 4:30 p.m. Monday through Friday), or to request copies of the material at a fee of $0.40 per page.

Please contact me at 515/281-8011, if you have additional questions or we may be of further assistance.

Sincerely,

Elaine R. Douskey

ELAINE R. DOUSKEY
ENVIRONMENTAL SPECIALIST
UNDERGROUND STORAGE TANK SECTION

c: Field Office 5
Christy Jaworski, 1801 Industrial Circle West Des Moines, IA 50265
Ellen Walkowiak, Economic Development, City of Des Moines, 400 E. 1st Street, Des Moines, IA 50309

USTFsitechk_2208 Forest.doc

BARKER LEMAR

ENGINEERING CONSULTANTS

Summary of Activities

Iowa USTfields Project –
City of Des Moines
Property Owner – Steven Boyt
2206 Forest Ave.
Des Moines, IA
Project No. IADNR 001
May 2004

1801 Industrial Circle, West Des Moines, Iowa 50265
(515) 256-8814 Fax (515) 256-0152

BARKER LEMAR
ENGINEERING CONSULTANTS

Summary of Activities
Iowa USTfields Project – City of Des Moines
Property Owner – Steven Boyt
2206 Forest Avenue
Des Moines, IA

1.0 INTRODUCTION

BARKER LEMAR ENGINEERING CONSULTANTS was contracted by the Iowa Department of Natural Resources in partnership with the City of Des Moines, the EPA, and the Iowa Underground Storage Tank Financial Responsibility Program to assess and clean up contaminated sites within the pilot project area with the ultimate goal of redevelopment. The sites are located in the Drake Neighborhood area within the City of Des Moines.

Initial activities included identifying sites where potential petroleum contamination may be located which could hinder future development activities. The potential petroleum contaminated sites were identified by a search of the Polk directories, Sanborn maps, review of IDNR underground storage tank and leaking underground storage tank records, and review of the Fire Marshall's records.

The site at 2206 Forest Avenue is currently owned by Steven Boyt. It also has been listed by the addresses of 2200 and 2208 Forest Avenue. Polk directories listed the site as a gas station from 1930 through 1960.

2.0 RECORD REVIEW

Polk directories were reviewed at the Des Moines Library The directory was reviewed in approximately five year intervals Information in the directory indicated the site was a Shell Service Station, 1930 through 1940, Mitchell Moore Filling Station in 1945, Lathan Rushing Filling Station in 1950, and Stadium Shell service in 1955 and 1960. The 1920 Sanborn map showed a gas station located on the site and three tanks were reportedly located on the east side of the property approximately 42 feet south of Forest Avenue

and 40 feet west of 22nd Street. The 1956 Sanborn indicated the site was a lawn motor and sales shop and no tanks were shown.

According to Matt Porter with the Fire Department there was no information on tanks at this site.

Site visual observations did not indicate evidence of underground storage tanks, although existing monitoring wells were observed on the subject site. These may be from the CRP process and related to an off-site investigation.

3.0 SOIL AND GROUNDWATER RESULTS

BARKER LEMAR personnel were on site March 22, 2004. Three soil borings were installed with a hollow-stem auger and converted to temporary monitoring wells. Logs are included in Appendix A. Boring TW-3 was placed in the area identified as the potential former tank location by the Sanborn information. The other borings were placed in order to triangulate the site and assess groundwater flow. Groundwater depths in the temporary wells indicated groundwater flows to the southwest at this site. Figure 1 is a site map showing the location of the borings/temporary monitoring wells.

Soil samples were screened approximately every foot with a photoionization detector (PID). A soil sample was collected from each soil boring at the location of the highest PID, or if the PID did not detect hydrocarbons, at the assumed groundwater/soil interface. Samples were submitted to Keystone Laboratories in Newton, Iowa for BTEX/MTBE analysis by Iowa Method OA-1 by GC/MS and for total extractable hydrocarbon analysis by Iowa Method OA-2. Soil sample analytical results are summarized in Table 1.

Temporary wells were installed at the boring locations. Wells were purged of three volumes or bailed dry and groundwater samples were collected for analysis. Samples were submitted to Keystone Laboratories in Newton, Iowa for BTEX/MTBE analysis by

Iowa Method OA-1 by GC/MS and for total extractable hydrocarbon analysis by Iowa Method OA-2. Groundwater sample analytical results are summarized in Table 2.

Soil results indicate total extractable hydrocarbons (TEH) as gasoline was detected in TW-3. No BTEX or TEH as diesel or waste oil were detected. TEH as gasoline is not a regulated compound in Iowa. The groundwater results show MTBE detected in TW-2 and TW-3. MTBE is currently not a regulated compound in Iowa. TW-3 also had detectable concentrations of benzene, ethylbenzene and TEH as diesel in the groundwater. Concentrations detected were below regulatory target levels.

Table 1
Analytical Results
Soil Sampling

Analyte	Units	Action Level	TW-1 6-7'	TW-2 9-10'	TW-3 7-8'
Methyl-tert-Butyl Ether (MTBE)	mg/kg	NE	<0.10	<0.010	<0.034
Benzene	mg/kg	0.54	<0.005	<0.005	<0.017
Toluene	mg/kg	42	<0.005	<0.005	<0.017
Ethylbenzene	mg/kg	15	<0.005	<0.005	<0.017
Xylenes, Total	mg/kg	NE	<0.0.10	<0.0.10	<0.034
TEH, as #2 diesel fuel	mg/kg	3800	<5	<5	<5
TEH, as gasoline	mg/kg	NE	<5	<5	24
TEH, as waste oil	mg/kg	NE	<5	<5	<5

Table 2
Analytical Results
Groundwater Sampling

Analyte	Units	Action Level	TW-1	TW-2	TW-3
Methyl-tert-Butyl Ether (MTBE)	ug/L	NA	<1	8	2
Benzene	ug/L	5	<1	<1	1
Toluene	ug/L	1000	<1	<1	<1
Ethylbenzene	ug/L	700	<1	<1	6
Xylenes, Total	ug/L	10,000	<2	<2	<2
TEH, as #2 diesel fuel	ug/L	1200	<100	<100	600
TEH, as waste oil	ug/L	400	<100	<100	<100

4.0 CONCLUSION

BARKER LEMAR conducted assessment activities to determine potential petroleum contamination for property owned by Steven Boyt at 2206 Forest Avenue in Des Moines, Iowa. Results of the activities did not locate underground storage tanks. Existing monitoring wells were observed. Total extractable hydrocarbons as gasoline were present in one (TW-3) of the three soil samples. This is not a regulated compound. Methyl-t-butyl Ether (MTBE) was present in two of the groundwater samples (TW-2 and TW-3). There is no regulatory level for this compound at the current time. Benzene, ethylbenzene, and TEH as diesel fuel were present in one (TW-3) of the three groundwater samples. Concentrations of these compounds were below IDNR action levels. Contamination in TW-3 is located in the approximate area of the assumed tank location. There also is the potential for off-site contamination from a known leaking underground storage tank site located at 2201 Forest Avenue. The MTBE contamination noted in TW-2 may potentially be from this off-site source.

We have appreciated being of service to you on this project. If you have any questions concerning this submittal, please do not hesitate to contact our office at 515-256-8814.

Sincerely,

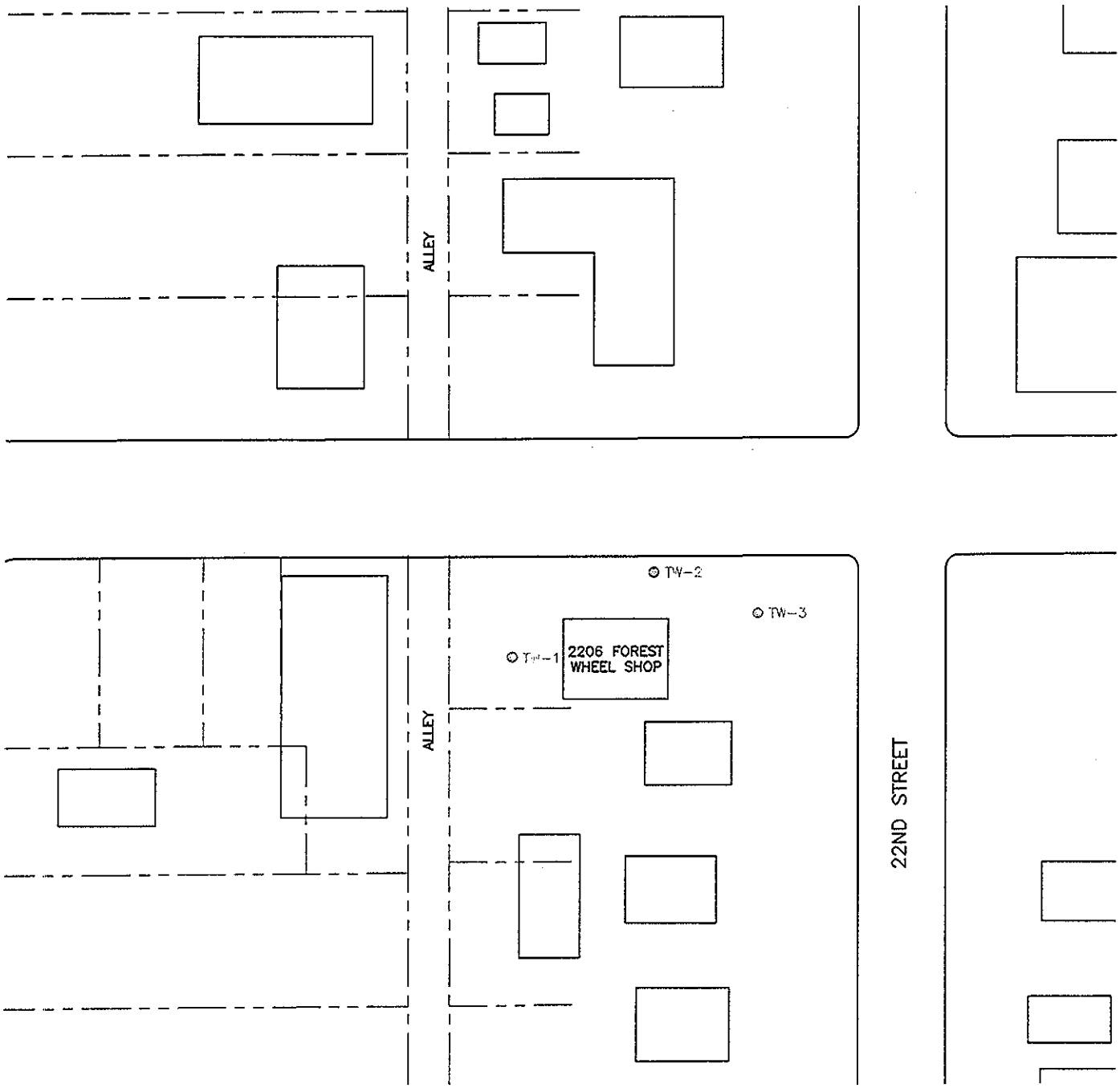
BARKER LEMAR ENGINEERING CONSULTANTS

Christy L. Jaworski
Senior Project Manager

Anita Maher-Lewis
Regional Manager

FIGURE 1

SITE PLAN MAP



LEGEND

BH-1 APPROXIMATE LOCATION OF BOREHOLE

PROPERTY BOUNDARY

BUILDINGS

SCALE

0 60 FT.

SITE MAP
BOREHOLE LOCATIONS
2206 FOREST AVE
PROJECT NO. IADNR 001
DRAWING DATE: MARCH, 2004

BARKER LEMAR
ENGINEERING CONSULTANTS
1801 Industrial Circle - West Des Moines, Iowa - 50265
Phone: 515.256.8814 - Fax: 515.256.0152 - www.barkerlemar.com

FIGURE
1

APPENDIX A

Boring/Monitoring Well Logs

MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number: TW-1 (TEMP)	Facility Name:	Facility Street Address: 2206 Forest Ave. Des Moines, IA
Boring Depth (ft) X Diameter (in): 19.0' X 7.25"		Drilling Method: Hollow Stem
Certified Well Contractor Name: Kevin Sperfslage		Logged by: Adam Browning

Ground Surface Elevation (ASL): 97.6		Top of Casing Elevation (ASL): NA	
Date: 3/22/2004 Start Time:	Date: 3/22/2004 End Time:	UST Number: NA	LUST Number: NA

Depth (feet)	Well Construction Details	Sample Depth (feet)	Sample No.	Sample Type*	Field Screening Results (PID / FID)	Rock Formations, Soil, Color and Classifications, Observations (moisture, odor, etc.) First column for USCS	
		0-1'			0		
		1-2'			0		0.0–0.5 – Concrete
		2-3'			0		
0.0		3-4'			0		
		4-5'			0	CL	0.5-5.0 – Sandy Lean Clay
		5-6'	Lab		0		
1.0		6-7'			0		
		7-8'			0		
		8-9'			0	SP	5.0-12.0 – Brown Sand with Trace of Gravel
		9-10'			0		
		10-11'			0		
		11-12'			0	SP	12.0-12.5 - Wet Brown Sand
		12-13'			0		
		13-14'			0		
		14-15'			0		
		15-16'			0	CL	12.5 - 13.0 – Wet Gray Lean Sandy Clay
8.0		16-17'			0		
		17-18'			0		
		18-19'			0		
9.0						CL	13.0-14.0 – Brown-Gray Lean Sandy Clay
						CL	14.0-19.0 – Gray Silty Lean Clay
19.0							
19.0							19.0 End of Boring

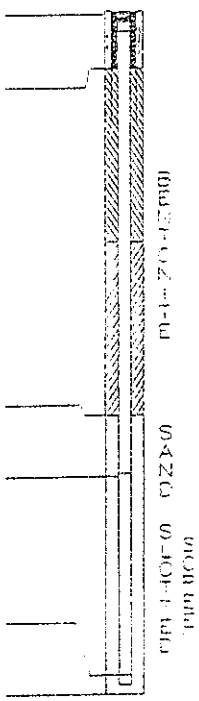
* Sample collected for laboratory analysis SS – Split Spoon

Observations	Date:	3/22/04				
Water Levels (ASL)	Level:	6.5'				
Static Water Level Symbol (v)	Time:					

MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number: TW-2 (TEMP)	Facility Name:	Facility Street Address: 2206 Forest Ave Des Moines, IA
Boring Depth (ft) X Diameter (in): 19.0' X 7.25"		Drilling Method: Hollow Stem
Certified Well Contractor Name: Kevin Sperfslage		Logged by: Adam Browning

Ground Surface Elevation (ASL): 99.3		Top of Casing Elevation (ASL): NA	
Date: 3/22/2004 Start Time:	Date: 3/22/2004 End Time:	UST Number: NA	LUST Number: NA

Depth (feet)	Well Construction Details	Sample Depth (feet)	Sample No.	Sample Type*	Field Screening Results (PID / FID)	Rock Formations, Soil, Color and Classifications, Observations (moisture odor, etc.) First column for USCS	
0.0		0-1'			0		0.0–0.5 – Concrete
		1-2'			0		
		2-3'			0		
		3-4'			0		
		4-5'			0	CL	0.5-1.0 – Brown Gray Lean Sandy Clay
1.0		5-6'	Lab		0		
		6-7'			0		
		7-8'			0		
		8-9'			0	CL	1.0-7.0 – Olive Lean Sandy Clay with Gravel
		9-10'			0		
		10-11'			0		
		11-12'			0		
		12-13'			0	CL	7.0-11.0 - Brown Gray Lean Sandy Clay
		13-14'			0		
3.0						CL	11.0-14.5 – Gray Sandy Lean Clay
4.0							
14.0							14.5 0 End of Boring
14.5							

* Sample collected for laboratory analysis SS – Split Spoon

Observations	Date:	3/22/04				
Water Levels (ASL)	Level:	9.5'				
Static Water Level Symbol (v)	Time:					

MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number: TW-3 (TEMP)	Facility Name:	Facility Street Address: 2206 Forest Ave Des Moines, IA
Boring Depth (ft) X Diameter (in): 19.0' X 7.25"		Drilling Method: Hollow Stem
Certified Well Contractor Name: Kevin Sperfslage		Logged by: Adam Browning

Ground Surface Elevation (ASL): 99.9		Top of Casing Elevation (ASL): NA	
Date: 3/22/2004 Start Time:	Date: 3/22/2004 End Time:	UST Number: NA	LUST Number: NA

Depth (feet)	Well Construction Details	Sample Depth (feet)	Sample No.	Sample Type*	Field Screening Results (PID / FID)	Rock Formations, Soil, Color and Classifications, Observations (moisture, odor, etc) First column for USCS	
		0-1'			0		
		1-2'			1		0.0–0.5 – Concrete
		2-3'			1		
0.0		3-4'			0		
		4-5'			1	CL	0.5-7.0 – Olive Lean Clay with Gravel
		5-6'			3		
1.0		6-7'			4		
		7-8'	LAB		16		
		8-9'			2	CL	7.0-9.0 – Brown-Gray Lean Clay with Gavel
		9-10'			0		
		10-11'			0		
		11-12'			0	CL	9.0-13.0 - Brown Lean Clay
		12-13'			0		
		13-14'			0		
		14-15'			0		
		15-16'			0	CL	13.0-19.0 – Dark Gray Lean Clay with Some Sand
8.0		16-17'			0		
		17-18'			0		
9.0		18-19'			0		
							19.0 End of Boring
19.0							
19.0							

* Sample collected for laboratory analysis SS – Split Spoon

Observations	Date:	3/22/04				
Water Levels (ASL)	Level:	16.0'				
Static Water Level Symbol (v)	Time:					

APPENDIX B

Laboratory Analytical Results

Keystone LABORATORIES, INC.

ACCREDITED IN ACCORDANCE WITH nelac

MEMBER ACIL

Accreditations:
Iowa DNR: 095
New Jersey DEP: IA001
Kansas DHE: E-10287

ANALYTICAL REPORT

April 06, 2004

Work Order: 14C0975

Report To	Work Order Information
Christy Jaworski Barker-Lemar Associates 1801 Industrial Circle West Des Moines, IA 50265	Date Received: 03/23/2004 11:50AM Collector: DK/AB Phone: 515-256-8814 PO Number:

Project : UST-Iowa
Project Number: IDNR 001

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
14C0975-01 TW-1				Matrix:Soil		Collected: 03/22/04 18:00	
Determination of Volatile Petroleum Hydrocarbons							
Benzene	<0.005 mg/kg	0.005	1C43010	OA-1 (GC/MS)	TVK	03/29/04 16:33	
Toluene	<0.005 mg/kg	0.005	1C43010	OA-1 (GC/MS)	TVK	03/29/04 16:33	
Ethylbenzene	<0.005 mg/kg	0.005	1C43010	OA-1 (GC/MS)	TVK	03/29/04 16:33	
Xylenes, total	<0.010 mg/kg	0.010	1C43010	OA-1 (GC/MS)	TVK	03/29/04 16:33	
Methyl-t-butyl Ether (MTBE)	<0.010 mg/kg	0.010	1C43010	OA-1 (GC/MS)	TVK	03/29/04 16:33	
Di-iso-Propyl Ether (DIPE)	<0.010 mg/kg	0.010	1C43010	OA-1 (GC/MS)	TVK	03/29/04 16:33	
Ethyl-tert-Butyl Ether (ETBE)	<0.010 mg/kg	0.010	1C43010	OA-1 (GC/MS)	TVK	03/29/04 16:33	
tert-Amyl Methyl Ether (TAME)	<0.010 mg/kg	0.010	1C43010	OA-1 (GC/MS)	TVK	03/29/04 16:33	
tert-Butyl Alcohol (TBA)	<0.250 mg/kg	0.250	1C43010	OA-1 (GC/MS)	TVK	03/29/04 16:33	
Surrogate 4-Bromofluorobenzene	*114 %*			*81-127*	TVK	03/29/04 16:33	
Determination of Extractable Petroleum Hydrocarbons							
TEH, as gasoline	<5 mg/kg	5	1C43125	Iowa OA-2	SMG	04/01/04 20:38	
TEH, as #2 diesel fuel	<5 mg/kg	5	1C43125	Iowa OA-2	SMG	04/01/04 20:38	
TEH, as waste oil	<5 mg/kg	5	1C43125	Iowa OA-2	SMG	04/01/04 20:38	
Total Extractable Hydrocarbons	<5 mg/kg	5	1C43125	Iowa OA-2	SMG	04/01/04 20:38	
Surrogate Pentacosane	*99.2 %*			*60-140*	SMG	04/01/04 20:38	
14C0975-02 TW-1				Matrix:Water		Collected: 03/22/04 18:00	
Determination of Volatile Petroleum Hydrocarbons							
Benzene	<1 ug/l	1	1C42619	OA-1 (GC/MS)	JRF	03/25/04 14:27	
Toluene	<1 ug/l	1	1C42619	OA-1 (GC/MS)	JRF	03/25/04 14:27	
Ethylbenzene	<1 ug/l	1	1C42619	OA-1 (GC/MS)	JRF	03/25/04 14:27	
Xylenes, total	<2 ug/l	2	1C42619	OA-1 (GC/MS)	JRF	03/25/04 14:27	
Methyl-t-butyl Ether (MTBE)	<1 ug/l	1	1C42619	OA-1 (GC/MS)	JRF	03/25/04 14:27	
Ethyl-tert-Butyl Ether (ETBE)	<2 ug/l	2	1C42619	OA-1 (GC/MS)	JRF	03/25/04 14:27	
Di-iso-Propyl Ether (DIPE)	<2 ug/l	2	1C42619	OA-1 (GC/MS)	JRF	03/25/04 14:27	
tert-Amyl Methyl Ether (TAME)	<2 ug/l	2	1C42619	OA-1 (GC/MS)	JRF	03/25/04 14:27	
tert-Butyl Alcohol (TBA)	<50 ug/l	50	1C42619	OA-1 (GC/MS)	JRF	03/25/04 14:27	
Surrogate 4-Bromofluorobenzene	*108 %*			*81-124*	JRF	03/25/04 14:27	
Determination of Extractable Petroleum Hydrocarbons							
TEH, as gasoline	<0.1 mg/l	0.1	1C42502	Iowa OA-2	SMG	03/26/04 16:55	

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. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL = Method Reporting Limit

Barker-Lemar Associates
1801 Industrial Circle
West Des Moines, IA 50265

April 06, 2004

Work Order: 14C0975

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
14C0975-02 TW-1				Matrix:Water		Collected: 03/22/04 18:00	
Determination of Extractable Petroleum Hydrocarbons							
TEH, as #2 diesel fuel	<0.1 mg/l	0.1	1C42502	Iowa OA-2	SMG	03/26/04 16:55	
TEH, as waste oil	<0.1 mg/l	0.1	1C42502	Iowa OA-2	SMG	03/26/04 16:55	
Total Extractable Hydrocarbons	<0.1 mg/l	0.1	1C42502	Iowa OA-2	SMG	03/26/04 16:55	
Surrogate Pentacosane	*90.6 %*			*70-130*	SMG	03/26/04 16:55	
14C0975-03 TW-2				Matrix:Soil		Collected: 03/22/04 18:00	
Determination of Volatile Petroleum Hydrocarbons							
Benzene	<0.005 mg/kg	0.005	1C43010	OA-1 (GC/MS)	TVK	03/29/04 17:12	
Toluene	<0.005 mg/kg	0.005	1C43010	OA-1 (GC/MS)	TVK	03/29/04 17:12	
Ethylbenzene	<0.005 mg/kg	0.005	1C43010	OA-1 (GC/MS)	TVK	03/29/04 17:12	
Xylenes, total	<0.010 mg/kg	0.010	1C43010	OA-1 (GC/MS)	TVK	03/29/04 17:12	
Methyl-t-butyl Ether (MTBE)	<0.010 mg/kg	0.010	1C43010	OA-1 (GC/MS)	TVK	03/29/04 17:12	
Di-iso-Propyl Ether (DIPE)	<0.010 mg/kg	0.010	1C43010	OA-1 (GC/MS)	TVK	03/29/04 17:12	
Ethyl-tert-Butyl Ether (ETBE)	<0.010 mg/kg	0.010	1C43010	OA-1 (GC/MS)	TVK	03/29/04 17:12	
tert-Amyl Methyl Ether (TAME)	<0.010 mg/kg	0.010	1C43010	OA-1 (GC/MS)	TVK	03/29/04 17:12	
tert-Butyl Alcohol (TBA)	<0.250 mg/kg	0.250	1C43010	OA-1 (GC/MS)	TVK	03/29/04 17:12	
Surrogate 4-Bromofluorobenzene	*112 %*			*81-127*	TVK	03/29/04 17:12	
Determination of Extractable Petroleum Hydrocarbons							
TEH, as gasoline	<5 mg/kg	5	1C43125	Iowa OA-2	SMG	04/01/04 21:27	
TEH, as #2 diesel fuel	<5 mg/kg	5	1C43125	Iowa OA-2	SMG	04/01/04 21:27	
TEH, as waste oil	<5 mg/kg	5	1C43125	Iowa OA-2	SMG	04/01/04 21:27	
Total Extractable Hydrocarbons	<5 mg/kg	5	1C43125	Iowa OA-2	SMG	04/01/04 21:27	
Surrogate Pentacosane	*96.7 %*			*60-140*	SMG	04/01/04 21:27	
14C0975-04 TW-2				Matrix:Water		Collected: 03/22/04 18:00	
Determination of Volatile Petroleum Hydrocarbons							
Benzene	<1 ug/l	1	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:06	
Toluene	<1 ug/l	1	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:06	
Ethylbenzene	<1 ug/l	1	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:06	
Xylenes, total	<2 ug/l	2	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:06	
Methyl-t-butyl Ether (MTBE)	8 ug/l	1	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:06	
Ethyl-tert-Butyl Ether (ETBE)	<2 ug/l	2	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:06	
Di-iso-Propyl Ether (DIPE)	<2 ug/l	2	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:06	
tert-Amyl Methyl Ether (TAME)	<2 ug/l	2	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:06	
tert-Butyl Alcohol (TBA)	<50 ug/l	50	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:06	
Surrogate 4-Bromofluorobenzene	*108 %*			*81-124*	JRF	03/25/04 15:06	
Determination of Extractable Petroleum Hydrocarbons							
TEH, as gasoline	<0.1 mg/l	0.1	1C42502	Iowa OA-2	SMG	03/26/04 17:43	
TEH, as #2 diesel fuel	<0.1 mg/l	0.1	1C42502	Iowa OA-2	SMG	03/26/04 17:43	
TEH, as waste oil	<0.1 mg/l	0.1	1C42502	Iowa OA-2	SMG	03/26/04 17:43	

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. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Keystone LABORATORIES, INC

ACCREDITED IN ACCORDANCE WITH nelac

MEMBER ACIL

Barker-Lemar Associates
1801 Industrial Circle
West Des Moines, IA 50265

April 06, 2004

Work Order: 14C0975

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
14C0975-04 TW-2				Matrix:Water		Collected: 03/22/04 18:00	
Determination of Extractable Petroleum Hydrocarbons							
Total Extractable Hydrocarbons	<0 1 mg/l	0 1	1C42502	Iowa OA-2	SMG	03/26/04 17:43	
Surrogate Pentacosane	*92 5 %*			*70-130*	SMG	03/26/04 17:43	
14C0975-05 TW-3				Matrix:Soil		Collected: 03/22/04 18:00	
Determination of Volatile Petroleum Hydrocarbons							
Benzene	<0 017 mg/kg	0 017	1C43010	OA-1 (GC/MS)	TVK	03/29/04 23:03	
Toluene	<0 017 mg/kg	0 017	1C43010	OA-1 (GC/MS)	TVK	03/29/04 23:03	
Ethylbenzene	<0 017 mg/kg	0 017	1C43010	OA-1 (GC/MS)	TVK	03/29/04 23:03	
Xylenes, total	<0 034 mg/kg	0 034	1C43010	OA-1 (GC/MS)	TVK	03/29/04 23:03	
Methyl-t-butyl Ether (MTBE)	<0 034 mg/kg	0 034	1C43010	OA-1 (GC/MS)	TVK	03/29/04 23:03	
Di-iso-Propyl Ether (DIPE)	<0 034 mg/kg	0 034	1C43010	OA-1 (GC/MS)	TVK	03/29/04 23:03	
Ethyl-tert-Butyl Ether (ETBE)	<0 034 mg/kg	0 034	1C43010	OA-1 (GC/MS)	TVK	03/29/04 23:03	
tert-Amyl Methyl Ether (TAME)	<0 034 mg/kg	0 034	1C43010	OA-1 (GC/MS)	TVK	03/29/04 23:03	
tert-Butyl Alcohol (TBA)	<0 862 mg/kg	0 862	1C43010	OA-1 (GC/MS)	TVK	03/29/04 23:03	
Surrogate 4-Bromofluorobenzene	*119 %*			*81-127*	TVK	03/29/04 23:03	
Determination of Extractable Petroleum Hydrocarbons							
TEH as gasoline	24 mg/kg	5	1C43125	Iowa OA-2	SMG	04/01/04 22:16	
TEH, as #2 diesel fuel	<5 mg/kg	5	1C43125	Iowa OA-2	SMG	04/01/04 22:16	
TEH, as waste oil	<5 mg/kg	5	1C43125	Iowa OA-2	SMG	04/01/04 22:16	
Total Extractable Hydrocarbons	24 mg/kg	5	1C43125	Iowa OA-2	SMG	04/01/04 22:16	
Surrogate Pentacosane	*97 5 %*			*60-140*	SMG	04/01/04 22:16	
14C0975-06 TW-3				Matrix:Water		Collected: 03/22/04 18:00	
Determination of Volatile Petroleum Hydrocarbons							
Benzene	1 ug/l	1	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:44	
Toluene	<1 ug/l	1	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:44	
Ethylbenzene	6 ug/l	1	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:44	
Xylenes, total	<2 ug/l	2	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:44	
Methyl-t-butyl Ether (MTBE)	2 ug/l	1	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:44	
Ethyl-tert-Butyl Ether (ETBE)	<2 ug/l	2	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:44	
Di-iso-Propyl Ether (DIPE)	<2 ug/l	2	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:44	
tert-Amyl Methyl Ether (TAME)	<2 ug/l	2	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:44	
tert-Butyl Alcohol (TBA)	<50 ug/l	50	1C42619	OA-1 (GC/MS)	JRF	03/25/04 15:44	
Surrogate 4-Bromofluorobenzene	*104 %*			*81-124*	JRF	03/25/04 15:44	
Determination of Extractable Petroleum Hydrocarbons							
TEH, as gasoline	<0 1 mg/l	0.1	1C42502	Iowa OA-2	SMG	03/26/04 18:31	
TEH, as #2 diesel fuel	0 6 mg/l	0 1	1C42502	Iowa OA-2	SMG	03/26/04 18:31	
TEH, as waste oil	<0 1 mg/l	0 1	1C42502	Iowa OA-2	SMG	03/26/04 18:31	
Total Extractable Hydrocarbons	0 6 mg/l	0.1	1C42502	Iowa OA-2	SMG	03/26/04 18:31	
Surrogate Pentacosane	*90 6 %*			*70-130*	SMG	03/26/04 18:31	

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MRL = Method Reporting Limit

Barker-Lemar Associates
1801 Industrial Circle
West Des Moines, IA 50265

April 06, 2004

Work Order: 14C0975

Determination of Volatile Petroleum Hydrocarbons - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C42619 - EPA 5030B										
Blank (1C42619-BLK1)				Prepared & Analyzed: 03/25/04						
Benzene	ND	1	ug/l							
Toluene	ND	1	"							
Ethylbenzene	ND	1	"							
Xylenes, total	ND	2	"							
Methyl-t-butyl Ether (MTBE)	ND	1	"							
Ethyl-tert-Butyl Ether (ETBE)	ND	2	"							
Di-iso-Propyl Ether (DIPE)	ND	2	"							
tert-Amyl Methyl Ether (TAME)	ND	2	"							
tert-Butyl Alcohol (TBA)	ND	50	"							
Surrogate: 4-Bromofluorobenzene	*54.1*		"	*50.0*		*108*	*81-124*			
LCS (1C42619-BS1)				Prepared & Analyzed: 03/25/04						
Benzene	57.6	1	ug/l	56.0		103	79-135			
Toluene	49.6	1	"	51.5		96.3	68-141			
Ethylbenzene	62.6	1	"	57.0		110	84-135			
Xylenes, total	120.9	2	"	110.5		109	85-132			
Methyl-t-butyl Ether (MTBE)	150.0	1	"	151.5		99.0	65-135			
Surrogate: 4-Bromofluorobenzene	*53.3*		"	*50.0*		*107*	*81-124*			
Matrix Spike (1C42619-MS1)		Source: 14C0975-02		Prepared: 03/25/04 Analyzed: 03/26/04						
Benzene	61.7	1	ug/l	56.0	ND	110	63-138			
Toluene	50.6	1	"	51.5	ND	98.3	72-128			
Ethylbenzene	66.9	1	"	57.0	ND	117	69-139			
Xylenes, total	128.2	2	"	110.5	ND	116	71-136			
Methyl-t-butyl Ether (MTBE)	154.9	1	"	151.5	ND	102	65-127			
Surrogate: 4-Bromofluorobenzene	*56.0*		"	*50.0*		*112*	*81-124*			
Matrix Spike Dup (1C42619-MSD1)		Source: 14C0975-02		Prepared: 03/25/04 Analyzed: 03/26/04						
Benzene	62.1	1	ug/l	56.0	ND	111	63-138	0.646	12	
Toluene	50.4	1	"	51.5	ND	97.9	72-128	0.396	21	
Ethylbenzene	63.7	1	"	57.0	ND	112	69-139	4.90	12	
Xylenes, total	123.2	2	"	110.5	ND	111	71-136	3.98	10	
Methyl-t-butyl Ether (MTBE)	160.5	1	"	151.5	ND	106	65-127	3.55	18	
Surrogate: 4-Bromofluorobenzene	*53.3*		"	*50.0*		*107*	*81-124*			

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Barker-Lemar Associates
1801 Industrial Circle
West Des Moines, IA 50265

April 06, 2004

Work Order: 14C0975

Determination of Volatile Petroleum Hydrocarbons - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C43010 - EPA 5030B										
Blank (1C43010-BLK1)				Prepared & Analyzed: 03/29/04						
Benzene	ND	0.005	mg/kg							
Toluene	ND	0.005	"							
Ethylbenzene	ND	0.005	"							
Xylenes, total	ND	0.010	"							
Methyl-t-butyl Ether (MTBE)	ND	0.010	"							
Di-iso-Propyl Ether (DIPE)	ND	0.010	"							
Ethyl-tert-Butyl Ether (ETBE)	ND	0.010	"							
tert-Amyl Methyl Ether (TAME)	ND	0.010	"							
tert-Butyl Alcohol (TBA)	ND	0.250	"							
Surrogate: 4-Bromofluorobenzene	*0.2689*		"	*0.2500*		*108*	*81-127*			
LCS (1C43010-BS1)				Prepared & Analyzed: 03/29/04						
Benzene	0.2436	0.005	mg/kg	0.2800		87.0	67-139			
Toluene	0.2602	0.005	"	0.2575		101	63-139			
Ethylbenzene	0.3508	0.005	"	0.2850		123	70-136			
Xylenes, total	0.6712	0.010	"	0.5525		121	67-140			
Methyl-t-butyl Ether (MTBE)	0.6990	0.010	"	0.7575		92.3	65-131			
Surrogate: 4-Bromofluorobenzene	*0.2624*		"	*0.2500*		*105*	*81-127*			
Calibration Check (1C43010-CCV1)				Prepared & Analyzed: 03/29/04						
Benzene	0.4133	0.005	mg/kg	0.4050		102	70-130			
Toluene	0.3803	0.005	"	0.3325		114	70-130			
Ethylbenzene	0.3694	0.005	"	0.3475		106	70-130			
Xylenes, total	0.8218	0.010	"	0.7725		106	70-130			
Methyl-t-butyl Ether (MTBE)	0.3715	0.010	"	0.3425		108	70-130			
Di-iso-Propyl Ether (DIPE)	0.3472	0.010	"	0.3150		110	70-130			
Ethyl-tert-Butyl Ether (ETBE)	0.3620	0.010	"	0.3350		108	70-130			
tert-Amyl Methyl Ether (TAME)	0.3114	0.010	"	0.2925		106	70-130			
tert-Butyl Alcohol (TBA)	5.398	0.250	"	4.975		109	70-130			
Surrogate: 4-Bromofluorobenzene	*0.2848*		"	*0.2500*		*114*	*81-127*			

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Barker-Lemar Associates
1801 Industrial Circle
West Des Moines, IA 50265

April 06, 2004

Work Order: 14C0975

Determination of Volatile Petroleum Hydrocarbons - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C43010 - EPA 5030B										
Matrix Spike (1C43010-MS1)		Source: 14C1179-04		Prepared & Analyzed: 03/29/04						
Benzene	0.3478	0.005	mg/kg	0.2979	0.007	114	66-140			
Toluene	0.3195	0.005	"	0.2739	0.016	111	66-132			
Ethylbenzene	0.3902	0.005	"	0.3032	ND	129	60-140			
Xylenes, total	0.7724	0.010	"	0.5878	0.020	128	71-128			
Methyl-t-butyl Ether (MTBE)	0.9696	0.010	"	0.8059	ND	120	64-120			
Surrogate: 4-Bromofluorobenzene	*0.2993*		"	*0.2660*		*113*	*81-127*			
Matrix Spike Dup (1C43010-MSD1)		Source: 14C1179-04		Prepared & Analyzed: 03/29/04						
Benzene	0.3134	0.005	mg/kg	0.2857	0.007	107	66-140	10.4	27	
Toluene	0.2932	0.005	"	0.2628	0.016	105	66-132	8.58	25	
Ethylbenzene	0.3868	0.005	"	0.2908	ND	133	60-140	0.875	27	
Xylenes, total	0.7424	0.010	"	0.5638	0.020	128	71-128	3.96	25	
Methyl-t-butyl Ether (MTBE)	0.9096	0.010	"	0.7730	ND	118	64-120	6.39	26	
Surrogate: 4-Bromofluorobenzene	*0.2979*		"	*0.2551*		*117*	*81-127*			

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Barker-Lemar Associates
1801 Industrial Circle
West Des Moines, IA 50265

April 06, 2004

Work Order: 14C0975

Determination of Extractable Petroleum Hydrocarbons - Quality Control
Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C42502 - 3510C OA-2 Sep Fnl										
Blank (1C42502-BLK1)				Prepared: 03/24/04 Analyzed: 03/26/04						
TEH, as gasoline	ND	0.1	mg/l							
TEH, as #2 diesel fuel	ND	0.1	"							
TEH, as waste oil	ND	0.1	"							
Total Extractable Hydrocarbons	ND	0.1	"							
Surrogate: Pentacosane	*0.0445*		"	*0.0498*		*89.4*	*70-130*			
LCS (1C42502-BS1)				Prepared: 03/24/04 Analyzed: 03/27/04						
TEH, as #2 diesel fuel	9.77	0.1	mg/l	10.01		97.6	65-110			
Surrogate: Pentacosane	*0.0520*		"	*0.0498*		*104*	*70-130*			
LCS Dup (1C42502-BSD1)				Prepared: 03/24/04 Analyzed: 03/27/04						
TEH, as #2 diesel fuel	9.43	0.1	mg/l	10.01		94.2	65-110	3.54	20	
Surrogate: Pentacosane	*0.0518*		"	*0.0498*		*104*	*70-130*			
Calibration Check (1C42502-CCV1)				Prepared: 03/24/04 Analyzed: 03/26/04						
TEH, as gasoline	2042		mg/l	2050		99.6	85-115			
TEH, as #2 diesel fuel	2193		"	2100		104	85-115			
TEH, as waste oil	2298		"	2030		113	85-115			
Surrogate: Pentacosane	*35.49*		"	*49.80*		*71.3*	*70-130*			
Calibration Check (1C42502-CCV2)				Prepared: 03/24/04 Analyzed: 03/27/04						
TEH, as gasoline	1939		mg/l	2050		94.6	85-115			
TEH, as #2 diesel fuel	2143		"	2100		102	85-115			
TEH, as waste oil	2296		"	2030		113	85-115			
Surrogate: Pentacosane	*38.41*		"	*49.80*		*77.1*	*70-130*			
Reference (1C42502-SRM1)				Prepared: 03/24/04 Analyzed: 03/27/04						
TEH, as #2 diesel fuel	4832	100	mg/l	4754		102	70-130			
Surrogate: Pentacosane	*48.17*		"	*49.80*		*96.7*	*70-130*			

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Barker-Lemar Associates
1801 Industrial Circle
West Des Moines, IA 50265

Determination of Extractable Petroleum Hydrocarbons - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C43125 - 3545 OA-2 PFE										
Blank (1C43125-BLK1)				Prepared: 03/31/04	Analyzed: 04/01/04					
TEH, as gasoline	ND	5	mg/kg							
TEH, as #2 diesel fuel	ND	5								
TEH, as waste oil	ND	5	"							
Total Extractable Hydrocarbons	ND	5	"							
Surrogate: Pentacosane	*1.85*		"	*2.44*		*75.8*	*60-140*			
LCS (1C43125-BS1)				Prepared: 03/31/04	Analyzed: 04/02/04					
TEH, as #2 diesel fuel	484.0	5	mg/kg	500.4		96.7	61-110			
Surrogate: Pentacosane	*2.88*		"	*2.44*		*118*	*60-140*			
Calibration Check (1C43125-CCV1)				Prepared: 03/31/04	Analyzed: 04/01/04					
TEH, as gasoline	1974		mg/kg	2050		96.3	85-115			
TEH, as #2 diesel fuel	2170		"	2100		103	85-115			
TEH, as waste oil	1949		"	2030		96.0	85-115			
Surrogate: Pentacosane	*51.0*		"	*48.7*		*105*	*60-140*			
Calibration Check (1C43125-CCV2)				Prepared: 03/31/04	Analyzed: 04/02/04					
TEH, as gasoline	1783		mg/kg	2050		87.0	85-115			
TEH, as #2 diesel fuel	2069		"	2100		98.5	85-115			
TEH, as waste oil	1934		"	2030		95.3	85-115			
Surrogate: Pentacosane	*52.8*		"	*48.7*		*108*	*60-140*			
Matrix Spike (1C43125-MS1)		Source: 14C1178-01		Prepared: 03/31/04	Analyzed: 04/02/04					
TEH, as #2 diesel fuel	457.2	5	mg/kg	500.2	ND	91.4	51-110			
Surrogate: Pentacosane	*2.99*		"	*2.43*		*123*	*60-140*			
Matrix Spike Dup (1C43125-MSD1)		Source: 14C1178-01		Prepared: 03/31/04	Analyzed: 04/02/04					
TEH, as #2 diesel fuel	432.5	5	mg/kg	500.4	ND	86.4	51-110	5.55	18	
Surrogate: Pentacosane	*2.89*		"	*2.44*		*118*	*60-140*			

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Barker-Lemar Associates
1801 Industrial Circle
West Des Moines, IA 50265

April 06, 2004

Work Order: 14C0975

Determination of Extractable Petroleum Hydrocarbons - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1C43125 - 3545 OA-2 PFE										
Reference (1C43125-SRM1)				Prepared: 03/31/04		Analyzed: 04/02/04				
TEH, as #2 diesel fuel	4753	100	mg/kg	4754		100	70-130			
Surrogate Pentacosane	*54 4*		*"*	*48 7*		*112*	*60-140*			

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

End of Report

Keystone Laboratories, Inc
Jeffrey King, Ph D
Laboratory Director

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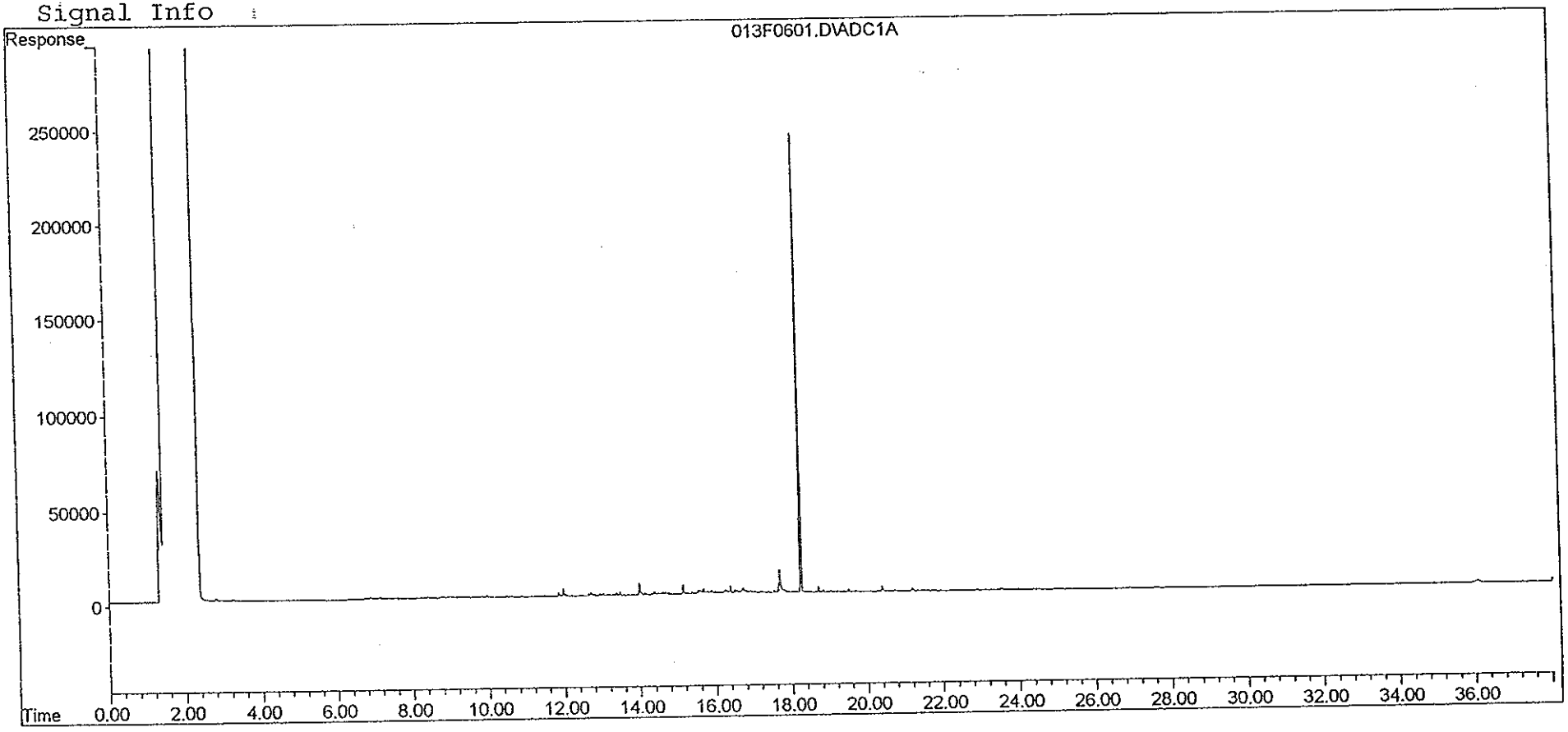
Data File : G:\HPCHEM\2\DATA\040104A2\013F0601.D
Acq On : 01 Apr 2004 08:38 PM
Sample : 14C0975-01
Misc :
IntFile : HYDRO.E
Quant Time: Apr 5 10:03 19104 Quant Results File: F040104.RES

Vial: 13
Operator: SMG
Inst : GC #2
Multiplr: 1.00

Keystone Laboratories
600 East 17th
Newton, IA

Quant Method : G:\HPCHEM\2\METHODS\F040104.M (Chemstation Integrator)
Title : 8015-500/OA-2 Method
Last Update : Fri Apr 02 08:53:24 2004
Response via : Multiple Level Calibration
DataAcq Meth : DIESEL.MTH

Volume Inj. :
Signal Phase :
Signal Info :



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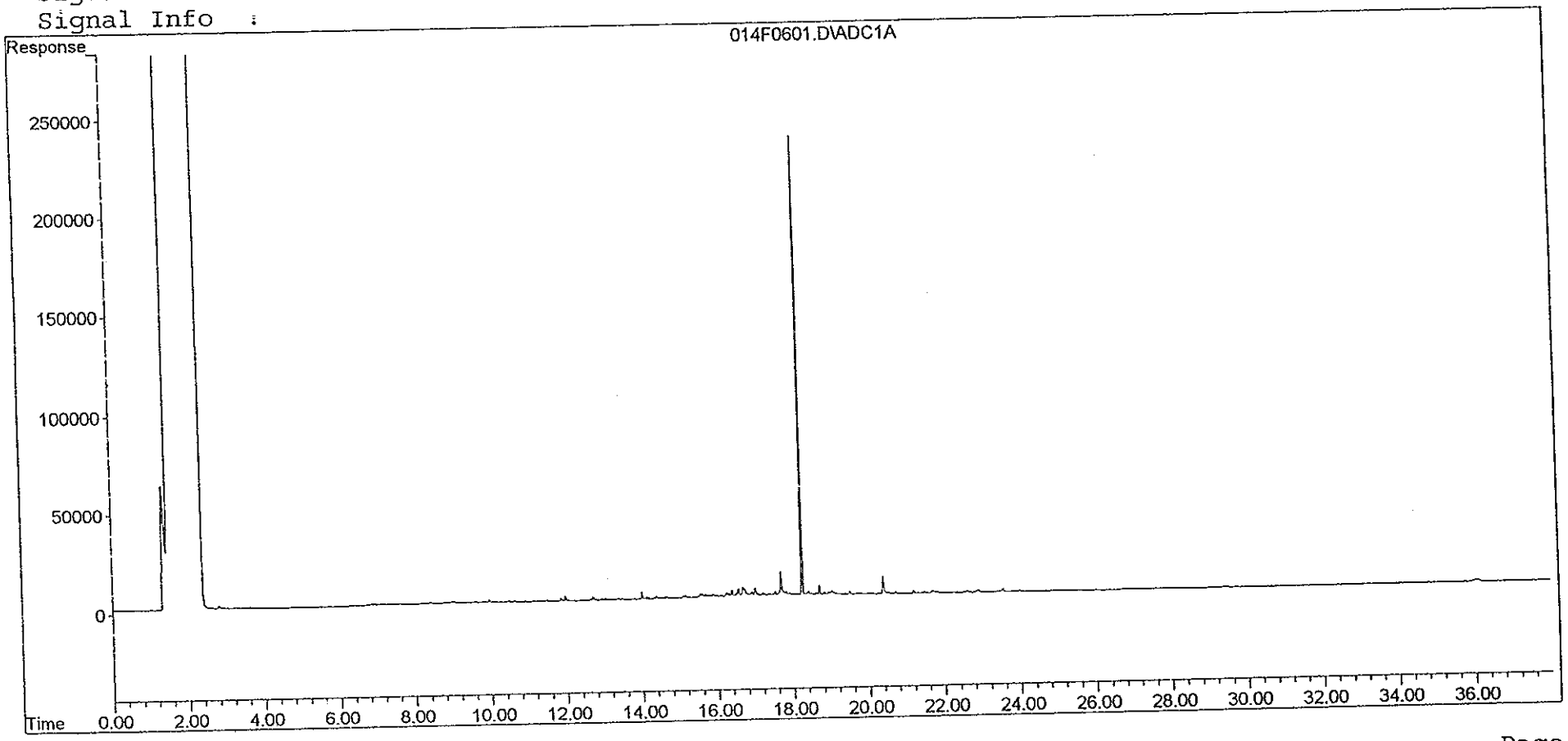
Acq On : 01 Apr 2004 09:27 PM
Sample : 14C0975-03
Misc :
IntFile : HYDRO.E
Quant Time: Apr 5 10:03 19104 Quant Results File: F040104.RES

Vial: 14
Operator: SMG
Inst : GC #2
Multiplr: 1.00

Keystone Laboratories, Inc.

Quant Method : G:\HPCHEM\2\METHODS\F040104.M (Chemstation Integrator)
Title : 8015-500/OA-2 Method
Last Update : Fri Apr 02 08:53:24 2004
Response via : Multiple Level Calibration
DataAcq Meth : DIESEL.MTH

Volume Inj. :
Signal Phase :
Signal Info :



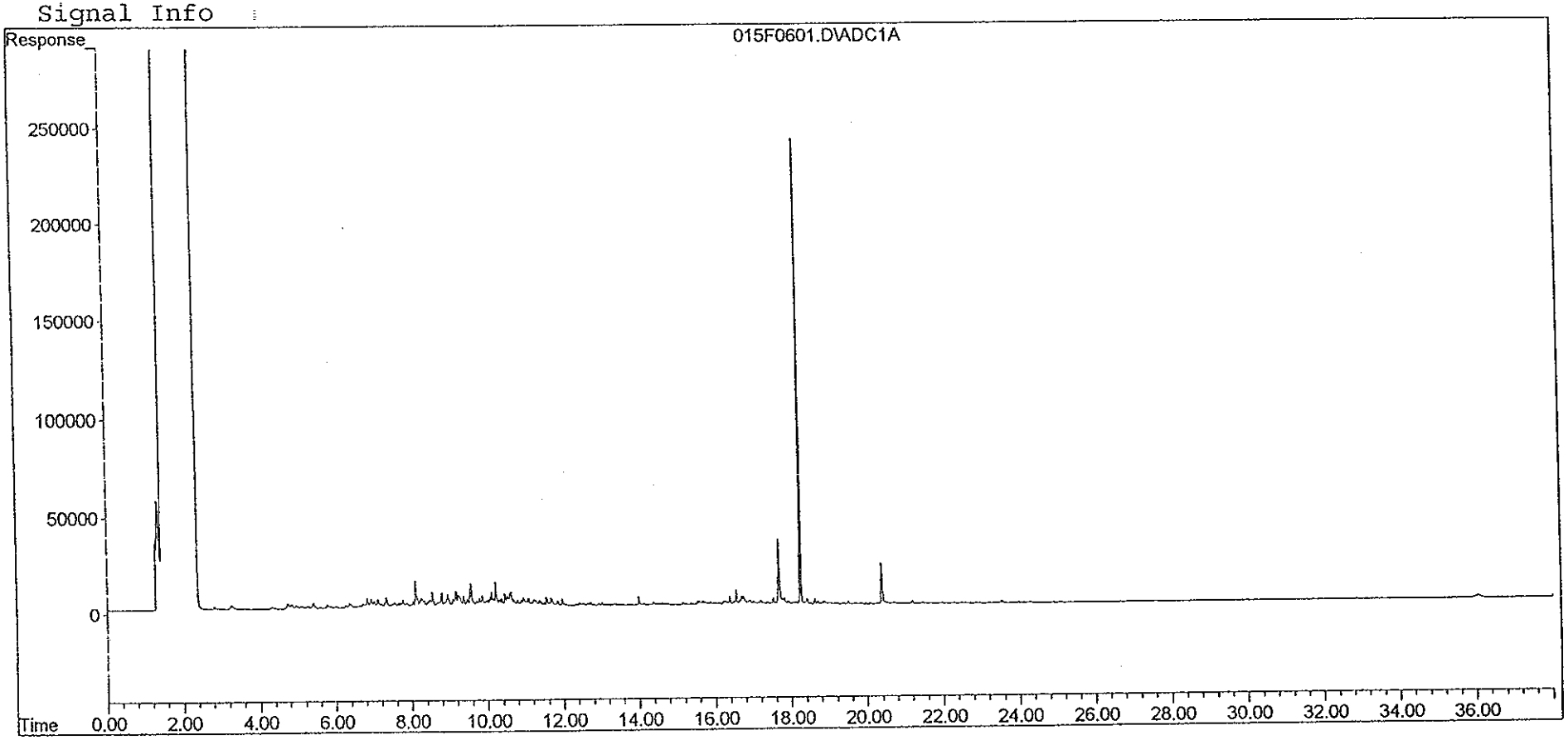
Data File : G:\HPCHEM\2\DATA\040104A2\015F0601.D
Acq On : 01 Apr 2004 10:16 PM
Sample : 14C0975-05
Misc :
IntFile : HYDRO.E
Quant Time: Apr 5 10:03 19104 Quant Results File: F040104.RES

Vial: 15
Operator: SMG
Inst : GC #2
Multiplr: 1.00

Keystone Laboratories, Inc.
600 East 17th St. South
Newton, IA 50208

Quant Method : G:\HPCHEM\2\METHODS\F040104.M (Chemstation Integrator)
Title : 8015-500/OA-2 Method
Last Update : Fri Apr 02 08:53:24 2004
Response via : Multiple Level Calibration
DataAcq Meth : DIESEL.MTH

Volume Inj. :
Signal Phase :
Signal Info :



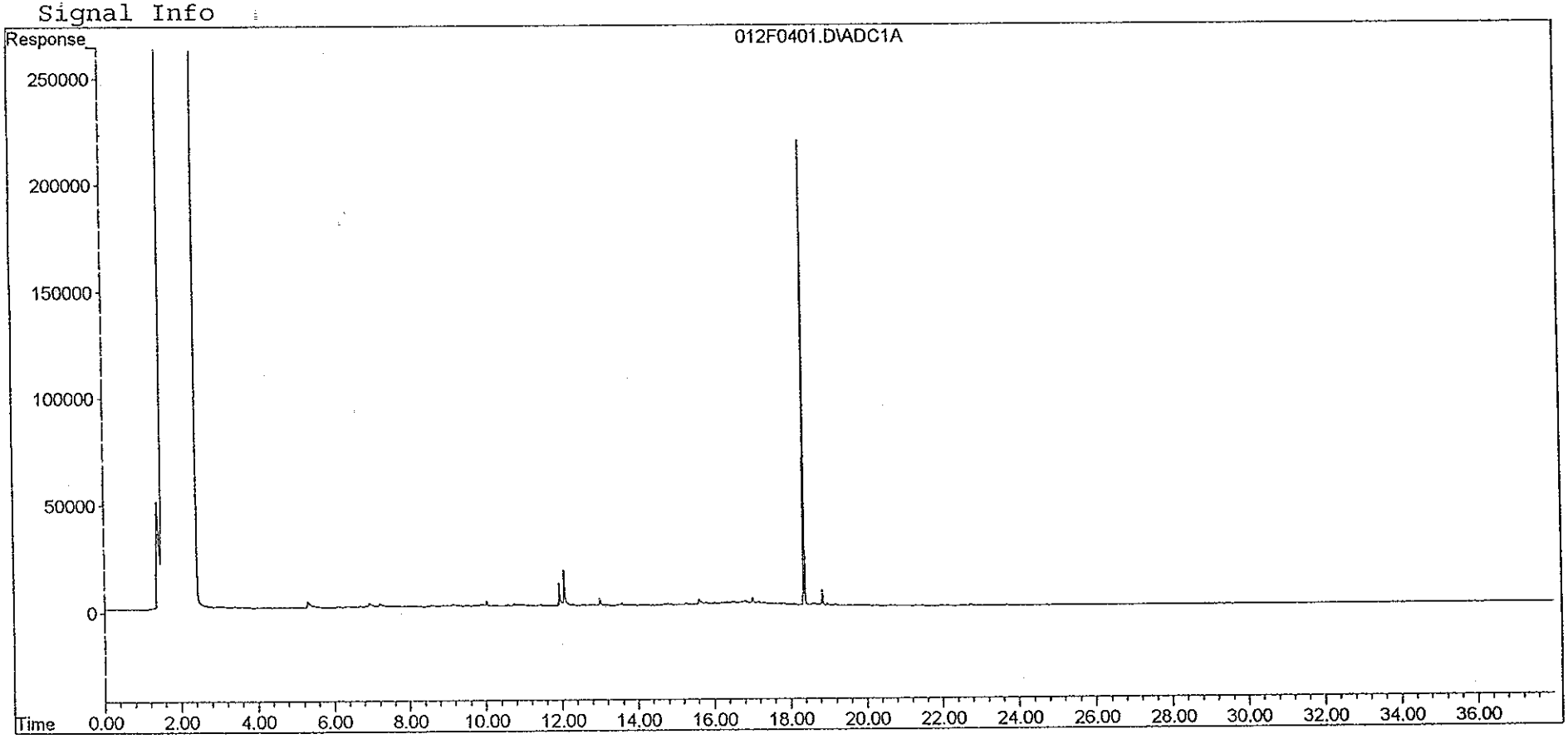
Data File : G:\HPCHEM\2\DATA\032604A2\012F0401.D
Acq On : 26 Mar 2004 04:55 PM
Sample : 14C0975-02
Misc :
IntFile : HYDRO.E
Quant Time: Mar 30 11:00 19104 Quant Results File: F031104.RES

Vial: 12
Operator: SMG
Inst : GC #2
Multiplr: 1.00

Keystone Laboratories, In
603 East 17th St [illegible]
Newton, IA [illegible]

Quant Method : G:\HPCHEM\2\METHODS\F031104.M (Chemstation Integrator)
Title : 8015-500/OA-2 Method
Last Update : Tue Mar 30 10:35:00 2004
Response via : Multiple Level Calibration
DataAcq Meth : DIESEL.MTH

Volume Inj :
Signal Phase :
Signal Info :



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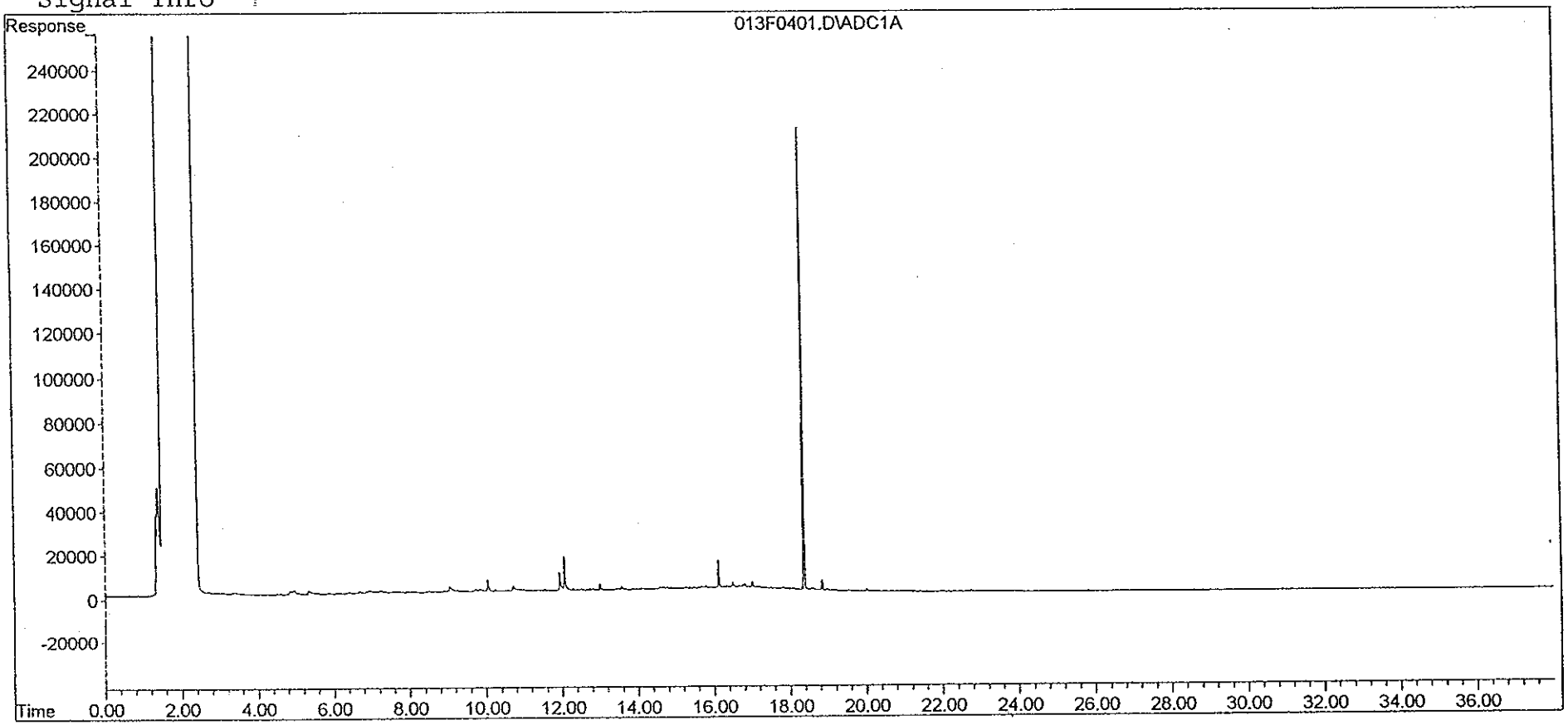
Sample : 14C0975-04
Misc :
IntFile : HYDRO.E
Quant Time: Mar 30 11:01 19104 Quant Results File: F031104.RES

Vial: 13
Operator: SMG
Inst : GC #2
Multiplr: 1.00

Keystone Laboratories, Inc.
609 [illegible] 17th St. South
[illegible]

Quant Method : G:\HPCHEM\2\METHODS\F031104.M (Chemstation Integrator)
Title : 8015-500/OA-2 Method
Last Update : Tue Mar 30 10:35:00 2004
Response via : Multiple Level Calibration
DataAcq Meth : DIESEL.MTH

Volume Inj :
Signal Phase :
Signal Info :

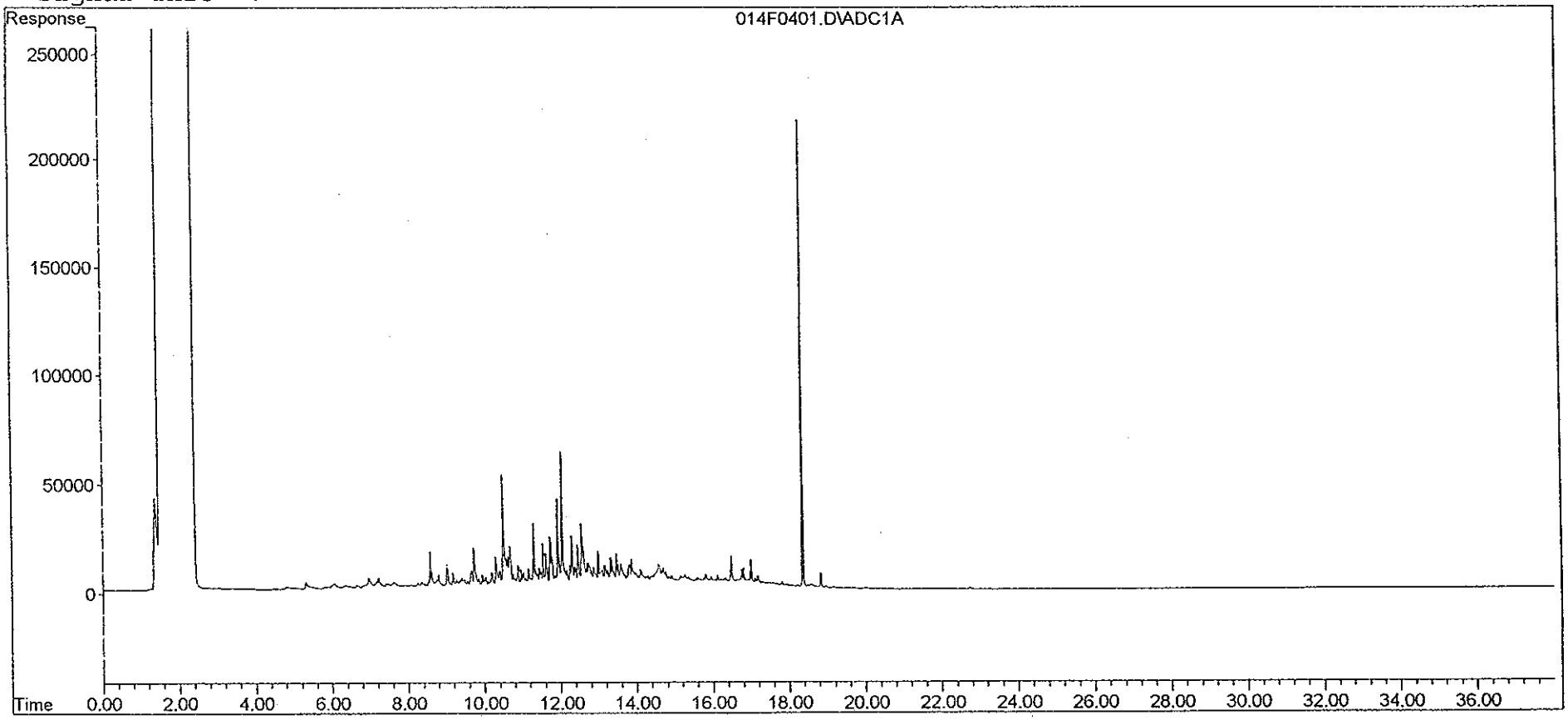


Data File : G:\HPCHEM\2\DATA\032604A2\014F0401.D Vial: 14
Acq On : 26 Mar 2004 06:31 PM Operator: SMG
Sample : 14C0975-06 Inst : GC #2
Misc : Multiplr: 1.00
IntFile : HYDRO.E
Quant Time: Mar 30 11:02 19104 Quant Results File: F031104.RES

Keystone Laboratories, In

Quant Method : G:\HPCHEM\2\METHODS\F031104.M (Chemstation Integrator)
Title : 8015-500/OA-2 Method
Last Update : Tue Mar 30 10:35:00 2004
Response via : Multiple Level Calibration
DataAcq Meth : DIESEL.MTH

Volume Inj :
Signal Phase :
Signal Info :



Qua cat: Rep

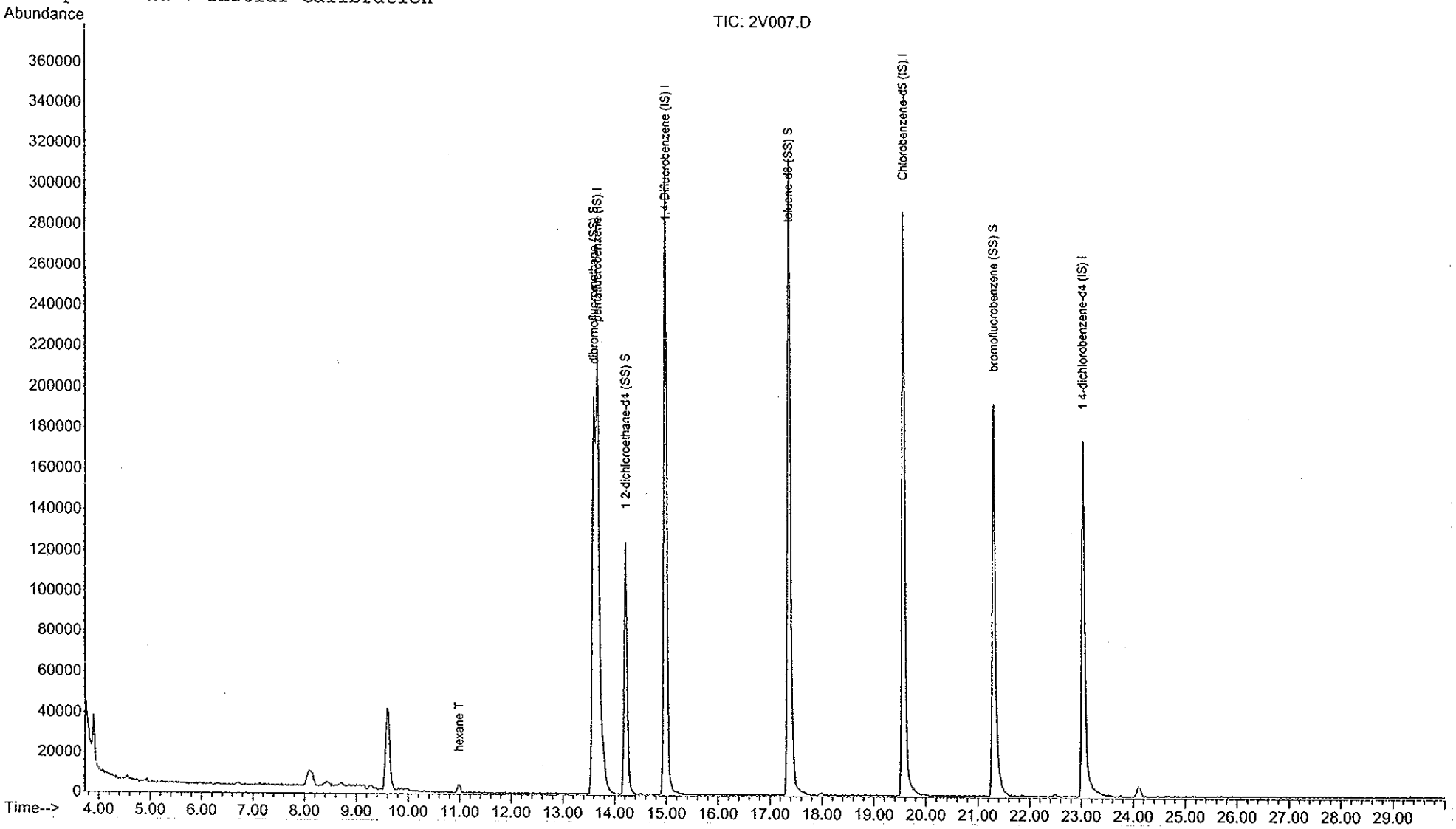
Data File : G:\MSCHEM\2\DATA\032904A2\2V007.D
Acq On : 29 Mar 2004 4:33 pm
Sample : 14C0975-01
Misc : * 1.03 g
MS Integration Params: rteint.p
Quant Time: Mar 30 14:09 2004

Vial: 7
Operator. TVK
Inst MS #2
Multiplr. 1.00

Quant Results File: BW021004.RES

Keystone Laboratories, Inc.
600 [illegible] 17th [illegible] South
[illegible]

Method : G:\MSCHEM\2\METHODS\BW021004.M (RTE Integrator)
Title : BTEX Water
Last Update : Thu Feb 12 12:53:48 2004
Response via : Initial Calibration



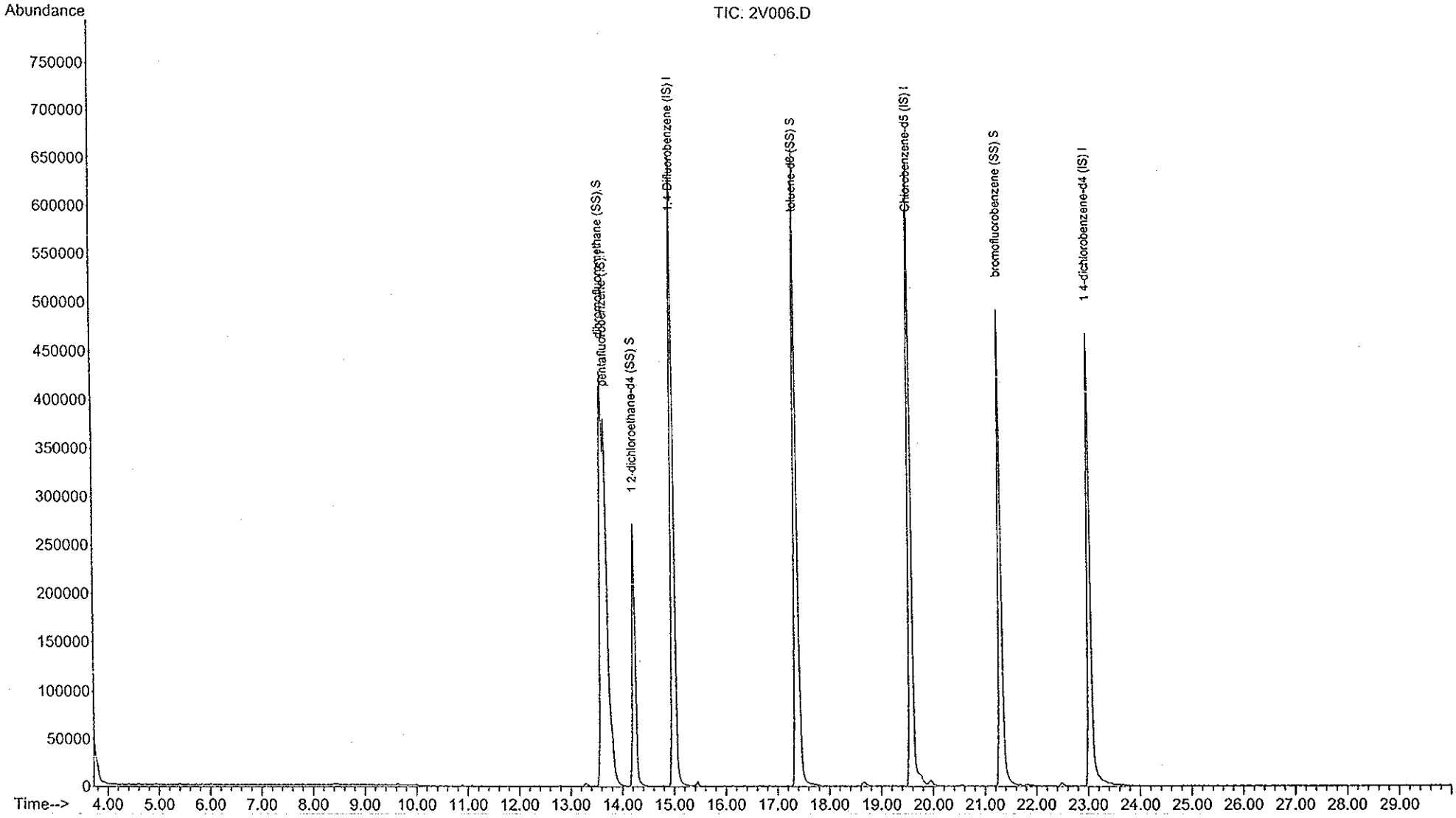
Data File : G:\MSCHEM\2\DATA\032504A2\2V006.D
Acq On : 25 Mar 2004 2:27 pm
Sample : 14C0975-02
Misc :
MS Integration Params: rteint.p
Quant Time: Mar 26 13:49 2004

Vial: 6
Operator: JRF
Inst : MS #2
Multiplr: 1.00

Quant Results File: BW021004.RES

Keystone Laboratories, Inc.
600 East [illegible]
Newton, MA [illegible]

Method : G:\MSCHEM\2\METHODS\BW021004.M (RTE Integrator)
Title : BTEX Water
Last Update : Thu Feb 12 12:53:48 2004
Response via : Initial Calibration



Quantitation Report

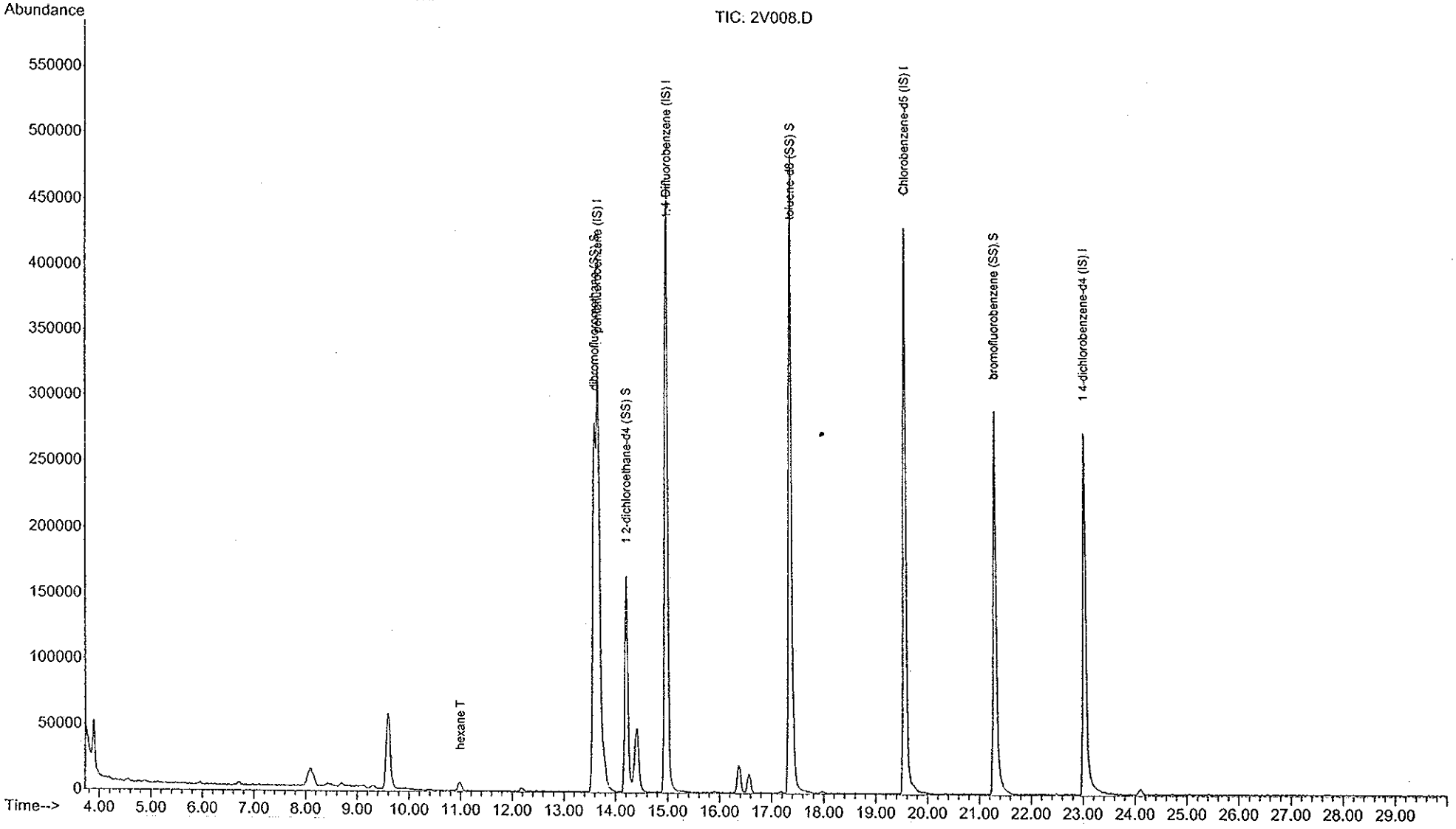
Data File : G:\MSCHEM\2\DATA\032904A2\2V008.D
Acq On : 29 Mar 2004 5:12 pm
Sample : 14C0975-03
Misc : * 0.99 g
MS Integration Params: rteint.p
Quant Time: Mar 30 14:09 2004

Vial: 8
Operator: TVK
Inst : MS #2
Multiplr. 1.00

Quant Results File: BW021004.RES

Keystone Laboratories, Inc.
600 East 17th [illegible]
Newton, IA 50208

Method : G:\MSCHEM\2\METHODS\BW021004.M (RTE Integrator)
Title : BTEX Water
Last Update : Thu Feb 12 12:53:48 2004
Response via : Initial Calibration



Quantitation Report

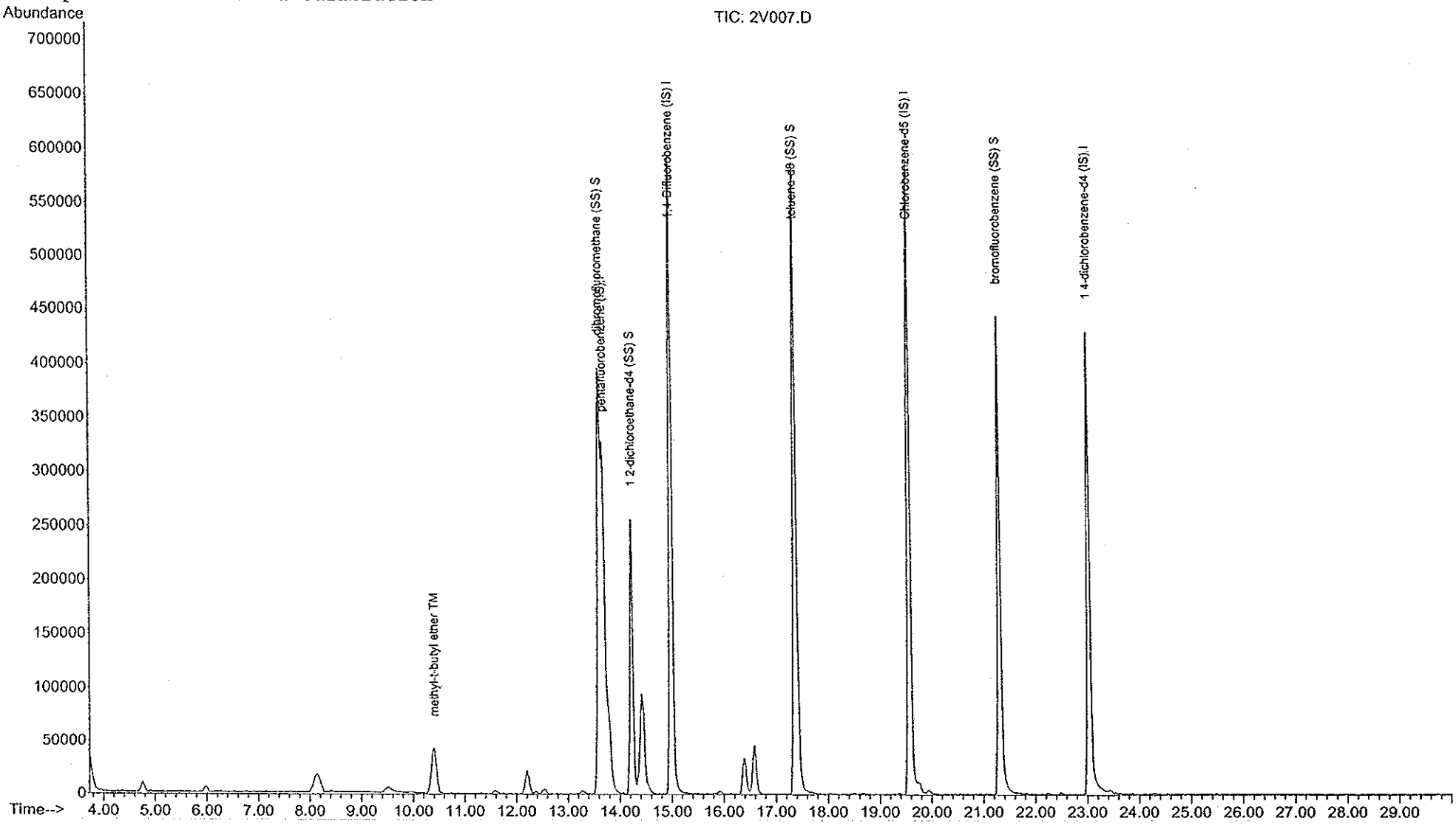
Data File G:\MSCHEM\2\DATA\032504A2\2V007.D
Acq On 25 Mar 2004 3:06 pm
Sample 14C0975-04
Misc
MS Integration Params: rteint.p
Quant Time: Mar 26 13:50 2004

Vial. 7
Operator: JRF
Inst MS #2
Multiplr. 1.00

Quant Results File: BW021004.RES

600 East 17th Street
Newton, IA

Method G:\MSCHEM\2\METHODS\BW021004.M (RTE Integrator)
Title BTEX Water
Last Update Thu Feb 12 12:53:48 2004
Response via Initial Calibration



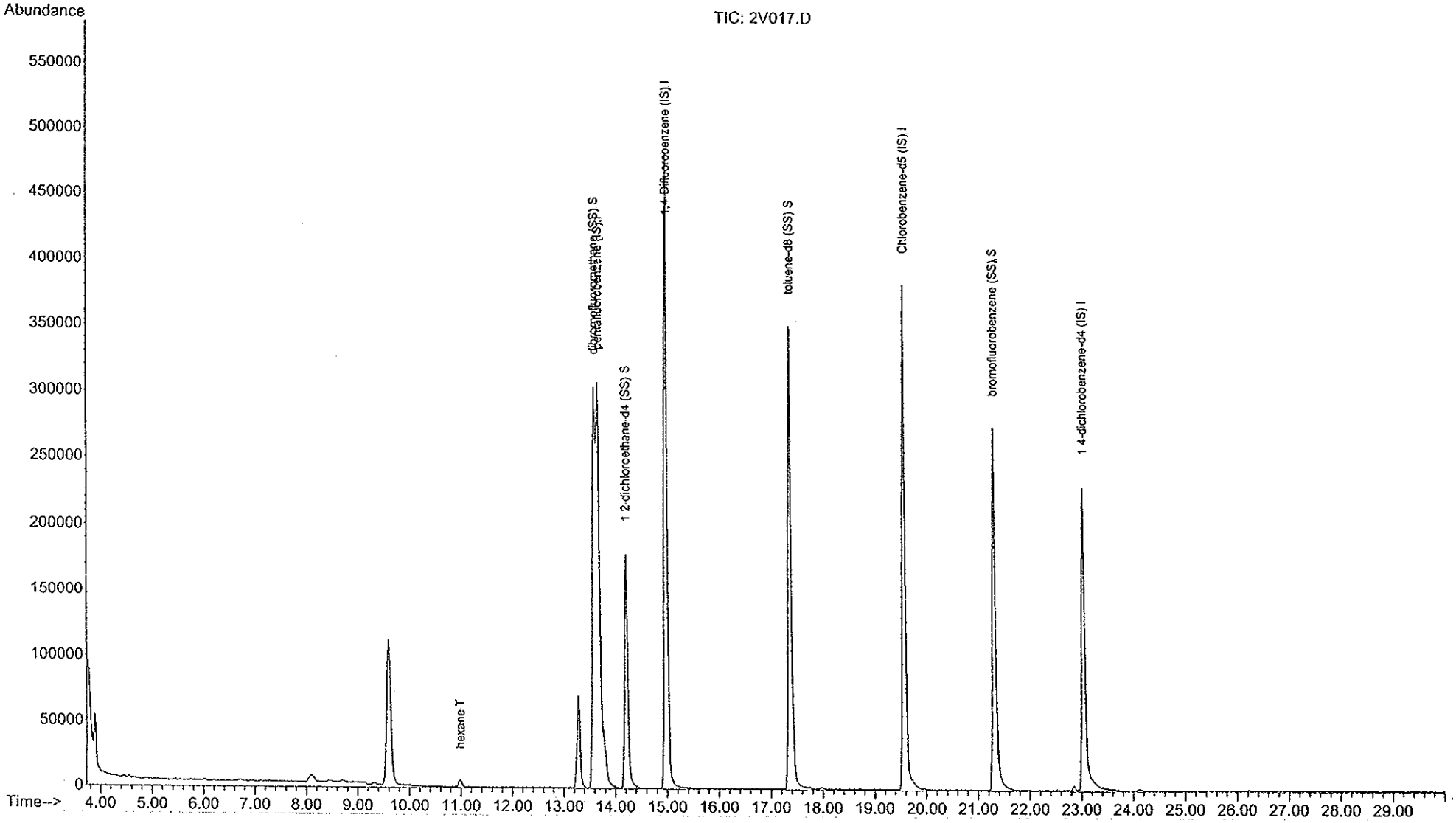
Data File : G:\MSCHEM\2\DATA\032904A2\2V017.D
Acq On : 29 Mar 2004 11:03 pm
Sample : 14C0975-05
Misc : * 0.29g
MS Integration Params: rteint.p
Quant Time: Mar 30 14:09 2004

Vial: 17
Operator: TVK
Inst : MS #2
Multiplr: 1.00

Quant Results File: BW021004.RES

Keystone Laboratories, Inc.
600 East 17th St. South
Newton, IA 50208

Method : G:\MSCHEM\2\METHODS\BW021004.M (RTE Integrator)
Title : BTEX Water
Last Update : Thu Feb 12 12:53:48 2004
Response via : Initial Calibration

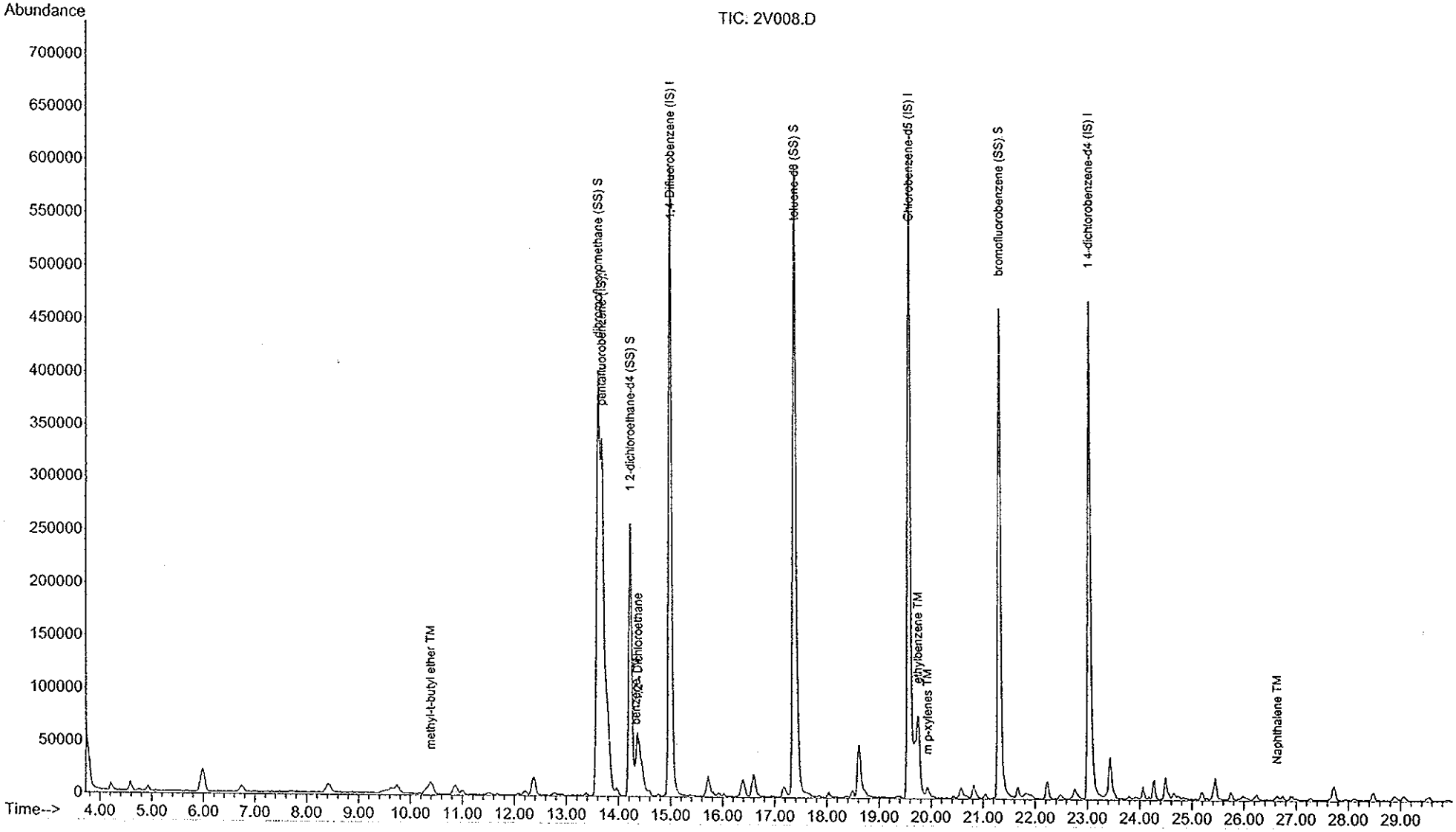


Data File : G:\MSCHEM\2\DATA\032504A2\2V008.D
Acq On : 25 Mar 2004 3:44 pm
Sample : 14C0975-06
Misc :
MS Integration Params: rteint.p
Quant Time: Mar 26 13:50 2004

Vial. 8
Operator. JRF
Inst : MS #2
Multiplr: 1.00

Quant Results File: BW021004.RES

Method : G:\MSCHEM\2\METHODS\BW021004.M (RTE Integrator)
Title : BTEX Water
Last Update : Thu Feb 12 12:53:48 2004
Response via : Initial Calibration



2V008.D BW021004.M Tue Mar 30 09:09:21 2004

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES, INC.

☒ 600 E. 17th St. S.
Newton, IA 50208
Phone: 641-792-8451
Fax: 641-792-7989

☐ 3012 Ansborough Ave.
Waterloo, IA 50701
Phone: 319-235-4440
Fax: 319-235-2480

☐ 1304 Adams
Kansas City, KS 66103
Phone: 913-321-7856
Fax: 913-321-7937

PAGE ____ OF ____

PRINT OR TYPE INFORMATION BELOW
SAMPLER: DK/AB [signature]
SITE NAME: IDNR 001
ADDRESS: 2200 FOREST DR
CITY/ST/ZIP: DSM IA
PHONE:

REPORT TO:
NAME: CHRISTY JAWORSKI
COMPANY NAME: BARKER LEMAR
ADDRESS: 1801 INDUSTRIAL CIRCLE
CITY/ST/ZIP: WEST DES MOINES
PHONE: 515 256-8814
FAX: 256-0152

BILL TO:
NAME:
COMPANY NAME:
ADDRESS:
CITY/ST/ZIP:
PHONE:
Keystone Quote No.: (If Applicable)

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO OF CONTAINERS	MATRIX	GRAB/COMPOSITE	BTEX MTBE GSMS	TEH BY OA2							SAMPLE CONDITION/COMMENTS	LABORATORY SAMPLE NUMBER
TW-1	03-22	6:00PM	6-7'	1	SOLID		X	X								01
TW-1	↓	↓	WATER SAMPLE	4	LIQ		X	X								02
TW-2			9-10'	1	SOLID		X	X								03
TW-2			WATER SAMPLE	4	LIQ		X	X								04
TW-3			7-8'	1	SOLID		X	X								05
TW-3			WATER SAMPLE	4	LIQ		X	X								06

ANALYSES REQUIRED

LAB USE ONLY
LABORATORY WORK ORDER NO. 14C0975
SAMPLE TEMPERATURE UPON RECEIPT: °C

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Turn-Around:
[signature]	Date 03-22-04 Time 6:00PM			☐ Standard ☐ Rush ____ Contact Lab Prior to Submission
Relinquished by: (Signature)	Date / Time	Received for Lab by: (Signature) [signature]	Date 3/23/04 Time 11:50 Am	Remarks:

Original - Return with Report • Yellow - Lab Copy • Pink - Sampler Copy

FORM: CCR 7-97

BARKER, LEMAR & ASSOCIATES
Consulting Engineers

Work Product Review

Project Name IADNR Job No. 001 Task No. _____

Project Manager Christy Author CLJ

Date Due 5-4-04 Description of Work Product Site Assessment 2206 Forest

ATTACH THIS FORM TO DOCUMENT DURING PROCESSING AND DOCUMENT REVIEWS

Review Protocol			Date Due	Initials	Date Completed
Draft Document					
Author/Project Manager Review					
Subject/Section	Author	Reviewer			
all	CLJ			TCB	5/6/04
Final Review					
Technical Editor Review (QA/QC)					
Repro-Ready Review (Alternate/PM)					
Post-Repro Review					

Special Instructions _____

1300 Cummins Road • Suite 201 • Des Moines, Iowa 50315 • (515) 256-8814 • FAX (515) 256-0152
4374 State Street • Suite 3 • Bettendorf, Iowa 52722 • (319) 359-0447 • FAX (319) 359-0474
16 Municipal Drive • Suite H • Arnold, Missouri 63010 • (636) 287-3050 • FAX (636) 287-1739