

**INTERIM REPORT
SITE CHARACTERIZATION
EIGHTH AVENUE AREA
NINTH AVENUE TERMINAL
PORT OF OAKLAND, CALIFORNIA
SCI 133.005**

VOLUME II OF II

**APPENDIX E- WELL DEVELOPMENT AND
GROUNDWATER MEASUREMENT FORMS
PERMITS**

**APPENDIX F - ANALYTICAL TEST REPORTS AND
CHAIN-of-CUSTODY FORMS FOR
SCI'S SOIL AND GROUNDWATER
INVESTIGATION**

AUGUST 9, 1996

■ **Subsurface Consultants, Inc.**

3736 Mt. Diablo Boulevard, Suite 200 • Lafayette, California • (510) 299-7960

SCI

Subsurface Consultants, Inc.

3736 Mt. Diablo Blvd., Suite 200, Lafayette, CA 94549

Phone: (510) 299-7960 Fax: (510) 299-7970

LETTER OF TRANSMITTAL

TO: Mr. Jonathan Redding
Fitzgerald, Abbott & Beardsley
1221 Broadway, 21st Floor
Oakland, CA 94612

DATE: August 12, 1996
PROJECT: Ninth Avenue Terminal/Port of Oakland
SCI JOB NUMBER: 133.005

WE ARE SENDING YOU:

16 copies

<input checked="" type="checkbox"/> of our final report	<input type="checkbox"/> if you have any questions, please call
<input type="checkbox"/> a draft of our report	<input type="checkbox"/> for your review and comment
<input type="checkbox"/> a Service Agreement	<input type="checkbox"/> please return an executed copy
<input type="checkbox"/> a proposed scope of services	<input type="checkbox"/> for geotechnical services
<input type="checkbox"/> specifications	<input type="checkbox"/> with our comments
<input type="checkbox"/> grading/foundation plans	<input type="checkbox"/> with Chain of Custody documents
<input type="checkbox"/> soil samples/groundwater samples	<input checked="" type="checkbox"/> for your use
<input type="checkbox"/> an executed contract	<input type="checkbox"/>

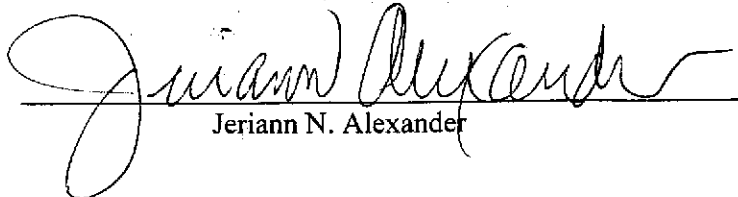
COPIES TO: (1) Ms. Michele Heffes, Esq., Deputy Port Attorney,
Port of Oakland, 530 Water Street, Oakland, CA 94607

(1) Mr. Jeff Rubin, Environmental Department,
Port of Oakland, 530 Water Street, Oakland, CA 94607

(1) Mr. Barney Chan, Alameda County Health Care Services Agency,
5997 Parkside Drive, Pleasanton, CA 94588

(1) Mr. Rich Hiatt, Regional Water Quality Control Board
2101 Webster Street, Suite 500, Oakland, CA 94612

BY:



Jeriann N. Alexander

APPENDIX E

**WELL DEVELOPMENT AND GROUNDWATER
MEASUREMENT FORMS
PERMITS**



ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

VOICE (510) 484-2600

FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT Ninth Avenue Terminal /
Part of Oakland - 7th, 8th, & 9th Avenues
south of Embarcadero, Oakland to Inner Harbor

PERMIT NUMBER 96207
 LOCATION NUMBER _____

CLIENT
 Name Part of Oakland / Ms. Michelle Haffes
 Address 530 Water Street Voice 510-272-1100
 City Oakland, CA Zip 94604-2064

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT
 Name Subsurface Consultants, Inc. 0137
Serone de Verrier Fax 510-268-0461
 Address 171-12th St., Suite 201 Voice 510-268-0461
 City Oakland, CA Zip 94607

A. GENERAL

1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER WELLS, INCLUDING PIEZOMETERS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

TYPE OF PROJECT

Well Construction	Geotechnical Investigation
Cathodic Protection _____	General _____
Water Supply _____	Contamination <u>X</u>
Monitoring _____	Well Destruction _____

PROPOSED WATER SUPPLY WELL USE N/A

Domestic _____	Industrial _____	Other _____
Municipal _____	Irrigation _____	

DRILLING METHOD:

Mud Rotary _____ Air Rotary _____ Auger _____
 Cable _____ Other Enviro-Core

DRILLER'S LICENSE NO. 636387

WELL PROJECTS N/A

Drill Hole Diameter _____ in.	Maximum _____
Casing Diameter _____ in.	Depth _____ ft.
Surface Seal Depth _____ ft.	Number _____

GEOTECHNICAL PROJECTS

Number of Borings <u>12</u>	Maximum _____
Hole Diameter <u>4</u> in.	Depth <u>15</u> ft.

ESTIMATED STARTING DATE March 21, 1996

ESTIMATED COMPLETION DATE March 26, 1996

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-6B.

Approved Wyman Hong Date 19 Mar 96
 Wyman Hong

APPLICANT'S SIGNATURE [Signature] Date 3/15/96

91992

WELL DEVELOPMENT FORM

Project Name: KOT Well Number: SM SCI-MW-1
 Job No.: 133.005 Well Casing Diameter: 2 inches
 Developed By: DWA Date: 5/23/96
 TOC Elevation: _____ Weather: sunny

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater (below TOC) 5.28 feet
 Feet of Water in Well 12.72 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.1 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Development Method disposable bailer

*very slow recharge
(overnight)*

FIELD MEASUREMENTS

Gallons Removed	pH	F Temp (°F)	Conductivity (micromhos/cm)	Salinity ‰	D.O. = 6.4 ppm	Comments
<u>5</u>	<u>7.94</u>	<u>64.5</u>	<u>3210</u>	_____	_____	<u>semi-clear / no odor</u>
<u>10</u>	<u>7.83</u>	<u>65.5</u>	<u>3570</u>	_____	_____	<u>mucky / PRESS DRY @ 12 gals.</u>
<u>15</u>	<u>7.91</u>	<u>66.8</u>	<u>3360</u>	_____	_____	↓
<u>20</u>	<u>7.84</u>	<u>67.8</u>	<u>3330</u>	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

Total Gallons Removed 20 gallons
 Depth to Groundwater After Development (below TOC) 5.71' feet

<h1 style="margin: 0;">Subsurface Consultants</h1>	JOB NUMBER	DATE	APPROVED	PLATE

WELL DEVELOPMENT FORM

Project Name: KOT Well Number: SCI-MW-2
 Job No.: 133.005 Well Casing Diameter: 2 inches
 Developed By: DWA Date: 5/23/96
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater (below TOC) 5.88 feet
 Feet of Water in Well 12.12 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.0 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Development Method disposable bailer

fast recharge

FIELD MEASUREMENTS

Gallons Removed	pH	F Temp (°F)	Conductivity (micromhos/cm)	DO = 7.1 ppm Salinity ‰	Comments
<u>5</u>	<u>8.19</u>	<u>62.2</u>	<u>2720</u>	_____	<i>murky / slight odor w/ sheen</i>
<u>10</u>	<u>7.96</u>	<u>63.1</u>	<u>2800</u>	_____	<i>decreasing turbidity</i>
<u>15</u>	<u>7.92</u>	<u>69.0</u>	<u>3060</u>	_____	_____
<u>20</u>	<u>7.76</u>	<u>64.1</u>	<u>2850</u>	_____	_____

Total Gallons Removed 20 gallons
 Depth to Groundwater After Development (below TOC) 7.12' feet

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL DEVELOPMENT FORM

Project Name: KOT Well Number: SCI-MW-3
 Job No.: 133.005 Well Casing Diameter: 2 inches
 Developed By: DWA Date: 5/23/96
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater (below TOC) 4.65 feet
 Feet of Water in Well 13.35 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.1 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Development Method disposable bailer

slow / moderate recharge

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity ‰	Comments
<u>5</u>	<u>7.95</u>	<u>72.2</u>	<u>3390</u>		<i>p.o. = .4ppm</i> Semi-clear / no odor muddy w/ slight odor spotty streak ↓
<u>10</u>	<u>7.44</u>	<u>72.0</u>	<u>3120</u>		
<u>15</u>	<u>7.69</u>	<u>72.5</u>	<u>3320</u>		
<u>20</u>	<u>7.92</u>	<u>73.4</u>	<u>3400</u>		

Total Gallons Removed 20 gallons
 Depth to Groundwater After Development (below TOC) 7.38' feet

Subsurface Consultants

JOB NUMBER	DATE	APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT Well Number: MW-1
 Job No.: 133,005 Well Casing Diameter: 2 inch
 Sampled By: DWA Date: 5/24/96
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 15.50 feet
 Depth to Groundwater (below TOC) 5.04 feet
 Feet of Water in Well 10.46 feet
 Depth to Groundwater When 80% Recovered 7.13 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.7 gallons
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

slow recharge

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	D.O. = 0ppm Salinity 5%	Comments
<u>1</u>	<u>7.98</u>	<u>64.0</u>	<u>2510</u>		<u>clear/no odor</u> ↓
<u>2</u>	<u>7.39</u>	<u>65.0</u>	<u>3020</u>		
<u>3</u>	<u>7.42</u>	<u>63.9</u>	<u>3000</u>		
<u>4</u>	<u>7.20</u>	<u>64.8</u>	<u>3350</u>		
<u>5</u>	<u>7.34</u>	<u>64.8</u>	<u>3350</u>		

Total Gallons Purged 5 gallons
 Depth to Groundwater Before Sampling (below TOC) 7.52 feet
 Sampling Method disposable bailer
 Containers Used 3 40 ml 1 liter _____ pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT Well Number: MW-2
 Job No.: 133.005 Well Casing Diameter: 2 inch
 Sampled By: DWA Date: 5/24/96
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 15.50 feet
 Depth to Groundwater (below TOC) 4.41 feet
 Feet of Water in Well 11.09 feet
 Depth to Groundwater When 80% Recovered 6.63 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.8 gallons
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

slow recharge

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	D.O. = 0 ppm Salinity 5%	Comments
1	8.26	67.8	2800	_____	clear/no odor
2	7.56	66.6	2610	_____	
3	7.34	65.8	2850	_____	
4	7.29	65.3	2760	_____	
5	7.30	64.7	2790	_____	Dex @ 5 gals.

Total Gallons Purged 5 gallons
 Depth to Groundwater Before Sampling (below TOC) 6.70' feet
 Sampling Method disposable bailer
 Containers Used 3 40 ml 1 liter _____ pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT Well Number: MW-3
 Job No.: 133.005 Well Casing Diameter: 2 inch
 Sampled By: DWA Date: 5/24/96
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 20.00 feet
 Depth to Groundwater (below TOC) 4.49 feet
 Feet of Water in Well 15.51 feet
 Depth to Groundwater When 80% Recovered 7.59 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.5 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

Very slow recharge

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	D.O. = 2.6 ppm Salinity ‰	Comments
<u>2</u>	<u>8.07</u>	<u>63.4</u>	<u>3420</u>		<i>Clean / slight odor w/ suspended particulates increasing particulates murky / dry @ 6 gals.</i>
<u>4</u>	<u>7.48</u>	<u>64.6</u>	<u>3470</u>		
<u>6</u>	<u>7.77</u>	<u>65.3</u>	<u>3250</u>		
<u>8</u>	<u>7.70</u>	<u>64.2</u>	<u>2850</u>		

Total Gallons Purged 8 gallons
 Depth to Groundwater Before Sampling (below TOC) 13.15 on 5/25/96 feet
 Sampling Method disposable bailer
 Containers Used 3 40 ml 1 liter _____ pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT Well Number: MW-4
 Job No.: 133,005 Well Casing Diameter: 2 inch
 Sampled By: DWA Date: 5/24/96
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 15.50 feet
 Depth to Groundwater (below TOC) 2.96 feet
 Feet of Water in Well 12.54 feet
 Depth to Groundwater When 80% Recovered 4.47 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.1 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other _____
 Free Product none until after bailing
 Purge Method disposable bailer

FIELD MEASUREMENTS

fast recharge

Gallons Removed	pH	F Temp (°F)	Conductivity (micromhos/cm)	D.O. = 1 ppm Salinity ‰	Comments
<u>1</u>	<u>8.30</u>	<u>79.1</u>	<u>2030</u>	_____	<u>clear / strong odor</u>
<u>2 3</u>	<u>7.78</u>	<u>75.1</u>	<u>1410</u>	_____	<u>suspended particulates</u>
<u>4 5</u>	<u>7.33</u>	<u>73.3</u>	<u>1710</u>	_____	<u>Globs of oily product</u>
<u>7</u>	<u>7.20</u>	<u>72.3</u>	<u>1310</u>	_____	<u>& thin film on bailer</u>
_____	_____	_____	_____	_____	<u>up to 1/4" ring inside</u>

Total Gallons Purged 7 gallons
 Depth to Groundwater Before Sampling (below TOC) 4.40 feet
 Sampling Method disposable bailer
 Containers Used 3 40 ml 1 liter _____ pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT Well Number: MW-5
 Job No.: 133.005 Well Casing Diameter: 2 inch
 Sampled By: DWA Date: 5/24/96
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 19.50 feet
 Depth to Groundwater (below TOC) 2.67 feet
 Feet of Water in Well 16.83 feet
 Depth to Groundwater When 80% Recovered 7.04 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.7 gallons
 Depth Measurement Method Tape & Paste Electronic Sounder Other _____
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

fast recharge

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	D.O. = 2.7 ppm Salinity ‰	Comments
<u>1</u>	<u>9.06</u>	<u>67.3</u>	<u>1300</u>	_____	<u>clean w/ slight odor + sheen</u>
<u>3</u>	<u>8.50</u>	<u>65.8</u>	<u>950</u>	_____	_____
<u>5</u>	<u>8.34</u>	<u>66.8</u>	<u>916</u>	_____	_____
<u>7</u>	<u>7.96</u>	<u>64.7</u>	<u>1050</u>	_____	_____
<u>9</u>	<u>7.51</u>	<u>62.2</u>	<u>1300</u>	_____	<u>↓</u>

Total Gallons Purged 9 gallons
 Depth to Groundwater Before Sampling (below TOC) 4.88' feet
 Sampling Method disposable bailer
 Containers Used 3 40 ml 1 liter _____ pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT Well Number: MW-6
 Job No.: 133.005 Well Casing Diameter: 2 inch
 Sampled By: DWA Date: 5/24/96
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 20.50 feet
 Depth to Groundwater (below TOC) 4.15 ← Product level feet
 Feet of Water in Well 16.35 feet
 Depth to Groundwater When 80% Recovered 7.42 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.7 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product Yes 4"-5" inside bailer @ start - bailed until not visible
 Purge Method disposable bailer

FIELD MEASUREMENTS

Last recharge

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Total Gallons Purged 4 gallons
 Depth to Groundwater Before Sampling (below TOC) 7.49' feet
 Sampling Method disposable bailer
 Containers Used 6 40 ml 2 liter _____ pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT Well Number: MW-7
 Job No.: 133.005 Well Casing Diameter: 2 inch
 Sampled By: DWA Date: 5/24/96
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 20.50 feet
 Depth to Groundwater (below TOC) 4.69 feet
 Feet of Water in Well 15.81 feet
 Depth to Groundwater When 80% Recovered 7.85 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.5 gallons
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	D.O. = <u>.7 ppm</u> Salinity ‰	Comments
<u>2</u>	<u>7.38</u>	<u>63.8</u>	<u>2320</u>		<u>clear / no odors</u>
<u>4</u>	<u>6.96</u>	<u>62.8</u>	<u>2460</u>		↓
<u>6</u>	<u>7.03</u>	<u>62.9</u>	<u>2710</u>		
<u>8</u>	<u>6.93</u>	<u>63.4</u>	<u>3090</u>		

Total Gallons Purged 8 gallons
 Depth to Groundwater Before Sampling (below TOC) 7.90' feet
 Sampling Method disposable bailer
 Containers Used 3 40 ml 1 liter pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

APPENDIX F

**ANALYTICAL TEST REPORTS AND
CHAIN-OF-CUSTODY FORMS FOR SCI'S
SOIL AND GROUNDWATER INVESTIGATION**



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 31-MAY-96
Lab Job Number: 125600
Project ID: 133.005
Location: KOT

Reviewed by: _____

Reviewed by: _____

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Client: Subsurface Consultants

Laboratory Login Number: 125600

 Project Name: KOT
 Project Number: 133.005

Report Date: 31 May 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520EF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
125600-001	SCI-MW-124.5	Soil	14-MAY-96	16-MAY-96	21-MAY-96	56.	mg/Kg	50	TR	27726
125600-002	SCI-MW-204.5	Soil	14-MAY-96	16-MAY-96	21-MAY-96	680	mg/Kg	50	TR	27726
125600-003	SCI-MW-304.5	Soil	14-MAY-96	16-MAY-96	21-MAY-96	64.	mg/Kg	50	TR	27726

ND = Not Detected at or above Reporting Limit (RL).

Q C B a t c h R e p o r t

 Client: Subsurface Consultants
 Project Name: KOT
 Project Number: 133.005

 Laboratory Login Number: 125600
 Report Date: 31 May 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 27726

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	50	mg/Kg	SMWW 17:5520EF	21-MAY-96

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	84%	SMWW 17:5520EF	21-MAY-96
BSD	83%	SMWW 17:5520EF	21-MAY-96

		Control Limits
Average Spike Recovery	84%	80% - 120%
Relative Percent Difference	2.1%	< 20%



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125600-001	SCI-MW-1@4.5	27723	05/14/96	05/22/96	05/22/96	
125600-002	SCI-MW-2@4.5	27723	05/14/96	05/21/96	05/21/96	

Matrix: Soil

Analyte	Units	125600-001	125600-002
Diln Fac:		1	1
Gasoline	mg/Kg	<1	19 Y
Surrogate			
Trifluorotoluene	%REC	85	79
Bromobenzene	%REC	82	256 *

* Values outside of QC limits

Y: Sample exhibits fuel pattern which does not resemble standard

Lab #: 125600

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons			
Client:	Subsurface Consultants	Analysis Method:	CA LUFT (EPA 8015M)
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
METHOD BLANK			
Matrix:	Soil	Prep Date:	05/21/96
Batch#:	27723	Analysis Date:	05/21/96
Units:	mg/Kg		
Diln Fac:	1		

MB Lab ID: QC22239

Analyte	Result		
Gasoline	<1.0		
Surrogate	%Rec	Recovery Limits	
Trifluorotoluene	86	52-127	
Bromobenzene	85	45-140	

DO: Surrogate diluted out

Lab #: 125600

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

 Matrix: Soil
 Batch#: 27723
 Units: mg/Kg
 Diln Fac: 1

 Prep Date: 05/21/96
 Analysis Date: 05/21/96

LCS Lab ID: QC22237

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	9.63	10	96	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	95	52-127		
Bromobenzene	94	45-140		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: LUFT

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125600-001	SCI-MW-1@4.5	27715	05/14/96	05/21/96	05/22/96	
125600-002	SCI-MW-2@4.5	27715	05/14/96	05/21/96	05/22/96	
125600-003	SCI-MW-3@4.5	27715	05/14/96	05/21/96	05/22/96	

Matrix: Soil

Analyte	Units	125600-001	125600-002	125600-003
Diln Fac:		1	1	1
Diesel C12-C22	mg/Kg	10 YH	36 YH	3.5YH
Surrogate				
Hexacosane	%REC	97	114	75

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

TEH Chromatogram - GC 11 Ch B

Sample Name : 125600-001,50:5

Sample #: 27715

Page 1 of 1

FileName : g:\gc11\chb\1438007.raw

Date : 5/22/96 12:49 PM

Method : DUL20BSL.ins

Time of Injection: 5/22/96 12:28 PM

Start Time : 0.00 min

End Time : 20.00 min

Low Point : 32.50 mV

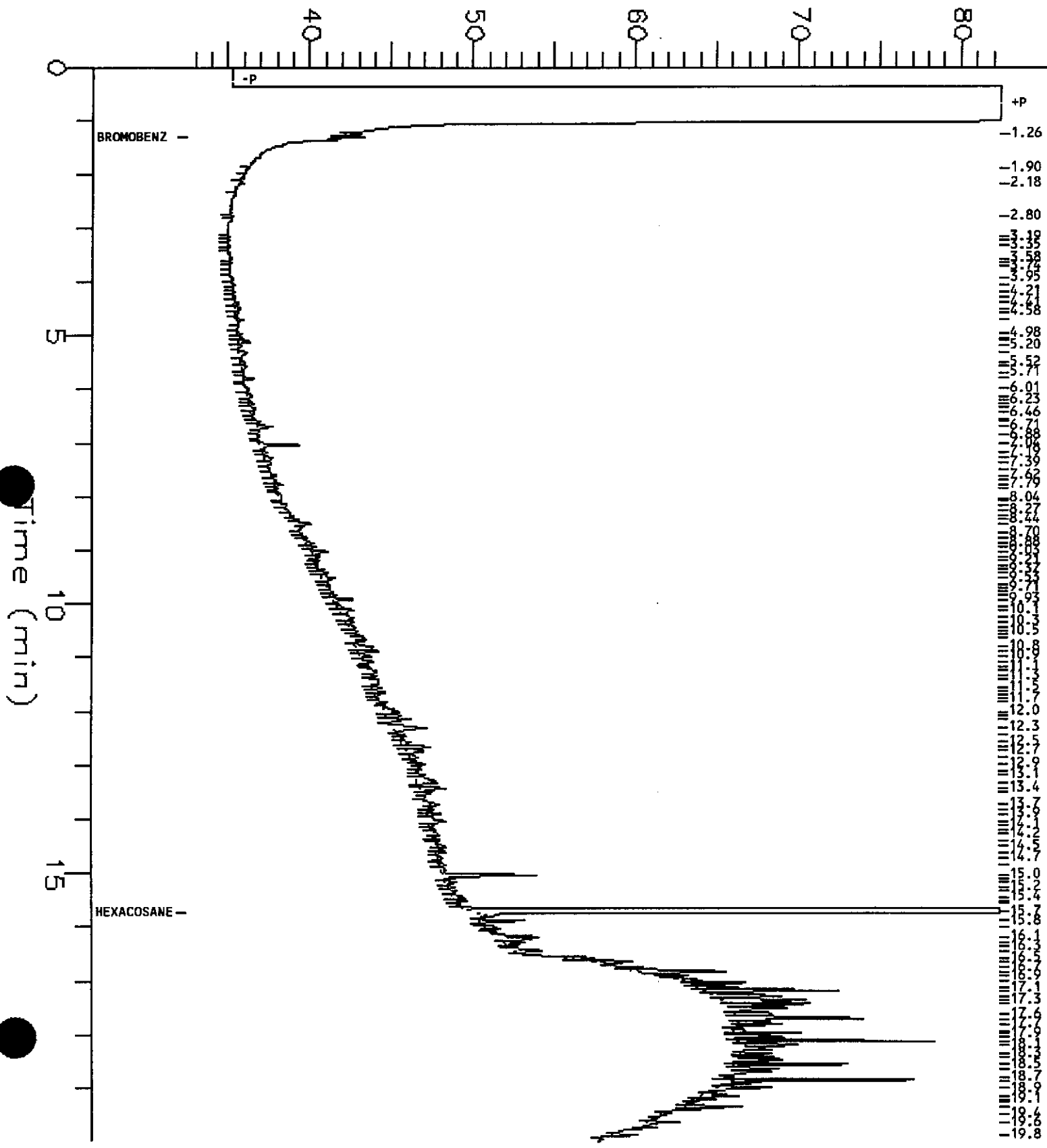
High Point : 82.50 mV

Scale Factor: -1

Plot Offset: 33 mV

Plot Scale: 50 mV

Response (mV)



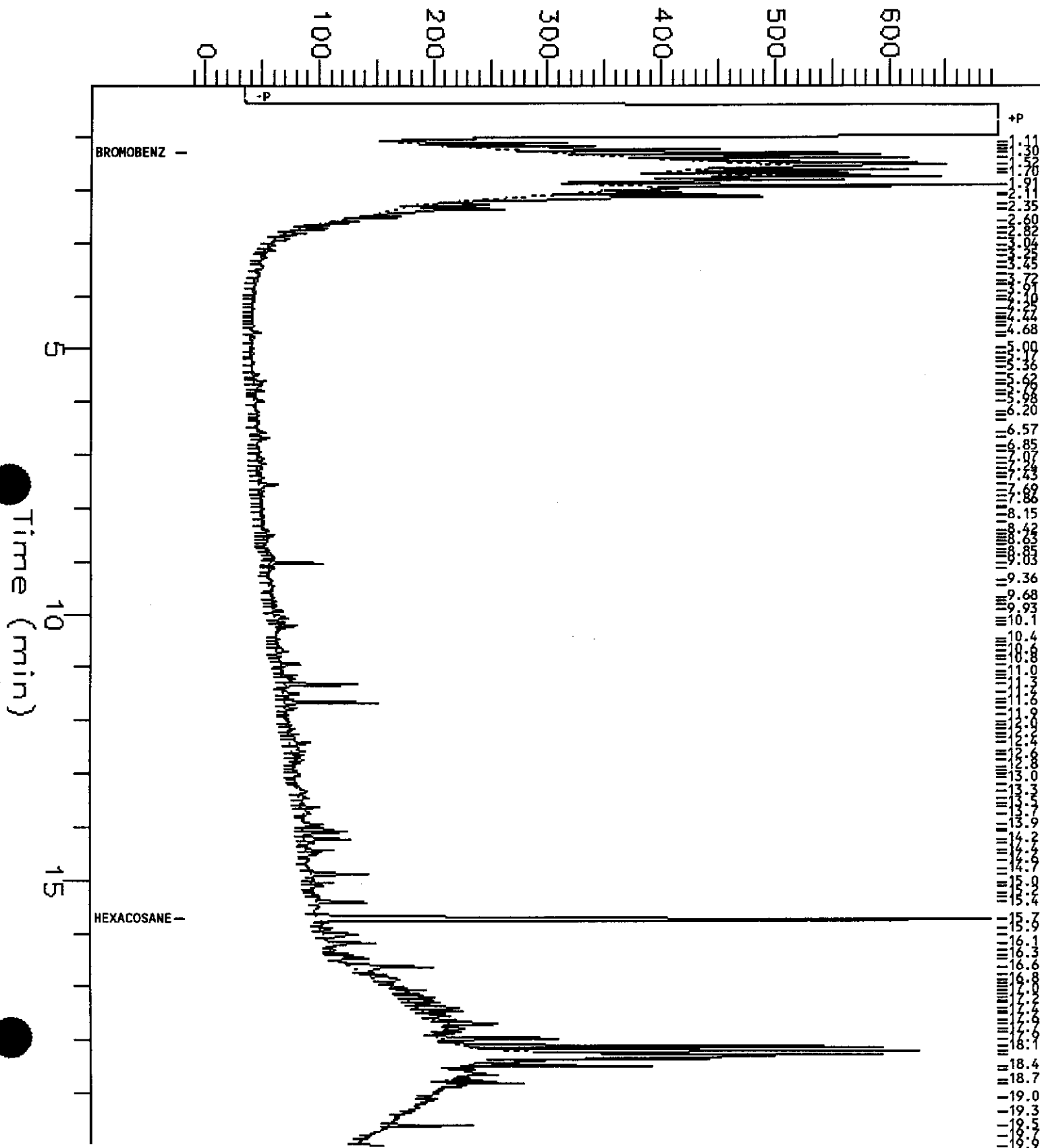
TEH Chromatogram - GC 11 Ch B

Sample Name : 125600-002,50:5
 FileName : G:\GC11\CHB\143B008.raw
 Method : DUL20BSL.ins
 Start Time : 0.01 min
 Scale Factor: 0

End Time : 19.97 min
 Plot Offset: -17 mV

Sample #: 27715
 Date : 5/22/96 01:30 PM
 Time of Injection: 5/22/96 12:58 PM
 Low Point : -17.12 mV
 High Point : 696.99 mV
 Plot Scale: 714 mV

Response (mV)



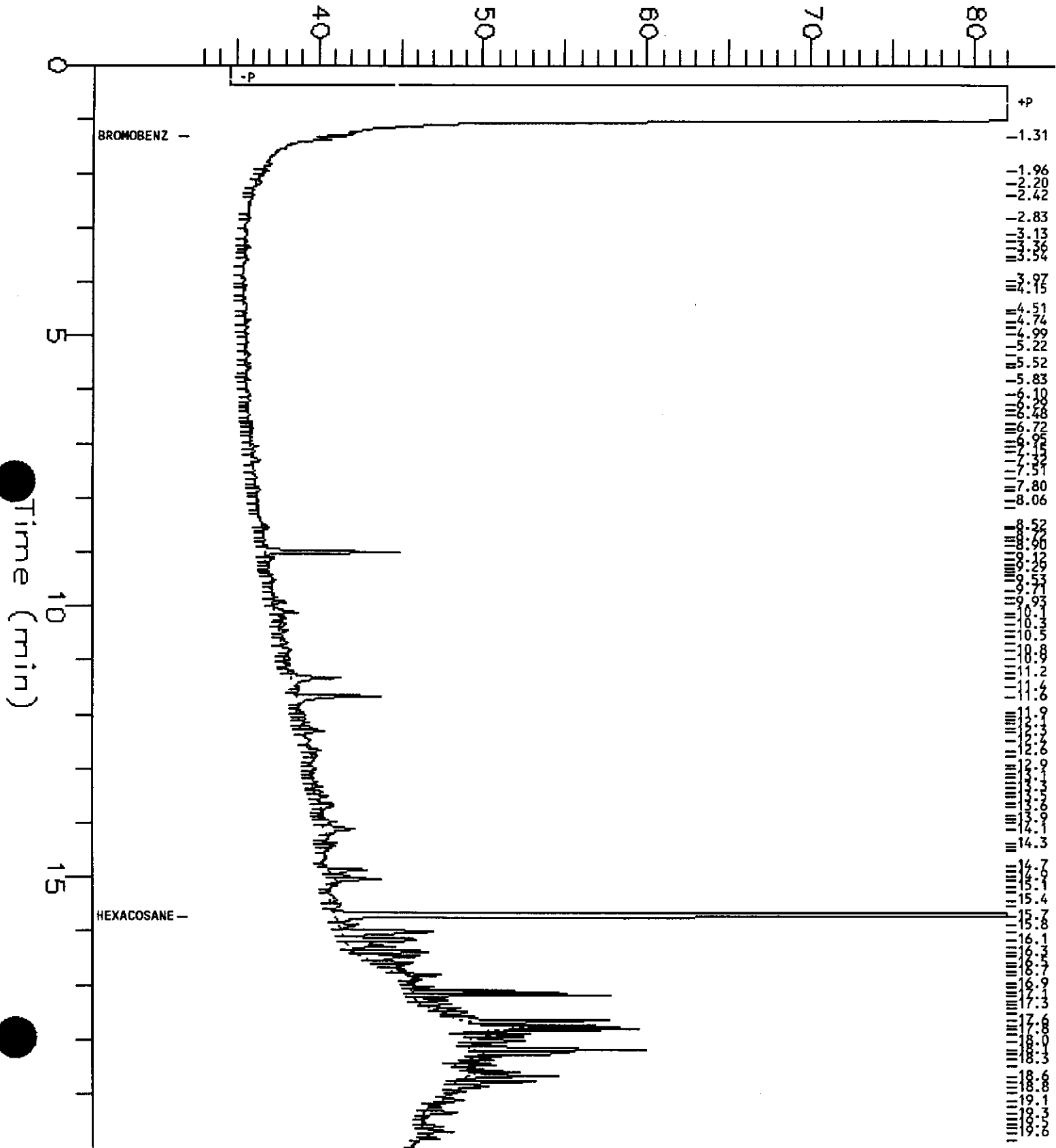
TEH Chromatogram - GC 11 Ch B

Sample Name : 125600-003,50:5
 FileName : g:\gc11\chb\1438006.raw
 Method : DUL20BSL.ins
 Start Time : 0.00 min
 Scale Factor : -1

End Time : 20.00 min
 Plot Offset : 32 mV

Sample #: 27715
 Date : 5/22/96 12:18 PM
 Time of Injection: 5/22/96 11:57 AM
 Low Point : 32.07 mV
 High Point : 82.07 mV
 Plot Scale: 50 mV

Response (mV)





Lab #: 125600

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: LUFT

METHOD BLANK

Matrix: Soil
Batch#: 27715
Units: mg/Kg
Diln Fac: 1

Prep Date: 05/21/96
Analysis Date: 05/22/96

MB Lab ID: QC22201

Analyte	Result		
Diesel C12-C22	<1.0		
Surrogate	%Rec	Recovery Limits	
Hexacosane	105	60-140	



Lab #: 125600

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: LUFT

LABORATORY CONTROL SAMPLE

Matrix: Soil
Batch#: 27715
Units: mg/Kg
Diln Fac: 1

Prep Date: 05/21/96
Analysis Date: 05/22/96

LCS Lab ID: QC22202

Analyte	Result	Spike Added	%Rec #	Limits
Diesel C12-C22	43.86	49.5	89	60-140
Surrogate	%Rec	Limits		
Hexacosane	103	60-140		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 125600

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: LUFT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125598-011
 Matrix: Soil
 Batch#: 27715
 Units: mg/Kg
 Diln Fac: 1

Sample Date: 05/15/96
 Received Date: 05/16/96
 Prep Date: 05/21/96
 Analysis Date: 05/22/96

MS Lab ID: QC22203

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Diesel C12-C22	49.5	<1.000	51.04	103	60-140
Surrogate	%Rec	Limits			
Hexacosane	105	60-140			

MSD Lab ID: QC22204

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	49.5	65.19	132	60-140	24	<30
Surrogate	%Rec	Limits				
Hexacosane	105	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125600-001	SCI-MW-1@4.5	27723	05/14/96	05/22/96	05/22/96	
125600-002	SCI-MW-2@4.5	27723	05/14/96	05/21/96	05/21/96	

Matrix: Soil

Analyte	Units	125600-001	125600-002
Diln Fac:		1	1
Benzene	ug/Kg	<5	<5
Toluene	ug/Kg	14	<5
Ethylbenzene	ug/Kg	<5	<5
m,p-Xylenes	ug/Kg	<5	<5
o-Xylene	ug/Kg	<5	860
Surrogate			
Trifluorotoluene	%REC	86	88
Bromobenzene	%REC	85	35 *



Lab #: 125600

BATCH QC REPORT

Page 1 of 1

BTXE			
Client:	Subsurface Consultants	Analysis Method:	EPA 8020
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
METHOD BLANK			
Matrix:	Soil	Prep Date:	05/21/96
Batch#:	27723	Analysis Date:	05/21/96
Units:	ug/Kg		
Diln Fac:	1		

MB Lab ID: QC22239

Analyte	Result	
Benzene	<5.0	
Toluene	<5.0	
Ethylbenzene	<5.0	
m,p-Xylenes	<5.0	
o-Xylene	<5.0	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	89	43-114
Bromobenzene	90	47-112

DO: Surrogate diluted out



Lab #: 125600

BATCH QC REPORT

Page 1 of 1

BTXE			
Client:	Subsurface Consultants	Analysis Method:	EPA 8020
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
LABORATORY CONTROL SAMPLE			
Matrix:	Soil	Prep Date:	05/21/96
Batch#:	27723	Analysis Date:	05/21/96
Units:	ug/Kg		
Diln Fac:	1		

LCS Lab ID: QC22238

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	102.3	100	102	80-120
Toluene	106.4	100	106	80-120
Ethylbenzene	103.4	100	103	80-120
m,p-Xylenes	208.7	200	104	80-120
o-Xylene	115.2	100	115	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	89	43-114		
Bromobenzene	88	47-112		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



PCBs		
Client: Subsurface Consultants	Analysis Method: PCB	
Project#: 133.005	Prep Method: EPA 3550	
Location: KOT	Cleanup Method: EPA acid	
Field ID: SCI-MW-3@4.5	Sampled: 05/14/96	
Lab ID: 125600-003	Received: 05/16/96	
Matrix: Soil	Extracted: 05/16/96	
Batch#: 27616	Analyzed: 05/16/96	
Units: ug/Kg		
Diln Fac: 1		
Analyte	Result	Reporting Limit
Aroclor-1016	ND	20
Aroclor-1221	ND	20
Aroclor-1232	ND	20
Aroclor-1242	ND	20
Aroclor-1248	ND	20
Aroclor-1254	ND	20
Aroclor-1260	ND	20
Surrogate	%Recovery	Recovery Limits
TCMX	111	65-135
Decachlorobiphenyl	154*	65-135

* Values outside of QC limits



Lab #: 125600

BATCH QC REPORT

Page 1 of 1

Polychlorinated Biphenyls

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: PCB
Prep Method: EPA 3550
Cleanup Method: EPA acid

METHOD BLANK

Matrix: Soil
Batch#: 27616
Units: ug/Kg
Diln Fac: 1

Prep Date: 05/16/96
Analysis Date: 05/16/96

MB Lab ID: QC21807

Analyte	Result	Reporting Limit
Aroclor-1016	ND	20
Aroclor-1221	ND	20
Aroclor-1232	ND	20
Aroclor-1242	ND	20
Aroclor-1248	ND	20
Aroclor-1254	ND	20
Aroclor-1260	ND	20
Surrogate	%Rec	Recovery Limits
TCMX	128	65-135
Decachlorobiphenyl	141	65-135

DO: Surrogate diluted out



Lab #: 125600

BATCH QC REPORT

Page 1 of 1

Polychlorinated Biphenyls

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: PCB
Prep Method: EPA 3550
Cleanup Method: EPA acid

LABORATORY CONTROL SAMPLE

Matrix: Soil
Batch#: 27616
Units: ug/Kg
Diln Fac: 1

Prep Date: 05/16/96
Analysis Date: 05/16/96

LCS Lab ID: QC21808

Analyte	Result	Spike Added	%Rec #	Limits
Aroclor-1260	207	220	94	65-135
Surrogate	%Rec	Limits		
TCMX	123	65-135		
Decachlorobiphenyl	140	65-135		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

Field ID: SCI-MW-3@4.5
 Lab ID: 125600-003
 Matrix: Soil
 Batch#: 27734
 Units: ug/Kg
 Diln Fac: 1

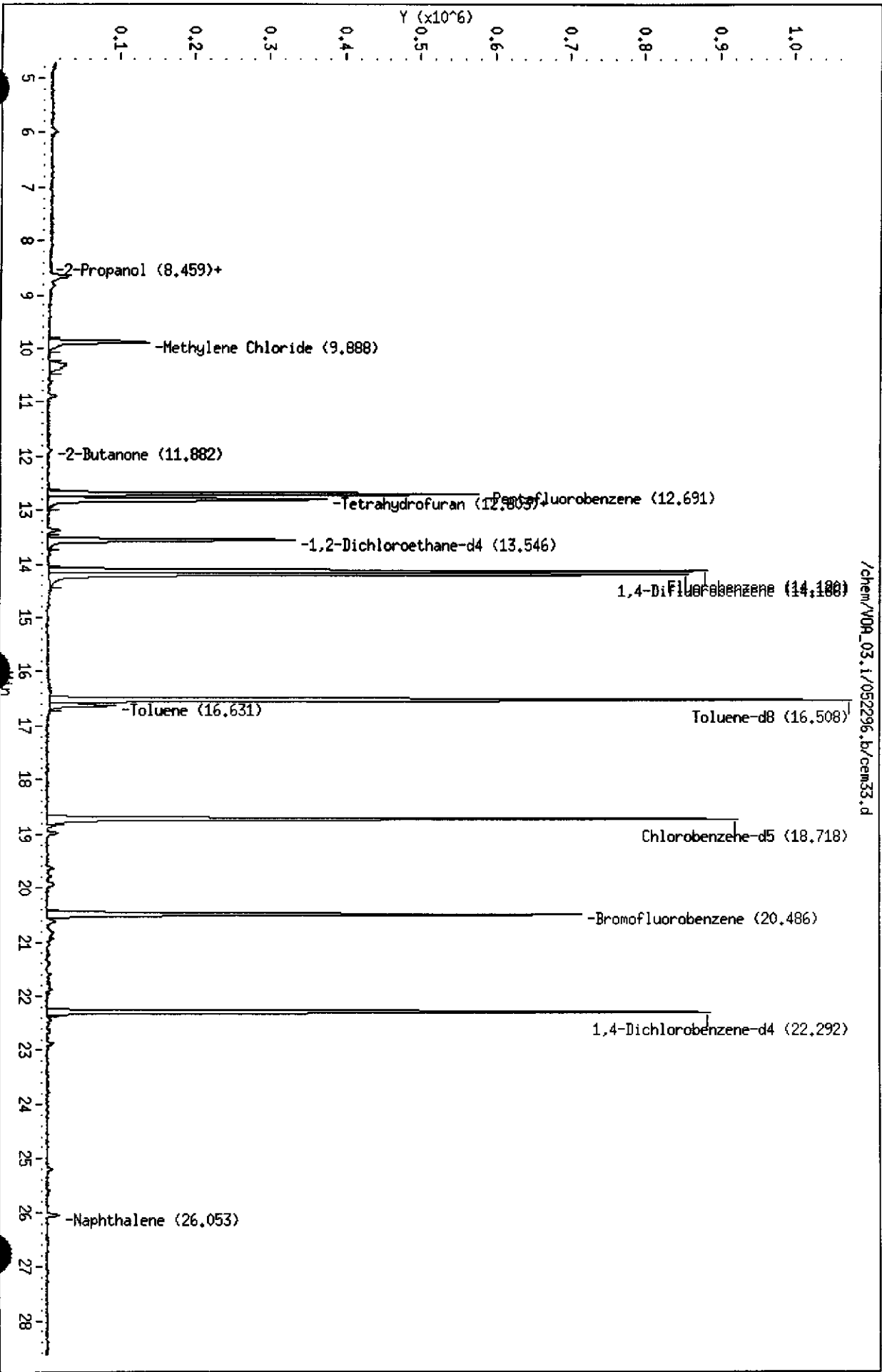
Sampled: 05/14/96
 Received: 05/16/96
 Extracted: 05/23/96
 Analyzed: 05/23/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	28	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	99	68-126
Toluene-d8	102	87-125
Bromofluorobenzene	100	79-122

Data File: /chem/VDA_03.1/052296.b/cem33.d
Date: 23-MAY-1996 04:37
Client ID: DYNA P&T
Sample Info: S.125600-003

Column phase: RTX Volatiles

Instrument: VDA_03.1
Operator: LLH
Column diameter: 0.32





Lab #: 125600

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics		
Client: Subsurface Consultants	Analysis Method: EPA 8240	
Project#: 133.005	Prep Method: EPA 5030	
Location: KOT		
METHOD BLANK		
Matrix: Soil	Prep Date:	05/22/96
Batch#: 27734	Analysis Date:	05/22/96
Units: ug/Kg		
Diln Fac: 1		

MB Lab ID: QC22281

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	99	68-126
Toluene-d8	104	87-125
Bromofluorobenzene	103	79-122



Lab #: 125600

BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil
Batch#: 27734
Units: ug/Kg
Diln Fac: 1

Prep Date: 05/22/96
Analysis Date: 05/22/96

LCS Lab ID: QC22279

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	77.9	50	156	51-180
Trichloroethene	53.67	50	107	73-141
Benzene	55.68	50	111	78-142
Toluene	56.05	50	112	76-150
Chlorobenzene	53.24	50	106	83-129
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	97	68-126		
Toluene-d8	99	87-125		
Bromofluorobenzene	98	79-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Lab #: 125600

BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125645-012
 Matrix: Soil
 Batch#: 27734
 Units: ug/Kg
 Diln Fac: 1

Sample Date: 05/16/96
 Received Date: 05/17/96
 Prep Date: 05/23/96
 Analysis Date: 05/23/96

MS Lab ID: QC22344

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	<5.000	73.92	148	51-180
Trichloroethene	50	<5.000	48.1	96	73-141
Benzene	50	<5.000	50.06	100	78-142
Toluene	50	<5.000	52.08	104	76-150
Chlorobenzene	50	<5.000	46.72	93	83-129
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	97	68-126			
Toluene-d8	102	87-125			
Bromofluorobenzene	96	79-122			

MSD Lab ID: QC22345

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	74.96	150	51-180	1	<22
Trichloroethene	50	50.5	101	73-141	5	<24
Benzene	50	51.81	104	78-142	3	<21
Toluene	50	51.51	103	76-150	1	<21
Chlorobenzene	50	46.73	93	83-129	0	<21
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	85	68-126				
Toluene-d8	103	87-125				
Bromofluorobenzene	94	79-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

CHAIN OF CUSTODY FORM

125000

PROJECT NAME: KOT
 JOB NUMBER: 133.005 LAB: Cu Fiss & Tompkins
 PROJECT CONTACT: Jerome de Verrier TURNAROUND: standard
 SAMPLED BY: Jerome de Verrier REQUESTED BY: Jerome de Verrier

ANALYSIS REQUESTED

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES										
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H ₂ SO ₄	HNO ₃	ICE	NONE	MONTH	DAY	YEAR	TIME											
																		HR		MIN									
-1	SCI-MW-1(45	X						X				X			05	14	96	11	00	X	X	X	X						
-2	SCI-MW-2(45	X										X							01	00	X		X	X					
-3	SCI-MW-3(45	X						X				X							05	00	X		X		X				

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature) <i>Jerome de Verrier</i>	DATE / TIME 5/16/96 2:40 pm	RECEIVED BY: (Signature) <i>Luigi de</i>	DATE / TIME 5/16/96 2:40
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:

Subsurface Consultants, Inc.

171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
(510) 268-0461 • FAX: 510-268-0137



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 31-MAY-96
Lab Job Number: 125687
Project ID: 133.005
Location: KOT

Reviewed by: _____

Reviewed by: _____

This package may be reproduced only in its entirety.

Client: Subsurface Consultants

Laboratory Login Number: 125687

 Project Name: KOT
 Project Number: 133.005

Report Date: 31 May 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520EF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
125687-001	SCI-1a3'	Soil	21-MAY-96	23-MAY-96	29-MAY-96	5900	mg/Kg	50	TR	27871
125687-002	SCI-1 @ 6'	Soil	21-MAY-96	23-MAY-96	29-MAY-96	17000	mg/Kg	50	TR	27871
125687-003	SCI-2 @ 3.5'	Soil	21-MAY-96	23-MAY-96	29-MAY-96	4000	mg/Kg	50	TR	27871
125687-004	SCI-2 @ 6'	Soil	21-MAY-96	23-MAY-96	29-MAY-96	6000	mg/Kg	50	TR	27871
125687-005	SCI-3 @ 6'	Soil	21-MAY-96	23-MAY-96	29-MAY-96	570	mg/Kg	50	TR	27871
125687-006	SCI-4 @ 4'	Soil	21-MAY-96	23-MAY-96	29-MAY-96	84	mg/Kg	50	TR	27871
125687-007	SCI-5 @ 3.5'	Soil	21-MAY-96	23-MAY-96	29-MAY-96	ND	mg/Kg	50	TR	27871

ND = Not Detected at or above Reporting Limit (RL).

Q C B a t c h R e p o r t

Client: Subsurface Consultants
 Project Name: KOT
 Project Number: 133.005

Laboratory Login Number: 125687
 Report Date: 31 May 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 27871

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	50	mg/Kg	SMWW 17:5520EF	29-MAY-96

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	87%	SMWW 17:5520EF	29-MAY-96
BSD	83%	SMWW 17:5520EF	29-MAY-96

	Control Limits
Average Spike Recovery	85% 80% - 120%
Relative Percent Difference	4.7% < 20%



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125687-007	SCI-5 @ 3.5'	27838	05/21/96	05/28/96	05/28/96	
125687-008	SCI-6 @ 3.5'	27838	05/21/96	05/28/96	05/28/96	

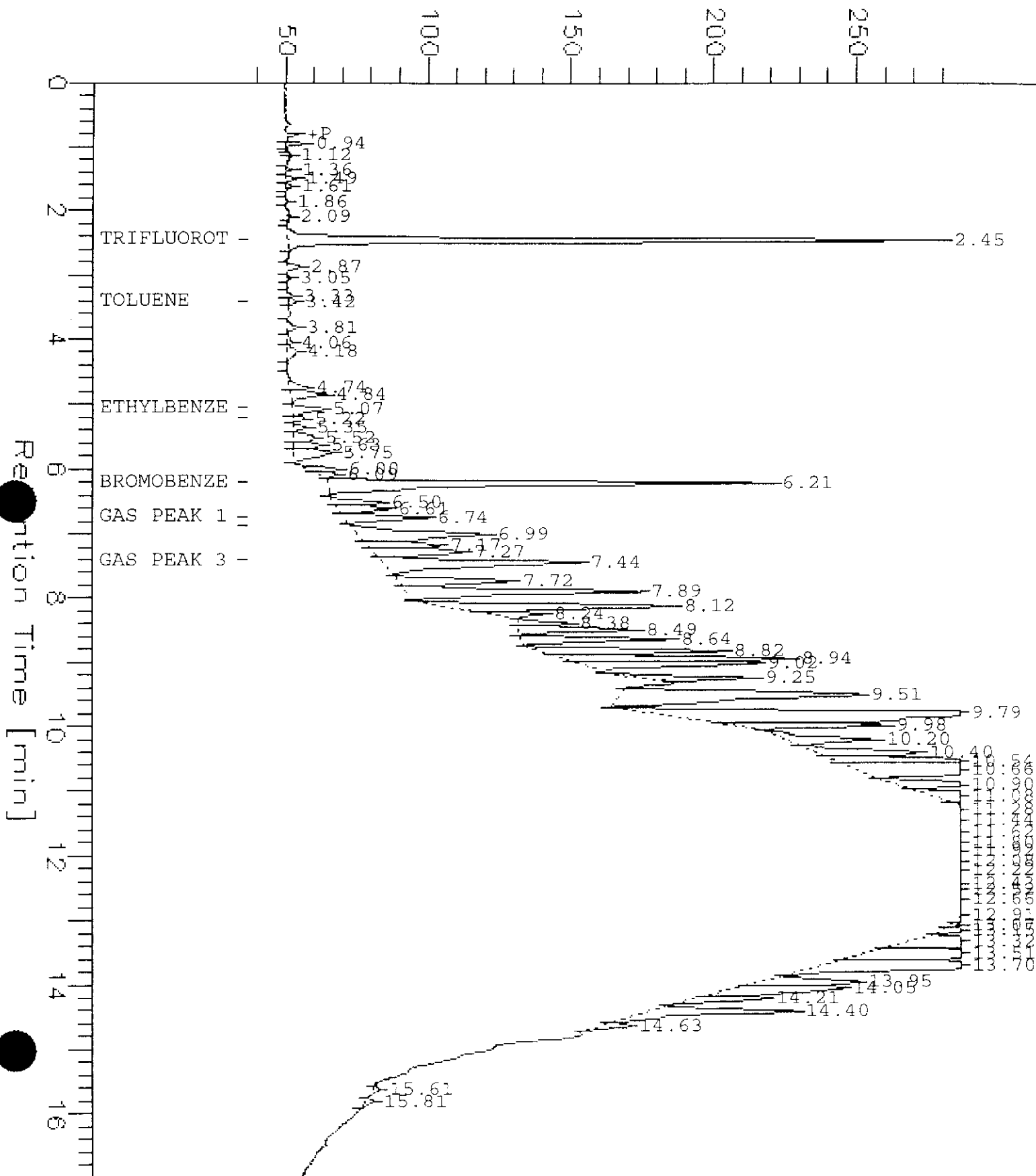
Matrix: Soil

Analyte	Units	125687-007	125687-008
Diln Fac:		1	1
Gasoline	mg/Kg	<1	9.2Y
Surrogate			
Trifluorotoluene	%REC	84	82
Bromobenzene	%REC	84	78

Y: Sample exhibits fuel pattern which does not resemble standard

125687-008

Response [mV]





Lab #: 125687

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

METHOD BLANK

Matrix: Soil
Batch#: 27838
Units: mg/Kg
Diln Fac: 1

Prep Date: 05/28/96
Analysis Date: 05/28/96

MB Lab ID: QC22736

Analyte	Result	
Gasoline	<1.0	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	84	52-127
Bromobenzene	82	45-140



Lab #: 125687

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil
 Batch#: 27838
 Units: mg/Kg
 Diln Fac: 1

Prep Date: 05/28/96
 Analysis Date: 05/28/96

LCS Lab ID: QC22737

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	9.87	10	99	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	96	52-127		
Bromobenzene	95	45-140		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 125687

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: SCI-5 @ 3.5'
 Lab ID: 125687-007
 Matrix: Soil
 Batch#: 27838
 Units: mg/Kg
 Diln Fac: 1

Sample Date: 05/21/96
 Received Date: 05/23/96
 Prep Date: 05/28/96
 Analysis Date: 05/28/96

MS Lab ID: QC22739

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	10	<1.000	9.69	97	65-135
Surrogate	%Rec	Limits			
Trifluorotoluene	92	52-127			
Bromobenzene	96	45-140			

MSD Lab ID: QC22740

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	10	9.5	95	65-135	2	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	90	52-127				
Bromobenzene	94	45-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: LUFT

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125687-001	SCI-1@3'	27833	05/21/96	05/28/96	05/31/96	
125687-002	SCI-1 @ 6'	27833	05/21/96	05/28/96	05/31/96	
125687-003	SCI-2 @ 3.5'	27833	05/21/96	05/28/96	05/30/96	
125687-004	SCI-2 @ 6'	27833	05/21/96	05/28/96	05/31/96	

Matrix: Soil

Analyte	Units	125687-001	125687-002	125687-003	125687-004
Diln Fac:		20	50	20	2
Diesel C12-C22	mg/Kg	720 YH	5500 YH	170 YH	45 YH
Motor Oil C22-C50	mg/Kg	2300	17000	5400 YH	750 H
Surrogate					
Hexacosane	%REC	DO	DO	DO	105

DO: Surrogate diluted out

Y: Sample exhibits fuel pattern which does not resemble standard

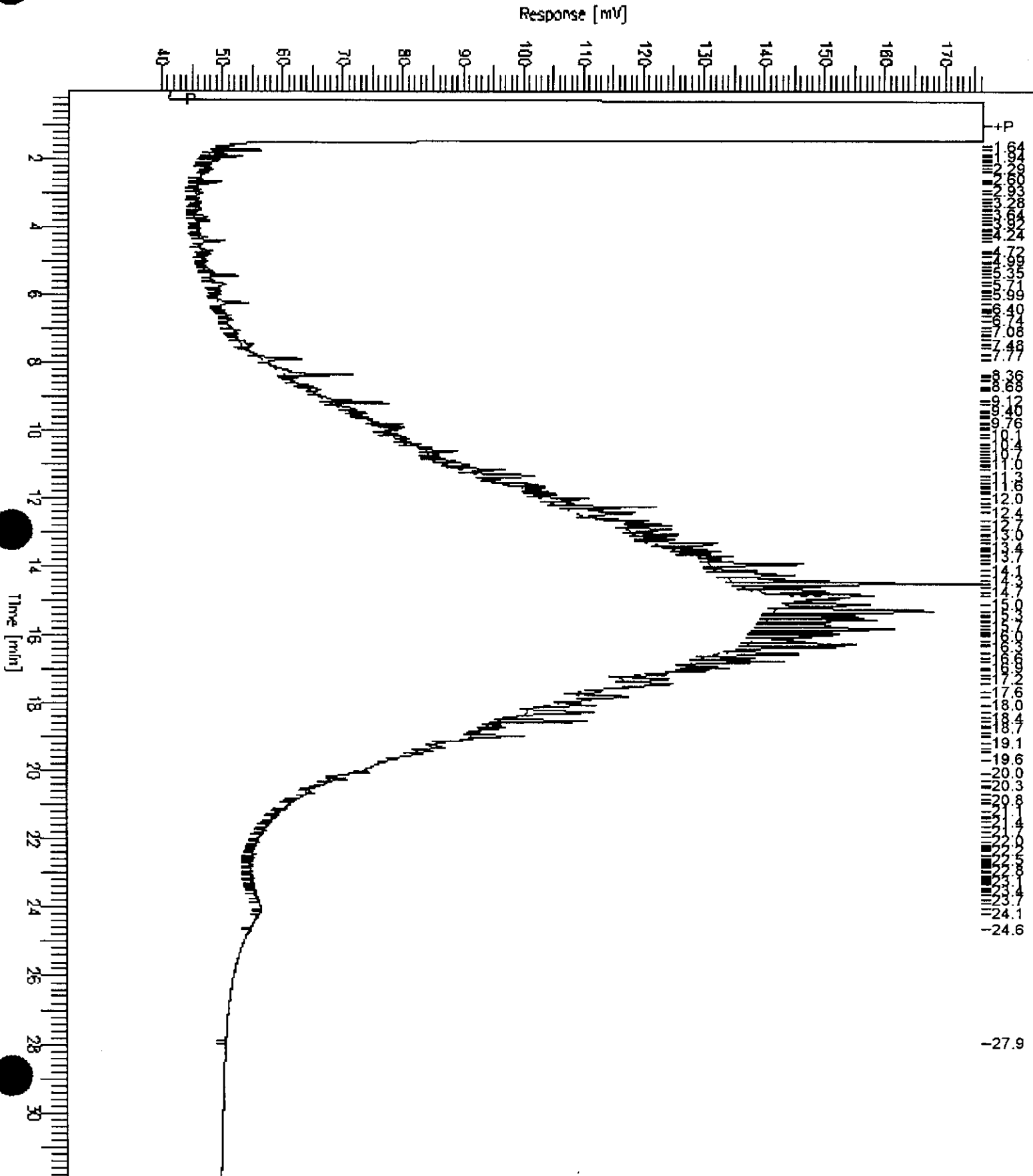
H: Heavier hydrocarbons than indicated standard

GC15 Channel A TEH

Sample Name : 125687-001,27833
FileName : C:\GC15\CHB\151B009.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: 40 mV

Sample #: 50:100
Date : 5/31/96 12:07 PM
Time of Injection: 5/31/96 01:17 AM
Low Point : 39.97 mV
High Point : 176.42 mV
Plot Scale: 136.5 mV



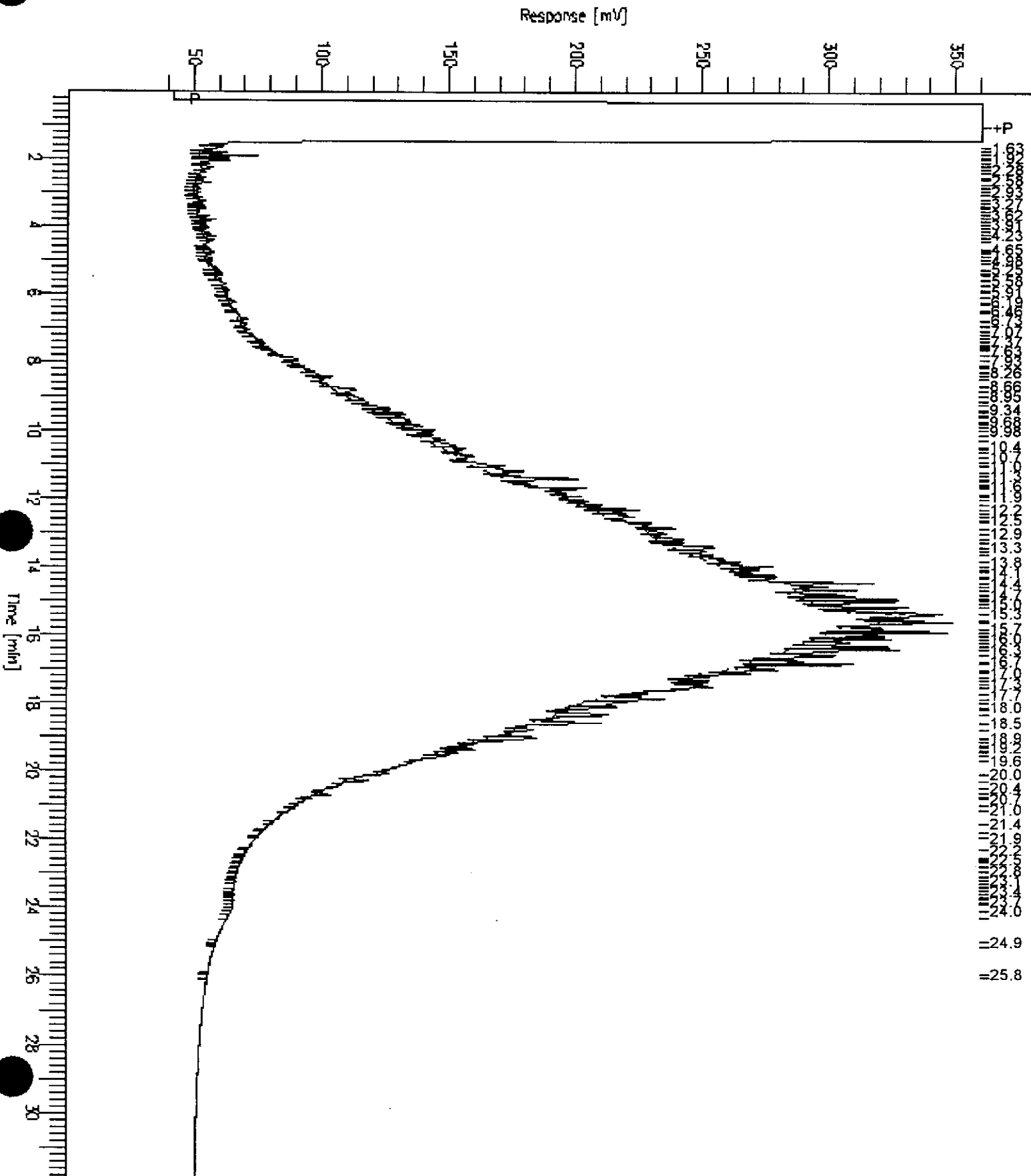
GC15 Channel A TEH

Sample Name : 125687-002,27833
FileName : C:\GC15\CHB\151B011.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: 37 mV

Sample #: 50:250
Date : 5/31/96 12:10 PM
Time of Injection: 5/31/96 02:46 AM
Low Point : 37.14 mV
High Point : 360.73 mV
Plot Scale: 323.6 mV

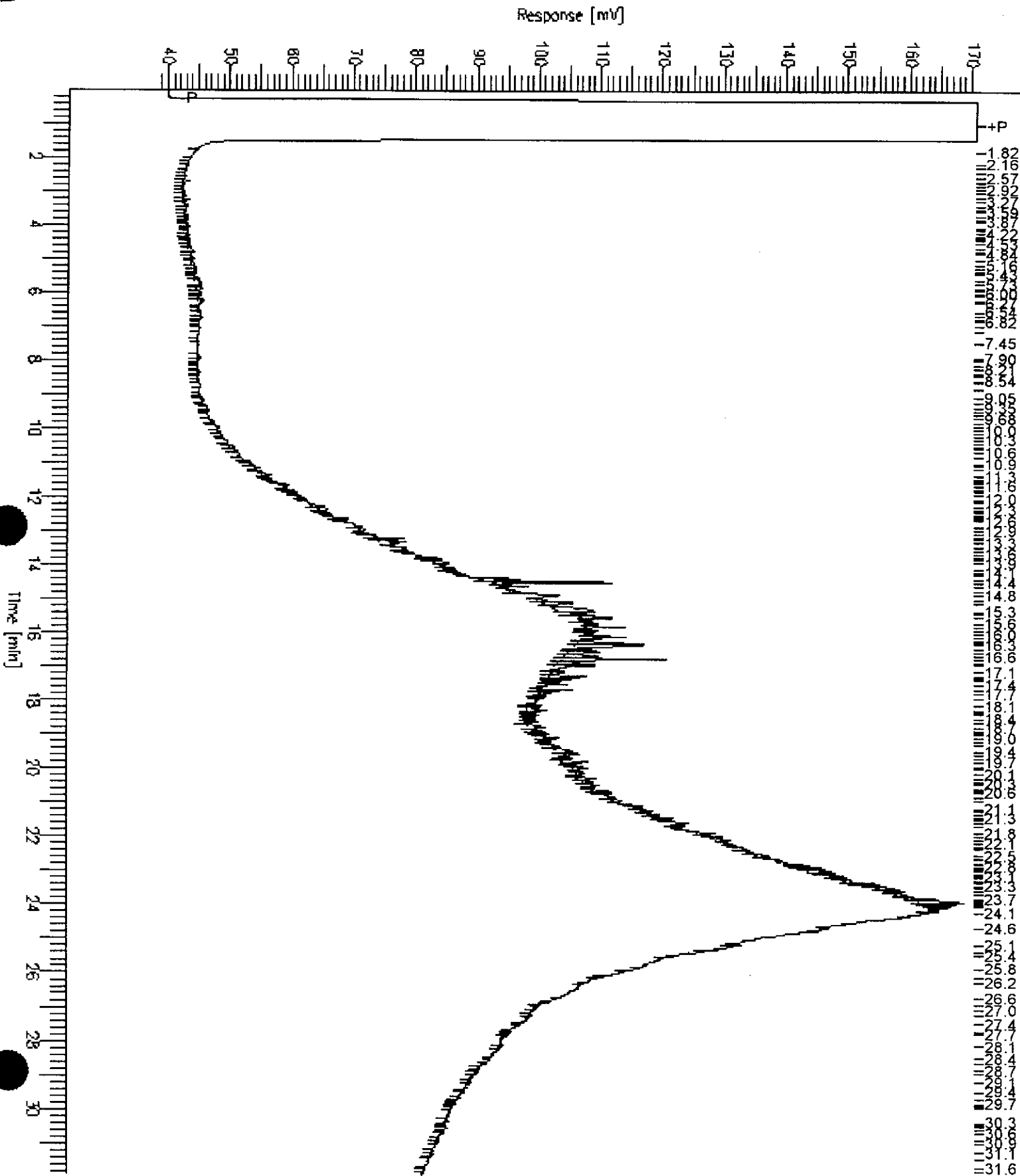
Page 1 of 1



GC15 Channel A TEH

Sample Name : S,125687-003,27855
 FileName : C:\GC15\CHB\149B069.RAW
 Method : BTEHJ.MTH
 Start Time : 0.01 min
 Scale Factor: 0.0

Sample #: 50:200
 Date : 5/30/96 03:28 PM
 Time of Injection: 5/30/96 11:36 AM
 Low Point : 38.88 mV
 High Point : 170.85 mV
 Plot Scale: 132.0 mV

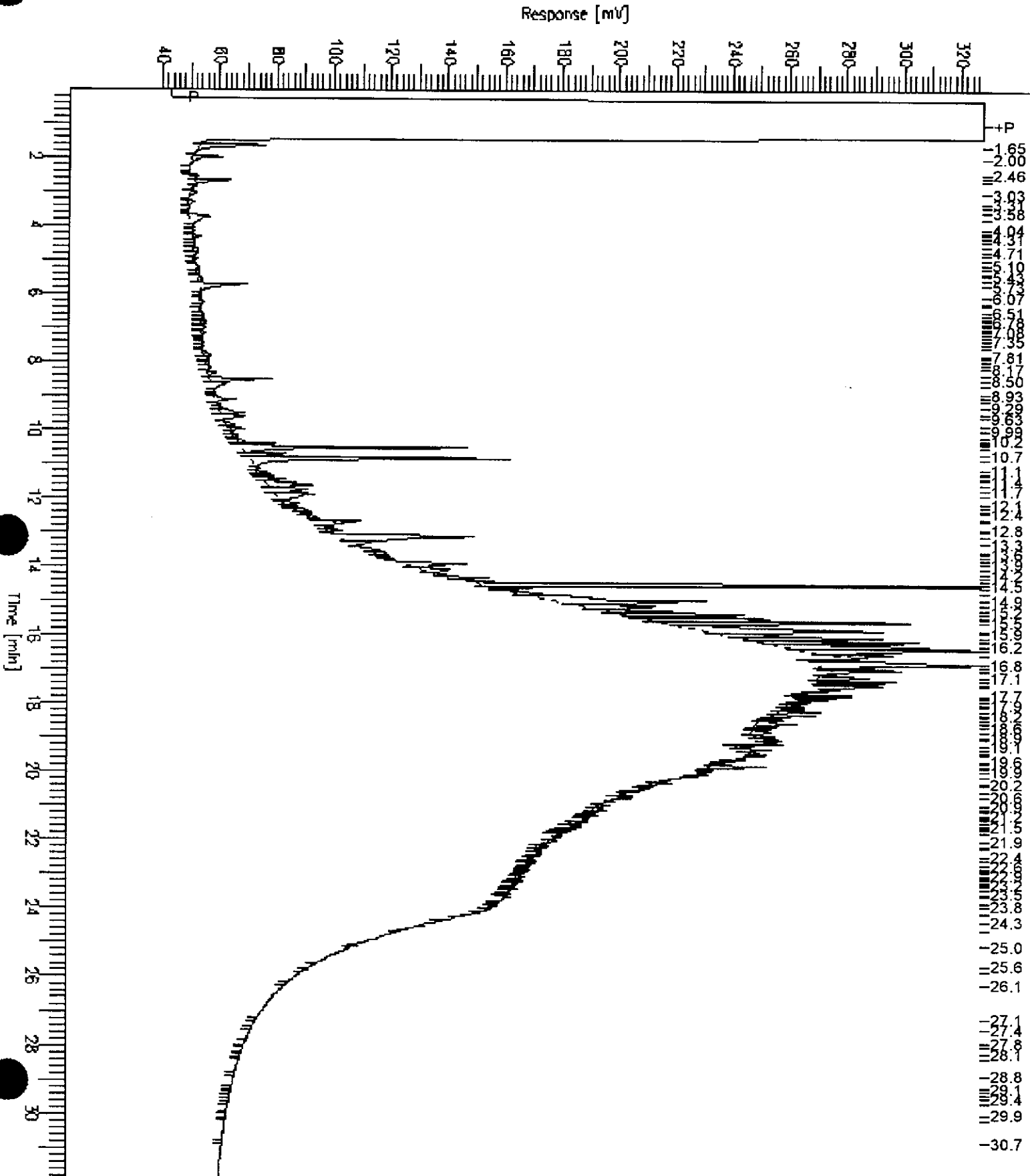


GC15 Channel A TEH

Sample Name : 125687-004,27833
 FileName : C:\GC15\CHB\151B012.RAW
 Method : BTEHJ.MTH
 Start Time : 0.01 min
 Scale Factor: 0.0

End Time : 31.91 min
 Plot Offset: 40 mV

Sample #: 50:10
 Date : 5/31/96 12:28 PM
 Time of Injection: 5/31/96 03:30 AM
 Low Point : 39.85 mV
 High Point : 327.93 mV
 Plot Scale: 288.1 mV





TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: LUFT

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125687-005	SCI-3 @ 6'	27833	05/21/96	05/28/96	05/30/96	
125687-006	SCI-4 @ 4'	27833	05/21/96	05/28/96	05/30/96	
125687-007	SCI-5 @ 3.5'	27833	05/21/96	05/28/96	05/30/96	
125687-008	SCI-6 @ 3.5'	27833	05/21/96	05/28/96	05/31/96	

Matrix: Soil

Analyte	Units	125687-005	125687-006	125687-007	125687-008
Diln Fac:		10	1	1	20
Diesel C12-C22	mg/Kg	1300 YHL	7.4YH	47 YH	2000 H
Motor Oil C22-C50	mg/Kg	4900 LH	37 Y	71 Y	1100 L
Surrogate					
Hexacosane	%REC	DO	82	91	DO

DO: Surrogate diluted out

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

L: Lighter hydrocarbons than indicated standard

GC15 Channel A TEH

Sample Name : S,125687-005,27855

Sample #: 50:50

Page 1 of 1

FileName : C:\GC15\CHB\149B072.RAW

Date : 5/30/96 02:49 PM

Method : BTEKJ.MTH

Time of Injection: 5/30/96 01:50 PM

Start Time : 0.01 min

End Time : 31.91 min

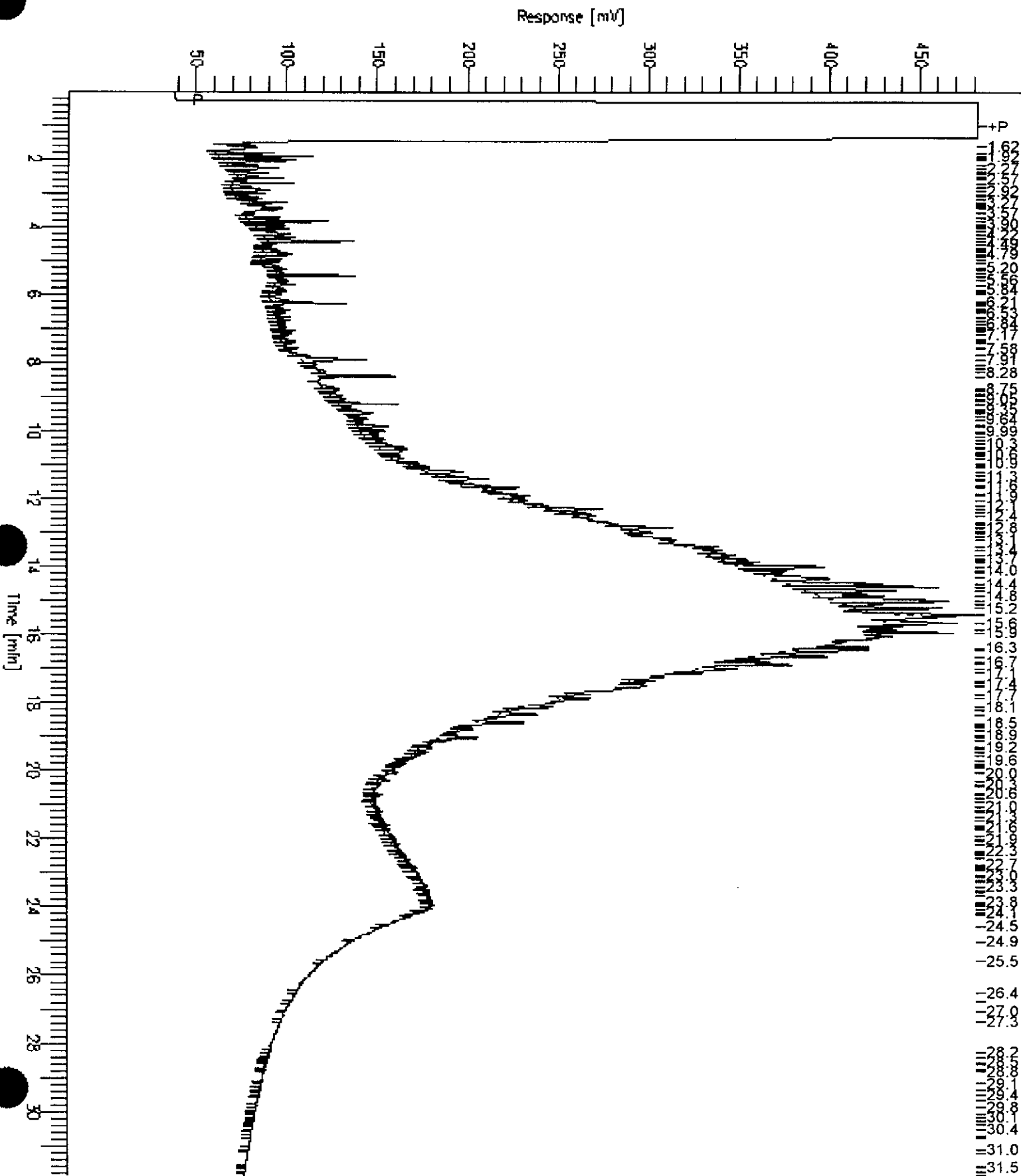
Low Point : 30.69 mV

High Point : 482.33 mV

Scale Factor: 0.0

Plot Offset: 31 mV

Plot Scale: 451.6 mV

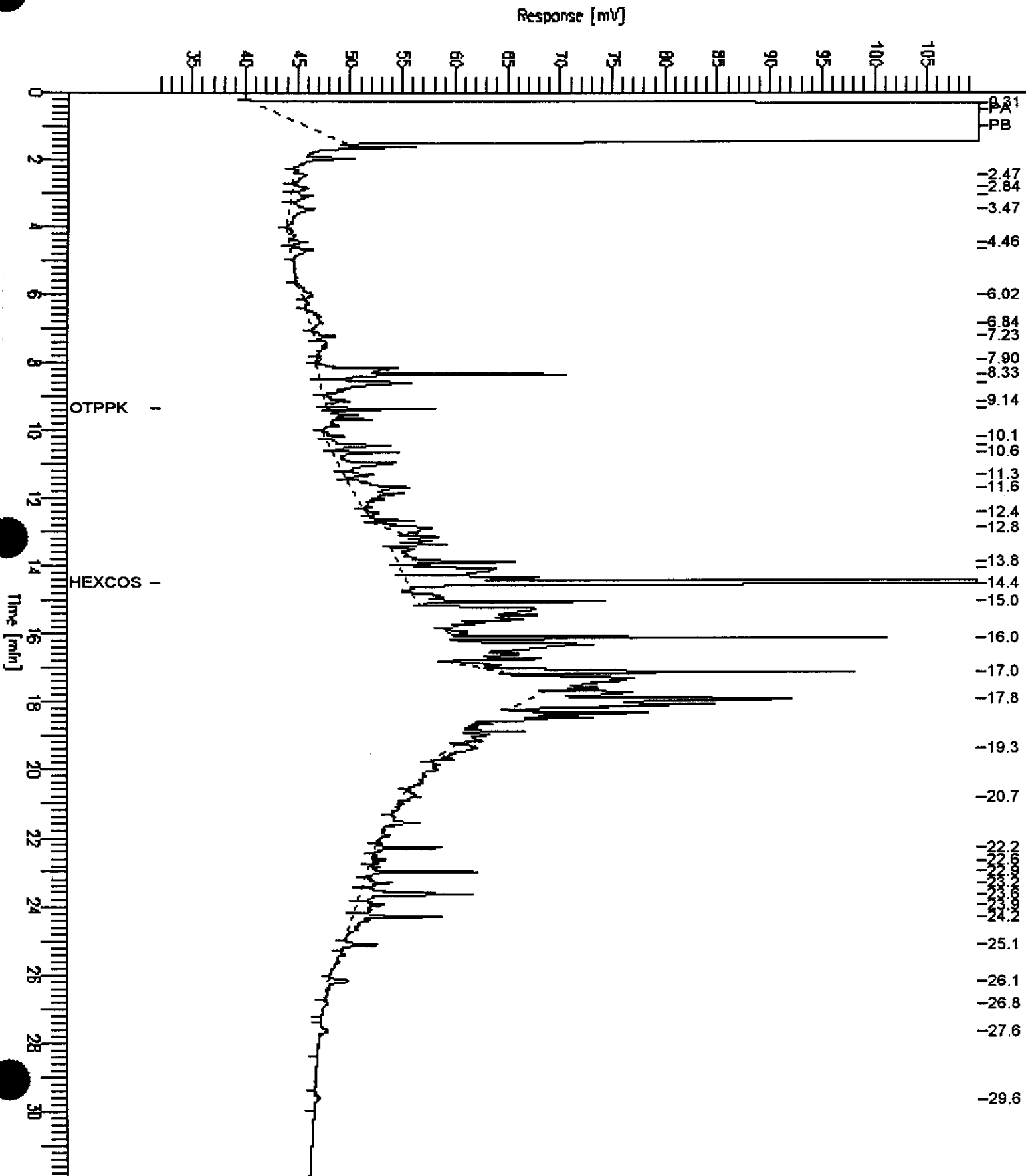


GC15 Channel B Surrogate

Sample Name : S,125687-006,27833
FileName : C:\GC15\CHB\149B062.raw
Method : DUAL
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 31.90 min
Plot Offset: 32 mV

Sample #: 50:5
Date : 5/30/96 06:58 AM
Time of Injection: 5/30/96 06:25 AM
Low Point : 32.00 mV
Plot Scale: 78.0 mV



GC15 Channel B Surrogate

Sample Name : S,125687-007,27833

Sample #: 50:5

Page 1 of 1

FileName : C:\GC15\CHB\149B063.raw

Date : 5/30/96 07:43 AM

Method : DUAL

Time of Injection: 5/30/96 07:09 AM

Start Time : 0.00 min

End Time : 31.90 min

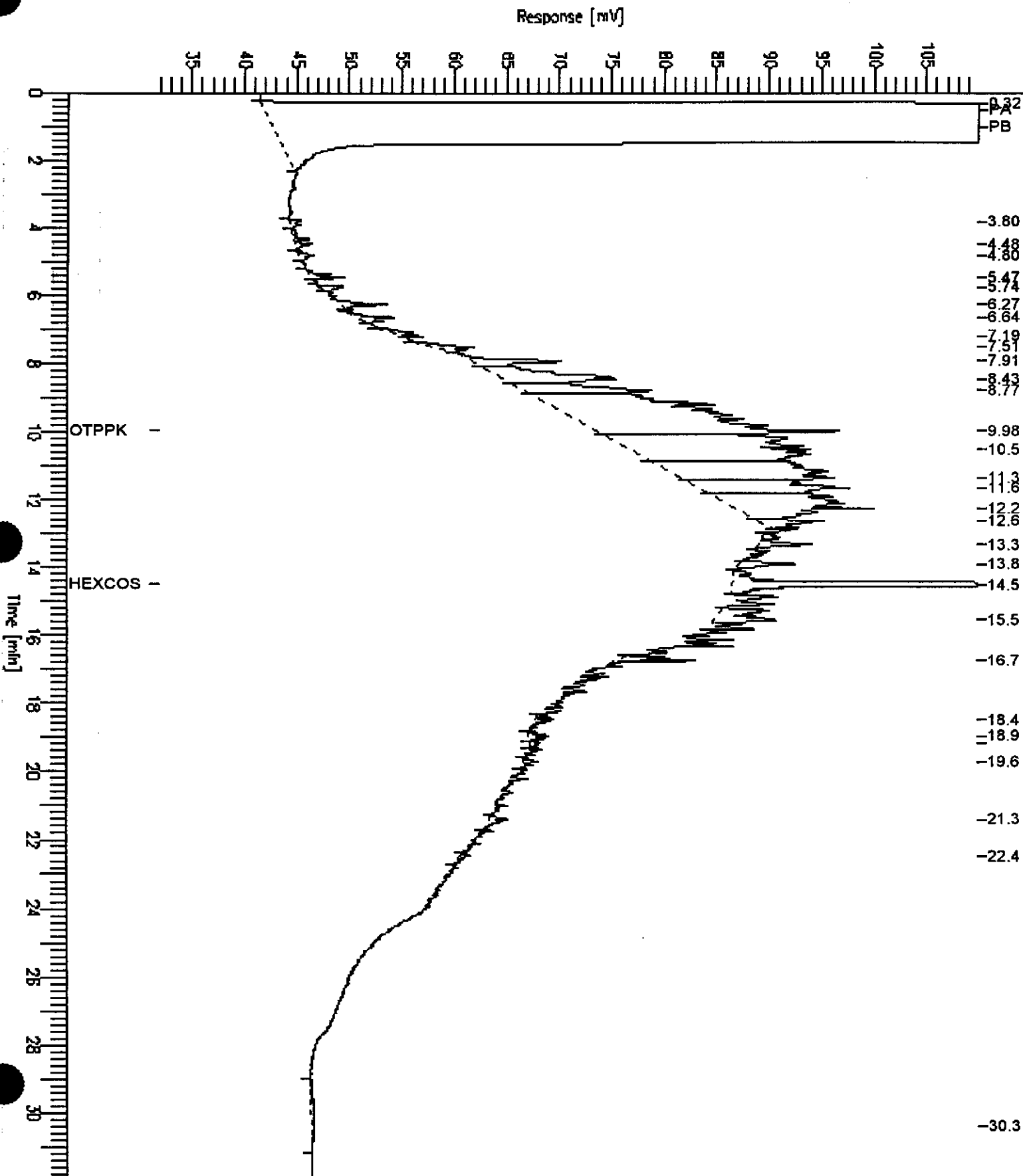
Low Point : 32.00 mV

High Point : 110.00 mV

Scale Factor: 0.0

Plot Offset: 32 mV

Plot Scale: 78.0 mV



GC15 Channel A TEH

Sample Name : 125687-008,27833

Sample #: 50:100

Page 1 of 1

FileName : C:\GC15\CHB\151B010.RAW

Date : 5/31/96 12:09 PM

Method : BTEHJ.MTH

Time of Injection: 5/31/96 02:01 AM

Start Time : 0.01 min

End Time : 31.91 min

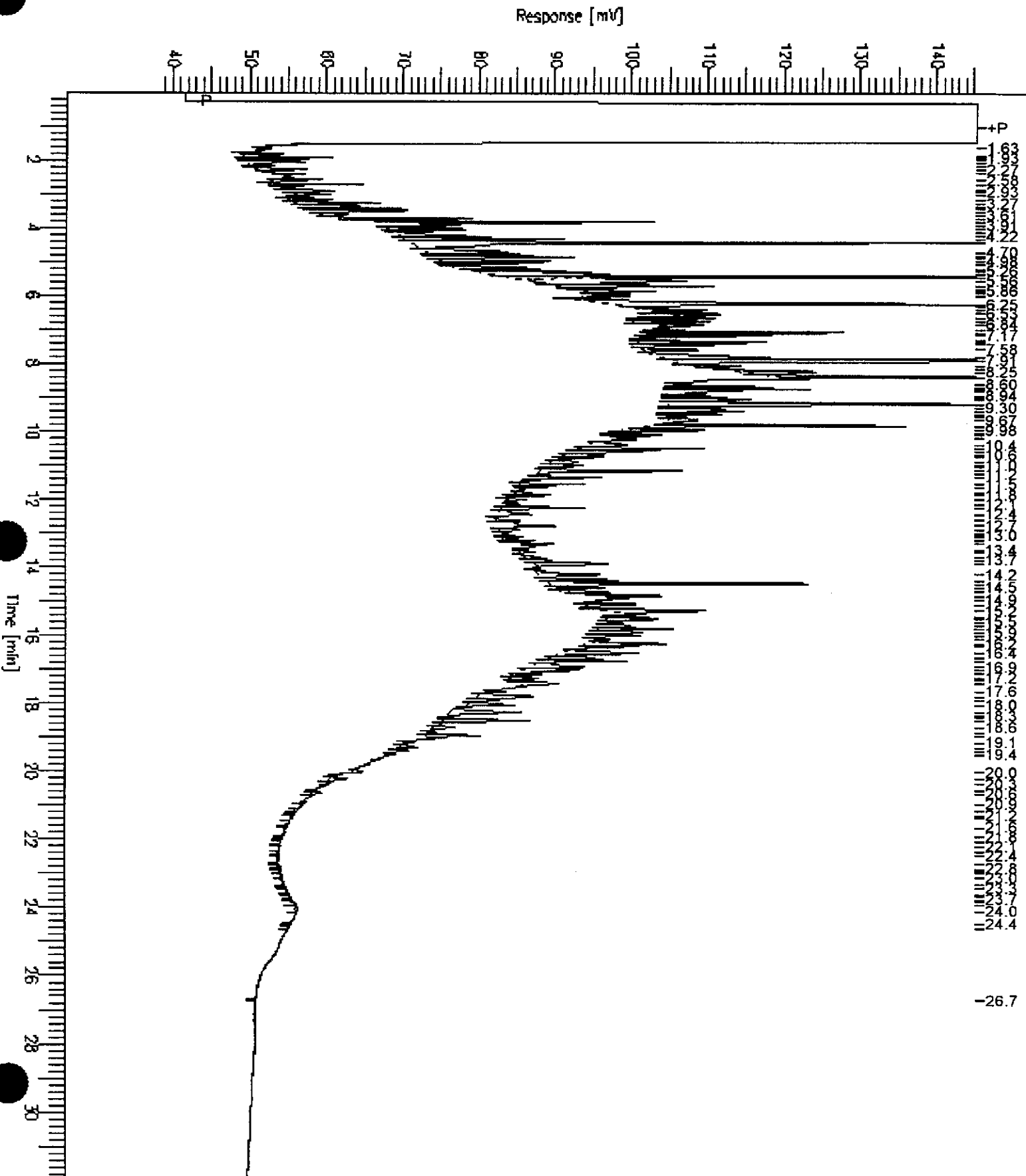
Low Point : 38.20 mV

High Point : 145.37 mV

Scale Factor: 0.0

Plot Offset: 38 mV

Plot Scale: 107.2 mV





Lab #: 125687

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: LUFT

METHOD BLANK

Matrix: Soil
Batch#: 27833
Units: mg/Kg
Diln Fac: 1

Prep Date: 05/28/96
Analysis Date: 05/29/96

MB Lab ID: QC22716

Analyte	Result	
Diesel C12-C22	<1.0	
Motor Oil C22-C50	<5.0	
Surrogate	%Rec	Recovery Limits
Hexacosane	104	60-140

Lab #: 125687

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: LUFT

LABORATORY CONTROL SAMPLE

 Matrix: Soil
 Batch#: 27833
 Units: mg/Kg
 Diln Fac: 1

 Prep Date: 05/28/96
 Analysis Date: 05/29/96

LCS Lab ID: QC22717

Analyte	Result	Spike Added	%Rec #	Limits
Diesel C12-C22	49.6	49.5	100	60-140
Surrogate	%Rec	Limits		
Hexacosane	98	60-140		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 125687

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: LUFT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125681-002
 Matrix: Soil
 Batch#: 27833
 Units: mg/Kg dry weight
 Diln Fac: 1

Sample Date: 05/21/96
 Received Date: 05/23/96
 Prep Date: 05/28/96
 Analysis Date: 05/30/96
 Moisture: 8%

MS Lab ID: QC22718

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Diesel C12-C22	53.8	<1.087	47.14	88	60-140
Surrogate	%Rec	Limits			
Hexacosane	89	60-140			

MSD Lab ID: QC22719

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	53.8	43.84	81	60-140	7	<30
Surrogate	%Rec	Limits				
Hexacosane	84	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125687-007	SCI-5 @ 3.5'	27838	05/21/96	05/28/96	05/28/96	
125687-008	SCI-6 @ 3.5'	27838	05/21/96	05/28/96	05/28/96	

Matrix: Soil

Analyte	Units	125687-007	125687-008
Diln Fac:		1	1
Benzene	ug/Kg	<5	<5
Toluene	ug/Kg	<5	<5
Ethylbenzene	ug/Kg	<5	22
m,p-Xylenes	ug/Kg	<5	<5
o-Xylene	ug/Kg	<5	20 C
Surrogate			
Trifluorotoluene	%REC	86	86
Bromobenzene	%REC	86	80

C: Presence of this compound confirmed by second column,
however, the confirmation concentration differed from the reported
result by more than a factor of two



Lab #: 125687

BATCH QC REPORT

Page 1 of 1

BTXE			
Client:	Subsurface Consultants	Analysis Method:	EPA 8020
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
METHOD BLANK			
Matrix:	Soil	Prep Date:	05/28/96
Batch#:	27838	Analysis Date:	05/28/96
Units:	ug/Kg		
Diln Fac:	1		

MB Lab ID: QC22736

Analyte	Result		
Benzene	<5.0		
Toluene	<5.0		
Ethylbenzene	<5.0		
m,p-Xylenes	<5.0		
o-Xylene	<5.0		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	85		43-114
Bromobenzene	86		47-112



Lab #: 125687

BATCH QC REPORT

BTXE	
Client: Subsurface Consultants	Analysis Method: EPA 8020
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	
LABORATORY CONTROL SAMPLE	
Matrix: Soil	Prep Date: 05/28/96
Batch#: 27838	Analysis Date: 05/28/96
Units: ug/Kg	
Diln Fac: 1	

LCS Lab ID: QC22738

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	98.6	100	99	80-120
Toluene	101.3	100	101	80-120
Ethylbenzene	98.3	100	98	80-120
m,p-Xylenes	205.8	200	103	80-120
o-Xylene	107.5	100	108	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	86	43-114		
Bromobenzene	85	47-112		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

CHAIN OF CUSTODY FORM

125007

PROJECT NAME: KOT
 JOB NUMBER: 133.005 LAB: Curtis + Tompkins
 PROJECT CONTACT: Jeri Alexander TURNAROUND: Normal
 SAMPLED BY: Jerome DeVellier REQUESTED BY: Jeri Alexander

PAGE	OF
ANALYSIS REQUESTED	

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME	
-1	SCI-1@3'		X					X						0	5	22	96	X	
-2	SCI-1@6'		X					X										X	
-3	SCI-2@3.5'		X					X										X	
-4	SCI-2@6'		X					X										X	
-5	SCI-3@6'		X					X										X	
-6	SCI-4@4'		X					X										X	
-7	SCI-5@3.5'		X					X										X	
-8	SCI-6@3.5'		X					X						0	5	22	96	X	

052296	052296

CHAIN OF CUSTODY RECORD

COMMENTS & NOTES:

RELEASED BY: (Signature) <u>Jeri Alexander</u>	DATE / TIME <u>5/23/96 4:45 pm</u>	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature) <u>T. B...</u>	DATE / TIME <u>5/23/96 4:45</u>

Subsurface Consultants, Inc.
 171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
 (510) 268-0461 • FAX: 510-268-0137



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 31-MAY-96
Lab Job Number: 125703
Project ID: 133.005
Location: KOT

Reviewed by: _____

Reviewed by: _____

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TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125703-001	MW-7	27798	05/24/96	05/25/96	05/25/96	

Matrix: Water

Analyte	Units	125703-001
Diln Fac:		1
Gasoline	ug/L	<50
Surrogate		
Trifluorotoluene	%REC	89
Bromobenzene	%REC	78



Lab #: 125703

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27798
Units: ug/L
Diln Fac: 1

Prep Date: 05/24/96
Analysis Date: 05/24/96

MB Lab ID: QC22553

Analyte	Result		
Gasoline	<50		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	89		69-120
Bromobenzene	75		70-122



Lab #: 125703

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
 Batch#: 27798
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/24/96
 Analysis Date: 05/24/96

LCS Lab ID: QC22551

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	2138	2006	107	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	95	69-120		
Bromobenzene	92	70-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125703-001	MW-7	27890	05/24/96	05/29/96	05/31/96	

Matrix: Water

Analyte	Units	125703-001
Diln Fac:		1
Diesel C12-C22	ug/L	750 YH
Motor Oil C22-C50	ug/L	750 Y
Surrogate		
Hexacosane	%REC	102

Y: Sample exhibits fuel pattern which does not resemble standard

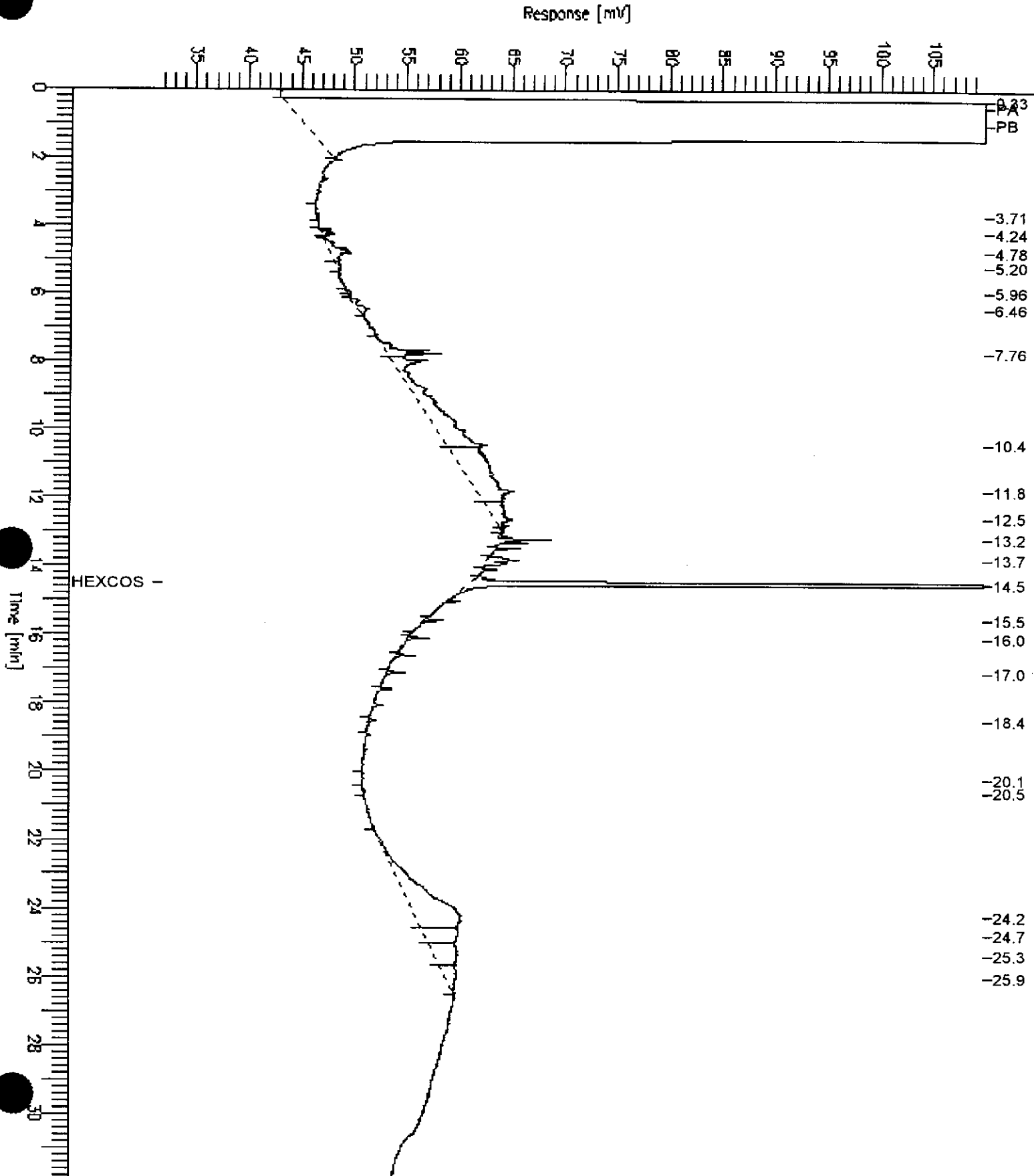
H: Heavier hydrocarbons than indicated standard

GC15 Channel B Surrogate

Sample Name : 125703-001,27890
FileName : C:\GC15\CHB\151B014.raw
Method : DUAL
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 31.90 min
Plot Offset: 32 mV

Sample #: 500:2.5
Date : 5/31/96 05:34 AM
Time of Injection: 5/31/96 04:59 AM
Low Point : 32.00 mV
Plot Scale: 78.0 mV
Page 1 of 1
High Point : 110.00 mV



Lab #: 125703

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

METHOD BLANK

 Matrix: Water
 Batch#: 27890
 Units: ug/L
 Diln Fac: 1

 Prep Date: 05/29/96
 Analysis Date: 05/30/96

MB Lab ID: QC22929

Analyte	Result	
Diesel C12-C22	<50	
Motor Oil C22-C50	<250	
Surrogate	%Rec	Recovery Limits
Hexacosane	105	60-140



Lab #: 125703

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27890
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/29/96
 Analysis Date: 05/30/96

BS Lab ID: QC22930

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	2509	101	60-140
Surrogate	%Rec	Limits		
Hexacosane	100	60-140		

BSD Lab ID: QC22931

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2602	105	60-140	4	<35
Surrogate	%Rec	Limits				
Hexacosane	100	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125703-001	MW-7	27798	05/24/96	05/25/96	05/25/96	

Matrix: Water

Analyte	Units	125703-001
Diln Fac:		1
Benzene	ug/L	<0.5
Toluene	ug/L	<0.5
Ethylbenzene	ug/L	<0.5
m,p-Xylenes	ug/L	<0.5
o-Xylene	ug/L	<0.5
Surrogate		
Trifluorotoluene	%REC	98
Bromobenzene	%REC	87



Lab #: 125703

BATCH QC REPORT

Page 1 of 1

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27798
Units: ug/L
Diln Fac: 1

Prep Date: 05/24/96
Analysis Date: 05/24/96

MB Lab ID: QC22553

Analyte	Result	
Benzene	<0.5	
Toluene	<0.5	
Ethylbenzene	<0.5	
m,p-Xylenes	<0.5	
o-Xylene	<0.5	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	97	58-130
Bromobenzene	83	62-131

Lab #: 125703

BATCH QC REPORT

Page 1 of 1

BTXE			
Client: Subsurface Consultants	Analysis Method: EPA 8020		
Project#: 133.005	Prep Method: EPA 5030		
Location: KOT			
LABORATORY CONTROL SAMPLE			
Matrix: Water	Prep Date: 05/24/96		
Batch#: 27798	Analysis Date: 05/24/96		
Units: ug/L			
Diln Fac: 1			

LCS Lab ID: QC22552

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	21.6	20	108	80-120
Toluene	22	20	110	80-120
Ethylbenzene	21.8	20	109	80-120
m,p-Xylenes	47	40	118	80-120
o-Xylene	23.5	20	118	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	98	58-130		
Bromobenzene	87	62-131		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

Lab #: 125703

BATCH QC REPORT

Page 1 of 1

BTXE	
Client: Subsurface Consultants	Analysis Method: EPA 8020
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	
MATRIX SPIKE/MATRIX SPIKE DUPLICATE	
Field ID: ZZZZZZ	Sample Date: 05/13/96
Lab ID: 125578-002	Received Date: 05/15/96
Matrix: Water	Prep Date: 05/24/96
Batch#: 27798	Analysis Date: 05/24/96
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC22554

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	20	<0.5000	22.4	112	75-125
Toluene	20	<0.5000	22.4	112	75-125
Ethylbenzene	20	<0.5000	22.1	111	75-125
m,p-Xylenes	40	<0.5000	45.9	115	75-125
o-Xylene	20	<0.5000	23	115	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	99	58-130			
Bromobenzene	89	62-131			

MSD Lab ID: QC22555

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	20	24.2	121	75-125	8	<20
Toluene	20	24.1	121	75-125	7	<20
Ethylbenzene	20	23.7	119	75-125	7	<20
m,p-Xylenes	40	49.5	124	75-125	8	<20
o-Xylene	20	25	125	75-125	8	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	100	58-130				
Bromobenzene	92	62-131				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

125707

CHAIN OF CUSTODY FORM

PROJECT NAME: KOT
 JOB NUMBER: 133.005 LAB: Curtis & Tompkins
 PROJECT CONTACT: Seri Alexander TURNAROUND: Normal
 SAMPLED BY: Dennis Alexander REQUESTED BY: Seri Alexander

ANALYSIS REQUESTED					
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE			
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME
✓	MW-7	X				3	1			X			X		05	24	96	1045

NOTES
 TEH (1.5 to 0.50)
 TVH
 B1XE

CHAIN OF CUSTODY RECORD			
RELEASED BY: (Signature) 	DATE / TIME 5/24/96 3:00	RECEIVED BY: (Signature) 	DATE / TIME 5/24/96 15:00
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:

Subsurface Consultants, Inc.
 171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
 (510) 268-0461 • FAX: 510-268-0137



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 04-JUN-96
Lab Job Number: 125670
Project ID: 133.005
Location: KOT

Reviewed by: _____

Reviewed by: _____

This package may be reproduced only in its entirety.

Client: Subsurface Consultants

Laboratory Login Number: 125670

 Project Name: KOT
 Project Number: 133.005

Report Date: 31 May 96

 ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520B^F

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
125670-002	SCI-2	Water	22-MAY-96	22-MAY-96	24-MAY-96	81.	mg/L	5	TR	27801
125670-003	SCI-3	Water	21-MAY-96	22-MAY-96	24-MAY-96	210	mg/L	5	TR	27801
125670-005	SCI-5	Water	22-MAY-96	22-MAY-96	24-MAY-96	28.	mg/L	5	TR	27801

ND = Not Detected at or above Reporting Limit (RL).



Q C B a t c h R e p o r t

Client: Subsurface Consultants
Project Name: KOT
Project Number: 133.005

Laboratory Login Number: 125670
Report Date: 31 May 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 27801

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	24-MAY-96

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	82%	SMWW 17:5520BF	24-MAY-96
BSD	86%	SMWW 17:5520BF	24-MAY-96

Average Spike Recovery	84%	Control Limits	80% - 120%
Relative Percent Difference	5.8%		< 20%



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125670-005	SCI-5	27794	05/22/96	05/26/96	05/26/96	

Matrix: Water

Analyte	Units	125670-005
Diln Fac:		1
Gasoline	ug/L	250 Y
Surrogate		
Trifluorotoluene	%REC	90
Bromobenzene	%REC	80

Y: Sample exhibits fuel pattern which does not resemble standard

FileName : G:\GC05\146H021.raw

Date : 5/26/96 5:16 AM

Page 1 of 1

Start Time : 0.00 min

End Time : 23.42 min

Low Point : 3.58 mV

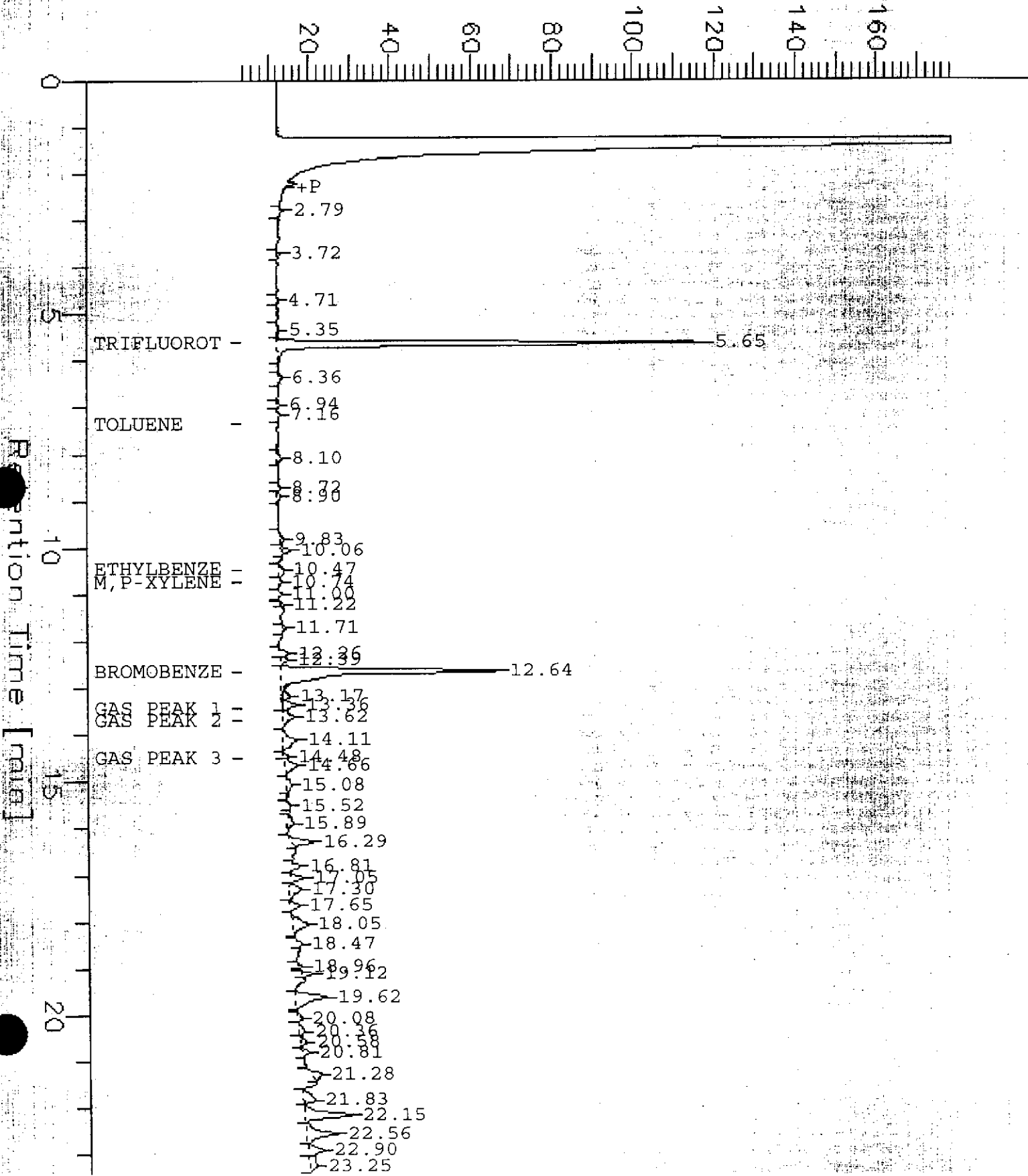
High Point : 178.58 mV

Scale Factor : -1

Plot Offset : 4 mV

Plot Scale : 175 mV

Response [mV]





Lab #: 125670

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons			
Client:	Subsurface Consultants	Analysis Method:	CA LUFT (EPA 8015M)
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
METHOD BLANK			
Matrix:	Water	Prep Date:	05/25/96
Batch#:	27794	Analysis Date:	05/25/96
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC22538

Analyte	Result		
Gasoline	<50		
Surrogate	%Rec	Recovery Limits	
Trifluorotoluene	89	65-135	
Bromobenzene	73	65-135	



Lab #: 125670

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 27794
Units: ug/L
Diln Fac: 1

Prep Date: 05/25/96
Analysis Date: 05/25/96

LCS Lab ID: QC22537

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	2074	2006	104	75-125
Surrogate	%Rec	Limits		
Trifluorotoluene	95	65-135		
Bromobenzene	91	65-135		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 125670

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125645-001
 Matrix: Water
 Batch#: 27794
 Units: ug/L
 Diln Fac: 1

Sample Date: 05/16/96
 Received Date: 05/17/96
 Prep Date: 05/25/96
 Analysis Date: 05/25/96

MS Lab ID: QC22539

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	2000	737.7	2710	99	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	97	65-135			
Bromobenzene	100	65-135			

MSD Lab ID: QC22540

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	2000	2783	102	75-125	3	<35
Surrogate	%Rec	Limits				
Trifluorotoluene	96	65-135				
Bromobenzene	100	65-135				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: EPA 3520
Location: KOT	

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125670-001	SCI-1	27779	05/21/96	05/23/96	05/27/96	
125670-002	SCI-2	27779	05/22/96	05/23/96	05/27/96	
125670-003	SCI-3	27779	05/21/96	05/23/96	05/27/96	
125670-004	SCI-4	27779	05/22/96	05/23/96	05/27/96	

Matrix: Water

Analyte	Units	125670-001	125670-002	125670-003	125670-004
Diln Fac:		5	20	20	1
Diesel C12-C22	ug/L	25000 YH	250000 YLH	100000 YH	1300 YH
Motor Oil C22-C50	ug/L	15000 YL	160000 YL	190000 YH	510 YL
Surrogate					
Hexacosane	%REC	117	DO	DO	93

DO: Surrogate diluted out

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

L: Lighter hydrocarbons than indicated standard

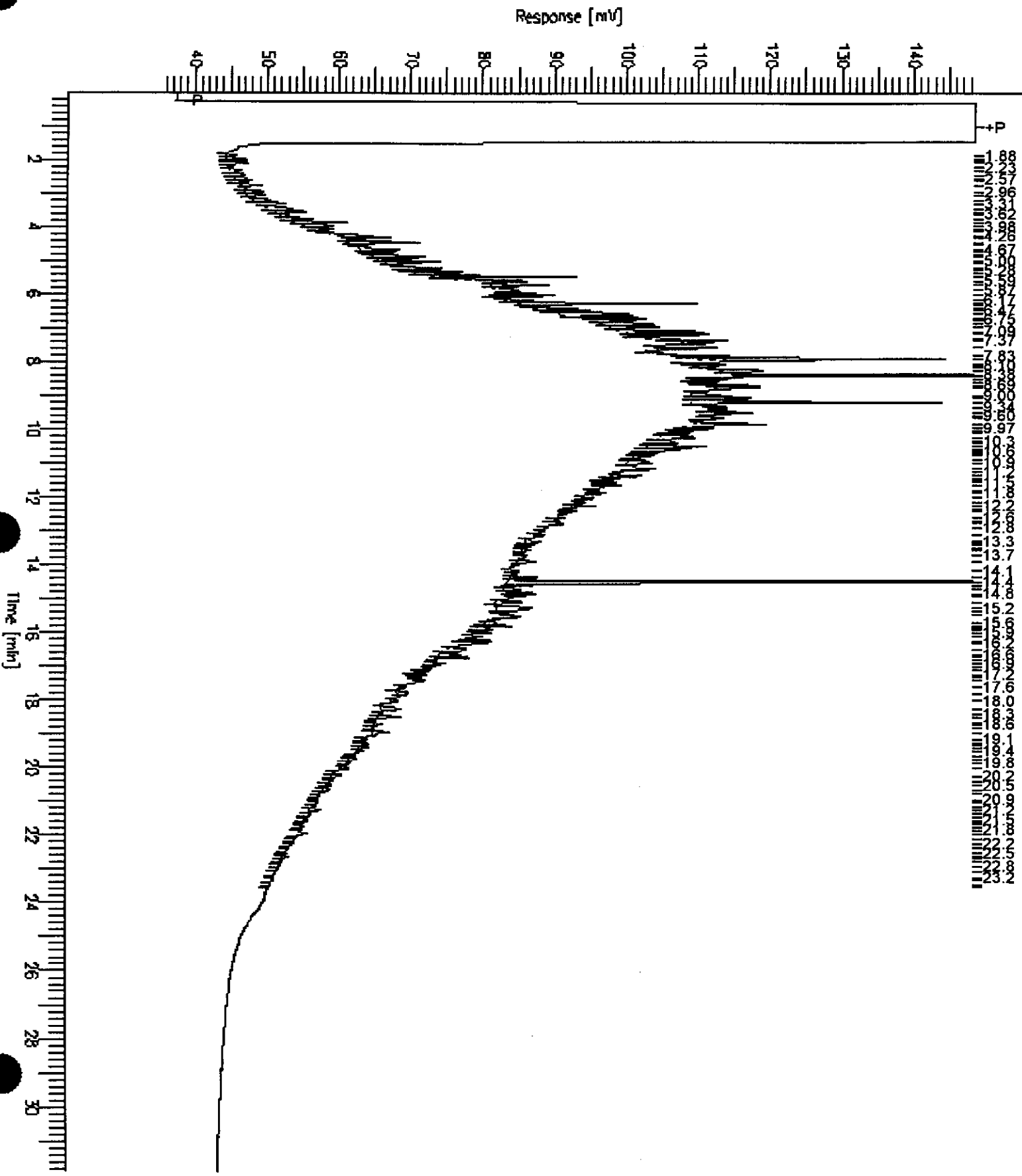
GC15 Channel A TEH

Sample Name : S,125670-001,27779
FileName : C:\GC15\CHB\145B099.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: 35 mV

Sample #: 500:12.5
Date : 5/27/96 04:29 PM
Time of Injection: 5/27/96 01:02 AM
Low Point : 35.08 mV
Plot Scale: 113.5 mV

Page 1 of 1
High Point : 148.58 mV

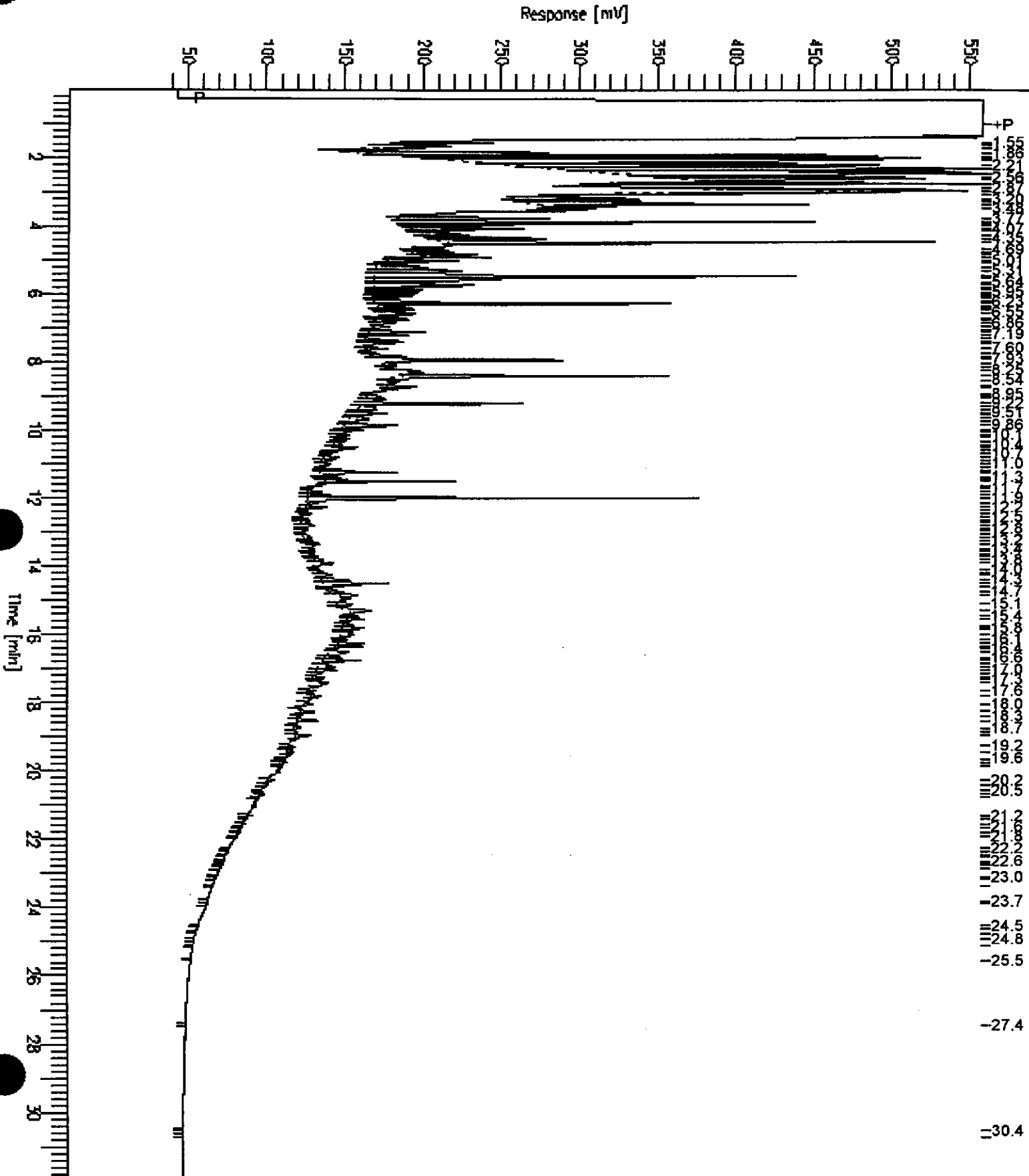


GC15 Channel A TEH

Sample Name : S,125670-002,27779
FileName : C:\GC15\CHBA\1458106.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: 33 mV

Sample #: 500:50
Date : 5/27/96 04:30 PM
Time of Injection: 5/27/96 06:15 AM
Low Point : 33.49 mV
High Point : 558.95 mV
Plot Scale: 525.5 mV



GC15 Channel A TEH

Sample Name : S,125670-003,27779

Sample #: 500:50

Page 1 of 1

FileName : C:\GC15\CHB\145B108.RAW

Date : 5/27/96 04:34 PM

Method : BTEHJ.MTH

Time of Injection: 5/27/96 07:45 AM

Start Time : 0.01 min

End Time : 31.91 min

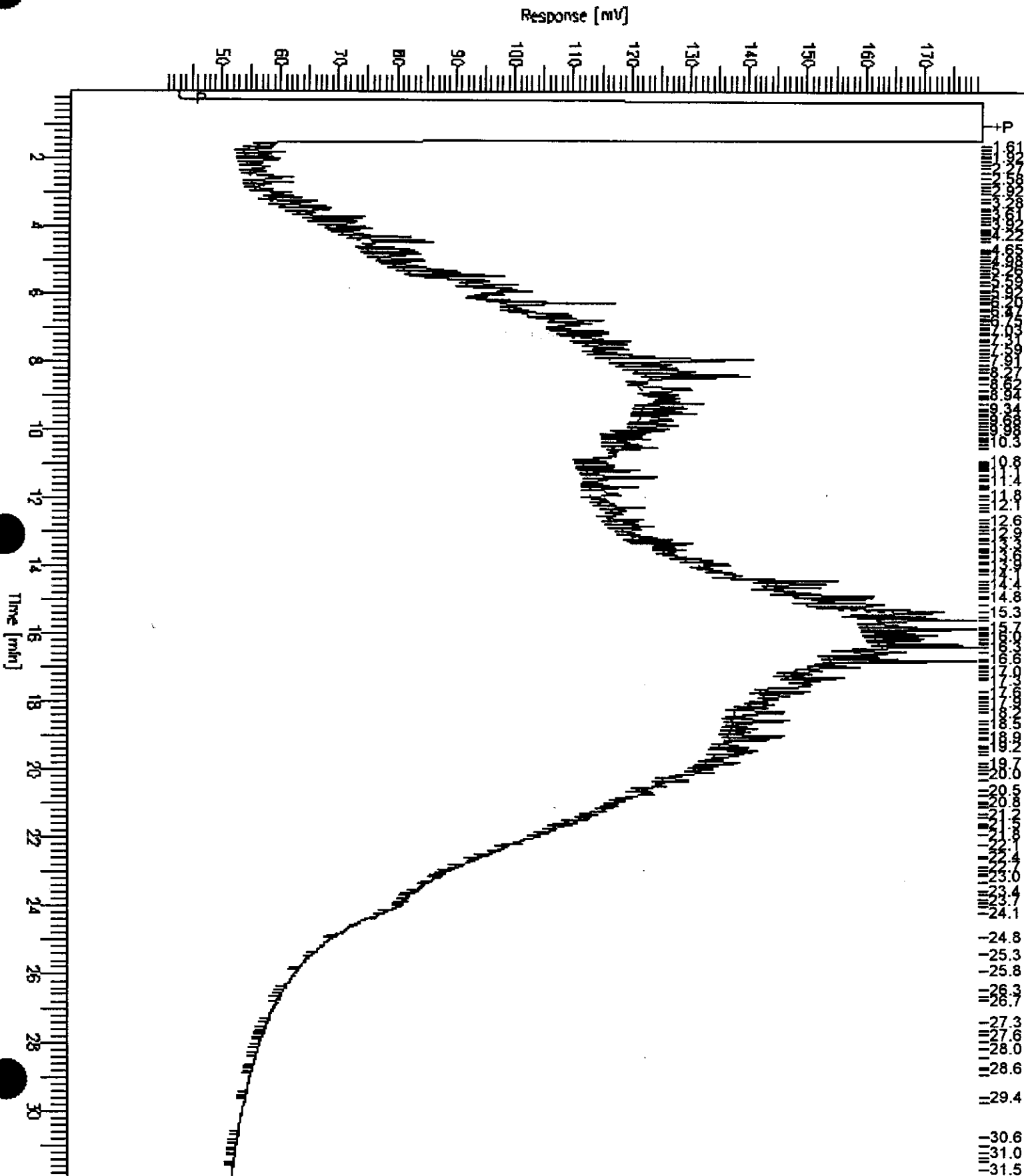
Low Point : 40.08 mV

High Point : 179.98 mV

Scale Factor: 0.0

Plot Offset: 40 mV

Plot Scale: 139.9 mV

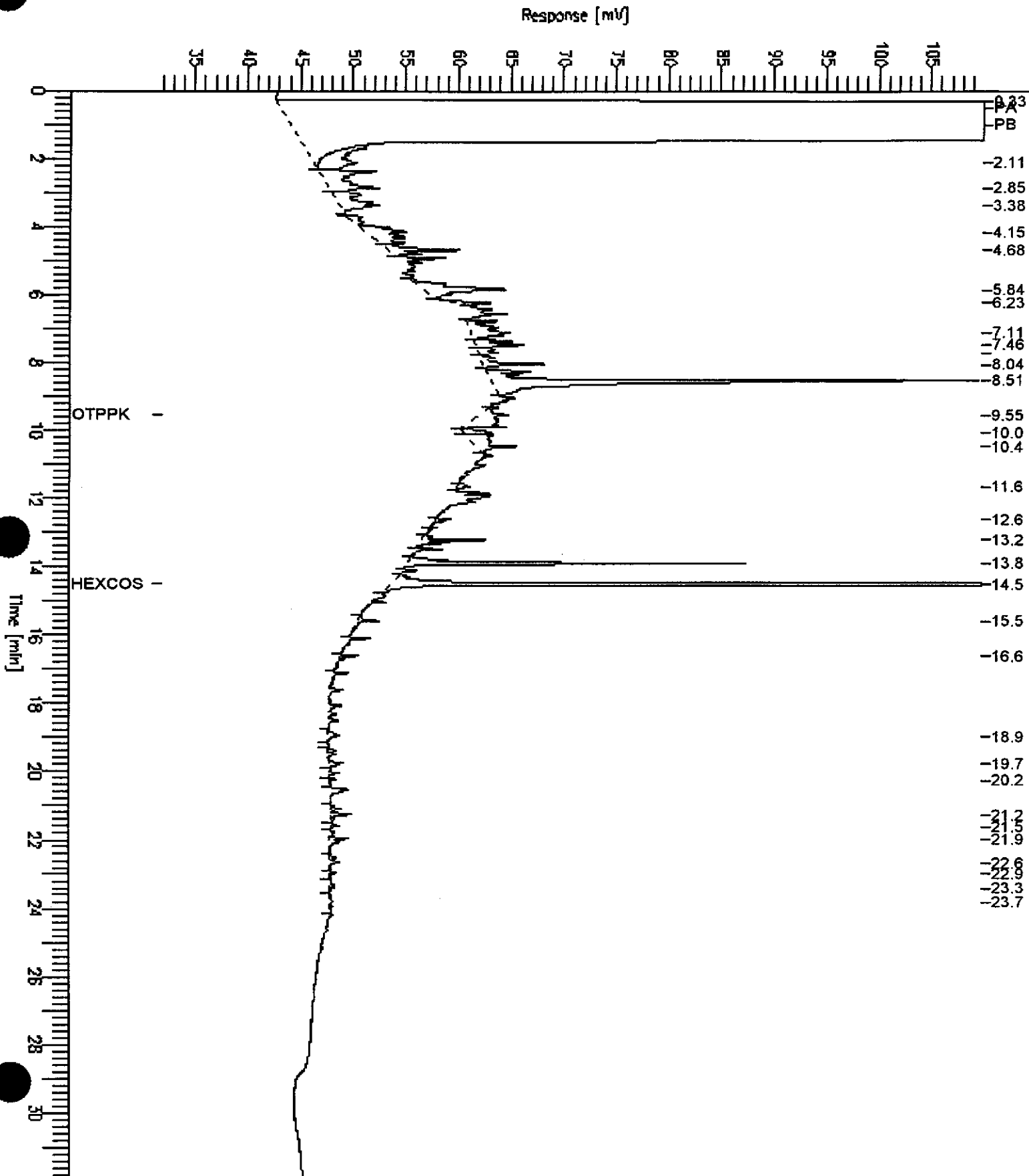


GC15 Channel B Surrogate

Sample Name : S,125670-004,27779
 FileName : C:\GC15\CHB\145B105.raw
 Method : DUAL
 Start Time : 0.00 min
 Scale Factor: 0.0

End Time : 31.90 min
 Plot Offset: 32 mV

Sample #: 500:2.5
 Date : 5/27/96 06:04 AM
 Time of Injection: 5/27/96 05:31 AM
 Low Point : 32.00 mV
 Plot Scale: 78.0 mV
 High Point : 110.00 mV





TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125670-005	SCI-5	27779	05/22/96	05/23/96	05/26/96	
125670-006	SCI-2-FP	27779	05/22/96	05/23/96	05/27/96	

Matrix: Water

Analyte	Units	125670-005	125670-006
Diln Fac:		10	20
Diesel C12-C22	ug/L	35000 YLH	8600000 YLH
Motor Oil C22-C50	ug/L	42000 YL	5300000 YL
Surrogate			
Hexacosane	%REC	DO	DO

DO: Surrogate diluted out

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

L: Lighter hydrocarbons than indicated standard

GC15 Channel A TEH

Sample Name : S,125670-005,27779

Sample #: 500:250

Page 1 of 1

FileName : C:\GC15\CHB\145B097.RAW

Date : 5/27/96 04:42 PM

Method : BTEHJ.MTH

Time of Injection: 5/26/96 11:32 PM

Start Time : 0.01 min

End Time : 31.91 min

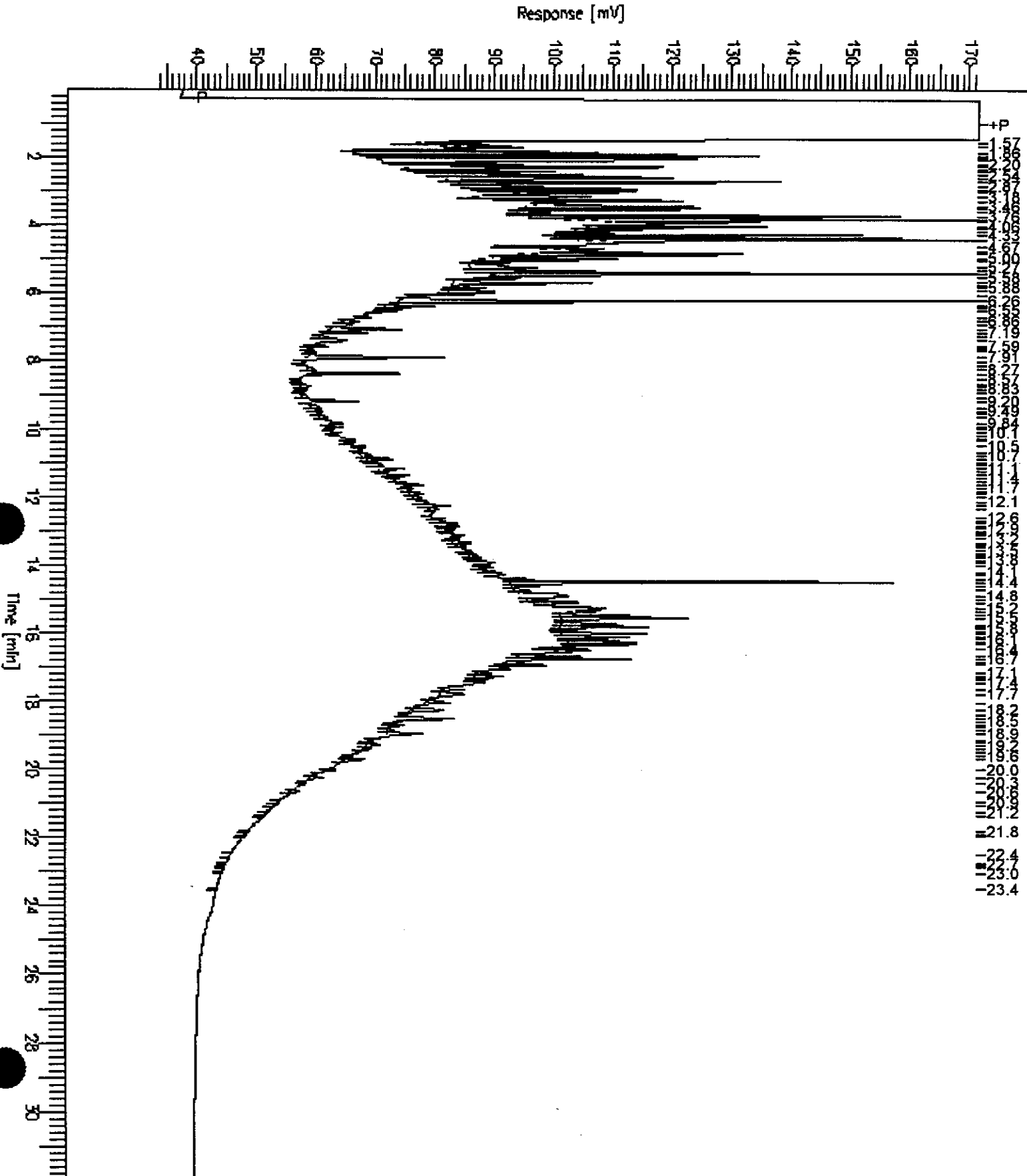
Low Point : 33.86 mV

High Point : 171.69 mV

Scale Factor: 0.0

Plot Offset: 34 mV

Plot Scale: 137.8 mV

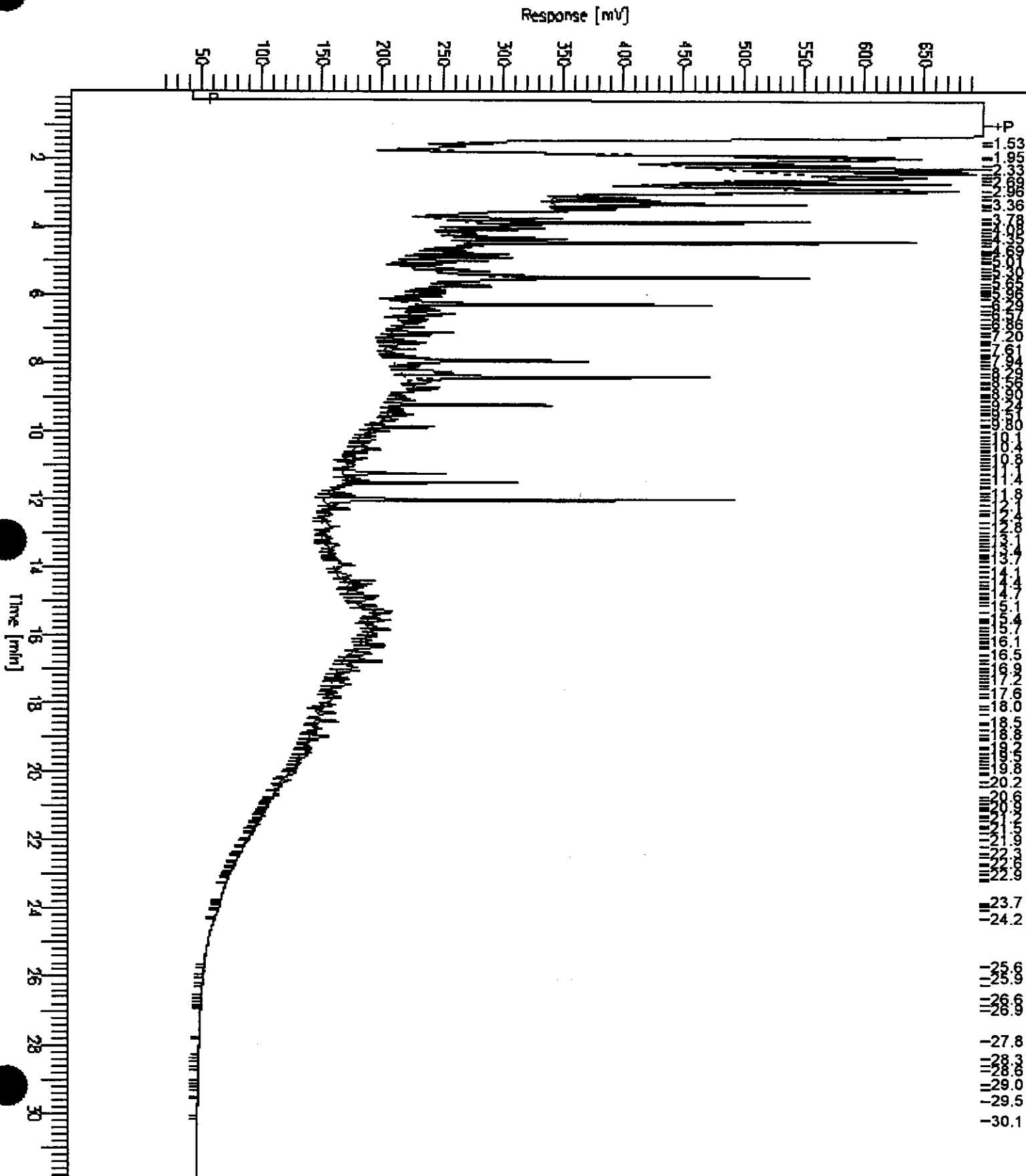


GC15 Channel A TEH

Sample Name : S,125670-006,27779
FileName : C:\GC15\CHB\145B107.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: 19 mV

Sample #: 40:100
Date : 5/27/96 04:39 PM
Time of Injection: 5/27/96 07:00 AM
Low Point : 18.90 mV
High Point : 699.63 mV
Plot Scale: 680.7 mV





Lab #: 125670

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext. Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 27779
Units: ug/L
Diln Fac: 1

Prep Date: 05/23/96
Analysis Date: 05/26/96

MB Lab ID: QC22468

Analyte	Result	
Diesel C12-C22	<50	
Motor Oil C22-C50	<250	
Surrogate	%Rec	Recovery Limits
Hexacosane	102	60-140



Lab #: 125670

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27779
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/23/96
 Analysis Date: 05/26/96

BS Lab ID: QC22469

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	2519	102	60-140
Surrogate	%Rec	Limits		
Hexacosane	102	60-140		

BSD Lab ID: QC22470

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2699	109	60-140	7	<35
Surrogate	%Rec	Limits				
Hexacosane	101	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

SAMPLE ID: SCI-4
 LAB ID: 125670-004
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Water

DATE SAMPLED: 05/22/96
 DATE RECEIVED: 05/22/96
 DATE REPORTED: 06/17/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	27845	EPA 6010A	05/29/96
Arsenic	33	5.0	1	27845	EPA 6010A	05/29/96
Barium	230	10	1	27845	EPA 6010A	05/29/96
Beryllium	ND	2.0	1	27845	EPA 6010A	05/29/96
Cadmium	2.2	2.0	1	27845	EPA 6010A	05/29/96
Chromium (total)	62	10	1	27845	EPA 6010A	05/29/96
Cobalt	ND	20	1	27845	EPA 6010A	05/29/96
Copper	ND	10	1	27845	EPA 6010A	05/29/96
Lead	20	3.0	1	27845	EPA 6010A	05/29/96
Mercury	ND	0.20	1	27826	EPA 7470	05/28/96
Molybdenum	ND	20	1	27845	EPA 6010A	05/29/96
Nickel	60	20	1	27845	EPA 6010A	05/29/96
Selenium	16	5.0	1	27845	EPA 6010A	05/29/96
Silver	ND	5.0	1	27845	EPA 6010A	05/29/96
Thallium	ND	5.0	1	27845	EPA 6010A	05/29/96
Vanadium	53	10	1	27845	EPA 6010A	05/29/96
Zinc	58	20	1	27845	EPA 6010A	05/29/96

ND = Not detected at or above reporting limit



SAMPLE ID: SCI-5
 LAB ID: 125670-005
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Water

DATE SAMPLED: 05/22/96
 DATE RECEIVED: 05/22/96
 DATE REPORTED: 06/17/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	27845	EPA 6010A	05/29/96
Arsenic	15	5.0	1	27845	EPA 6010A	05/29/96
Barium	270	10	1	27845	EPA 6010A	05/29/96
Beryllium	ND	2.0	1	27845	EPA 6010A	05/29/96
Cadmium	ND	2.0	1	27845	EPA 6010A	05/29/96
Chromium (total)	12	10	1	27845	EPA 6010A	05/29/96
Cobalt	ND	20	1	27845	EPA 6010A	05/29/96
Copper	ND	10	1	27845	EPA 6010A	05/29/96
Lead	11	3.0	1	27845	EPA 6010A	05/29/96
Mercury	0.59	0.20	1	27826	EPA 7470	05/28/96
Molybdenum	ND	20	1	27845	EPA 6010A	05/29/96
Nickel	24	20	1	27845	EPA 6010A	05/29/96
Selenium	8.5	5.0	1	27845	EPA 6010A	05/29/96
Silver	ND	5.0	1	27845	EPA 6010A	05/29/96
Thallium	ND	5.0	1	27845	EPA 6010A	05/29/96
Vanadium	12	10	1	27845	EPA 6010A	05/29/96
Zinc	49	20	1	27845	EPA 6010A	05/29/96

ND = Not detected at or above reporting limit



CLIENT: Subsurface Consultants
JOB NUMBER: 125670

DATE REPORTED: 06/17/96

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	500	540	516	ug/L	108	103	80-120	5	35	27845	EPA 6010A	05/29/96
Arsenic	2000	1930	1960	ug/L	97	98	80-120	2	35	27845	EPA 6010A	05/29/96
Barium	2000	1920	1960	ug/L	96	98	80-120	2	35	27845	EPA 6010A	05/29/96
Beryllium	50	51.3	51.8	ug/L	103	104	80-120	1	35	27845	EPA 6010A	05/29/96
Cadmium	50	49.3	50.2	ug/L	99	100	80-120	2	35	27845	EPA 6010A	05/29/96
Chromium (total)	200	191	194	ug/L	96	97	80-120	2	35	27845	EPA 6010A	05/29/96
Cobalt	500	468	472	ug/L	94	94	80-120	1	35	27845	EPA 6010A	05/29/96
Copper	250	258	260	ug/L	103	104	80-120	1	35	27845	EPA 6010A	05/29/96
Lead	500	491	496	ug/L	98	99	80-120	1	35	27845	EPA 6010A	05/29/96
Mercury	5	4.736	4.924	ug/L	95	99	80-120	4	35	27826	EPA 7470	05/28/96
Molybdenum	400	374	380	ug/L	94	95	80-120	2	35	27845	EPA 6010A	05/29/96
Nickel	500	485	492	ug/L	97	98	80-120	1	35	27845	EPA 6010A	05/29/96
Selenium	2000	1940	1950	ug/L	97	98	80-120	1	35	27845	EPA 6010A	05/29/96
Silver	100	109	104	ug/L	109	104	80-120	5	35	27845	EPA 6010A	05/29/96
Thallium	2000	1930	1970	ug/L	97	99	80-120	2	35	27845	EPA 6010A	05/29/96
Vanadium	500	485	490	ug/L	97	98	80-120	1	35	27845	EPA 6010A	05/29/96
Zinc	500	468	474	ug/L	94	95	80-120	1	35	27845	EPA 6010A	05/29/96

CLIENT: Subsurface Consultants
 JOB NUMBER: 125670

DATE REPORTED: 06/17/96

 BATCH QC REPORT
 PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	ug/L	1	27845	EPA 6010A	05/29/96
Arsenic	ND	5	ug/L	1	27845	EPA 6010A	05/29/96
Barium	ND	10	ug/L	1	27845	EPA 6010A	05/29/96
Beryllium	ND	2	ug/L	1	27845	EPA 6010A	05/29/96
Cadmium	ND	2	ug/L	1	27845	EPA 6010A	05/29/96
Chromium (total)	ND	10	ug/L	1	27845	EPA 6010A	05/29/96
Cobalt	ND	20	ug/L	1	27845	EPA 6010A	05/29/96
Copper	ND	10	ug/L	1	27845	EPA 6010A	05/29/96
Lead	ND	3	ug/L	1	27845	EPA 6010A	05/29/96
Mercury	ND	0.2	ug/L	1	27826	EPA 7470	05/28/96
Molybdenum	ND	20	ug/L	1	27845	EPA 6010A	05/29/96
Nickel	ND	20	ug/L	1	27845	EPA 6010A	05/29/96
Selenium	ND	5	ug/L	1	27845	EPA 6010A	05/29/96
Silver	ND	5	ug/L	1	27845	EPA 6010A	05/29/96
Thallium	ND	5	ug/L	1	27845	EPA 6010A	05/29/96
Vanadium	ND	10	ug/L	1	27845	EPA 6010A	05/29/96
Zinc	ND	20	ug/L	1	27845	EPA 6010A	05/29/96

ND = Not Detected at or above reporting limit



PCBs		
Client: Subsurface Consultants	Analysis Method: PCB	
Project#: 133.005	Prep Method: EPA 3550	
Location: KOT	Cleanup Method: EPA Acid	
Field ID: SCI-1	Sampled: 05/21/96	
Lab ID: 125670-001	Received: 05/22/96	
Matrix: Water	Extracted: 05/28/96	
Batch#: 27850	Analyzed: 05/30/96	
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Surrogate	%Recovery	Recovery Limits
TCMX	82	60-150
Decachlorobiphenyl	137*	30-130

* Values outside of QC limits



PCBs

Client: Subsurface Consultants Analysis Method: PCB
Project#: 133.005 Prep Method: EPA 3550
Location: KOT Cleanup Method: EPA Acid

Field ID: SCI-2 Sampled: 05/22/96
Lab ID: 125670-002 Received: 05/22/96
Matrix: Water Extracted: 05/28/96
Batch#: 27850 Analyzed: 05/30/96
Units: ug/L
Diln Fac: 10

Analyte	Result	Reporting Limit
Aroclor-1016	ND	10
Aroclor-1221	ND	10
Aroclor-1232	ND	10
Aroclor-1242	ND	10
Aroclor-1248	ND	10
Aroclor-1254	ND	10
Aroclor-1260	45	10

Surrogate	%Recovery	Recovery Limits
TCMX	DO*	60-150
Decachlorobiphenyl	DO*	30-130

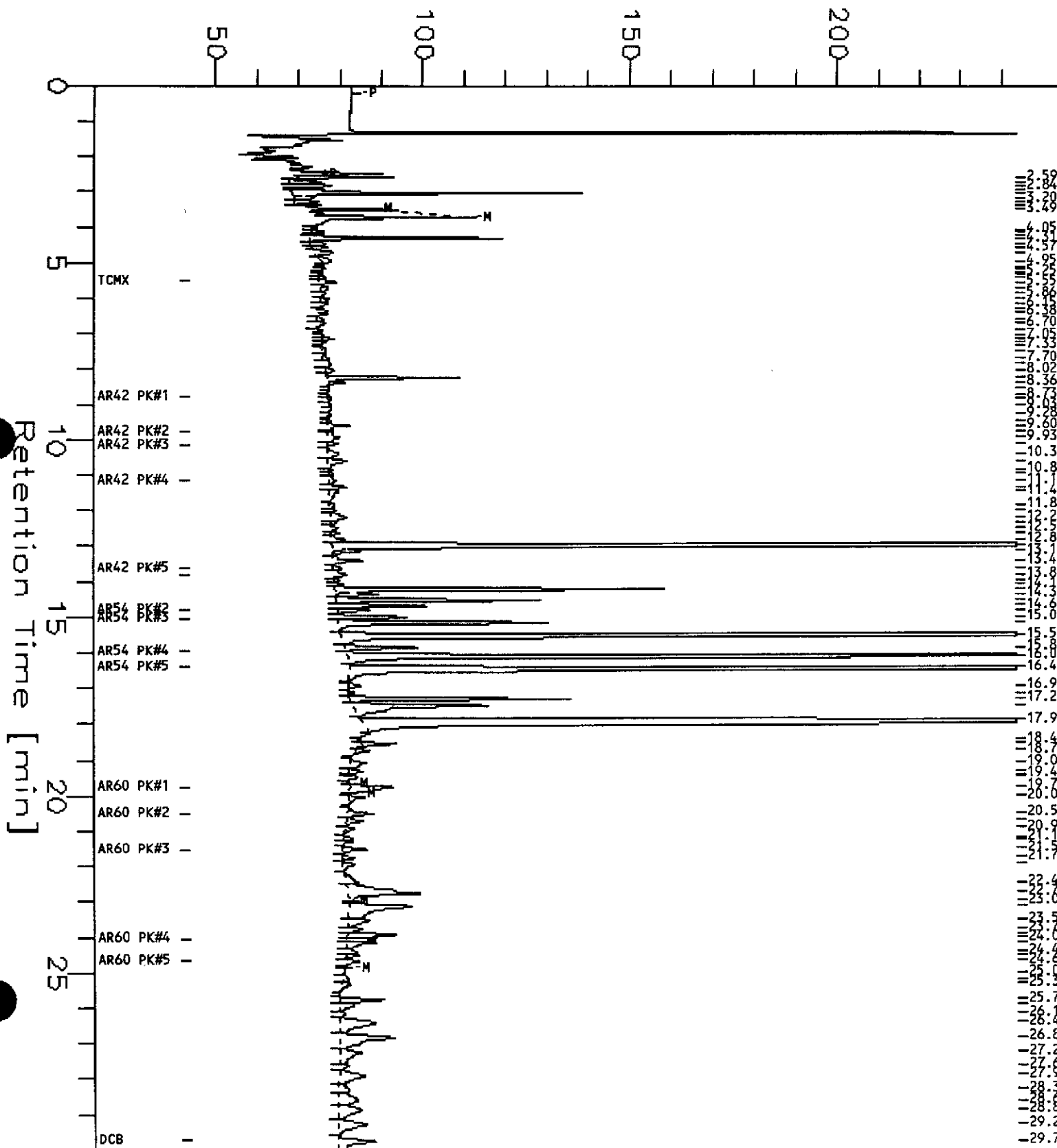
* Values outside of QC limits
DO: Surrogate diluted out

Sample Name : 125670-002
FileName : G:\GC01\CHA\150A011.raw
Method : SINPCB.ins
Start Time : 0.00 min
Scale Factor : 1.0

End Time : 30.50 min
Plot Offset: 44 mV

Sample #: 27850-1:10
Date : 5/31/96 11:28 AM
Time of Injection: 5/27/96 04:38 PM
Low Point : 44.02 mV
Plot Scale: 200.0 mV
High Point : 244.02 mV
6/3/96

Response [mV]





PCBs		
Client: Subsurface Consultants	Analysis Method: PCB	
Project#: 133.005	Prep Method: EPA 3550	
Location: KOT	Cleanup Method: EPA Acid	
Field ID: SCI-3	Sampled: 05/21/96	
Lab ID: 125670-003	Received: 05/22/96	
Matrix: Water	Extracted: 05/28/96	
Batch#: 27850	Analyzed: 05/30/96	
Units: ug/L		
Diln Fac: 10		
Analyte	Result	Reporting Limit
Aroclor-1016	ND	10
Aroclor-1221	ND	10
Aroclor-1232	ND	10
Aroclor-1242	ND	10
Aroclor-1248	ND	10
Aroclor-1254	ND	10
Aroclor-1260	43	10
Surrogate	%Recovery	Recovery Limits
TCMX	DO*	60-150
Decachlorobiphenyl	DO*	30-130

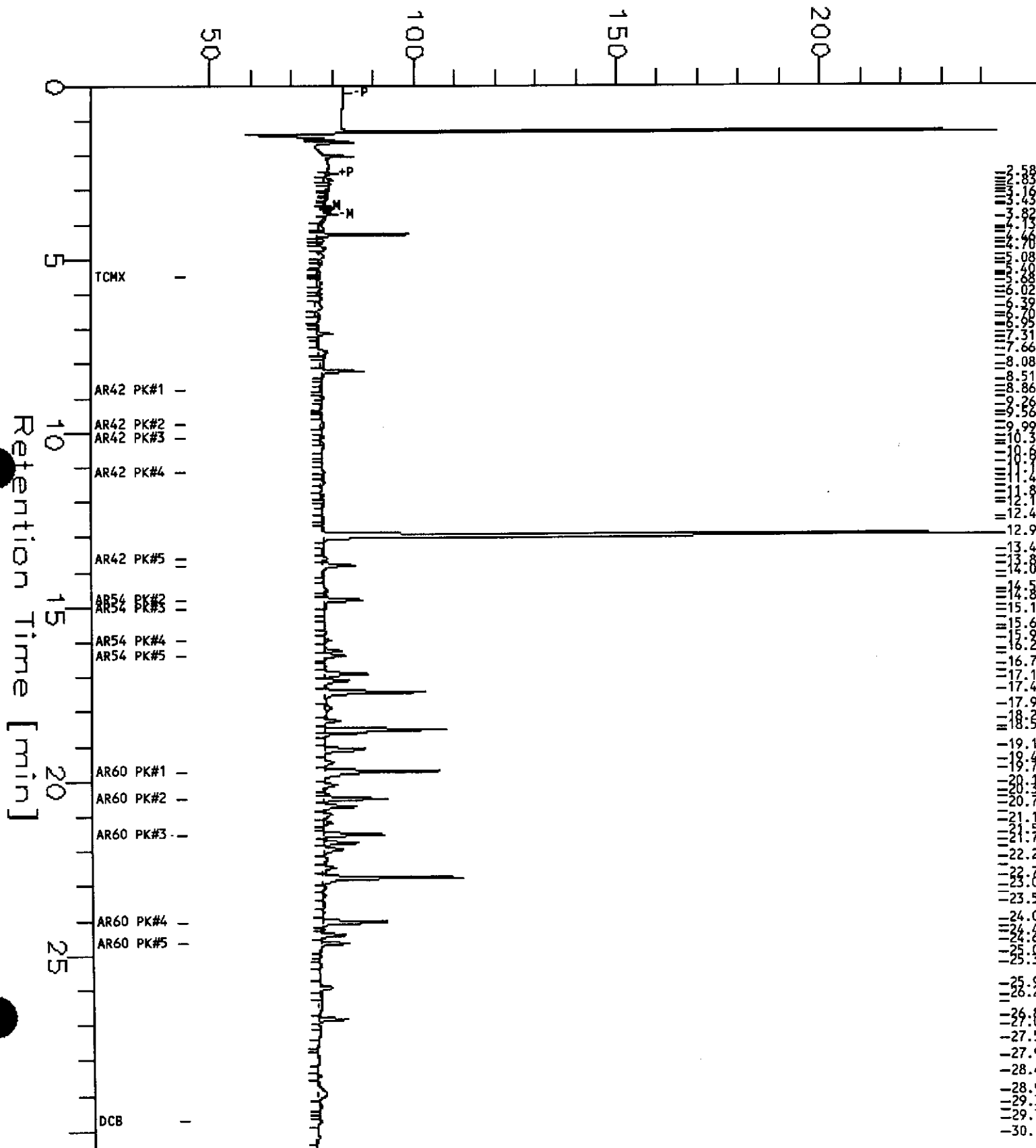
* Values outside of QC limits
DO: Surrogate diluted out

Sample Name : 125670-003
FileName : g:\gc01\cha\150A012.raw
Method : SINPCB.ins
Start Time : 0.00 min
Scale Factor: -1.0

End Time : 30.50 min
Plot Offset: 44 mV

Sample #: 27850-1:10
Date : 5/27/96 05:52 PM
Time of Injection: 5/27/96 05:21 PM
Low Point : 43.91 mV
Plot Scale: 200.0 mV
High Point : 243.91 mV
NAK
6/3/96

Response [mV]





PCBs		
Client: Subsurface Consultants	Analysis Method: PCB	
Project#: 133.005	Prep Method: EPA 3550	
Location: KOT	Cleanup Method: EPA Acid	
Field ID: SCI-4	Sampled: 05/22/96	
Lab ID: 125670-004	Received: 05/22/96	
Matrix: Water	Extracted: 05/28/96	
Batch#: 27850	Analyzed: 05/30/96	
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Surrogate	%Recovery	Recovery Limits
TCMX	135	60-150
Decachlorobiphenyl	29*	30-130

* Values outside of QC limits

Lab #: 125670

BATCH QC REPORT

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Polychlorinated Biphenyls		
Client: Subsurface Consultants	Analysis Method: PCB	
Project#: 133.005	Prep Method: EPA 3550	
Location: KOT	Cleanup Method: EPA Acid	
METHOD BLANK		
Matrix: Water	Prep Date: 05/28/96	
Batch#: 27850	Analysis Date: 05/30/96	
Units: ug/L		
Diln Fac: 1		

MB Lab ID: QC22778

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Surrogate	%Rec	Recovery Limits
TCMX	99	60-150
Decachlorobiphenyl	95	30-130

Lab #: 125670

BATCH QC REPORT

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Polychlorinated Biphenyls			
Client: Subsurface Consultants	Analysis Method: PCB		
Project#: 133.005	Prep Method: EPA 3550		
Location: KOT	Cleanup Method: EPA Acid		
BLANK SPIKE/BLANK SPIKE DUPLICATE			
Matrix: Water	Prep Date: 05/28/96		
Batch#: 27850	Analysis Date: 05/30/96		
Units: ug/L			
Diln Fac: 1			

BS Lab ID: QC22779

Analyte	Spike Added	BS	%Rec #	Limits
Aroclor-1260	6.67	7.3	111	50-128
Surrogate	%Rec	Limits		
TCMX	93	60-150		
Decachlorobiphenyl	82	30-130		

BSD Lab ID: QC22780

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Aroclor-1260	6.67	7.5	114	50-128	3	<20
Surrogate	%Rec	Limits				
TCMX	98	60-150				
Decachlorobiphenyl	103	30-130				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



Volatile Organics by GC/MS		
Client: Subsurface Consultants	Analysis Method: EPA 8240	
Project#: 133.005	Prep Method: EPA 5030	
Location: KOT		
Field ID: SCI-1	Sampled: 05/21/96	
Lab ID: 125670-001	Received: 05/22/96	
Matrix: Water	Extracted: 05/25/96	
Batch#: 27782	Analyzed: 05/25/96	
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	8.0	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	103	68-126
Toluene-d8	102	87-125
Bromofluorobenzene	99	79-122



Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

Field ID: SCI-2
 Lab ID: 125670-002
 Matrix: Water
 Batch#: 27782
 Units: ug/L
 Diln Fac: 2.5

Sampled: 05/22/96
 Received: 05/22/96
 Extracted: 05/25/96
 Analyzed: 05/25/96

Analyte	Result	Reporting Limit
Chloromethane	ND	25
Bromomethane	ND	25
Vinyl Chloride	ND	25
Chloroethane	ND	25
Methylene Chloride	ND	50
Acetone	ND	50
Carbon Disulfide	ND	13
Trichlorofluoromethane	ND	13
1,1-Dichloroethene	ND	13
1,1-Dichloroethane	ND	13
trans-1,2-Dichloroethene	ND	13
cis-1,2-Dichloroethene	ND	13
Chloroform	ND	13
Freon 113	ND	13
1,2-Dichloroethane	ND	13
2-Butanone	38	25
1,1,1-Trichloroethane	ND	13
Carbon Tetrachloride	ND	13
Vinyl Acetate	ND	130
Bromodichloromethane	ND	13
1,2-Dichloropropane	ND	13
cis-1,3-Dichloropropene	ND	13
Trichloroethene	ND	13
Dibromochloromethane	ND	13
1,1,2-Trichloroethane	ND	13
Benzene	ND	13
trans-1,3-Dichloropropene	ND	13
Bromoform	ND	13
2-Hexanone	ND	25
4-Methyl-2-Pentanone	ND	25
1,1,2,2-Tetrachloroethane	ND	13
Tetrachloroethene	ND	13
Toluene	ND	13
Chlorobenzene	ND	13
Ethylbenzene	ND	13
Styrene	ND	13
m,p-Xylenes	ND	13
o-Xylene	ND	13
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	96	68-126
Toluene-d8	102	87-125
Bromofluorobenzene	105	79-122



Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

Field ID: SCI-3
 Lab ID: 125670-003
 Matrix: Water
 Batch#: 27782
 Units: ug/L
 Diln Fac: 1

Sampled: 05/21/96
 Received: 05/22/96
 Extracted: 05/25/96
 Analyzed: 05/25/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	103	68-126
Toluene-d8	100	87-125
Bromofluorobenzene	107	79-122



Volatile Organics by GC/MS

Client: Subsurface Consultants	Analysis Method: EPA 8240	
Project#: 133.005	Prep Method: EPA 5030	
Location: KOT		
Field ID: SCI-4	Sampled: 05/22/96	
Lab ID: 125670-004	Received: 05/22/96	
Matrix: Water	Extracted: 05/24/96	
Batch#: 27755	Analyzed: 05/24/96	
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	450	50
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	92	68-126
Toluene-d8	99	87-125
Bromofluorobenzene	104	79-122



Volatile Organics by GC/MS		
Client: Subsurface Consultants	Analysis Method: EPA 8240	
Project#: 133.005	Prep Method: EPA 5030	
Location: KOT		
Field ID: SCI-5	Sampled:	05/22/96
Lab ID: 125670-005	Received:	05/22/96
Matrix: Water	Extracted:	05/25/96
Batch#: 27782	Analyzed:	05/25/96
Units: ug/L		
Diln Fac: 5		
Analyte	Result	Reporting Limit
Chloromethane	ND	50
Bromomethane	ND	50
Vinyl Chloride	ND	50
Chloroethane	ND	50
Methylene Chloride	ND	100
Acetone	ND	100
Carbon Disulfide	ND	25
Trichlorofluoromethane	ND	25
1,1-Dichloroethene	ND	25
1,1-Dichloroethane	ND	25
trans-1,2-Dichloroethene	ND	25
cis-1,2-Dichloroethene	ND	25
Chloroform	ND	25
Freon 113	ND	25
1,2-Dichloroethane	ND	25
2-Butanone	210	50
1,1,1-Trichloroethane	ND	25
Carbon Tetrachloride	ND	25
Vinyl Acetate	ND	250
Bromodichloromethane	ND	25
1,2-Dichloropropane	ND	25
cis-1,3-Dichloropropene	ND	25
Trichloroethene	ND	25
Dibromochloromethane	ND	25
1,1,2-Trichloroethane	ND	25
Benzene	ND	25
trans-1,3-Dichloropropene	ND	25
Bromoform	ND	25
2-Hexanone	ND	50
4-Methyl-2-Pentanone	ND	50
1,1,2,2-Tetrachloroethane	ND	25
Tetrachloroethene	ND	25
Toluene	ND	25
Chlorobenzene	ND	25
Ethylbenzene	ND	25
Styrene	ND	25
m,p-Xylenes	ND	25
o-Xylene	ND	25
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	94	68-126
Toluene-d8	102	87-125
Bromofluorobenzene	100	79-122



Lab #: 125670

BATCH QC REPORT

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EPA 8240 Volatile Organics			
Client:	Subsurface Consultants	Analysis Method:	EPA 8240
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
METHOD BLANK			
Matrix:	Water	Prep Date:	05/23/96
Batch#:	27755	Analysis Date:	05/23/96
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC22364

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	118	68-126
Toluene-d8	103	87-125
Bromofluorobenzene	102	79-122



Lab #: 125670

BATCH QC REPORT

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EPA 8240 Volatile Organics			
Client:	Subsurface Consultants	Analysis Method:	EPA 8240
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
METHOD BLANK			
Matrix:	Water	Prep Date:	05/23/96
Batch#:	27755	Analysis Date:	05/23/96
Units:	ug/L		
Diln Fac:	25		

MB Lab ID: QC22409

Analyte	Result	Reporting Limit
Chloromethane	ND	250
Bromomethane	410	250
Vinyl Chloride	ND	250
Chloroethane	ND	250
Methylene Chloride	ND	500
Acetone	ND	500
Carbon Disulfide	ND	130
Trichlorofluoromethane	ND	130
1,1-Dichloroethene	ND	130
1,1-Dichloroethane	ND	130
trans-1,2-Dichloroethene	ND	130
cis-1,2-Dichloroethene	ND	130
Chloroform	ND	130
Freon 113	ND	130
1,2-Dichloroethane	ND	130
2-Butanone	ND	250
1,1,1-Trichloroethane	ND	130
Carbon Tetrachloride	ND	130
Vinyl Acetate	ND	1300
Bromodichloromethane	ND	130
1,2-Dichloropropane	ND	130
cis-1,3-Dichloropropene	ND	130
Trichloroethene	ND	130
Dibromochloromethane	ND	130
1,1,2-Trichloroethane	ND	130
Benzene	ND	130
trans-1,3-Dichloropropene	ND	130
Bromoform	ND	130
2-Hexanone	ND	250
4-Methyl-2-Pentanone	ND	250
1,1,2,2-Tetrachloroethane	ND	130
Tetrachloroethene	ND	130
Toluene	ND	130
Chlorobenzene	ND	130
Ethylbenzene	ND	130
Styrene	ND	130
m,p-Xylenes	ND	130
o-Xylene	ND	130
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	94	68-126
Toluene-d8	102	87-125
Bromofluorobenzene	103	79-122



Lab #: 125670

BATCH QC REPORT

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EPA 8240 Volatile Organics			
Client:	Subsurface Consultants	Analysis Method:	EPA 8240
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
METHOD BLANK			
Matrix:	Water	Prep Date:	05/23/96
Batch#:	27755	Analysis Date:	05/23/96
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC22455

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	115	68-126
Toluene-d8	107	87-125
Bromofluorobenzene	113	79-122



Lab #: 125670

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
 Batch#: 27782
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/24/96
 Analysis Date: 05/24/96

MB Lab ID: QC22526

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	101	68-126
Toluene-d8	99	87-125
Bromofluorobenzene	98	79-122



Lab #: 125670

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
 Batch#: 27782
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/24/96
 Analysis Date: 05/24/96

MB Lab ID: QC22480

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	100	68-126
Toluene-d8	99	87-125
Bromofluorobenzene	97	79-122



Lab #: 125670

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics			
Client: Subsurface Consultants	Analysis Method: EPA 8240		
Project#: 133.005	Prep Method: EPA 5030		
Location: KOT			
LABORATORY CONTROL SAMPLE			
Matrix: Water	Prep Date:	05/23/96	
Batch#: 27755	Analysis Date:	05/23/96	
Units: ug/L			
Diln Fac: 1			

LCS Lab ID: QC22363

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	64.94	50	130	51-180
Trichloroethene	56.16	50	112	73-141
Benzene	51.78	50	104	78-142
Toluene	61.38	50	123	76-150
Chlorobenzene	53.19	50	106	83-129
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	102	68-126		
Toluene-d8	107	87-125		
Bromofluorobenzene	107	79-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Lab #: 125670

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 27782
Units: ug/L
Diln Fac: 1

Prep Date: 05/24/96
Analysis Date: 05/24/96

LCS Lab ID: QC22479

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	71.33	50	143	51-180
Trichloroethene	52.17	50	104	73-141
Benzene	54.53	50	109	78-142
Toluene	56.65	50	113	76-150
Chlorobenzene	52.99	50	106	83-129
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	85	68-126		
Toluene-d8	103	87-125		
Bromofluorobenzene	96	79-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Lab #: 125670

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125624-002
 Matrix: Water
 Batch#: 27755
 Units: ug/L
 Diln Fac: 1

Sample Date: 05/17/96
 Received Date: 05/17/96
 Prep Date: 05/23/96
 Analysis Date: 05/23/96

MS Lab ID: QC22416

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	<5.000	54.74	109	51-180
Trichloroethene	50	<5.000	62.28	125	73-141
Benzene	50	<5.000	55.47	111	78-142
Toluene	50	<5.000	55.87	111	76-150
Chlorobenzene	50	<5.000	53.44	107	83-129
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	111	68-126			
Toluene-d8	98	87-125			
Bromofluorobenzene	103	79-122			

MSD Lab ID: QC22417

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	51.23	102	51-180	7	<14
Trichloroethene	50	54.25	108	73-141	14	<14
Benzene	50	50.77	102	78-142	9	<11
Toluene	50	54.73	109	76-150	2	<13
Chlorobenzene	50	53.38	107	83-129	0	<13
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	92	68-126				
Toluene-d8	96	87-125				
Bromofluorobenzene	98	79-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



Lab #: 125670

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics	
Client: Subsurface Consultants	Analysis Method: EPA 8240
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	
MATRIX SPIKE/MATRIX SPIKE DUPLICATE	
Field ID: ZZZZZZ	Sample Date: 05/16/96
Lab ID: 125645-001	Received Date: 05/17/96
Matrix: Water	Prep Date: 05/24/96
Batch#: 27782	Analysis Date: 05/24/96
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC22524

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	<5.000	69.32	139	51-180
Trichloroethene	50	<5.000	51.32	103	73-141
Benzene	50	<2.893	55.04	104	78-142
Toluene	50	<5.000	54.79	110	76-150
Chlorobenzene	50	<5.000	50.45	101	83-129
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	91	68-126			
Toluene-d8	102	87-125			
Bromofluorobenzene	102	79-122			

MSD Lab ID: QC22527

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	71.18	142	51-180	3	<14
Trichloroethene	50	50.49	101	73-141	2	<14
Benzene	50	54.6	103	78-142	1	<11
Toluene	50	54.21	108	76-150	1	<13
Chlorobenzene	50	50.99	102	83-129	1	<13
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	105	68-126				
Toluene-d8	100	87-125				
Bromofluorobenzene	102	79-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

Field ID: SCI-1
Lab ID: 125670-001
Matrix: Water
Batch#: 27835
Units: ug/L
Diln Fac: 1

Sampled: 05/21/96
Received: 05/22/96
Extracted: 05/28/96
Analyzed: 06/11/96

Analyte	Result	Reporting Limit
Phenol	ND	9.4
2-Chlorophenol	ND	9.4
Benzyl alcohol	ND	9.4
2-Methylphenol	ND	9.4
4-Methylphenol	ND	9.4
2-Nitrophenol	ND	47
2,4-Dimethylphenol	ND	9.4
Benzoic acid	ND	47
2,4-Dichlorophenol	ND	9.4
4-Chloro-3-methylphenol	ND	9.4
2,4,6-Trichlorophenol	ND	9.4
2,4,5-Trichlorophenol	ND	47
2,4-Dinitrophenol	ND	47
4-Nitrophenol	ND	47
4,6-Dinitro-2-methylphenol	ND	47
Pentachlorophenol	ND	47
N-Nitrosodimethylamine	ND	9.4
Aniline	ND	9.4
bis(2-Chloroethyl)ether	ND	9.4
1,3-Dichlorobenzene	ND	9.4
1,4-Dichlorobenzene	ND	9.4
1,2-Dichlorobenzene	ND	9.4
bis(2-Chloroisopropyl) ether	ND	9.4
N-Nitroso-di-n-propylamine	ND	9.4
Hexachloroethane	ND	9.4
Nitrobenzene	ND	9.4
Isophorone	ND	9.4
bis(2-Chloroethoxy)methane	ND	9.4
1,2,4-Trichlorobenzene	ND	9.4
Naphthalene	ND	9.4
4-Chloroaniline	ND	9.4
Hexachlorobutadiene	ND	9.4
2-Methylnaphthalene	ND	9.4
Hexachlorocyclopentadiene	ND	9.4
2-Chloronaphthalene	ND	9.4
2-Nitroaniline	ND	47
Dimethylphthalate	ND	9.4
Acenaphthylene	ND	9.4



Semivolatile Organics by GC/MS

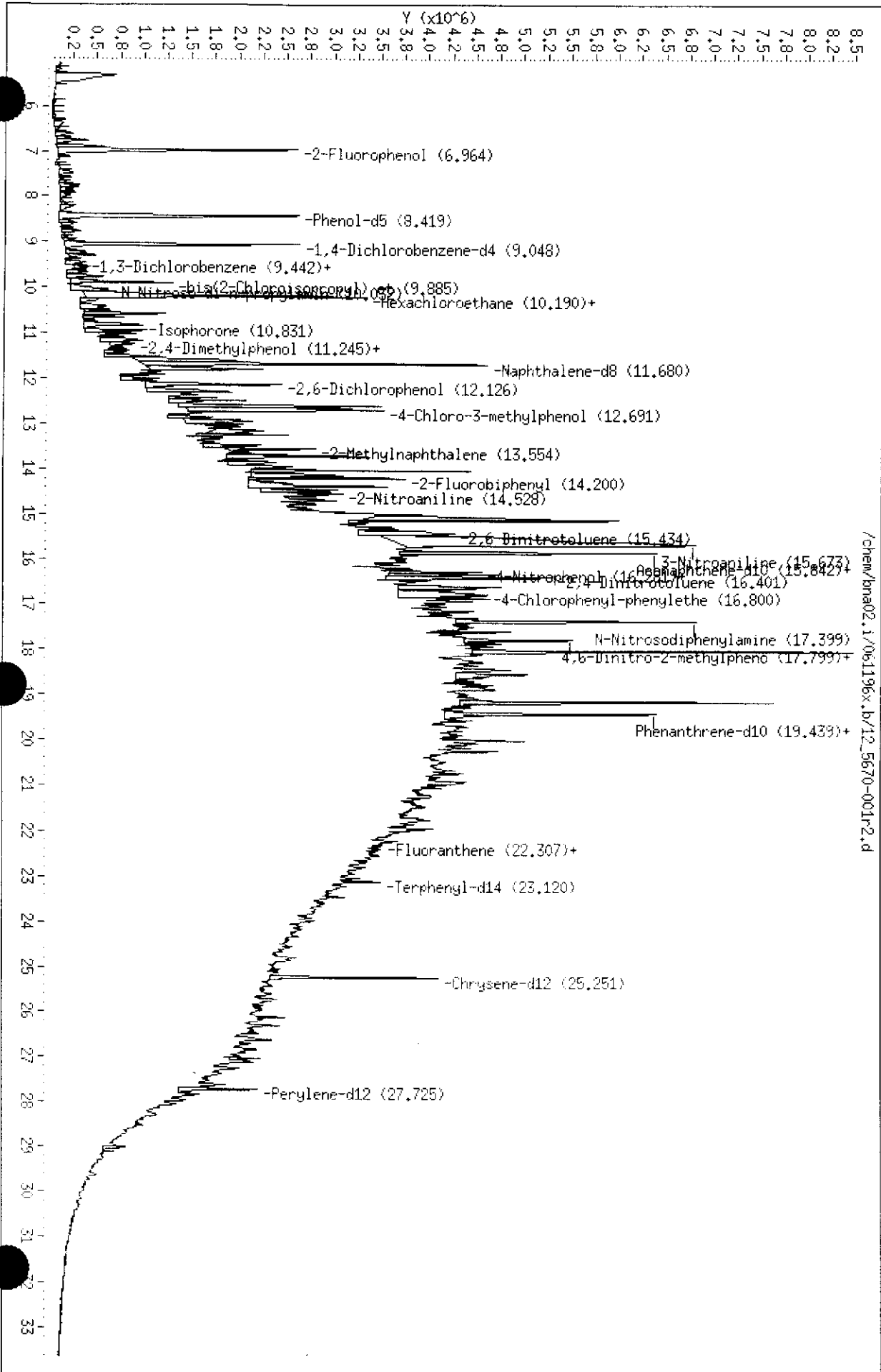
Field ID: SCI-1	Sampled: 05/21/96
Lab ID: 125670-001	Received: 05/22/96
Matrix: Water	Extracted: 05/28/96
Batch#: 27835	Analyzed: 06/11/96
Units: ug/L	
Diln Fac: 1	

Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	9.4
3-Nitroaniline	ND	47
Acenaphthene	ND	9.4
Dibenzofuran	ND	9.4
2,4-Dinitrotoluene	ND	9.4
Diethylphthalate	ND	9.4
4-Chlorophenyl-phenylether	ND	9.4
Fluorene	ND	9.4
4-Nitroaniline	ND	47
N-Nitrosodiphenylamine	ND	9.4
Azobenzene	ND	9.4
4-Bromophenyl-phenylether	ND	9.4
Hexachlorobenzene	ND	9.4
Phenanthrene	ND	9.4
Anthracene	ND	9.4
Di-n-butylphthalate	ND	9.4
Fluoranthene	ND	9.4
Pyrene	ND	9.4
Butylbenzylphthalate	ND	9.4
3,3'-Dichlorobenzidine	ND	47
Benzo(a)anthracene	ND	9.4
Chrysene	ND	9.4
bis(2-Ethylhexyl)phthalate	ND	9.4
Di-n-octylphthalate	ND	9.4
Benzo(b)fluoranthene	ND	9.4
Benzo(k)fluoranthene	ND	9.4
Benzo(a)pyrene	ND	9.4
Indeno(1,2,3-cd)pyrene	ND	9.4
Dibenz(a,h)anthracene	ND	9.4
Benzo(g,h,i)perylene	ND	9.4

Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	73	21-110
Phenol-d5	80	10-110
2,4,6-Tribromophenol	61	10-123
Nitrobenzene-d5	80	35-114
2-Fluorobiphenyl	43	43-116
Terphenyl-d14	15*	33-141

* Values outside of QC limits

125670-001



Data File: /chem/bna02.1/061196x.b/12_5670-001r2.d
Date: 11-JUN-96 21:18
Client ID: CURTIS&DMPKINS,LTD
Sample Info:
Volume Injected (uL): 1.0
Column phase: Xci 5 x .5 u

Instrument: bna02.1
Operator: dsh
Column diameter: 0.25
/chem/bna02.1/061196x.b/12_5670-001r2.d



Semivolatile Organics by GC/MS		
Client: Subsurface Consultants	Analysis Method: EPA 8270	
Project#: 133.005	Prep Method: EPA 3520	
Location: KOT		
Field ID: SCI-3	Sampled: 05/21/96	
Lab ID: 125670-003	Received: 05/22/96	
Matrix: Water	Extracted: 05/28/96	
Batch#: 27835	Analyzed: 06/10/96	
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
Phenol	ND	47
2-Chlorophenol	ND	47
Benzyl alcohol	ND	47
2-Methylphenol	ND	47
4-Methylphenol	ND	47
2-Nitrophenol	ND	240
2,4-Dimethylphenol	ND	47
Benzoic acid	ND	240
2,4-Dichlorophenol	ND	47
4-Chloro-3-methylphenol	ND	47
2,4,6-Trichlorophenol	ND	47
2,4,5-Trichlorophenol	ND	240
2,4-Dinitrophenol	ND	240
4-Nitrophenol	ND	240
4,6-Dinitro-2-methylphenol	ND	240
Pentachlorophenol	ND	240
N-Nitrosodimethylamine	ND	47
Aniline	ND	47
bis(2-Chloroethyl)ether	ND	47
1,3-Dichlorobenzene	ND	47
1,4-Dichlorobenzene	36 J	47
1,2-Dichlorobenzene	ND	47
bis(2-Chloroisopropyl) ether	ND	47
N-Nitroso-di-n-propylamine	ND	47
Hexachloroethane	ND	47
Nitrobenzene	ND	47
Isophorone	ND	47
bis(2-Chloroethoxy)methane	ND	47
1,2,4-Trichlorobenzene	ND	47
Naphthalene	ND	47
4-Chloroaniline	ND	47
Hexachlorobutadiene	ND	47
2-Methylnaphthalene	ND	47
Hexachlorocyclopentadiene	ND	47
2-Chloronaphthalene	ND	47
2-Nitroaniline	ND	240
Dimethylphthalate	ND	47
Acenaphthylene	ND	47



Semivolatile Organics by GC/MS		
Field ID: SCI-3	Sampled:	05/21/96
Lab ID: 125670-003	Received:	05/22/96
Matrix: Water	Extracted:	05/28/96
Batch#: 27835	Analyzed:	06/10/96
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	47
3-Nitroaniline	ND	240
Acenaphthene	ND	47
Dibenzofuran	ND	47
2,4-Dinitrotoluene	ND	47
Diethylphthalate	ND	47
4-Chlorophenyl-phenylether	ND	47
Fluorene	ND	47
4-Nitroaniline	ND	240
N-Nitrosodiphenylamine	ND	47
Azobenzene	ND	47
4-Bromophenyl-phenylether	ND	47
Hexachlorobenzene	ND	47
Phenanthrene	ND	47
Anthracene	ND	47
Di-n-butylphthalate	ND	47
Fluoranthene	ND	47
Pyrene	ND	47
Butylbenzylphthalate	ND	47
3,3'-Dichlorobenzidine	ND	240
Benzo(a)anthracene	ND	47
Chrysene	ND	47
bis(2-Ethylhexyl)phthalate	ND	47
Di-n-octylphthalate	ND	47
Benzo(b)fluoranthene	ND	47
Benzo(k)fluoranthene	ND	47
Benzo(a)pyrene	ND	47
Indeno(1,2,3-cd)pyrene	ND	47
Dibenz(a,h)anthracene	ND	47
Benzo(g,h,i)perylene	ND	47
Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	85	21-110
Phenol-d5	94	10-110
2,4,6-Tribromophenol	9*	10-123
Nitrobenzene-d5	47	35-114
2-Fluorobiphenyl	9*	43-116
Terphenyl-d14	5*	33-141

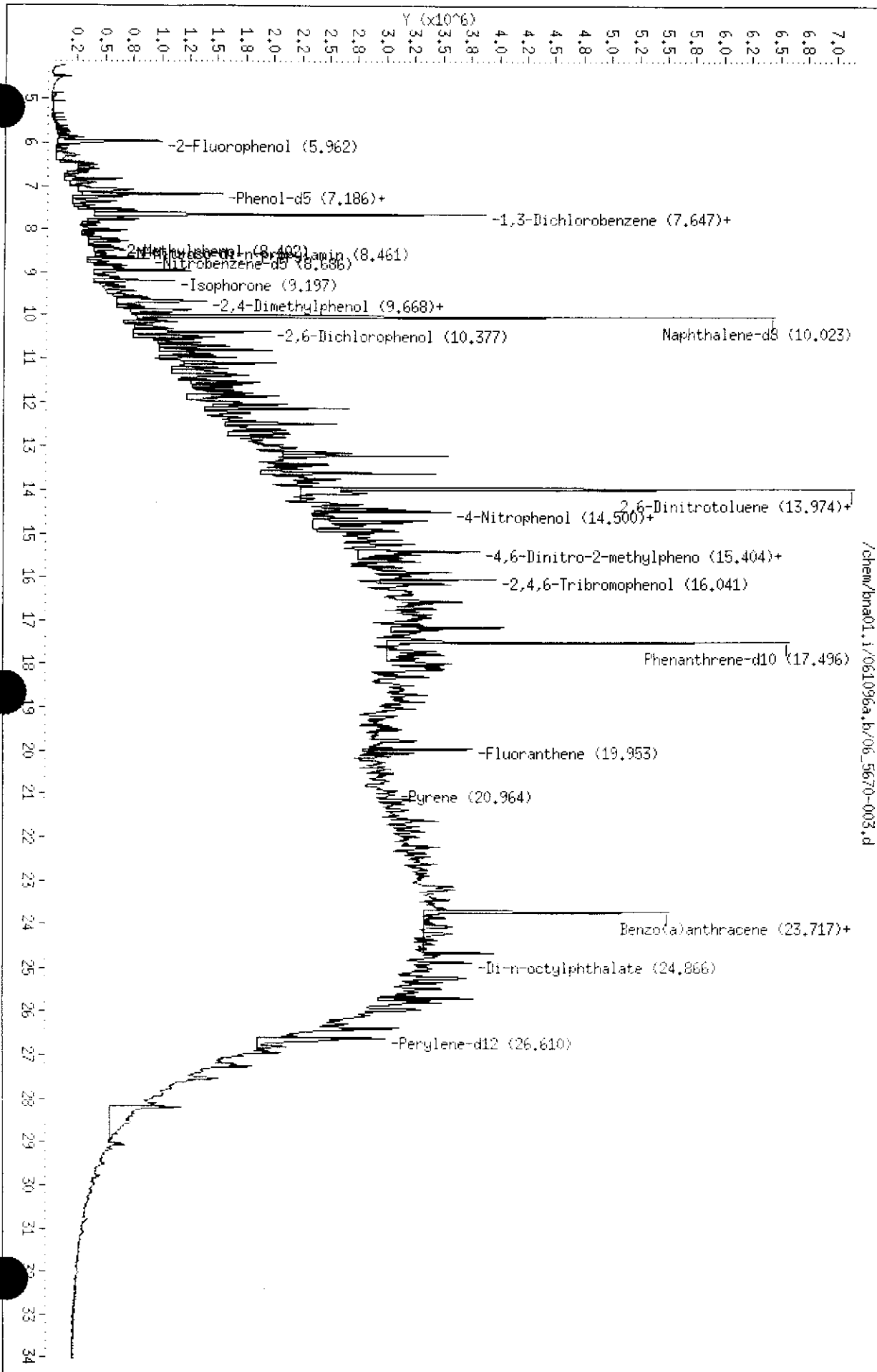
J: Estimated Value

* Values outside of QC limits

125670-003

Data File: /chem/bna01.i/061096a.b/06_5670-003.d
Date: 10-JUN-1996 18:51
Client ID: CURTIS/ROMPKINS,LTD
Sample Info:
Volume Injected (uL): 1.0
Column phase: Xti 5 x .5 u

Instrument: bna01.i
Operator: dsh
Column diameter: 0.25





Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

Field ID: SCI-4
Lab ID: 125670-004
Matrix: Water
Batch#: 27835
Units: ug/L
Diln Fac: 1

Sampled: 05/22/96
Received: 05/22/96
Extracted: 05/28/96
Analyzed: 06/12/96

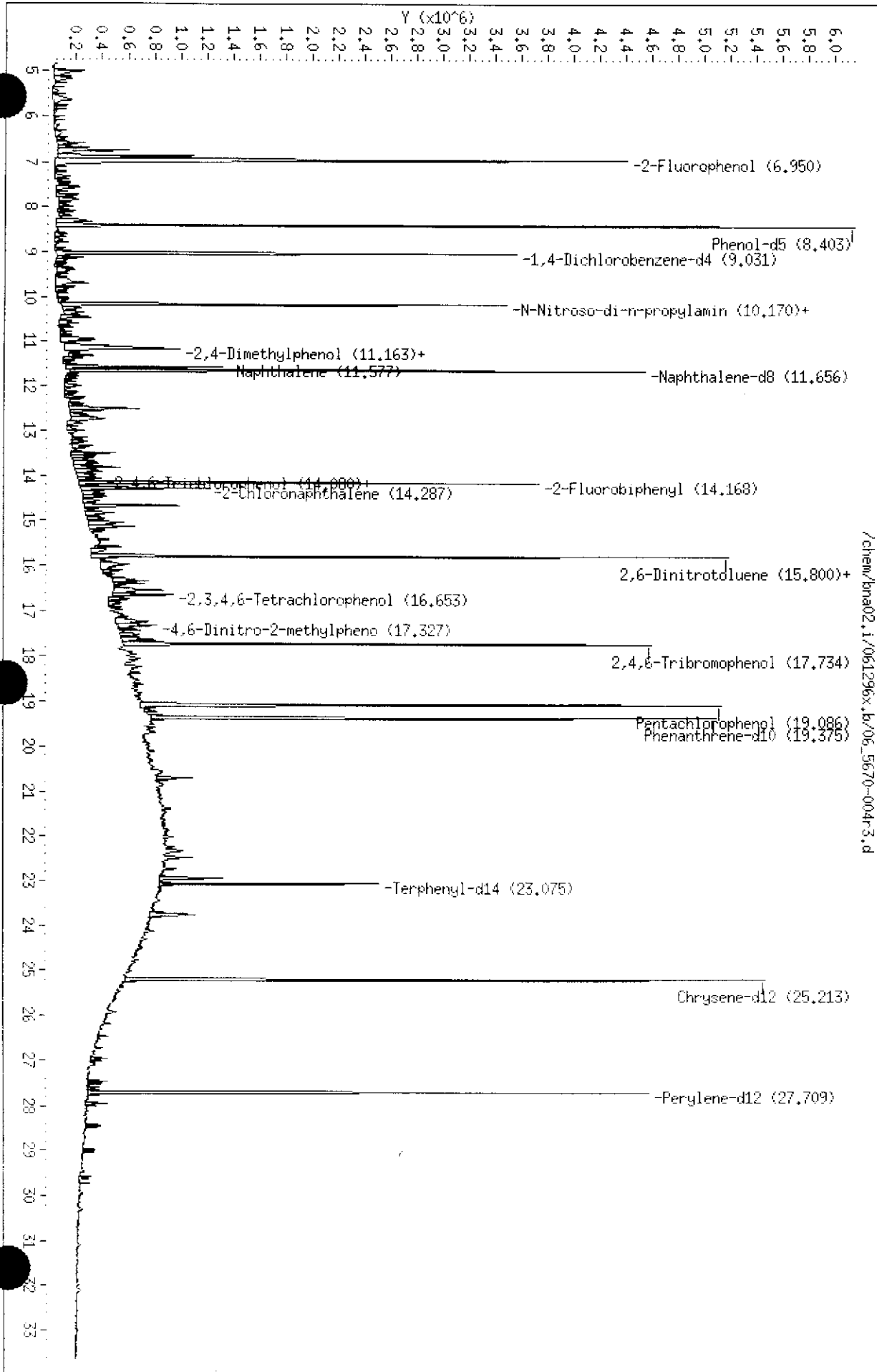
Analyte	Result	Reporting Limit
Phenol	ND	10
2-Chlorophenol	ND	10
Benzyl alcohol	ND	10
2-Methylphenol	ND	10
4-Methylphenol	ND	10
2-Nitrophenol	ND	52
2,4-Dimethylphenol	ND	10
Benzoic acid	ND	52
2,4-Dichlorophenol	ND	10
4-Chloro-3-methylphenol	ND	10
2,4,6-Trichlorophenol	ND	10
2,4,5-Trichlorophenol	ND	52
2,4-Dinitrophenol	ND	52
4-Nitrophenol	ND	52
4,6-Dinitro-2-methylphenol	ND	52
Pentachlorophenol	70	52
N-Nitrosodimethylamine	ND	10
Aniline	ND	10
bis(2-Chloroethyl)ether	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
1,2-Dichlorobenzene	ND	10
bis(2-Chloroisopropyl) ether	ND	10
N-Nitroso-di-n-propylamine	ND	10
Hexachloroethane	ND	10
Nitrobenzene	ND	10
Isophorone	ND	10
bis(2-Chloroethoxy)methane	ND	10
1,2,4-Trichlorobenzene	ND	10
Naphthalene	ND	10
4-Chloroaniline	ND	10
Hexachlorobutadiene	ND	10
2-Methylnaphthalene	ND	10
Hexachlorocyclopentadiene	ND	10
2-Chloronaphthalene	ND	10
2-Nitroaniline	ND	52
Dimethylphthalate	ND	10
Acenaphthylene	ND	10



Semivolatile Organics by GC/MS		
Field ID: SCI-4	Sampled:	05/22/96
Lab ID: 125670-004	Received:	05/22/96
Matrix: Water	Extracted:	05/28/96
Batch#: 27835	Analyzed:	06/12/96
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	10
3-Nitroaniline	ND	52
Acenaphthene	ND	10
Dibenzofuran	ND	10
2,4-Dinitrotoluene	ND	10
Diethylphthalate	ND	10
4-Chlorophenyl-phenylether	ND	10
Fluorene	ND	10
4-Nitroaniline	ND	52
N-Nitrosodiphenylamine	ND	10
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	10
Hexachlorobenzene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Di-n-butylphthalate	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Butylbenzylphthalate	ND	10
3,3'-Dichlorobenzidine	ND	52
Benzo(a)anthracene	ND	10
Chrysene	ND	10
bis(2-Ethylhexyl)phthalate	ND	10
Di-n-octylphthalate	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(a)pyrene	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Dibenz(a,h)anthracene	ND	10
Benzo(g,h,i)perylene	ND	10
Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	87	21-110
Phenol-d5	102	10-110
2,4,6-Tribromophenol	84	10-123
Nitrobenzene-d5	86	35-114
2-Fluorobiphenyl	58	43-116
Terphenyl-d14	25*	33-141

* Values outside of QC limits

125670-004



Data File: /chem/bna02.i/061296x.b/06_5670-004r3.d
Date : 12-JUN-1996 19:24
Client ID: CURTIS&TOPKINS,LTD
Sample Info:
Volume Injected (uL): 1.0
Column phase: Xci 5 x .5 u

Instrument: bna02.i
Operator: dsh
Column diameter: 0.25

/chem/bna02.i/061296x.b/06_5670-004r3.d



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

Field ID: SCI-5
Lab ID: 125670-005
Matrix: Water
Batch#: 27835
Units: ug/L
Diln Fac: 1

Sampled: 05/22/96
Received: 05/22/96
Extracted: 05/28/96
Analyzed: 06/10/96

Analyte	Result	Reporting Limit
Phenol	ND	9.4
2-Chlorophenol	ND	9.4
Benzyl alcohol	ND	9.4
2-Methylphenol	ND	9.4
4-Methylphenol	ND	9.4
2-Nitrophenol	ND	47
2,4-Dimethylphenol	ND	9.4
Benzoic acid	ND	47
2,4-Dichlorophenol	ND	9.4
4-Chloro-3-methylphenol	ND	9.4
2,4,6-Trichlorophenol	ND	9.4
2,4,5-Trichlorophenol	ND	47
2,4-Dinitrophenol	ND	47
4-Nitrophenol	ND	47
4,6-Dinitro-2-methylphenol	ND	47
Pentachlorophenol	ND	47
N-Nitrosodimethylamine	ND	9.4
Aniline	ND	9.4
bis(2-Chloroethyl)ether	ND	9.4
1,3-Dichlorobenzene	ND	9.4
1,4-Dichlorobenzene	ND	9.4
1,2-Dichlorobenzene	ND	9.4
bis(2-Chloroisopropyl) ether	ND	9.4
N-Nitroso-di-n-propylamine	ND	9.4
Hexachloroethane	ND	9.4
Nitrobenzene	ND	9.4
Isophorone	ND	9.4
bis(2-Chloroethoxy)methane	ND	9.4
1,2,4-Trichlorobenzene	ND	9.4
Naphthalene	ND	9.4
4-Chloroaniline	ND	9.4
Hexachlorobutadiene	ND	9.4
2-Methylnaphthalene	ND	9.4
Hexachlorocyclopentadiene	ND	9.4
2-Chloronaphthalene	ND	9.4
2-Nitroaniline	ND	47
Dimethylphthalate	ND	9.4
Acenaphthylene	ND	9.4

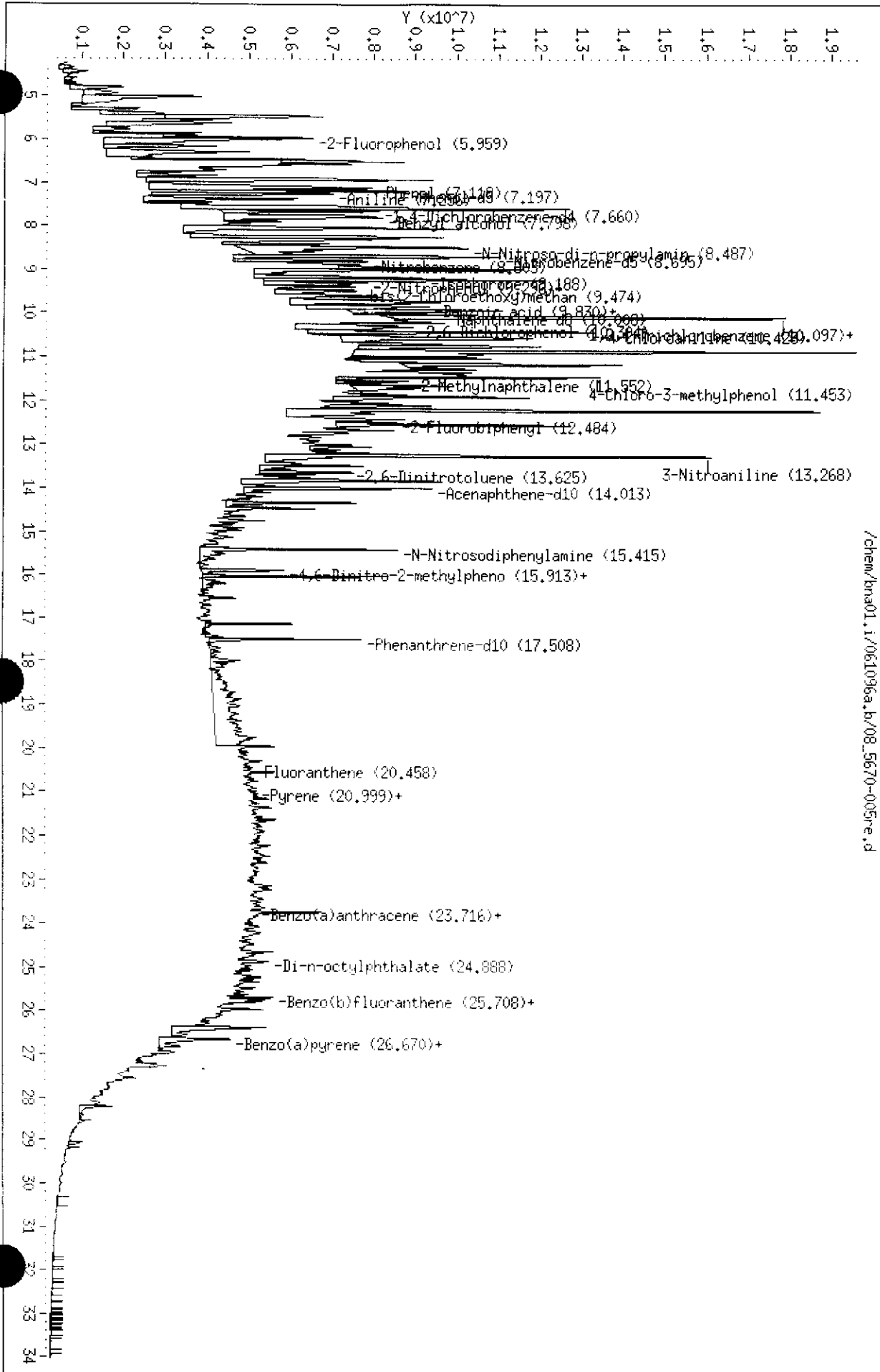
Semivolatile Organics by GC/MS		
Field ID: SCI-5	Sampled:	05/22/96
Lab ID: 125670-005	Received:	05/22/96
Matrix: Water	Extracted:	05/28/96
Batch#: 27835	Analyzed:	06/10/96
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	9.4
3-Nitroaniline	ND	47
Acenaphthene	ND	9.4
Dibenzofuran	ND	9.4
2,4-Dinitrotoluene	ND	9.4
Diethylphthalate	ND	9.4
4-Chlorophenyl-phenylether	ND	9.4
Fluorene	ND	9.4
4-Nitroaniline	ND	47
N-Nitrosodiphenylamine	ND	9.4
Azobenzene	ND	9.4
4-Bromophenyl-phenylether	ND	9.4
Hexachlorobenzene	ND	9.4
Phenanthrene	ND	9.4
Anthracene	ND	9.4
Di-n-butylphthalate	ND	9.4
Fluoranthene	ND	9.4
Pyrene	ND	9.4
Butylbenzylphthalate	ND	9.4
3,3'-Dichlorobenzidine	ND	47
Benzo(a)anthracene	ND	9.4
Chrysene	ND	9.4
bis(2-Ethylhexyl)phthalate	ND	9.4
Di-n-octylphthalate	ND	9.4
Benzo(b)fluoranthene	ND	9.4
Benzo(k)fluoranthene	ND	9.4
Benzo(a)pyrene	ND	9.4
Indeno(1,2,3-cd)pyrene	ND	9.4
Dibenz(a,h)anthracene	ND	9.4
Benzo(g,h,i)perylene	ND	9.4
Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	89	21-110
Phenol-d5	90	10-110
2,4,6-Tribromophenol	73	10-123
Nitrobenzene-d5	128*	35-114
2-Fluorobiphenyl	40*	43-116
Terphenyl-d14	14*	33-141

* Values outside of QC limits

125670-005

Data File: /chem/bna01.1/061096a.b/08_5670-005re.d
Date: 10-JUN-1996 20:14
Client ID: CURTIS&TOMPKINS,LTD
Sample Info:
Volume Injected (uL): 1.0
Column phase: Xti 5 x .5 u

Instrument: bna01.1
Operator: dsp
Column diameter: 0.25



/chem/bna01.1/061096a.b/08_5670-005re.d



Lab #: 125670

BATCH QC REPORT

Page 1 of 2

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8270
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 27835
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/28/96
 Analysis Date: 05/30/96

MB Lab ID: QC22731

Analyte	Result	Reporting Limit
Phenol	ND	10
2-Chlorophenol	ND	10
Benzyl alcohol	ND	10
2-Methylphenol	ND	10
4-Methylphenol	ND	10
2-Nitrophenol	ND	50
2,4-Dimethylphenol	ND	10
Benzoic acid	ND	50
2,4-Dichlorophenol	ND	10
4-Chloro-3-methylphenol	ND	10
2,4,6-Trichlorophenol	ND	10
2,4,5-Trichlorophenol	ND	50
2,4-Dinitrophenol	ND	50
4-Nitrophenol	ND	50
4,6-Dinitro-2-methylphenol	ND	50
Pentachlorophenol	ND	10
N-Nitrosodimethylamine	ND	10
Aniline	ND	10
bis(2-Chloroethyl)ether	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
1,2-Dichlorobenzene	ND	10
bis(2-Chloroisopropyl) ether	ND	10
N-Nitroso-di-n-propylamine	ND	10
Hexachloroethane	ND	10
Nitrobenzene	ND	10
Isophorone	ND	10
bis(2-Chloroethoxy)methane	ND	10
1,2,4-Trichlorobenzene	ND	10
Naphthalene	ND	10
4-Chloroaniline	ND	10
Hexachlorobutadiene	ND	10
2-Methylnaphthalene	ND	10
Hexachlorocyclopentadiene	ND	10
2-Chloronaphthalene	ND	10
2-Nitroaniline	ND	50
Dimethylphthalate	ND	10
Acenaphthylene	ND	10
2,6-Dinitrotoluene	ND	10
3-Nitroaniline	ND	50

Lab #: 125670

BATCH QC REPORT

Page 2 of 2

EPA 8270 Semi-Volatile Organics			
Client:	Subsurface Consultants	Analysis Method:	EPA 8270
Project#:	133.005	Prep Method:	EPA 3520
Location:	KOT		
METHOD BLANK			
Matrix:	Water	Prep Date:	05/28/96
Batch#:	27835	Analysis Date:	05/30/96
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC22731

Analyte	Result	Reporting Limit
Acenaphthene	ND	10
Dibenzofuran	ND	10
2,4-Dinitrotoluene	ND	10
Diethylphthalate	ND	10
4-Chlorophenyl-phenylether	ND	10
Fluorene	ND	10
4-Nitroaniline	ND	50
N-Nitrosodiphenylamine	ND	10
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	10
Hexachlorobenzene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Di-n-butylphthalate	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Butylbenzylphthalate	ND	10
3,3'-Dichlorobenzidine	ND	50
Benzo(a)anthracene	ND	10
Chrysene	ND	10
bis(2-Ethylhexyl)phthalate	ND	10
Di-n-octylphthalate	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(a)pyrene	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Dibenz(a,h)anthracene	ND	10
Benzo(g,h,i)perylene	ND	10
Surrogate	%Rec	Recovery Limits
2-Fluorophenol	85	21-110
Phenol-d5	79	10-110
2,4,6-Tribromophenol	69	10-123
Nitrobenzene-d5	75	35-114
2-Fluorobiphenyl	71	43-116
Terphenyl-d14	83	33-141

Lab #: 125670

BATCH QC REPORT

Page 1 of 1

EPA 8270 Semi-Volatile Organics			
Client: Subsurface Consultants	Analysis Method: EPA 8270		
Project#: 133.005	Prep Method: EPA 3520		
Location: KOT			
BLANK SPIKE/BLANK SPIKE DUPLICATE			
Matrix: Water	Prep Date: 05/28/96		
Batch#: 27835	Analysis Date: 05/30/96		
Units: ug/L			
Diln Fac: 1			

BS Lab ID: QC22732

Analyte	Spike Added	BS	%Rec #	Limits
Phenol	100	76.34	76	12-110
2-Chlorophenol	100	72.49	72	27-123
4-Chloro-3-methylphenol	100	71.7	72	23-97
4-Nitrophenol	100	51.27	51	10-80
Pentachlorophenol	100	42.09	42	9-103
1,4-Dichlorobenzene	50	31.35	63	36-97
N-Nitroso-di-n-propylamine	50	32.79	66	41-116
1,2,4-Trichlorobenzene	50	31.17	62	39-98
Acenaphthene	50	37.01	74	46-118
2,4-Dinitrotoluene	50	34.06	68	24-96
Pyrene	50	40.45	81	26-127
Surrogate	%Rec	Limits		
2-Fluorophenol	83	21-110		
Phenol-d5	84	10-110		
2,4,6-Tribromophenol	86	10-123		
Nitrobenzene-d5	77	35-114		
2-Fluorobiphenyl	74	43-116		
Terphenyl-d14	84	33-141		

BSD Lab ID: QC22733

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Phenol	100	73.95	74	12-110	3	<42
2-Chlorophenol	100	70.19	70	27-123	3	<40
4-Chloro-3-methylphenol	100	71.15	71	23-97	1	<42
4-Nitrophenol	100	55.03	55	10-80	8	<50
Pentachlorophenol	100	41.04	41	9-103	2	<50
1,4-Dichlorobenzene	50	28.05	56	36-97	12	<28
N-Nitroso-di-n-propylamine	50	34.4	69	41-116	4	<38
1,2,4-Trichlorobenzene	50	28.18	56	39-98	10	<28
Acenaphthene	50	35.82	72	46-118	3	<31
2,4-Dinitrotoluene	50	33.75	68	24-96	0	<38
Pyrene	50	40.17	80	26-127	1	<31
Surrogate	%Rec	Limits				
2-Fluorophenol	78	21-110				
Phenol-d5	79	10-110				
2,4,6-Tribromophenol	84	10-123				
Nitrobenzene-d5	75	35-114				
2-Fluorobiphenyl	71	43-116				
Terphenyl-d14	83	33-141				

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits
 RPD: 0 out of 11 outside limits
 Spike Recovery: 0 out of 22 outside limits
 DO: Surrogate diluted out

CHAIN OF CUSTODY FORM

12567

PAGE 1 OF 1

PROJECT NAME: KOT
 JOB NUMBER: 133.005 LAB: Curtis & Tompkins
 PROJECT CONTACT: Jeri Alexander / Jerome DeVeveer TURNAROUND: Normal
 SAMPLED BY: Dennis Alexander / Jerome DeVeveer REQUESTED BY: Jeri Alexander

ANALYSIS REQUESTED						
TEH (e-s to c-50) Fingerprint						
8270 w/ PNA's						
Metals (CAM 17)						
VOCs (8240)						
PCBs						
TNH						

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS					METHOD PRESERVED					SAMPLING DATE				NOTES	
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	100 mL poly	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME		
-1	SCI-1	X				4	4		1		X		X			05	21	96	1430	XX	XX
-2	SCI-2	X				4	4		1		X		X			05	22	96	1000	XX	XX
-6	SCI-2-FP					1														X	
-3	SCI-3	X				4	4		1		X		X			05	21	96	1600	XX	XX
-4	SCI-4	X				4	4		1		X		X			05	22	96	1045	XX	XX
-5	SCI-5	X				4	4		1		X		X			05	22	96	1200	XX	XX

CHAIN OF CUSTODY RECORD			
RELEASED BY: (Signature) <i>Dennis Alexander</i>	DATE / TIME 5/22/96 2:45 P.M.	RECEIVED BY: (Signature) <i>W. Felch</i>	DATE / TIME 5-22-96 2:45 P.M.
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES: * Please start oldest samples first

XX Fingerprint on top layer of VOA - Product ONLY

Subsurface Consultants, Inc.
 171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
 (510) 268-0461 • FAX: 510-268-0137



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 04-JUN-96
Lab Job Number: 125704
Project ID: 133.005
Location: KOT

Reviewed by:

Jusa K Morrison

Reviewed by:

Tracy B. J.

This package may be reproduced only in its entirety.

Client: Subsurface Consultants

Laboratory Login Number: 125704

 Project Name: KOT
 Project Number: 133.005

Report Date: 04 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520BF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
125704-001	SCI-MW-1	Water	24-MAY-96	24-MAY-96	28-MAY-96	ND	mg/L	5	TR	27848
125704-002	SCI-MW-2	Water	23-MAY-96	24-MAY-96	28-MAY-96	5.6	mg/L	5	TR	27848
125704-003	SCI-MW-3	Water	23-MAY-96	24-MAY-96	28-MAY-96	ND	mg/L	5	TR	27848

ND = Not Detected at or above Reporting Limit (RL).

Q C B a t c h R e p o r t

Client: Subsurface Consultants
 Project Name: KOT
 Project Number: 133.005

Laboratory Login Number: 125704
 Report Date: 04 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 27848

Blank Results						
Sample ID	Result	MDL	Units	Method	Date Analyzed	
MB	ND	5	mg/L	SMWW 17:5520BF	28-MAY-96	
Spike/Duplicate Results						
Sample ID	Recovery			Method	Date Analyzed	
BS	83%			SMWW 17:5520BF	28-MAY-96	
BSD	85%			SMWW 17:5520BF	28-MAY-96	
Average Spike Recovery				84%	Control Limits	
Relative Percent Difference				2.4%	80% - 120%	
					< 20%	



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125704-001	SCI-MW-1	27794	05/24/96	05/26/96	05/26/96	

Matrix: Water

Analyte	Units	125704-001
Diln Fac:		1
Gasoline	ug/L	<50
Surrogate		
Trifluorotoluene	%REC	90
Bromobenzene	%REC	80



Lab #: 125704

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27794
Units: ug/L
Diln Fac: 1

Prep Date: 05/25/96
Analysis Date: 05/25/96

MB Lab ID: QC22538

Analyte	Result		
Gasoline	<50		
Surrogate	%Rec	Recovery Limits	
Trifluorotoluene	89	65-135	
Bromobenzene	73	65-135	

Lab #: 125704

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons			
Client:	Subsurface Consultants	Analysis Method:	CA LUFT (EPA 8015M)
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
LABORATORY CONTROL SAMPLE			
Matrix:	Water	Prep Date:	05/25/96
Batch#:	27794	Analysis Date:	05/25/96
Units:	ug/L		
Diln Fac:	1		

LCS Lab ID: QC22544

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	2128	2006	106	75-125
Surrogate	%Rec	Limits		
Trifluorotoluene	95	65-135		
Bromobenzene	95	65-135		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 125704

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125645-001
 Matrix: Water
 Batch#: 27794
 Units: ug/L
 Diln Fac: 1

Sample Date: 05/16/96
 Received Date: 05/17/96
 Prep Date: 05/25/96
 Analysis Date: 05/25/96

MS Lab ID: QC22539

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	2000	737.7	2710	99	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	97	65-135			
Bromobenzene	100	65-135			

MSD Lab ID: QC22540

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	2000	2783	102	75-125	3	<35
Surrogate	%Rec	Limits				
Trifluorotoluene	96	65-135				
Bromobenzene	100	65-135				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125704-001	SCI-MW-1	27890	05/24/96	05/29/96	05/31/96	
125704-002	SCI-MW-2	27890	05/23/96	05/29/96	05/31/96	
125704-003	SCI-MW-3	27890	05/23/96	05/29/96	05/31/96	

Matrix: Water

Analyte	Units	125704-001	125704-002	125704-003
Diln Fac:		1	1	1
Diesel C12-C22	ug/L	560 YH	2600 L	8000 YH
Motor Oil C22-C50	ug/L	280 Y	360 YL	7400 Y
Surrogate				
Hexacosane	%REC	102	106	100

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

L: Lighter hydrocarbons than indicated standard

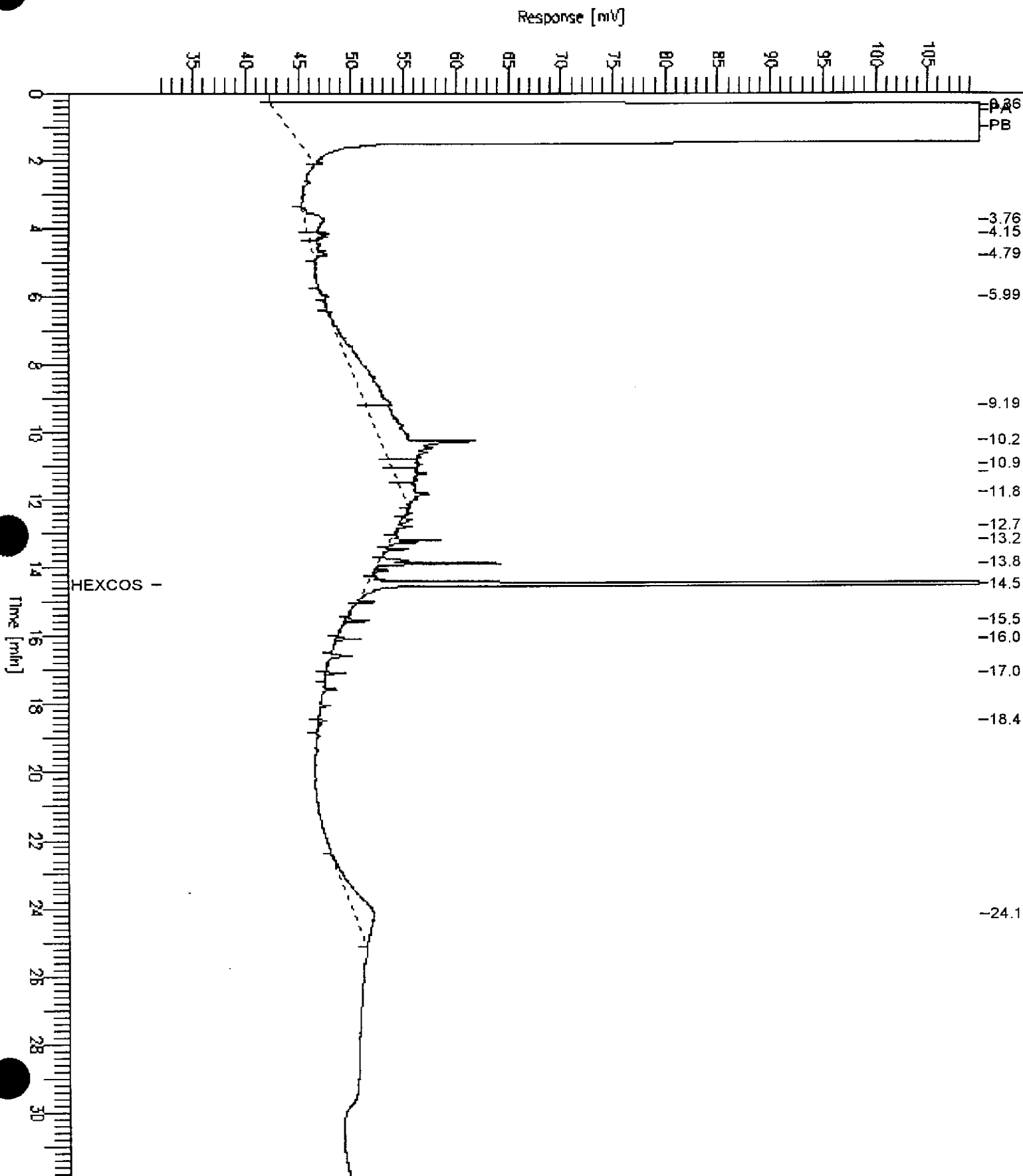
GC15 Channel B Surrogate

Sample Name : 125704-001,27890
FileName : C:\GC15\CHB\151B019.raw
Method : DUAL
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 31.90 min
Plot Offset: 32 mV

Sample #: 500:2.5
Date : 5/31/96 09:16 AM
Time of Injection: 5/31/96 08:41 AM
Low Point : 32.00 mV
Plot Scale: 78.0 mV

Page 1 of 1

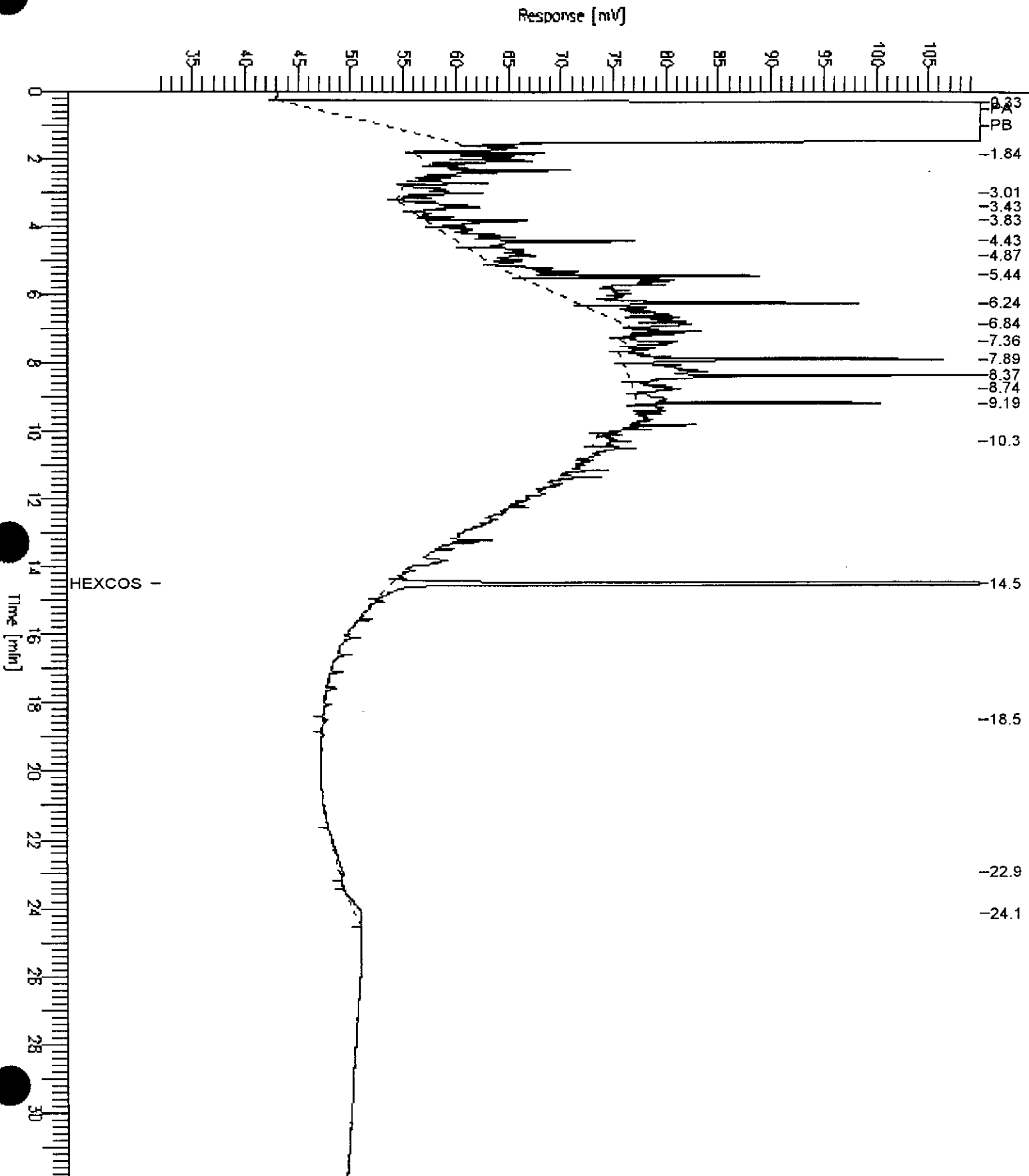


GC15 Channel B Surrogate

Sample Name : 125704-002,27890
FileName : C:\GC15\CHB\151B020.raw
Method : DUAL
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 31.90 min
Plot Offset: 32 mV

Sample #: 500:2.5
Date : 5/31/96 10:00 AM
Time of Injection: 5/31/96 09:26 AM
Low Point : 32.00 mV
High Point : 110.00 mV
Plot Scale: 78.0 mV



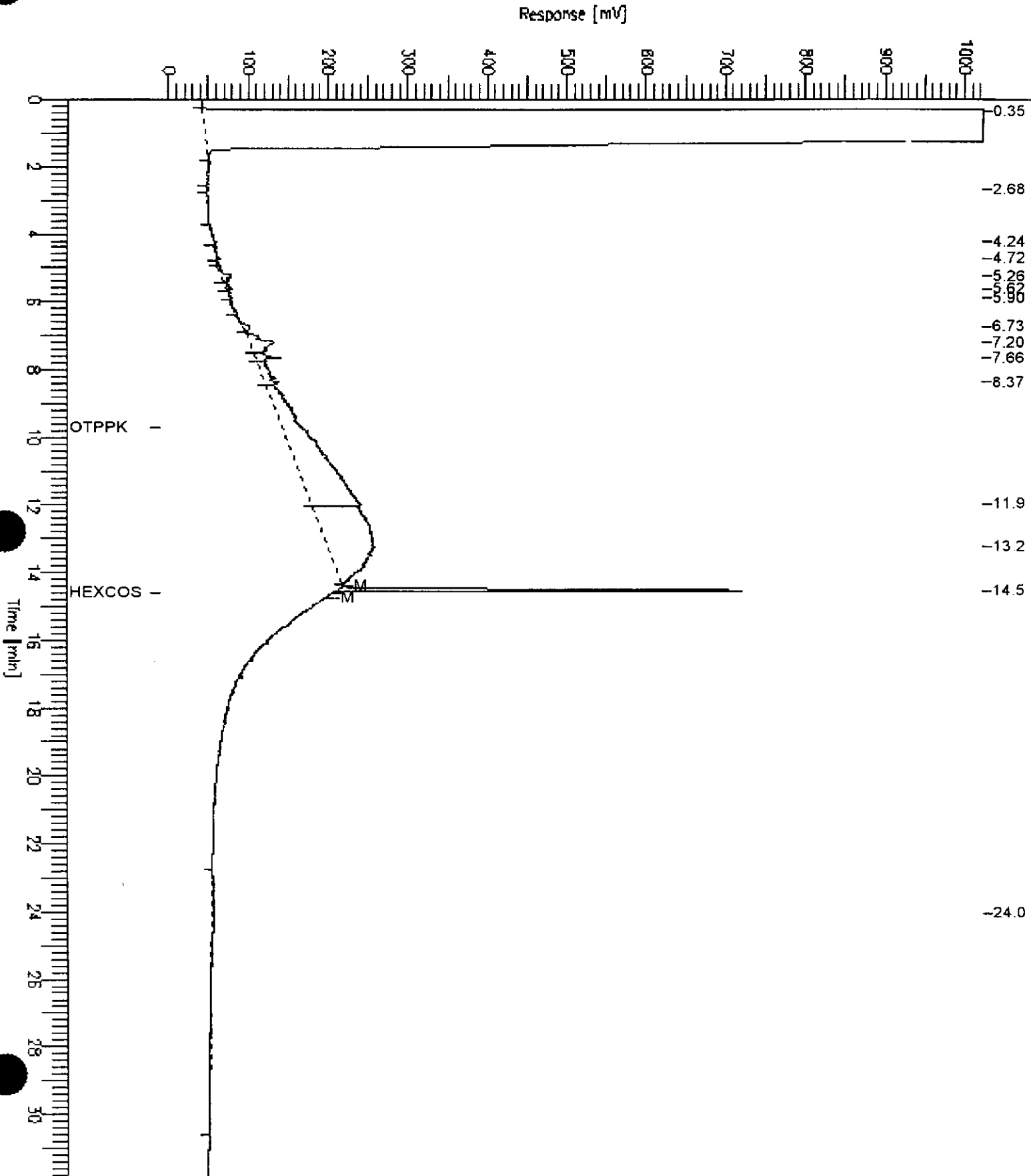
GC15 Channel B Surrogate

Sample Name : 125704-003,27890
FileName : C:\GC15\CHB\151B021.RAW
Method : BSURR.MTH
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 31.90 min
Plot Offset: -9 mV

Sample #: 500:2.5
Date : 5/31/96 01:58 PM
Time of Injection: 5/31/96 10:10 AM
Low Point : -9.40 mV
High Point : 1024.00 mV
Plot Scale: 1033.4 mV

Page 1 of 1





Lab #: 125704

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 27890
Units: ug/L
Diln Fac: 1

Prep Date: 05/29/96
Analysis Date: 05/30/96

MB Lab ID: QC22929

Analyte	Result	
Diesel C12-C22	<50	
Motor Oil C22-C50	<250	
Surrogate	%Rec	Recovery Limits
Hexacosane	105	60-140



Lab #: 125704

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27890
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/29/96
 Analysis Date: 05/30/96

BS Lab ID: QC22930

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	2509	101	60-140
Surrogate	%Rec	Limits		
Hexacosane	100	60-140		

BSD Lab ID: QC22931

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2602	105	60-140	4	<35
Surrogate	%Rec	Limits				
Hexacosane	100	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125704-002	SCI-MW-2	27798	05/23/96	05/25/96	05/25/96	

Matrix: Water

Analyte	Units	125704-002
Diln Fac:		1
Benzene	ug/L	<0.5
Toluene	ug/L	<0.5
Ethylbenzene	ug/L	<0.5
m,p-Xylenes	ug/L	<0.5
o-Xylene	ug/L	<0.5
Surrogate		
Trifluorotoluene	%REC	99
Bromobenzene	%REC	91

Lab #: 125704

BATCH QC REPORT

Page 1 of 1

BTXE			
Client:	Subsurface Consultants	Analysis Method:	EPA 8020
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
METHOD BLANK			
Matrix:	Water	Prep Date:	05/24/96
Batch#:	27798	Analysis Date:	05/24/96
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC22553

Analyte	Result		
Benzene	<0.5		
Toluene	<0.5		
Ethylbenzene	<0.5		
m,p-Xylenes	<0.5		
o-Xylene	<0.5		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	97		58-130
Bromobenzene	83		62-131

DO: Surrogate diluted out

Lab #: 125704

BATCH QC REPORT

Page 1 of 1

BTXE	
Client: Subsurface Consultants	Analysis Method: EPA 8020
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	
MATRIX SPIKE/MATRIX SPIKE DUPLICATE	
Field ID: ZZZZZZ	Sample Date: 05/13/96
Lab ID: 125578-002	Received Date: 05/15/96
Matrix: Water	Prep Date: 05/24/96
Batch#: 27798	Analysis Date: 05/24/96
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC22554

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	20	<0.5000	22.4	112	75-125
Toluene	20	<0.5000	22.4	112	75-125
Ethylbenzene	20	<0.5000	22.1	111	75-125
m,p-Xylenes	40	<0.5000	45.9	115	75-125
o-Xylene	20	<0.5000	23	115	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	99	58-130			
Bromobenzene	89	62-131			

MSD Lab ID: QC22555

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	20	24.2	121	75-125	8	<20
Toluene	20	24.1	121	75-125	7	<20
Ethylbenzene	20	23.7	119	75-125	7	<20
m,p-Xylenes	40	49.5	124	75-125	8	<20
o-Xylene	20	25	125	75-125	8	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	100	58-130				
Bromobenzene	92	62-131				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



PCBs		
Client: Subsurface Consultants	Analysis Method: PCB	
Project#: 133.005	Prep Method: EPA 3550	
Location: KOT	Cleanup Method: EPA Acid	
Field ID: SCI-MW-3	Sampled: 05/23/96	
Lab ID: 125704-003	Received: 05/24/96	
Matrix: Water	Extracted: 05/28/96	
Batch#: 27850	Analyzed: 05/30/96	
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Surrogate	%Recovery	Recovery Limits
TCMX	97	60-150
Decachlorobiphenyl	69	30-130

Lab #: 125704

BATCH QC REPORT

Page 1 of 1

Polychlorinated Biphenyls		
Client: Subsurface Consultants	Analysis Method: PCB	
Project#: 133.005	Prep Method: EPA 3550	
Location: KOT	Cleanup Method: EPA Acid	
METHOD BLANK		
Matrix: Water	Prep Date: 05/28/96	
Batch#: 27850	Analysis Date: 05/30/96	
Units: ug/L		
Diln Fac: 1		

MB Lab ID: QC22778

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Surrogate	%Rec	Recovery Limits
TCMX	99	60-150
Decachlorobiphenyl	95	30-130



Lab #: 125704

BATCH QC REPORT

Page 1 of 1

Polychlorinated Biphenyls

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: PCB
 Prep Method: EPA 3550
 Cleanup Method: EPA Acid

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27850
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/28/96
 Analysis Date: 05/30/96

BS Lab ID: QC22779

Analyte	Spike Added	BS	%Rec #	Limits
Aroclor-1260	6.67	7.3	111	50-128
Surrogate	%Rec	Limits		
TCMX	93	60-150		
Decachlorobiphenyl	82	30-130		

BSD Lab ID: QC22780

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Aroclor-1260	6.67	7.5	114	50-128	3	<20
Surrogate	%Rec	Limits				
TCMX	98	60-150				
Decachlorobiphenyl	103	30-130				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



Organochlorine Pesticides and PCBs		
Client: Subsurface Consultants	Analysis Method: EPA 8080	
Project#: 133.005	Prep Method: EPA 3520	
Location: KOT		
Field ID: SCI-MW-1	Sampled: 05/24/96	
Lab ID: 125704-001	Received: 05/24/96	
Matrix: Water	Extracted: 05/29/96	
Batch#: 27889	Analyzed: 06/05/96	
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
gamma-BHC	ND	0.05
delta-BHC	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor epoxide B	ND	0.05
Heptachlor epoxide A	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.09
4,4'-DDE	ND	0.09
Endrin	ND	0.09
Endosulfan II	ND	0.09
Endosulfan sulfate	ND	0.09
4,4'-DDD	ND	0.09
Endrin aldehyde	ND	0.09
4,4'-DDT	ND	0.09
Chlordane	ND	0.5
Methoxychlor	ND	0.5
Toxaphene	ND	0.9
Aroclor-1016	ND	0.5
Aroclor-1221	ND	0.9
Aroclor-1232	ND	0.5
Aroclor-1242	ND	0.5
Aroclor-1248	ND	0.5
Aroclor-1254	ND	0.5
Aroclor-1260	ND	0.5
Surrogate	%Recovery	Recovery Limits
TCMX	70	47-133
Decachlorobiphenyl	30*	35-132

* Values outside of QC limits



Lab #: 125704

BATCH QC REPORT

Page 1 of 1

EPA 8080 Pesticides & PCBs

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8080
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 27889
Units: ug/L
Diln Fac: 1

Prep Date: 05/29/96
Analysis Date: 06/05/96

MB Lab ID: QC22926

Analyte	Result	Reporting Limit
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
gamma-BHC	ND	0.05
delta-BHC	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor epoxide B	ND	0.05
Heptachlor epoxide A	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.1
4,4'-DDE	ND	0.1
Endrin	ND	0.1
Endosulfan II	ND	0.1
Endosulfan sulfate	ND	0.1
4,4'-DDD	ND	0.1
Endrin aldehyde	ND	0.1
4,4'-DDT	ND	0.1
Chlordane	ND	0.5
Methoxychlor	ND	0.5
Toxaphene	ND	1.0
Aroclor-1016	ND	0.5
Aroclor-1221	ND	1.0
Aroclor-1232	ND	0.5
Aroclor-1242	ND	0.5
Aroclor-1248	ND	0.5
Aroclor-1254	ND	0.5
Aroclor-1260	ND	0.5

Surrogate	%Rec	Recovery Limits
TCMX	69	47-133
Decachlorobiphenyl	114	35-132



Lab #: 125704

BATCH QC REPORT

Page 1 of 1

EPA 8080 Pesticides & PCBs

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8080
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27889
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/29/96
 Analysis Date: 06/05/96

BS Lab ID: QC22927

Analyte	Spike Added	BS	%Rec #	Limits
gamma-BHC	0.5	0.43	86	67-116
Heptachlor	0.5	0.4	80	69-109
Aldrin	0.5	0.38	76	64-115
Dieldrin	1	0.91	91	76-126
Endrin	1	1.04	104	78-122
4,4'-DDT	1	0.99	99	72-123
Surrogate	%Rec	Limits		
TCMX	69	47-133		
Decachlorobiphenyl	94	35-132		

BSD Lab ID: QC22928

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
gamma-BHC	0.5	0.41	82	67-116	5	<20
Heptachlor	0.5	0.4	80	69-109	0	<20
Aldrin	0.5	0.37	74	64-115	3	<20
Dieldrin	1	0.94	94	76-126	3	<20
Endrin	1	1.07	107	78-122	3	<20
4,4'-DDT	1	1.01	101	72-123	2	<20
Surrogate	%Rec	Limits				
TCMX	65	47-133				
Decachlorobiphenyl	86	35-132				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits



AGRICULTURE &
PRIORITY POLLUTANTS
LABORATORIES, INC.

4203 West Swift ▼ Fresno, California 93722 ▼ Phone 209.275-2175 ▼ Fax 209.275-4422

Curtis & Tompkins Ltd.
2323 5th Street
Berkeley, CA 94710
Attn: Tracy Babjar

Sample Date: 05/24/96
Report Date: 06/07/96

Page 1 of 1

Sample ID No : 125704
SCI-MW-1
APPL Sample No: R22845-38492

Date Received: 05/29/96
Date Extracted: 05/30/96

Results of Herbicide Water Analysis by EPA Method 8150

Compound	Units	Concentration	Quantitation Limit
Dicamba	µg/L	ND	0.10
2,4-D	µg/L	ND	0.50
2,4-DB	µg/L	ND	1.0
Dichlorprop (2,4-DP)	µg/L	ND	0.50
2,4,5-T	µg/L	ND	0.10
2,4,5-TP	µg/L	ND	0.10
Dinoseb (DNBP)	µg/L	ND	0.25
Dalapon	µg/L	ND	1.0
MCPA	µg/L	ND	100
MCPP	µg/L	ND	100

ND = None Detected

Tested by:

Paula Young

Checked by:

[Signature]



AGRICULTURE &
PRIORITY POLLUTANTS
LABORATORIES, INC.

4203 West Swift ▼ Fresno, California 93722 ▼ Phone 209.275-2175 ▼ Fax 209.275-4422

Curtis & Tompkins Ltd.
2323 5th Street
Berkeley, CA 94710
Attn: Tracy Babjar

Sample Date: NA
Report Date: 06/07/96

Sample I.D. No: **BLANK** Associated with
sample group: R22845
APPL Sample No: R22845-960530W

Date Received: NA
Date Extracted: 05/30/96

Results of Herbicide Water Analysis by EPA Method 8150

Compound	Units	Concentration	Quantitation Limit
Dicamba	µg/L	ND	0.10
2,4-D	µg/L	ND	0.50
2,4-DB	µg/L	ND	1.0
Dichlorprop (2,4-DP)	µg/L	ND	0.50
2,4,5-T	µg/L	ND	0.10
2,4,5-TP	µg/L	ND	0.10
Dinoseb (DNBP)	µg/L	ND	0.25
Dalapon	µg/L	ND	1.0
MCPA	µg/L	ND	100
MCPP	µg/L	ND	100

ND = None Detected

Checked by: Larnee Cook

APPL Sample: 960530W

Spike Report: LCS / LCSD

Units
µg/L

Method
8150

Extraction Date
5/30/96
Analysis Date
5/31/96

Analyte	CAS Number	Amount in Sample	Amount Added	Recovery LCS	Recovery LCSD	Percent LCS	Percent LCS	Percent LCSD	RPD	Recovery Limit	RPD Limit
2,4-D	94-75-7	ND	1.00	0.930	0.876	93.0%	87.6%	6.0%		44-155	15
Dicamba	1918-00-9	ND	1.00	0.672	0.627	67.2%	62.7%	6.9%		48-102	24
Dichlorprop (2,4-DP)	120-36-5	ND	1.00	0.970	0.915	97.0%	91.5%	5.8%		37-146	18
Dinoseb (DNBP)	88-85-7	ND	1.00	0.807	0.759	80.7%	75.9%	6.1%		73-173	NE
Silvex (2,4,5-TP)	93-72-1	ND	1.00	0.695	0.670	69.5%	67.0%	3.7%		60-118	24
2,4,5-T	93-76-5	ND	1.00	0.951	0.901	95.1%	90.1%	5.4%		53-134	32

ABBREVIATIONS & FLAGS

ND None Detected
NA Not Applicable

NE Not Established
x Percentage Outside Stated Limits

Curtis & Tompkins, Ltd.
 Analytical Laboratories, Since 1878
 2323 Fifth Street
 Berkeley, CA 94710
 (510)486-0900 ph
 (510)486-0532 fx

Project Number: 125704

Subcontract Lab:

APPL
 4203 West Swift
 Fresno, CA 93722
 (209) 275-2175

Please send report to: Tracy Babjar

Turnaround Time: 1 week

Sample ID	Date Sampled	Matrix	Analysis	C&T Lab #
SCI-MW-1	24-MAY-96	Water	8150	125704-001

***Please report using Sample ID instead of C&T Lab #.

Notes:

RELINQUISHED BY:	RECEIVED BY:
<i>[Signature]</i> Date/Time	<i>CA overnight</i> Date/Time
<i>CA overnight</i> Date/Time	<i>[Signature]</i> Date/Time

Signature on this form constitutes a firm Purchase Order for the services requested above.

SAMPLE ID: SCI-MW-1
 LAB ID: 125704-001
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Water

DATE SAMPLED: 05/24/96
 DATE RECEIVED: 05/24/96
 DATE REPORTED: 06/04/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	27878	EPA 6010A	05/30/96
Arsenic	45	5.0	1	27878	EPA 6010A	05/30/96
Barium	1000	10	1	27878	EPA 6010A	05/30/96
Beryllium	2.8	2.0	1	27878	EPA 6010A	05/30/96
Cadmium	2.3	2.0	1	27878	EPA 6010A	05/30/96
Chromium (total)	63	10	1	27878	EPA 6010A	05/30/96
Cobalt	ND	20	1	27878	EPA 6010A	05/30/96
Copper	1800	10	1	27878	EPA 6010A	05/30/96
Lead	2300	3.0	1	27878	EPA 6010A	05/30/96
Mercury	ND	0.20	1	27826	EPA 7470	05/28/96
Molybdenum	ND	20	1	27878	EPA 6010A	05/30/96
Nickel	68	20	1	27878	EPA 6010A	05/30/96
Selenium	7.8	5.0	1	27878	EPA 6010A	05/30/96
Silver	ND	5.0	1	27878	EPA 6010A	05/30/96
Thallium	ND	5.0	1	27878	EPA 6010A	05/30/96
Vanadium	62	10	1	27878	EPA 6010A	05/30/96
Zinc	1000	20	1	27878	EPA 6010A	05/30/96

ND = Not detected at or above reporting limit



SAMPLE ID: SCI-MW-2
LAB ID: 125704-002
CLIENT: Subsurface Consultants
PROJECT ID: 133.005
LOCATION: KOT
MATRIX: Water

DATE SAMPLED: 05/23/96
DATE RECEIVED: 05/24/96
DATE REPORTED: 06/04/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	27878	EPA 6010A	05/30/96
Arsenic	14	5.0	1	27878	EPA 6010A	05/30/96
Barium	90	10	1	27878	EPA 6010A	05/30/96
Beryllium	ND	2.0	1	27878	EPA 6010A	05/30/96
Cadmium	ND	2.0	1	27878	EPA 6010A	05/30/96
Chromium (total)	12	10	1	27878	EPA 6010A	05/30/96
Cobalt	ND	20	1	27878	EPA 6010A	05/30/96
Copper	ND	10	1	27878	EPA 6010A	05/30/96
Lead	2300	3.0	1	27878	EPA 6010A	05/30/96
Mercury	0.64	0.20	1	27826	EPA 7470	05/28/96
Molybdenum	ND	20	1	27878	EPA 6010A	05/30/96
Nickel	ND	20	1	27878	EPA 6010A	05/30/96
Selenium	14	5.0	1	27878	EPA 6010A	05/30/96
Silver	ND	5.0	1	27878	EPA 6010A	05/30/96
Thallium	ND	5.0	1	27878	EPA 6010A	05/30/96
Vanadium	ND	10	1	27878	EPA 6010A	05/30/96
Zinc	38	20	1	27878	EPA 6010A	05/30/96

ND = Not detected at or above reporting limit

SAMPLE ID: SCI-MW-3
 LAB ID: 125704-003
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Water

DATE SAMPLED: 05/23/96
 DATE RECEIVED: 05/24/96
 DATE REPORTED: 06/04/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	27878	EPA 6010A	05/30/96
Arsenic	ND	5.0	1	27878	EPA 6010A	05/30/96
Barium	ND	10	1	27878	EPA 6010A	05/30/96
Beryllium	ND	2.0	1	27878	EPA 6010A	05/30/96
Cadmium	ND	2.0	1	27878	EPA 6010A	05/30/96
Chromium (total)	ND	10	1	27878	EPA 6010A	05/30/96
Cobalt	58	20	1	27878	EPA 6010A	05/30/96
Copper	ND	10	1	27878	EPA 6010A	05/30/96
Lead	ND	3.0	1	27878	EPA 6010A	05/30/96
Mercury	ND	0.20	1	27826	EPA 7470	05/28/96
Molybdenum	ND	20	1	27878	EPA 6010A	05/30/96
Nickel	ND	20	1	27878	EPA 6010A	05/30/96
Selenium	ND	5.0	1	27878	EPA 6010A	05/30/96
Silver	ND	5.0	1	27878	EPA 6010A	05/30/96
Thallium	ND	5.0	1	27878	EPA 6010A	05/30/96
Vanadium	ND	10	1	27878	EPA 6010A	05/30/96
Zinc	ND	20	1	27878	EPA 6010A	05/30/96

ND = Not detected at or above reporting limit

CLIENT: Subsurface Consultants
 JOB NUMBER: 125704

DATE REPORTED: 06/04/96

 BATCH QC REPORT
 PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	ug/L	1	27878	EPA 6010A	05/30/96
Arsenic	ND	5	ug/L	1	27878	EPA 6010A	05/30/96
Barium	ND	10	ug/L	1	27878	EPA 6010A	05/30/96
Beryllium	ND	2	ug/L	1	27878	EPA 6010A	05/30/96
Cadmium	ND	2	ug/L	1	27878	EPA 6010A	05/30/96
Chromium (total)	ND	10	ug/L	1	27878	EPA 6010A	05/30/96
Cobalt	ND	20	ug/L	1	27878	EPA 6010A	05/30/96
Copper	ND	10	ug/L	1	27878	EPA 6010A	05/30/96
Lead	ND	3	ug/L	1	27878	EPA 6010A	05/30/96
Mercury	ND	0.2	ug/L	1	27826	EPA 7470	05/28/96
Molybdenum	ND	20	ug/L	1	27878	EPA 6010A	05/30/96
Nickel	ND	20	ug/L	1	27878	EPA 6010A	05/30/96
Selenium	ND	5	ug/L	1	27878	EPA 6010A	05/30/96
Silver	ND	5	ug/L	1	27878	EPA 6010A	05/30/96
Thallium	ND	5	ug/L	1	27878	EPA 6010A	05/30/96
Vanadium	ND	10	ug/L	1	27878	EPA 6010A	05/30/96
Zinc	ND	20	ug/L	1	27878	EPA 6010A	05/30/96

ND = Not Detected at or above reporting limit

CLIENT: Subsurface Consultants
 JOB NUMBER: 125704

DATE REPORTED: 06/04/96

 BATCH QC REPORT
 BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	500	549	553	ug/L	110	111	80-120	1	35	27878	EPA 6010A	05/30/96
Arsenic	2000	1960	1960	ug/L	98	98	80-120	0	35	27878	EPA 6010A	05/30/96
Barium	2000	1910	1910	ug/L	96	96	80-120	0	35	27878	EPA 6010A	05/30/96
Beryllium	50	51.4	51.8	ug/L	103	104	80-120	1	35	27878	EPA 6010A	05/30/96
Cadmium	50	50.2	50.6	ug/L	100	101	80-120	1	35	27878	EPA 6010A	05/30/96
Chromium (total)	200	189	192	ug/L	95	96	80-120	2	35	27878	EPA 6010A	05/30/96
Cobalt	500	472	474	ug/L	94	95	80-120	0	35	27878	EPA 6010A	05/30/96
Copper	250	248	251	ug/L	99	100	80-120	1	35	27878	EPA 6010A	05/30/96
Lead	500	490	495	ug/L	98	99	80-120	1	35	27878	EPA 6010A	05/30/96
Mercury	5	4.736	4.924	ug/L	95	99	80-120	4	35	27826	EPA 7470	05/28/96
Molybdenum	400	377	377	ug/L	94	94	80-120	0	35	27878	EPA 6010A	05/30/96
Nickel	500	510	511	ug/L	102	102	80-120	0	35	27878	EPA 6010A	05/30/96
Selenium	2000	1950	1950	ug/L	98	98	80-120	0	35	27878	EPA 6010A	05/30/96
Silver	100	99.1	101	ug/L	99	101	80-120	2	35	27878	EPA 6010A	05/30/96
Thallium	2000	1940	1970	ug/L	97	99	80-120	2	35	27878	EPA 6010A	05/30/96
Vanadium	500	482	487	ug/L	96	97	80-120	1	35	27878	EPA 6010A	05/30/96
Zinc	500	478	480	ug/L	96	96	80-120	0	35	27878	EPA 6010A	05/30/96



Volatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

Field ID: SCI-MW-1
Lab ID: 125704-001
Matrix: Water
Batch#: 27814
Units: ug/L
Diln Fac: 1

Sampled: 05/24/96
Received: 05/24/96
Extracted: 05/26/96
Analyzed: 05/26/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	101	68-126
Toluene-d8	94	87-125
Bromofluorobenzene	88	79-122



Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

Field ID: SCI-MW-3
 Lab ID: 125704-003
 Matrix: Water
 Batch#: 27814
 Units: ug/L
 Diln Fac: 1

Sampled: 05/23/96
 Received: 05/24/96
 Extracted: 05/26/96
 Analyzed: 05/26/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	101	68-126
Toluene-d8	96	87-125
Bromofluorobenzene	89	79-122

Lab #: 125704

BATCH QC REPORT

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EPA 8240 Volatile Organics			
Client:	Subsurface Consultants	Analysis Method:	EPA 8240
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
METHOD BLANK			
Matrix:	Water	Prep Date:	05/25/96
Batch#:	27814	Analysis Date:	05/25/96
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC22623

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	104	68-126
Toluene-d8	98	87-125
Bromofluorobenzene	92	79-122

Lab #: 125704

BATCH QC REPORT

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EPA 8240 Volatile Organics			
Client: Subsurface Consultants	Analysis Method: EPA 8240		
Project#: 133.005	Prep Method: EPA 5030		
Location: KOT			
LABORATORY CONTROL SAMPLE			
Matrix: Water	Prep Date:	05/25/96	
Batch#: 27814	Analysis Date:	05/25/96	
Units: ug/L			
Diln Fac: 1			

LCS Lab ID: QC22622

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	69.74	50	139	51-180
Trichloroethene	55.76	50	112	73-141
Benzene	51.32	50	103	78-142
Toluene	52.14	50	104	76-150
Chlorobenzene	50.17	50	100	83-129
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	122	68-126		
Toluene-d8	101	87-125		
Bromofluorobenzene	100	79-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Lab #: 125704

BATCH QC REPORT

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EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125690-001
 Matrix: Water
 Batch#: 27814
 Units: ug/L
 Diln Fac: 1

Sample Date: 05/23/96
 Received Date: 05/23/96
 Prep Date: 05/25/96
 Analysis Date: 05/25/96

MS Lab ID: QC22625

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	<1.000	59.46	119	51-180
Trichloroethene	50	2.29	53.79	103	73-141
Benzene	50	0	47.51	95	78-142
Toluene	50	0	47.11	94	76-150
Chlorobenzene	50	<1.000	47.5	95	83-129
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	106	68-126			
Toluene-d8	97	87-125			
Bromofluorobenzene	92	79-122			

MSD Lab ID: QC22626

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	63.91	128	51-180	7	<14
Trichloroethene	50	53.83	103	73-141	0	<14
Benzene	50	47.85	96	78-142	1	<11
Toluene	50	47.26	95	76-150	0	<13
Chlorobenzene	50	48.27	97	83-129	2	<13
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	100	68-126				
Toluene-d8	96	87-125				
Bromofluorobenzene	90	79-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

Field ID: SCI-MW-1
Lab ID: 125704-001
Matrix: Water
Batch#: 27835
Units: ug/L
Diln Fac: 1

Sampled: 05/24/96
Received: 05/24/96
Extracted: 05/28/96
Analyzed: 06/11/96

Analyte	Result	Reporting Limit
Phenol	ND	9.4
2-Chlorophenol	ND	9.4
Benzyl alcohol	ND	9.4
2-Methylphenol	ND	9.4
4-Methylphenol	ND	9.4
2-Nitrophenol	ND	47
2,4-Dimethylphenol	ND	9.4
Benzoic acid	ND	47
2,4-Dichlorophenol	ND	9.4
4-Chloro-3-methylphenol	ND	9.4
2,4,6-Trichlorophenol	ND	9.4
2,4,5-Trichlorophenol	ND	47
2,4-Dinitrophenol	ND	47
4-Nitrophenol	ND	47
4,6-Dinitro-2-methylphenol	ND	47
Pentachlorophenol	ND	47
N-Nitrosodimethylamine	ND	9.4
Aniline	ND	9.4
bis(2-Chloroethyl)ether	ND	9.4
1,3-Dichlorobenzene	ND	9.4
1,4-Dichlorobenzene	ND	9.4
1,2-Dichlorobenzene	ND	9.4
bis(2-Chloroisopropyl) ether	ND	9.4
N-Nitroso-di-n-propylamine	ND	9.4
Hexachloroethane	ND	9.4
Nitrobenzene	ND	9.4
Isophorone	ND	9.4
bis(2-Chloroethoxy)methane	ND	9.4
1,2,4-Trichlorobenzene	ND	9.4
Naphthalene	ND	9.4
4-Chloroaniline	ND	9.4
Hexachlorobutadiene	ND	9.4
2-Methylnaphthalene	ND	9.4
Hexachlorocyclopentadiene	ND	9.4
2-Chloronaphthalene	ND	9.4
2-Nitroaniline	ND	47
Dimethylphthalate	ND	9.4
Acenaphthylene	ND	9.4

Semivolatile Organics by GC/MS		
Field ID: SCI-MW-1	Sampled:	05/24/96
Lab ID: 125704-001	Received:	05/24/96
Matrix: Water	Extracted:	05/28/96
Batch#: 27835	Analyzed:	06/11/96
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	9.4
3-Nitroaniline	ND	47
Acenaphthene	ND	9.4
Dibenzofuran	ND	9.4
2,4-Dinitrotoluene	ND	9.4
Diethylphthalate	ND	9.4
4-Chlorophenyl-phenylether	ND	9.4
Fluorene	ND	9.4
4-Nitroaniline	ND	47
N-Nitrosodiphenylamine	ND	9.4
Azobenzene	ND	9.4
4-Bromophenyl-phenylether	ND	9.4
Hexachlorobenzene	ND	9.4
Phenanthrene	ND	9.4
Anthracene	ND	9.4
Di-n-butylphthalate	ND	9.4
Fluoranthene	ND	9.4
Pyrene	ND	9.4
Butylbenzylphthalate	ND	9.4
3,3'-Dichlorobenzidine	ND	47
Benzo(a)anthracene	ND	9.4
Chrysene	ND	9.4
bis(2-Ethylhexyl)phthalate	ND	9.4
Di-n-octylphthalate	ND	9.4
Benzo(b)fluoranthene	ND	9.4
Benzo(k)fluoranthene	ND	9.4
Benzo(a)pyrene	ND	9.4
Indeno(1,2,3-cd)pyrene	ND	9.4
Dibenz(a,h)anthracene	ND	9.4
Benzo(g,h,i)perylene	ND	9.4
Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	96	21-110
Phenol-d5	97	10-110
2,4,6-Tribromophenol	88	10-123
Nitrobenzene-d5	102	35-114
2-Fluorobiphenyl	97	43-116
Terphenyl-d14	61	33-141



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

Field ID: SCI-MW-2
Lab ID: 125704-002
Matrix: Water
Batch#: 27835
Units: ug/L
Diln Fac: 1

Sampled: 05/23/96
Received: 05/24/96
Extracted: 05/28/96
Analyzed: 05/30/96

Analyte	Result	Reporting Limit
Phenol	ND	9.4
2-Chlorophenol	ND	9.4
Benzyl alcohol	ND	9.4
2-Methylphenol	ND	9.4
4-Methylphenol	ND	9.4
2-Nitrophenol	ND	47
2,4-Dimethylphenol	ND	9.4
Benzoic acid	ND	47
2,4-Dichlorophenol	ND	9.4
4-Chloro-3-methylphenol	ND	9.4
2,4,6-Trichlorophenol	ND	9.4
2,4,5-Trichlorophenol	ND	47
2,4-Dinitrophenol	ND	47
4-Nitrophenol	ND	47
4,6-Dinitro-2-methylphenol	ND	47
Pentachlorophenol	ND	47
N-Nitrosodimethylamine	ND	9.4
Aniline	ND	9.4
bis(2-Chloroethyl)ether	ND	9.4
1,3-Dichlorobenzene	ND	9.4
1,4-Dichlorobenzene	ND	9.4
1,2-Dichlorobenzene	ND	9.4
bis(2-Chloroisopropyl) ether	ND	9.4
N-Nitroso-di-n-propylamine	ND	9.4
Hexachloroethane	ND	9.4
Nitrobenzene	ND	9.4
Isophorone	ND	9.4
bis(2-Chloroethoxy)methane	ND	9.4
1,2,4-Trichlorobenzene	ND	9.4
Naphthalene	ND	9.4
4-Chloroaniline	ND	9.4
Hexachlorobutadiene	ND	9.4
2-Methylnaphthalene	ND	9.4
Hexachlorocyclopentadiene	ND	9.4
2-Chloronaphthalene	ND	9.4
2-Nitroaniline	ND	47
Dimethylphthalate	ND	9.4
Acenaphthylene	ND	9.4



Semivolatile Organics by GC/MS		
Field ID: SCI-MW-2	Sampled:	05/23/96
Lab ID: 125704-002	Received:	05/24/96
Matrix: Water	Extracted:	05/28/96
Batch#: 27835	Analyzed:	05/30/96
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	9.4
3-Nitroaniline	ND	47
Acenaphthene	ND	9.4
Dibenzofuran	ND	9.4
2,4-Dinitrotoluene	ND	9.4
Diethylphthalate	ND	9.4
4-Chlorophenyl-phenylether	ND	9.4
Fluorene	ND	9.4
4-Nitroaniline	ND	47
N-Nitrosodiphenylamine	ND	9.4
Azobenzene	ND	9.4
4-Bromophenyl-phenylether	ND	9.4
Hexachlorobenzene	ND	9.4
Phenanthrene	ND	9.4
Anthracene	ND	9.4
Di-n-butylphthalate	ND	9.4
Fluoranthene	ND	9.4
Pyrene	ND	9.4
Butylbenzylphthalate	ND	9.4
3,3'-Dichlorobenzidine	ND	47
Benzo(a)anthracene	ND	9.4
Chrysene	ND	9.4
bis(2-Ethylhexyl)phthalate	ND	9.4
Di-n-octylphthalate	ND	9.4
Benzo(b)fluoranthene	ND	9.4
Benzo(k)fluoranthene	ND	9.4
Benzo(a)pyrene	ND	9.4
Indeno(1,2,3-cd)pyrene	ND	9.4
Dibenz(a,h)anthracene	ND	9.4
Benzo(g,h,i)perylene	ND	9.4
Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	77	21-110
Phenol-d5	74	10-110
2,4,6-Tribromophenol	87	10-123
Nitrobenzene-d5	80	35-114
2-Fluorobiphenyl	68	43-116
Terphenyl-d14	52	33-141



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

Field ID: SCI-MW-3
Lab ID: 125704-003
Matrix: Water
Batch#: 27835
Units: ug/L
Diln Fac: 1

Sampled: 05/23/96
Received: 05/24/96
Extracted: 05/28/96
Analyzed: 05/30/96

Analyte	Result	Reporting Limit
Phenol	ND	9.4
2-Chlorophenol	ND	9.4
Benzyl alcohol	ND	9.4
2-Methylphenol	ND	9.4
4-Methylphenol	ND	9.4
2-Nitrophenol	ND	47
2,4-Dimethylphenol	ND	9.4
Benzoic acid	ND	47
2,4-Dichlorophenol	ND	9.4
4-Chloro-3-methylphenol	ND	9.4
2,4,6-Trichlorophenol	ND	9.4
2,4,5-Trichlorophenol	ND	47
2,4-Dinitrophenol	ND	47
4-Nitrophenol	ND	47
4,6-Dinitro-2-methylphenol	ND	47
Pentachlorophenol	ND	47
N-Nitrosodimethylamine	ND	9.4
Aniline	ND	9.4
bis(2-Chloroethyl)ether	ND	9.4
1,3-Dichlorobenzene	ND	9.4
1,4-Dichlorobenzene	ND	9.4
1,2-Dichlorobenzene	ND	9.4
bis(2-Chloroisopropyl) ether	ND	9.4
N-Nitroso-di-n-propylamine	ND	9.4
Hexachloroethane	ND	9.4
Nitrobenzene	ND	9.4
Isophorone	ND	9.4
bis(2-Chloroethoxy)methane	ND	9.4
1,2,4-Trichlorobenzene	ND	9.4
Naphthalene	ND	9.4
4-Chloroaniline	ND	9.4
Hexachlorobutadiene	ND	9.4
2-Methylnaphthalene	ND	9.4
Hexachlorocyclopentadiene	ND	9.4
2-Chloronaphthalene	ND	9.4
2-Nitroaniline	ND	47
Dimethylphthalate	ND	9.4
Acenaphthylene	ND	9.4

Semivolatile Organics by GC/MS		
Field ID: SCI-MW-3	Sampled:	05/23/96
Lab ID: 125704-003	Received:	05/24/96
Matrix: Water	Extracted:	05/28/96
Batch#: 27835	Analyzed:	05/30/96
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	9.4
3-Nitroaniline	ND	47
Acenaphthene	ND	9.4
Dibenzofuran	ND	9.4
2,4-Dinitrotoluene	ND	9.4
Diethylphthalate	ND	9.4
4-Chlorophenyl-phenylether	ND	9.4
Fluorene	ND	9.4
4-Nitroaniline	ND	47
N-Nitrosodiphenylamine	ND	9.4
Azobenzene	ND	9.4
4-Bromophenyl-phenylether	ND	9.4
Hexachlorobenzene	ND	9.4
Phenanthrene	ND	9.4
Anthracene	ND	9.4
Di-n-butylphthalate	ND	9.4
Fluoranthene	ND	9.4
Pyrene	ND	9.4
Butylbenzylphthalate	ND	9.4
3,3'-Dichlorobenzidine	ND	47
Benzo(a)anthracene	ND	9.4
Chrysene	ND	9.4
bis(2-Ethylhexyl)phthalate	ND	9.4
Di-n-octylphthalate	ND	9.4
Benzo(b)fluoranthene	ND	9.4
Benzo(k)fluoranthene	ND	9.4
Benzo(a)pyrene	ND	9.4
Indeno(1,2,3-cd)pyrene	ND	9.4
Dibenz(a,h)anthracene	ND	9.4
Benzo(g,h,i)perylene	ND	9.4
Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	69	21-110
Phenol-d5	68	10-110
2,4,6-Tribromophenol	82	10-123
Nitrobenzene-d5	73	35-114
2-Fluorobiphenyl	58	43-116
Terphenyl-d14	37	33-141



Lab #: 125704

BATCH QC REPORT

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EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 27835
Units: ug/L
Diln Fac: 1

Prep Date: 05/28/96
Analysis Date: 05/30/96

MB Lab ID: QC22731

Analyte	Result	Reporting Limit
Phenol	ND	10
2-Chlorophenol	ND	10
Benzyl alcohol	ND	10
2-Methylphenol	ND	10
4-Methylphenol	ND	10
2-Nitrophenol	ND	50
2,4-Dimethylphenol	ND	10
Benzoic acid	ND	50
2,4-Dichlorophenol	ND	10
4-Chloro-3-methylphenol	ND	10
2,4,6-Trichlorophenol	ND	10
2,4,5-Trichlorophenol	ND	50
2,4-Dinitrophenol	ND	50
4-Nitrophenol	ND	50
4,6-Dinitro-2-methylphenol	ND	50
Pentachlorophenol	ND	10
N-Nitrosodimethylamine	ND	10
Aniline	ND	10
bis(2-Chloroethyl)ether	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
1,2-Dichlorobenzene	ND	10
bis(2-Chloroisopropyl) ether	ND	10
N-Nitroso-di-n-propylamine	ND	10
Hexachloroethane	ND	10
Nitrobenzene	ND	10
Isophorone	ND	10
bis(2-Chloroethoxy)methane	ND	10
1,2,4-Trichlorobenzene	ND	10
Naphthalene	ND	10
4-Chloroaniline	ND	10
Hexachlorobutadiene	ND	10
2-Methylnaphthalene	ND	10
Hexachlorocyclopentadiene	ND	10
2-Chloronaphthalene	ND	10
2-Nitroaniline	ND	50
Dimethylphthalate	ND	10
Acenaphthylene	ND	10
2,6-Dinitrotoluene	ND	10
3-Nitroaniline	ND	50

Lab #: 125704

BATCH QC REPORT

Page 2 of 2

EPA 8270 Semi-Volatile Organics

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: EPA 8270
 Prep Method: EPA 3520

METHOD BLANK

 Matrix: Water
 Batch#: 27835
 Units: ug/L
 Diln Fac: 1

 Prep Date: 05/28/96
 Analysis Date: 05/30/96

MB Lab ID: QC22731

Analyte	Result	Reporting Limit
Acenaphthene	ND	10
Dibenzofuran	ND	10
2,4-Dinitrotoluene	ND	10
Diethylphthalate	ND	10
4-Chlorophenyl-phenylether	ND	10
Fluorene	ND	10
4-Nitroaniline	ND	50
N-Nitrosodiphenylamine	ND	10
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	10
Hexachlorobenzene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Di-n-butylphthalate	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Butylbenzylphthalate	ND	10
3,3'-Dichlorobenzidine	ND	50
Benzo(a)anthracene	ND	10
Chrysene	ND	10
bis(2-Ethylhexyl)phthalate	ND	10
Di-n-octylphthalate	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(a)pyrene	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Dibenz(a,h)anthracene	ND	10
Benzo(g,h,i)perylene	ND	10
Surrogate	%Rec	Recovery Limits
2-Fluorophenol	85	21-110
Phenol-d5	79	10-110
2,4,6-Tribromophenol	69	10-123
Nitrobenzene-d5	75	35-114
2-Fluorobiphenyl	71	43-116
Terphenyl-d14	83	33-141



Lab #: 125704

BATCH QC REPORT

Page 1 of 1

EPA 8270 Semi-Volatile Organics		
Client: Subsurface Consultants	Analysis Method: EPA 8270	
Project#: 133.005	Prep Method: EPA 3520	
Location: KOT		
BLANK SPIKE/BLANK SPIKE DUPLICATE		
Matrix: Water	Prep Date: 05/28/96	
Batch#: 27835	Analysis Date: 05/30/96	
Units: ug/L		
Diln Fac: 1		

BS Lab ID: QC22732

Analyte	Spike Added	BS	%Rec #	Limits
Phenol	100	76.34	76	12-110
2-Chlorophenol	100	72.49	72	27-123
4-Chloro-3-methylphenol	100	71.7	72	23-97
4-Nitrophenol	100	51.27	51	10-80
Pentachlorophenol	100	42.09	42	9-103
1,4-Dichlorobenzene	50	31.35	63	36-97
N-Nitroso-di-n-propylamine	50	32.79	66	41-116
1,2,4-Trichlorobenzene	50	31.17	62	39-98
Acenaphthene	50	37.01	74	46-118
2,4-Dinitrotoluene	50	34.06	68	24-96
Pyrene	50	40.45	81	26-127
Surrogate	%Rec	Limits		
2-Fluorophenol	83	21-110		
Phenol-d5	84	10-110		
2,4,6-Tribromophenol	86	10-123		
Nitrobenzene-d5	77	35-114		
2-Fluorobiphenyl	74	43-116		
Terphenyl-d14	84	33-141		

BSD Lab ID: QC22733

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Phenol	100	73.95	74	12-110	3	<42
2-Chlorophenol	100	70.19	70	27-123	3	<40
4-Chloro-3-methylphenol	100	71.15	71	23-97	1	<42
4-Nitrophenol	100	55.03	55	10-80	8	<50
Pentachlorophenol	100	41.04	41	9-103	2	<50
1,4-Dichlorobenzene	50	28.05	56	36-97	12	<28
N-Nitroso-di-n-propylamine	50	34.4	69	41-116	4	<38
1,2,4-Trichlorobenzene	50	28.18	56	39-98	10	<28
Acenaphthene	50	35.82	72	46-118	3	<31
2,4-Dinitrotoluene	50	33.75	68	24-96	0	<38
Pyrene	50	40.17	80	26-127	1	<31
Surrogate	%Rec	Limits				
2-Fluorophenol	78	21-110				
Phenol-d5	79	10-110				
2,4,6-Tribromophenol	84	10-123				
Nitrobenzene-d5	75	35-114				
2-Fluorobiphenyl	71	43-116				
Terphenyl-d14	83	33-141				

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits
 RPD: 0 out of 11 outside limits
 Spike Recovery: 0 out of 22 outside limits
 DO: Surrogate diluted out

125704

CHAIN OF CUSTODY FORM

PROJECT NAME: KOT
 JOB NUMBER: 133.005 LAB: Curtis & Tompkins
 PROJECT CONTACT: Jeri Alexander TURNAROUND: Normal
 SAMPLED BY: Dennis Alexander REQUESTED BY: Jeri Alexander

ANALYSIS REQUESTED											
TEH (C-B TO C-50)											
TVH											
BTXE											
ROBO											
RI50											
Metals (Can 17)											
VOCS (P240)											
P270 w/ PNAS											
ORG											
PBS's											

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES						
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME							
1	SCI-MW-1					6	6			X			X		05	24	96	0630	X	X	X	X	X	X	X
2	SCI-MW-2					2	4			X			X		05	23	96	1045	X	X		X	X	X	X
3	SCI-MW-3					4	5			X			X		05	23	96	1400	X			X	X	X	X

CHAIN OF CUSTODY RECORD			
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
<i>[Signature]</i>	5/24/96 3:00	<i>[Signature]</i>	5/24/96 15:00
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:

Subsurface Consultants, Inc.
 171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
 (510) 268-0461 • FAX: 510-268-0137



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 04-JUN-96
Lab Job Number: 125711
Project ID: 133.005
Location: KOT

Reviewed by:

Teresa K Morris

Reviewed by:

Troy BBA

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TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125711-001	MW-1	27882	05/24/96	05/30/96	05/30/96	
125711-002	MW-2	27882	05/24/96	05/30/96	05/30/96	
125711-003	MW-4	27882	05/24/96	05/30/96	05/30/96	
125711-004	MW-5	27882	05/24/96	05/30/96	05/30/96	

Matrix: Water

Analyte	Units	125711-001	125711-002	125711-003	125711-004
Diln Fac:		1	1	5	1
Gasoline	ug/L	<50	<50	690 Y	82 Y
Surrogate					
Trifluorotoluene	%REC	89	89	92	91
Bromobenzene	%REC	79	79	81	81

Y: Sample exhibits fuel pattern which does not resemble standard

FileName : G:\GC05\150H037.raw
Start Time : 0.00 min
Scale Factor: -1

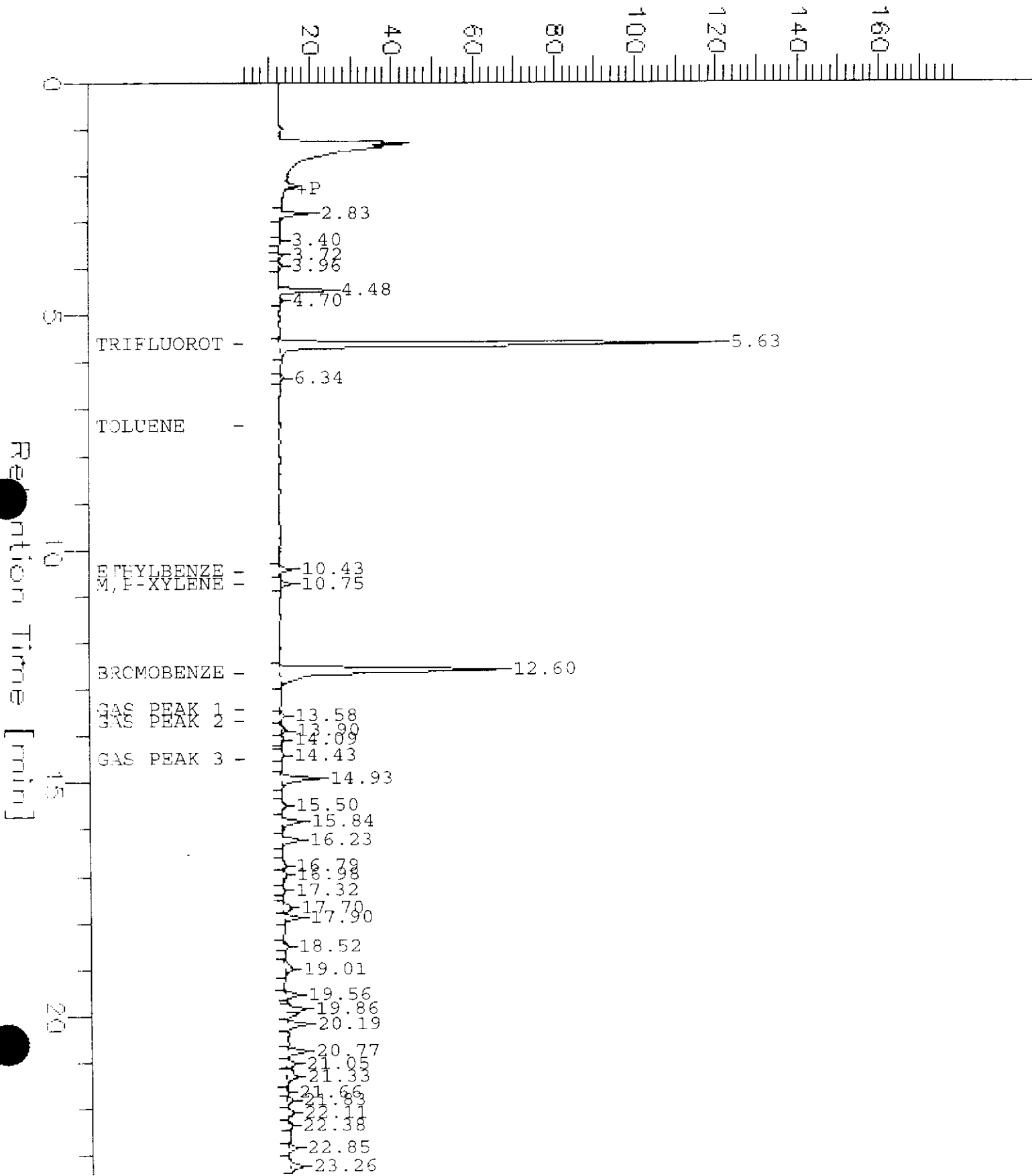
End Time : 23.42 min
Plot Offset: 4 mV

Date : 5/30/96 3:33 PM
Low Point : 3.71 mV
Plot Scale: 175 mV

Page 1 of 1
High Point : 178.71 mV

125711-003

Response [mV]



FileName : G:\GC05\150H021.raw
Start Time : 0.00 min
Scale Factor: -1

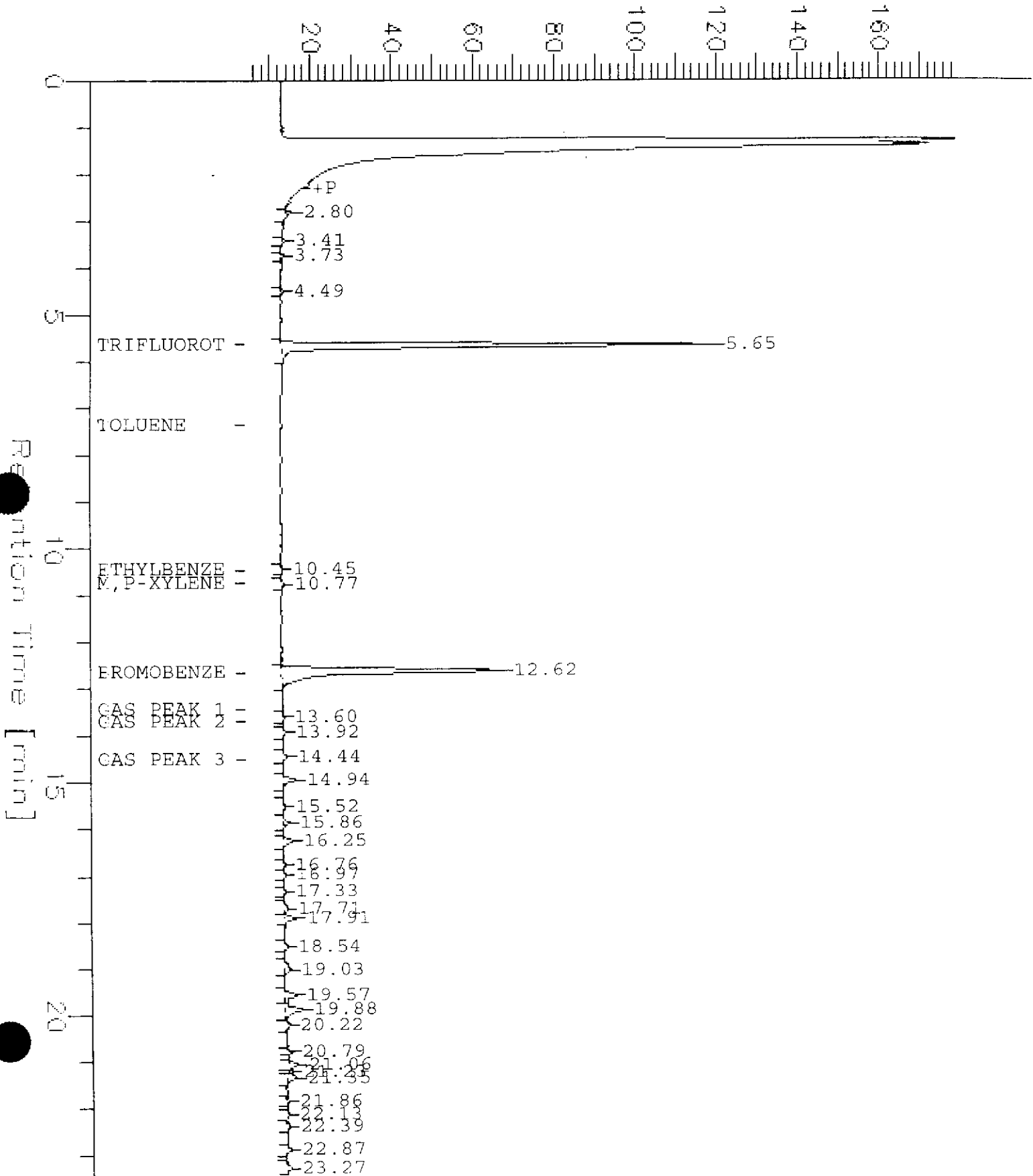
End Time : 23.42 min
Plot Offset: 4 mV

Date : 5/30/96 5:13 AM
Low Point : 4.07 mV
Plot Scale: 175 mV

Page 1 of 1
High Point : 179.07 mV

125711-004

Response [mV]



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125711-005	MW-6 AFTER PURGE	27882	05/24/96	05/30/96	05/30/96	
125711-006	MW-6 BEFORE PURGE	27882	05/24/96	05/30/96	05/30/96	

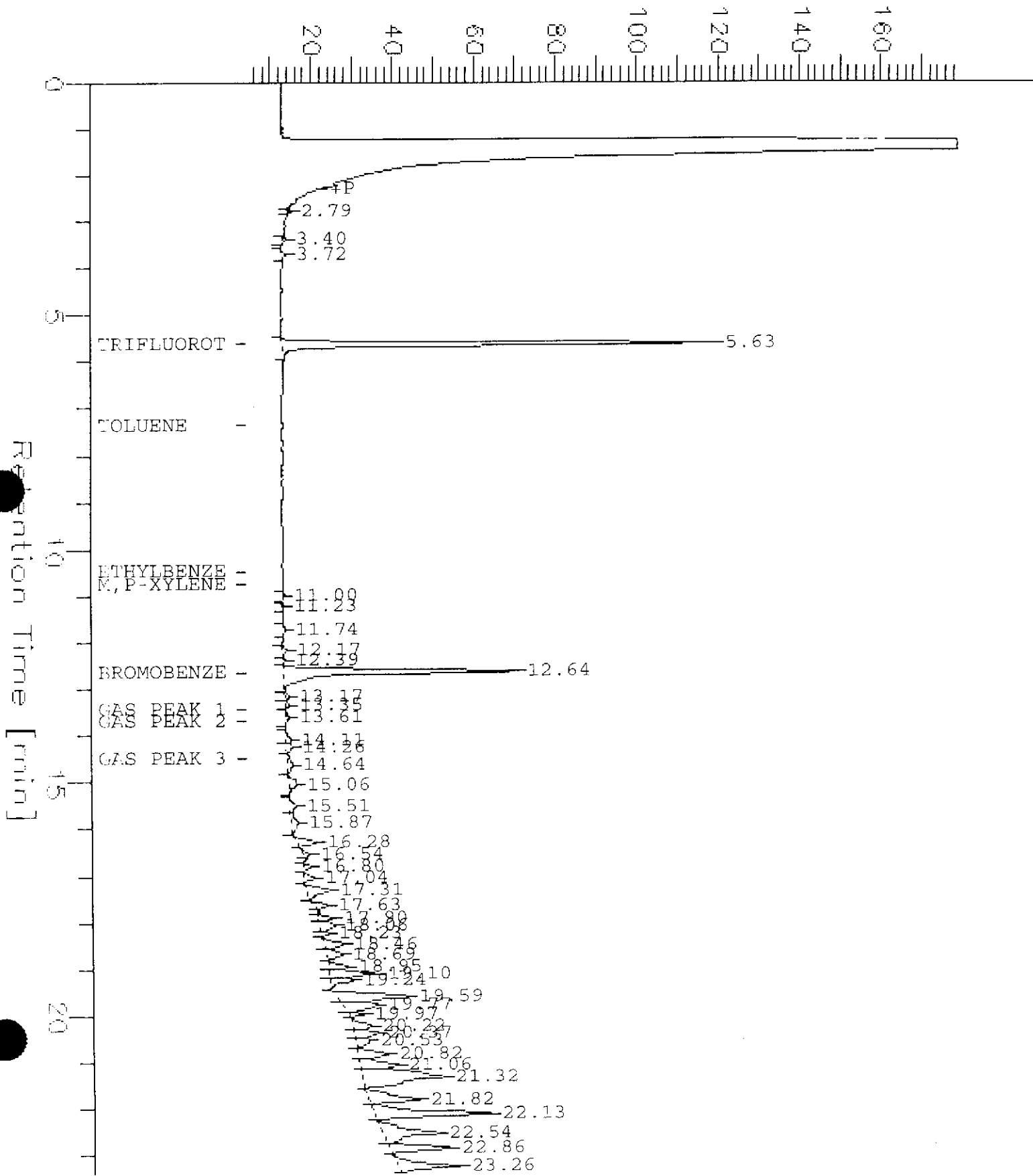
Matrix: Water

Analyte	Units	125711-005	125711-006
Diln Fac:		500	500
Gasoline	ug/L	280000 YH	900000 YH
Surrogate			
Trifluorotoluene	%REC	90	90
Bromobenzene	%REC	85	85

Y: Sample exhibits fuel pattern which does not resemble standard
H: Heavier hydrocarbons than indicated standard

125711-005

Response [mV]



FileName : G:\GC05\150H031.raw
Start Time : 0.00 min
Scale Factor: -1

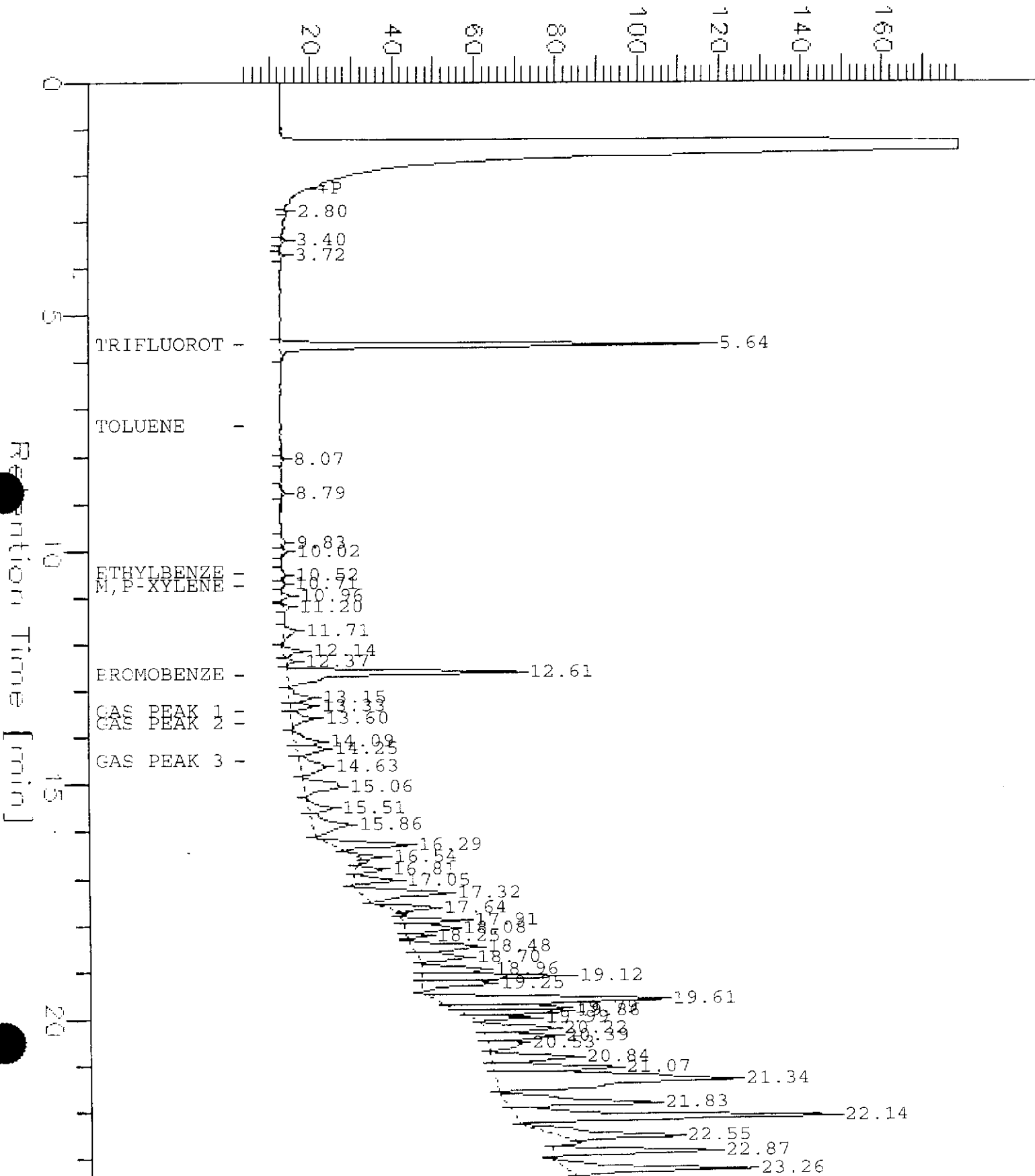
End Time : 23.42 min
Plot Offset: 4 mV

Date : 5/30/96 11:41 AM
Low Point : 3.95 mV
Plot Scale: 175 mV

Page 1 of 1
High Point : 178.95 mV

125711-004

Response [mV]



Lab #: 125711

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons			
Client:	Subsurface Consultants	Analysis Method:	CA LUFT (EPA 8015M)
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
METHOD BLANK			
Matrix:	Water	Prep Date:	05/29/96
Batch#:	27882	Analysis Date:	05/29/96
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC22896

Analyte	Result		
Gasoline	<50		
Surrogate	%Rec	Recovery Limits	
Trifluorotoluene	85	69-120	
Bromobenzene	71	70-122	

DO: Surrogate diluted out

Lab #: 125711

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

 Matrix: Water
 Batch#: 27882
 Units: ug/L
 Diln Fac: 1

 Prep Date: 05/29/96
 Analysis Date: 05/29/96

LCS Lab ID: QC22897

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	2081	2006	104	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	88	69-120		
Bromobenzene	87	70-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

Lab #: 125711

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons	
Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	
MATRIX SPIKE/MATRIX SPIKE DUPLICATE	
Field ID: ZZZZZZ	Sample Date: 05/28/96
Lab ID: 125723-001	Received Date: 05/28/96
Matrix: Water	Prep Date: 05/29/96
Batch#: 27882	Analysis Date: 05/29/96
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC22899

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	2000	860	2839	99	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	93	69-120			
Bromobenzene	108	70-122			

MSD Lab ID: QC22900

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	2000	2882	101	75-125	2	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	93	69-120				
Bromobenzene	109	70-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125711-001	MW-1	27890	05/24/96	05/29/96	05/31/96	
125711-002	MW-2	27890	05/24/96	05/29/96	05/31/96	
125711-003	MW-4	27890	05/24/96	05/29/96	05/31/96	
125711-004	MW-5	27890	05/24/96	05/29/96	05/31/96	

Matrix: Water

Analyte	Units	125711-001	125711-002	125711-003	125711-004
Diln Fac:		1	1	5	1
Diesel C12-C22	ug/L	870 YH	2800 YH	37000	4600 YH
Motor Oil C22-C50	ug/L	630 Y	1200 Y	2800 YL	1900 Y
Surrogate					
Hexacosane	%REC	105	109	81	103

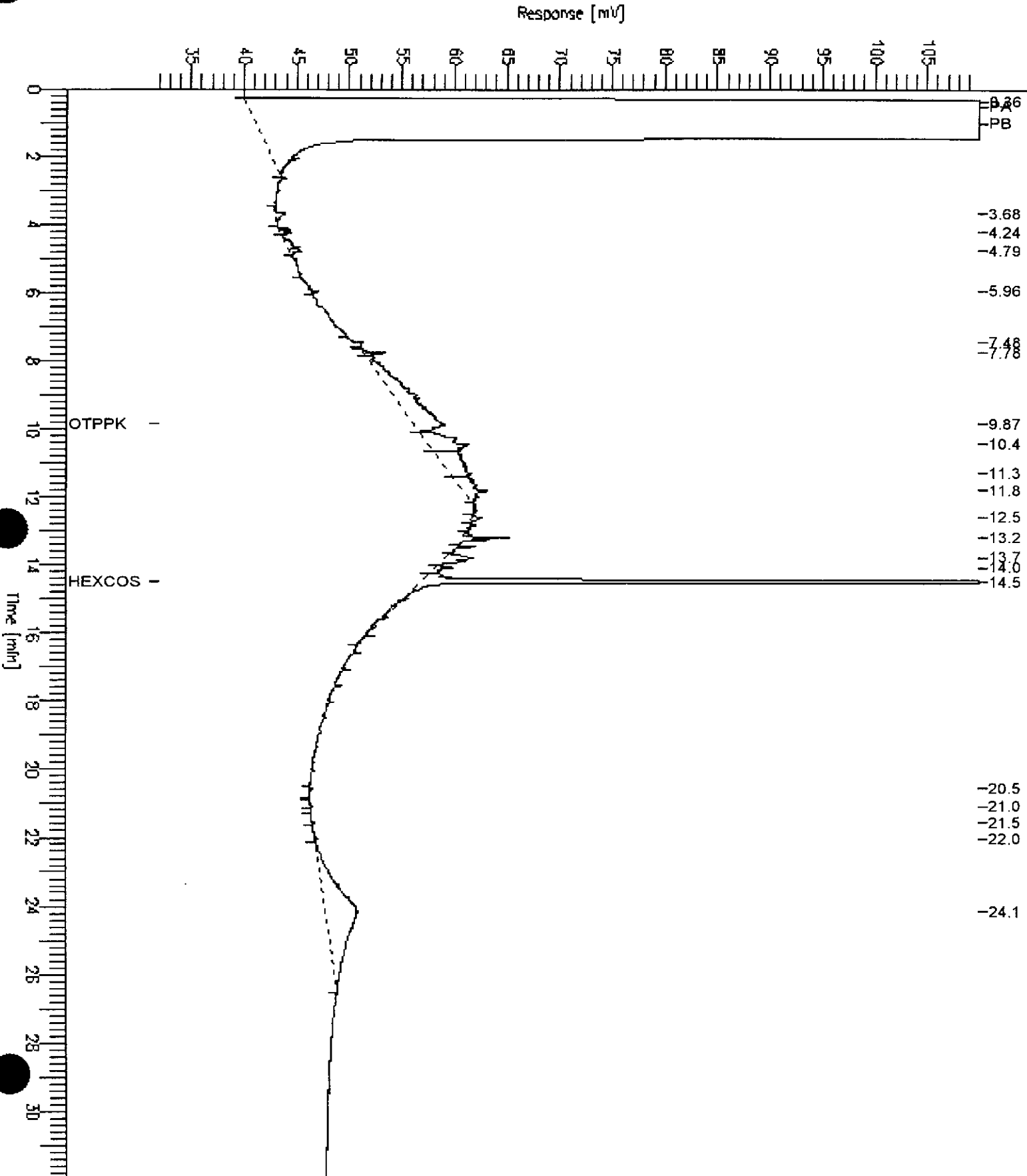
- Y: Sample exhibits fuel pattern which does not resemble standard
- H: Heavier hydrocarbons than indicated standard
- L: Lighter hydrocarbons than indicated standard

GC15 Channel B Surrogate

Sample Name : 125711-001,27890
 FileName : C:\GC15\CHB\151B022.raw
 Method : DUAL
 Start Time : 0.00 min
 Scale Factor: 0.0

End Time : 31.90 min
 Plot Offset: 32 mV

Sample #: 500:2.5
 Date : 5/31/96 11:30 AM
 Time of Injection: 5/31/96 10:55 AM
 Low Point : 32.00 mV
 High Point : 110.00 mV
 Plot Scale: 78.0 mV



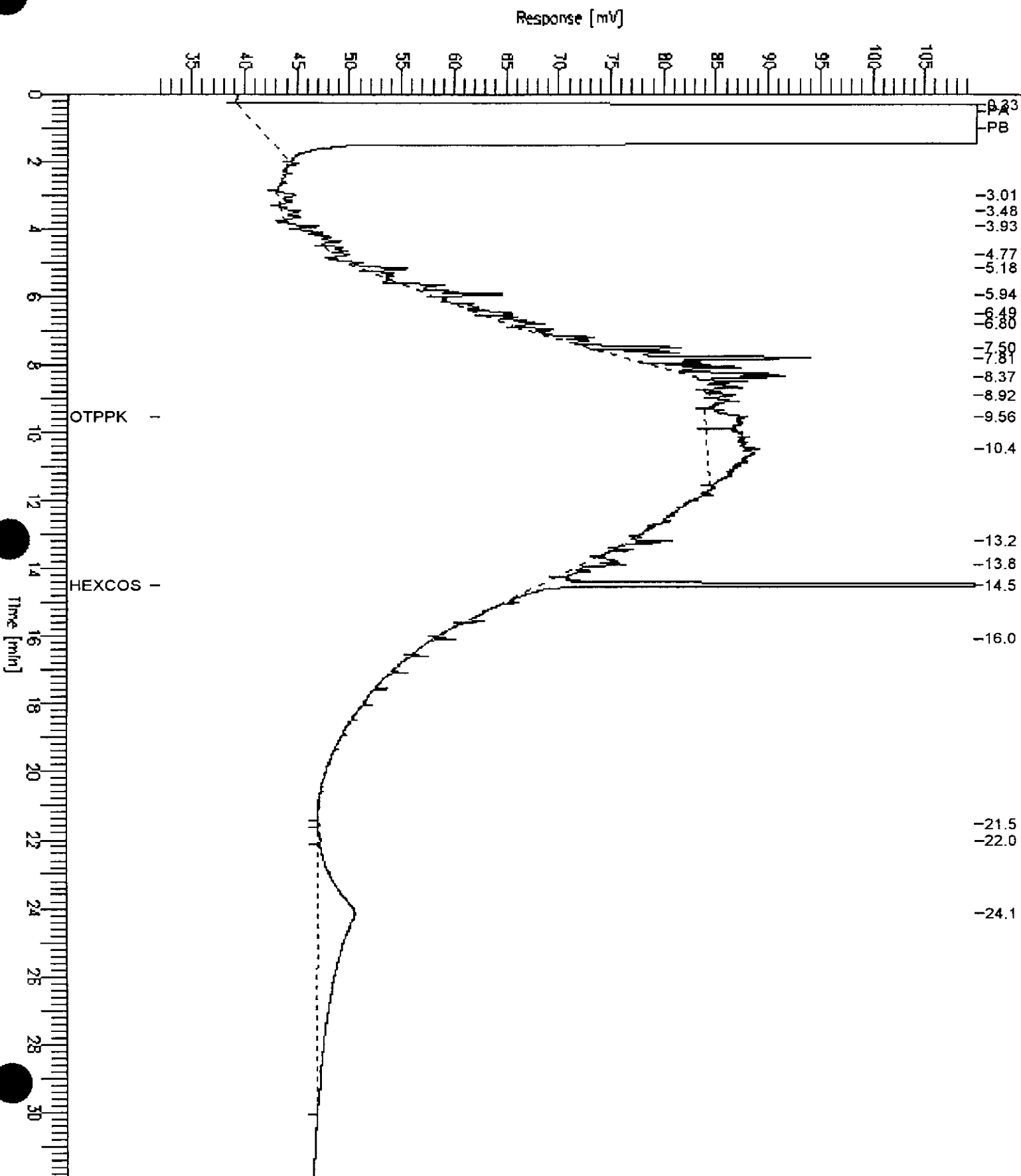
GC15 Channel B Surrogate

Sample Name : 125711-002,27890
FileName : C:\GC15\CHB\151B023.raw
Method : DUAL
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 31.90 min
Plot Offset: 32 mV

Sample #: 500:2.5
Date : 5/31/96 12:14 PM
Time of Injection: 5/31/96 11:40 AM
Low Point : 32.00 mV
Plot Scale: 78.0 mV

Page 1 of 1



GC15 Channel A TEH

Sample Name : 125711-003,27890

Sample #: 500:12.5

Page 1 of 1

FileName : C:\GC15\CHB\151B038.RAW

Date : 6/3/96 11:49 AM

Method : BTEHJ.MTH

Time of Injection: 6/1/96 02:21 AM

Start Time : 0.01 min

End Time : 31.91 min

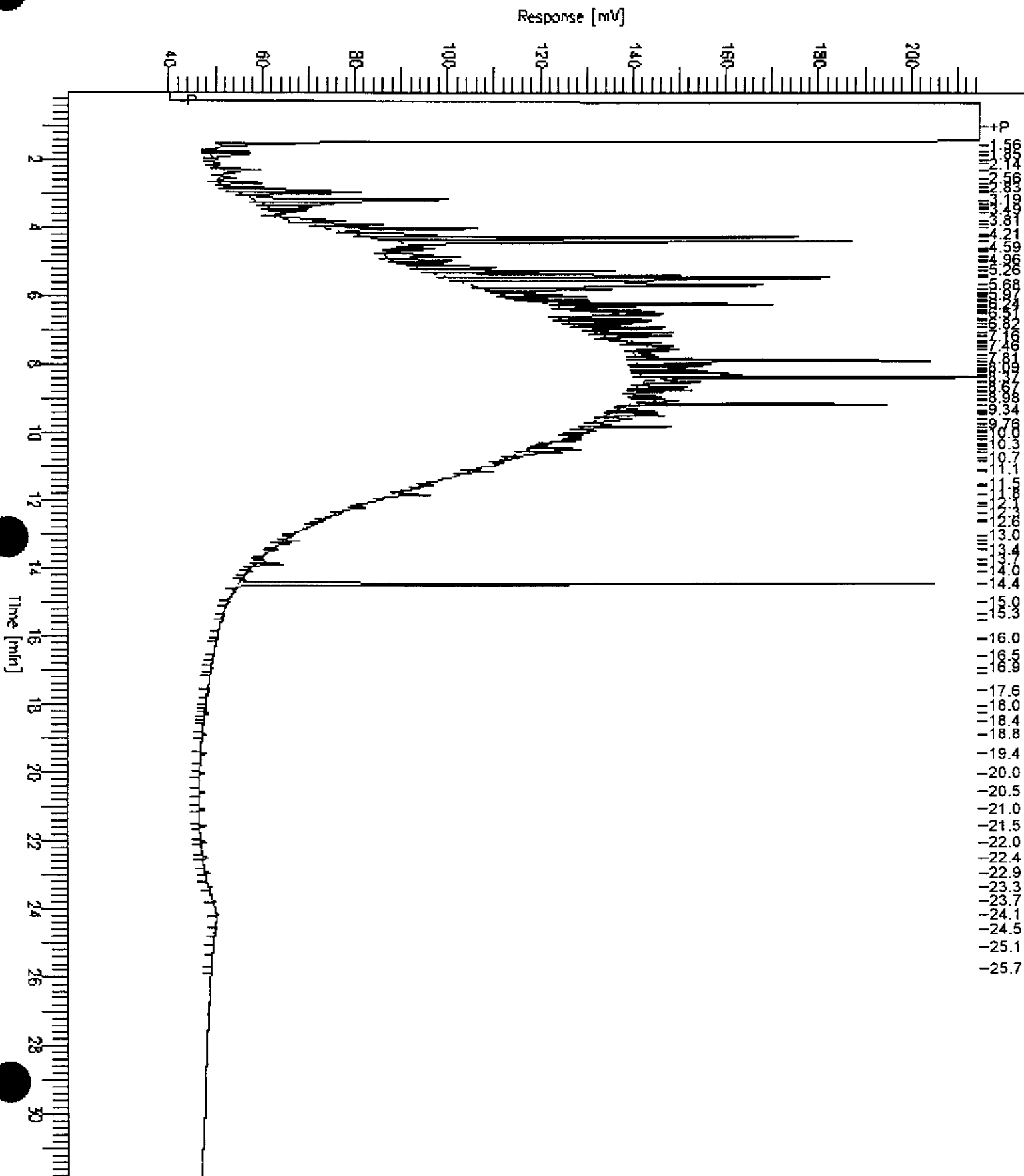
Low Point : 38.32 mV

High Point : 214.87 mV

Scale Factor: 0.0

Plot Offset: 38 mV

Plot Scale: 176.6 mV



GC15 Channel B Surrogate

Sample Name : 125711-004,27890

FileName : C:\GC15\CHB\151B025.RAW

Method : BSURR.MTH

Start Time : 0.01 min

File Factor : 0.0

Sample #: 500:2.5

Date : 5/31/96 01:51 PM

Time of Injection: 5/31/96 01:10 PM

Low Point : 34.83 mV

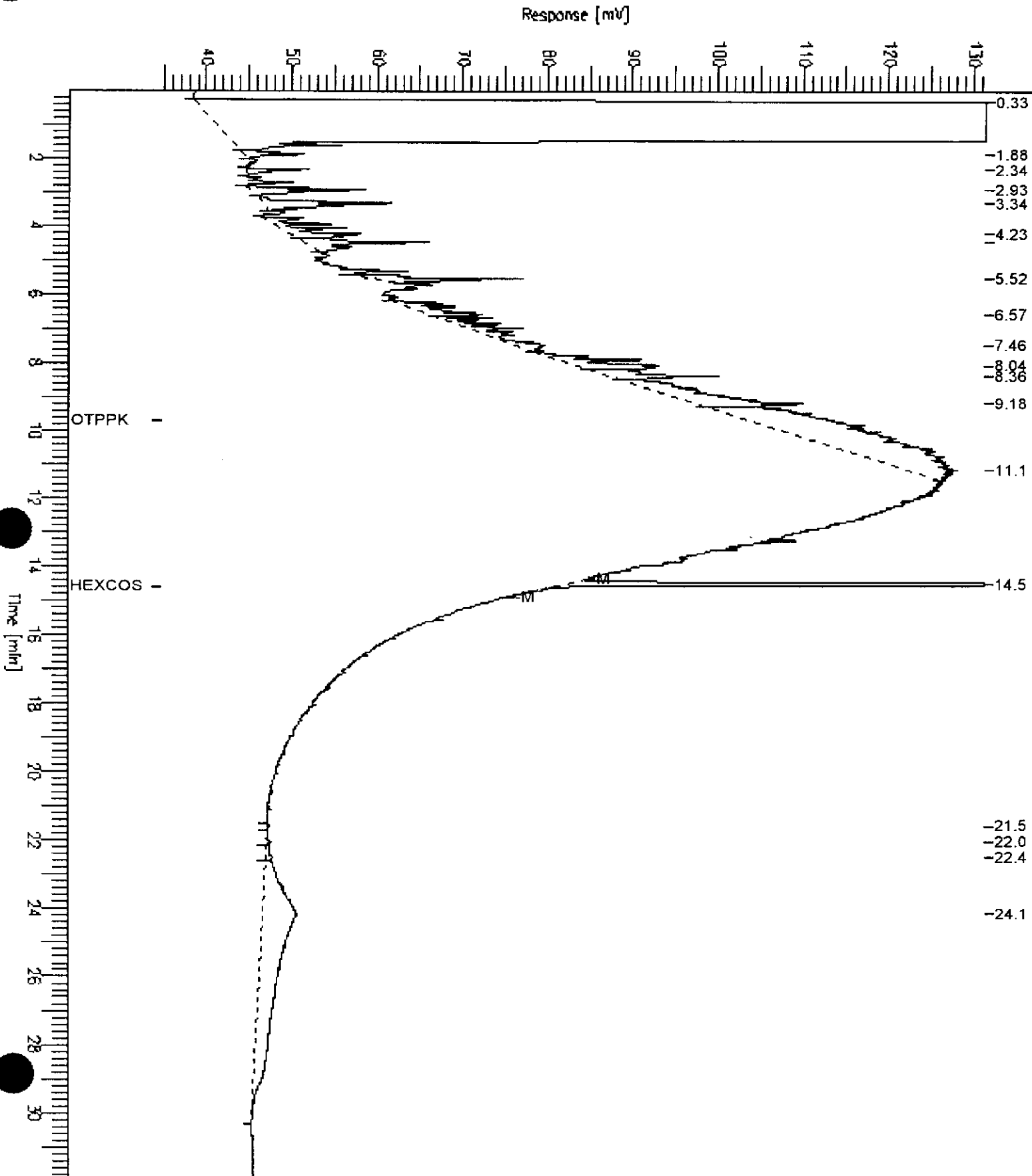
Plot Scale: 96.6 mV

Page 1 of 1

End Time : 31.91 min

Plot Offset: 35 mV

High Point : 131.46 mV





TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125711-005	MW-6 AFTER PURGE	27890	05/24/96	05/29/96	05/31/96	
125711-006	MW-6 BEFORE PURGE	27890	05/24/96	05/29/96	05/31/96	

Matrix: Water

Analyte	Units	125711-005	125711-006
Diln Fac:		40	50
Diesel C12-C22	ug/L	240000	470000
Motor Oil C22-C50	ug/L	5500 YL	13000 YL
Surrogate			
Hexacosane	%REC	DO	DO

DO: Surrogate diluted out

Y: Sample exhibits fuel pattern which does not resemble standard

L: Lighter hydrocarbons than indicated standard

GC15 Channel A TEH

Sample Name : 125711-005,27890

Sample #: 500:100

Page 1 of 1

FileName : C:\GC15\CHB\151B026.RAW

Date : 5/31/96 04:39 PM

Method : BTEHJ.MTH

Time of Injection: 5/31/96 01:55 PM

Start Time : 0.01 min

End Time : 31.91 min

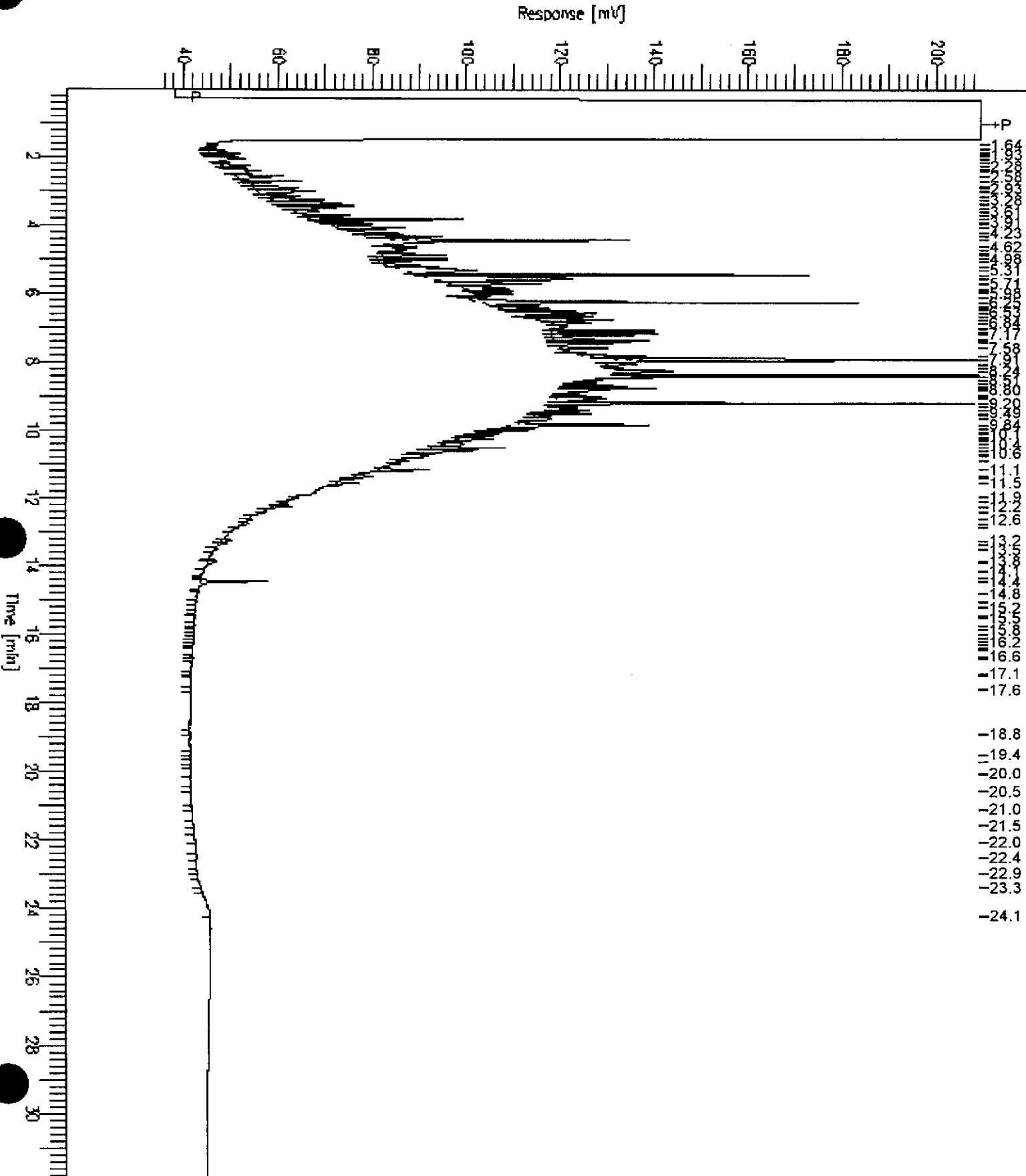
Low Point : 34.87 mV

High Point : 209.62 mV

Scale Factor: 0.0

Plot Offset: 35 mV

Plot Scale: 174.8 mV



GC15 Channel B Surrogate

Sample Name : 125711-006,27890

FileName : C:\GC15\CHB\151B027.RAW

Method : BSURR.MTH

Start Time : 0.01 min

Scale Factor: 0.0

End Time : 31.91 min

Plot Offset: 36 mV

Sample #: 250:125

Date : 5/31/96 04:58 PM

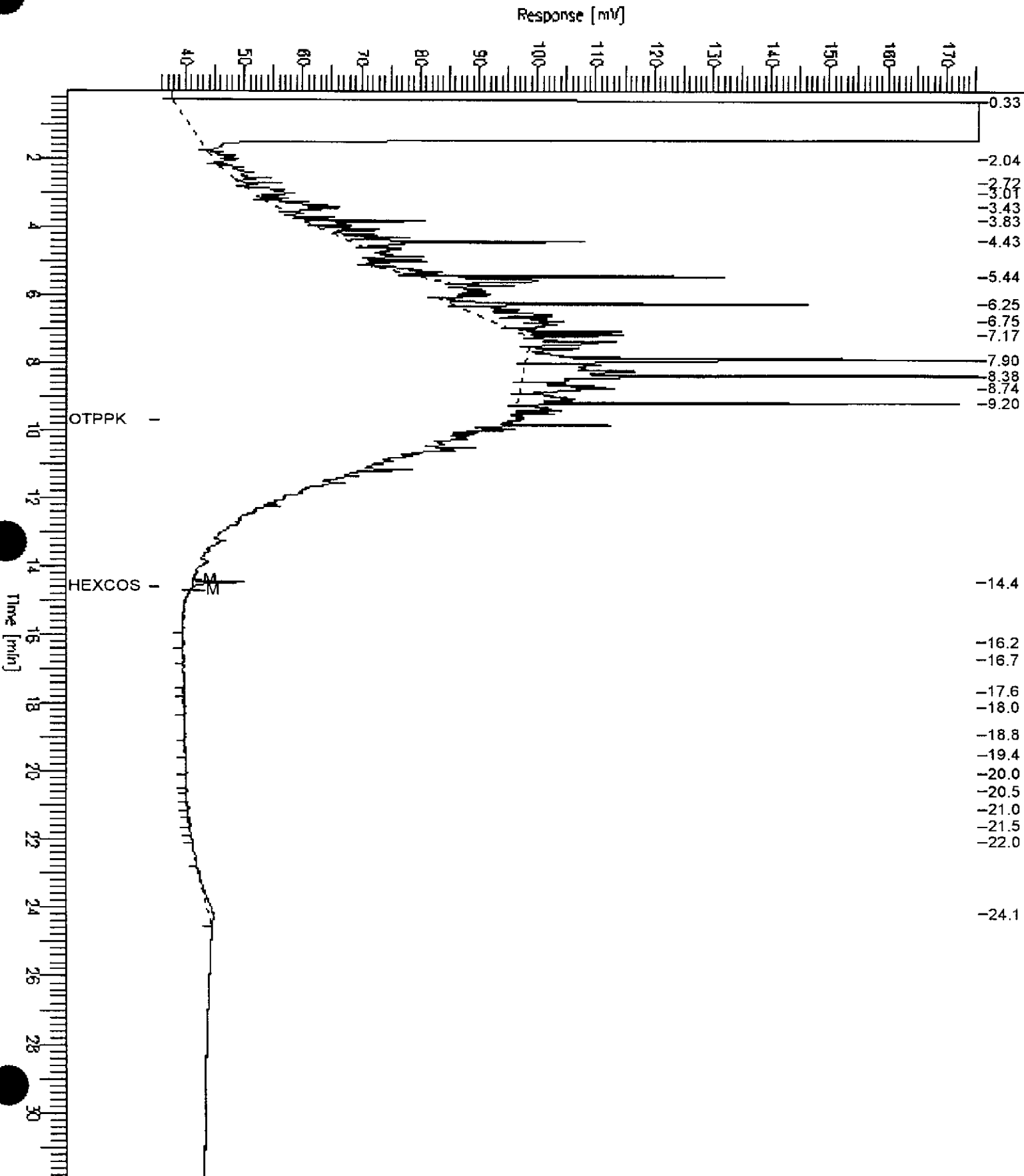
Time of Injection: 5/31/96 02:40 PM

Low Point : 35.61 mV

Plot Scale: 140.0 mV

Page 1 of 1

High Point : 175.65 mV





Lab #: 125711

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 27890
Units: ug/L
Diln Fac: 1

Prep Date: 05/29/96
Analysis Date: 05/30/96

MB Lab ID: QC22929

Analyte	Result	
Diesel C12-C22	<50	
Motor Oil C22-C50	<250	
Surrogate	%Rec	Recovery Limits
Hexacosane	105	60-140



Lab #: 125711

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27890
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/29/96
 Analysis Date: 05/30/96

BS Lab ID: QC22930

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	2509	101	60-140
Surrogate	%Rec	Limits		
Hexacosane	100	60-140		

BSD Lab ID: QC22931

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2602	105	60-140	4	<35
Surrogate	%Rec	Limits				
Hexacosane	100	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125711-001	MW-1	27882	05/24/96	05/30/96	05/30/96	
125711-002	MW-2	27882	05/24/96	05/30/96	05/30/96	
125711-003	MW-4	27882	05/24/96	05/30/96	05/30/96	
125711-004	MW-5	27882	05/24/96	05/30/96	05/30/96	

Matrix: Water

Analyte	Units	125711-001	125711-002	125711-003	125711-004
Diln Fac:		1	1	5	1
Benzene	ug/L	<0.5	<0.5	44	<0.5
Toluene	ug/L	<0.5	<0.5	<2.5	<0.5
Ethylbenzene	ug/L	<0.5	<0.5	18	<0.5
m,p-Xylenes	ug/L	<0.5	<0.5	7.7	<0.5
o-Xylene	ug/L	<0.5	<0.5	<2.5	<0.5
Surrogate					
Trifluorotoluene	%REC	97	99	99	99
Bromobenzene	%REC	88	88	90	91



BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125711-005	MW-6 AFTER PURGE	27882	05/24/96	05/30/96	05/30/96	
125711-006	MW-6 BEFORE PURGE	27882	05/24/96	05/30/96	05/30/96	

Matrix: Water

Analyte	Units	125711-005	125711-006
Diln Fac:		500	500
Benzene	ug/L	<250	<250
Toluene	ug/L	<250	<250
Ethylbenzene	ug/L	<250	<250
m,p-Xylenes	ug/L	<250	<250
o-Xylene	ug/L	<250	<250
Surrogate			
Trifluorotoluene	%REC	99	97
Bromobenzene	%REC	94	95



Lab #: 125711

BATCH QC REPORT

Page 1 of 1

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27882
Units: ug/L
Diln Fac: 1

Prep Date: 05/29/96
Analysis Date: 05/29/96

MB Lab ID: QC22896

Analyte	Result	
Benzene	<0.5	
Toluene	<0.5	
Ethylbenzene	<0.5	
m,p-Xylenes	<0.5	
o-Xylene	<0.5	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	92	58-130
Bromobenzene	80	62-131

DO: Surrogate diluted out



Lab #: 125711

BATCH QC REPORT

Page 1 of 1

BTXE			
Client: Subsurface Consultants	Analysis Method: EPA 8020		
Project#: 133.005	Prep Method: EPA 5030		
Location: KOT			
LABORATORY CONTROL SAMPLE			
Matrix: Water	Prep Date: 05/29/96		
Batch#: 27882	Analysis Date: 05/29/96		
Units: ug/L			
Diln Fac: 1			

LCS Lab ID: QC22898

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	22.1	20	111	80-120
Toluene	21.9	20	110	80-120
Ethylbenzene	21.7	20	109	80-120
m,p-Xylenes	45.4	40	114	80-120
o-Xylene	23	20	115	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	93	58-130		
Bromobenzene	83	62-131		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



PCBs

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: PCB
Prep Method: EPA 3550
Cleanup Method: EPA Acid

Field ID: MW-6 BEFORE PURGE
Lab ID: 125711-006
Matrix: Water
Batch#: 27850
Units: ug/L
Diln Fac: 1

Sampled: 05/24/96
Received: 05/24/96
Extracted: 05/28/96
Analyzed: 05/30/96

Analyte	Result	Reporting Limit
Aroclor-1016	ND	2.0
Aroclor-1221	ND	2.0
Aroclor-1232	ND	2.0
Aroclor-1242	ND	2.0
Aroclor-1248	ND	2.0
Aroclor-1254	ND	2.0
Aroclor-1260	ND	2.0

Surrogate	%Recovery	Recovery Limits
TCMX	62	60-150
Decachlorobiphenyl	38	30-130



Lab #: 125711

BATCH QC REPORT

Page 1 of 1

Polychlorinated Biphenyls

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: PCB
 Prep Method: EPA 3550
 Cleanup Method: EPA Acid

METHOD BLANK

Matrix: Water
 Batch#: 27850
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/28/96
 Analysis Date: 05/30/96

MB Lab ID: QC22778

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Surrogate	%Rec	Recovery Limits
TCMX	99	60-150
Decachlorobiphenyl	95	30-130



Lab #: 125711

BATCH QC REPORT

Page 1 of 1

Polychlorinated Biphenyls

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: PCB
 Prep Method: EPA 3550
 Cleanup Method: EPA Acid

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27850
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/28/96
 Analysis Date: 05/30/96

BS Lab ID: QC22779

Analyte	Spike Added	BS	%Rec #	Limits
Aroclor-1260	6.67	7.3	111	50-128
Surrogate	%Rec	Limits		
TCMX	93	60-150		
Decachlorobiphenyl	82	30-130		

BSD Lab ID: QC22780

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Aroclor-1260	6.67	7.5	114	50-128	3	<20
Surrogate	%Rec	Limits				
TCMX	98	60-150				
Decachlorobiphenyl	103	30-130				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

SAMPLE ID: MW-6 BEFORE PURGE
 LAB ID: 125711-006
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Water

DATE SAMPLED: 05/24/96
 DATE RECEIVED: 05/24/96
 DATE REPORTED: 06/04/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	27878	EPA 6010A	05/30/96
Arsenic	ND	5.0	1	27878	EPA 6010A	05/30/96
Barium	170	10	1	27878	EPA 6010A	05/30/96
Beryllium	ND	2.0	1	27878	EPA 6010A	05/30/96
Cadmium	ND	2.0	1	27878	EPA 6010A	05/30/96
Chromium (total)	ND	10	1	27878	EPA 6010A	05/30/96
Cobalt	ND	20	1	27878	EPA 6010A	05/30/96
Copper	ND	10	1	27878	EPA 6010A	05/30/96
Lead	3.3	3.0	1	27878	EPA 6010A	05/30/96
Mercury	0.28	0.20	1	27875	EPA 7470	05/30/96
Molybdenum	ND	20	1	27878	EPA 6010A	05/30/96
Nickel	ND	20	1	27878	EPA 6010A	05/30/96
Selenium	14	5.0	1	27878	EPA 6010A	05/30/96
Silver	ND	5.0	1	27878	EPA 6010A	05/30/96
Thallium	ND	5.0	1	27878	EPA 6010A	05/30/96
Vanadium	ND	10	1	27878	EPA 6010A	05/30/96
Zinc	34	20	1	27878	EPA 6010A	05/30/96

ND = Not detected at or above reporting limit

CLIENT: Subsurface Consultants
 JOB NUMBER: 125711

DATE REPORTED: 06/04/96

 BATCH QC REPORT
 PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	ug/L	1	27878	EPA 6010A	05/30/96
Arsenic	ND	5	ug/L	1	27878	EPA 6010A	05/30/96
Barium	ND	10	ug/L	1	27878	EPA 6010A	05/30/96
Beryllium	ND	2	ug/L	1	27878	EPA 6010A	05/30/96
Cadmium	ND	2	ug/L	1	27878	EPA 6010A	05/30/96
Chromium (total)	ND	10	ug/L	1	27878	EPA 6010A	05/30/96
Cobalt	ND	20	ug/L	1	27878	EPA 6010A	05/30/96
Copper	ND	10	ug/L	1	27878	EPA 6010A	05/30/96
Lead	ND	3	ug/L	1	27878	EPA 6010A	05/30/96
Mercury	ND	0.2	ug/L	1	27875	EPA 7470	05/30/96
Molybdenum	ND	20	ug/L	1	27878	EPA 6010A	05/30/96
Nickel	ND	20	ug/L	1	27878	EPA 6010A	05/30/96
Selenium	ND	5	ug/L	1	27878	EPA 6010A	05/30/96
Silver	ND	5	ug/L	1	27878	EPA 6010A	05/30/96
Thallium	ND	5	ug/L	1	27878	EPA 6010A	05/30/96
Vanadium	ND	10	ug/L	1	27878	EPA 6010A	05/30/96
Zinc	ND	20	ug/L	1	27878	EPA 6010A	05/30/96

ND = Not Detected at or above reporting limit

CLIENT: Subsurface Consultants
 JOB NUMBER: 125711

DATE REPORTED: 06/04/96

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	500	549	553	ug/L	110	111	80-120	1	35	27878	EPA 6010A	05/30/96
Arsenic	2000	1960	1960	ug/L	98	98	80-120	0	35	27878	EPA 6010A	05/30/96
Barium	2000	1910	1910	ug/L	96	96	80-120	0	35	27878	EPA 6010A	05/30/96
Beryllium	50	51.4	51.8	ug/L	103	104	80-120	1	35	27878	EPA 6010A	05/30/96
Cadmium	50	50.2	50.6	ug/L	100	101	80-120	1	35	27878	EPA 6010A	05/30/96
Chromium (total)	200	189	192	ug/L	95	96	80-120	2	35	27878	EPA 6010A	05/30/96
Cobalt	500	472	474	ug/L	94	95	80-120	0	35	27878	EPA 6010A	05/30/96
Copper	250	248	251	ug/L	99	100	80-120	1	35	27878	EPA 6010A	05/30/96
Lead	500	490	495	ug/L	98	99	80-120	1	35	27878	EPA 6010A	05/30/96
Mercury	5	4.863	5.187	ug/L	97	104	80-120	6	35	27875	EPA 7470	05/30/96
Molybdenum	400	377	377	ug/L	94	94	80-120	0	35	27878	EPA 6010A	05/30/96
Nickel	500	510	511	ug/L	102	102	80-120	0	35	27878	EPA 6010A	05/30/96
Selenium	2000	1950	1950	ug/L	98	98	80-120	0	35	27878	EPA 6010A	05/30/96
Silver	100	99.1	101	ug/L	99	101	80-120	2	35	27878	EPA 6010A	05/30/96
Thallium	2000	1940	1970	ug/L	97	99	80-120	2	35	27878	EPA 6010A	05/30/96
Vanadium	500	482	487	ug/L	96	97	80-120	1	35	27878	EPA 6010A	05/30/96
Zinc	500	478	480	ug/L	96	96	80-120	0	35	27878	EPA 6010A	05/30/96



Volatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

Field ID: MW-6 BEFORE PURGE
Lab ID: 125711-006
Matrix: Water
Batch#: 27920
Units: ug/L
Diln Fac: 5000

Sampled: 05/24/96
Received: 05/24/96
Extracted: 06/01/96
Analyzed: 06/01/96

Analyte	Result	Reporting Limit
Chloromethane	ND	50000
Bromomethane	ND	50000
Vinyl Chloride	ND	50000
Chloroethane	ND	50000
Methylene Chloride	ND	100000
Acetone	ND	100000
Carbon Disulfide	ND	25000
Trichlorofluoromethane	ND	25000
1,1-Dichloroethene	ND	25000
1,1-Dichloroethane	ND	25000
trans-1,2-Dichloroethene	ND	25000
cis-1,2-Dichloroethene	ND	25000
Chloroform	ND	25000
Freon 113	ND	25000
1,2-Dichloroethane	ND	25000
2-Butanone	ND	50000
1,1,1-Trichloroethane	ND	25000
Carbon Tetrachloride	ND	25000
Vinyl Acetate	ND	250000
Bromodichloromethane	ND	25000
1,2-Dichloropropane	ND	25000
cis-1,3-Dichloropropene	ND	25000
Trichloroethene	ND	25000
Dibromochloromethane	ND	25000
1,1,2-Trichloroethane	ND	25000
Benzene	ND	25000
trans-1,3-Dichloropropene	ND	25000
Bromoform	ND	25000
2-Hexanone	ND	50000
4-Methyl-2-Pentanone	ND	50000
1,1,2,2-Tetrachloroethane	ND	25000
Tetrachloroethene	ND	25000
Toluene	ND	25000
Chlorobenzene	ND	25000
Ethylbenzene	ND	25000
Styrene	ND	25000
m,p-Xylenes	ND	25000
o-Xylene	ND	25000
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	96	68-126
Toluene-d8	97	87-125
Bromofluorobenzene	100	79-122

Lab #: 125711

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics		
Client: Subsurface Consultants	Analysis Method: EPA 8240	
Project#: 133.005	Prep Method: EPA 5030	
Location: KOT		
METHOD BLANK		
Matrix: Water	Prep Date: 05/31/96	
Batch#: 27920	Analysis Date: 05/31/96	
Units: ug/L		
Diln Fac: 1		

MB Lab ID: QC23120

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	82	68-126
Toluene-d8	98	87-125
Bromofluorobenzene	93	79-122

Lab #: 125711

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics			
Client:	Subsurface Consultants	Analysis Method:	EPA 8240
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
METHOD BLANK			
Matrix:	Water	Prep Date:	05/31/96
Batch#:	27920	Analysis Date:	05/31/96
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC23060

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	101	68-126
Toluene-d8	101	87-125
Bromofluorobenzene	92	79-122



Lab #: 125711

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics			
Client: Subsurface Consultants	Analysis Method: EPA 8240		
Project#: 133.005	Prep Method: EPA 5030		
Location: KOT			
LABORATORY CONTROL SAMPLE			
Matrix: Water	Prep Date: 05/31/96		
Batch#: 27920	Analysis Date: 05/31/96		
Units: ug/L			
Diln Fac: 1			

LCS Lab ID: QC23059

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	47.06	50	94	51-180
Trichloroethene	51.61	50	103	73-141
Benzene	49.74	50	100	78-142
Toluene	51.54	50	103	76-150
Chlorobenzene	50.23	50	100	83-129
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	92	68-126		
Toluene-d8	98	87-125		
Bromofluorobenzene	91	79-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8270
 Prep Method: EPA 3520

Field ID: MW-6 BEFORE PURGE
 Lab ID: 125711-006
 Matrix: Water
 Batch#: 27835
 Units: ug/L
 Diln Fac: 1

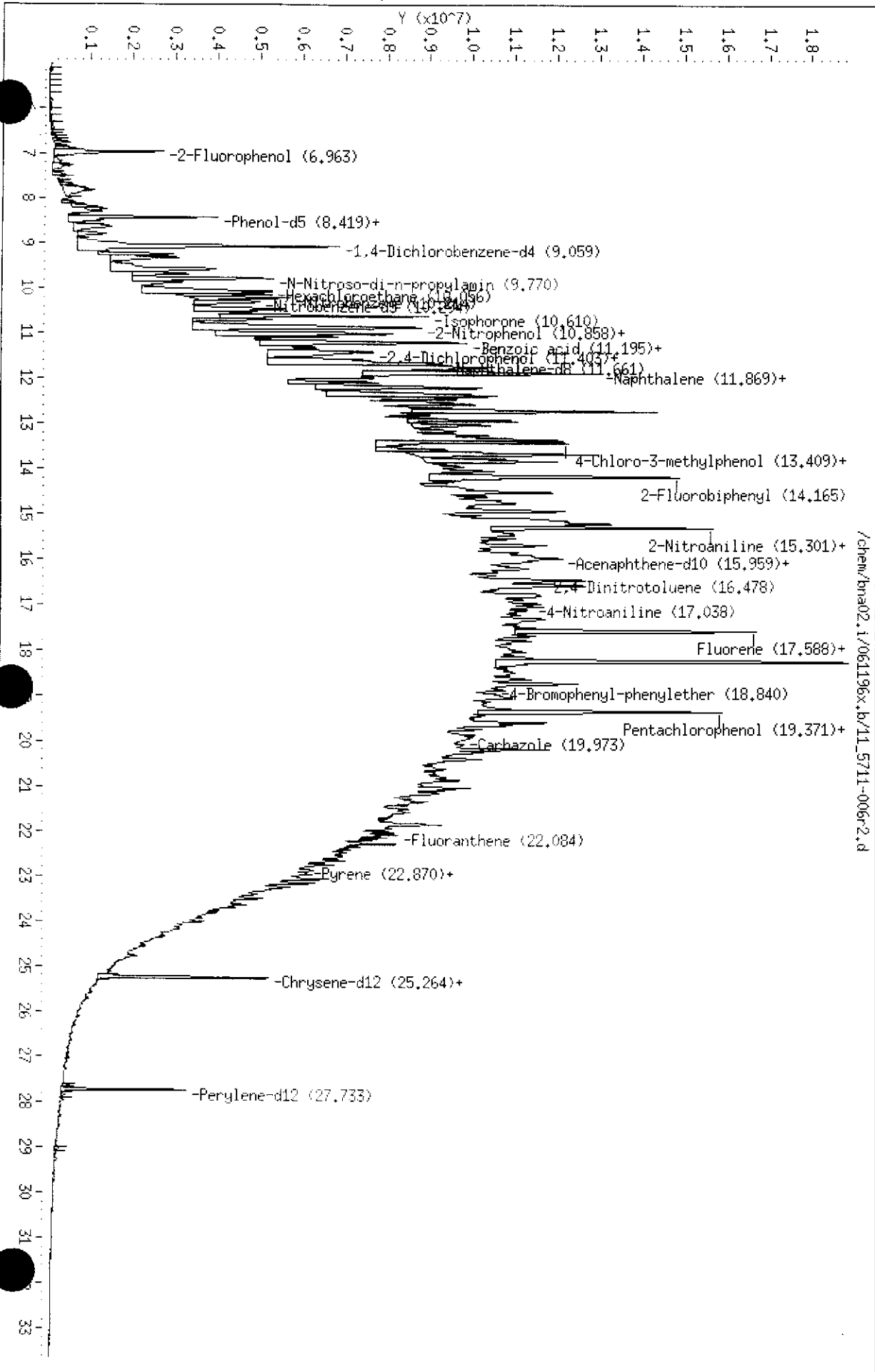
Sampled: 05/24/96
 Received: 05/24/96
 Extracted: 05/28/96
 Analyzed: 06/11/96

Analyte	Result	Reporting Limit
Phenol	ND	40
2-Chlorophenol	ND	40
Benzyl alcohol	ND	40
2-Methylphenol	ND	40
4-Methylphenol	ND	40
2-Nitrophenol	ND	200
2,4-Dimethylphenol	ND	40
Benzoic acid	ND	200
2,4-Dichlorophenol	ND	40
4-Chloro-3-methylphenol	ND	40
2,4,6-Trichlorophenol	ND	40
2,4,5-Trichlorophenol	ND	200
2,4-Dinitrophenol	ND	200
4-Nitrophenol	ND	200
4,6-Dinitro-2-methylphenol	ND	200
Pentachlorophenol	ND	200
N-Nitrosodimethylamine	ND	40
Aniline	ND	40
bis(2-Chloroethyl)ether	ND	40
1,3-Dichlorobenzene	ND	40
1,4-Dichlorobenzene	ND	40
1,2-Dichlorobenzene	ND	40
bis(2-Chloroisopropyl) ether	ND	40
N-Nitroso-di-n-propylamine	ND	40
Hexachloroethane	ND	40
Nitrobenzene	ND	40
Isophorone	ND	40
bis(2-Chloroethoxy)methane	ND	40
1,2,4-Trichlorobenzene	ND	40
Naphthalene	49	40
4-Chloroaniline	ND	40
Hexachlorobutadiene	ND	40
2-Methylnaphthalene	260	40
Hexachlorocyclopentadiene	ND	40
2-Chloronaphthalene	ND	40
2-Nitroaniline	ND	200
Dimethylphthalate	ND	40
Acenaphthylene	ND	40

Semivolatile Organics by GC/MS		
Field ID: MW-6 BEFORE PURGE	Sampled:	05/24/96
Lab ID: 125711-006	Received:	05/24/96
Matrix: Water	Extracted:	05/28/96
Batch#: 27835	Analyzed:	06/11/96
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	40
3-Nitroaniline	ND	200
Acenaphthene	ND	40
Dibenzofuran	ND	40
2,4-Dinitrotoluene	ND	40
Diethylphthalate	ND	40
4-Chlorophenyl-phenylether	ND	40
Fluorene	ND	40
4-Nitroaniline	ND	200
N-Nitrosodiphenylamine	ND	40
Azobenzene	ND	40
4-Bromophenyl-phenylether	ND	40
Hexachlorobenzene	ND	40
Phenanthrene	90	40
Anthracene	ND	40
Di-n-butylphthalate	ND	40
Fluoranthene	ND	40
Pyrene	ND	40
Butylbenzylphthalate	ND	40
3,3'-Dichlorobenzidine	ND	200
Benzo(a)anthracene	ND	40
Chrysene	ND	40
bis(2-Ethylhexyl)phthalate	ND	40
Di-n-octylphthalate	ND	40
Benzo(b)fluoranthene	ND	40
Benzo(k)fluoranthene	ND	40
Benzo(a)pyrene	ND	40
Indeno(1,2,3-cd)pyrene	ND	40
Dibenz(a,h)anthracene	ND	40
Benzo(g,h,i)perylene	ND	40
Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	29	21-110
Phenol-d5	29	10-110
2,4,6-Tribromophenol	23	10-123
Nitrobenzene-d5	38	35-114
2-Fluorobiphenyl	29*	43-116
Terphenyl-d14	15*	33-141

* Values outside of QC limits

125711-006



Data File: /chem/bna02.i/061196x.b/11.5711-006r2.d
Date: 11-JUN-96 20:28
Client ID: CURTIS&TOMPKINS.LTD
Sample Info:
Volume Injected (uL): 1.0
Column phase: Xti 5 x .5 u

Instrument: bna02.i
Operator: dsh
Column diameter: 0.25

/chem/bna02.i/061196x.b/11.5711-006r2.d

Lab #: 125711

BATCH QC REPORT

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EPA 8270 Semi-Volatile Organics		
Client: Subsurface Consultants	Analysis Method: EPA 8270	
Project#: 133.005	Prep Method: EPA 3520	
Location: KOT		
METHOD BLANK		
Matrix: Water	Prep Date: 05/28/96	
Batch#: 27835	Analysis Date: 05/30/96	
Units: ug/L		
Diln Fac: 1		

MB Lab ID: QC22731

Analyte	Result	Reporting Limit
Phenol	ND	10
2-Chlorophenol	ND	10
Benzyl alcohol	ND	10
2-Methylphenol	ND	10
4-Methylphenol	ND	10
2-Nitrophenol	ND	50
2,4-Dimethylphenol	ND	10
Benzoic acid	ND	50
2,4-Dichlorophenol	ND	10
4-Chloro-3-methylphenol	ND	10
2,4,6-Trichlorophenol	ND	10
2,4,5-Trichlorophenol	ND	50
2,4-Dinitrophenol	ND	50
4-Nitrophenol	ND	50
4,6-Dinitro-2-methylphenol	ND	50
Pentachlorophenol	ND	10
N-Nitrosodimethylamine	ND	10
Aniline	ND	10
bis(2-Chloroethyl)ether	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
1,2-Dichlorobenzene	ND	10
bis(2-Chloroisopropyl) ether	ND	10
N-Nitroso-di-n-propylamine	ND	10
Hexachloroethane	ND	10
Nitrobenzene	ND	10
Isophorone	ND	10
bis(2-Chloroethoxy)methane	ND	10
1,2,4-Trichlorobenzene	ND	10
Naphthalene	ND	10
4-Chloroaniline	ND	10
Hexachlorobutadiene	ND	10
2-Methylnaphthalene	ND	10
Hexachlorocyclopentadiene	ND	10
2-Chloronaphthalene	ND	10
2-Nitroaniline	ND	50
Dimethylphthalate	ND	10
Acenaphthylene	ND	10
2,6-Dinitrotoluene	ND	10
3-Nitroaniline	ND	50



Lab #: 125711

BATCH QC REPORT

Page 2 of 2

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8270
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 27835
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/28/96
 Analysis Date: 05/30/96

MB Lab ID: QC22731

Analyte	Result	Reporting Limit
Acenaphthene	ND	10
Dibenzofuran	ND	10
2,4-Dinitrotoluene	ND	10
Diethylphthalate	ND	10
4-Chlorophenyl-phenylether	ND	10
Fluorene	ND	10
4-Nitroaniline	ND	50
N-Nitrosodiphenylamine	ND	10
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	10
Hexachlorobenzene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Di-n-butylphthalate	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Butylbenzylphthalate	ND	10
3,3'-Dichlorobenzidine	ND	50
Benzo(a)anthracene	ND	10
Chrysene	ND	10
bis(2-Ethylhexyl)phthalate	ND	10
Di-n-octylphthalate	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(a)pyrene	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Dibenz(a,h)anthracene	ND	10
Benzo(g,h,i)perylene	ND	10
Surrogate	%Rec	Recovery Limits
2-Fluorophenol	85	21-110
Phenol-d5	79	10-110
2,4,6-Tribromophenol	69	10-123
Nitrobenzene-d5	75	35-114
2-Fluorobiphenyl	71	43-116
Terphenyl-d14	83	33-141



Lab #: 125711

BATCH QC REPORT

Page 1 of 1

EPA 8270 Semi-Volatile Organics			
Client: Subsurface Consultants	Analysis Method: EPA 8270		
Project#: 133.005	Prep Method: EPA 3520		
Location: KOT			
BLANK SPIKE/BLANK SPIKE DUPLICATE			
Matrix: Water	Prep Date: 05/28/96		
Batch#: 27835	Analysis Date: 05/30/96		
Units: ug/L			
Diln Fac: 1			

BS Lab ID: QC22732

Analyte	Spike Added	BS	%Rec #	Limits
Phenol	100	76.34	76	12-110
2-Chlorophenol	100	72.49	72	27-123
4-Chloro-3-methylphenol	100	71.7	72	23-97
4-Nitrophenol	100	51.27	51	10-80
Pentachlorophenol	100	42.09	42	9-103
1,4-Dichlorobenzene	50	31.35	63	36-97
N-Nitroso-di-n-propylamine	50	32.79	66	41-116
1,2,4-Trichlorobenzene	50	31.17	62	39-98
Acenaphthene	50	37.01	74	46-118
2,4-Dinitrotoluene	50	34.06	68	24-96
Pyrene	50	40.45	81	26-127
Surrogate	%Rec	Limits		
2-Fluorophenol	83	21-110		
Phenol-d5	84	10-110		
2,4,6-Tribromophenol	86	10-123		
Nitrobenzene-d5	77	35-114		
2-Fluorobiphenyl	74	43-116		
Terphenyl-d14	84	33-141		

BSD Lab ID: QC22733

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Phenol	100	73.95	74	12-110	3	<42
2-Chlorophenol	100	70.19	70	27-123	3	<40
4-Chloro-3-methylphenol	100	71.15	71	23-97	1	<42
4-Nitrophenol	100	55.03	55	10-80	8	<50
Pentachlorophenol	100	41.04	41	9-103	2	<50
1,4-Dichlorobenzene	50	28.05	56	36-97	12	<28
N-Nitroso-di-n-propylamine	50	34.4	69	41-116	4	<38
1,2,4-Trichlorobenzene	50	28.18	56	39-98	10	<28
Acenaphthene	50	35.82	72	46-118	3	<31
2,4-Dinitrotoluene	50	33.75	68	24-96	0	<38
Pyrene	50	40.17	80	26-127	1	<31
Surrogate	%Rec	Limits				
2-Fluorophenol	78	21-110				
Phenol-d5	79	10-110				
2,4,6-Tribromophenol	84	10-123				
Nitrobenzene-d5	75	35-114				
2-Fluorobiphenyl	71	43-116				
Terphenyl-d14	83	33-141				

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits
 RPD: 0 out of 11 outside limits
 Spike Recovery: 0 out of 22 outside limits
 DO: Surrogate diluted out

CHAIN OF CUSTODY FORM

125711

PROJECT NAME: KOT
 JOB NUMBER: 133.005 LAB: Curtis + Tompkins
 PROJECT CONTACT: Jeri Alexander TURNAROUND: Normal
 SAMPLED BY: Dennis Alexander REQUESTED BY: Jeri Alexander

ANALYSIS REQUESTED					
TEH (C-5 to C-50)					
TVH/BIXE					
6270 M/PANG					
Metals					
VOCs					
PCBs					

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX					CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES						
		WATER	SOIL	WASTE	AIR	Product	VOA	LITER	PINT	TUBE	HCL	H ₂ SO ₄	HNO ₃	ICE	NONE	MONTH	DAY	YEAR	TIME							
-1	MW-1	X					3	1			X			X		05	24	96	12:15	X	X					
-2	MW-2	X					3	1			X			X		05	24	96	12:00	X	X					
-3	MW-4	X					3	1			X			X		05	24	96	13:30	*	X	X				
-4	MW-5	X					3	1			X			X		05	24	96	10:30	X	X					
-5	(AFTER PURGE) MW-6	X					1	2	1		X			X		05	24	96	11:45	*	X	X				
-6	MW-6 (FPF) Before Purge	X					3	1	1		X			X		05	24	96	11:45	*	X	X	X	X	X	X
-7	FP																									

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature) <i>[Signature]</i>	DATE / TIME 5/24/96 3:00	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE / TIME 5/24/96 15:00
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES: * These samples comes from wells with free product in them - BEWARE!!

Subsurface Consultants, Inc.
 171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
 (510) 268-0461 • FAX: 510-268-0137



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 05-JUN-96
Lab Job Number: 125702
Project ID: 133.005
Location: KOT

Reviewed by: _____

Reviewed by: _____

This package may be reproduced only in its entirety.

Client: Subsurface Consultants

Laboratory Login Number: 125702

 Project Name: KOT
 Project Number: 133.005

Report Date: 05 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520BF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
125702-003	SCI-11	Water	23-MAY-96	24-MAY-96	31-MAY-96	ND	mg/L	5	TR	27924
125702-004	SCI-14	Water	23-MAY-96	24-MAY-96	31-MAY-96	ND	mg/L	5	TR	27924
125702-005	SCI-15	Water	23-MAY-96	24-MAY-96	31-MAY-96	ND	mg/L	5	TR	27924

ND = Not Detected at or above Reporting Limit (RL).

Q C B a t c h R e p o r t

 Client: Subsurface Consultants
 Project Name: KOT
 Project Number: 133.005

 Laboratory Login Number: 125702
 Report Date: 05 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 27924

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	31-MAY-96

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	86%	SMWW 17:5520BF	31-MAY-96
BSD	83%	SMWW 17:5520BF	31-MAY-96

		Control Limits
Average Spike Recovery	84%	80% - 120%
Relative Percent Difference	2.6%	< 20%



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125702-004	SCI-14	27926	05/23/96	06/01/96	06/01/96	
125702-005	SCI-15	27926	05/23/96	06/01/96	06/01/96	

Matrix: Water

Analyte	Units	125702-004	125702-005
Diln Fac:		1	1
Gasoline	ug/L	<50	<50
Surrogate			
Trifluorotoluene	%REC	90	90
Bromobenzene	%REC	85	83

Lab #: 125702

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons			
Client:	Subsurface Consultants	Analysis Method:	CA LUFT (EPA 8015M)
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
METHOD BLANK			
Matrix:	Water	Prep Date:	05/31/96
Batch#:	27926	Analysis Date:	05/31/96
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC23084

Analyte	Result		
Gasoline	<50		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	90		65-135
Bromobenzene	76		65-135



Lab #: 125702

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 27926
Units: ug/L
Diln Fac: 1

Prep Date: 05/31/96
Analysis Date: 05/31/96

LCS Lab ID: QC23085

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	2010	2006	101	75-125
Surrogate	%Rec	Limits		
Trifluorotoluene	95	65-135		
Bromobenzene	92	65-135		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125702-001	SCI-7	27890	05/23/96	05/29/96	06/01/96	
125702-002	SCI-9	27890	05/23/96	05/29/96	05/31/96	
125702-003	SCI-11	27890	05/23/96	05/29/96	05/31/96	
125702-004	SCI-14	27890	05/23/96	05/29/96	06/01/96	

Matrix: Water

Analyte	Units	125702-001	125702-002	125702-003	125702-004
Diln Fac:		1	1	1	1
Diesel C12-C22	ug/L	3000 YH	2500 YH	340 Y	540 YH
Motor Oil C22-C50	ug/L	3600	2300	<250	860 Y
Surrogate					
Hexacosane	%REC	101	106	98	100

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

GC15 Channel A TEH

Sample Name : 125702-001,27890

Sample #: 500:2.5

Page 1 of 1

FileName : C:\GC15\CHB\151B036.RAW

Date : 6/5/96 12:05 PM

Method : BTEHJ.MTH

Time of Injection: 6/1/96 12:52 AM

Start Time : 0.01 min

End Time : 31.91 min

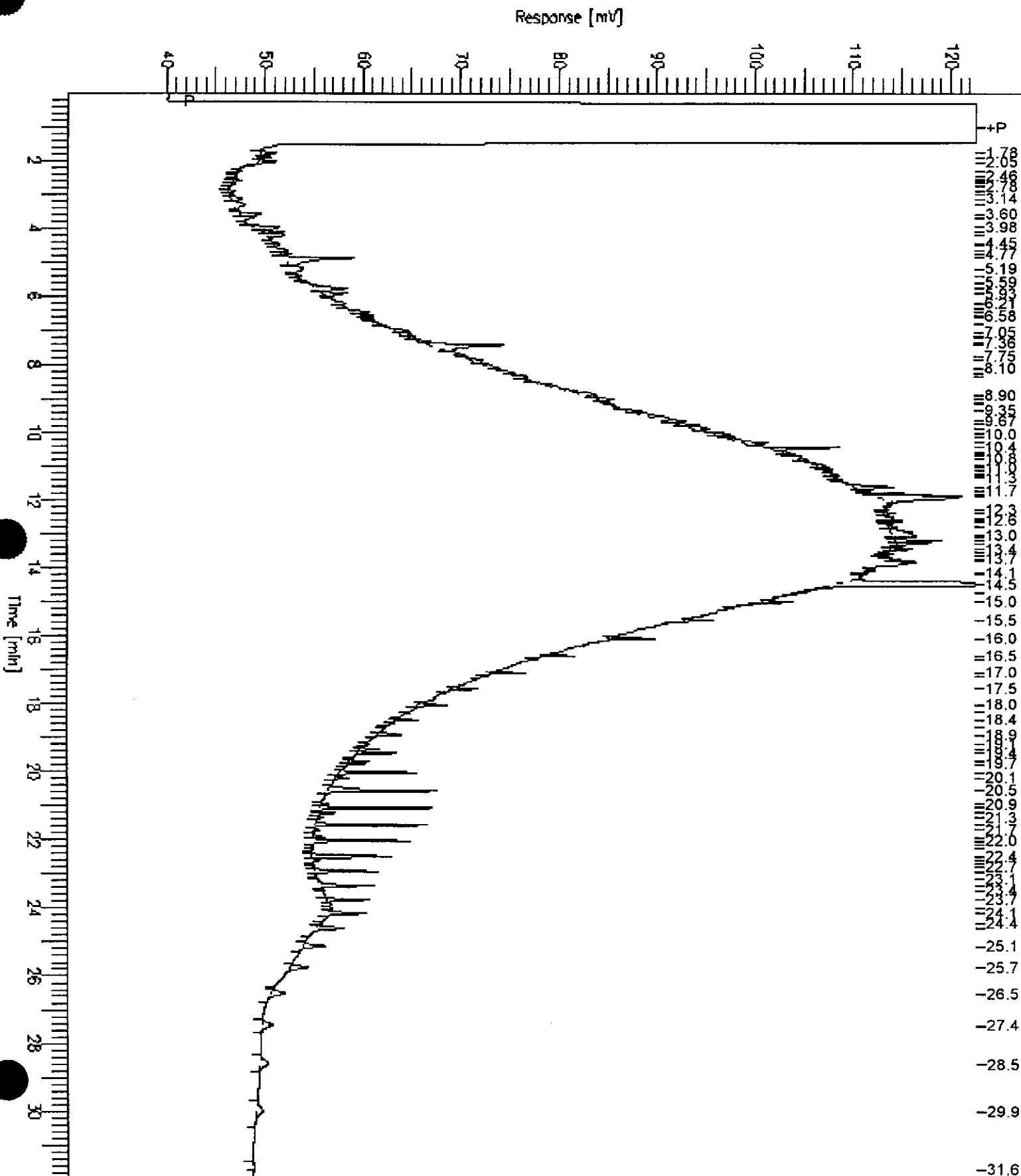
Low Point : 39.34 mV

High Point : 122.62 mV

Scale Factor: 0.0

Plot Offset: 39 mV

Plot Scale: 83.3 mV



GC15 Channel B Surrogate

Sample Name : 125702-002,27890

FileName : C:\GC15\CH8\151B034.raw

Method : DUAL

Start Time : 0.00 min

End Time : 31.90 min

Scale Factor: 0.0

Plot Offset: 32 mV

Sample #: 500:2.5

Date : 5/31/96 11:57 PM

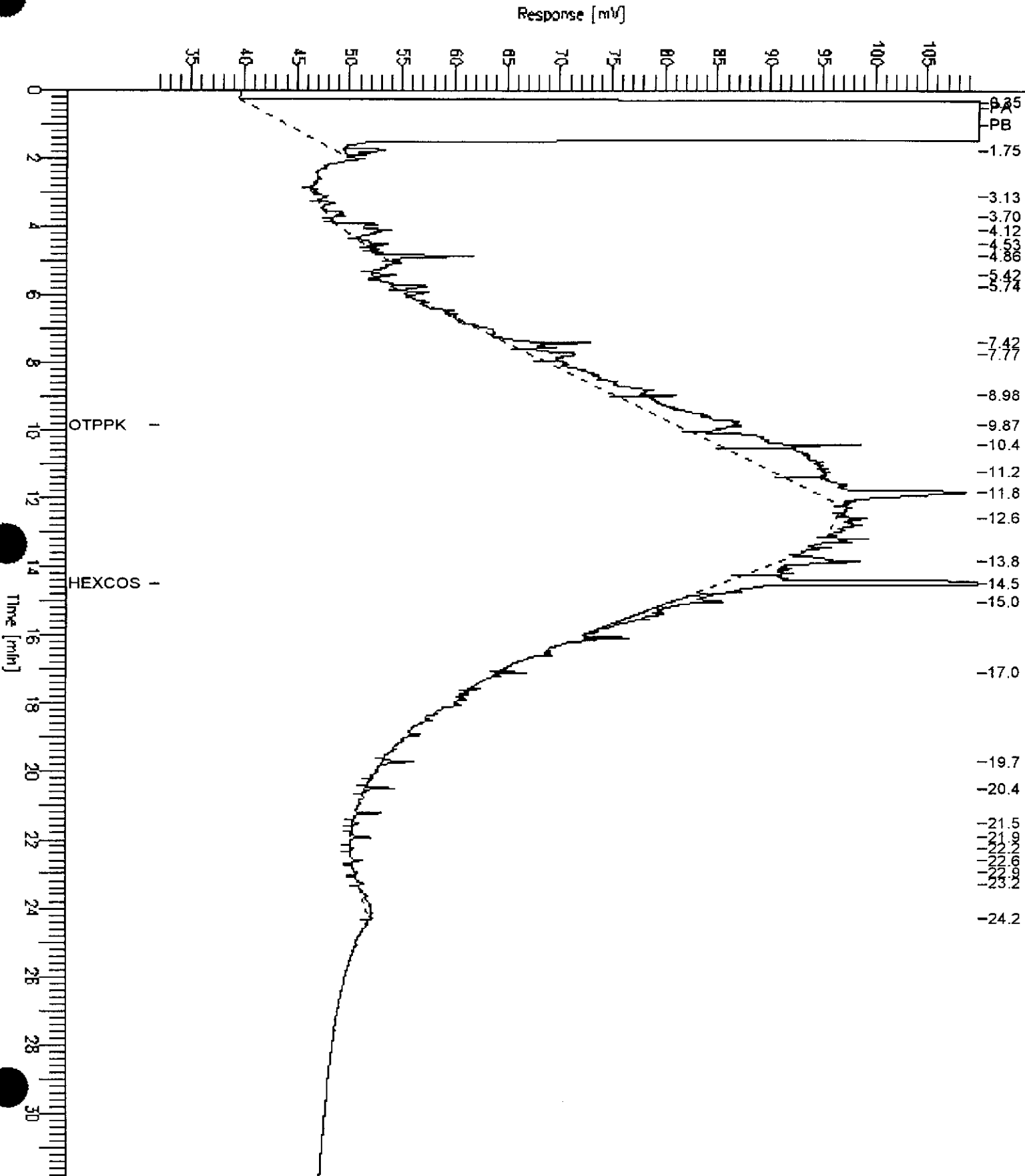
Time of Injection: 5/31/96 11:23 PM

Low Point : 32.00 mV

High Point : 110.00 mV

Plot Scale: 78.0 mV

Page 1 of 1



GC15 Channel B Surrogate

Sample Name : 125702-003,27890

FileName : C:\GC15\CHB\151B033.raw

Method : DUAL

Start Time : 0.00 min

End Time : 31.90 min

Scale Factor: 0.0

Plot Offset: 32 mV

Sample #: 500:2.5

Date : 5/31/96 11:12 PM

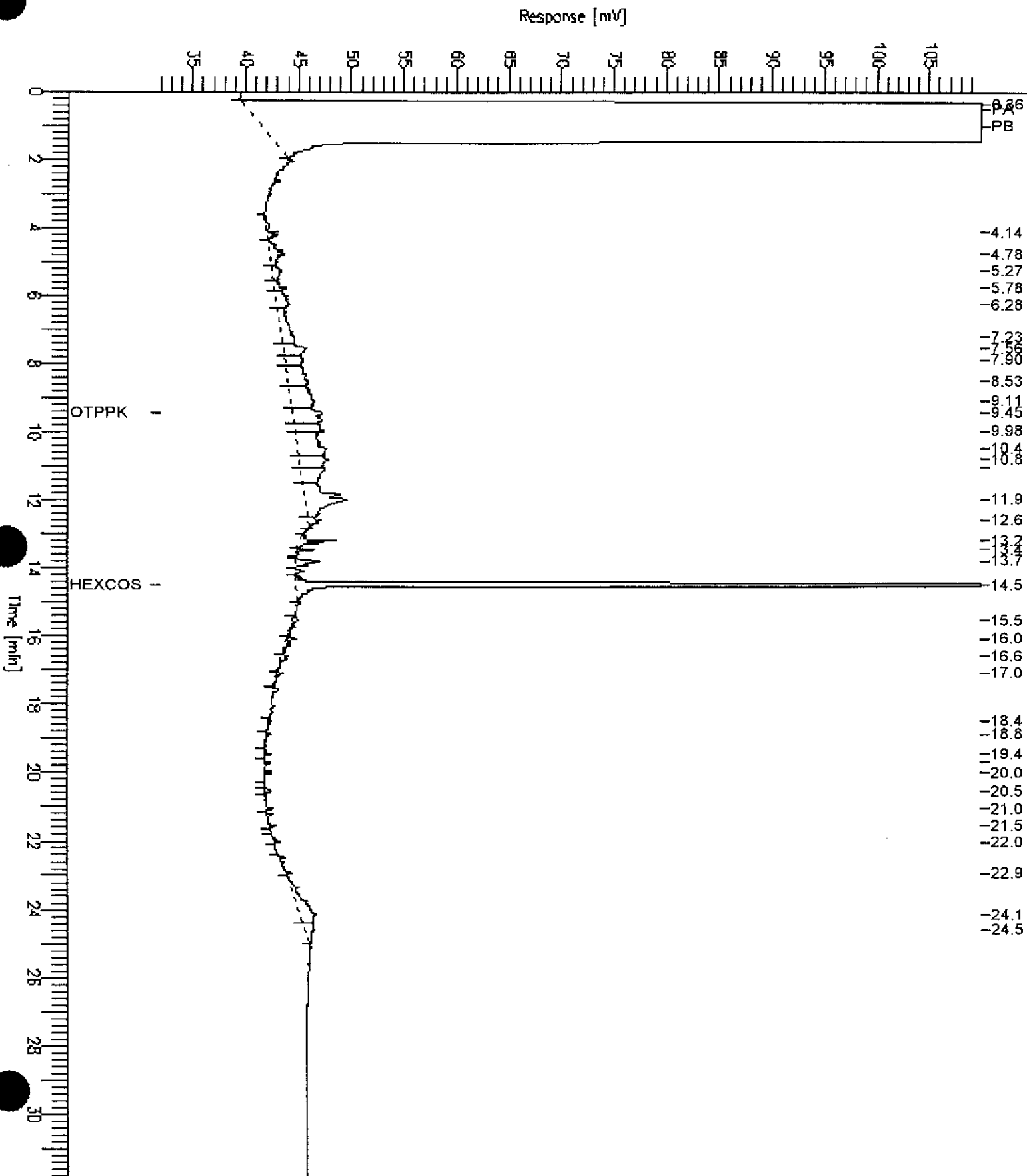
Time of Injection: 5/31/96 10:38 PM

Low Point : 32.00 mV

High Point : 110.00 mV

Plot Scale: 78.0 mV

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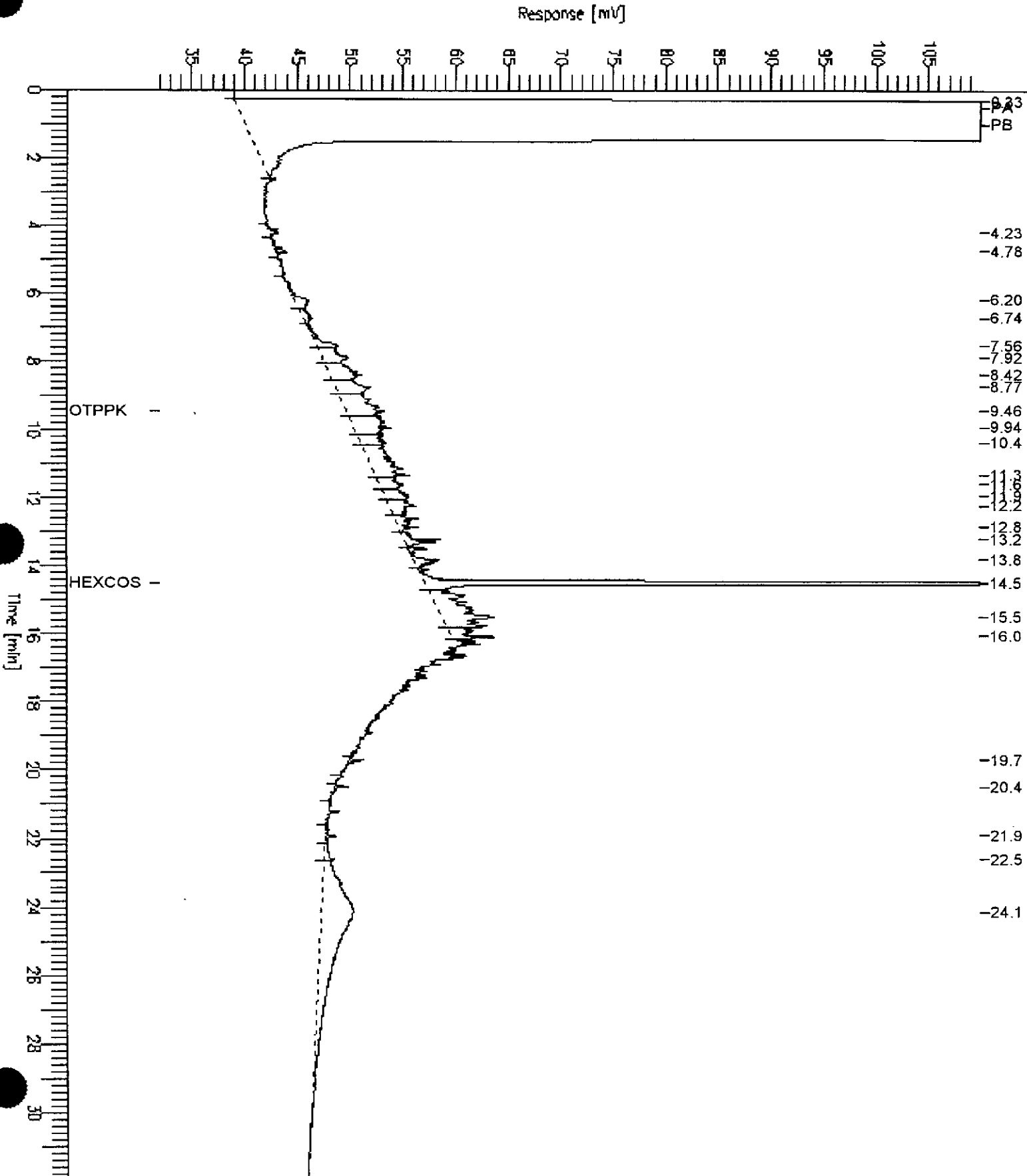
GC15 Channel B Surrogate

Sample Name : 125702-004,27890
FileName : C:\GC15\CHB\151B035.raw
Method : DUAL
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 31.90 min
Plot Offset: 32 mV

Sample #: 500:2.5
Date : 6/1/96 12:41 AM
Time of Injection: 6/1/96 12:07 AM
Low Point : 32.00 mV
Plot Scale: 78.0 mV

Page 1 of 1





TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125702-005	SCI-15	27966	05/23/96	06/03/96	06/04/96	

Matrix: Water

Analyte	Units	125702-005		
Diln Fac:		1		
Diesel C12-C22	ug/L	430	YH	
Motor Oil C22-C50	ug/L	3900	Y	
Surrogate				
Hexacosane	%REC	48	*	

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

GC15 Channel B Surrogate

Sample Name : S,125702-005,27966

Sample #: 500:2.5

Page 1 of 1

FileName : C:\GC15\CHB\155B044.raw

Date : 6/4/96 03:32 PM

Method : DUAL

Time of Injection: 6/4/96 02:58 PM

Start Time : 0.00 min

End Time : 31.90 min

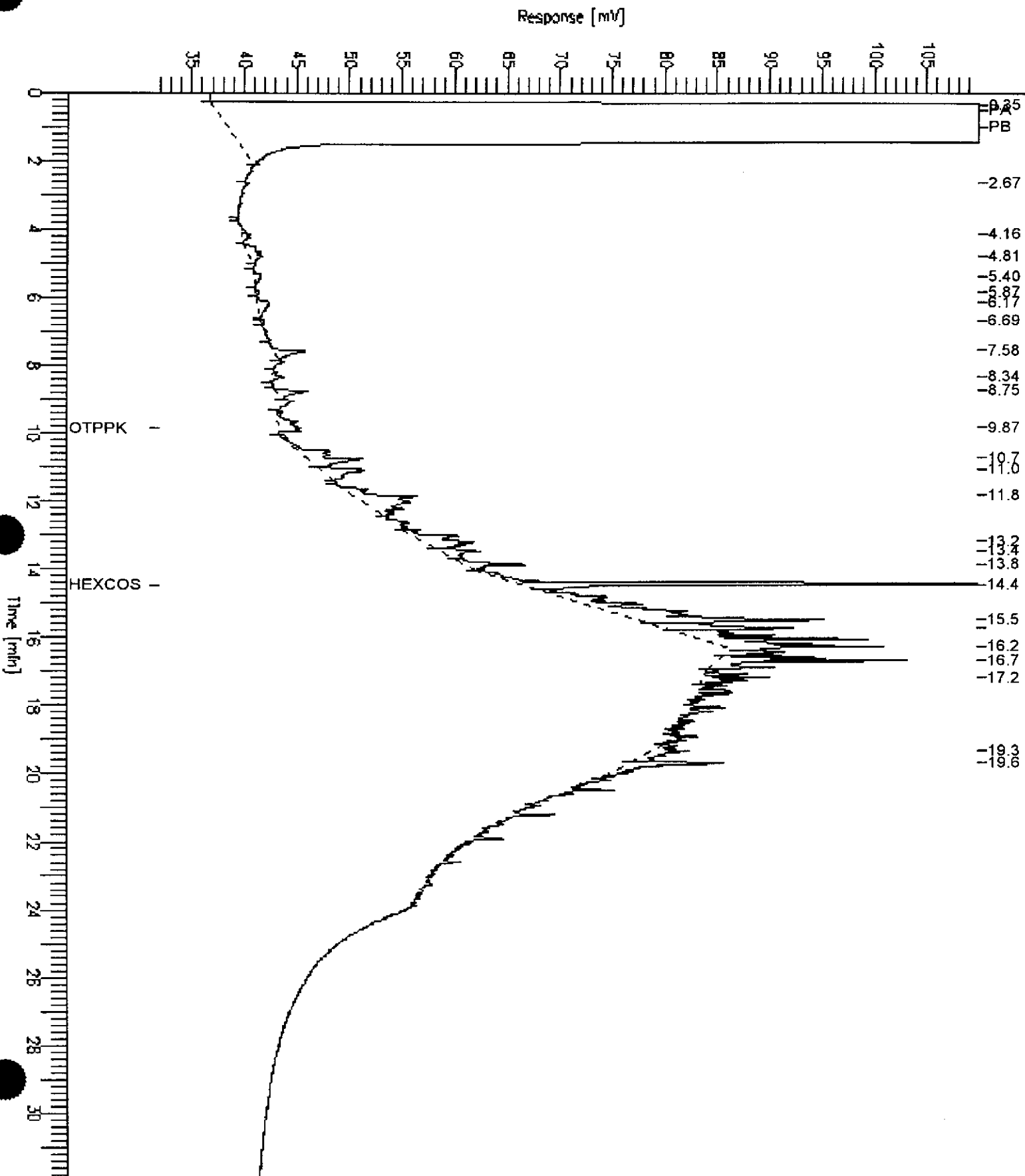
Low Point : 32.00 mV

High Point : 110.00 mV

Scale Factor: 0.0

Plot Offset: 32 mV

Plot Scale: 78.0 mV



Lab #: 125702

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons			
Client:	Subsurface Consultants	Analysis Method:	CA LUFT (EPA 8015M)
Project#:	133.005	Prep Method:	EPA 3520
Location:	KOT		
METHOD BLANK			
Matrix:	Water	Prep Date:	05/29/96
Batch#:	27890	Analysis Date:	05/30/96
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC22929

Analyte	Result		
Diesel C12-C22	<50		
Motor Oil C22-C50	<250		
Surrogate	%Rec		Recovery Limits
Hexacosane	105		60-140



Lab #: 125702

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons			
Client:	Subsurface Consultants	Analysis Method:	CA LUFT (EPA 8015M)
Project#:	133.005	Prep Method:	EPA 3520
Location:	KOT		
METHOD BLANK			
Matrix:	Water	Prep Date:	06/03/96
Batch#:	27966	Analysis Date:	06/04/96
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC23260

Analyte	Result		
Diesel C12-C22	<50		
Motor Oil C22-C50	<250		
Surrogate	%Rec		Recovery Limits
Hexacosane	102		60-140

Lab #: 125702

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons			
Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)		
Project#: 133.005	Prep Method: EPA 3520		
Location: KOT			
BLANK SPIKE/BLANK SPIKE DUPLICATE			
Matrix: Water	Prep Date: 05/29/96		
Batch#: 27890	Analysis Date: 05/30/96		
Units: ug/L			
Diln Fac: 1			

BS Lab ID: QC22930

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	2509	101	60-140
Surrogate	%Rec	Limits		
Hexacosane	100	60-140		

BSD Lab ID: QC22931

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2602	105	60-140	4	<35
Surrogate	%Rec	Limits				
Hexacosane	100	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

Lab #: 125702

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons			
Client:	Subsurface Consultants	Analysis Method:	CA LUFT (EPA 8015M)
Project#:	133.005	Prep Method:	EPA 3520
Location:	KOT		
LABORATORY CONTROL SAMPLE			
Matrix:	Water	Prep Date:	06/03/96
Batch#:	27966	Analysis Date:	06/04/96
Units:	ug/L		
Diln Fac:	1		

LCS Lab ID: QC23261

Analyte	Result	Spike Added	%Rec #	Limits
Diesel C12-C22	2149	2475	87	60-140
Surrogate	%Rec	Limits		
Hexacosane	101	60-140		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 125702

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125762-001
 Matrix: Water
 Batch#: 27966
 Units: ug/L
 Diln Fac: 1

Sample Date: 05/29/96
 Received Date: 05/30/96
 Prep Date: 06/03/96
 Analysis Date: 06/05/96

MS Lab ID: QC23262

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Diesel C12-C22	2475	589.9	2804	92	60-140
Surrogate	%Rec	Limits			
Hexacosane	110	60-140			

MSD Lab ID: QC23263

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	3054	102	60-140	10	<25
Surrogate	%Rec	Limits				
Hexacosane	119	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125702-001	SCI-7	27936	05/23/96	06/02/96	06/02/96	
125702-002	SCI-9	27936	05/23/96	06/02/96	06/02/96	
125702-003	SCI-11	27936	05/23/96	06/02/96	06/02/96	

Matrix: Water

Analyte	Units	125702-001	125702-002	125702-003
Diln Fac:		1	1	1
Benzene	ug/L	<0.5	<0.5	<0.5
Toluene	ug/L	<0.5	<0.5	<0.5
Ethylbenzene	ug/L	<0.5	<0.5	<0.5
m,p-Xylenes	ug/L	<0.5	<0.5	<0.5
o-Xylene	ug/L	<0.5	<0.5	<0.5
Surrogate				
Trifluorotoluene	%REC	94	94	94
Bromobenzene	%REC	86	86	88

Lab #: 125702

BATCH QC REPORT

Page 1 of 1

BTXE			
Client:	Subsurface Consultants	Analysis Method:	EPA 8020
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
METHOD BLANK			
Matrix:	Water	Prep Date:	06/01/96
Batch#:	27936	Analysis Date:	06/01/96
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC23135

Analyte	Result		
Benzene	<0.5		
Toluene	<0.5		
Ethylbenzene	<0.5		
m,p-Xylenes	<0.5		
o-Xylene	<0.5		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	91		58-130
Bromobenzene	78		62-131



Lab #: 125702

BATCH QC REPORT

Page 1 of 1

BTXE			
Client: Subsurface Consultants	Analysis Method: EPA 8020		
Project#: 133.005	Prep Method: EPA 5030		
Location: KOT			
LABORATORY CONTROL SAMPLE			
Matrix: Water	Prep Date: 06/01/96		
Batch#: 27936	Analysis Date: 06/01/96		
Units: ug/L			
Diln Fac: 1			

LCS Lab ID: QC23137

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	16.1	20	81	80-120
Toluene	16.1	20	81	80-120
Ethylbenzene	16.2	20	81	80-120
m,p-Xylenes	32	40	80	80-120
o-Xylene	16.2	20	81	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	92	58-130		
Bromobenzene	85	62-131		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

Lab #: 125702

BATCH QC REPORT

Page 1 of 1

BTXE	
Client: Subsurface Consultants	Analysis Method: EPA 8020
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	
MATRIX SPIKE/MATRIX SPIKE DUPLICATE	
Field ID: ZZZZZZ	Sample Date: 05/29/96
Lab ID: 125762-001	Received Date: 05/30/96
Matrix: Water	Prep Date: 06/01/96
Batch#: 27936	Analysis Date: 06/01/96
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC23138

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	20	<0.5000	17.7	89	75-125
Toluene	20	<0.5000	17.5	88	75-125
Ethylbenzene	20	<0.5000	17.7	89	75-125
m,p-Xylenes	40	<0.5000	34.6	87	75-125
o-Xylene	20	<0.5000	17.8	89	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	91	58-130			
Bromobenzene	84	62-131			

MSD Lab ID: QC23139

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	20	19.2	96	75-125	8	<20
Toluene	20	18.9	95	75-125	8	<20
Ethylbenzene	20	18.7	94	75-125	6	<20
m,p-Xylenes	40	36.8	92	75-125	6	<20
o-Xylene	20	18.9	95	75-125	6	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	91	58-130				
Bromobenzene	84	62-131				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

SAMPLE ID: SCI-11
 LAB ID: 125702-003
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Water

DATE SAMPLED: 05/23/96
 DATE RECEIVED: 05/24/96
 DATE REPORTED: 06/05/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	27878	EPA 6010A	05/30/96
Arsenic	120	5.0	1	27878	EPA 6010A	05/30/96
Barium	4000	10	1	27878	EPA 6010A	05/30/96
Beryllium	18	2.0	1	27878	EPA 6010A	05/30/96
Cadmium	14	2.0	1	27878	EPA 6010A	05/30/96
Chromium (total)	1000	10	1	27878	EPA 6010A	05/30/96
Cobalt	130	20	1	27878	EPA 6010A	05/30/96
Copper	1400	10	1	27878	EPA 6010A	05/30/96
Lead	1100	3.0	1	27878	EPA 6010A	05/30/96
Mercury	15	0.40	2	27875	EPA 7470	05/30/96
Molybdenum	ND	20	1	27878	EPA 6010A	05/30/96
Nickel	1200	20	1	27878	EPA 6010A	05/30/96
Selenium	41	5.0	1	27878	EPA 6010A	05/30/96
Silver	ND	5.0	1	27878	EPA 6010A	05/30/96
Thallium	ND	5.0	1	27878	EPA 6010A	05/30/96
Vanadium	800	10	1	27878	EPA 6010A	05/30/96
Zinc	2100	20	1	27878	EPA 6010A	05/30/96

ND = Not detected at or above reporting limit

SAMPLE ID: SCI-14
 LAB ID: 125702-004
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Water

DATE SAMPLED: 05/23/96
 DATE RECEIVED: 05/24/96
 DATE REPORTED: 06/05/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	27878	EPA 6010A	05/30/96
Arsenic	120	5.0	1	27878	EPA 6010A	05/30/96
Barium	3000	10	1	27878	EPA 6010A	05/30/96
Beryllium	11	2.0	1	27878	EPA 6010A	05/30/96
Cadmium	6.2	2.0	1	27878	EPA 6010A	05/30/96
Chromium (total)	260	10	1	27878	EPA 6010A	05/30/96
Cobalt	110	20	1	27878	EPA 6010A	05/30/96
Copper	850	10	1	27878	EPA 6010A	05/30/96
Lead	610	3.0	1	27878	EPA 6010A	05/30/96
Mercury	5.4	0.20	1	27875	EPA 7470	05/30/96
Molybdenum	35	20	1	27878	EPA 6010A	05/30/96
Nickel	380	20	1	27878	EPA 6010A	05/30/96
Selenium	20	5.0	1	27878	EPA 6010A	05/30/96
Silver	ND	5.0	1	27878	EPA 6010A	05/30/96
Thallium	ND	5.0	1	27878	EPA 6010A	05/30/96
Vanadium	380	10	1	27878	EPA 6010A	05/30/96
Zinc	1200	20	1	27878	EPA 6010A	05/30/96

ND = Not detected at or above reporting limit

SAMPLE ID: SCI-15
 LAB ID: 125702-005
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Water

DATE SAMPLED: 05/23/96
 DATE RECEIVED: 05/24/96
 DATE REPORTED: 06/05/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	27878	EPA 6010A	05/30/96
Arsenic	110	5.0	1	27878	EPA 6010A	05/30/96
Barium	2200	10	1	27878	EPA 6010A	05/30/96
Beryllium	11	2.0	1	27878	EPA 6010A	05/30/96
Cadmium	8.7	2.0	1	27878	EPA 6010A	05/30/96
Chromium (total)	570	10	1	27878	EPA 6010A	05/30/96
Cobalt	150	20	1	27878	EPA 6010A	05/30/96
Copper	430	10	1	27878	EPA 6010A	05/30/96
Lead	1400	3.0	1	27878	EPA 6010A	05/30/96
Mercury	8.2	0.20	1	27875	EPA 7470	05/30/96
Molybdenum	ND	20	1	27878	EPA 6010A	05/30/96
Nickel	630	20	1	27878	EPA 6010A	05/30/96
Selenium	25	5.0	1	27878	EPA 6010A	05/30/96
Silver	ND	5.0	1	27878	EPA 6010A	05/30/96
Thallium	ND	5.0	1	27878	EPA 6010A	05/30/96
Vanadium	550	10	1	27878	EPA 6010A	05/30/96
Zinc	2200	20	1	27878	EPA 6010A	05/30/96

ND = Not detected at or above reporting limit

CLIENT: Subsurface Consultants
 JOB NUMBER: 125702

DATE REPORTED: 06/05/96

 BATCH QC REPORT
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Compound	Result	Reporting Units	IDF	QC Batch	Method	Analysis Date
		Limit				
Antimony	ND	60	ug/L	1	27878 EPA 6010A	05/30/96
Arsenic	ND	5	ug/L	1	27878 EPA 6010A	05/30/96
Barium	ND	10	ug/L	1	27878 EPA 6010A	05/30/96
Beryllium	ND	2	ug/L	1	27878 EPA 6010A	05/30/96
Cadmium	ND	2	ug/L	1	27878 EPA 6010A	05/30/96
Chromium (total)	ND	10	ug/L	1	27878 EPA 6010A	05/30/96
Cobalt	ND	20	ug/L	1	27878 EPA 6010A	05/30/96
Copper	ND	10	ug/L	1	27878 EPA 6010A	05/30/96
Lead	ND	3	ug/L	1	27878 EPA 6010A	05/30/96
Mercury	ND	0.2	ug/L	1	27875 EPA 7470	05/30/96
Molybdenum	ND	20	ug/L	1	27878 EPA 6010A	05/30/96
Nickel	ND	20	ug/L	1	27878 EPA 6010A	05/30/96
Selenium	ND	5	ug/L	1	27878 EPA 6010A	05/30/96
Silver	ND	5	ug/L	1	27878 EPA 6010A	05/30/96
Thallium	ND	5	ug/L	1	27878 EPA 6010A	05/30/96
Vanadium	ND	10	ug/L	1	27878 EPA 6010A	05/30/96
Zinc	ND	20	ug/L	1	27878 EPA 6010A	05/30/96

ND = Not Detected at or above reporting limit

CLIENT: Subsurface Consultants
 JOB NUMBER: 125702

DATE REPORTED: 06/05/96

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

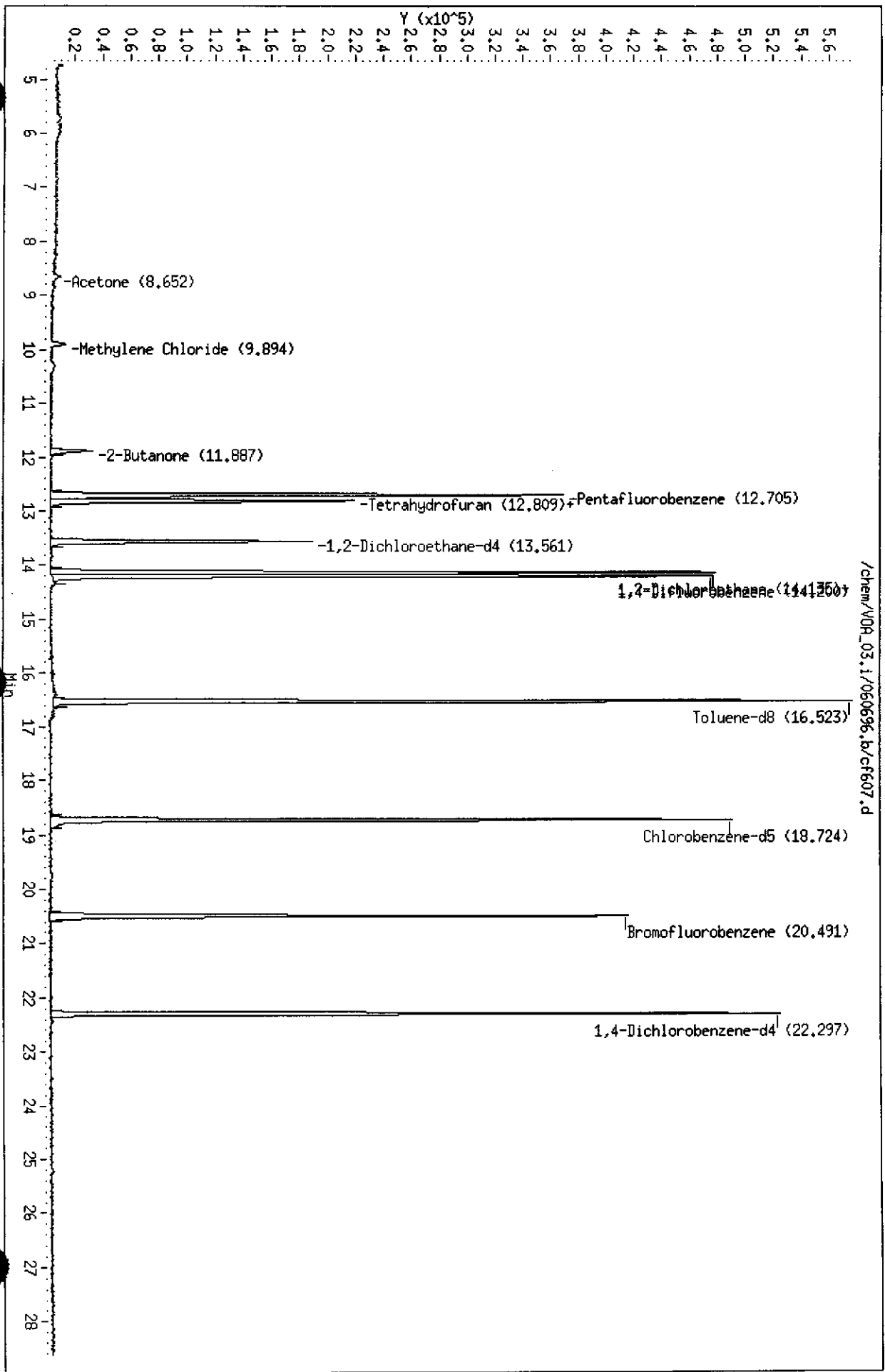
Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	500	549	553	ug/L	110	111	80-120	1	35	27878	EPA 6010A	05/30/96
Arsenic	2000	1960	1960	ug/L	98	98	80-120	0	35	27878	EPA 6010A	05/30/96
Barium	2000	1910	1910	ug/L	96	96	80-120	0	35	27878	EPA 6010A	05/30/96
Beryllium	50	51.4	51.8	ug/L	103	104	80-120	1	35	27878	EPA 6010A	05/30/96
Cadmium	50	50.2	50.6	ug/L	100	101	80-120	1	35	27878	EPA 6010A	05/30/96
Chromium (total)	200	189	192	ug/L	95	96	80-120	2	35	27878	EPA 6010A	05/30/96
Cobalt	500	472	474	ug/L	94	95	80-120	0	35	27878	EPA 6010A	05/30/96
Copper	250	248	251	ug/L	99	100	80-120	1	35	27878	EPA 6010A	05/30/96
Lead	500	490	495	ug/L	98	99	80-120	1	35	27878	EPA 6010A	05/30/96
Mercury	5	4.863	5.187	ug/L	97	104	80-120	6	35	27875	EPA 7470	05/30/96
Molybdenum	400	377	377	ug/L	94	94	80-120	0	35	27878	EPA 6010A	05/30/96
Nickel	500	510	511	ug/L	102	102	80-120	0	35	27878	EPA 6010A	05/30/96
Selenium	2000	1950	1950	ug/L	98	98	80-120	0	35	27878	EPA 6010A	05/30/96
Silver	100	99.1	101	ug/L	99	101	80-120	2	35	27878	EPA 6010A	05/30/96
Thallium	2000	1940	1970	ug/L	97	99	80-120	2	35	27878	EPA 6010A	05/30/96
Vanadium	500	482	487	ug/L	96	97	80-120	1	35	27878	EPA 6010A	05/30/96
Zinc	500	478	480	ug/L	96	96	80-120	0	35	27878	EPA 6010A	05/30/96



Volatile Organics by GC/MS		
Client: Subsurface Consultants	Analysis Method: EPA 8240	
Project#: 133.005	Prep Method: EPA 5030	
Location: KOT		
Field ID: SCI-14	Sampled: 05/23/96	
Lab ID: 125702-004	Received: 05/24/96	
Matrix: Water	Extracted: 06/06/96	
Batch#: 28021	Analyzed: 06/06/96	
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	78	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	0.5
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	0.5
Chlorobenzene	ND	5.0
Ethylbenzene	ND	0.5
Styrene	ND	5.0
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	114	68-126
Toluene-d8	97	87-125
Bromofluorobenzene	92	79-122

Data File: /chem/VD9_03.1/060696.b/cf607.d
Date : 06-JUN-96 13:29
Client ID: DYNA PaT
Sample Info: MSS.125702-004
Column phase: RTX Volatiles

Instrument: VDA_03.1
Operator: LLH
Column diameter: 0.32





Volatile Organics by GC/MS		
Client: Subsurface Consultants	Analysis Method: EPA 8240	
Project#: 133.005	Prep Method: EPA 5030	
Location: KOT		
Field ID: SCI-15	Sampled:	05/23/96
Lab ID: 125702-005	Received:	05/24/96
Matrix: Water	Extracted:	06/03/96
Batch#: 27939	Analyzed:	06/03/96
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	20	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	94	68-126
Toluene-d8	97	87-125
Bromofluorobenzene	92	79-122

Lab #: 125702

BATCH QC REPORT

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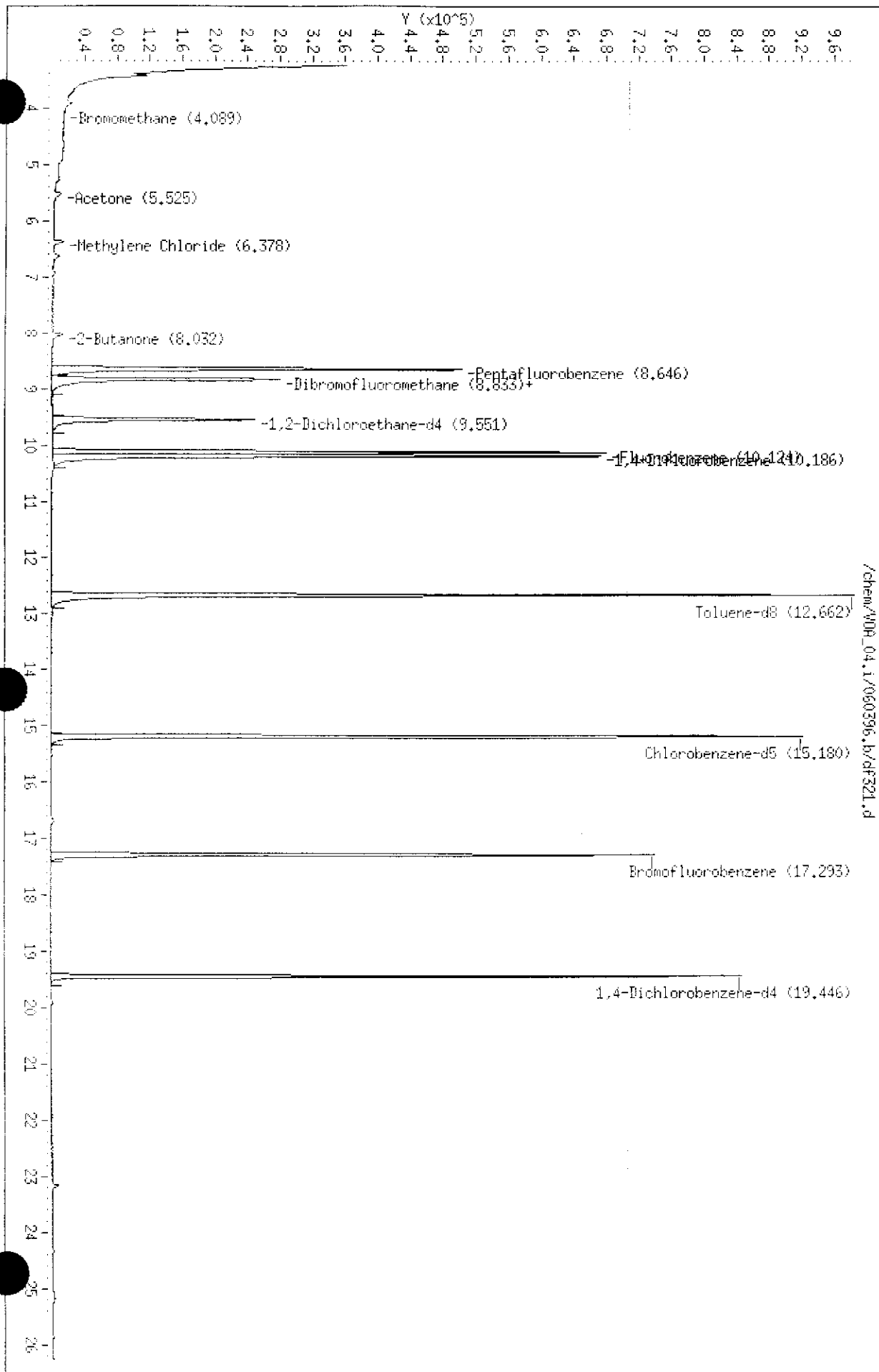
EPA 8240 Volatile Organics		
Client: Subsurface Consultants	Analysis Method: EPA 8240	
Project#: 133.005	Prep Method: EPA 5030	
Location: KOT		
METHOD BLANK		
Matrix: Water	Prep Date: 06/03/96	
Batch#: 27939	Analysis Date: 06/03/96	
Units: ug/L		
Diln Fac: 1		

MB Lab ID: QC23152

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	98	68-126
Toluene-d8	101	87-125
Bromofluorobenzene	103	79-122

Data File: /chem/WD9_04.1/060396.b/df321.d
Date: 03-JUN-96 22:11
Client ID: DYNA P&T
Sample Info: S-125702-005
Purge Volume: 5.0
Column phase: RTX Volatiles

Instrument: WD9_04.1
Operator: JM
Column diameter: 0.32



Lab #: 125702

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics		
Client: Subsurface Consultants	Analysis Method: EPA 8240	
Project#: 133.005	Prep Method: EPA 5030	
Location: KOT		
METHOD BLANK		
Matrix: Water	Prep Date:	06/03/96
Batch#: 27939	Analysis Date:	06/03/96
Units: ug/L		
Diln Fac: 1		

MB Lab ID: QC23234

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	90	68-126
Toluene-d8	96	87-125
Bromofluorobenzene	89	79-122

Lab #: 125702

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics		
Client: Subsurface Consultants	Analysis Method: EPA 8240	
Project#: 133.005	Prep Method: EPA 5030	
Location: KOT		
METHOD BLANK		
Matrix: Water	Prep Date: 06/06/96	
Batch#: 28021	Analysis Date: 06/06/96	
Units: ug/L		
Diln Fac: 1		

MB Lab ID: QC23479

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	107	68-126
Toluene-d8	97	87-125
Bromofluorobenzene	90	79-122

Lab #: 125702

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics			
Client: Subsurface Consultants	Analysis Method: EPA 8240		
Project#: 133.005	Prep Method: EPA 5030		
Location: KOT			
LABORATORY CONTROL SAMPLE			
Matrix: Water	Prep Date:	06/03/96	
Batch#: 27939	Analysis Date:	06/03/96	
Units: ug/L			
Diln Fac: 1			

LCS Lab ID: QC23151

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	50.09	50	100	51-180
Trichloroethene	50.95	50	102	73-141
Benzene	49.08	50	98	78-142
Toluene	53.93	50	108	76-150
Chlorobenzene	50.39	50	101	83-129
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	79	68-126		
Toluene-d8	97	87-125		
Bromofluorobenzene	94	79-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Lab #: 125702

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 28021
Units: ug/L
Diln Fac: 1

Prep Date: 06/06/96
Analysis Date: 06/06/96

LCS Lab ID: QC23478

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	49.92	50	100	51-180
Trichloroethene	48.67	50	97	73-141
Benzene	46.81	50	94	78-142
Toluene	49.66	50	99	76-150
Chlorobenzene	49.16	50	98	83-129
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	108	68-126		
Toluene-d8	98	87-125		
Bromofluorobenzene	93	79-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

Lab #: 125702

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics	
Client: Subsurface Consultants	Analysis Method: EPA 8240
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	
MATRIX SPIKE/MATRIX SPIKE DUPLICATE	
Field ID: ZZZZZZ	Sample Date: 05/20/96
Lab ID: 125680-002	Received Date: 05/23/96
Matrix: Water	Prep Date: 06/03/96
Batch#: 27939	Analysis Date: 06/03/96
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC23179

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	<5.000	44.5	89	51-180
Trichloroethene	50	<5.000	48.51	97	73-141
Benzene	50	<5.000	47.42	95	78-142
Toluene	50	<5.000	51.17	102	76-150
Chlorobenzene	50	<5.000	48.13	96	83-129
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	89	68-126			
Toluene-d8	98	87-125			
Bromofluorobenzene	92	79-122			

MSD Lab ID: QC23180

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	47.1	94	51-180	6	<14
Trichloroethene	50	50.03	100	73-141	3	<14
Benzene	50	48.82	98	78-142	3	<11
Toluene	50	52.23	104	76-150	2	<13
Chlorobenzene	50	48.92	98	83-129	2	<13
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	92	68-126				
Toluene-d8	97	87-125				
Bromofluorobenzene	93	79-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

Lab #: 125702

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: EPA 8240
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

 Field ID: SCI-14
 Lab ID: 125702-004
 Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

 Sample Date: 05/23/96
 Received Date: 05/24/96
 Prep Date: 06/06/96
 Analysis Date: 06/06/96

MS Lab ID: QC23509

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	<5.000	45.69	91	51-180
Trichloroethene	50	<5.000	44.32	89	73-141
Benzene	50	<0.5000	43.08	86	78-142
Toluene	50	<0.5000	44.43	89	76-150
Chlorobenzene	50	<5.000	45.95	92	83-129
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	111	68-126			
Toluene-d8	97	87-125			
Bromofluorobenzene	94	79-122			

MSD Lab ID: QC23510

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	47.32	95	51-180	4	<14
Trichloroethene	50	45.14	90	73-141	2	<14
Benzene	50	45.55	91	78-142	6	<11
Toluene	50	46.51	93	76-150	5	<13
Chlorobenzene	50	46.75	94	83-129	2	<13
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	109	68-126				
Toluene-d8	99	87-125				
Bromofluorobenzene	93	79-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

Field ID: SCI-11
Lab ID: 125702-003
Matrix: Water
Batch#: 27913
Units: ug/L
Diln Fac: 1

Sampled: 05/23/96
Received: 05/24/96
Extracted: 05/30/96
Analyzed: 06/11/96

Analyte	Result	Reporting Limit
Phenol	ND	9.4
2-Chlorophenol	ND	9.4
Benzyl alcohol	ND	9.4
2-Methylphenol	ND	9.4
4-Methylphenol	ND	9.4
2-Nitrophenol	ND	47
2,4-Dimethylphenol	ND	9.4
Benzoic acid	ND	47
2,4-Dichlorophenol	ND	9.4
4-Chloro-3-methylphenol	ND	9.4
2,4,6-Trichlorophenol	ND	9.4
2,4,5-Trichlorophenol	ND	47
2,4-Dinitrophenol	ND	47
4-Nitrophenol	ND	47
4,6-Dinitro-2-methylphenol	ND	47
Pentachlorophenol	ND	47
N-Nitrosodimethylamine	ND	9.4
Aniline	ND	9.4
bis(2-Chloroethyl)ether	ND	9.4
1,3-Dichlorobenzene	ND	9.4
1,4-Dichlorobenzene	ND	9.4
1,2-Dichlorobenzene	ND	9.4
bis(2-Chloroisopropyl) ether	ND	9.4
N-Nitroso-di-n-propylamine	ND	9.4
Hexachloroethane	ND	9.4
Nitrobenzene	ND	9.4
Isophorone	ND	9.4
bis(2-Chloroethoxy)methane	ND	9.4
1,2,4-Trichlorobenzene	ND	9.4
Naphthalene	ND	9.4
4-Chloroaniline	ND	9.4
Hexachlorobutadiene	ND	9.4
2-Methylnaphthalene	ND	9.4
Hexachlorocyclopentadiene	ND	9.4
2-Chloronaphthalene	ND	9.4
2-Nitroaniline	ND	47
Dimethylphthalate	ND	9.4
Acenaphthylene	ND	9.4

Semivolatile Organics by GC/MS

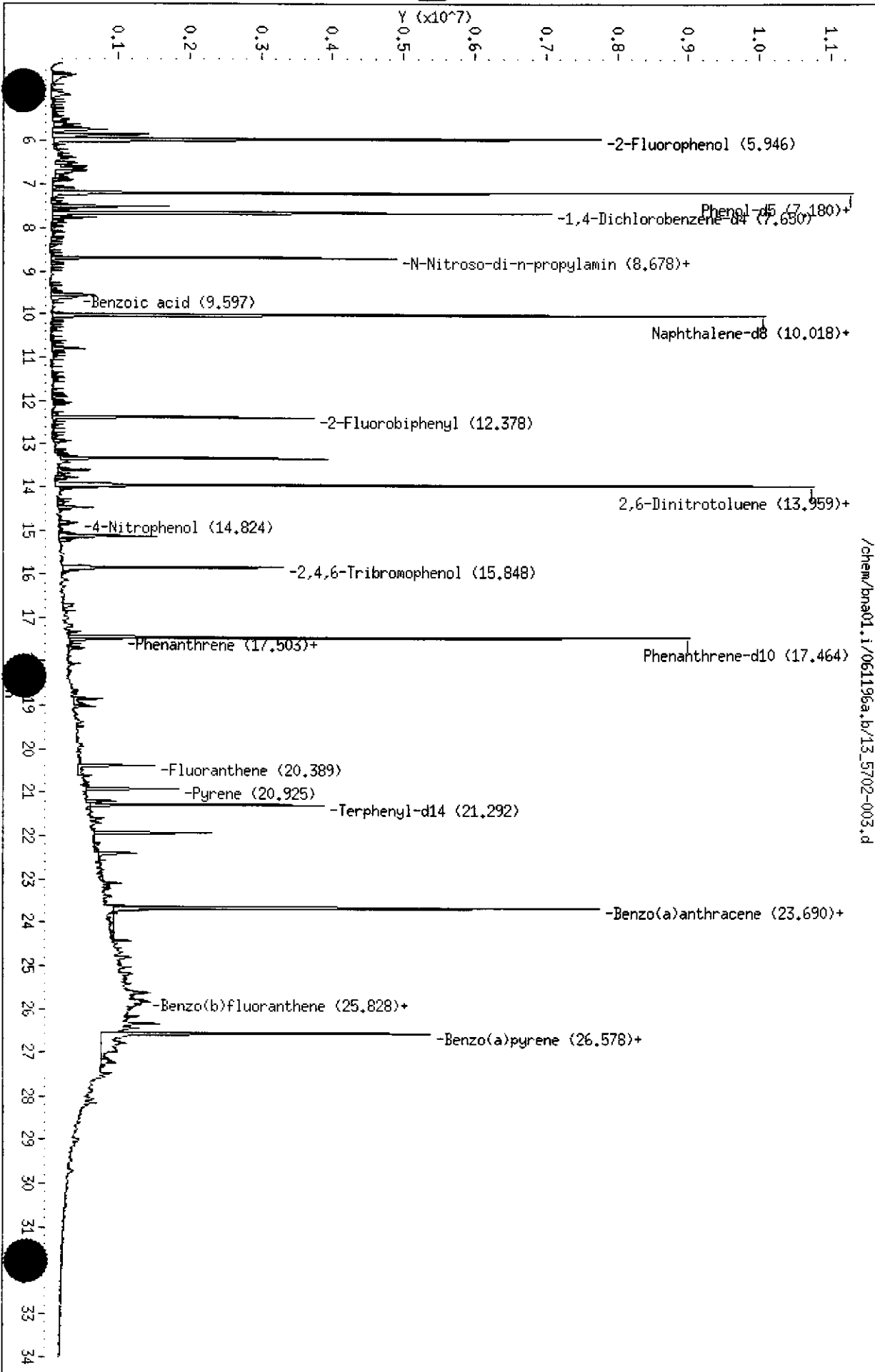
Field ID: SCI-11	Sampled: 05/23/96
Lab ID: 125702-003	Received: 05/24/96
Matrix: Water	Extracted: 05/30/96
Batch#: 27913	Analyzed: 06/11/96
Units: ug/L	
Diln Fac: 1	

Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	9.4
3-Nitroaniline	ND	47
Acenaphthene	ND	9.4
Dibenzofuran	ND	9.4
2,4-Dinitrotoluene	ND	9.4
Diethylphthalate	ND	9.4
4-Chlorophenyl-phenylether	ND	9.4
Fluorene	ND	9.4
4-Nitroaniline	ND	47
N-Nitrosodiphenylamine	ND	9.4
Azobenzene	ND	9.4
4-Bromophenyl-phenylether	ND	9.4
Hexachlorobenzene	ND	9.4
Phenanthrene	ND	9.4
Anthracene	ND	9.4
Di-n-butylphthalate	ND	9.4
Fluoranthene	ND	9.4
Pyrene	ND	9.4
Butylbenzylphthalate	ND	9.4
3,3'-Dichlorobenzidine	ND	47
Benzo(a)anthracene	ND	9.4
Chrysene	ND	9.4
bis(2-Ethylhexyl)phthalate	ND	9.4
Di-n-octylphthalate	ND	9.4
Benzo(b)fluoranthene	ND	9.4
Benzo(k)fluoranthene	ND	9.4
Benzo(a)pyrene	ND	9.4
Indeno(1,2,3-cd)pyrene	ND	9.4
Dibenz(a,h)anthracene	ND	9.4
Benzo(g,h,i)perylene	ND	9.4

Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	77	21-110
Phenol-d5	82	10-110
2,4,6-Tribromophenol	40	10-123
Nitrobenzene-d5	73	35-114
2-Fluorobiphenyl	35*	43-116
Terphenyl-d14	39	33-141

* Values outside of QC limits

125702-003



/chem/bna01.i/061196a.b/13_5702-003.d

Data File: /chem/bna01.i/061196a.b/13_5702-003.d
Date : 11-JUN-1996 23:29
Client ID: CURTIS&TOMPKINS, LTD
Sample Info:
Volume Injected (uL): 1.0
Column phase: Xti 5 x .5 u

Instrument: bna01.i
Operator: dsh
Column diameter: 0.25



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

Field ID: SCI-14
Lab ID: 125702-004
Matrix: Water
Batch#: 27913
Units: ug/L
Diln Fac: 1

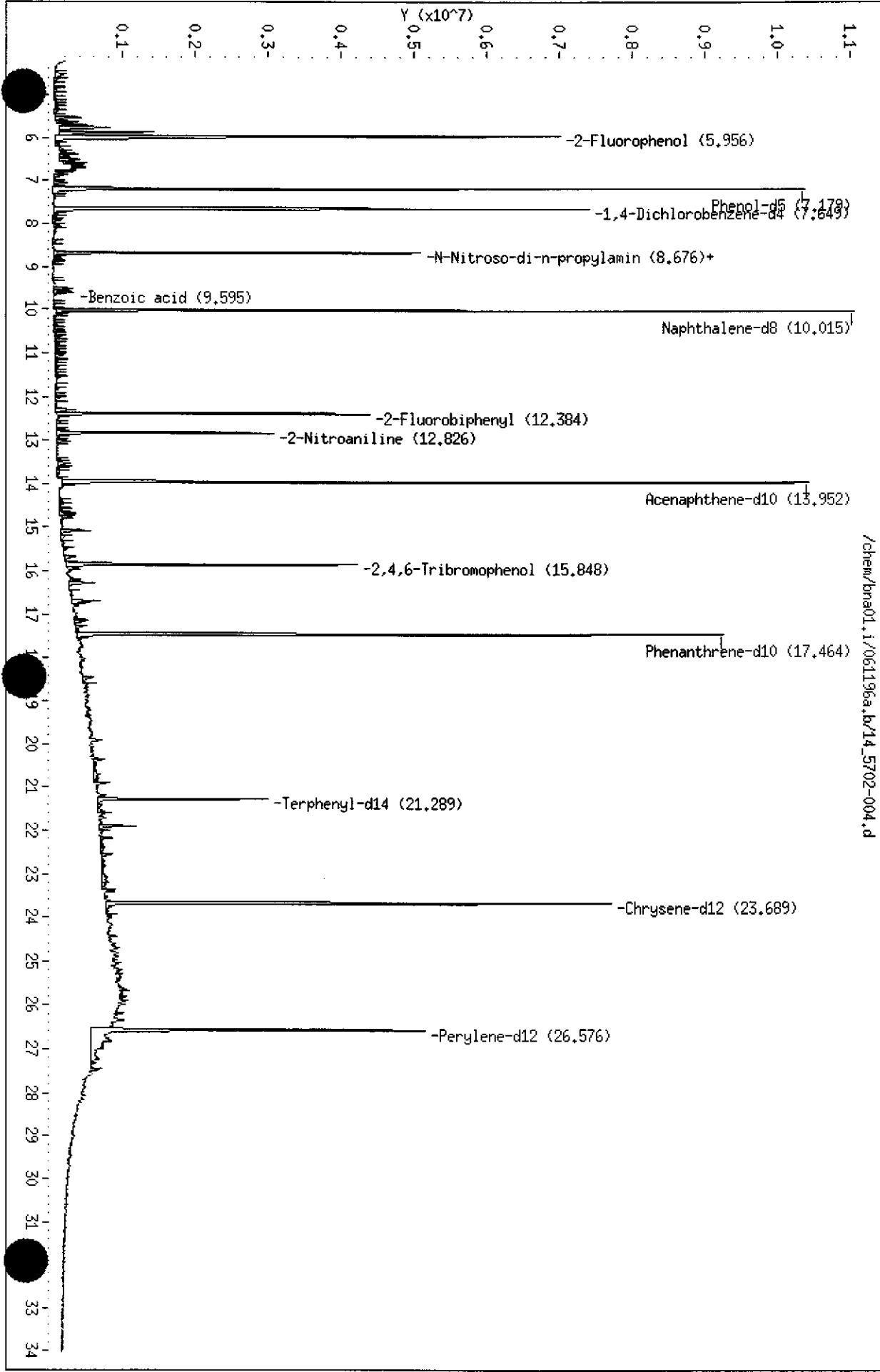
Sampled: 05/23/96
Received: 05/24/96
Extracted: 05/30/96
Analyzed: 06/12/96

Analyte	Result	Reporting Limit
Phenol	ND	11
2-Chlorophenol	ND	11
Benzyl alcohol	ND	11
2-Methylphenol	ND	11
4-Methylphenol	ND	11
2-Nitrophenol	ND	53
2,4-Dimethylphenol	ND	11
Benzoic acid	ND	53
2,4-Dichlorophenol	ND	11
4-Chloro-3-methylphenol	ND	11
2,4,6-Trichlorophenol	ND	11
2,4,5-Trichlorophenol	ND	53
2,4-Dinitrophenol	ND	53
4-Nitrophenol	ND	53
4,6-Dinitro-2-methylphenol	ND	53
Pentachlorophenol	ND	53
N-Nitrosodimethylamine	ND	11
Aniline	ND	11
bis(2-Chloroethyl)ether	ND	11
1,3-Dichlorobenzene	ND	11
1,4-Dichlorobenzene	ND	11
1,2-Dichlorobenzene	ND	11
bis(2-Chloroisopropyl) ether	ND	11
N-Nitroso-di-n-propylamine	ND	11
Hexachloroethane	ND	11
Nitrobenzene	ND	11
Isophorone	ND	11
bis(2-Chloroethoxy)methane	ND	11
1,2,4-Trichlorobenzene	ND	11
Naphthalene	ND	11
4-Chloroaniline	ND	11
Hexachlorobutadiene	ND	11
2-Methylnaphthalene	ND	11
Hexachlorocyclopentadiene	ND	11
2-Chloronaphthalene	ND	11
2-Nitroaniline	ND	53
Dimethylphthalate	ND	11
Acenaphthylene	ND	11

Semivolatile Organics by GC/MS		
Field ID: SCI-14	Sampled:	05/23/96
Lab ID: 125702-004	Received:	05/24/96
Matrix: Water	Extracted:	05/30/96
Batch#: 27913	Analyzed:	06/12/96
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	11
3-Nitroaniline	ND	53
Acenaphthene	ND	11
Dibenzofuran	ND	11
2,4-Dinitrotoluene	ND	11
Diethylphthalate	ND	11
4-Chlorophenyl-phenylether	ND	11
Fluorene	ND	11
4-Nitroaniline	ND	53
N-Nitrosodiphenylamine	ND	11
Azobenzene	ND	11
4-Bromophenyl-phenylether	ND	11
Hexachlorobenzene	ND	11
Phenanthrene	ND	11
Anthracene	ND	11
Di-n-butylphthalate	ND	11
Fluoranthene	ND	11
Pyrene	ND	11
Butylbenzylphthalate	ND	11
3,3'-Dichlorobenzidine	ND	53
Benzo(a)anthracene	ND	11
Chrysene	ND	11
bis(2-Ethylhexyl)phthalate	ND	11
Di-n-octylphthalate	ND	11
Benzo(b)fluoranthene	ND	11
Benzo(k)fluoranthene	ND	11
Benzo(a)pyrene	ND	11
Indeno(1,2,3-cd)pyrene	ND	11
Dibenz(a,h)anthracene	ND	11
Benzo(g,h,i)perylene	ND	11
Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	67	21-110
Phenol-d5	72	10-110
2,4,6-Tribromophenol	52	10-123
Nitrobenzene-d5	76	35-114
2-Fluorobiphenyl	37*	43-116
Terphenyl-d14	28*	33-141

* Values outside of QC limits

125702-004



Data File: /chem/bna01.i/061196a.b/14_5702-004.d
Date : 12-JUN-1996 00:17
Client ID: CURTIS&TOMPKINS,LTD
Sample Info:
Volume Injected (uL): 1.0
Column phase: Xti 5 x .5 u

Instrument: bna01.i
Operator: dsh
Column diameter: 0.25

/chem/bna01.i/061196a.b/14_5702-004.d



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

Field ID: SCI-15
Lab ID: 125702-005
Matrix: Water
Batch#: 27913
Units: ug/L
Diln Fac: 1

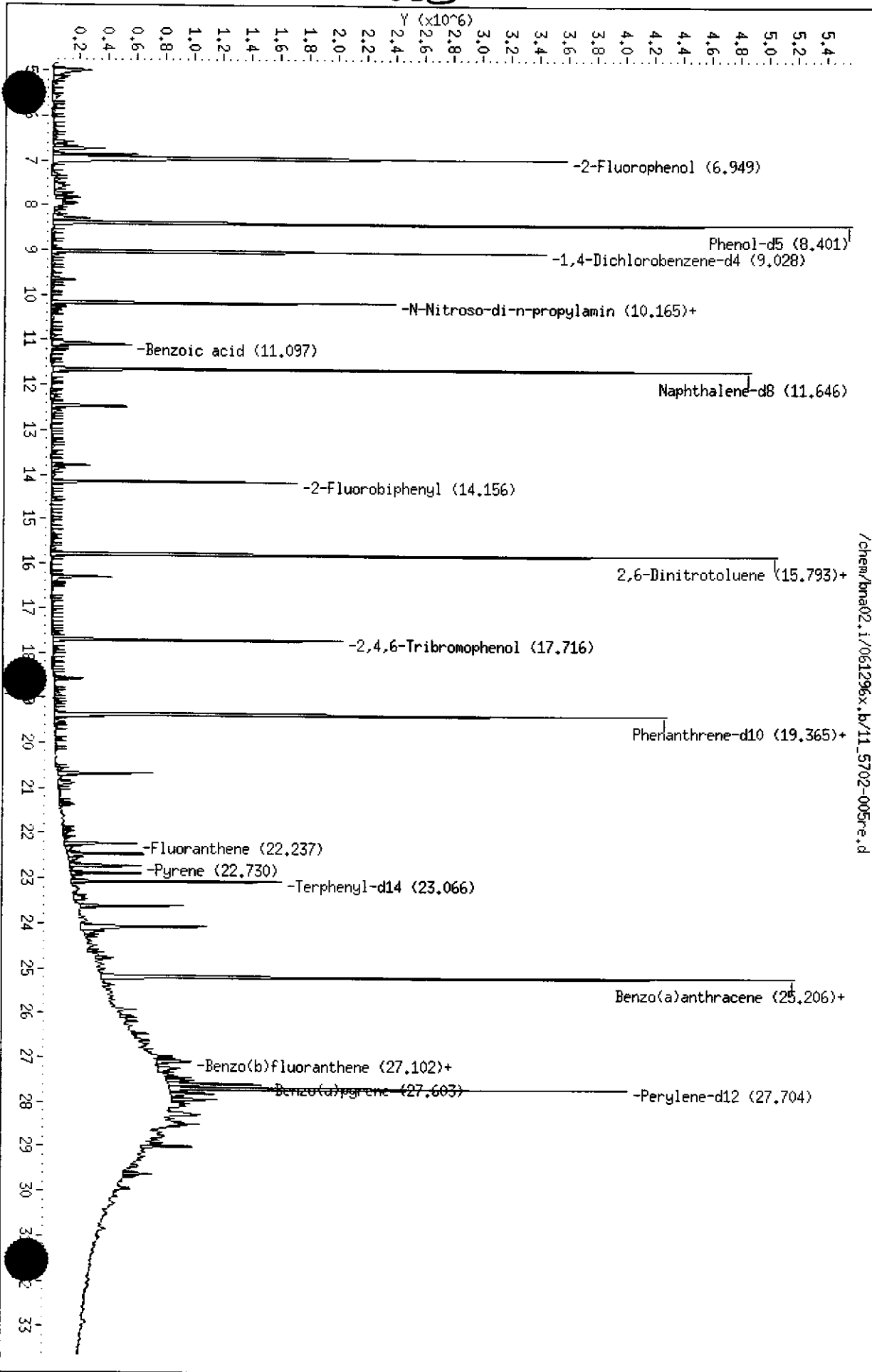
Sampled: 05/23/96
Received: 05/24/96
Extracted: 05/30/96
Analyzed: 06/12/96

Analyte	Result	Reporting Limit
Phenol	ND	11
2-Chlorophenol	ND	11
Benzyl alcohol	ND	11
2-Methylphenol	ND	11
4-Methylphenol	ND	11
2-Nitrophenol	ND	54
2,4-Dimethylphenol	ND	11
Benzoic acid	ND	54
2,4-Dichlorophenol	ND	11
4-Chloro-3-methylphenol	ND	11
2,4,6-Trichlorophenol	ND	11
2,4,5-Trichlorophenol	ND	54
2,4-Dinitrophenol	ND	54
4-Nitrophenol	ND	54
4,6-Dinitro-2-methylphenol	ND	54
Pentachlorophenol	ND	54
N-Nitrosodimethylamine	ND	11
Aniline	ND	11
bis(2-Chloroethyl)ether	ND	11
1,3-Dichlorobenzene	ND	11
1,4-Dichlorobenzene	ND	11
1,2-Dichlorobenzene	ND	11
bis(2-Chloroisopropyl) ether	ND	11
N-Nitroso-di-n-propylamine	ND	11
Hexachloroethane	ND	11
Nitrobenzene	ND	11
Isophorone	ND	11
bis(2-Chloroethoxy)methane	ND	11
1,2,4-Trichlorobenzene	ND	11
Naphthalene	ND	11
4-Chloroaniline	ND	11
Hexachlorobutadiene	ND	11
2-Methylnaphthalene	ND	11
Hexachlorocyclopentadiene	ND	11
2-Chloronaphthalene	ND	11
2-Nitroaniline	ND	54
Dimethylphthalate	ND	11
Acenaphthylene	ND	11

Semivolatile Organics by GC/MS		
Field ID: SCI-15	Sampled:	05/23/96
Lab ID: 125702-005	Received:	05/24/96
Matrix: Water	Extracted:	05/30/96
Batch#: 27913	Analyzed:	06/12/96
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	11
3-Nitroaniline	ND	54
Acenaphthene	ND	11
Dibenzofuran	ND	11
2,4-Dinitrotoluene	ND	11
Diethylphthalate	ND	11
4-Chlorophenyl-phenylether	ND	11
Fluorene	ND	11
4-Nitroaniline	ND	54
N-Nitrosodiphenylamine	ND	11
Azobenzene	ND	11
4-Bromophenyl-phenylether	ND	11
Hexachlorobenzene	ND	11
Phenanthrene	ND	11
Anthracene	ND	11
Di-n-butylphthalate	ND	11
Fluoranthene	ND	11
Pyrene	ND	11
Butylbenzylphthalate	ND	11
3,3'-Dichlorobenzidine	ND	54
Benzo(a)anthracene	ND	11
Chrysene	ND	11
bis(2-Ethylhexyl)phthalate	ND	11
Di-n-octylphthalate	ND	11
Benzo(b)fluoranthene	ND	11
Benzo(k)fluoranthene	ND	11
Benzo(a)pyrene	ND	11
Indeno(1,2,3-cd)pyrene	ND	11
Dibenz(a,h)anthracene	ND	11
Benzo(g,h,i)perylene	ND	11
Surrogate	% Recovery	Recovery Limits
2-Fluorophenol	68	21-110
Phenol-d5	80	10-110
2,4,6-Tribromophenol	38	10-123
Nitrobenzene-d5	63	35-114
2-Fluorobiphenyl	27*	43-116
Terphenyl-d14	23*	33-141

* Values outside of QC limits

125702-005



/chem/bna02.i/061296x.b/11_5702-005re.d

Data File: /chem/bna02.i/061296x.b/11_5702-005re.d
Date: 12-JUN-1996 23:04
Client ID: CURTIS&TOMPKINS.LTD
Sample Info:
Volume Injected (uL): 1.0
Column phase: Xti 5 x .5 u

Instrument: bna02.i
Operator: dsh
Column diameter: 0.25



Lab #: 125702

BATCH QC REPORT

Page 1 of 2

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 27913
Units: ug/L
Diln Fac: 1

Prep Date: 05/30/96
Analysis Date: 06/11/96

MB Lab ID: QC23029

Analyte	Result	Reporting Limit
Phenol	ND	10
2-Chlorophenol	ND	10
Benzyl alcohol	ND	10
2-Methylphenol	ND	10
4-Methylphenol	ND	10
2-Nitrophenol	ND	50
2,4-Dimethylphenol	ND	10
Benzoic acid	ND	50
2,4-Dichlorophenol	ND	10
4-Chloro-3-methylphenol	ND	10
2,4,6-Trichlorophenol	ND	10
2,4,5-Trichlorophenol	ND	50
2,4-Dinitrophenol	ND	50
4-Nitrophenol	ND	50
4,6-Dinitro-2-methylphenol	ND	50
Pentachlorophenol	ND	10
N-Nitrosodimethylamine	ND	10
Aniline	ND	10
bis(2-Chloroethyl)ether	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
1,2-Dichlorobenzene	ND	10
bis(2-Chloroisopropyl) ether	ND	10
N-Nitroso-di-n-propylamine	ND	10
Hexachloroethane	ND	10
Nitrobenzene	ND	10
Isophorone	ND	10
bis(2-Chloroethoxy)methane	ND	10
1,2,4-Trichlorobenzene	ND	10
Naphthalene	ND	10
4-Chloroaniline	ND	10
Hexachlorobutadiene	ND	10
2-Methylnaphthalene	ND	10
Hexachlorocyclopentadiene	ND	10
2-Chloronaphthalene	ND	10
2-Nitroaniline	ND	50
Dimethylphthalate	ND	10
Acenaphthylene	ND	10
2,6-Dinitrotoluene	ND	10
3-Nitroaniline	ND	50

Lab #: 125702

BATCH QC REPORT

Page 2 of 2

EPA 8270 Semi-Volatile Organics

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: EPA 8270
 Prep Method: EPA 3520

METHOD BLANK

 Matrix: Water
 Batch#: 27913
 Units: ug/L
 Diln Fac: 1

 Prep Date: 05/30/96
 Analysis Date: 06/11/96

MB Lab ID: QC23029

Analyte	Result	Reporting Limit
Acenaphthene	ND	10
Dibenzofuran	ND	10
2,4-Dinitrotoluene	ND	10
Diethylphthalate	ND	10
4-Chlorophenyl-phenylether	ND	10
Fluorene	ND	10
4-Nitroaniline	ND	50
N-Nitrosodiphenylamine	ND	10
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	10
Hexachlorobenzene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Di-n-butylphthalate	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Butylbenzylphthalate	ND	10
3,3'-Dichlorobenzidine	ND	50
Benzo(a)anthracene	ND	10
Chrysene	ND	10
bis(2-Ethylhexyl)phthalate	ND	10
Di-n-octylphthalate	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(a)pyrene	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Dibenz(a,h)anthracene	ND	10
Benzo(g,h,i)perylene	ND	10
Surrogate	%Rec	Recovery Limits
2-Fluorophenol	84	21-110
Phenol-d5	88	10-110
2,4,6-Tribromophenol	100	10-123
Nitrobenzene-d5	90	35-114
2-Fluorobiphenyl	101	43-116
Terphenyl-d14	111	33-141



Lab #: 125702

BATCH QC REPORT

Page 1 of 1

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8270
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27913
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/30/96
 Analysis Date: 06/11/96

BS Lab ID: QC23030

Analyte	Spike Added	BS	%Rec #	Limits
Phenol	100	70.52	71	12-110
2-Chlorophenol	100	75.83	76	27-123
4-Chloro-3-methylphenol	100	76.1	76	23-97
4-Nitrophenol	100	74.74	75	10-80
Pentachlorophenol	100	58.5	59	9-103
1,4-Dichlorobenzene	50	39	78	36-97
N-Nitroso-di-n-propylamine	50	35.78	72	41-116
1,2,4-Trichlorobenzene	50	42.74	85	39-98
Acenaphthene	50	45.51	91	46-118
2,4-Dinitrotoluene	50	38.78	78	24-96
Pyrene	50	47.97	96	26-127
Surrogate	%Rec	Limits		
2-Fluorophenol	77	21-110		
Phenol-d5	79	10-110		
2,4,6-Tribromophenol	100	10-123		
Nitrobenzene-d5	83	35-114		
2-Fluorobiphenyl	96	43-116		
Terphenyl-d14	107	33-141		

BSD Lab ID: QC23031

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Phenol	100	75.48	75	12-110	5	<42
2-Chlorophenol	100	82.11	82	27-123	8	<40
4-Chloro-3-methylphenol	100	78.32	78	23-97	3	<42
4-Nitrophenol	100	73.51	74	10-80	1	<50
Pentachlorophenol	100	59.62	60	9-103	2	<50
1,4-Dichlorobenzene	50	41.78	84	36-97	7	<28
N-Nitroso-di-n-propylamine	50	36.73	73	41-116	1	<38
1,2,4-Trichlorobenzene	50	46.28	93	39-98	9	<28
Acenaphthene	50	47.7	95	46-118	4	<31
2,4-Dinitrotoluene	50	39.27	79	24-96	1	<38
Pyrene	50	48.73	97	26-127	1	<31
Surrogate	%Rec	Limits				
2-Fluorophenol	82	21-110				
Phenol-d5	83	10-110				
2,4,6-Tribromophenol	101	10-123				
Nitrobenzene-d5	87	35-114				
2-Fluorobiphenyl	98	43-116				
Terphenyl-d14	108	33-141				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits

DO: Surrogate diluted out

CHAIN OF CUSTODY FORM

This C-O-C submitted 5/24/96 (Previously called on hold)

PROJECT NAME: KOT
 JOB NUMBER: 133-005 LAB: CURTIS & JIMPKINS
 PROJECT CONTACT: JERIANN ALEXANDER TURNAROUND: NORMAL
 SAMPLED BY: DEMU ALEXANDER REQUESTED BY: JERIANN ALEXANDER

ANALYSIS REQUESTED										

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS					METHOD PRESERVED					SAMPLING DATE				NOTES				
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME						
1	SCI-7	X				4	4		100 ml					2	05	23		0810	X	X				
2	SCI-9	X				4	3		1					1	05	23		0815	X	X				
5	SCI-11	X				4	4		1					2	05	23		0820	X	X	X	X	X	X
4	SCI-14	X				4	4		1					2	05	23		1615	X	X	X	X	X	X
3	SCI-15	X				4	4		1					2	05	23		1700	X	X	X	X	X	X

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
<i>[Signature]</i>	5/24/96 3:00	<i>[Signature]</i>	5/24/96 15:00
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:
 HOLD
 Note: if not enough sample, omit O&G.

Subsurface Consultants, Inc.
 171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
 (510) 268-0461 • FAX: 510-268-0137



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 05-JUN-96
Lab Job Number: 125717
Project ID: 133.005
Location: KOT

Reviewed by: _____

Reviewed by: _____

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TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125717-001	MW-3	27926	05/24/96	05/31/96	05/31/96	

Matrix: Water

Analyte	Units	125717-001
Diln Fac:		1
Gasoline	ug/L	<50
Surrogate		
Trifluorotoluene	%REC	91
Bromobenzene	%REC	85

Lab #: 125717

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	

METHOD BLANK

Matrix: Water	Prep Date: 05/31/96
Batch#: 27926	Analysis Date: 05/31/96
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC23084

Analyte	Result	
Gasoline	<50	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	90	69-120
Bromobenzene	76	70-122

Lab #: 125717

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

 Matrix: Water
 Batch#: 27926
 Units: ug/L
 Diln Fac: 1

 Prep Date: 05/31/96
 Analysis Date: 05/31/96

LCS Lab ID: QC23085

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	2010	2006	101	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	95	69-120		
Bromobenzene	92	70-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

Lab #: 125717

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ	Sample Date: 05/22/96
Lab ID: 125692-001	Received Date: 05/23/96
Matrix: Water	Prep Date: 05/31/96
Batch#: 27926	Analysis Date: 05/31/96
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC23087

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	2000	<50.00	1850	93	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	95	69-120			
Bromobenzene	86	70-122			

MSD Lab ID: QC23088

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	2000	1979	90	75-125	7	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	95	69-120				
Bromobenzene	98	70-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: EPA 3520
Location: KOT	

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125717-001	MW-3	27890	05/24/96	05/29/96	05/31/96	

Matrix: Water

Analyte	Units	125717-001
Diln Fac:		1
Diesel C12-C22	ug/L	1100 YH
Motor Oil C22-C50	ug/L	550 Y
Surrogate		
Hexacosane	%REC	99

Y: Sample exhibits fuel pattern which does not resemble standard

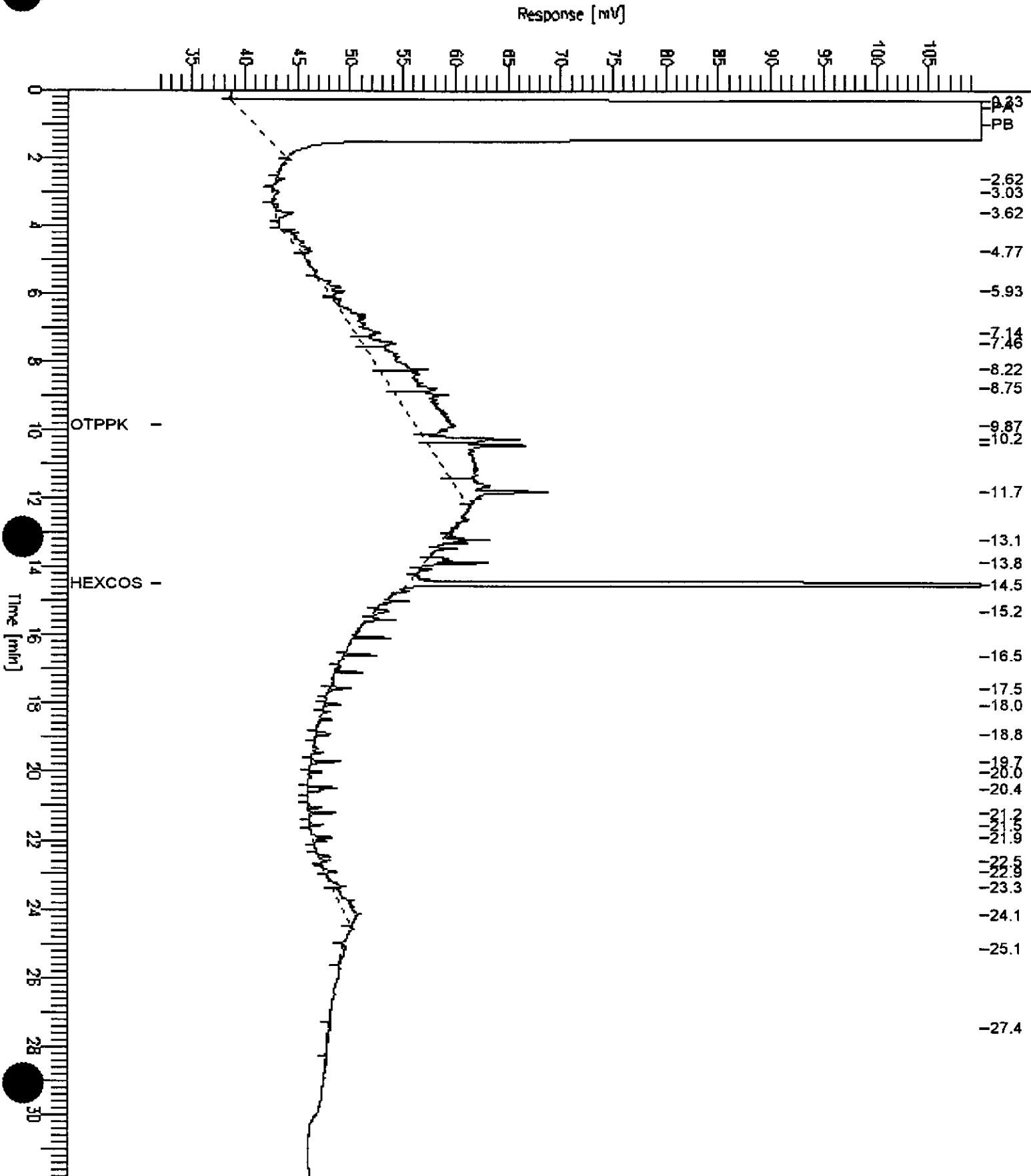
H: Heavier hydrocarbons than indicated standard

GC15 Channel B Surrogate

Sample Name : S_125717-001,27890
FileName : C:\GC15\CHB\151B031.raw
Method : DUAL
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 31.90 min
Plot Offset: 32 mV

Sample #: 500:2.5
Date : 5/31/96 09:43 PM
Time of Injection: 5/31/96 09:09 PM
Low Point : 32.00 mV
Plot Scale: 78.0 mV
High Point : 110.00 mV



Lab #: 125717

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

METHOD BLANK

 Matrix: Water
 Batch#: 27890
 Units: ug/L
 Diln Fac: 1

 Prep Date: 05/29/96
 Analysis Date: 05/30/96

MB Lab ID: QC22929

Analyte	Result	
Diesel C12-C22	<50	
Motor Oil C22-C50	<250	
Surrogate	%Rec	Recovery Limits
Hexacosane	105	60-140



Lab #: 125717

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27890
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/29/96
 Analysis Date: 05/30/96

BS Lab ID: QC22930

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	2509	101	60-140
Surrogate	%Rec	Limits		
Hexacosane	100	60-140		

BSD Lab ID: QC22931

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2602	105	60-140	4	<35
Surrogate	%Rec	Limits				
Hexacosane	100	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125717-001	MW-3	27926	05/24/96	05/31/96	05/31/96	

Matrix: Water

Analyte	Units	125717-001
Diln Fac:		1
Benzene	ug/L	<0.5
Toluene	ug/L	<0.5
Ethylbenzene	ug/L	<0.5
m,p-Xylenes	ug/L	<0.5
o-Xylene	ug/L	<0.5
Surrogate		
Trifluorotoluene	%REC	96
Bromobenzene	%REC	92



Lab #: 125717

BATCH QC REPORT

Page 1 of 1

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27926
Units: ug/L
Diln Fac: 1

Prep Date: 05/31/96
Analysis Date: 05/31/96

MB Lab ID: QC23084

Analyte	Result	
Benzene	<0.5	
Toluene	<0.5	
Ethylbenzene	<0.5	
m,p-Xylenes	<0.5	
o-Xylene	<0.5	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	97	58-130
Bromobenzene	85	62-131



Lab #: 125717

BATCH QC REPORT

Page 1 of 1

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 27926
Units: ug/L
Diln Fac: 1

Prep Date: 05/31/96
Analysis Date: 05/31/96

LCS Lab ID: QC23086

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	20.7	20	104	80-120
Toluene	20.7	20	104	80-120
Ethylbenzene	20.3	20	102	80-120
m,p-Xylenes	42.8	40	107	80-120
o-Xylene	21.6	20	108	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	99	58-130		
Bromobenzene	87	62-131		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

CHAIN OF CUSTODY FORM

12,717

PAGE

PROJECT NAME: KOT
 JOB NUMBER: 133.005 LAB: Curtis + Tomptius
 PROJECT CONTACT: Jeri Alexander / Jerome DeVellera TURNAROUND: Normal
 SAMPLED BY: Dennis Alexander REQUESTED BY: Jeri Alexander

ANALYSIS REQUESTED											
TEH (c-s to c-50) TVH / BTXE											

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H ₂ SO ₄	HNO ₃	ICE	NONE	MONTH	DAY	YEAR	TIME	
	MW-3	X				3	1			X			X		05	24	96	12:30	XX

CHAIN OF CUSTODY RECORD				COMMENTS & NOTES:
RELEASED BY: (Signature) <i>Dennis Alexander</i>	DATE / TIME 5/28/96 3:15 pm	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE / TIME 5-28-96 3:15	
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME	
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME	
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME	

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 171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
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Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710. Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 06-JUN-96
Lab Job Number: 125716
Project ID: 133.005
Location: KOT

Reviewed by: _____

Reviewed by: _____

This package may be reproduced only in its entirety.

Client: Subsurface Consultants

Laboratory Login Number: 125716

 Project Name: KOT
 Project Number: 133.005

Report Date: 06 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520EF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
125716-007	SCI-13 @ 4.5	Soil	23-MAY-96	28-MAY-96	03-JUN-96	630	mg/Kg	50	TR	27958
125716-008	SCI-14 @ 3.5	Soil	23-MAY-96	28-MAY-96	03-JUN-96	920	mg/Kg	100	TR	27958
125716-009	SCI-14 @ 6.0	Soil	23-MAY-96	28-MAY-96	03-JUN-96	3100	mg/Kg	50	TR	27958
125716-010	SCI-15 @ 3.0	Soil	23-MAY-96	28-MAY-96	03-JUN-96	400	mg/Kg	50	TR	27958
125716-011	SCI-16 @ 2.5	Soil	23-MAY-96	28-MAY-96	03-JUN-96	570	mg/Kg	50	TR	27958
125716-012	SCI-17 @ 3.5	Soil	24-MAY-96	28-MAY-96	03-JUN-96	72	mg/Kg	50	TR	27958
125716-013	SCI-18 @ 3.5	Soil	24-MAY-96	28-MAY-96	03-JUN-96	1400	mg/Kg	50	TR	27958
125716-014	SCI-19 @ 3.5	Soil	24-MAY-96	28-MAY-96	03-JUN-96	ND	mg/Kg	50	TR	27958
125716-015	SCI-20 @ 3.5	Soil	24-MAY-96	28-MAY-96	03-JUN-96	ND	mg/Kg	50	TR	27958
125716-016	SCI-20 @ 6.5	Soil	24-MAY-96	28-MAY-96	03-JUN-96	52	mg/Kg	50	TR	27958

ND = Not Detected at or above Reporting Limit (RL).

Q C B a t c h R e p o r t

 Client: Subsurface Consultants
 Project Name: KOT
 Project Number: 133.005

 Laboratory Login Number: 125716
 Report Date: 06 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 27958

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	50	mg/Kg	SMWW 17:552OEF	03-JUN-96

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	83%	SMWW 17:552OEF	03-JUN-96
BSD	85%	SMWW 17:552OEF	03-JUN-96

		Control Limits
Average Spike Recovery	84%	80% - 120%
Relative Percent Difference	2.2%	< 20%



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125716-006	SCI-12 @ 6.5	27977	05/22/96	06/04/96	06/04/96	
125716-007	SCI-13 @ 4.5	27927	05/23/96	06/01/96	06/01/96	
125716-008	SCI-14 @ 3.5	27927	05/23/96	06/01/96	06/01/96	
125716-009	SCI-14 @ 6.0	27927	05/23/96	06/01/96	06/01/96	

Matrix: Soil

Analyte	Units	125716-006	125716-007	125716-008	125716-009
Diln Fac:		10	1	1	1
Gasoline	mg/Kg	800	<1	<1	<1
Surrogate					
Trifluorotoluene	%REC	112	83	82	82
Bromobenzene	%REC	88	84	83	85



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125716-010	SCI-15 @ 3.0	27927	05/23/96	06/01/96	06/01/96	
125716-011	SCI-16 @ 2.5	27927	05/23/96	06/01/96	06/01/96	
125716-012	SCI-17 @ 3.5	27927	05/24/96	06/01/96	06/01/96	
125716-013	SCI-18 @ 3.5	27927	05/24/96	06/01/96	06/01/96	

Matrix: Soil

Analyte	Units	125716-010	125716-011	125716-012	125716-013
Diln Fac:		1	1	1	1
Gasoline	mg/Kg	<1	<1	<1	<1
Surrogate					
Trifluorotoluene	%REC	84	82	84	85
Bromobenzene	%REC	87	84	87	88

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125716-014	SCI-19 @ 3.5	27927	05/24/96	06/01/96	06/01/96	

Matrix: Soil

Analyte	Units	125716-014
Diln Fac:		1
Gasoline	mg/Kg	<1
Surrogate		
Trifluorotoluene	%REC	87
Bromobenzene	%REC	85

Lab #: 125716

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	

METHOD BLANK

Matrix: Soil	Prep Date: 05/31/96
Batch#: 27927	Analysis Date: 05/31/96
Units: mg/Kg	
Diln Fac: 1	

MB Lab ID: QC23089

Analyte	Result	
Gasoline	<1.0	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	84	52-127
Bromobenzene	82	45-140

Lab #: 125716

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	

METHOD BLANK

Matrix: Water	Prep Date: 06/04/96
Batch#: 27977	Analysis Date: 06/04/96
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC23305

Analyte	Result	
Gasoline	<1.0	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	84	52-127
Bromobenzene	69	45-140

Lab #: 125716

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

 Matrix: Soil
 Batch#: 27927
 Units: mg/Kg
 Diln Fac: 1

 Prep Date: 05/31/96
 Analysis Date: 05/31/96

LCS Lab ID: QC23090

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	10.72	10	107	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	93	52-127		
Bromobenzene	94	45-140		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

Lab #: 125716

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	

LABORATORY CONTROL SAMPLE

Matrix: Water	Prep Date: 06/04/96
Batch#: 27977	Analysis Date: 06/04/96
Units: ug/L	
Diln Fac: 1	

LCS Lab ID: QC23306

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	1901	2006	95	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	79	52-127		
Bromobenzene	82	45-140		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

Lab #: 125716

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ	Sample Date: 05/30/96
Lab ID: 125764-001	Received Date: 05/30/96
Matrix: Soil	Prep Date: 05/31/96
Batch#: 27927	Analysis Date: 05/31/96
Units: mg/Kg	
Diln Fac: 1	

MS Lab ID: QC23092

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	10	<1.000	9.35	94	65-135
Surrogate	%Rec	Limits			
Trifluorotoluene	90	52-127			
Bromobenzene	91	45-140			

MSD Lab ID: QC23093

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	10	9.63	96	65-135	3	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	91	52-127				
Bromobenzene	92	45-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: LUFT

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125716-001	SCI-7 @ 6.0	27917	05/22/96	05/31/96	06/04/96	
125716-002	SCI-8 @ 5.5	27917	05/22/96	05/31/96	06/04/96	
125716-003	SCI-9 @ 5.5	27917	05/22/96	05/31/96	06/04/96	
125716-004	SCI-10 @ 5.0	27917	05/22/96	05/31/96	06/04/96	

Matrix: Soil

Analyte	Units	125716-001	125716-002	125716-003	125716-004
Diln Fac:		1	1	1	1
Diesel C12-C22	mg/Kg	15 YH	7.4YH	<1	28 YH
Motor Oil C22-C50	mg/Kg	100 YH	120 YH	<5	370 YH
Surrogate					
Hexacosane	%REC	77	73	69	100

Y: Sample exhibits fuel pattern which does not resemble standard
H: Heavier hydrocarbons than indicated standard

TEH Chromatogram-GC13 CH A

Sample Name : 125716-001,50:5

FileName : g:\gc13\cha\154a068.raw

Method : 13A32.ins

Start Time : 0.00 min

Scale Factor: -1

End Time : 31.92 min

Plot Offset: 30 mV

Sample #: 27917

Date : 6/4/96 09:55 AM

Time of Injection: 6/4/96 09:21 AM

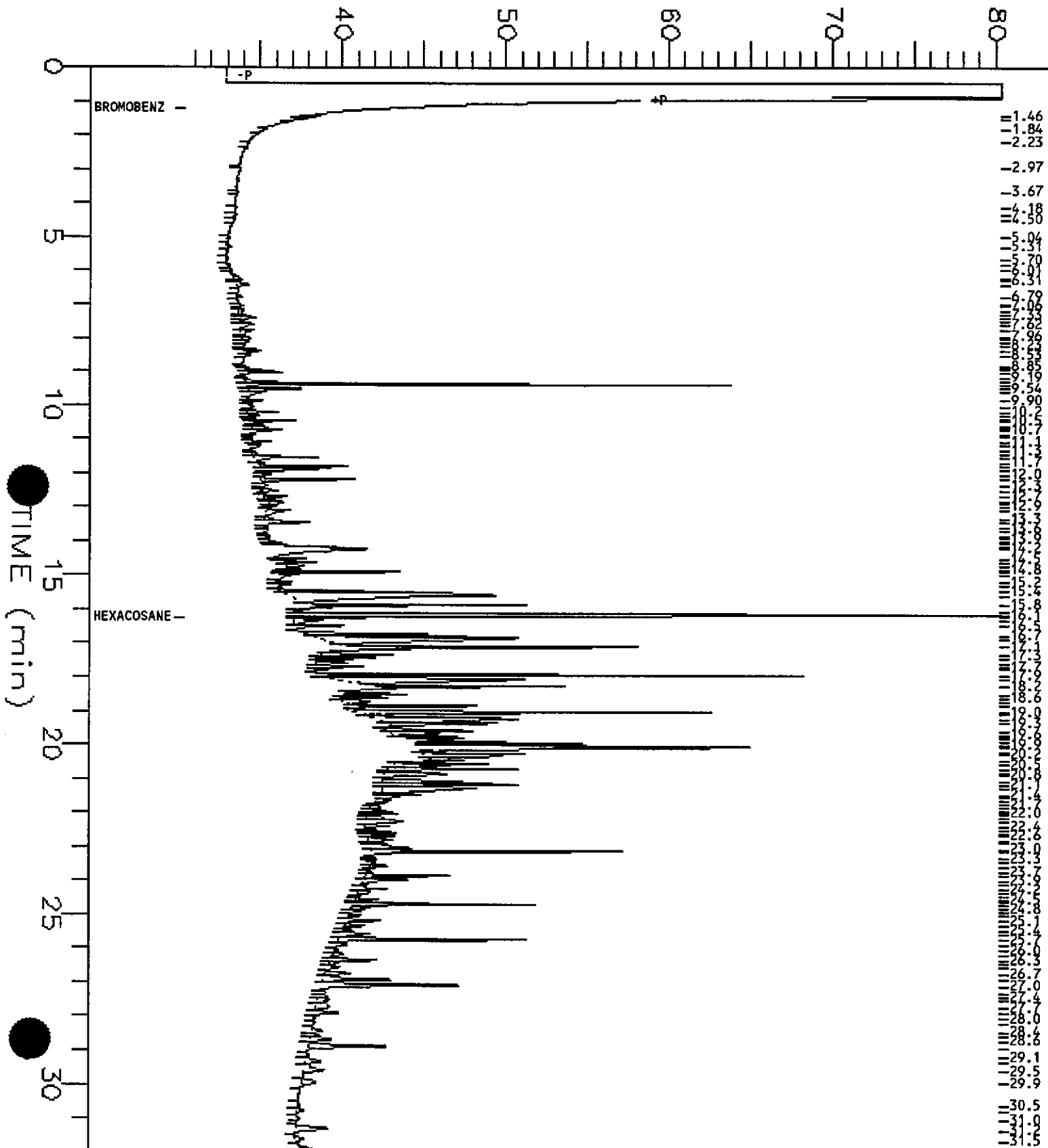
Low Point : 30.39 mV

Plot Scale: 50 mV

Page 1 of 1

High Point : 80.39 mV

RESPONSE (mV)



TEH Chromatogram-GC13 CH A

Sample Name : 125716-002,50:5

Sample #: 27917

Page 1 of 1

FileName : g:\gc13\cha\154a069.raw

Date : 6/4/96 11:07 AM

Method : 13A32.ins

Time of Injection: 6/4/96 10:04 AM

Start Time : 0.00 min

End Time : 31.92 min

Low Point : 29.49 mV

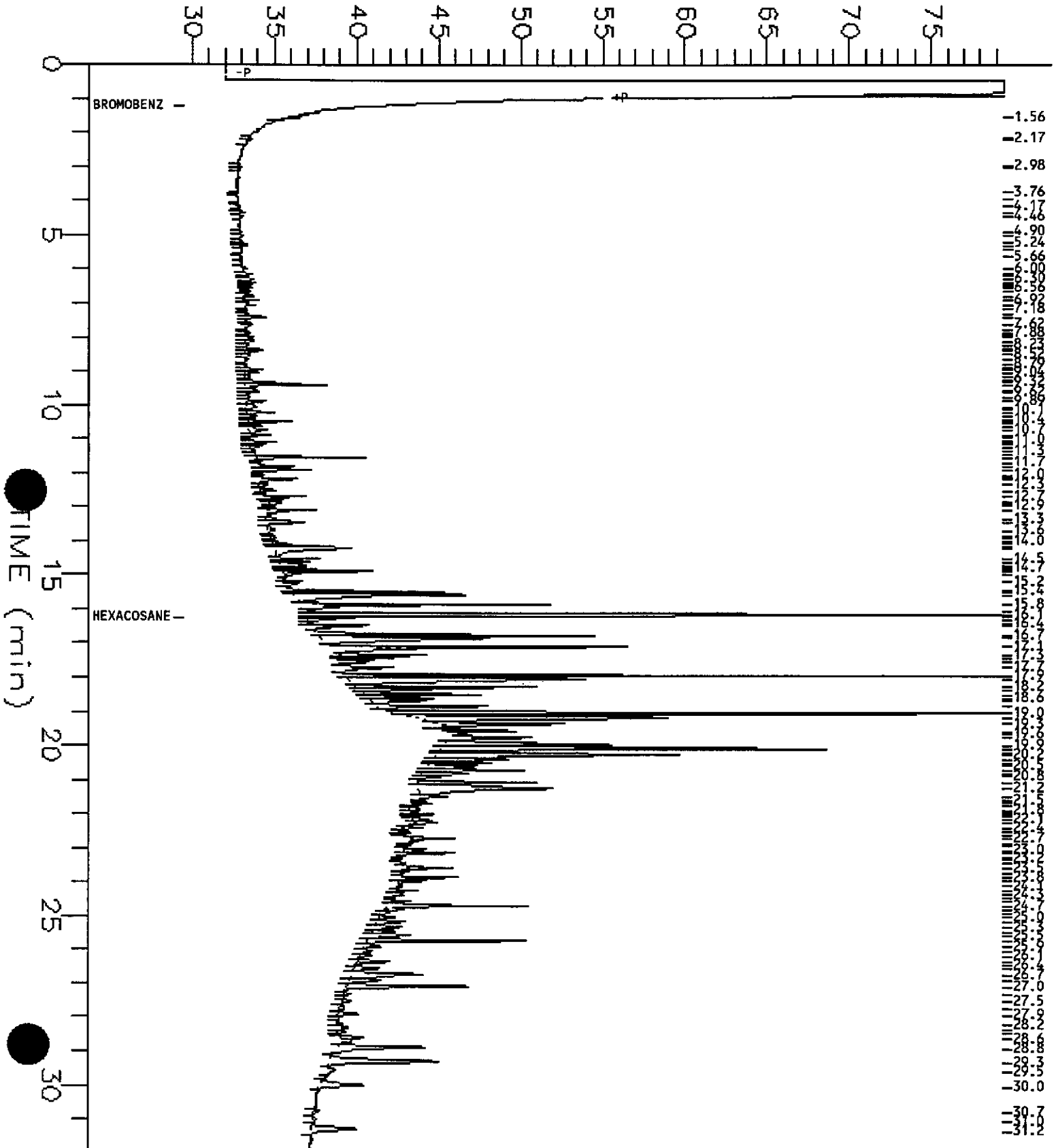
High Point : 79.49 mV

Scale Factor: -1

Plot Offset: 30 mV

Plot Scale: 50 mV

RESPONSE (mV)



TEH Chromatogram-GC13 CH A

Sample Name : 125716-003,50:5

Sample #: 27917

Page 1 of 1

FileName : g:\gc13\cha\154a066.raw

Date : 6/4/96 08:29 AM

Method : 13A32.ins

Time of Injection: 6/4/96 07:56 AM

Start Time : 0.00 min

End Time : 31.92 min

Low Point : 30.44 mV

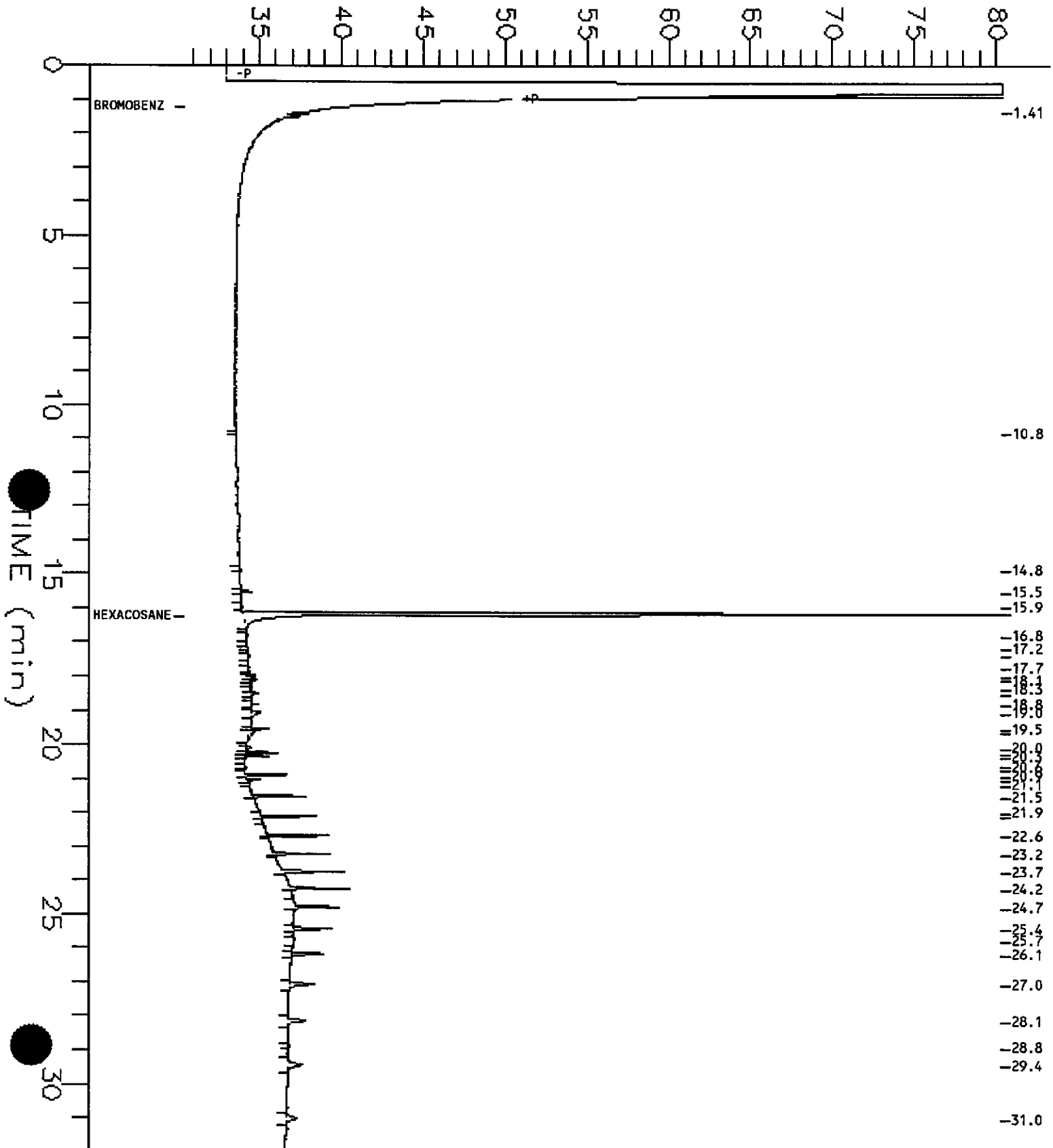
High Point : 80.44 mV

Scale Factor: -1

Plot Offset: 30 mV

Plot Scale: 50 mV

RESPONSE (mV)



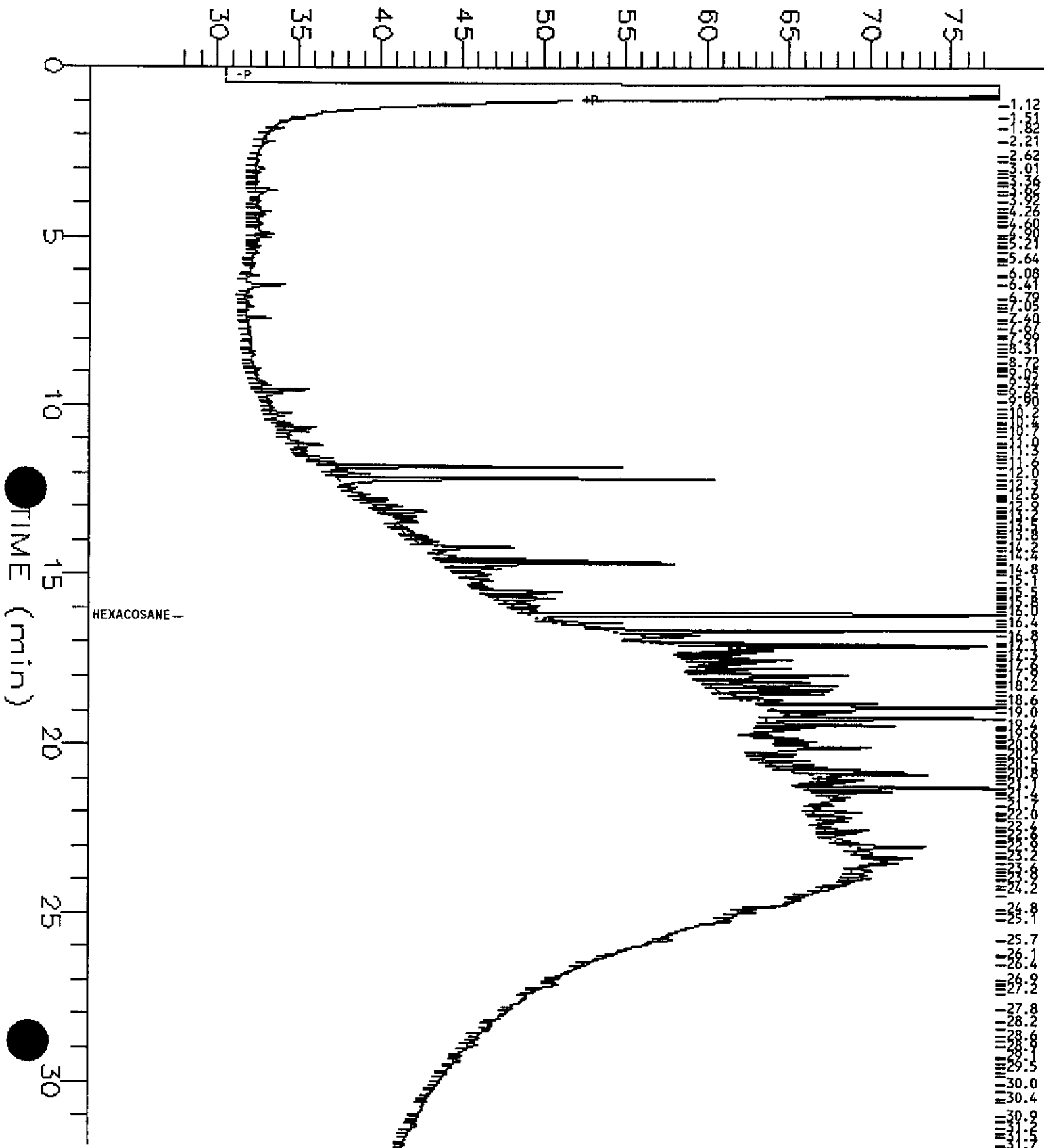
TEH Chromatogram-GC13 CH A

Sample Name : 125716-004,50:5
FileName : g:\gc13\cha\154a077.raw
Method : 13A32.ins
Start Time : 0.00 min
Scale Factor : -1

End Time : 31.92 min
Plot Offset : 28 mV

Sample #: 27917
Date : 6/4/96 04:19 PM
Time of Injection: 6/4/96 03:45 PM
Low Point : 27.97 mV
Plot Scale : 50 mV

RESPONSE (mV)





TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: LUFT

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125716-005	SCI-11 @ 3.5	27917	05/22/96	05/31/96	06/04/96	
125716-006	SCI-12 @ 6.5	27917	05/22/96	05/31/96	06/05/96	
125716-007	SCI-13 @ 4.5	27917	05/23/96	05/31/96	06/05/96	
125716-008	SCI-14 @ 3.5	27917	05/23/96	05/31/96	06/05/96	

Matrix: Soil

Analyte	Units	125716-005	125716-006	125716-007	125716-008
Diln Fac:		1	2	2	20
Diesel C12-C22	mg/Kg	<1	330 YLH	97 YH	3800 H
Motor Oil C22-C50	mg/Kg	<5	940 YH	2100 YH	10000 YLH
Surrogate					
Hexacosane	%REC	93	120	111	DO

DO: Surrogate diluted out

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

L: Lighter hydrocarbons than indicated standard

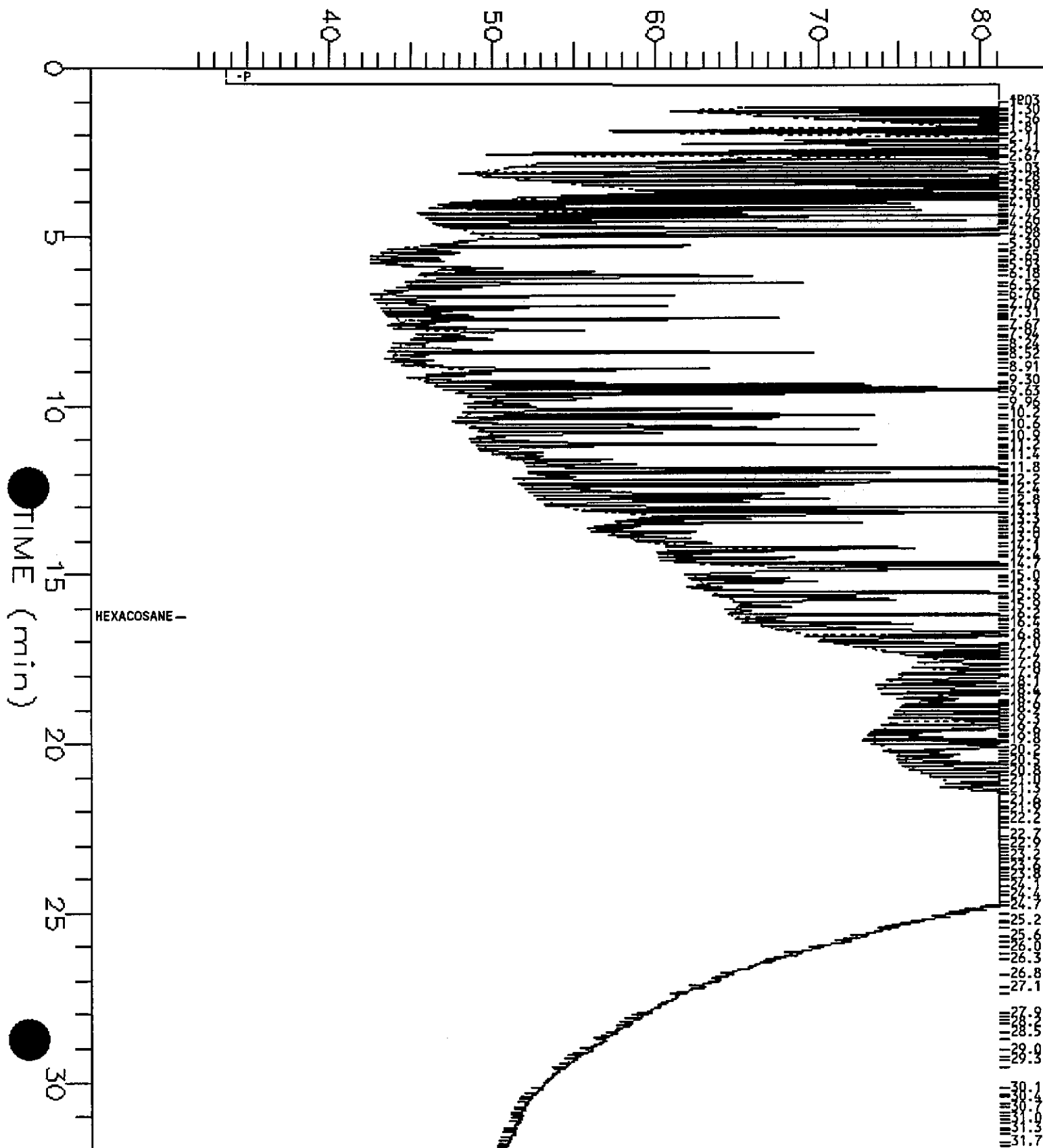
TEH Chromatogram-GC13 CH A

Sample Name : 125716-006,50:10
FileName : g:\gc13\cha\154a098.raw
Method : 13A32.ins
Start Time : 0.00 min
Scale Factor: -1

End Time : 31.92 min
Plot Offset: 31 mV

Sample #: 27917
Date : 6/5/96 10:46 AM
Time of Injection: 6/5/96 10:07 AM
Low Point : 31.17 mV
High Point : 81.17 mV
Plot Scale: 50 mV

RESPONSE (mV)

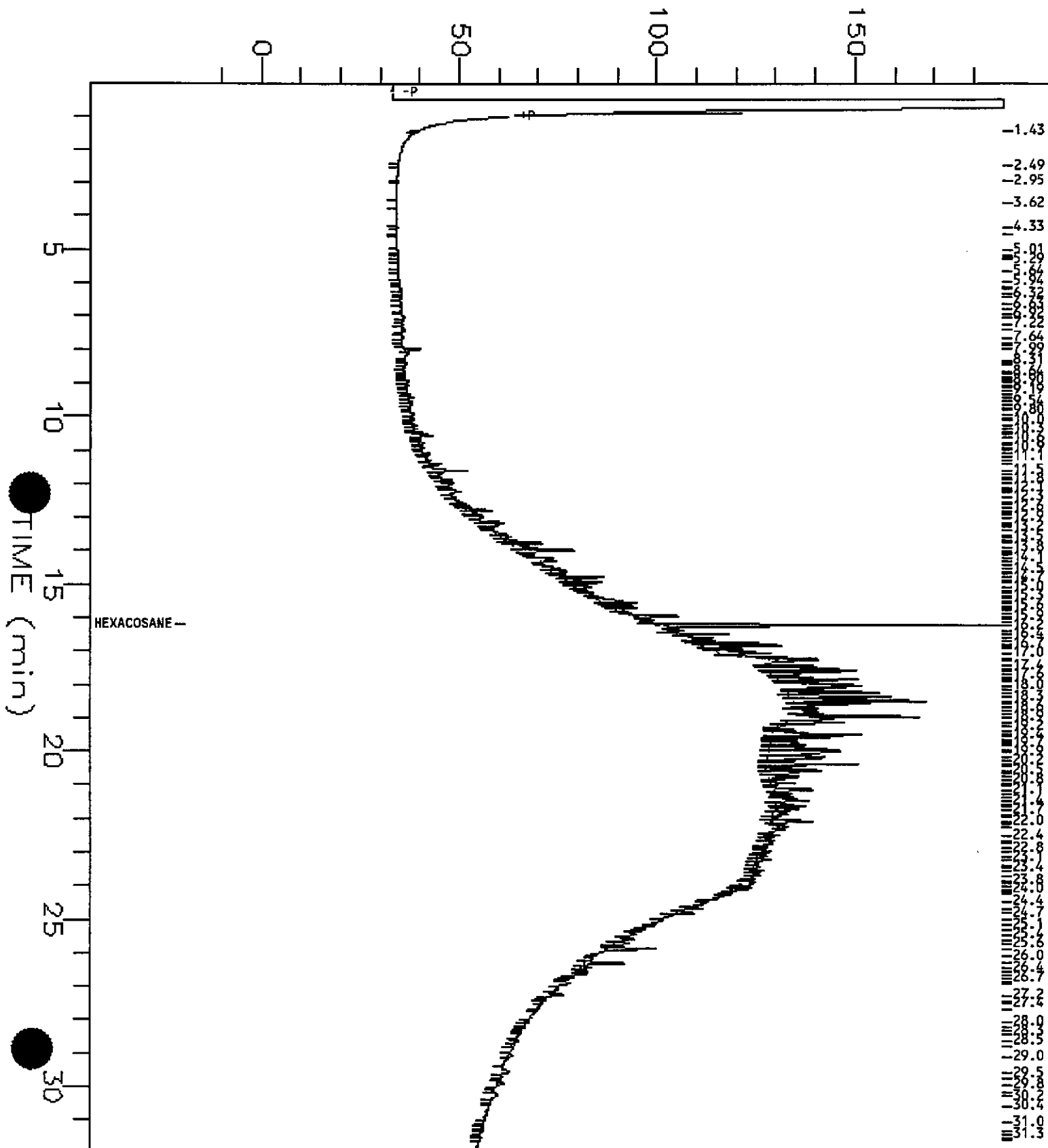


Sample Name : 125716-007,50:10
 FileName : G:\GC13\CHA\154a099.raw
 Method : 13A32.ins
 Start Time : 0.01 min
 Scale Factor: 0

End Time : 31.92 min
 Plot Offset: -19 mV

Sample #: 27917
 Date : 6/5/96 11:59 AM
 Time of Injection: 6/5/96 10:49 AM
 Low Point : -19.16 mV
 Plot Scale: 207 mV
 Page 1 of 1
 High Point : 187.67 mV

RESPONSE (mV)



TEH Chromatogram-GC13 CH A

Sample Name : 125716-008,50:200

FileName : g:\gc13\cha\154a102.raw

Method : 13A32.ins

Start Time : 0.00 min

Scale Factor: -1

End Time : 31.92 min

Plot Offset: 29 mV

Sample #: 27917

Date : 6/5/96 01:31 PM

Time of Injection: 6/5/96 12:57 PM

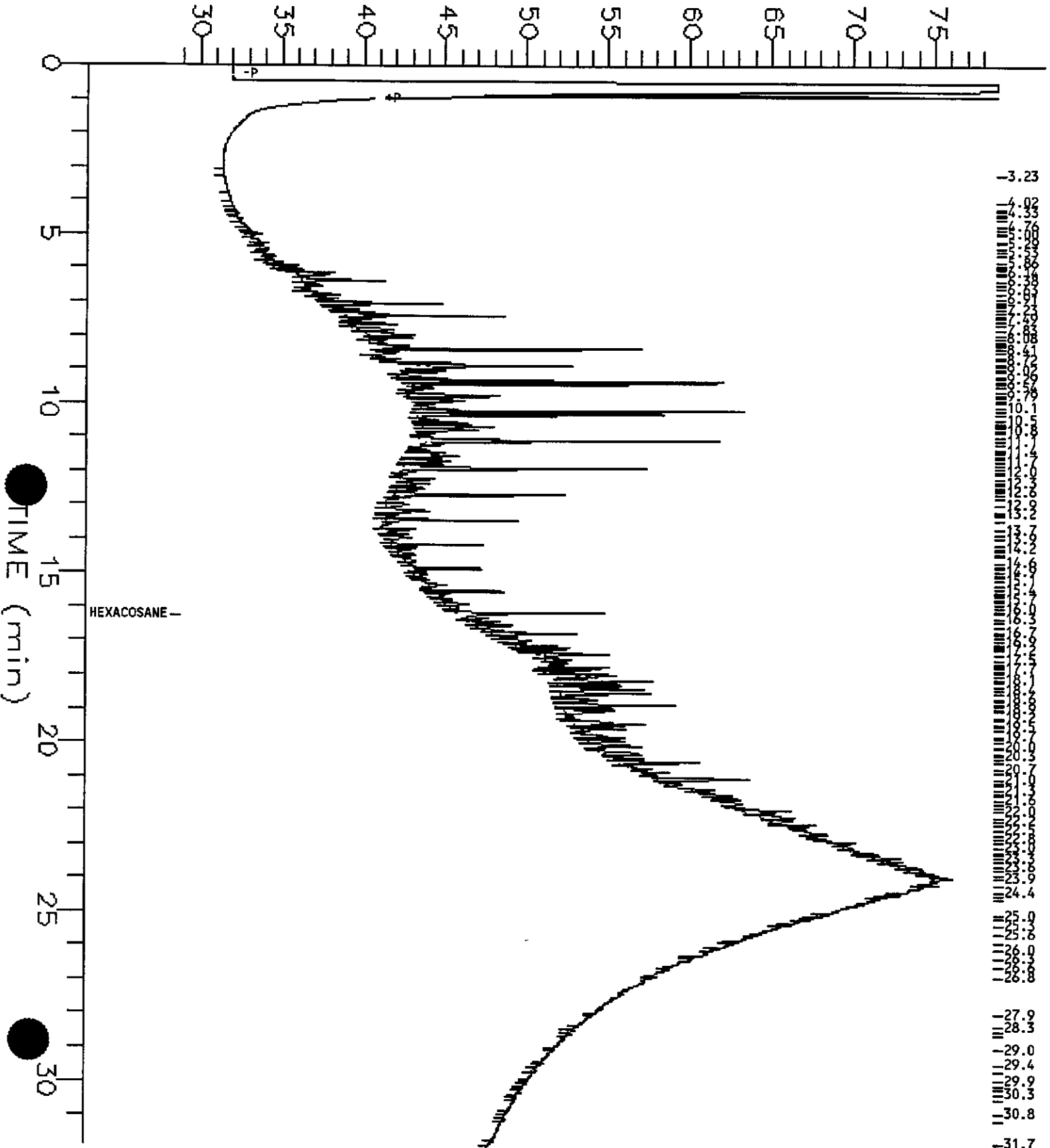
Low Point : 28.87 mV

Plot Scale: 50 mV

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High Point : 78.87 mV

RESPONSE (mV)





TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: LUFT

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125716-009	SCI-14 @ 6.0	27917	05/23/96	05/31/96	06/04/96	
125716-010	SCI-15 @ 3.0	27917	05/23/96	05/31/96	06/04/96	
125716-011	SCI-16 @ 2.5	27917	05/23/96	05/31/96	06/04/96	
125716-012	SCI-17 @ 3.5	27917	05/24/96	05/31/96	06/05/96	

Matrix: Soil

Analyte	Units	125716-009	125716-010	125716-011	125716-012
Diln Fac:		1	1	1	4
Diesel C12-C22	mg/Kg	32 YH	10 YH	40 YH	610 YHZ
Motor Oil C22-C50	mg/Kg	510 YH	540 YH	1700 YH	3900 YH
Surrogate					
Hexacosane	%REC	106	88	101	103

Y: Sample exhibits fuel pattern which does not resemble standard

Z: Sample exhibits unknown single peak or peaks

H: Heavier hydrocarbons than indicated standard

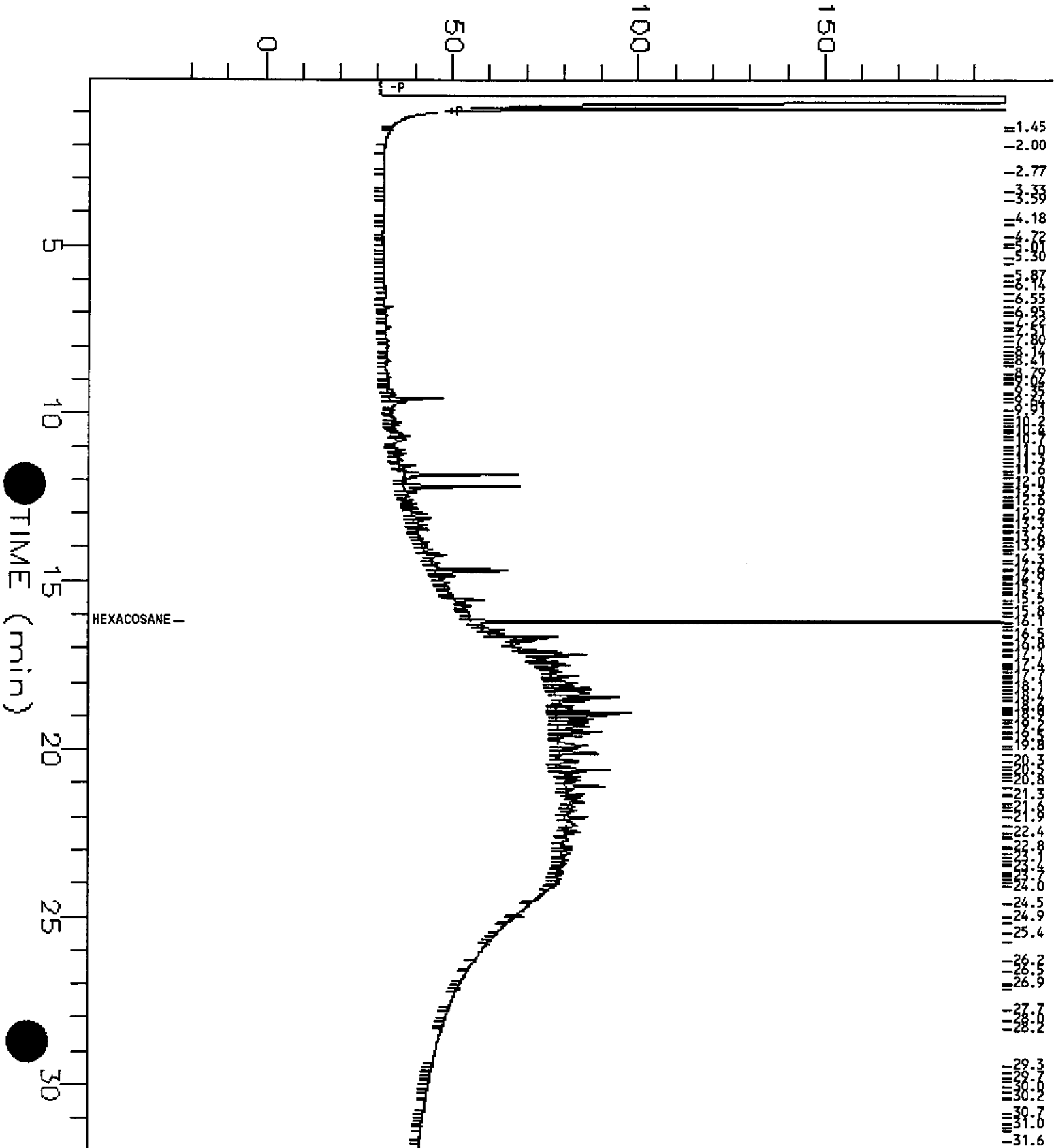
TEH Chromatogram-GC13 CH A

Sample Name : 125716-009,50:5
 FileName : G:\GC13\CHA\154a076.raw
 Method : 13A32.ins
 Start Time : 0.01 min
 Scale Factor: 0

End Time : 31.92 min
 Plot Offset: -22 mV

Sample #: 27917
 Date : 6/4/96 03:41 PM
 Time of Injection: 6/4/96 03:02 PM
 Low Point : -21.81 mV
 High Point : 198.59 mV
 Plot Scale: 220 mV

RESPONSE (mV)



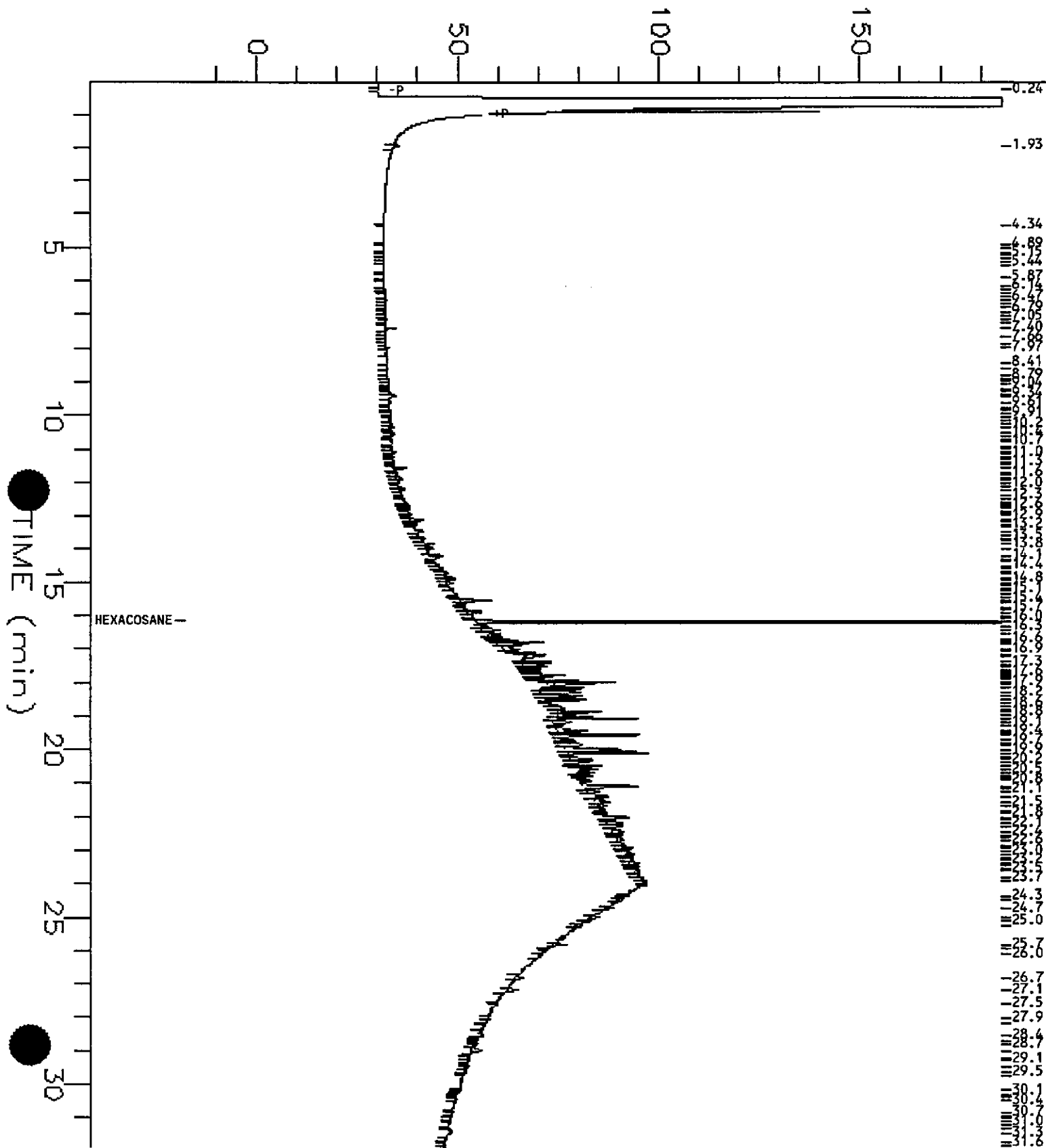
TEH Chromatogram-GC13 CH A

Sample Name : 125716-010,50:5
 FileName : G:\GC13\CHA\154a078.raw
 Method : 13A32.ins
 Start Time : 0.01 min
 Scale Factor : 0

End Time : 31.92 min
 Plot Offset : -18 mV

Sample #: 27917
 Date : 6/5/96 09:14 AM
 Time of Injection: 6/4/96 04:28 PM
 Low Point : -17.76 mV
 High Point : 185.50 mV
 Plot Scale: 203 mV

RESPONSE (mV)

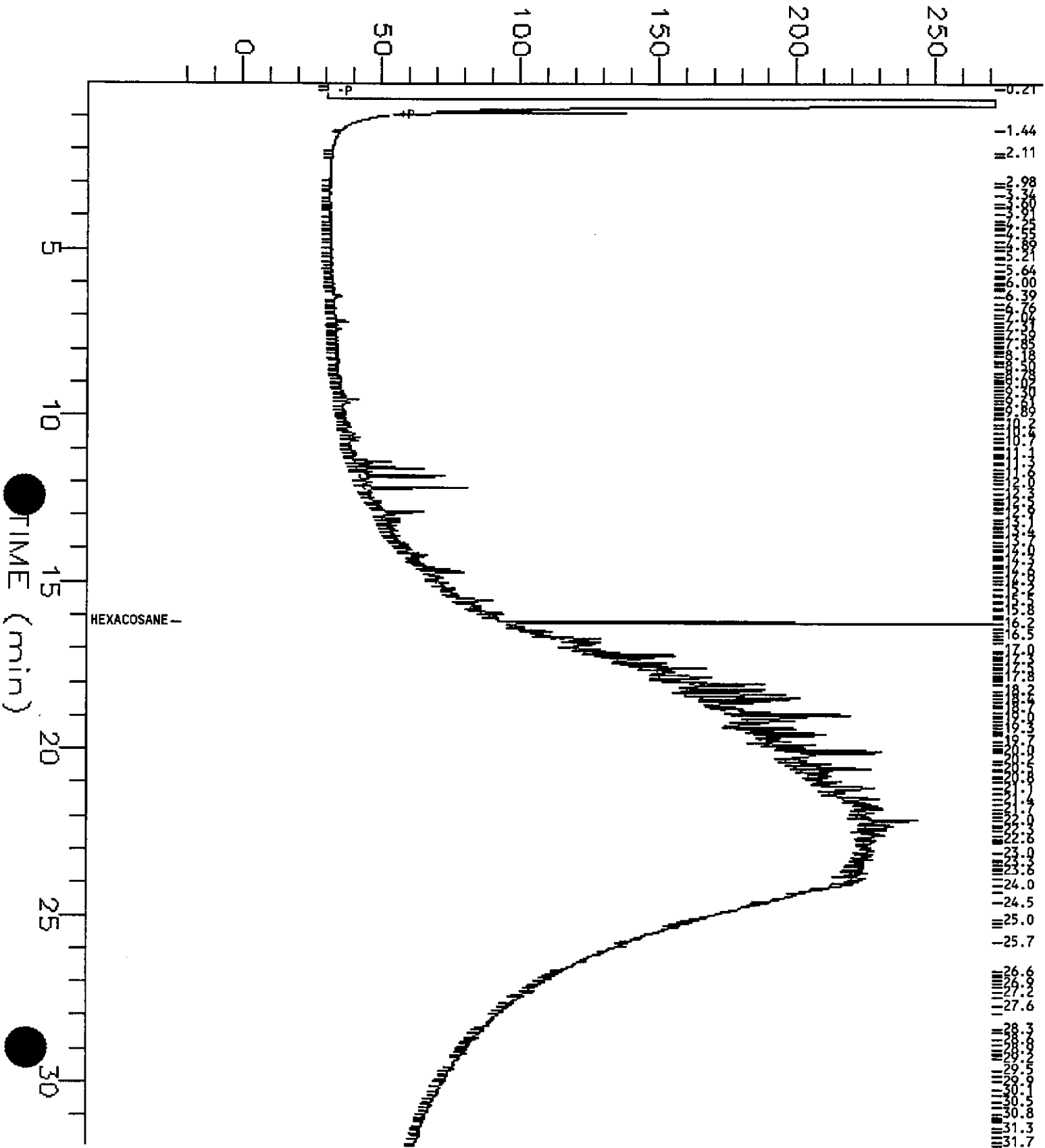


Sample Name : 125716-011,50:5
 FileName : G:\GC13\CHA\154a081.raw
 Method : 13A32.ins
 Start Time : 0.01 min
 Scale Factor : 0

End Time : 31.92 min
 Plot Offset : -22 mV

Sample #: 27917
 Date : 6/5/96 09:18 AM
 Time of Injection: 6/4/96 06:35 PM
 Low Point : -21.90 mV
 High Point : 271.94 mV
 Plot Scale: 294 mV

RESPONSE (mV)



TEH Chromatogram-GC13 CH A

Sample Name : 125716-012,50:20

FileName : G:\GC13\CHA\154a100.raw

Method : 13A32.ins

Start Time : 0.01 min

Scale Factor: 0

End Time : 31.92 min

Plot Offset: -20 mV

Sample #: 27917

Date : 6/5/96 12:07 PM

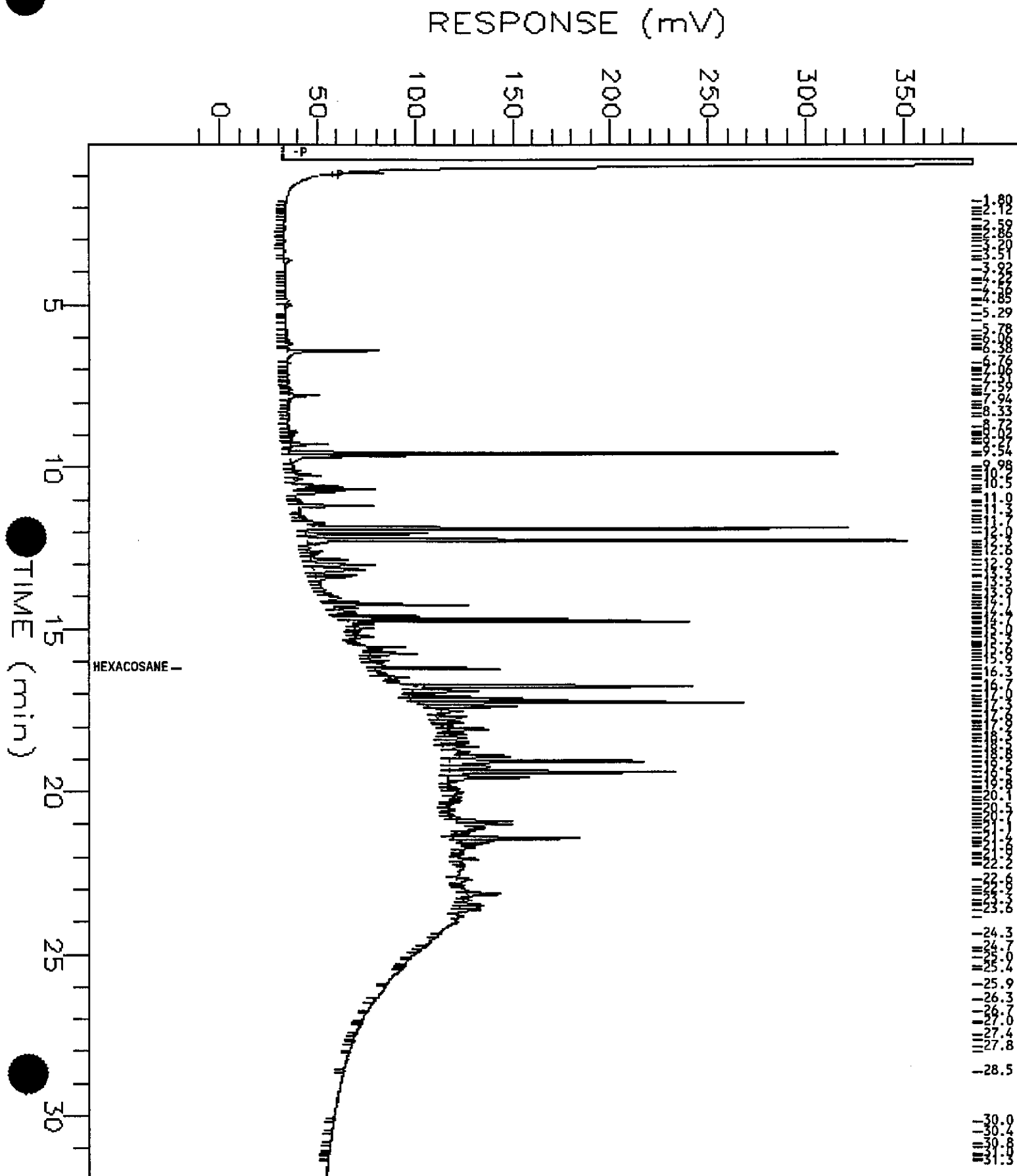
Time of Injection: 6/5/96 11:31 AM

Low Point : -19.77 mV

Plot Scale: 406 mV

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High Point : 385.72 mV





TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: LUFT
Location: KOT	

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125716-013	SCI-18 @ 3.5	27917	05/24/96	05/31/96	06/05/96	
125716-014	SCI-19 @ 3.5	27917	05/24/96	05/31/96	06/05/96	
125716-015	SCI-20 @ 3.5	27917	05/24/96	05/31/96	06/04/96	
125716-016	SCI-20 @ 6.5	27917	05/24/96	05/31/96	06/04/96	

Matrix: Soil

Analyte	Units	125716-013	125716-014	125716-015	125716-016
Diln Fac:		1	40	1	1
Diesel C12-C22	mg/Kg	780 YH	5600	<1	240 YH
Motor Oil C22-C50	mg/Kg	37000 YH	<200	<5	210 YH
Surrogate					
Hexacosane	%REC	DO	DO	88	90

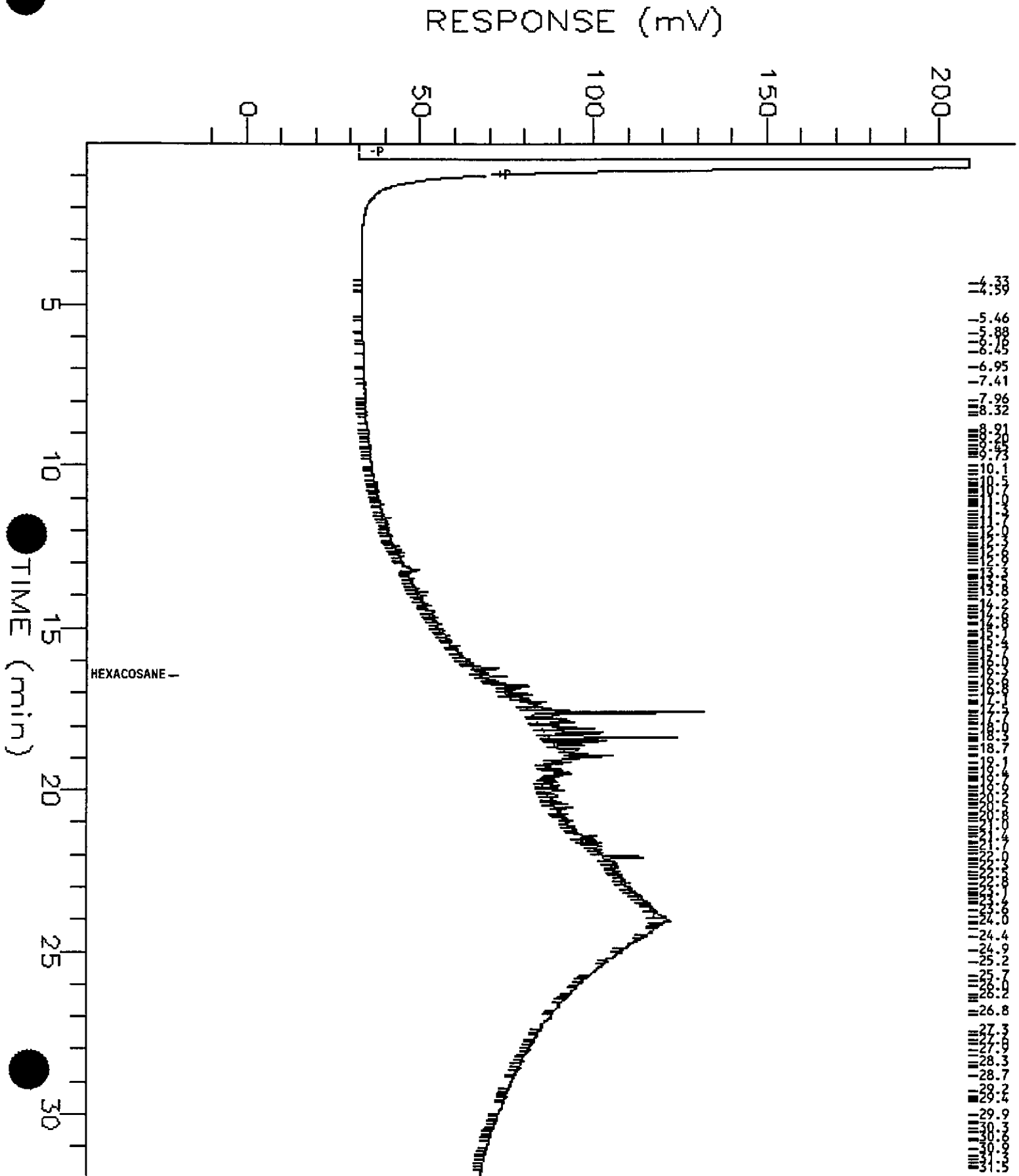
DO: Surrogate diluted out
 Y: Sample exhibits fuel pattern which does not resemble standard
 H: Heavier hydrocarbons than indicated standard

TEH Chromatogram-GC13 CH A

Sample Name : 125716-013,50:300
 FileName : G:\GC13\CHA\154a089.raw
 Method : 13A32.ins
 Start Time : 0.01 min
 Scale Factor: 0

End Time : 31.92 min
 Plot Offset: -20 mV

Sample #: 27917
 Date : 6/5/96 04:08 PM
 Time of Injection: 6/5/96 12:14 AM
 Low Point : -19.82 mV
 High Point : 208.73 mV
 Plot Scale: 229 mV



TEH Chromatogram-GC13 CH A

Sample Name : 125716-014,50:200

Sample #: 27917

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FileName : g:\gc13\cha\154a104.raw

Date : 6/5/96 02:55 PM

Method : 13A32.ins

Time of Injection: 6/5/96 02:21 PM

Start Time : 0.00 min

End Time : 31.92 min

Low Point : 28.62 mV

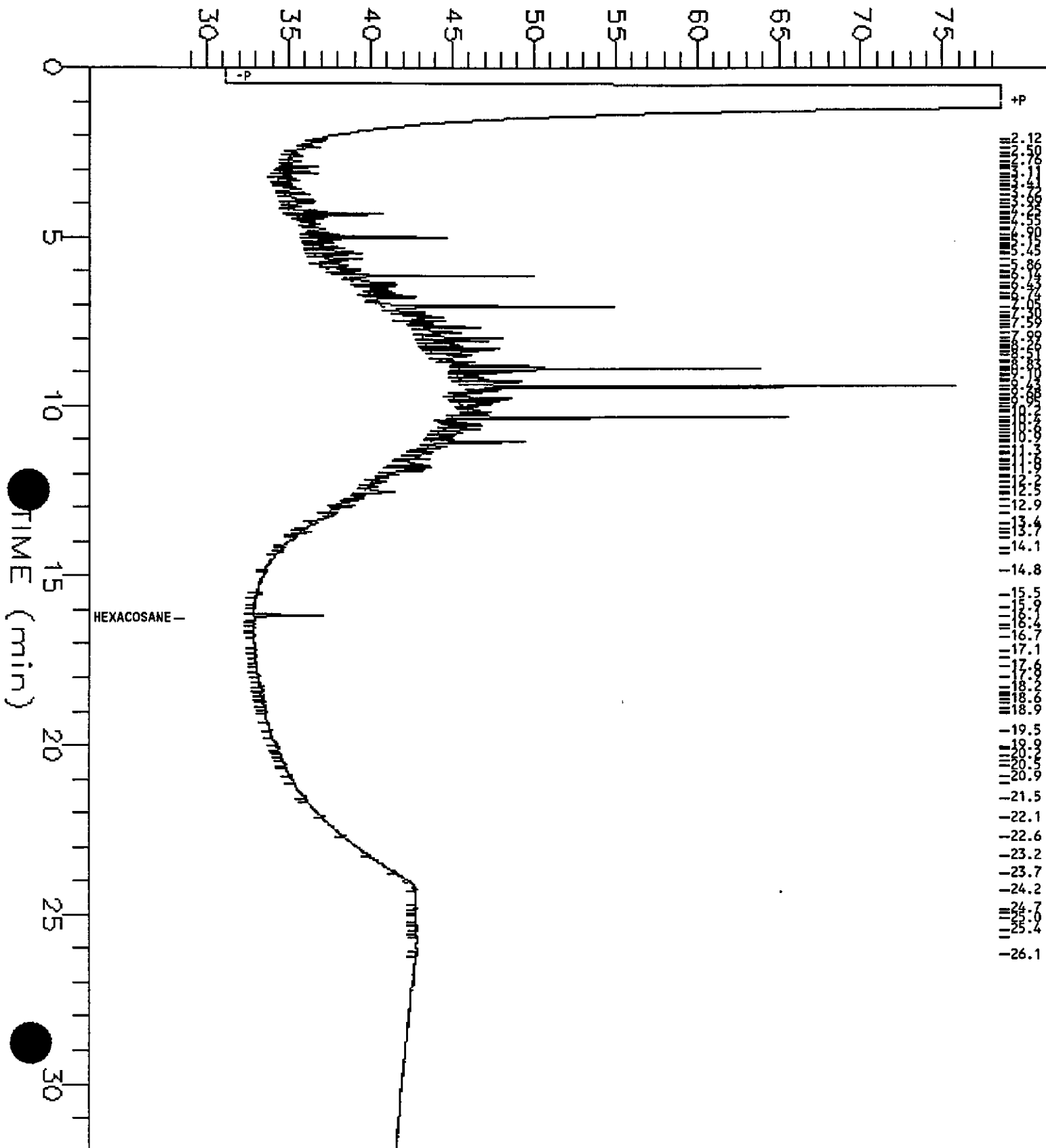
High Point : 78.62 mV

Scale Factor: -1

Plot Offset: 29 mV

Plot Scale: 50 mV

RESPONSE (mV)



TEH Chromatogram-GC13 CH A

Sample Name : 125716-016,50:5

Sample #: 27917

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FileName : g:\gc13\cha\154a075.raw

Date : 6/4/96 02:54 PM

Method : 13A32.ins

Time of Injection: 6/4/96 02:20 PM

Start Time : 0.00 min

End Time : 31.92 min

Low Point : 27.75 mV

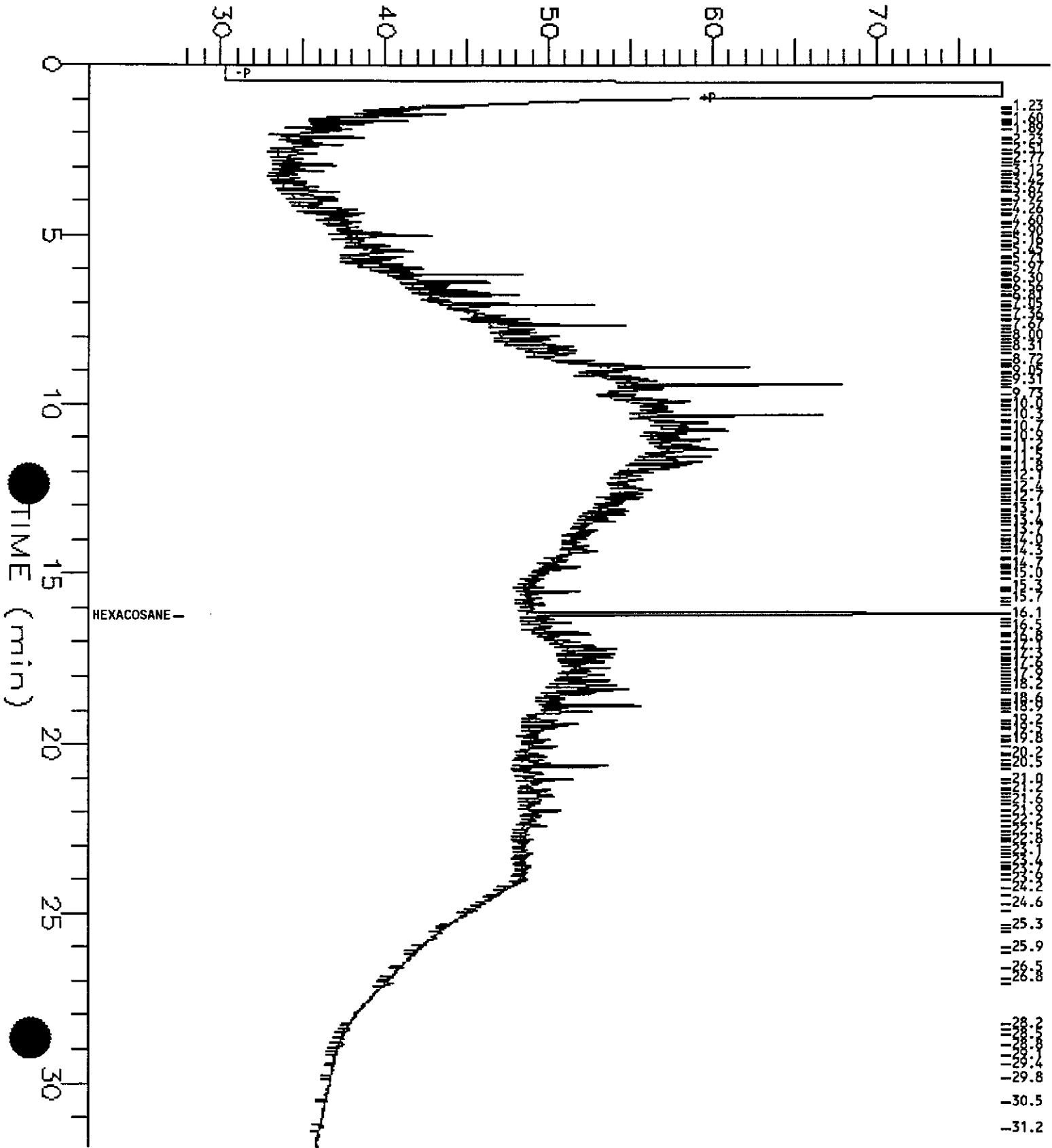
High Point : 77.75 mV

Scale Factor: -1

Plot Offset: 28 mV

Plot Scale: 50 mV

RESPONSE (mV)



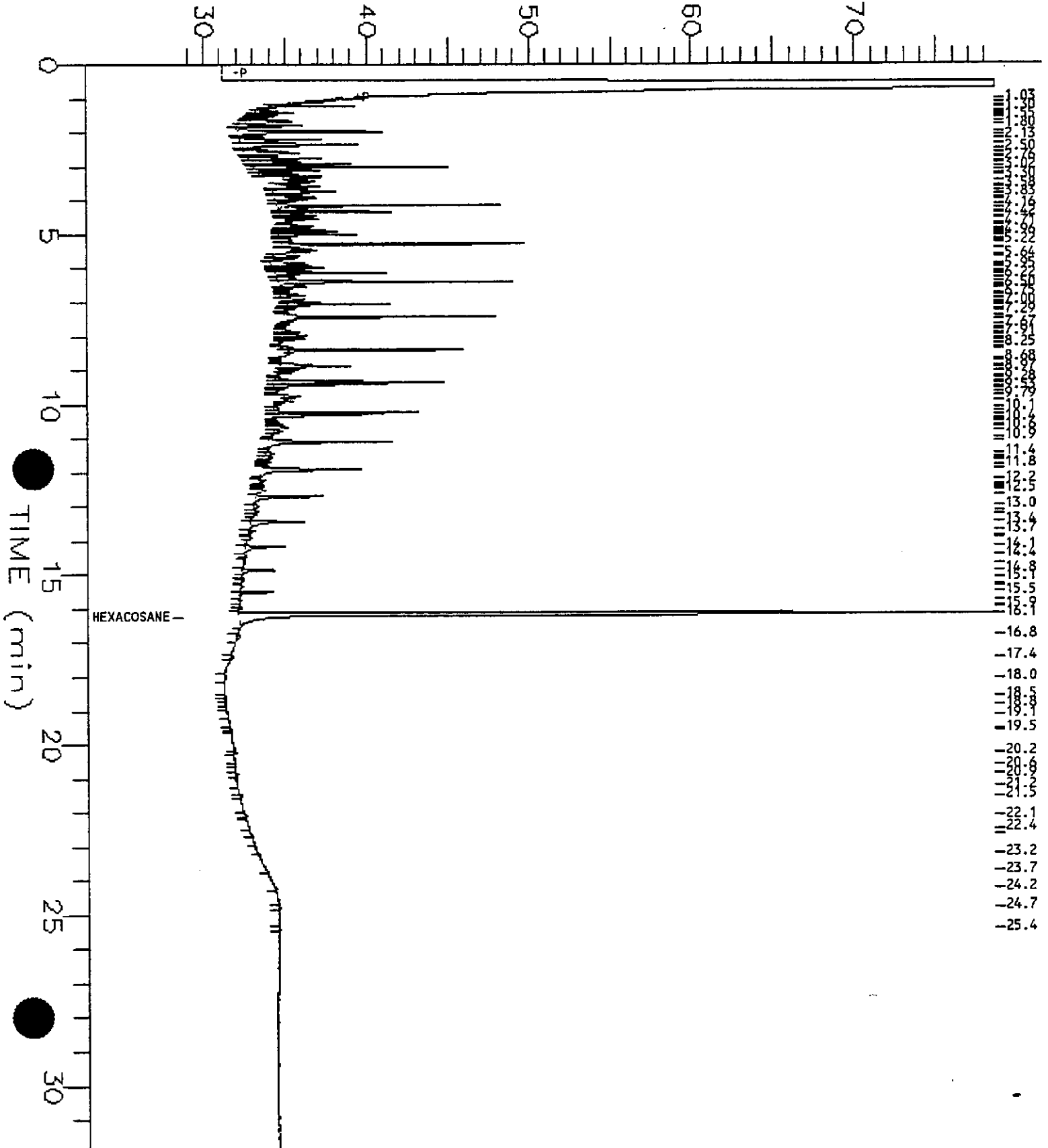
TEH Chromatogram-GC13 CH A

Sample Name : DIESEL 500MG/L
 FileName : g:\gc13\cha\154a073.raw
 Method : 13A32.ins
 Start Time : 0.00 min
 Scale Factor : -1

End Time : 31.92 min
 Plot Offset: 29 mV

Sample #: 96WS2288
 Date : 6/4/96 01:29 PM
 Time of Injection: 6/4/96 12:54 PM
 Low Point : 28.63 mV
 High Point : 78.63 mV
 Plot Scale: 50 mV

RESPONSE (mV)



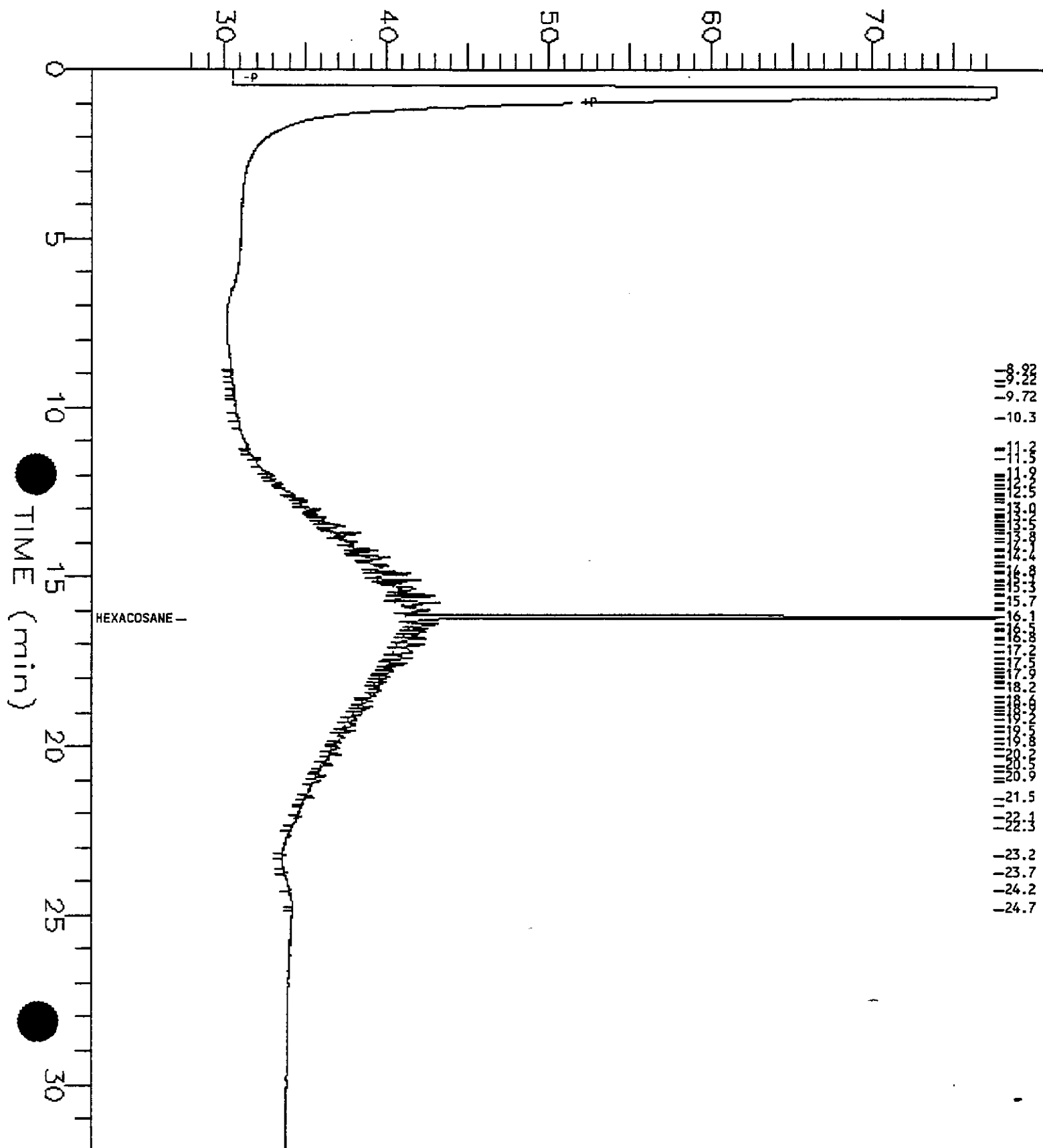
TEH Chromatogram-GC13 CH A

Sample Name : MOTOR OIL 500MG/L
FileName : g:\gc13\cha\154a074.raw
Method : 13A32.ins
Start Time : 0.00 min
Scale Factor: -1

End Time : 31.92 min
Plot Offset: 28 mV

Sample #: 96WS2416
Date : 6/4/96 02:10 PM
Time of Injection: 6/4/96 01:37 PM
Low Point : 27.66 mV
Plot Scale: 50 mV
High Point : 77.66 mV

RESPONSE (mV)



Lab #: 125716

BATCH QC REPORT

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TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: LUFT
Location: KOT	

METHOD BLANK

Matrix: Soil	Prep Date: 05/31/96
Batch#: 27917	Analysis Date: 06/04/96
Units: mg/Kg	
Diln Fac: 1	

MB Lab ID: QC23046

Analyte	Result	
Diesel C12-C22	<1.0	
Motor Oil C22-C50	<5.0	
Surrogate	%Rec	Recovery Limits
Hexacosane	78	60-140

Lab #: 125716

BATCH QC REPORT

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TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: LUFT
Location: KOT	

LABORATORY CONTROL SAMPLE

Matrix: Soil	Prep Date: 05/31/96
Batch#: 27917	Analysis Date: 06/04/96
Units: mg/Kg	
Diln Fac: 1	

LCS Lab ID: QC23047

Analyte	Result	Spike Added	%Rec #	Limits
Diesel C12-C22	57.42	49.5	116	60-140
Surrogate	%Rec	Limits		
Hexacosane	98	60-140		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 125716

BATCH QC REPORT

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TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: LUFT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: SCI-17 @ 3.5
 Lab ID: 125716-012
 Matrix: Soil
 Batch#: 27917
 Units: mg/Kg
 Diln Fac: 1

Sample Date: 05/24/96
 Received Date: 05/28/96
 Prep Date: 05/31/96
 Analysis Date: 06/05/96

MS Lab ID: QC23048

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Diesel C12-C22	49.5	606.5	75.53	-1073 *	60-140
Surrogate	%Rec	Limits			
Hexacosane	101	60-140			

MSD Lab ID: QC23049

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	49.5	68.86	-1086 *	60-140	1	<30
Surrogate	%Rec	Limits				
Hexacosane	112	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 2 out of 2 outside limits



BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125716-001	SCI-7 @ 6.0	27938	05/22/96	06/02/96	06/02/96	
125716-002	SCI-8 @ 5.5	27938	05/22/96	06/02/96	06/02/96	
125716-003	SCI-9 @ 5.5	27938	05/22/96	06/02/96	06/02/96	
125716-004	SCI-10 @ 5.0	27938	05/22/96	06/02/96	06/02/96	

Matrix: Soil

Analyte	Units	125716-001	125716-002	125716-003	125716-004
Diln Fac:		1	1	1	1
Benzene	ug/Kg	<5	<5	<5	<5
Toluene	ug/Kg	<5	<5	<5	<5
Ethylbenzene	ug/Kg	<5	<5	<5	<5
m,p-Xylenes	ug/Kg	<5	<5	<5	<5
o-Xylene	ug/Kg	<5	<5	<5	<5
Surrogate					
Trifluorotoluene	%REC	86	86	84	85
Bromobenzene	%REC	87	85	83	85



BTXE

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8020
 Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125716-005	SCI-11 @ 3.5	27938	05/22/96	06/03/96	06/03/96	
125716-006	SCI-12 @ 6.5	27977	05/22/96	06/04/96	06/04/96	
125716-007	SCI-13 @ 4.5	27927	05/23/96	06/01/96	06/01/96	
125716-011	SCI-16 @ 2.5	27927	05/23/96	06/01/96	06/01/96	

Matrix: Soil

Analyte	Units	125716-005	125716-006	125716-007	125716-011
Diln Fac:		1	20	1	1
Benzene	ug/Kg	<5	12000	<5	<5
Toluene	ug/Kg	<5	34000	<5	<5
Ethylbenzene	ug/Kg	<5	13000	<5	<5
m,p-Xylenes	ug/Kg	<5	41000	<5	<5
o-Xylene	ug/Kg	<5	7100	<5	<5
Surrogate					
Trifluorotoluene	%REC	86	96	87	88
Bromobenzene	%REC	86	94	86	85



BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125716-014	SCI-19 @ 3.5	27927	05/24/96	06/01/96	06/01/96	

Matrix: Soil

Analyte	Units	125716-014
Diln Fac:		1
Benzene	ug/Kg	<5
Toluene	ug/Kg	<5
Ethylbenzene	ug/Kg	<5
m,p-Xylenes	ug/Kg	<5
o-Xylene	ug/Kg	<5
Surrogate		
Trifluorotoluene	%REC	86
Bromobenzene	%REC	86



Lab #: 125716

BATCH QC REPORT

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BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27977
Units: ug/L
Diln Fac: 1

Prep Date: 06/04/96
Analysis Date: 06/04/96

MB Lab ID: QC23305

Analyte	Result		
Benzene	<5.0		
Toluene	<5.0		
Ethylbenzene	<5.0		
m,p-Xylenes	<5.0		
o-Xylene	<5.0		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	86		43-114
Bromobenzene	74		47-112

Lab #: 125716

BATCH QC REPORT

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BTXE			
Client:	Subsurface Consultants	Analysis Method:	EPA 8020
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		
METHOD BLANK			
Matrix:	Soil	Prep Date:	05/31/96
Batch#:	27927	Analysis Date:	05/31/96
Units:	ug/Kg		
Diln Fac:	1		

MB Lab ID: QC23089

Analyte	Result		
Benzene	<5.0		
Toluene	<5.0		
Ethylbenzene	<5.0		
m,p-Xylenes	<5.0		
o-Xylene	<5.0		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	85		43-114
Bromobenzene	83		47-112



Lab #: 125716

BATCH QC REPORT

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BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

METHOD BLANK

Matrix: Soil
Batch#: 27938
Units: ug/Kg
Diln Fac: 1

Prep Date: 06/02/96
Analysis Date: 06/02/96

MB Lab ID: QC23145

Analyte	Result	
Benzene	<5.0	
Toluene	<5.0	
Ethylbenzene	<5.0	
m,p-Xylenes	<5.0	
o-Xylene	<5.0	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	85	43-114
Bromobenzene	85	47-112

Lab #: 125716

BATCH QC REPORT

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BTXE

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: EPA 8020
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

 Matrix: Water
 Batch#: 27977
 Units: ug/L
 Diln Fac: 1

 Prep Date: 06/04/96
 Analysis Date: 06/04/96

LCS Lab ID: QC23307

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	21.8	20	109	80-120
Toluene	22.1	20	111	80-120
Ethylbenzene	21.9	20	110	80-120
m,p-Xylenes	44.5	40	111	80-120
o-Xylene	22.4	20	112	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	93	43-114		
Bromobenzene	84	47-112		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Lab #: 125716

BATCH QC REPORT

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil
Batch#: 27938
Units: ug/Kg
Diln Fac: 1

Prep Date: 06/02/96
Analysis Date: 06/02/96

LCS Lab ID: QC23147

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	96.5	100	97	80-120
Toluene	99.2	100	99	80-120
Ethylbenzene	96.8	100	97	80-120
m,p-Xylenes	204.6	200	102	80-120
o-Xylene	106.5	100	107	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	86	43-114		
Bromobenzene	85	47-112		

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 5 outside limits

Lab #: 125716

BATCH QC REPORT

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BTXE			
Client: Subsurface Consultants	Analysis Method: EPA 8020		
Project#: 133.005	Prep Method: EPA 5030		
Location: KOT			
LABORATORY CONTROL SAMPLE			
Matrix: Soil	Prep Date: 05/31/96		
Batch#: 27927	Analysis Date: 05/31/96		
Units: ug/Kg			
Diln Fac: 1			

LCS Lab ID: QC23091

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	96.4	100	96	80-120
Toluene	97.7	100	98	80-120
Ethylbenzene	93.9	100	94	80-120
m,p-Xylenes	191.5	200	96	80-120
o-Xylene	99.1	100	99	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	87	43-114		
Bromobenzene	86	47-112		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

Lab #: 125716

BATCH QC REPORT

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BTXE	
Client: Subsurface Consultants	Analysis Method: EPA 8020
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	
MATRIX SPIKE/MATRIX SPIKE DUPLICATE	
Field ID: SCI-9 @ 5.5	Sample Date: 05/22/96
Lab ID: 125716-003	Received Date: 05/28/96
Matrix: Soil	Prep Date: 06/02/96
Batch#: 27938	Analysis Date: 06/02/96
Units: ug/Kg	
Diln Fac: 1	

MS Lab ID: QC23148

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	100	<5.000	100.2	100	75-125
Toluene	100	<5.000	101	101	75-125
Ethylbenzene	100	<5.000	94.2	94	75-125
m,p-Xylenes	200	<5.000	196.8	98	75-125
o-Xylene	100	<5.000	102.7	103	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	85	43-114			
Bromobenzene	84	47-112			

MSD Lab ID: QC23149

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	100	101.1	101	75-125	1	<20
Toluene	100	102.7	103	75-125	2	<20
Ethylbenzene	100	98.5	99	75-125	5	<20
m,p-Xylenes	200	199.6	100	75-125	1	<20
o-Xylene	100	102.3	102	75-125	0	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	86	43-114				
Bromobenzene	85	47-112				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

Lab #: 125716

BATCH QC REPORT

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BTXE			
Client: Subsurface Consultants	Analysis Method: EPA 8020		
Project#: 133.005	Prep Method: EPA 5030		
Location: KOT			
MATRIX SPIKE/MATRIX SPIKE DUPLICATE			
Field ID: ZZZZZZ	Sample Date: 05/22/96		
Lab ID: 125692-001	Received Date: 05/23/96		
Matrix: Water	Prep Date: 06/04/96		
Batch#: 27977	Analysis Date: 06/04/96		
Units: ug/L			
Diln Fac: 1			

MS Lab ID: QC23308

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	20	<0.5000	21.6	108	75-125
Toluene	20	<0.5000	22.1	111	75-125
Ethylbenzene	20	<0.5000	21.9	110	75-125
m,p-Xylenes	40	<0.5000	46	115	75-125
o-Xylene	20	<0.5000	22.8	114	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	93	43-114			
Bromobenzene	88	47-112			

MSD Lab ID: QC23309

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	20	22.3	112	75-125	3	<20
Toluene	20	22.7	114	75-125	3	<20
Ethylbenzene	20	22.2	111	75-125	1	<20
m,p-Xylenes	40	46	115	75-125	0	<20
o-Xylene	20	23	115	75-125	1	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	93	43-114				
Bromobenzene	88	47-112				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



PCBs

Client: Subsurface Consultants	Analysis Method: PCB
Project#: 133.005	Prep Method: EPA 3550
Location: KOT	Cleanup Method: EPA acid

Field ID: SCI-20 @ 3.5	Sampled: 05/24/96
Lab ID: 125716-015	Received: 05/28/96
Matrix: Soil	Extracted: 05/29/96
Batch#: 27868	Analyzed: 06/02/96
Units: ug/Kg	
Diln Fac: 1	

Analyte	Result	Reporting Limit
Aroclor-1016	ND	20
Aroclor-1221	ND	20
Aroclor-1232	ND	20
Aroclor-1242	ND	20
Aroclor-1248	ND	20
Aroclor-1254	ND	20
Aroclor-1260	ND	20

Surrogate	%Recovery	Recovery Limits
TCMX	115	65-135
Decachlorobiphenyl	120	65-135

Lab #: 125716

BATCH QC REPORT

Page 1 of 1

Polychlorinated Biphenyls

Client: Subsurface Consultants	Analysis Method: PCB
Project#: 133.005	Prep Method: EPA 3550
Location: KOT	Cleanup Method: EPA acid

METHOD BLANK

Matrix: Soil	Prep Date: 05/29/96
Batch#: 27868	Analysis Date: 06/01/96
Units: ug/Kg	
Diln Fac: 1	

MB Lab ID: QC22838

Analyte	Result	Reporting Limit
Aroclor-1016	ND	20
Aroclor-1221	ND	20
Aroclor-1232	ND	20
Aroclor-1242	ND	20
Aroclor-1248	ND	20
Aroclor-1254	ND	20
Aroclor-1260	ND	20
Surrogate	%Rec	Recovery Limits
TCMX	116	65-135
Decachlorobiphenyl	124	65-135



Lab #: 125716

BATCH QC REPORT

Polychlorinated Biphenyls

Client: Subsurface Consultants	Analysis Method: PCB
Project#: 133.005	Prep Method: EPA 3550
Location: KOT	Cleanup Method: EPA acid

LABORATORY CONTROL SAMPLE

Matrix: Soil	Prep Date: 05/29/96
Batch#: 27868	Analysis Date: 06/03/96
Units: ug/Kg	
Diln Fac: 1	

LCS Lab ID: QC22839

Analyte	Result	Spike Added	%Rec #	Limits
Aroclor-1260	246	220	112	65-135
Surrogate	%Rec	Limits		
TCMX	110	65-135		
Decachlorobiphenyl	128	65-135		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

CHAIN OF CUSTODY FORM

PAGE

PROJECT NAME: LOT
 JOB NUMBER: 135 005
 PROJECT CONTACT: Serena Alexander
 SAMPLED BY: Leanne Alexander
 LAB: Subs. Consultants, Inc.
 TURNAROUND: 3 days
 REQUESTED BY: Serena Alexander

ANALYSIS REQUESTED											

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES				
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H ₂ SO ₄	HNO ₃	ICE	NONE	MONTH	DAY	YEAR	TIME					
	SCI-70 (C) 6.0		X										X		05	23	10		X	X			
	SCI-8 (C) 5.5		X										X						X	X			
	SCI-7 (C) 5.5												X						X	X			
	SCI-10 (C) 5.0												X						X	X			
	SCI-11 (C) 5.5												X						X	X			
	SCI-12 (C) 5.5												X						X		X		
	SCI-13 (C) 4.5												X		05	23	10		X		X	X	
	SCI-14 (C) 3.5												X						X	X	X		
	SCI-14 (C) 6.0		X										X						X	X	X		
	SCI-15 (C) 5.0		X										X						X	X	X		
	SCI-16 (C) 2.5		X										X						X	X	X		
	SCI-17 (C) 3.5		X										X		05	20	10		X	X	X		

CHAIN OF CUSTODY RECORD				COMMENTS & NOTES: <i>Note: holding time - samples from last week</i>
RELEASED BY: (Signature) <i>Serena Alexander</i>	DATE / TIME <i>5/28/10 3:15 pm</i>	RECEIVED BY: (Signature) <i>Leanne Alexander</i>	DATE / TIME <i>5-28-10 3:15</i>	
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME	
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME	
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME	

Subsurface Consultants, Inc.

171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
 (510) 268-0461 • FAX: 510-268-0137

CHAIN OF CUSTODY FORM

PAGE

PROJECT NAME: KOT
 JOB NUMBER: 133-005 LAB: SLB Co. 515 E. 12th Ave
 PROJECT CONTACT: SWA TURNAROUND: SWA
 SAMPLED BY: SD REQUESTED BY: SWA

ANALYSIS REQUESTED	
TEH (C-5 16 C-50)	
BTEX	
TH	
TH/STPA	
PCU	
TD	

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES				
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H ₂ SO ₄	HNO ₃	ICE	NONE	MONTH	DAY	YEAR	TIME					
	SCI-18 (C) 35	X						X					X		05	24	96			X			
	SCI-19 (C) 35	X						X					X							X			
	SCI-20 (C) 35	X						X					X							X			
	SCI-20 (C) 65	X						X					X							X			

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature) <i>Dennis Defender</i>	DATE / TIME 5/28/96 3:15 p.m.	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE / TIME 5-28-96 3:15
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:

Note holding time - samples from last week

Subsurface Consultants, Inc.
 171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
 (510) 268-0461 • FAX: 510-268-0137



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710. Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 07-JUN-96
Lab Job Number: 125688
Project ID: 133.005
Location: KOT

Reviewed by: _____

Reviewed by: _____

This package may be reproduced only in its entirety.

Client: Subsurface Consultants

Laboratory Login Number: 125688

 Project Name: KOT
 Project Number: 133.005

Report Date: 31 May 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520BF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
125688-001	SCI-6	Water	22-MAY-96	23-MAY-96	24-MAY-96	140	mg/L	5	TR	27801

ND = Not Detected at or above Reporting Limit (RL).

Q C B a t c h R e p o r t

 Client: Subsurface Consultants
 Project Name: KOT
 Project Number: 133.005

 Laboratory Login Number: 125688
 Report Date: 31 May 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 27801

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	24-MAY-96

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	82%	SMWW 17:5520BF	24-MAY-96
BSD	86%	SMWW 17:5520BF	24-MAY-96

		Control Limits
Average Spike Recovery	84%	80% - 120%
Relative Percent Difference	5.8%	< 20%



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125688-001	SCI-6	27839	05/22/96	05/28/96	05/28/96	
125688-004	SCI-12	27794	05/22/96	05/26/96	05/26/96	

Matrix: Water

Analyte	Units	125688-001	125688-004
Diln Fac:		20	50
Gasoline	ug/L	14000 Y,H	18000
Surrogate			
Trifluorotoluene	%REC	89	93
Bromobenzene	%REC	78	82

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

125688-001

TVH2 - GC-05 RTX-1

FileName : G:\GC05\149H010.raw

Date : 5/28/96 4:38 PM

Page 1 of 1

Start Time : 0.00 min

End Time : 23.42 min

Low Point : 3.64 mV

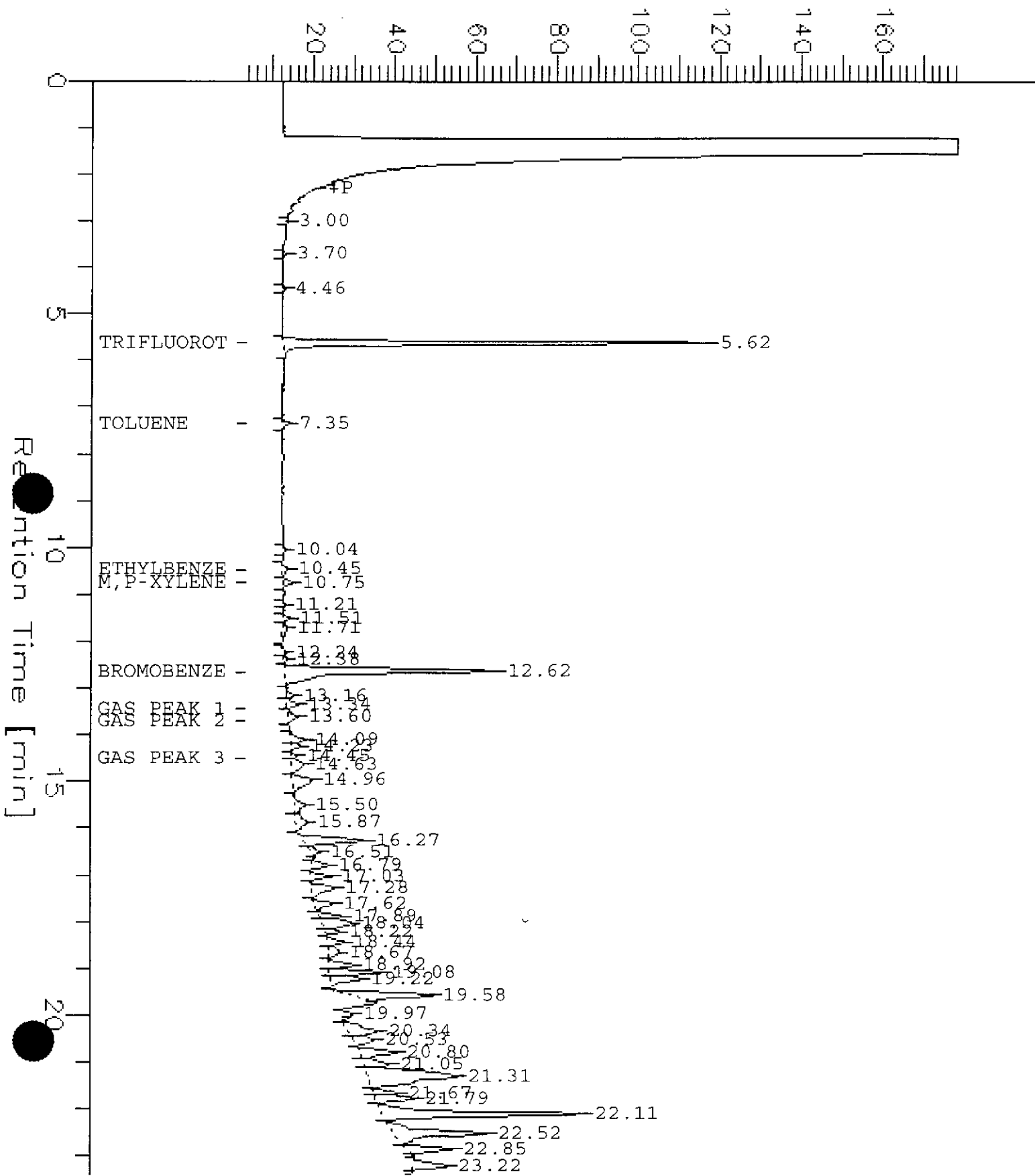
High Point : 178.64 mV

Scale Factor: -1

Plot Offset: 4 mV

Plot Scale: 175 mV

Response [mV]



FileName : G:\GC05\146H023.raw

Date : 5/26/96 6:34 AM

Page 1 of 1

Start Time : 0.00 min

End Time : 23.42 min

Low Point : 3.56 mV

High Point : 178.56 mV

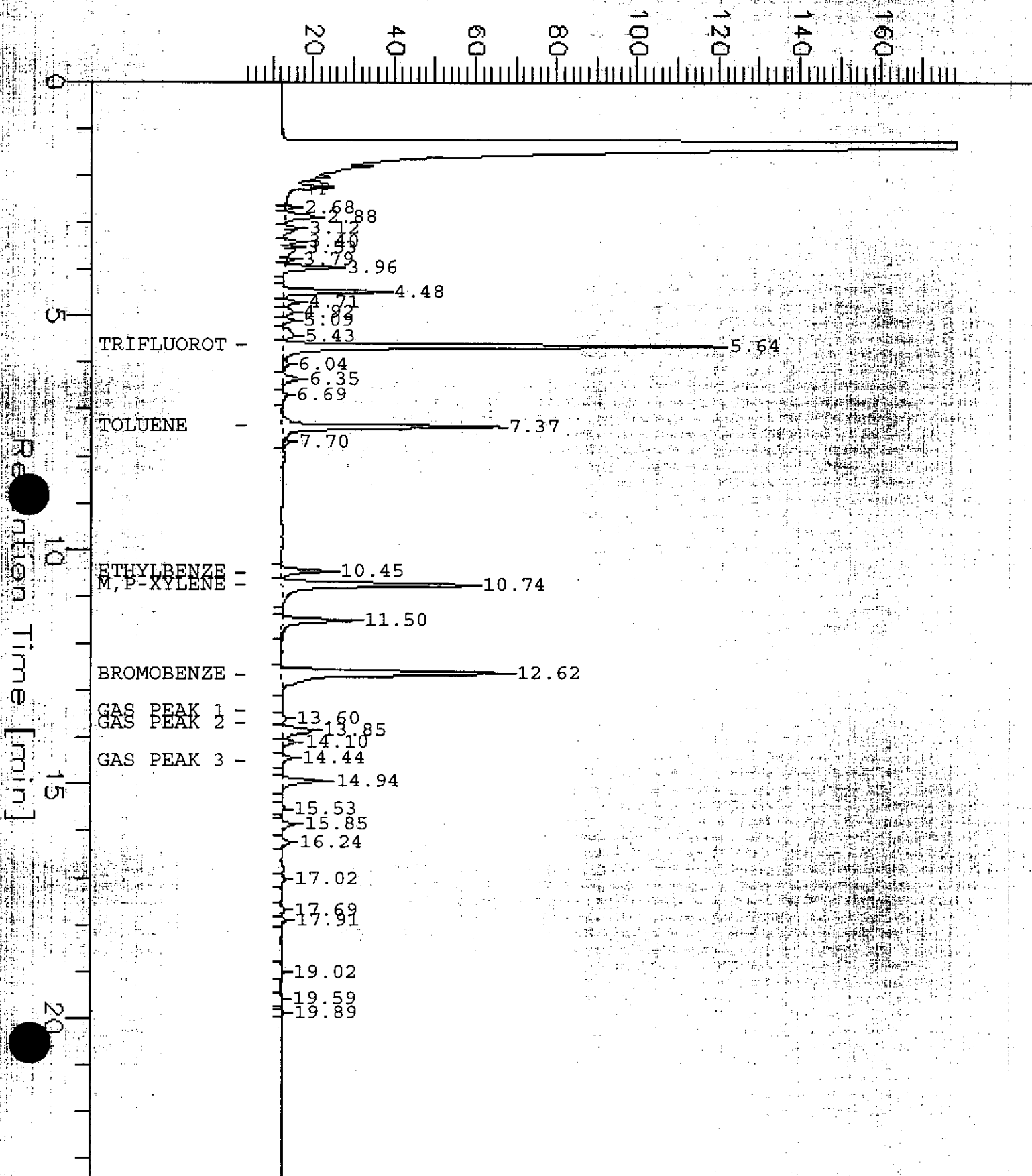
Scale Factor : -1

Plot Offset : 4 mV

Plot Scale : 175 mV

125622-004

Response [mV]





Lab #: 125688

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27839
Units: ug/L
Diln Fac: 1

Prep Date: 05/28/96
Analysis Date: 05/28/96

MB Lab ID: QC22811

Analyte	Result		
Gasoline	<50		
Surrogate	%Rec	Recovery Limits	
Trifluorotoluene	87	65-135	
Bromobenzene	70	65-135	



Lab #: 125688

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27794
Units: ug/L
Diln Fac: 1

Prep Date: 05/26/96
Analysis Date: 05/26/96

MB Lab ID: QC22545

Analyte	Result		
Gasoline	<50		
Surrogate	%Rec	Recovery Limits	
Trifluorotoluene	90	65-135	
Bromobenzene	78	65-135	



Lab #: 125688

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 27794
Units: ug/L
Diln Fac: 1

Prep Date: 05/25/96
Analysis Date: 05/25/96

LCS Lab ID: QC22544

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	2128	2006	106	75-125
Surrogate	%Rec	Limits		
Trifluorotoluene	95	65-135		
Bromobenzene	95	65-135		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 125688

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27839
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/28/96
 Analysis Date: 05/28/96

BS Lab ID: QC22813

Analyte	Spike Added	BS	%Rec #	Limits
Gasoline	2006	2126	106	75-125
Surrogate	%Rec	Limits		
Trifluorotoluene	93	65-135		
Bromobenzene	94	65-135		

BSD Lab ID: QC22814

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Gasoline	2006	1973	98	75-125	7	<35
Surrogate	%Rec	Limits				
Trifluorotoluene	94	65-135				
Bromobenzene	93	65-135				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125688-001	SCI-6	27855	05/22/96	05/28/96	05/31/96	
125688-002	SCI-8	27855	05/22/96	05/28/96	05/30/96	
125688-003	SCI-10	27855	05/22/96	05/28/96	05/30/96	
125688-004	SCI-12	27931	05/22/96	05/31/96	06/03/96	

Matrix: Water

Analyte	Units	125688-001	125688-002	125688-003	125688-004
Diln Fac:		50	1	1	2
Diesel C12-C22	ug/L	240000 H	2100 YH	840 YH	2400 YLH
Motor Oil C22-C50	ug/L	46000 YL	1400 Y	1200 Y	14000 Y
Surrogate					
Hexacosane	%REC	DO	95	85	88

DO: Surrogate diluted out

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

L: Lighter hydrocarbons than indicated standard

GC15 Channel A TEH

Sample Name : 125688-001,27855

Sample #: 500:125

Page 1 of 1

FileName : C:\GC15\CHB\151B008.RAW

Date : 5/31/96 12:05 PM

Method : BTEHJ.MTH

Time of Injection: 5/31/96 12:33 AM

Start Time : 0.01 min

End Time : 31.91 min

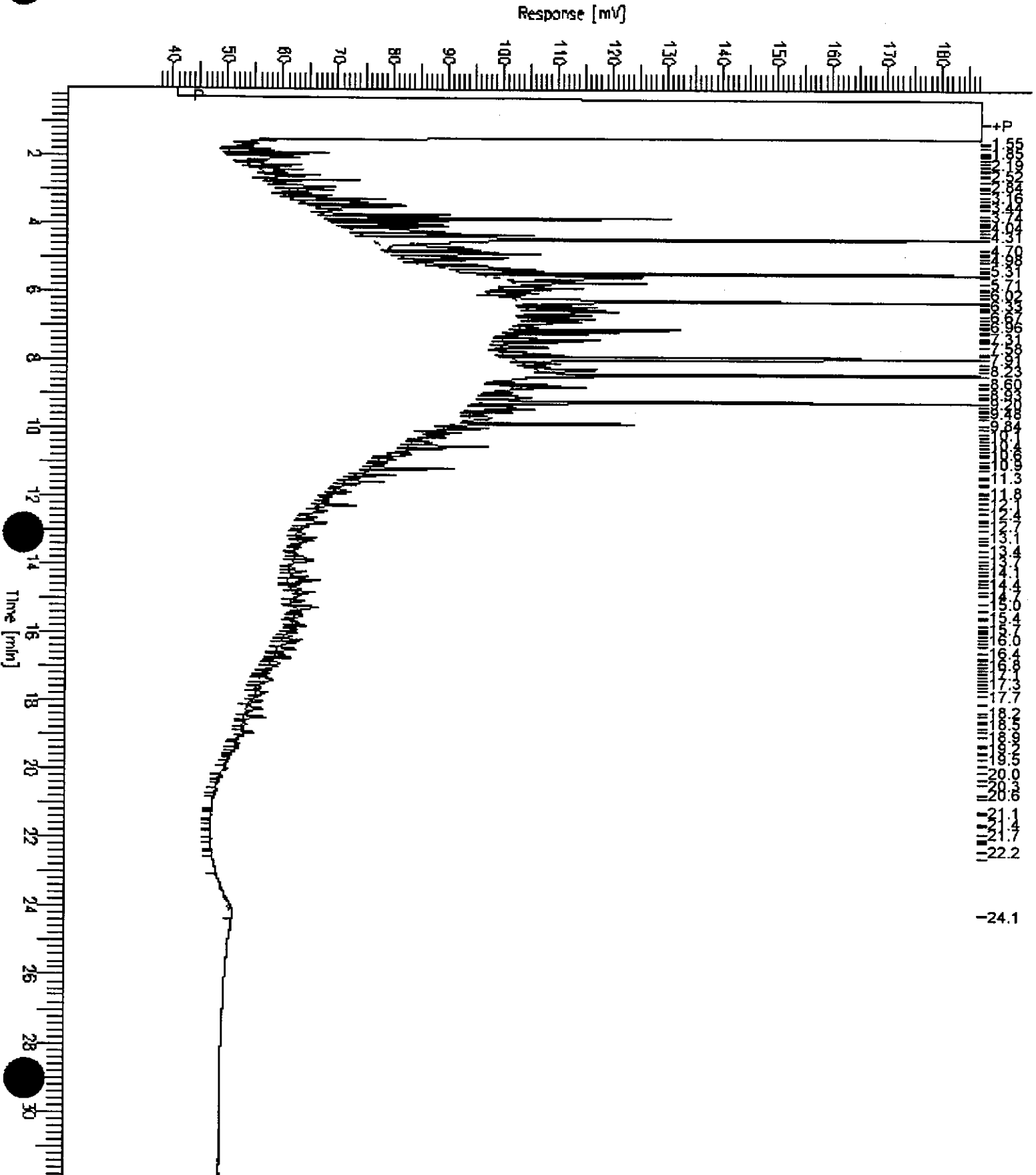
Low Point : 37.65 mV

High Point : 187.24 mV

Scale Factor: 0.0

Plot Offset: 38 mV

Plot Scale: 149.6 mV



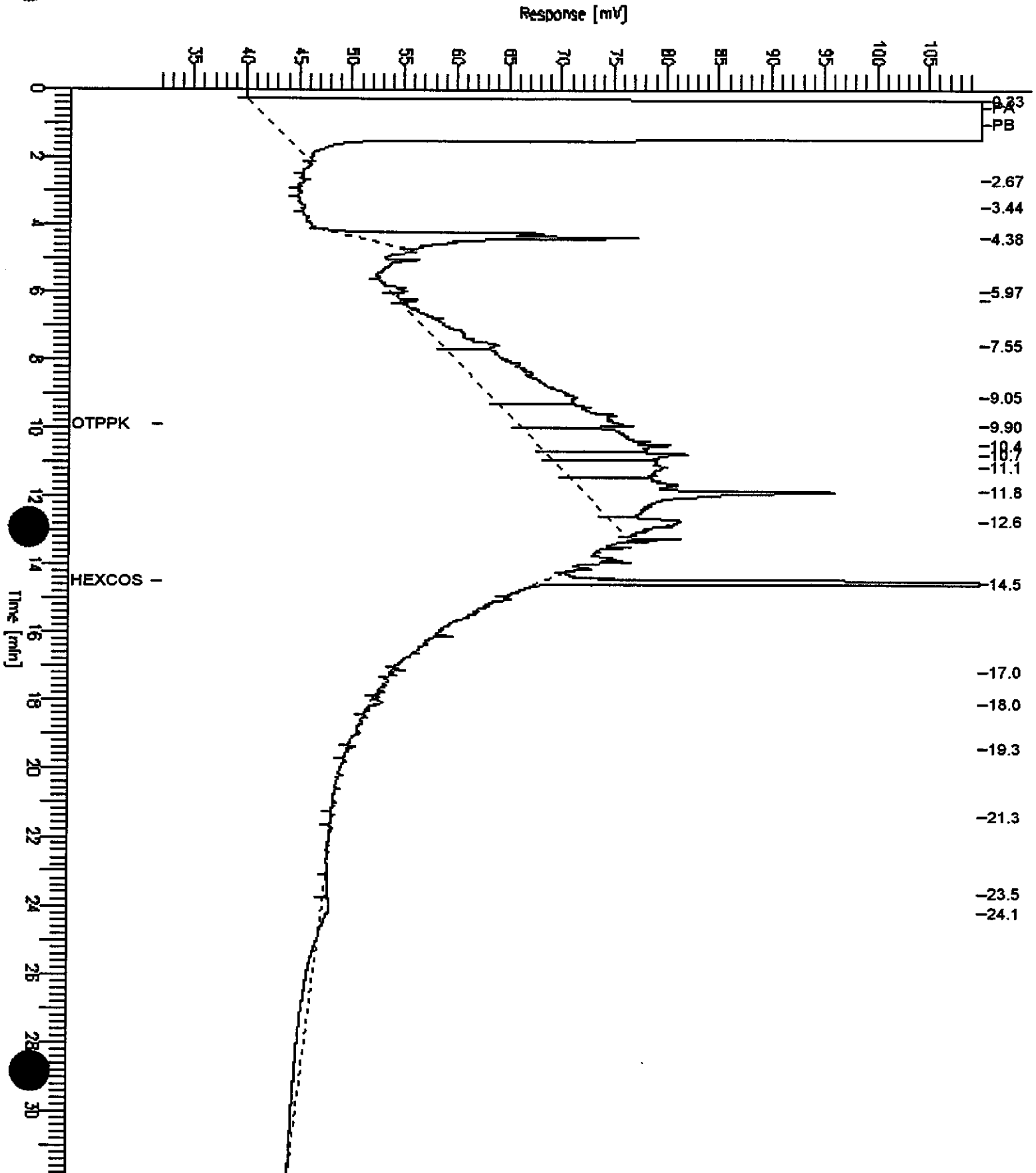
GC15 Channel B Surrogate

Sample Name : S,125688-002,27855
FileName : C:\GC15\CHB\149B056.raw
Method : DUAL
Start Time : 0.00 min
Scan Factor : 0.0

End Time : 31.90 min
Plot Offset: 32 mV

Sample #: 500:2.5
Date : 5/30/96 02:43 AM
Time of Injection: 5/30/96 02:09 AM
Low Point : 32.00 mV
High Point : 110.00 mV
Plot Scale: 78.0 mV

Page 1 of 1



GC15 Channel B Surrogate

Sample Name : S,125688-003,27855

FileName : C:\GC15\CHB\149B057.raw

Method : DUAL

Start Time : 0.00 min

Scale Factor: 0.0

End Time : 31.90 min

Plot Offset: 32 mV

Sample #: 500:2.5

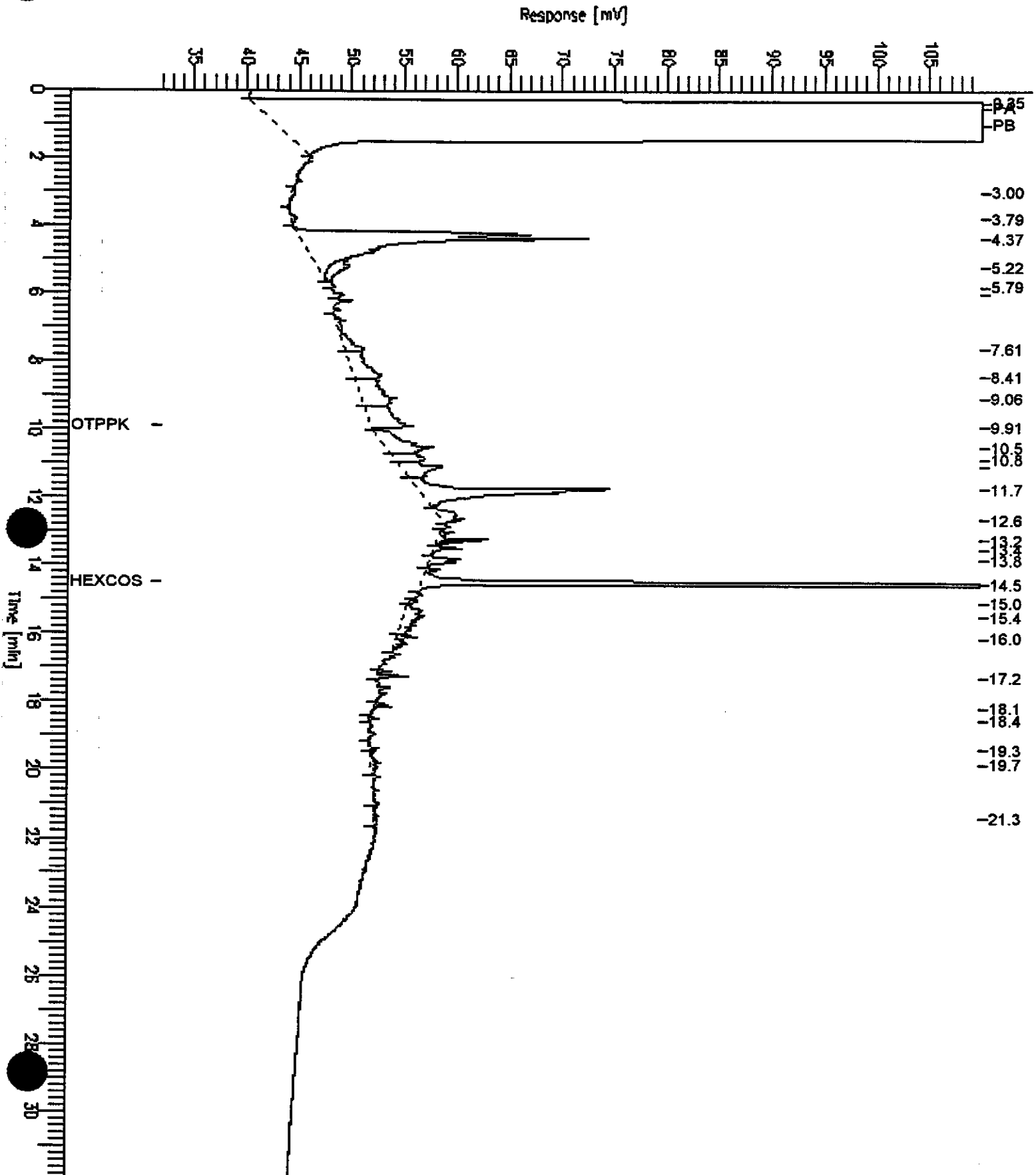
Date : 5/30/96 03:27 AM

Time of Injection: 5/30/96 02:54 AM

Low Point : 32.00 mV

Plot Scale: 78.0 mV

Page 1 of 1

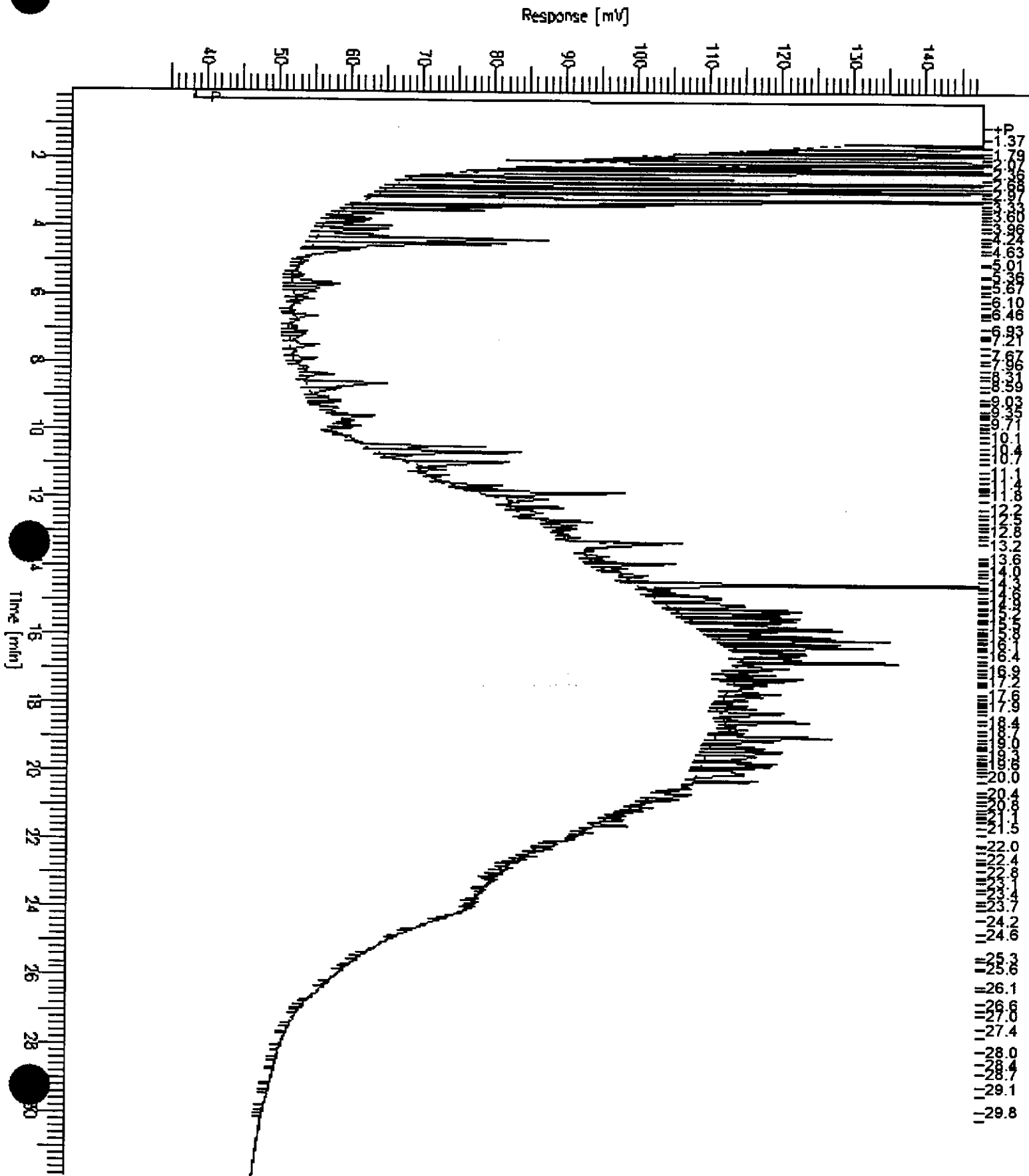


GC15 Channel A TEH

Sample Name : S,125688-004,27931
 FileName : C:\GC15\CHB\155B020.RAW
 Method : BTEHJ.MTH
 Start Time : 0.01 min
 Scale Factor: 0.0

End Time : 31.91 min
 Plot Offset: 34 mV

Sample #: 500:5
 Date : 6/4/96 08:32 AM
 Time of Injection: 6/3/96 11:18 PM
 Low Point : 34.03 mV
 Plot Scale: 114.0 mV
 High Point : 147.98 mV





Lab #: 125688

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 27855
Units: ug/L
Diln Fac: 1

Prep Date: 05/28/96
Analysis Date: 05/29/96

MB Lab ID: QC22795

Analyte	Result		
Diesel C12-C22	<50		
Motor Oil C22-C50	<250		
Surrogate	%Rec		Recovery Limits
Hexacosane	110		60-140



Lab #: 125688

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 27931
Units: ug/L
Diln Fac: 1

Prep Date: 05/31/96
Analysis Date: 06/04/96

MB Lab ID: QC23112

Analyte	Result	
Diesel C12-C22	<50	
Motor Oil C22-C50	<250	
Surrogate	%Rec	Recovery Limits
Hexacosane	103	60-140



Lab #: 125688

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27855
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/28/96
 Analysis Date: 05/29/96

BS Lab ID: QC22796

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	2690	109	60-140
Surrogate	%Rec	Limits		
Hexacosane	102	60-140		

BSD Lab ID: QC22797

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2463	100	60-140	9	<35
Surrogate	%Rec	Limits				
Hexacosane	90	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



Lab #: 125688

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27931
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/31/96
 Analysis Date: 06/04/96

BS Lab ID: QC23113

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	2170	88	60-140
Surrogate	%Rec	Limits		
Hexacosane	106	60-140		

BSD Lab ID: QC23114

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2474	100	60-140	13	<35
Surrogate	%Rec	Limits				
Hexacosane	108	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125688-002	SCI-8	27798	05/22/96	05/24/96	05/24/96	
125688-003	SCI-10	27798	05/22/96	05/24/96	05/24/96	

Matrix: Water

Analyte	Units	125688-002	125688-003
Diln Fac:		1	1
Benzene	ug/L	<0.5	<0.5
Toluene	ug/L	<0.5	<0.5
Ethylbenzene	ug/L	<0.5	<0.5
m,p-Xylenes	ug/L	<0.5	<0.5
o-Xylene	ug/L	<0.5	<0.5
Surrogate			
Trifluorotoluene	%REC	95	96
Bromobenzene	%REC	82	82



Lab #: 125688

BATCH QC REPORT

Page 1 of 1

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27798
Units: ug/L
Diln Fac: 1

Prep Date: 05/24/96
Analysis Date: 05/24/96

MB Lab ID: QC22553

Analyte	Result	
Benzene	<0.5	
Toluene	<0.5	
Ethylbenzene	<0.5	
m,p-Xylenes	<0.5	
o-Xylene	<0.5	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	97	58-130
Bromobenzene	83	62-131



Lab #: 125688

BATCH QC REPORT

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 27798
Units: ug/L
Diln Fac: 1

Prep Date: 05/24/96
Analysis Date: 05/24/96

LCS Lab ID: QC22552

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	21.6	20	108	80-120
Toluene	22	20	110	80-120
Ethylbenzene	21.8	20	109	80-120
m,p-Xylenes	47	40	118	80-120
o-Xylene	23.5	20	118	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	98	58-130		
Bromobenzene	87	62-131		

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 5 outside limits



Lab #: 125688

BATCH QC REPORT

Page 1 of 1

BTXE

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8020
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125578-002
 Matrix: Water
 Batch#: 27798
 Units: ug/L
 Diln Fac: 1

Sample Date: 05/13/96
 Received Date: 05/15/96
 Prep Date: 05/24/96
 Analysis Date: 05/24/96

MS Lab ID: QC22554

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	20	<0.5000	22.4	112	75-125
Toluene	20	<0.5000	22.4	112	75-125
Ethylbenzene	20	<0.5000	22.1	111	75-125
m,p-Xylenes	40	<0.5000	45.9	115	75-125
o-Xylene	20	<0.5000	23	115	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	99	58-130			
Bromobenzene	89	62-131			

MSD Lab ID: QC22555

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	20	24.2	121	75-125	8	<20
Toluene	20	24.1	121	75-125	7	<20
Ethylbenzene	20	23.7	119	75-125	7	<20
m,p-Xylenes	40	49.5	124	75-125	8	<20
o-Xylene	20	25	125	75-125	8	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	100	58-130				
Bromobenzene	92	62-131				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

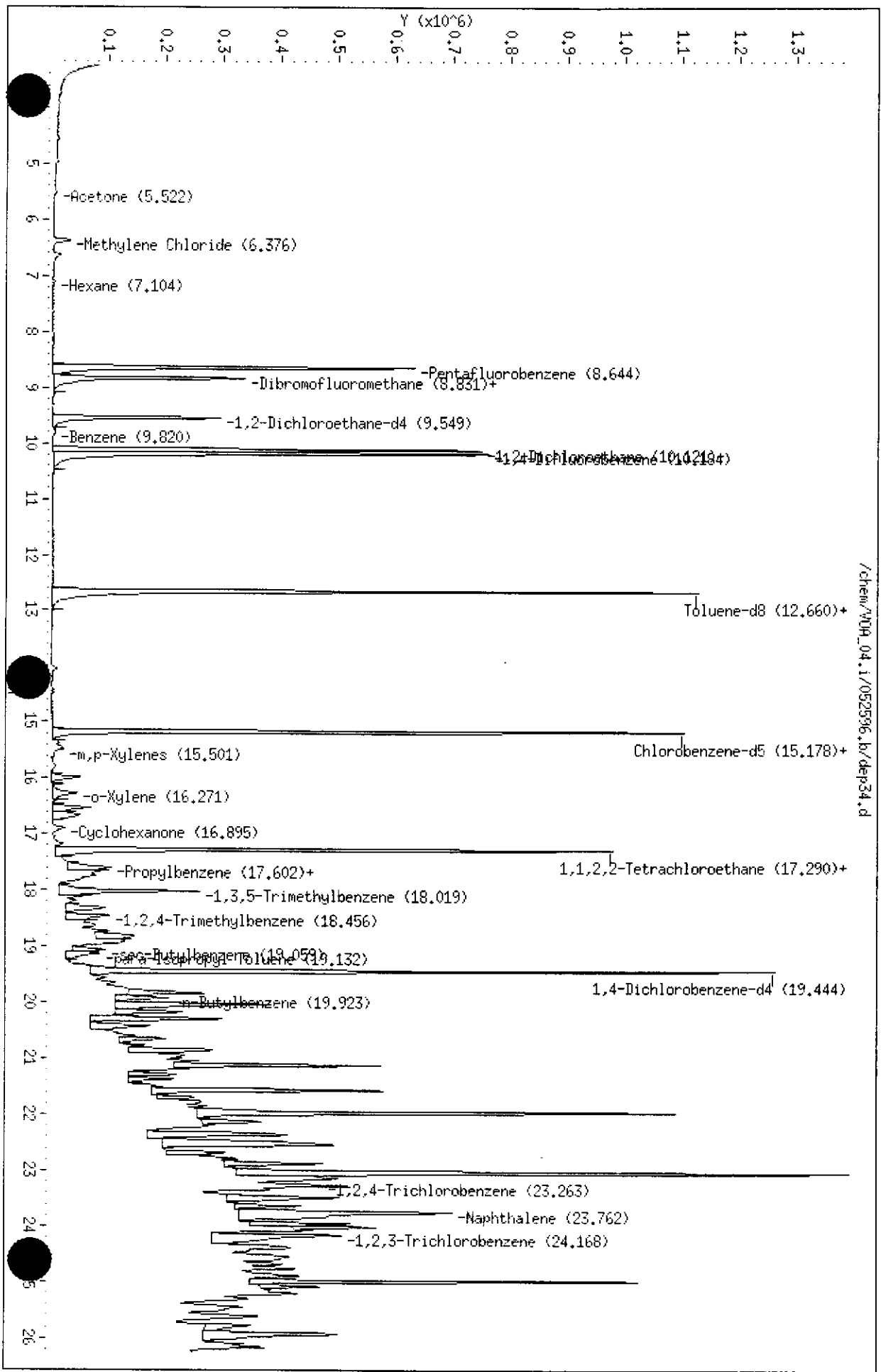
Field ID: SCI-6
 Lab ID: 125688-001
 Matrix: Water
 Batch#: 27814
 Units: ug/L
 Diln Fac: 10

Sampled: 05/22/96
 Received: 05/23/96
 Extracted: 05/26/96
 Analyzed: 05/26/96

Analyte	Result	Reporting Limit
Chloromethane	ND	100
Bromomethane	ND	100
Vinyl Chloride	ND	100
Chloroethane	ND	100
Methylene Chloride	ND	200
Acetone	ND	200
Carbon Disulfide	ND	50
Trichlorofluoromethane	ND	50
1,1-Dichloroethene	ND	50
1,1-Dichloroethane	ND	50
trans-1,2-Dichloroethene	ND	50
cis-1,2-Dichloroethene	ND	50
Chloroform	ND	50
Freon 113	ND	50
1,2-Dichloroethane	ND	50
2-Butanone	ND	100
1,1,1-Trichloroethane	ND	50
Carbon Tetrachloride	ND	50
Vinyl Acetate	ND	500
Bromodichloromethane	ND	50
1,2-Dichloropropane	ND	50
cis-1,3-Dichloropropene	ND	50
Trichloroethene	ND	50
Dibromochloromethane	ND	50
1,1,2-Trichloroethane	ND	50
Benzene	ND	50
trans-1,3-Dichloropropene	ND	50
Bromoform	ND	50
2-Hexanone	ND	100
4-Methyl-2-Pentanone	ND	100
1,1,2,2-Tetrachloroethane	ND	50
Tetrachloroethene	ND	50
Toluene	ND	50
Chlorobenzene	ND	50
Ethylbenzene	ND	50
Styrene	ND	50
m,p-Xylenes	ND	50
o-Xylene	ND	50
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	97	68-126
Toluene-d8	95	87-125
Bromofluorobenzene	93	79-122

Data File: /chem/VQA_04.1/052596.b/deps34.d
 Date: 26-MAY-96 04:07
 Client ID: DVNA P&T
 Sample Info: S.125688-001
 Purge Volume: 5.0
 Column phase: RTX Volatiles

Instrument: VQA_04.1
 Operator: LLH
 Column diameter: 0.32





Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

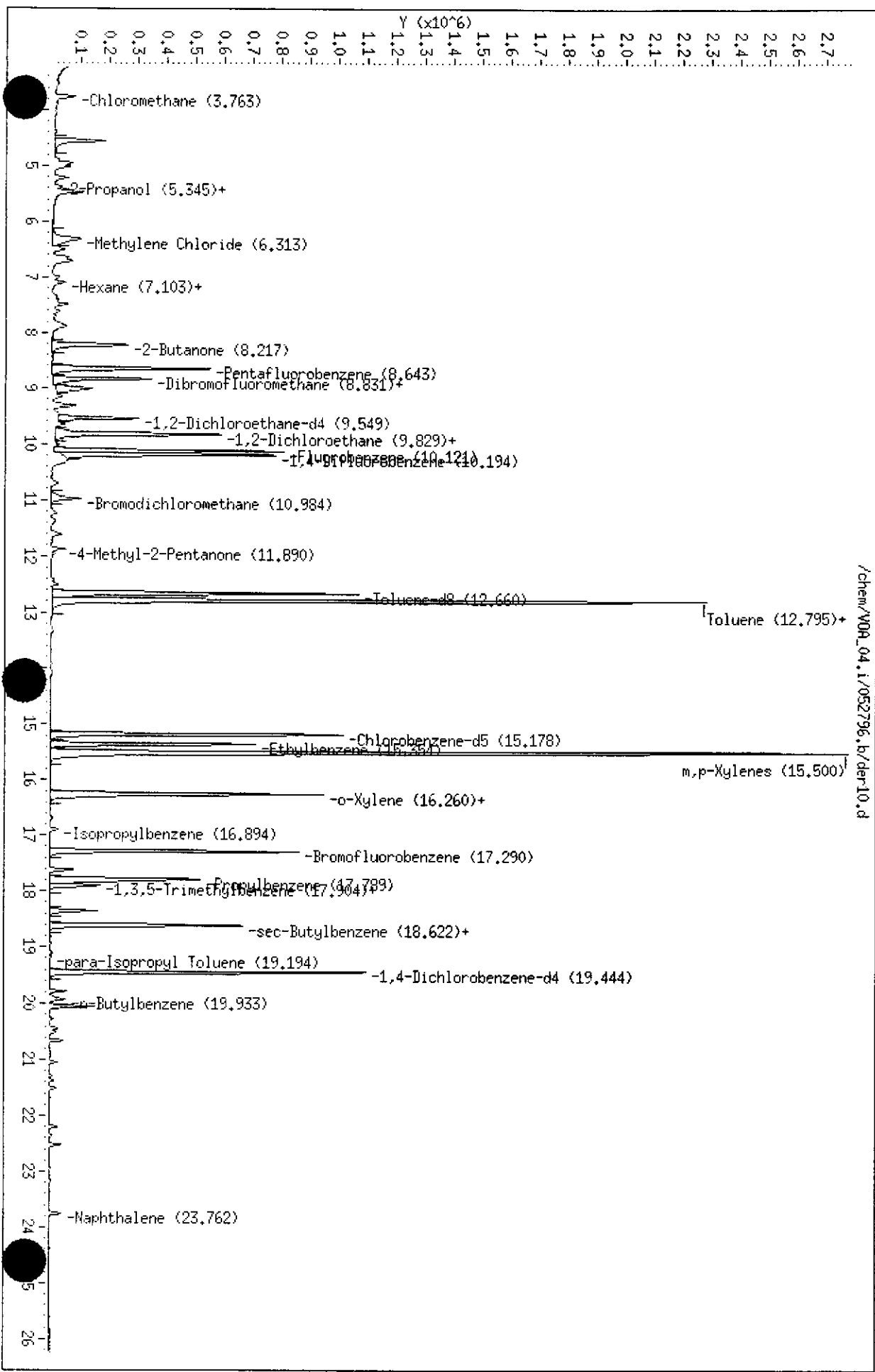
Field ID: SCI-12
 Lab ID: 125688-004
 Matrix: Water
 Batch#: 27820
 Units: ug/L
 Diln Fac: 20

Sampled: 05/22/96
 Received: 05/23/96
 Extracted: 05/27/96
 Analyzed: 05/27/96

Analyte	Result	Reporting Limit
Chloromethane	ND	200
Bromomethane	ND	200
Vinyl Chloride	ND	200
Chloroethane	ND	200
Methylene Chloride	ND	400
Acetone	ND	400
Carbon Disulfide	ND	100
Trichlorofluoromethane	ND	100
1,1-Dichloroethene	ND	100
1,1-Dichloroethane	ND	100
trans-1,2-Dichloroethene	ND	100
cis-1,2-Dichloroethene	ND	100
Chloroform	ND	100
Freon 113	ND	100
1,2-Dichloroethane	ND	100
2-Butanone	ND	200
1,1,1-Trichloroethane	ND	100
Carbon Tetrachloride	ND	100
Vinyl Acetate	ND	1000
Bromodichloromethane	ND	100
1,2-Dichloropropane	ND	100
cis-1,3-Dichloropropene	ND	100
Trichloroethene	ND	100
Dibromochloromethane	ND	100
1,1,2-Trichloroethane	ND	100
Benzene	810	100
trans-1,3-Dichloropropene	ND	100
Bromoform	ND	100
2-Hexanone	ND	200
4-Methyl-2-Pentanone	ND	200
1,1,2,2-Tetrachloroethane	ND	100
Tetrachloroethene	ND	100
Toluene	2200	100
Chlorobenzene	ND	100
Ethylbenzene	680	100
Styrene	ND	100
m,p-Xylenes	2900	100
o-Xylene	1000	100
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	97	68-126
Toluene-d8	88	87-125
Bromofluorobenzene	83	79-122

Data File: /chem/V09_04.1/052796.b/der10.d
 Date: 27-MAY-96 17:37
 Client ID: DYNA P&I
 Sample Info: MSS,125688-004
 Purge Volume: 5.0
 Column phase: RTX Volatiles

Instrument: V09_04.1
 Operator: LLH
 Column diameter: 0.32





Lab #: 125688

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
 Batch#: 27814
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/25/96
 Analysis Date: 05/25/96

MB Lab ID: QC22623

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	104	68-126
Toluene-d8	98	87-125
Bromofluorobenzene	92	79-122

DO: Surrogate diluted out

Lab #: 125688

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: EPA 8240
 Prep Method: EPA 5030

METHOD BLANK

 Matrix: Water
 Batch#: 27820
 Units: ug/L
 Diln Fac: 1

 Prep Date: 05/27/96
 Analysis Date: 05/27/96

MB Lab ID: QC22659

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	95	68-126
Toluene-d8	98	87-125
Bromofluorobenzene	89	79-122

DO: Surrogate diluted out



Lab #: 125688

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
 Batch#: 27814
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/25/96
 Analysis Date: 05/25/96

LCS Lab ID: QC22622

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	69.74	50	139	51-180
Trichloroethene	55.76	50	112	73-141
Benzene	51.32	50	103	78-142
Toluene	52.14	50	104	76-150
Chlorobenzene	50.17	50	100	83-129
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	122	68-126		
Toluene-d8	101	87-125		
Bromofluorobenzene	100	79-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Lab #: 125688

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
 Batch#: 27820
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/27/96
 Analysis Date: 05/27/96

LCS Lab ID: QC22658

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	65.96	50	132	51-180
Trichloroethene	53.03	50	106	73-141
Benzene	48.23	50	97	78-142
Toluene	45.94	50	92	76-150
Chlorobenzene	48.38	50	97	83-129
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	88	68-126		
Toluene-d8	90	87-125		
Bromofluorobenzene	84	79-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Lab #: 125688

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125690-001
 Matrix: Water
 Batch#: 27814
 Units: ug/L
 Diln Fac: 1

Sample Date: 05/23/96
 Received Date: 05/23/96
 Prep Date: 05/25/96
 Analysis Date: 05/25/96

MS Lab ID: QC22625

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	<1.000	59.46	119	51-180
Trichloroethene	50	2.29	53.79	103	73-141
Benzene	50	0	47.51	95	78-142
Toluene	50	0	47.11	94	76-150
Chlorobenzene	50	<1.000	47.5	95	83-129
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	106	68-126			
Toluene-d8	97	87-125			
Bromofluorobenzene	92	79-122			

MSD Lab ID: QC22626

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	63.91	128	51-180	7	<14
Trichloroethene	50	53.83	103	73-141	0	<14
Benzene	50	47.85	96	78-142	1	<11
Toluene	50	47.26	95	76-150	0	<13
Chlorobenzene	50	48.27	97	83-129	2	<13
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	100	68-126				
Toluene-d8	96	87-125				
Bromofluorobenzene	90	79-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



Lab #: 125688

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: SCI-12
 Lab ID: 125688-004
 Matrix: Water
 Batch#: 27820
 Units: ug/L
 Diln Fac: 20

Sample Date: 05/22/96
 Received Date: 05/23/96
 Prep Date: 05/27/96
 Analysis Date: 05/27/96

MS Lab ID: QC22668

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	1000	<100.0	1376	138	51-180
Trichloroethene	1000	<100.0	1134	113	73-141
Benzene	1000	810.3	1818	101	78-142
Toluene	1000	2201	3331	113	76-150
Chlorobenzene	1000	<100.0	993.5	99	83-129
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	93	68-126			
Toluene-d8	92	87-125			
Bromofluorobenzene	88	79-122			

MSD Lab ID: QC22669

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	1000	1354	135	51-180	2	<14
Trichloroethene	1000	1088	109	73-141	4	<14
Benzene	1000	1785	98	78-142	2	<11
Toluene	1000	3320	112	76-150	0	<13
Chlorobenzene	1000	997.8	100	83-129	0	<13
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	91	68-126				
Toluene-d8	92	87-125				
Bromofluorobenzene	88	79-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

Field ID: SCI-6
Lab ID: 125688-001
Matrix: Water
Batch#: 27835
Units: ug/L
Diln Fac: 5

Sampled: 05/22/96
Received: 05/23/96
Extracted: 05/28/96
Analyzed: 06/13/96

Analyte	Result	Reporting Limit
Phenol	ND	47
2-Chlorophenol	ND	47
Benzyl alcohol	ND	47
2-Methylphenol	ND	47
4-Methylphenol	ND	47
2-Nitrophenol	ND	240
2,4-Dimethylphenol	ND	47
Benzoic acid	ND	240
2,4-Dichlorophenol	ND	47
4-Chloro-3-methylphenol	ND	47
2,4,6-Trichlorophenol	ND	47
2,4,5-Trichlorophenol	ND	240
2,4-Dinitrophenol	ND	240
4-Nitrophenol	ND	240
4,6-Dinitro-2-methylphenol	ND	240
Pentachlorophenol	ND	240
N-Nitrosodimethylamine	ND	47
Aniline	ND	47
bis(2-Chloroethyl)ether	ND	47
1,3-Dichlorobenzene	ND	47
1,4-Dichlorobenzene	ND	47
1,2-Dichlorobenzene	ND	47
bis(2-Chloroisopropyl) ether	ND	47
N-Nitroso-di-n-propylamine	ND	47
Hexachloroethane	ND	47
Nitrobenzene	ND	47
Isophorone	ND	47
bis(2-Chloroethoxy)methane	ND	47
1,2,4-Trichlorobenzene	ND	47
Naphthalene	ND	47
4-Chloroaniline	ND	47
Hexachlorobutadiene	ND	47
2-Methylnaphthalene	110	47
Hexachlorocyclopentadiene	ND	47
2-Chloronaphthalene	ND	47
2-Nitroaniline	ND	240
Dimethylphthalate	ND	47
Acenaphthylene	ND	47



Semivolatile Organics by GC/MS

Field ID: SCI-6	Sampled: 05/22/96
Lab ID: 125688-001	Received: 05/23/96
Matrix: Water	Extracted: 05/28/96
Batch#: 27835	Analyzed: 06/13/96
Units: ug/L	
Diln Fac: 5	

Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	47
3-Nitroaniline	ND	240
Acenaphthene	ND	47
Dibenzofuran	ND	47
2,4-Dinitrotoluene	ND	47
Diethylphthalate	ND	47
4-Chlorophenyl-phenylether	ND	47
Fluorene	37 J	47
4-Nitroaniline	ND	240
N-Nitrosodiphenylamine	ND	47
Azobenzene	ND	47
4-Bromophenyl-phenylether	ND	47
Hexachlorobenzene	ND	47
Phenanthrene	45 J	47
Anthracene	ND	47
Di-n-butylphthalate	ND	47
Fluoranthene	ND	47
Pyrene	ND	47
Butylbenzylphthalate	ND	47
3,3'-Dichlorobenzidine	ND	240
Benzo(a)anthracene	ND	47
Chrysene	ND	47
bis(2-Ethylhexyl)phthalate	ND	47
Di-n-octylphthalate	ND	47
Benzo(b)fluoranthene	ND	47
Benzo(k)fluoranthene	ND	47
Benzo(a)pyrene	ND	47
Indeno(1,2,3-cd)pyrene	ND	47
Dibenz(a,h)anthracene	ND	47
Benzo(g,h,i)perylene	ND	47

Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	65	21-110
Phenol-d5	73	10-110
2,4,6-Tribromophenol	30	10-123
Nitrobenzene-d5	52	35-114
2-Fluorobiphenyl	16*	43-116
Terphenyl-d14	3*	33-141

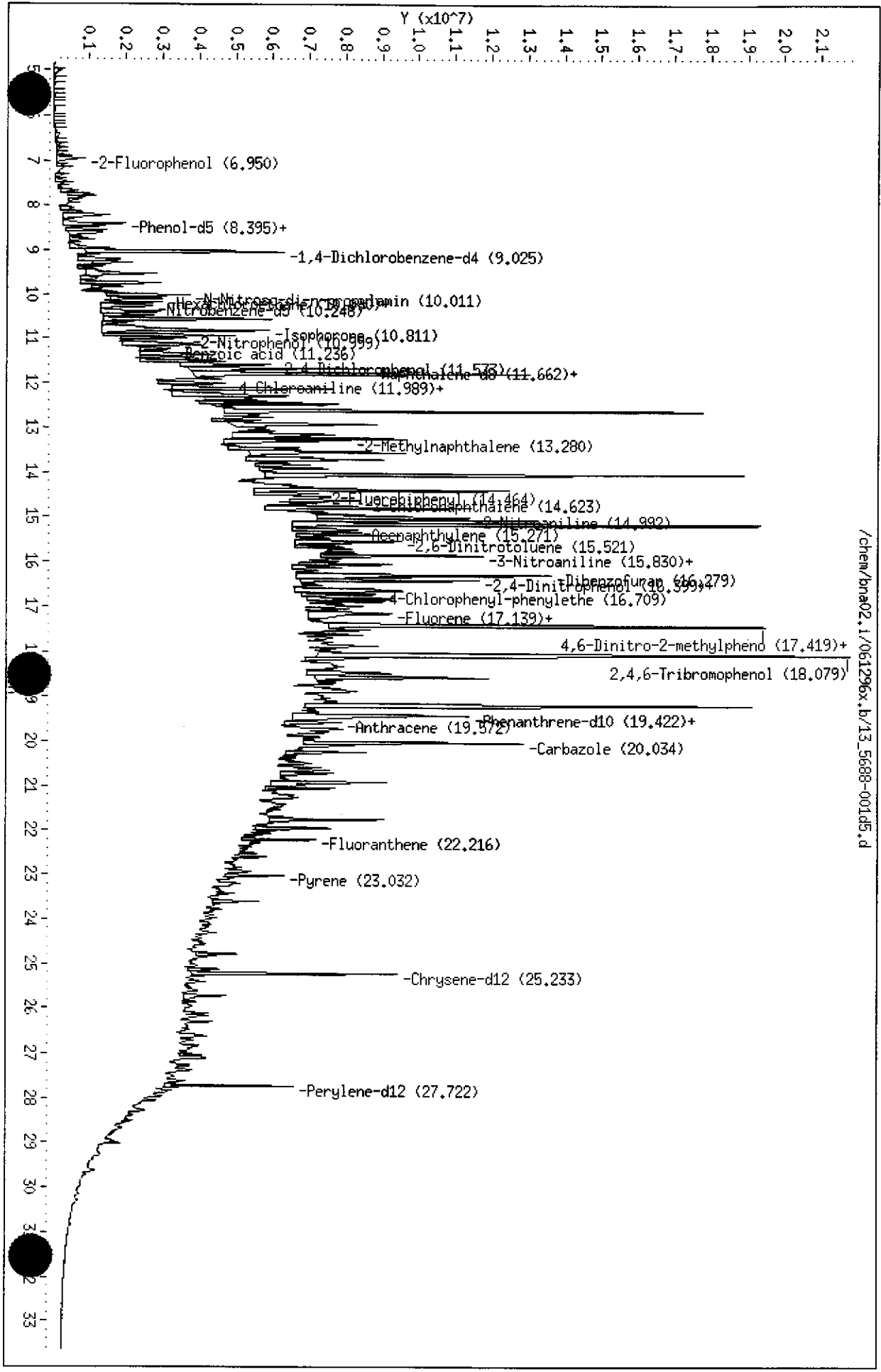
J: Estimated Value

* Values outside of QC limits

125688-1

Data File: /chem/bna02.1/061296x.b/13_5688-001d5.d
Date: 13-JUN-1996 00:39
Client ID: CURTIS&TOMPkins,LTD
Sample Info:
Volume Injected (uL): 1.0
Column phase: Xti 5 x .5 u

Instrument: bna02.1
Operator: dsh
Column diameter: 0.25



/chem/bna02.1/061296x.b/13_5688-001d5.d



Lab #: 125688

BATCH QC REPORT

Page 1 of 2

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8270
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 27835
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/28/96
 Analysis Date: 05/30/96

MB Lab ID: QC22731

Analyte	Result	Reporting Limit
Phenol	ND	10
2-Chlorophenol	ND	10
Benzyl alcohol	ND	10
2-Methylphenol	ND	10
4-Methylphenol	ND	10
2-Nitrophenol	ND	50
2,4-Dimethylphenol	ND	10
Benzoic acid	ND	50
2,4-Dichlorophenol	ND	10
4-Chloro-3-methylphenol	ND	10
2,4,6-Trichlorophenol	ND	10
2,4,5-Trichlorophenol	ND	50
2,4-Dinitrophenol	ND	50
4-Nitrophenol	ND	50
4,6-Dinitro-2-methylphenol	ND	50
Pentachlorophenol	ND	10
N-Nitrosodimethylamine	ND	10
Aniline	ND	10
bis(2-Chloroethyl)ether	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
1,2-Dichlorobenzene	ND	10
bis(2-Chloroisopropyl) ether	ND	10
N-Nitroso-di-n-propylamine	ND	10
Hexachloroethane	ND	10
Nitrobenzene	ND	10
Isophorone	ND	10
bis(2-Chloroethoxy)methane	ND	10
1,2,4-Trichlorobenzene	ND	10
Naphthalene	ND	10
4-Chloroaniline	ND	10
Hexachlorobutadiene	ND	10
2-Methylnaphthalene	ND	10
Hexachlorocyclopentadiene	ND	10
2-Chloronaphthalene	ND	10
2-Nitroaniline	ND	50
Dimethylphthalate	ND	10
Acenaphthylene	ND	10
2,6-Dinitrotoluene	ND	10
3-Nitroaniline	ND	50



Lab #: 125688

BATCH QC REPORT

Page 2 of 2

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8270
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 27835
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/28/96
 Analysis Date: 05/30/96

MB Lab ID: QC22731

Analyte	Result	Reporting Limit
Acenaphthene	ND	10
Dibenzofuran	ND	10
2,4-Dinitrotoluene	ND	10
Diethylphthalate	ND	10
4-Chlorophenyl-phenylether	ND	10
Fluorene	ND	10
4-Nitroaniline	ND	50
N-Nitrosodiphenylamine	ND	10
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	10
Hexachlorobenzene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Di-n-butylphthalate	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Butylbenzylphthalate	ND	10
3,3'-Dichlorobenzidine	ND	50
Benzo(a)anthracene	ND	10
Chrysene	ND	10
bis(2-Ethylhexyl)phthalate	ND	10
Di-n-octylphthalate	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(a)pyrene	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Dibenz(a,h)anthracene	ND	10
Benzo(g,h,i)perylene	ND	10
Surrogate	%Rec	Recovery Limits
2-Fluorophenol	85	21-110
Phenol-d5	79	10-110
2,4,6-Tribromophenol	69	10-123
Nitrobenzene-d5	75	35-114
2-Fluorobiphenyl	71	43-116
Terphenyl-d14	83	33-141



Lab #: 125688

BATCH QC REPORT

Page 1 of 1

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8270
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27835
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/28/96
 Analysis Date: 05/30/96

BS Lab ID: QC22732

Analyte	Spike Added	BS	%Rec #	Limits
Phenol	100	76.34	76	12-110
2-Chlorophenol	100	72.49	72	27-123
4-Chloro-3-methylphenol	100	71.7	72	23-97
4-Nitrophenol	100	51.27	51	10-80
Pentachlorophenol	100	42.09	42	9-103
1,4-Dichlorobenzene	50	31.35	63	36-97
N-Nitroso-di-n-propylamine	50	32.79	66	41-116
1,2,4-Trichlorobenzene	50	31.17	62	39-98
Acenaphthene	50	37.01	74	46-118
2,4-Dinitrotoluene	50	34.06	68	24-96
Pyrene	50	40.45	81	26-127
Surrogate	%Rec	Limits		
2-Fluorophenol	83	21-110		
Phenol-d5	84	10-110		
2,4,6-Tribromophenol	86	10-123		
Nitrobenzene-d5	77	35-114		
2-Fluorobiphenyl	74	43-116		
Terphenyl-d14	84	33-141		

BSD Lab ID: QC22733

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Phenol	100	73.95	74	12-110	3	<42
2-Chlorophenol	100	70.19	70	27-123	3	<40
4-Chloro-3-methylphenol	100	71.15	71	23-97	1	<42
4-Nitrophenol	100	55.03	55	10-80	8	<50
Pentachlorophenol	100	41.04	41	9-103	2	<50
1,4-Dichlorobenzene	50	28.05	56	36-97	12	<28
N-Nitroso-di-n-propylamine	50	34.4	69	41-116	4	<38
1,2,4-Trichlorobenzene	50	28.18	56	39-98	10	<28
Acenaphthene	50	35.82	72	46-118	3	<31
2,4-Dinitrotoluene	50	33.75	68	24-96	0	<38
Pyrene	50	40.17	80	26-127	1	<31
Surrogate	%Rec	Limits				
2-Fluorophenol	78	21-110				
Phenol-d5	79	10-110				
2,4,6-Tribromophenol	84	10-123				
Nitrobenzene-d5	75	35-114				
2-Fluorobiphenyl	71	43-116				
Terphenyl-d14	83	33-141				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits

DO: Surrogate diluted out

125688

CHAIN OF CUSTODY FORM

PAGE _____ OF _____

PROJECT NAME: KOT
 JOB NUMBER: 133.005 LAB: Curtis & Tompkins
 PROJECT CONTACT: Jeri Alexander TURNAROUND: Normal
 SAMPLED BY: Jerome De Veer REQUESTED BY: Jeri Alexander

ANALYSIS REQUESTED						
TYH	BTXE	TEH (C-5 to C-50)	P270 w/ PMA's	09G	VOC's 8240	

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS					METHOD PRESERVED					SAMPLING DATE				NOTES			
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	100ml poly	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME				
	SCI-6	X				4	4		1		X		X		05	22	96	1330	X	X	X	X	X
	SCI-8	X				4	4		1		X		X					1230		X	X		
	SCI-10	X				4	4		1		X		X					1230		X	X		
	SCI-12	X				4	4		1		X		X		05	22	96	1630	X	X		X	

CHAIN OF CUSTODY RECORD				COMMENTS & NOTES:
RELEASED BY: (Signature) <u>Jeri Alexander</u>	DATE / TIME <u>5/23/96 4:45 pm</u>	RECEIVED BY: (Signature)	DATE / TIME	
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME	
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME	
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature) <u>Tina Bobina</u>	DATE / TIME <u>7/23 4:45</u>	

Subsurface Consultants, Inc.
 171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
 (510) 268-0461 • FAX: 510-268-0137



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 13-JUN-96
Lab Job Number: 125883
Project ID: 133.005
Location: KOT

Reviewed by: _____

Reviewed by: Traas Babjor

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Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 125883
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 133.005
LOCATION: KOT
BATCH NO: 27715

DATE SAMPLED: 05/14/96
DATE RECEIVED: 05/16/96
DATE EXTRACTED: 05/21/96
DATE ORDERED: 06/10/96
DATE ANALYZED: 06/12,13/96
DATE REPORTED: 06/13/96

Extractable Petroleum Hydrocarbons in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

LAB ID	SAMPLE ID	DIESEL RANGE (mg/Kg)	MOTOR OIL RANGE (mg/Kg)	SURROGATE HEXACOSANE %
125883-001	SCI-MW-1@4.5	19 YH	51 Y	191*
125883-002	SCI-MW-2@4.5	40 YH	160 YH	104
125883-003	SCI-MW-3@4.5	3.4 YH	8.0 YH	66
METHOD BLANK	N/A	ND(1.0)	ND(5.0)	89

Y = Fuel pattern does not resemble standard.

H = Heavier hydrocarbons contributing to quantitated area

ND = Not detected at or above reporting limit; reporting limit indicated in parentheses.

* Surrogate above control limits due to matrix interferences.

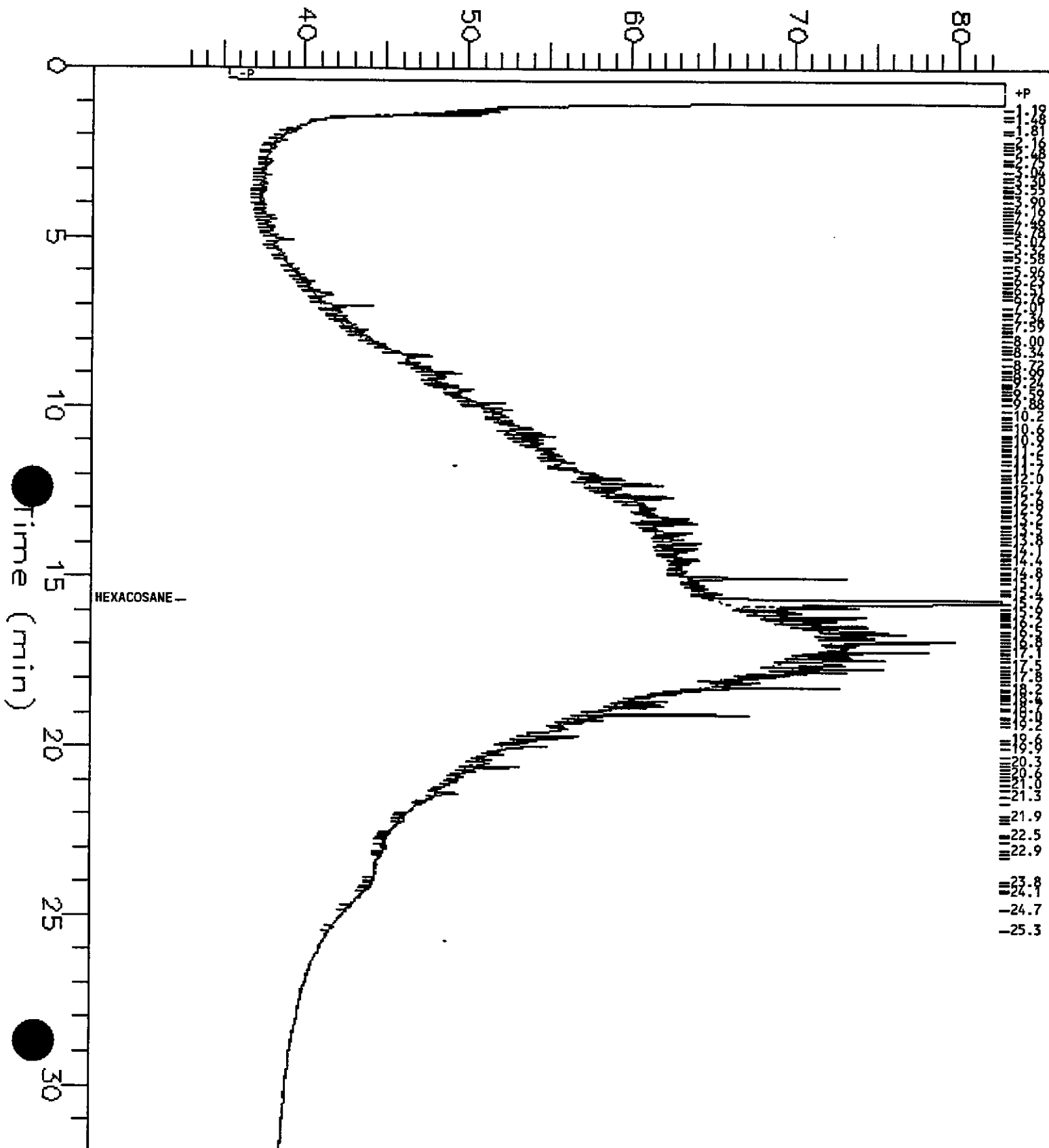
TEH Chromatogram - GC 11 Ch B

Sample Name : 125883-001,50:5
 FileName : g:\gc11\chb\162B075.raw
 Method : DUL32BSL.ins
 Start Time : 0.00 min
 Scale Factor : -1

End Time : 31.92 min
 Plot Offset: 33 mV

Sample #: 27715
 Date : 6/12/96 04:34 AM
 Time of Injection: 6/12/96 04:00 AM
 Low Point : 32.83 mV
 Plot Scale: 50 mV
 High Point : 82.83 mV

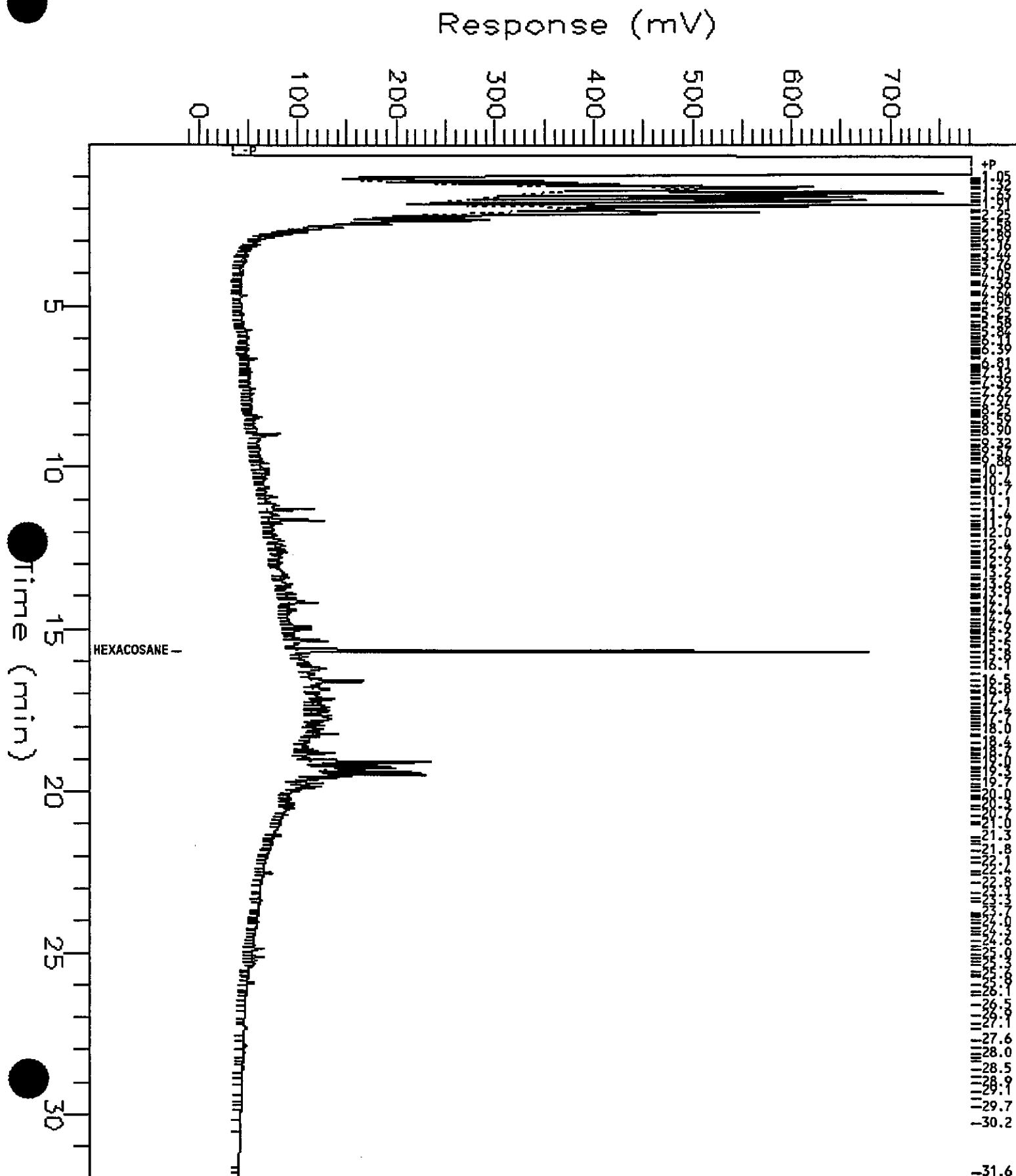
Response (mV)



Sample Name : 125883-002,50:5
FileName : G:\GC11\CHB\162B076.raw
Method : DUL32BSL.ins
Start Time : 0.01 min
Scale Factor: 0

End Time : 31.92 min
Plot Offset: -18 mV

Sample #: 27715
Date : 6/12/96 09:46 AM
Time of Injection: 6/12/96 04:44 AM
Low Point : -17.88 mV
Plot Scale: 801 mV
High Point : 782.88 mV



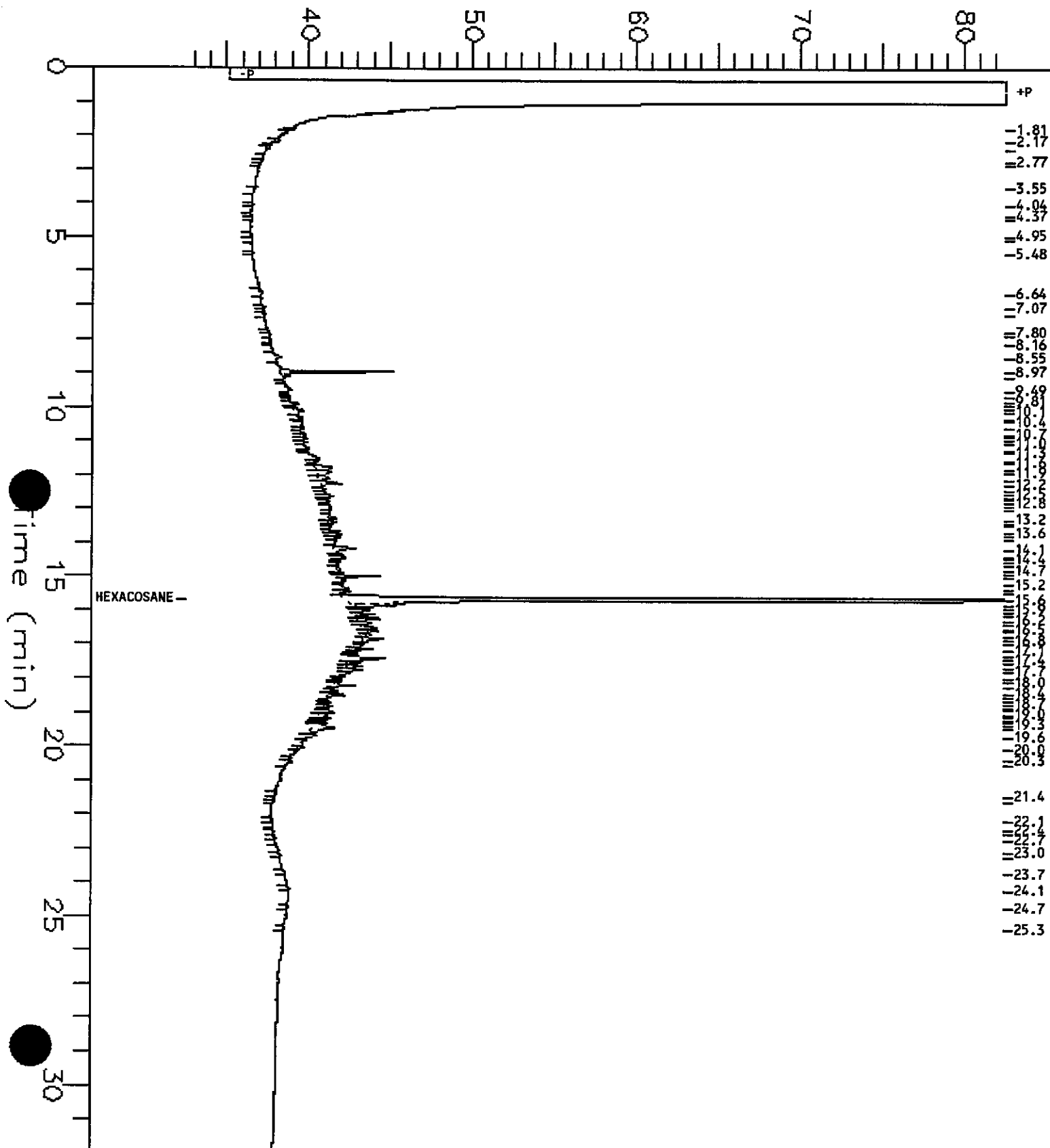
TEH Chromatogram - GC 11 Ch B

Sample Name : 125883-003,50:5
 FileName : g:\gc11\chb\162B074.raw
 Method : DUL32BSL.ins
 Start Time : 0.00 min
 Scale Factor : -1

End Time : 31.92 min
 Plot Offset: 33 mV

Sample #: 27715
 Date : 6/12/96 03:49 AM
 Time of Injection: 6/12/96 03:17 AM
 Low Point : 32.63 mV
 High Point : 82.63 mV
 Plot Scale: 50 mV

Response (mV)



SOIL TEH LCS RECOVERY

Lab Name: CURTIS & TOMPKINS,LTD.

Instrument ID: GC 13 CH A

Run Date: 05/22/96

C&T ID: QC22202

Batch No.: 27715

COMPOUND	SPIKE ADDED mg/Kg	LCS CONC. mg/Kg	LCS % REC	#	RECOVERY LIMITS
DIESEL	49.5	43.86	89		60 - 140

Surrogate Recovery:

103

(Limits: 60 - 140)

Column to be used to flag recovery and RPD values with an asterisk

* Value outside of QC limits

Spike Recovery: 0 out of 2 outside QC limits

LCS PASSES

 COMMENTS:

SOIL TEH MATRIX SPIKE/DUPLICATE RECOVERY

Lab Name: Curtis & Tompkins, Ltd.

Instrument ID: GC 13 CH A

Run Date: : 05/22/96

C&T ID: QC22203, QC22204

Batch No.: 27715

Spiked sample: 125598-011

COMPOUND	SPIKE ADDED mg/Kg	SAMPLE CONC. mg/Kg	MS CONC. mg/Kg	MS		QC LIMITS RECOVERY
				% REC	#	
DIESEL	49.5	0	51.04	103		60 - 140

COMPOUND	SPIKE ADDED mg/Kg	MSD CONC. mg/Kg	MSD		% RPD		QC LIMITS	
			% REC	#	RPD	#	RPD	RECOVERY
DIESEL	49.5	65.19	132		24		35	60 - 140

 Surrogate Recoveries -
 (Limits: 60 - 140)

 MS: 105
 MSD: 105

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside of QC limits

Spike Recovery: 0 out of 4 outside of QC limits

 COMMENTS: _____

CURTIS & TOMPKINS, LTD. BERKELEY

LOGIN CHANGE FORM

Reason for change: Client Request: By: Jerome Date/Time: 6/10 10:25 Initials: JS
 Login Review Data Review

Current Lab ID	Previous Lab ID	Client ID	Matrix	Add/Cancel	Analysis	Due date
125883-001	125600-001		2775 Extracts	add	TEH M.O	6/14
-002	-002		Extracts	-		6/11
-003	-003		Extracts	add	TEH M.O.	



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A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 14-JUN-96
Lab Job Number: 125736
Project ID: 133.005
Location: KOT

Reviewed by: _____

Reviewed by: _____

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Client: Subsurface Consultants

Laboratory Login Number: 125736

Project Name: KOT
Project Number: 133.005

Report Date: 14 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520BF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
125736-001	SCI-17	Water	28-MAY-96	29-MAY-96	31-MAY-96	ND	mg/L	5	TR	27924

ND = Not Detected at or above Reporting Limit (RL).



Q C B a t c h R e p o r t

Client: Subsurface Consultants
Project Name: KOT
Project Number: 133.005

Laboratory Login Number: 125736
Report Date: 14 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 27924

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	31-MAY-96

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	86%	SMWW 17:5520BF	31-MAY-96
BSD	83%	SMWW 17:5520BF	31-MAY-96

		Control Limits
Average Spike Recovery	84%	80% - 120%
Relative Percent Difference	2.6%	< 20%



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125736-001	SCI-17	27926	05/28/96	06/01/96	06/01/96	

Matrix: Water

Analyte	Units	125736-001
Diln Fac:		1
Gasoline	ug/L	92 Y
Surrogate		
Trifluorotoluene	%REC	94
Bromobenzene	%REC	87

Y: Sample exhibits fuel pattern which does not resemble standard

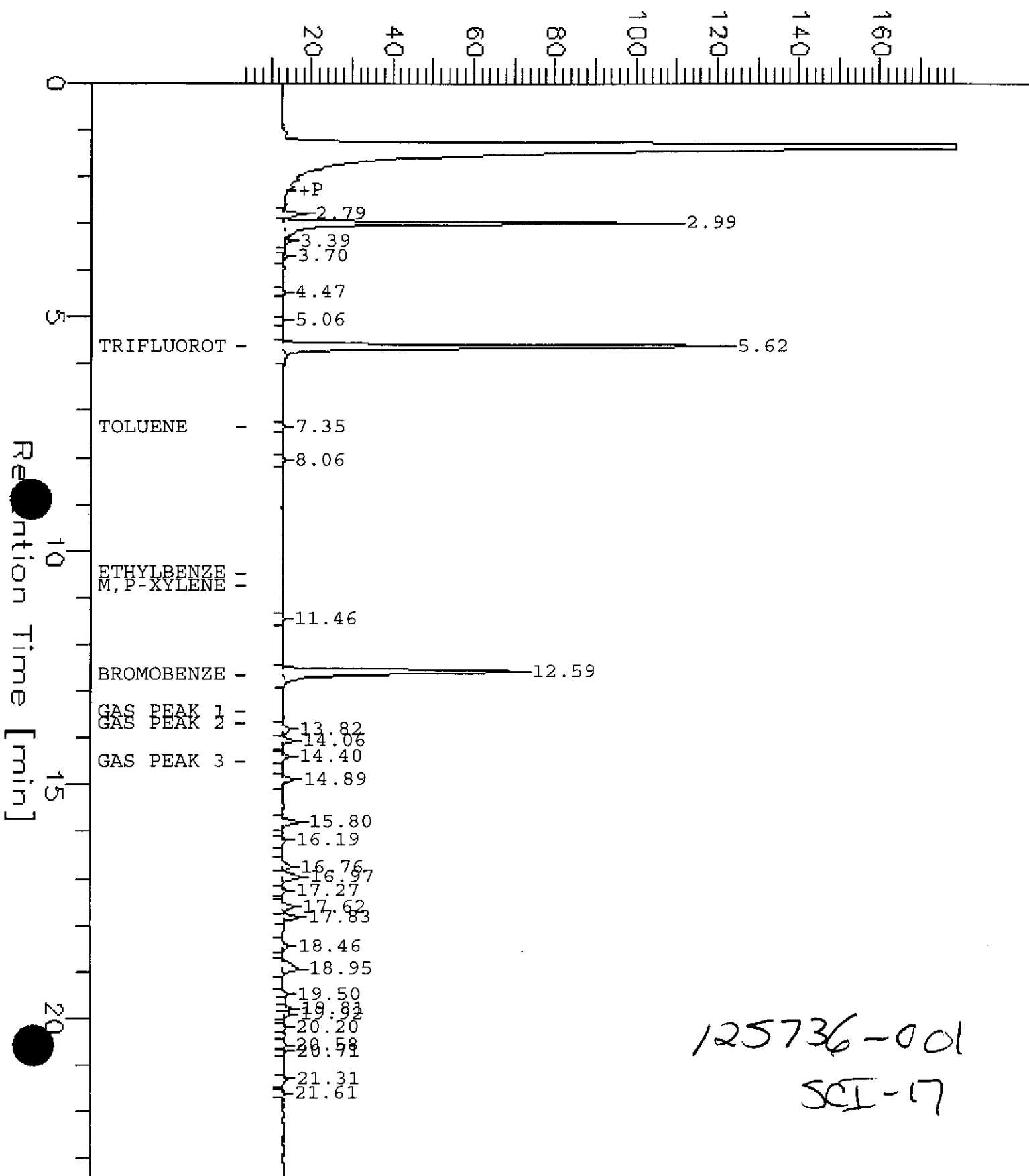
FileName : G:\GC05\152H022.raw
Start Time : 0.00 min
Scale Factor: -1

End Time : 23.42 min
Plot Offset: 4 mV

Date : 6/1/96 11:08 AM
Low Point : 3.96 mV
Plot Scale: 175 mV

Page 1 of 1
High Point : 178.96 mV

Response [mV]



125736-001
SCI-17



Lab #: 125736

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27926
Units: ug/L
Diln Fac: 1

Prep Date: 05/31/96
Analysis Date: 05/31/96

MB Lab ID: QC23084

Analyte	Result		
Gasoline	<50		
Surrogate	%Rec	Recovery Limits	
Trifluorotoluene	90	65-135	
Bromobenzene	76	65-135	

Lab #: 125736

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ	Sample Date: 05/22/96
Lab ID: 125692-001	Received Date: 05/23/96
Matrix: Water	Prep Date: 05/31/96
Batch#: 27926	Analysis Date: 05/31/96
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC23087

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	2000	<50.00	1850	93	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	95	65-135			
Bromobenzene	86	65-135			

MSD Lab ID: QC23088

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	2000	1979	90	75-125	7	<35
Surrogate	%Rec	Limits				
Trifluorotoluene	95	65-135				
Bromobenzene	98	65-135				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



Lab #: 125736

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	

LABORATORY CONTROL SAMPLE

Matrix: Water	Prep Date: 05/31/96
Batch#: 27926	Analysis Date: 05/31/96
Units: ug/L	
Diln Fac: 1	

LCS Lab ID: QC23085

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	2010	2000	101	75-125
Surrogate	%Rec	Limits		
Trifluorotoluene	95	65-135		
Bromobenzene	92	65-135		

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits
 Spike Recovery: 0 out of 1 outside limits



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125736-001	SCI-17	27914	05/28/96	05/30/96	06/03/96	

Matrix: Water

Analyte	Units	125736-001
Diln Fac:		1
Diesel C12-C22	ug/L	190 YZ
Motor Oil C22-C50	ug/L	<250
Surrogate		
Hexacosane	%REC	116

Y: Sample exhibits fuel pattern which does not resemble standard

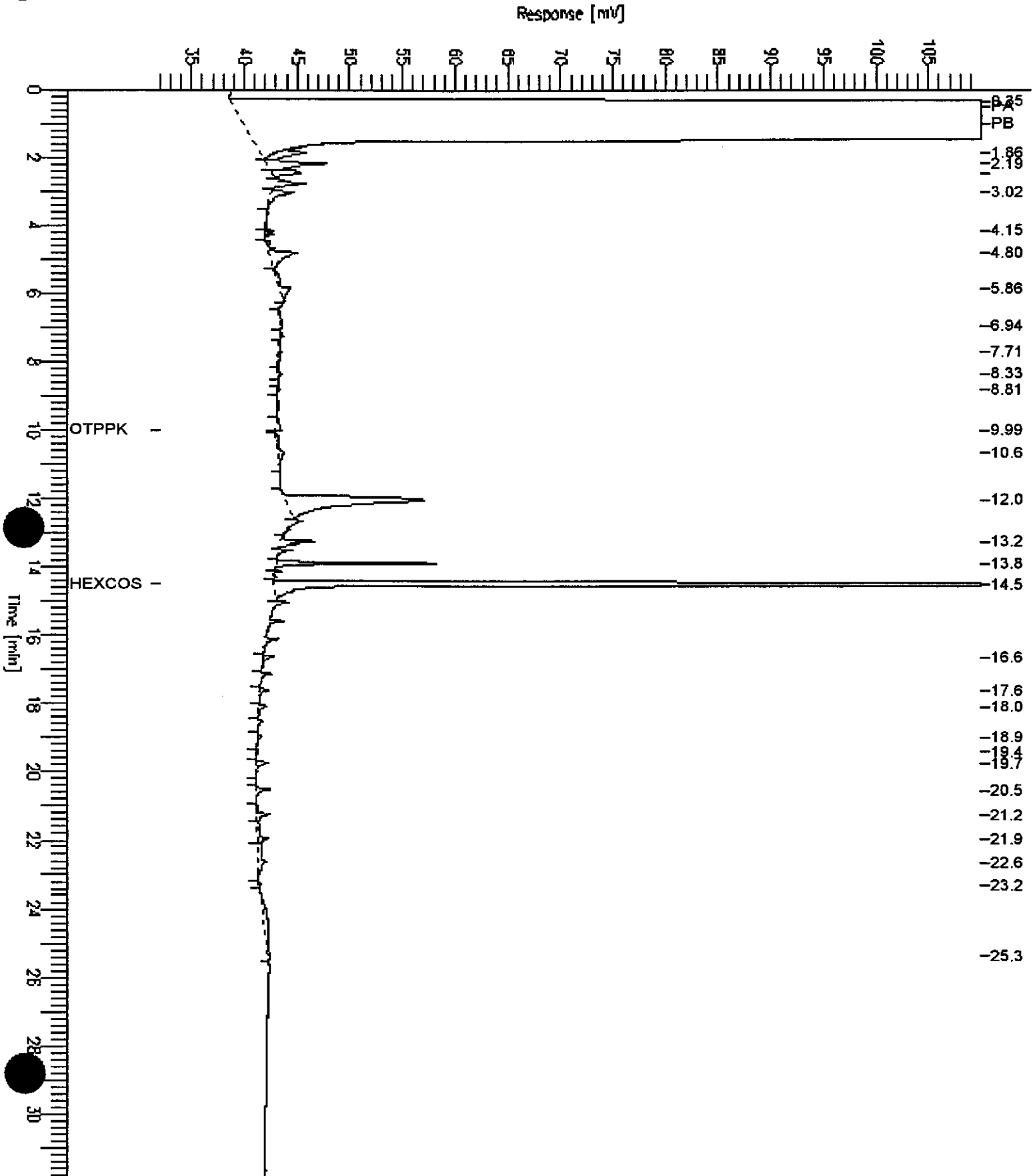
Z: Sample exhibits unknown single peak or peaks

GC15 Channel B Surrogate

Sample Name : S,125736-001,27914
FileName : C:\GC15\CHB\155B010.raw
Method : DUAL
Start Time : 0.00 min
Factor : 0.0

End Time : 31.90 min
Plot Offset: 32 mV

Sample #: 500:2.5
Date : 6/3/96 04:26 PM
Time of Injection: 6/3/96 03:53 PM
Low Point : 32.00 mV
High Point : 110.00 mV
Plot Scale: 78.0 mV



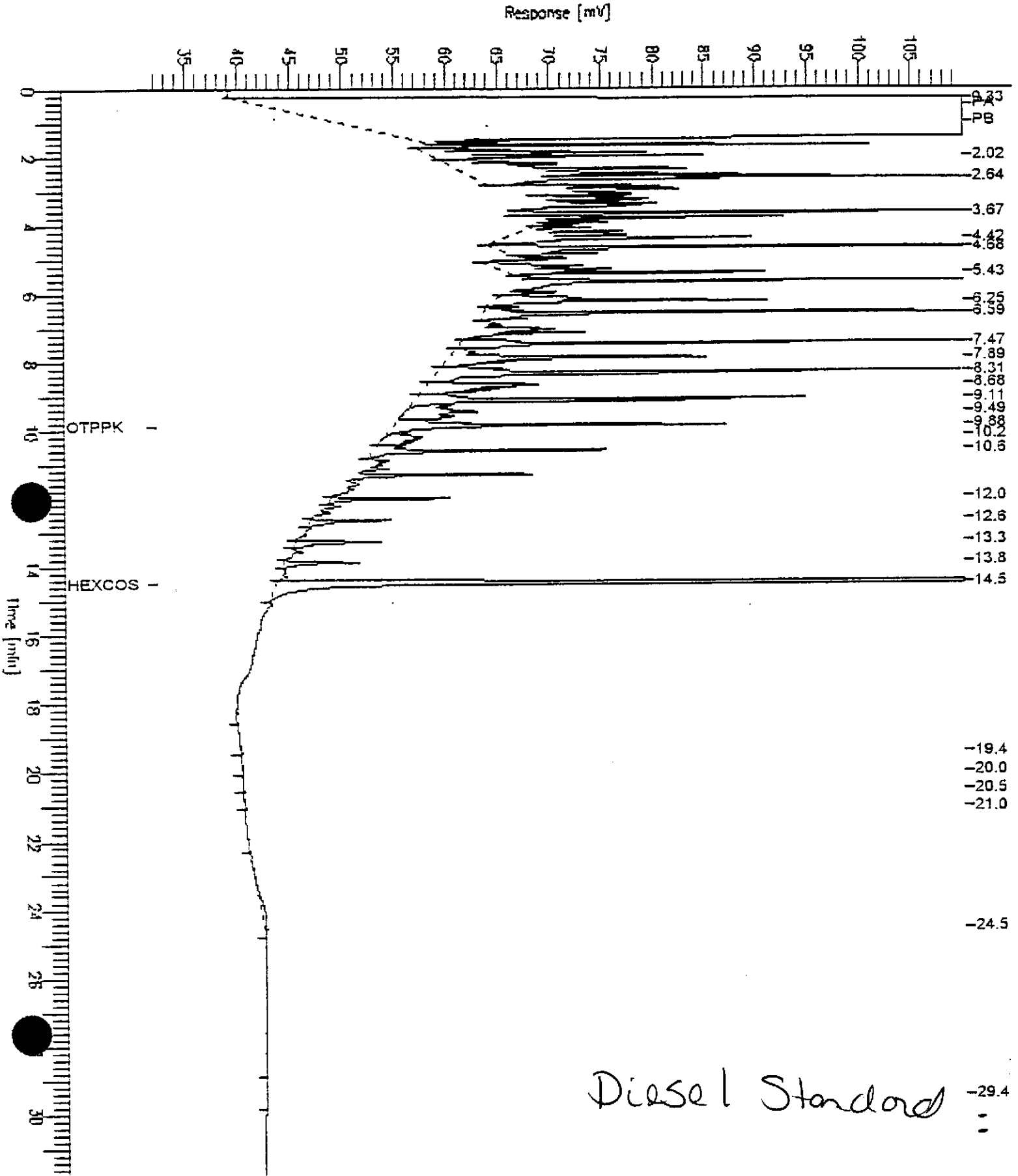
GC15 Channel B Surrogate

Sample Name : CCV, 96WS2288, DSL
FileName : C:\GC15\CHB\1518056.raw
Method : DUAL
Start Time : 0.00 min
Scale Factor : 0.0

End Time : 31.90 min
Plot Offset: 32 mV

Sample #: 500MG/L
Date : 6/1/96 04:19 PM
Time of Injection: 6/1/96 03:44 PM
Low Point : 32.00 mV
Plot Scale: 78.0 mV
High Point : 110.00 mV

Page 1 of 1



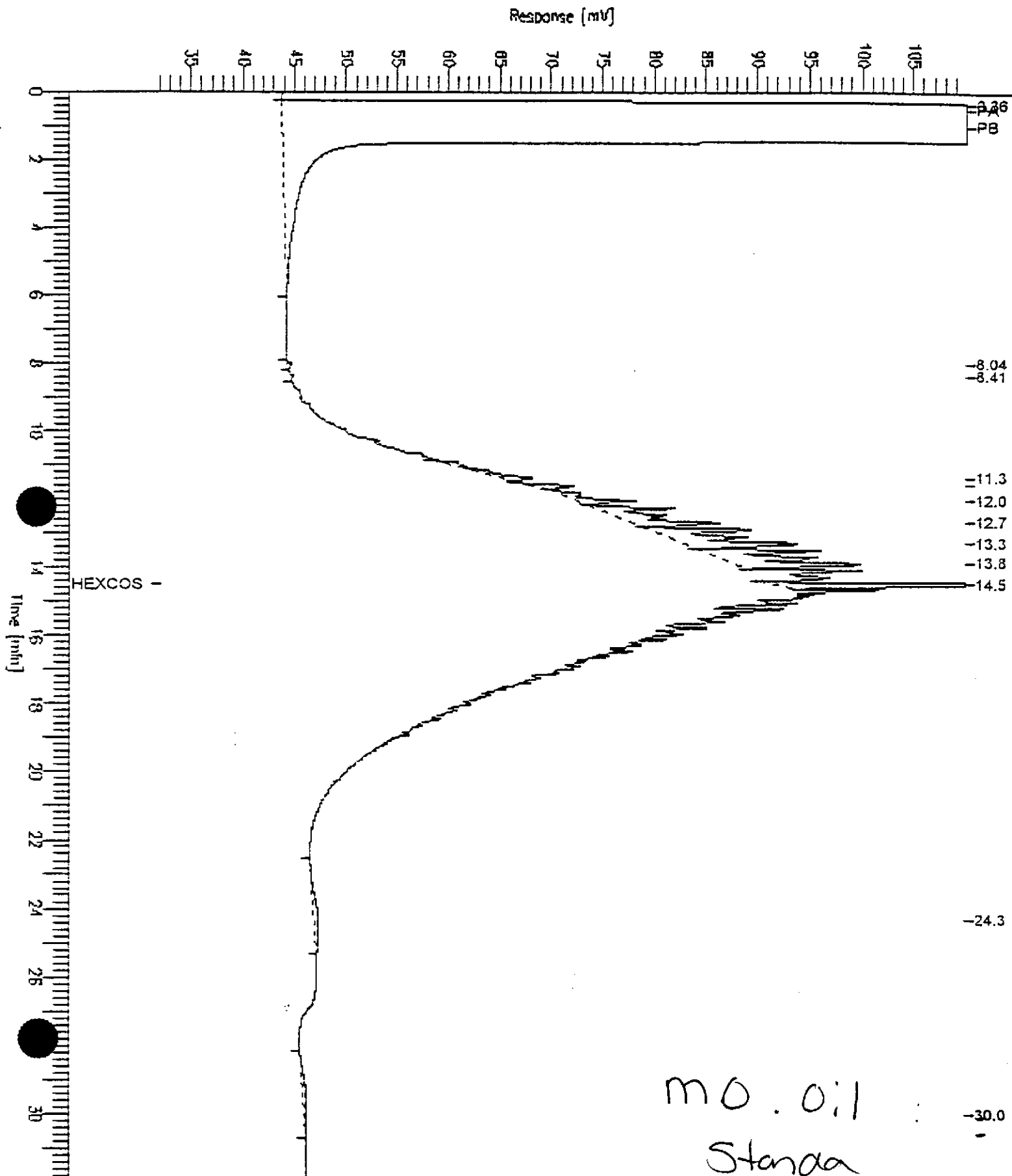
GC15 Channel B Surrogate

Sample Name : CCV, 96WS2416, MO
FileName : C:\GC15\CHB\1518071.raw
Method : DUAL
Start Time : 0.00 min
Se Factor: 0.0

End Time : 31.90 min
Plot Offset: 32 mV

Sample #: 500MG/L
Date : 6/2/96 03:28 AM
Time of Injection: 6/2/96 02:53 AM
Low Point : 32.00 mV
High Point : 110.00 mV
Plot Scale: 78.0 mV

Page 1 of 1





Lab #: 125736

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 27914
Units: ug/L
Diln Fac: 1

Prep Date: 05/30/96
Analysis Date: 06/01/96

MB Lab ID: QC23032

Analyte	Result	
Diesel C12-C22	<50	
Motor Oil C22-C50	<250	
Surrogate	%Rec	Recovery Limits
Hexacosane	113	60-140



Lab #: 125736

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27914
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/30/96
 Analysis Date: 06/01/96

BS Lab ID: QC23033

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	2201	89	60-140
Surrogate	%Rec	Limits		
Hexacosane	110	60-140		

BSD Lab ID: QC23034

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2358	95	60-140	7	<35
Surrogate	%Rec	Limits				
Hexacosane	104	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



PCBs

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: PCB
Prep Method: EPA 3550
Cleanup Method: EPA acid

Field ID: SCI-17
Lab ID: 125736-001
Matrix: Water
Batch#: 27932
Units: ug/L
Diln Fac: 1

Sampled: 05/28/96
Received: 05/29/96
Extracted: 05/31/96
Analyzed: 06/03/96

Analyte	Result	Reporting Limit
---------	--------	-----------------

Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

Surrogate	%Recovery	Recovery Limits
-----------	-----------	-----------------

TCMX	50*	60-150
Decachlorobiphenyl	19*	30-130

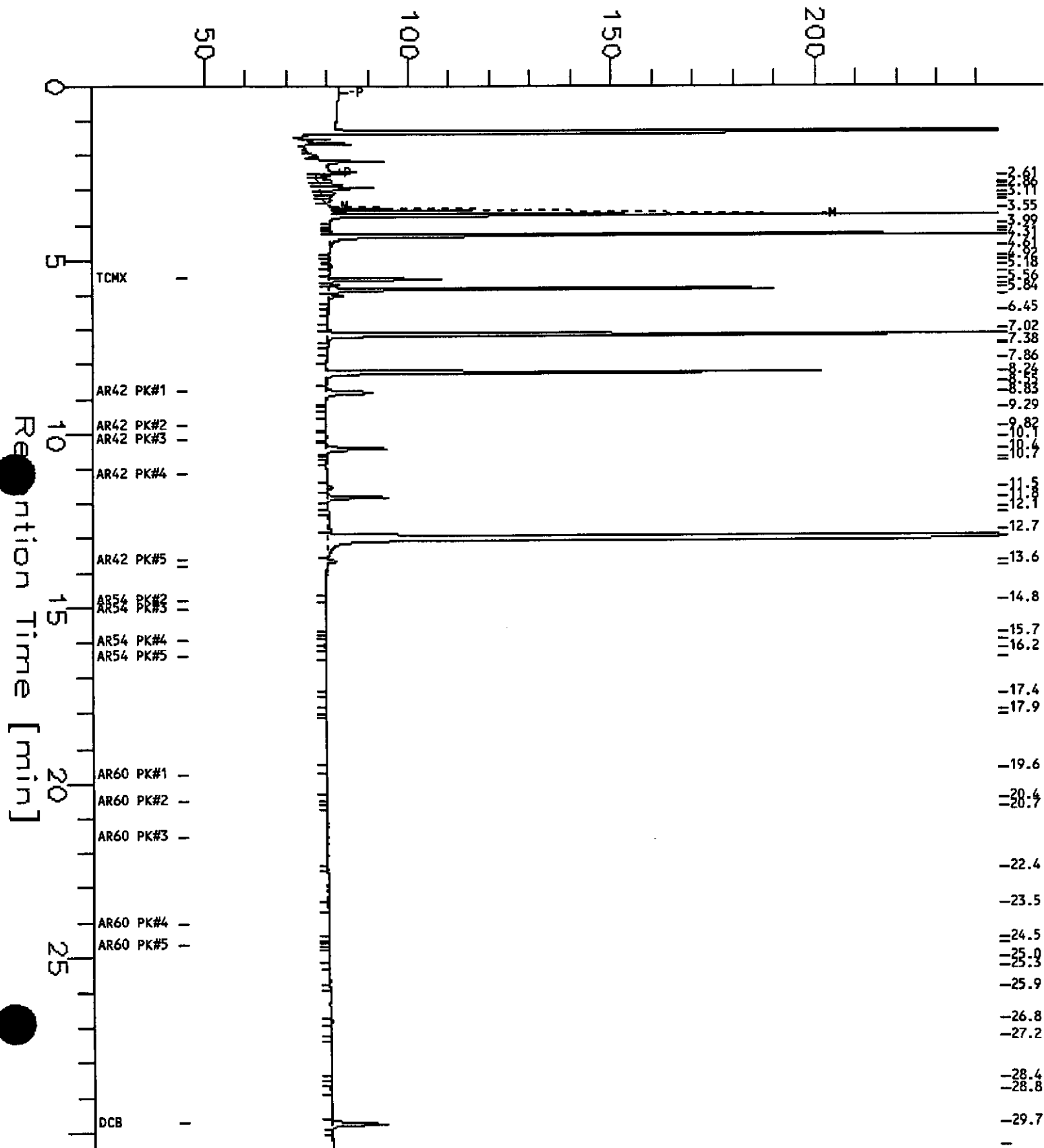
* Values outside of QC limits

Sample Name : 125736-001
 FileName : g:\gc01\cha\155A014.raw
 Method : SINPCB.ins
 Start Time : 0.00 min
 Scale Factor: -1.0

End Time : 30.50 min
 Plot Offset: 45 mV

Sample #: 27932
 Date : 6/3/96 09:27 PM
 Time of Injection: 6/3/96 08:56 PM
 Low Point : 45.49 mV
 High Point : 245.49 mV
 Plot Scale: 200.0 mV

Response [mV]





Lab #: 125736

BATCH QC REPORT

Page 1 of 1

Polychlorinated Biphenyls

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: PCB
 Prep Method: EPA 3550
 Cleanup Method: EPA acid

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27932
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/31/96
 Analysis Date: 06/03/96

BS Lab ID: QC23117

Analyte	Spike Added	BS	%Rec #	Limits
Aroclor-1260	6.67	6.6	100	50-128
Surrogate	%Rec	Limits		
TCMX	73	60-150		
Decachlorobiphenyl	99	30-130		

BSD Lab ID: QC23118

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Aroclor-1260	6.67	6.7	101	50-128	1	<20
Surrogate	%Rec	Limits				
TCMX	69	60-150				
Decachlorobiphenyl	95	30-130				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



Lab #: 125736

BATCH QC REPORT

Page 1 of 1

Polychlorinated Biphenyls

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: PCB
Prep Method: EPA 3550
Cleanup Method: EPA acid

METHOD BLANK

Matrix: Water
Batch#: 27932
Units: ug/L
Diln Fac: 1

Prep Date: 05/31/96
Analysis Date: 06/03/96

MB Lab ID: QC23116

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Surrogate	%Rec	Recovery Limits
TCMX	75	60-150
Decachlorobiphenyl	75	30-130



Curtis & Tompkins, Ltd.

SAMPLE ID: SCI-17
LAB ID: 125736-001
CLIENT: Subsurface Consultants
PROJECT ID: 133.005
LOCATION: KOT
MATRIX: Water

DATE SAMPLED: 05/28/96
DATE RECEIVED: 05/29/96
DATE REPORTED: 06/14/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	27903	EPA 6010A	05/31/96
Arsenic	19	5.0	1	27903	EPA 6010A	05/31/96
Barium	410	10	1	27903	EPA 6010A	05/31/96
Beryllium	2.9	2.0	1	27903	EPA 6010A	05/31/96
Cadmium	ND	2.0	1	27903	EPA 6010A	05/31/96
Chromium (total)	28	10	1	27903	EPA 6010A	05/31/96
Cobalt	ND	20	1	27903	EPA 6010A	05/31/96
Copper	250	10	1	27903	EPA 6010A	05/31/96
Lead	650	3.0	1	27903	EPA 6010A	05/31/96
Mercury	0.60	0.20	1	27919	EPA 7470	05/31/96
Molybdenum	ND	20	1	27903	EPA 6010A	05/31/96
Nickel	41	20	1	27903	EPA 6010A	05/31/96
Selenium	ND	5.0	1	27903	EPA 6010A	05/31/96
Silver	ND	5.0	1	27903	EPA 6010A	05/31/96
Thallium	7.0	5.0	1	27903	EPA 6010A	05/31/96
Vanadium	30	10	1	27903	EPA 6010A	05/31/96
Zinc	310	20	1	27903	EPA 6010A	05/31/96

ND = Not detected at or above reporting limit



CLIENT: Subsurface Consultants
JOB NUMBER: 125736

DATE REPORTED: 06/14/96

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	500	585	535	ug/L	117	107	80-120	9	35	27903	EPA 6010A	05/31/96
Arsenic	2000	1880	1910	ug/L	94	96	80-120	2	35	27903	EPA 6010A	05/31/96
Barium	2000	1910	1940	ug/L	96	97	80-120	2	35	27903	EPA 6010A	05/31/96
Beryllium	50	50.7	51.6	ug/L	101	103	80-120	2	35	27903	EPA 6010A	05/31/96
Cadmium	50	50	50.9	ug/L	100	102	80-120	2	35	27903	EPA 6010A	05/31/96
Chromium (total)	200	187	190	ug/L	94	95	80-120	2	35	27903	EPA 6010A	05/31/96
Cobalt	500	508	516	ug/L	102	103	80-120	2	35	27903	EPA 6010A	05/31/96
Copper	250	240	246	ug/L	96	98	80-120	3	35	27903	EPA 6010A	05/31/96
Lead	500	480	490	ug/L	96	98	80-120	2	35	27903	EPA 6010A	05/31/96
Mercury	5	5.278	5.125	ug/L	106	103	80-120	3	35	27919	EPA 7470	05/31/96
Molybdenum	400	374	378	ug/L	94	95	80-120	1	35	27903	EPA 6010A	05/31/96
Nickel	500	521	498	ug/L	104	100	80-120	5	35	27903	EPA 6010A	05/31/96
Selenium	2000	1880	1920	ug/L	94	96	80-120	2	35	27903	EPA 6010A	05/31/96
Silver	100	99.6	99.8	ug/L	100	100	80-120	0	35	27903	EPA 6010A	05/31/96
Thallium	2000	1930	1970	ug/L	97	99	80-120	2	35	27903	EPA 6010A	05/31/96
Vanadium	500	474	481	ug/L	95	96	80-120	2	35	27903	EPA 6010A	05/31/96
Zinc	500	517	520	ug/L	103	104	80-120	1	35	27903	EPA 6010A	05/31/96

CLIENT: Subsurface Consultants
JOB NUMBER: 125736

DATE REPORTED: 06/14/96

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Units	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60 ug/L	1	27903	EPA 6010A	05/31/96
Arsenic	ND	5 ug/L	1	27903	EPA 6010A	05/31/96
Barium	ND	10 ug/L	1	27903	EPA 6010A	05/31/96
Beryllium	ND	2 ug/L	1	27903	EPA 6010A	05/31/96
Cadmium	ND	2 ug/L	1	27903	EPA 6010A	05/31/96
Chromium (total)	ND	10 ug/L	1	27903	EPA 6010A	05/31/96
Cobalt	ND	20 ug/L	1	27903	EPA 6010A	05/31/96
Copper	ND	10 ug/L	1	27903	EPA 6010A	05/31/96
Lead	ND	3 ug/L	1	27903	EPA 6010A	05/31/96
Mercury	ND	0.2 ug/L	1	27919	EPA 7470	05/31/96
Molybdenum	ND	20 ug/L	1	27903	EPA 6010A	05/31/96
Nickel	ND	20 ug/L	1	27903	EPA 6010A	05/31/96
Selenium	ND	5 ug/L	1	27903	EPA 6010A	05/31/96
Silver	ND	5 ug/L	1	27903	EPA 6010A	05/31/96
Thallium	ND	5 ug/L	1	27903	EPA 6010A	05/31/96
Vanadium	ND	10 ug/L	1	27903	EPA 6010A	05/31/96
Zinc	ND	20 ug/L	1	27903	EPA 6010A	05/31/96

ND = Not Detected at or above reporting limit



Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

Field ID: SCI-17
 Lab ID: 125736-001
 Matrix: Water
 Batch#: 27939
 Units: ug/L
 Diln Fac: 1

Sampled: 05/28/96
 Received: 05/29/96
 Extracted: 06/04/96
 Analyzed: 06/04/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	1200	250
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	108	68-126
Toluene-d8	106	87-125
Bromofluorobenzene	108	79-122

Data File: /chem/VDR_04.1/060396.b/df325.d

Date: 04-JUN-96 00:23

Client ID: DVNA P&T

Sample Info: S.125736-001

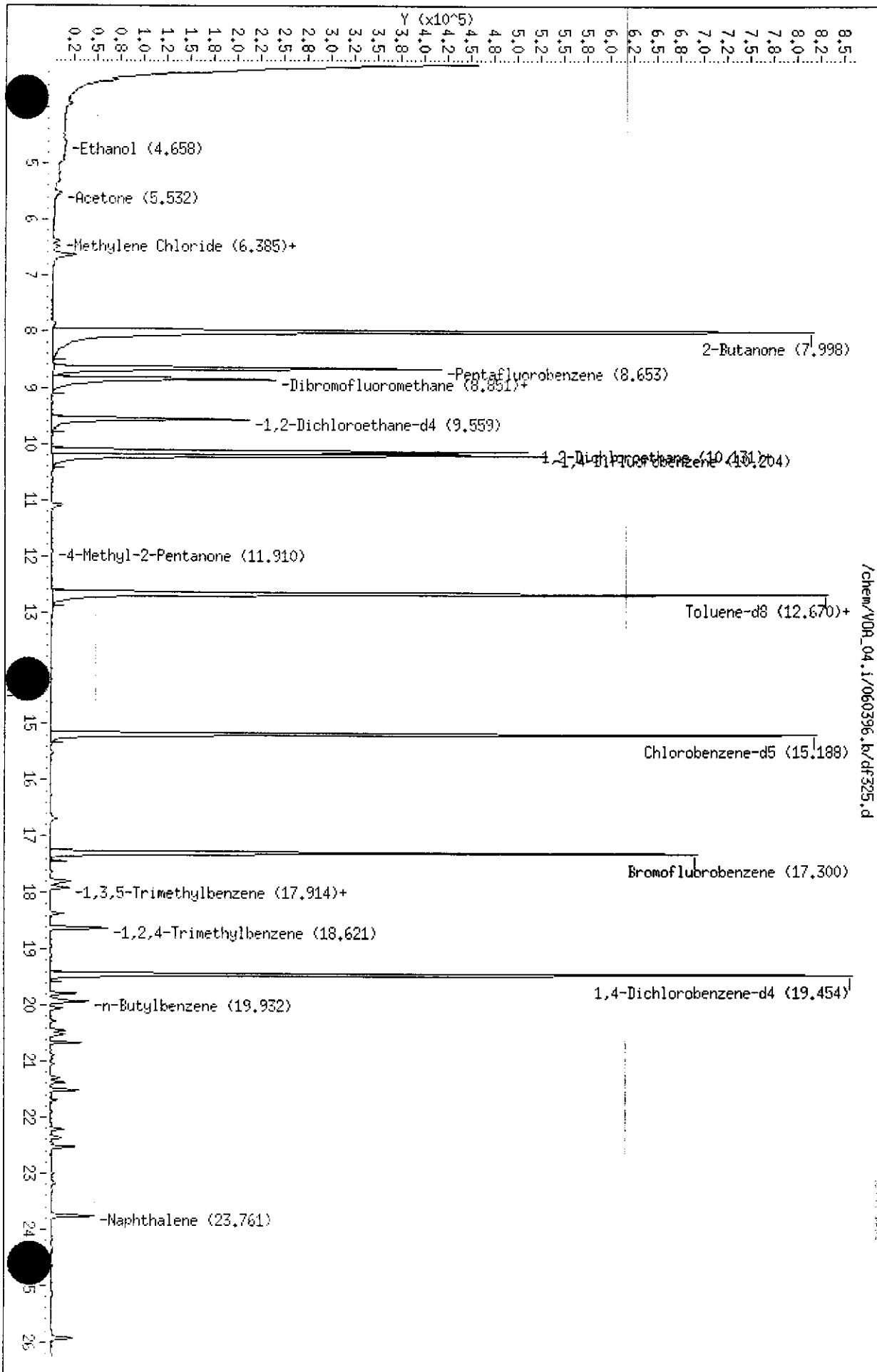
Purge Volume: 5.0

Column phase: RTX Volatiles

Instrument: VDR_04.1

Operator: DM

Column diameter: 0.32





Lab #: 125736

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 27939
Units: ug/L
Diln Fac: 1

Prep Date: 06/03/96
Analysis Date: 06/03/96

LCS Lab ID: QC23151

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	50.09	50	100	51-180
Trichloroethene	50.95	50	102	73-141
Benzene	49.08	50	98	78-142
Toluene	53.93	50	108	76-150
Chlorobenzene	50.39	50	101	83-129
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	79	68-126		
Toluene-d8	97	87-125		
Bromofluorobenzene	94	79-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Lab #: 125736

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 28021
Units: ug/L
Diln Fac: 1

Prep Date: 06/06/96
Analysis Date: 06/06/96

LCS Lab ID: QC23478

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	49.92	50	100	51-180
Trichloroethene	48.67	50	97	73-141
Benzene	46.81	50	94	78-142
Toluene	49.66	50	99	76-150
Chlorobenzene	49.16	50	98	83-129
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	108	68-126		
Toluene-d8	98	87-125		
Bromofluorobenzene	93	79-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Lab #: 125736

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125680-002
 Matrix: Water
 Batch#: 27939
 Units: ug/L
 Diln Fac: 1

Sample Date: 05/20/96
 Received Date: 05/23/96
 Prep Date: 06/03/96
 Analysis Date: 06/03/96

MS Lab ID: QC23179

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	<5.000	44.5	89	51-180
Trichloroethene	50	<5.000	48.51	97	73-141
Benzene	50	<5.000	47.42	95	78-142
Toluene	50	<5.000	51.17	102	76-150
Chlorobenzene	50	<5.000	48.13	96	83-129
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	89	68-126			
Toluene-d8	98	87-125			
Bromofluorobenzene	92	79-122			

MSD Lab ID: QC23180

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	47.1	94	51-180	6	<14
Trichloroethene	50	50.03	100	73-141	3	<14
Benzene	50	48.82	98	78-142	3	<11
Toluene	50	52.23	104	76-150	2	<13
Chlorobenzene	50	48.92	98	83-129	2	<13
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	92	68-126				
Toluene-d8	97	87-125				
Bromofluorobenzene	93	79-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



Lab #: 125736

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125702-004
 Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

Sample Date: 05/23/96
 Received Date: 05/24/96
 Prep Date: 06/06/96
 Analysis Date: 06/06/96

MS Lab ID: QC23509

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	<5.000	45.69	91	51-180
Trichloroethene	50	<5.000	44.32	89	73-141
Benzene	50	<0.5000	43.08	86	78-142
Toluene	50	<0.5000	44.43	89	76-150
Chlorobenzene	50	<5.000	45.95	92	83-129
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	111	68-126			
Toluene-d8	97	87-125			
Bromofluorobenzene	94	79-122			

MSD Lab ID: QC23510

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	47.32	95	51-180	4	<14
Trichloroethene	50	45.14	90	73-141	2	<14
Benzene	50	45.55	91	78-142	6	<11
Toluene	50	46.51	93	76-150	5	<13
Chlorobenzene	50	46.75	94	83-129	2	<13
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	109	68-126				
Toluene-d8	99	87-125				
Bromofluorobenzene	93	79-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



Lab #: 125736

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

Prep Date: 06/06/96
 Analysis Date: 06/06/96

MB Lab ID: QC23479

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	107	68-126
Toluene-d8	97	87-125
Bromofluorobenzene	90	79-122

Lab #: 125736

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: EPA 8240
 Prep Method: EPA 5030

METHOD BLANK

 Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

 Prep Date: 06/06/96
 Analysis Date: 06/06/96

MB Lab ID: QC23480

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	102	68-126
Toluene-d8	99	87-125
Bromofluorobenzene	91	79-122

Lab #: 125736

BATCH QC REPORT

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EPA 8240 Volatile Organics

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: EPA 8240
 Prep Method: EPA 5030

METHOD BLANK

 Matrix: Water
 Batch#: 27939
 Units: ug/L
 Diln Fac: 1

 Prep Date: 06/03/96
 Analysis Date: 06/03/96

MB Lab ID: QC23152

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	98	68-126
Toluene-d8	101	87-125
Bromofluorobenzene	103	79-122

Lab #: 125736

BATCH QC REPORT

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EPA 8240 Volatile Organics

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: EPA 8240
 Prep Method: EPA 5030

METHOD BLANK

 Matrix: Water
 Batch#: 27939
 Units: ug/L
 Diln Fac: 1

 Prep Date: 06/03/96
 Analysis Date: 06/03/96

MB Lab ID: QC23234

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	90	68-126
Toluene-d8	96	87-125
Bromofluorobenzene	89	79-122



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

Field ID: SCI-17
Lab ID: 125736-001
Matrix: Water
Batch#: 27913
Units: ug/L
Diln Fac: 1

Sampled: 05/28/96
Received: 05/29/96
Extracted: 05/30/96
Analyzed: 06/12/96

Analyte	Result	Reporting Limit
Phenol	ND	9.4
2-Chlorophenol	ND	9.4
Benzyl alcohol	ND	9.4
2-Methylphenol	ND	9.4
4-Methylphenol	ND	9.4
2-Nitrophenol	ND	47
2,4-Dimethylphenol	ND	9.4
Benzoic acid	ND	47
2,4-Dichlorophenol	ND	9.4
4-Chloro-3-methylphenol	ND	9.4
2,4,6-Trichlorophenol	ND	9.4
2,4,5-Trichlorophenol	ND	47
2,4-Dinitrophenol	ND	47
4-Nitrophenol	ND	47
4,6-Dinitro-2-methylphenol	ND	47
Pentachlorophenol	ND	47
N-Nitrosodimethylamine	ND	9.4
Aniline	ND	9.4
bis(2-Chloroethyl)ether	ND	9.4
1,3-Dichlorobenzene	ND	9.4
1,4-Dichlorobenzene	ND	9.4
1,2-Dichlorobenzene	ND	9.4
bis(2-Chloroisopropyl) ether	ND	9.4
N-Nitroso-di-n-propylamine	ND	9.4
Hexachloroethane	ND	9.4
Nitrobenzene	ND	9.4
Isophorone	ND	9.4
bis(2-Chloroethoxy)methane	ND	9.4
1,2,4-Trichlorobenzene	ND	9.4
Naphthalene	ND	9.4
4-Chloroaniline	ND	9.4
Hexachlorobutadiene	ND	9.4
2-Methylnaphthalene	ND	9.4
Hexachlorocyclopentadiene	ND	9.4
2-Chloronaphthalene	ND	9.4
2-Nitroaniline	ND	47
Dimethylphthalate	ND	9.4
Acenaphthylene	ND	9.4



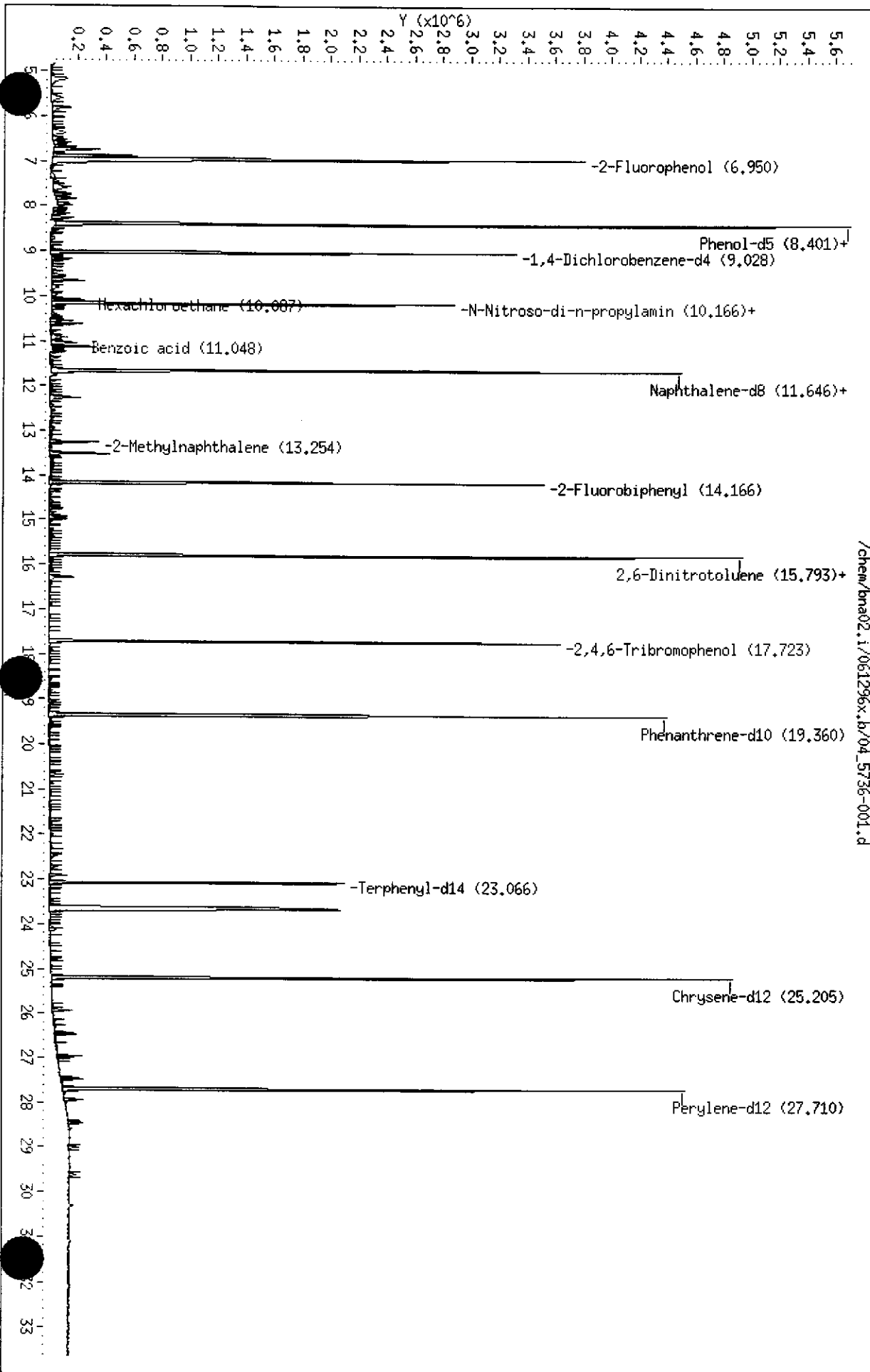
Semivolatile Organics by GC/MS

Field ID: SCI-17	Sampled: 05/28/96
Lab ID: 125736-001	Received: 05/29/96
Matrix: Water	Extracted: 05/30/96
Batch#: 27913	Analyzed: 06/12/96
Units: ug/L	
Diln Fac: 1	

Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	9.4
3-Nitroaniline	ND	47
Acenaphthene	ND	9.4
Dibenzofuran	ND	9.4
2,4-Dinitrotoluene	ND	9.4
Diethylphthalate	ND	9.4
4-Chlorophenyl-phenylether	ND	9.4
Fluorene	ND	9.4
4-Nitroaniline	ND	47
N-Nitrosodiphenylamine	ND	9.4
Azobenzene	ND	9.4
4-Bromophenyl-phenylether	ND	9.4
Hexachlorobenzene	ND	9.4
Phenanthrene	ND	9.4
Anthracene	ND	9.4
Di-n-butylphthalate	ND	9.4
Fluoranthene	ND	9.4
Pyrene	ND	9.4
Butylbenzylphthalate	ND	9.4
3,3'-Dichlorobenzidine	ND	47
Benzo(a)anthracene	ND	9.4
Chrysene	ND	9.4
bis(2-Ethylhexyl)phthalate	ND	9.4
Di-n-octylphthalate	ND	9.4
Benzo(b)fluoranthene	ND	9.4
Benzo(k)fluoranthene	ND	9.4
Benzo(a)pyrene	ND	9.4
Indeno(1,2,3-cd)pyrene	ND	9.4
Dibenz(a,h)anthracene	ND	9.4
Benzo(g,h,i)perylene	ND	9.4

Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	74	21-110
Phenol-d5	85	10-110
2,4,6-Tribromophenol	76	10-123
Nitrobenzene-d5	74	35-114
2-Fluorobiphenyl	59	43-116
Terphenyl-d14	36	33-141

125736-001



Data File: /chem/bna02.i/061296x.b/04_5736-001.d
Date: 12-JUN-1996 18:03
Client ID: CURTIS&TOMPKINS,LTD
Sample Info:
Volume Injected (uL): 1.0
Column phase: Xci 5 x .5 u

/chem/bna02.i/061296x.b/04_5736-001.d

Instrument: bna02.i
Operator: dsh
Column diameter: 0.25



Lab #: 125736

BATCH QC REPORT

Page 1 of 2

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 27913
Units: ug/L
Diln Fac: 1

Prep Date: 05/30/96
Analysis Date: 06/11/96

MB Lab ID: QC23029

Analyte	Result	Reporting Limit
Phenol	ND	10
2-Chlorophenol	ND	10
Benzyl alcohol	ND	10
2-Methylphenol	ND	10
4-Methylphenol	ND	10
2-Nitrophenol	ND	50
2,4-Dimethylphenol	ND	10
Benzoic acid	ND	50
2,4-Dichlorophenol	ND	10
4-Chloro-3-methylphenol	ND	10
2,4,6-Trichlorophenol	ND	10
2,4,5-Trichlorophenol	ND	50
2,4-Dinitrophenol	ND	50
4-Nitrophenol	ND	50
4,6-Dinitro-2-methylphenol	ND	50
Pentachlorophenol	ND	10
N-Nitrosodimethylamine	ND	10
Aniline	ND	10
bis(2-Chloroethyl)ether	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
1,2-Dichlorobenzene	ND	10
bis(2-Chloroisopropyl) ether	ND	10
N-Nitroso-di-n-propylamine	ND	10
Hexachloroethane	ND	10
Nitrobenzene	ND	10
Isophorone	ND	10
bis(2-Chloroethoxy)methane	ND	10
1,2,4-Trichlorobenzene	ND	10
Naphthalene	ND	10
4-Chloroaniline	ND	10
Hexachlorobutadiene	ND	10
2-Methylnaphthalene	ND	10
Hexachlorocyclopentadiene	ND	10
2-Chloronaphthalene	ND	10
2-Nitroaniline	ND	50
Dimethylphthalate	ND	10
Acenaphthylene	ND	10
2,6-Dinitrotoluene	ND	10
3-Nitroaniline	ND	50



Lab #: 125736

BATCH QC REPORT

Page 2 of 2

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8270
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 27913
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/30/96
 Analysis Date: 06/11/96

MB Lab ID: QC23029

Analyte	Result	Reporting Limit
Acenaphthene	ND	10
Dibenzofuran	ND	10
2,4-Dinitrotoluene	ND	10
Diethylphthalate	ND	10
4-Chlorophenyl-phenylether	ND	10
Fluorene	ND	10
4-Nitroaniline	ND	50
N-Nitrosodiphenylamine	ND	10
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	10
Hexachlorobenzene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Di-n-butylphthalate	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Butylbenzylphthalate	ND	10
3,3'-Dichlorobenzidine	ND	50
Benzo(a)anthracene	ND	10
Chrysene	ND	10
bis(2-Ethylhexyl)phthalate	ND	10
Di-n-octylphthalate	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(a)pyrene	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Dibenz(a,h)anthracene	ND	10
Benzo(g,h,i)perylene	ND	10
Surrogate	%Rec	Recovery Limits
2-Fluorophenol	84	21-110
Phenol-d5	88	10-110
2,4,6-Tribromophenol	100	10-123
Nitrobenzene-d5	90	35-114
2-Fluorobiphenyl	101	43-116
Terphenyl-d14	111	33-141



Lab #: 125736

BATCH QC REPORT

Page 1 of 1

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8270
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27913
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/30/96
 Analysis Date: 06/11/96

BS Lab ID: QC23030

Analyte	Spike Added	BS	%Rec	#	Limits
Phenol	100	70.52	71		12-110
2-Chlorophenol	100	75.83	76		27-123
4-Chloro-3-methylphenol	100	76.1	76		23-97
4-Nitrophenol	100	74.74	75		10-80
Pentachlorophenol	100	58.5	59		9-103
1,4-Dichlorobenzene	50	39	78		36-97
N-Nitroso-di-n-propylamine	50	35.78	72		41-116
1,2,4-Trichlorobenzene	50	42.74	85		39-98
Acenaphthene	50	45.51	91		46-118
2,4-Dinitrotoluene	50	38.78	78		24-96
Pyrene	50	47.97	96		26-127
Surrogate	%Rec	Limits			
2-Fluorophenol	77	21-110			
Phenol-d5	79	10-110			
2,4,6-Tribromophenol	100	10-123			
Nitrobenzene-d5	83	35-114			
2-Fluorobiphenyl	96	43-116			
Terphenyl-d14	107	33-141			

BSD Lab ID: QC23031

Analyte	Spike Added	BSD	%Rec	#	Limits	RPD #	Limit
Phenol	100	75.48	75		12-110	5	<42
2-Chlorophenol	100	82.11	82		27-123	8	<40
4-Chloro-3-methylphenol	100	78.32	78		23-97	3	<42
4-Nitrophenol	100	73.51	74		10-80	1	<50
Pentachlorophenol	100	59.62	60		9-103	2	<50
1,4-Dichlorobenzene	50	41.78	84		36-97	7	<38
N-Nitroso-di-n-propylamine	50	36.73	73		41-116	1	<38
1,2,4-Trichlorobenzene	50	46.28	93		39-98	9	<28
Acenaphthene	50	47.7	95		46-118	4	<31
2,4-Dinitrotoluene	50	39.27	79		24-96	1	<38
Pyrene	50	48.73	97		26-127	1	<31
Surrogate	%Rec	Limits					
2-Fluorophenol	82	21-110					
Phenol-d5	83	10-110					
2,4,6-Tribromophenol	101	10-123					
Nitrobenzene-d5	87	35-114					
2-Fluorobiphenyl	98	43-116					
Terphenyl-d14	108	33-141					

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits

DO: Surrogate diluted out

CHAIN OF CUSTODY FORM

125036

PAGE 1 OF 1

PROJECT NAME: KOT
 JOB NUMBER: 133.005 LAB: Curtis & Tompkins
 PROJECT CONTACT: Jeri Alexander / Serone De Veerick TURNAROUND: Normal
 SAMPLED BY: Dennis Alexander REQUESTED BY: _____

ANALYSIS REQUESTED	
TVH	
TEH (C-5 to C-50)	
Metals (CAM17)	
8240 VOCs	
8270 w/ PMA's	
PCBs	

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS					METHOD PRESERVED					SAMPLING DATE				NOTES											
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	100ml poly	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME												
1	SC1-17	X				4	5		1		X			X		0	5	2	8	9	6	0	9	4	5	X	X	X	X	X	X

CHAIN OF CUSTODY RECORD			
RELEASED BY: (Signature) <u>Dennis Alexander</u>	DATE / TIME <u>5/29/96</u> <u>1:15 PM</u>	RECEIVED BY: (Signature) <u>[Signature]</u>	DATE / TIME <u>5-29-96</u> <u>1:15</u>
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:

Subsurface Consultants, Inc.
 171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
 (510) 288-0481 • FAX: 510-268-0137



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 14-JUN-96
Lab Job Number: 125824
Project ID: 133.005
Location: KOT

Reviewed by: _____

Reviewed by: _____

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Client: Subsurface Consultants

Laboratory Login Number: 125824

Project Name: KOT
Project Number: 133.005

Report Date: 14 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520EF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
125824-003	SCI-29 05.5	Soil	03-JUN-96	04-JUN-96	06-JUN-96	52.	mg/Kg	50	TR	28037

ND = Not Detected at or above Reporting Limit (RL).

Q C B a t c h R e p o r t

 Client: Subsurface Consultants
 Project Name: KOT
 Project Number: 133.005

 Laboratory Login Number: 125824
 Report Date: 14 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 28037

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	50	mg/Kg	SMWW 17:5520EF	06-JUN-96

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	86%	SMWW 17:5520EF	06-JUN-96
BSD	83%	SMWW 17:5520EF	06-JUN-96

		Control Limits
Average Spike Recovery	84%	80% - 120%
Relative Percent Difference	4.4%	< 20%

Client: Subsurface Consultants

Laboratory Login Number: 125824

Project Name: KOT
 Project Number: 133.005

Report Date: 14 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520BF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
125824-004	SCI-29	Water	03-JUN-96	04-JUN-96	07-JUN-96	ND	mg/L	5	TR	28061

ND = Not Detected at or above Reporting Limit (RL).

Q C B a t c h R e p o r t

Client: Subsurface Consultants
 Project Name: KOT
 Project Number: 133.005

Laboratory Login Number: 125824
 Report Date: 14 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 28061

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	07-JUN-96

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	95%	SMWW 17:5520BF	07-JUN-96
BSD	88%	SMWW 17:5520BF	07-JUN-96

		Control Limits
Average Spike Recovery	92%	80% - 120%
Relative Percent Difference	7.1%	< 20%



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125824-002	SCI-28	28087	06/04/96	06/10/96	06/10/96	
125824-004	SCI-29	28087	06/03/96	06/10/96	06/10/96	

Matrix: Water

Analyte	Units	125824-002	125824-004
Diln Fac:		1	1
Gasoline	ug/L	<50	<50
Surrogate			
Trifluorotoluene	%REC	92	90
Bromobenzene	%REC	80	81



Lab #: 125824

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 28087
Units: ug/L
Diln Fac: 1

Prep Date: 06/10/96
Analysis Date: 06/10/96

MB Lab ID: QC23794

Analyte	Result	
Gasoline	<50	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	83	69-120
Bromobenzene	71	70-122

Lab #: 125824

BATCH QC REPORT



Curtis & Tompkins, Ltd.
Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 28087
Units: ug/L
Diln Fac: 1

Prep Date: 06/10/96
Analysis Date: 06/10/96

LCS Lab ID: QC23792

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	1948	2000	97	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	92	69-120		
Bromobenzene	90	70-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

Lab #: 125824

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ	Sample Date: 06/03/96
Lab ID: 125859-001	Received Date: 06/05/96
Matrix: Water	Prep Date: 06/10/96
Batch#: 28087	Analysis Date: 06/10/96
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC23834

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	2000	<50.00	2039	102	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	93	69-120			
Bromobenzene	95	70-122			

MSD Lab ID: QC23835

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	2000	2034	102	75-125	0	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	93	69-120				
Bromobenzene	95	70-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



TSH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: LUFT

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125824-001	SCI-28 @3.5	28003	06/03/96	06/05/96	06/08/96	
125824-003	SCI-29 @5.5	28003	06/03/96	06/05/96	06/08/96	

Matrix: Soil

Analyte	Units	125824-001	125824-003
Diln Fac:		1	1
Diesel C12-C22	mg/Kg	3.1YH	10 YH
Motor Oil C22-C50	mg/Kg	22 YH	78 YH
Surrogate			
Hexacosane	%REC	100	95

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

TEH-Tot Ext Hydrocarbons

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125824-004	SCI-29	28130	06/03/96	06/11/96	06/13/96	

Matrix: Water

Analyte	Units	125824-004
Diln Fac:		1
Diesel C12-C22	ug/L	2000 YHZ
Motor Oil C22-C50	ug/L	1600
Surrogate		
Hexacosane	%REC	94

Y: Sample exhibits fuel pattern which does not resemble standard

Z: Sample exhibits unknown single peak or peaks

H: Heavier hydrocarbons than indicated standard



Lab #: 125824

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: LUFT

METHOD BLANK

Matrix: Soil
Batch#: 28003
Units: mg/Kg
Diln Fac: 1

Prep Date: 06/05/96
Analysis Date: 06/08/96

MB Lab ID: QC23407

Analyte	Result	
Diesel C12-C22	<1.0	
Motor Oil C22-C50	<5.0	
Surrogate	%Rec	Recovery Limits
Hexacosane	90	60-140



Lab #: 125824

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: LUFT

LABORATORY CONTROL SAMPLE

Matrix: Soil
Batch#: 28003
Units: mg/Kg
Diln Fac: 1

Prep Date: 06/05/96
Analysis Date: 06/08/96

LCS Lab ID: QC23408

Analyte	Result	Spike Added	%Rec #	Limits
Diesel C12-C22	43.11	49.5	87	60-140
Surrogate	%Rec	Limits		
Hexacosane	93	60-140		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 125824

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: LUFT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125789-002
 Matrix: Soil
 Batch#: 28003
 Units: mg/Kg
 Diln Fac: 1

Sample Date: 05/30/96
 Received Date: 05/31/96
 Prep Date: 06/05/96
 Analysis Date: 06/08/96

MS Lab ID: QC23409

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Diesel C12-C22	49.5	<1.000	41.83	85	60-140
Surrogate	%Rec	Limits			
Hexacosane	92	60-140			

MSD Lab ID: QC23410

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	49.5	38.9	79	60-140	7	<30
Surrogate	%Rec	Limits				
Hexacosane	77	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



Lab #: 125824

BATCH QC REPORT

Page 1 of 1

TEH-tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 28130
Units: ug/L
Diln Fac: 1

Prep Date: 06/11/96
Analysis Date: 06/12/96

MB Lab ID: QC23979

Analyte	Result		
Diesel C12-C22	<50		
Motor Oil C22-C50	<250		
Surrogate	%Rec		Recovery Limits
Hexacosane	98		60-140



Lab #: 125824

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 28130
 Units: ug/L
 Diln Fac: 1

Prep Date: 06/11/96
 Analysis Date: 06/13/96

BS Lab ID: QC23980

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	1983	80	60-140
Surrogate	%Rec	Limits		
Hexacosane	98	60-140		

BSD Lab ID: QC23981

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2165	87	60-140	9	<35
Surrogate	%Rec	Limits				
Hexacosane	92	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125824-001	SCI-28 @3.5	28050	06/03/96	06/07/96	06/07/96	
125824-003	SCI-29 @5.5	28050	06/03/96	06/07/96	06/07/96	

Matrix: Soil

Analyte	Units	125824-001	125824-003
Diln Fac:		1	1
Benzene	ug/Kg	<5	<5
Toluene	ug/Kg	<5	<5
Ethylbenzene	ug/Kg	<5	<5
m,p-Xylenes	ug/Kg	<5	<5
o-Xylene	ug/Kg	<5	<5
Surrogate			
Trifluorotoluene	%REC	85	85
Bromobenzene	%REC	86	86

BTXE

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: EPA 8020
 Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125824-002	SCI-28	28087	06/04/96	06/10/96	06/10/96	
125824-004	SCI-29	28087	06/03/96	06/10/96	06/10/96	

Matrix: Water

Analyte	Units	125824-002	125824-004
Diln Fac:		1	1
Benzene	ug/L	<0.5	<0.5
Toluene	ug/L	<0.5	<0.5
Ethylbenzene	ug/L	<0.5	<0.5
m,p-Xylenes	ug/L	3.5	8.1
o-Xylene	ug/L	<0.5	5.6
Surrogate			
Trifluorotoluene	%REC	93	93
Bromobenzene	%REC	85	84



Lab #: 125824

BATCH QC REPORT

Page 1 of 1

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

METHOD BLANK

Matrix: Soil
Batch#: 28050
Units: ug/Kg
Diln Fac: 1

Prep Date: 06/07/96
Analysis Date: 06/07/96

MB Lab ID: QC23612

Analyte	Result	
Benzene	<5.0	
Toluene	<5.0	
Ethylbenzene	<5.0	
m,p-Xylenes	<5.0	
o-Xylene	<5.0	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	84	43-114
Bromobenzene	83	47-112



Lab #: 125824

BATCH QC REPORT

Page 1 of 1

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil
Batch#: 28050
Units: ug/Kg
Diln Fac: 1

Prep Date: 06/07/96
Analysis Date: 06/07/96

LCS Lab ID: QC23611

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	90.6	100	91	80-120
Toluene	93.6	100	94	80-120
Ethylbenzene	94.3	100	94	80-120
m,p-Xylenes	190.9	200	96	80-120
o-Xylene	98	100	98	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	84	43-114		
Bromobenzene	84	47-112		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

Lab #: 125824

BATCH QC REPORT

Page 1 of 1

BTXE

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: EPA 8020
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

 Field ID: ZZZZZZ
 Lab ID: 125841-003
 Matrix: Soil
 Batch#: 28050
 Units: ug/Kg
 Diln Fac: 1

 Sample Date: 06/05/96
 Received Date: 06/06/96
 Prep Date: 06/07/96
 Analysis Date: 06/07/96

MS Lab ID: QC23613

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	100	<5.000	104.8	105	75-125
Toluene	100	<5.000	108.7	109	75-125
Ethylbenzene	100	<5.000	106.4	106	75-125
m,p-Xylenes	200	<5.000	225.2	113	75-125
o-Xylene	100	<5.000	114.4	114	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	86	43-114			
Bromobenzene	86	47-112			

MSD Lab ID: QC23614

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	100	97.5	98	75-125	7	<20
Toluene	100	100.8	101	75-125	8	<20
Ethylbenzene	100	99.7	100	75-125	7	<20
m,p-Xylenes	200	207.9	104	75-125	8	<20
o-Xylene	100	106.9	107	75-125	7	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	85	43-114				
Bromobenzene	85	47-112				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



Lab #: 125824

BATCH QC REPORT

Page 1 of 1

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 28087
Units: ug/L
Diln Fac: 1

Prep Date: 06/10/96
Analysis Date: 06/10/96

MB Lab ID: QC23794

Analyte	Result	
Benzene	<0.5	
Toluene	<0.5	
Ethylbenzene	<0.5	
m,p-Xylenes	<0.5	
o-Xylene	<0.5	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	86	58-130
Bromobenzene	74	62-131



Lab #: 125824

BATCH QC REPORT

Page 1 of 1

BTXE

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8020
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
 Batch#: 28087
 Units: ug/L
 Diln Fac: 1

Prep Date: 06/10/96
 Analysis Date: 06/10/96

LCS Lab ID: QC23793

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	19.3	20	97	80-120
Toluene	19.6	20	98	80-120
Ethylbenzene	19.8	20	99	80-120
m,p-Xylenes	38.9	40	97	80-120
o-Xylene	19.9	20	100	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	93	58-130		
Bromobenzene	85	62-131		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 17-JUN-96
Lab Job Number: 125727
Project ID: 133.005
Location: KOT

Reviewed by: _____

Reviewed by: _____

This package may be reproduced only in its entirety.

Client: Subsurface Consultants

Laboratory Login Number: 125727

 Project Name: KOT
 Project Number: 133.005

Report Date: 17 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520BF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
125727-001	SCI-13	Water	24-MAY-96	28-MAY-96	31-MAY-96	ND	mg/L	5	TR	27924
125727-002	SCI-16	Water	24-MAY-96	28-MAY-96	31-MAY-96	ND	mg/L	5	TR	27924
125727-003	SCI-18	Water	24-MAY-96	28-MAY-96	31-MAY-96	ND	mg/L	5	TR	27924
125727-004	SCI-19	Water	24-MAY-96	28-MAY-96	31-MAY-96	ND	mg/L	5	TR	27924
125727-005	SCI-20	Water	24-MAY-96	28-MAY-96	31-MAY-96	ND	mg/L	5	TR	27924

ND = Not Detected at or above Reporting Limit (RL).

Q C B a t c h R e p o r t

 Client: Subsurface Consultants
 Project Name: KOT
 Project Number: 133.005

 Laboratory Login Number: 125727
 Report Date: 17 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 27924

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	31-MAY-96

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	86%	SMWW 17:5520BF	31-MAY-96
BSD	83%	SMWW 17:5520BF	31-MAY-96

		Control Limits
Average Spike Recovery	84%	80% - 120%
Relative Percent Difference	2.6%	< 20%



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125727-001	SCI-13	27926	05/24/96	06/01/96	06/01/96	
125727-002	SCI-16	27926	05/24/96	06/01/96	06/01/96	
125727-003	SCI-18	27926	05/24/96	06/01/96	06/01/96	
125727-004	SCI-19	27926	05/24/96	06/01/96	06/01/96	

Matrix: Water

Analyte	Units	125727-001	125727-002	125727-003	125727-004
Diln Fac:		1	1	1	1
Gasoline	ug/L	<50	<50	<50	93 YH
Surrogate					
Trifluorotoluene	%REC	92	93	90	91
Bromobenzene	%REC	83	84	83	84

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

FileName : G:\GC05\152H021.raw

Date : 6/1/96 11:07 AM

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Start Time : 0.00 min

End Time : 23.42 min

Low Point : 3.93 mV

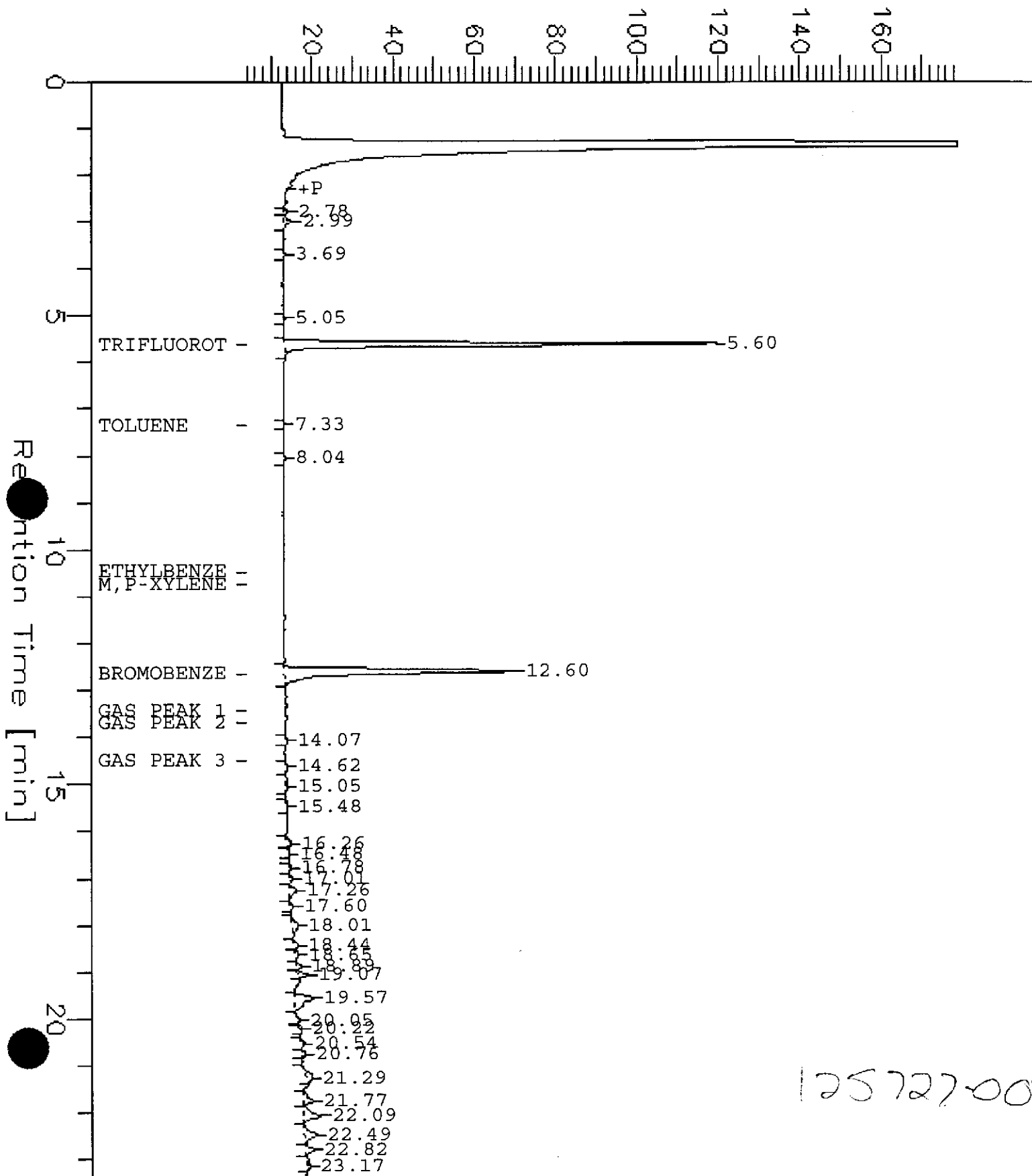
High Point : 178.93 mV

Scale Factor: -1

Plot Offset: 4 mV

Plot Scale: 175 mV

Response [mV]





Lab #: 125727

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27926
Units: ug/L
Diln Fac: 1

Prep Date: 05/31/96
Analysis Date: 05/31/96

MB Lab ID: QC23084

Analyte	Result	
Gasoline	<50	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	90	65-135
Bromobenzene	76	65-135



Lab #: 125727

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
 Batch#: 27926
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/31/96
 Analysis Date: 05/31/96

LCS Lab ID: QC23085

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	2010	2000	101	75-125
Surrogate	%Rec	Limits		
Trifluorotoluene	95	65-135		
Bromobenzene	92	65-135		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 125727

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125692-001
 Matrix: Water
 Batch#: 27926
 Units: ug/L
 Diln Fac: 1

Sample Date: 05/22/96
 Received Date: 05/23/96
 Prep Date: 05/31/96
 Analysis Date: 05/31/96

MS Lab ID: QC23087

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	2000	<50.00	1850	93	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	95	65-135			
Bromobenzene	98	65-135			

MSD Lab ID: QC23088

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	2000	1979	99	75-125	7	<35
Surrogate	%Rec	Limits				
Trifluorotoluene	95	65-135				
Bromobenzene	99	65-135				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125727-001	SCI-13	27914	05/24/96	05/30/96	06/03/96	
125727-002	SCI-16	27914	05/24/96	05/30/96	06/03/96	
125727-003	SCI-18	27914	05/24/96	05/30/96	06/03/96	
125727-004	SCI-19	27914	05/24/96	05/30/96	06/03/96	

Matrix: Water

Analyte	Units	125727-001	125727-002	125727-003	125727-004
Diln Fac:		1	1	1	10
Diesel C12-C22	ug/L	930 YH	960 YH	1100 YH	25000
Motor Oil C22-C50	ug/L	1500 Y	1100 Y	11000 Y	710 YL
Surrogate					
Hexacosane	%REC	100	100	104	DO

DO: Surrogate diluted out

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

L: Lighter hydrocarbons than indicated standard

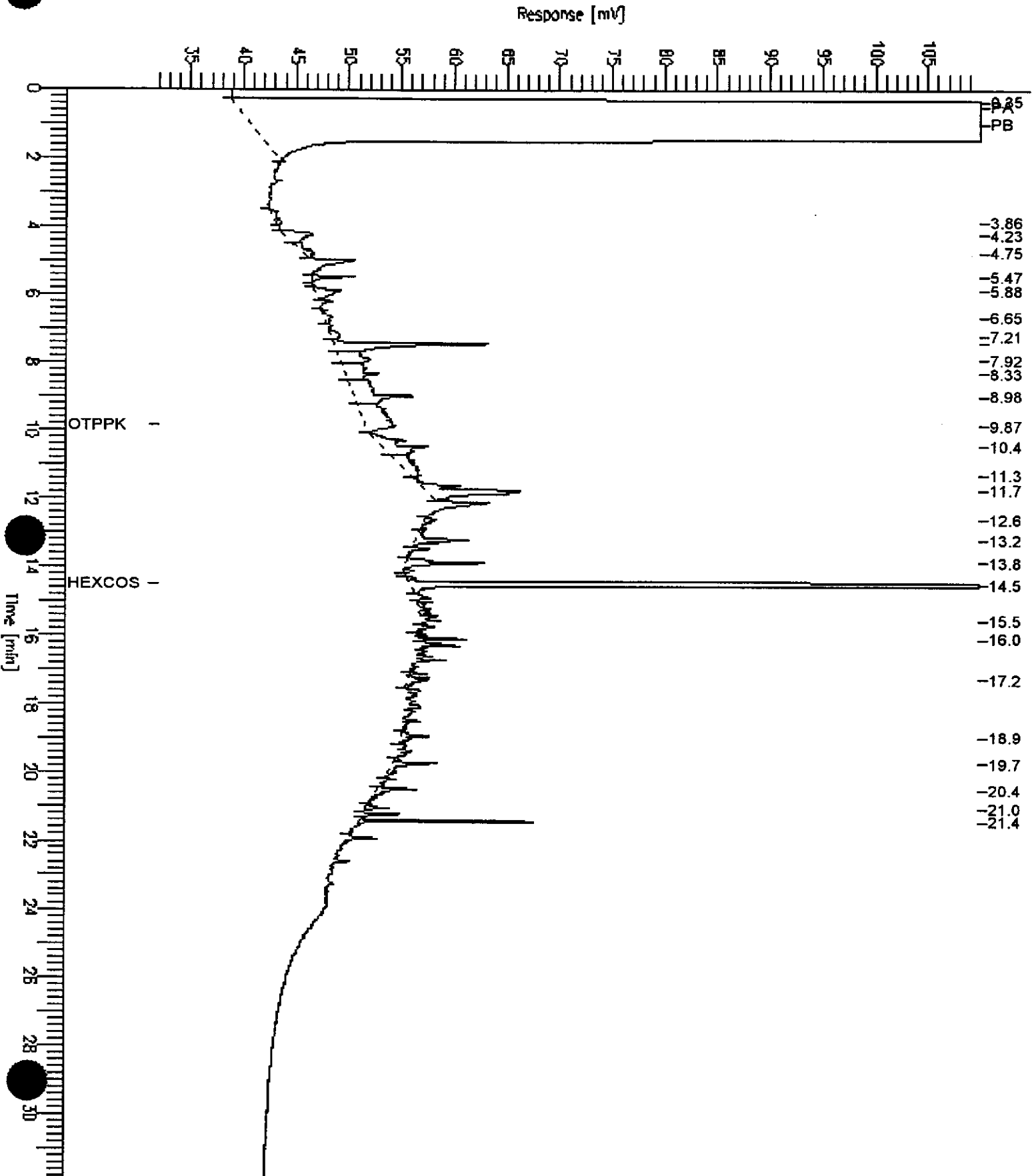
GC15 Channel B Surrogate

Sample Name : S,125727-001,27914
FileName : C:\GC15\CHB\155B011.raw
Method : DUAL
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 31.90 min
Plot Offset: 32 mV

Sample #: 500:2.5
Date : 6/3/96 05:11 PM
Time of Injection: 6/3/96 04:37 PM
Low Point : 32.00 mV
Plot Scale: 78.0 mV
High Point : 110.00 mV

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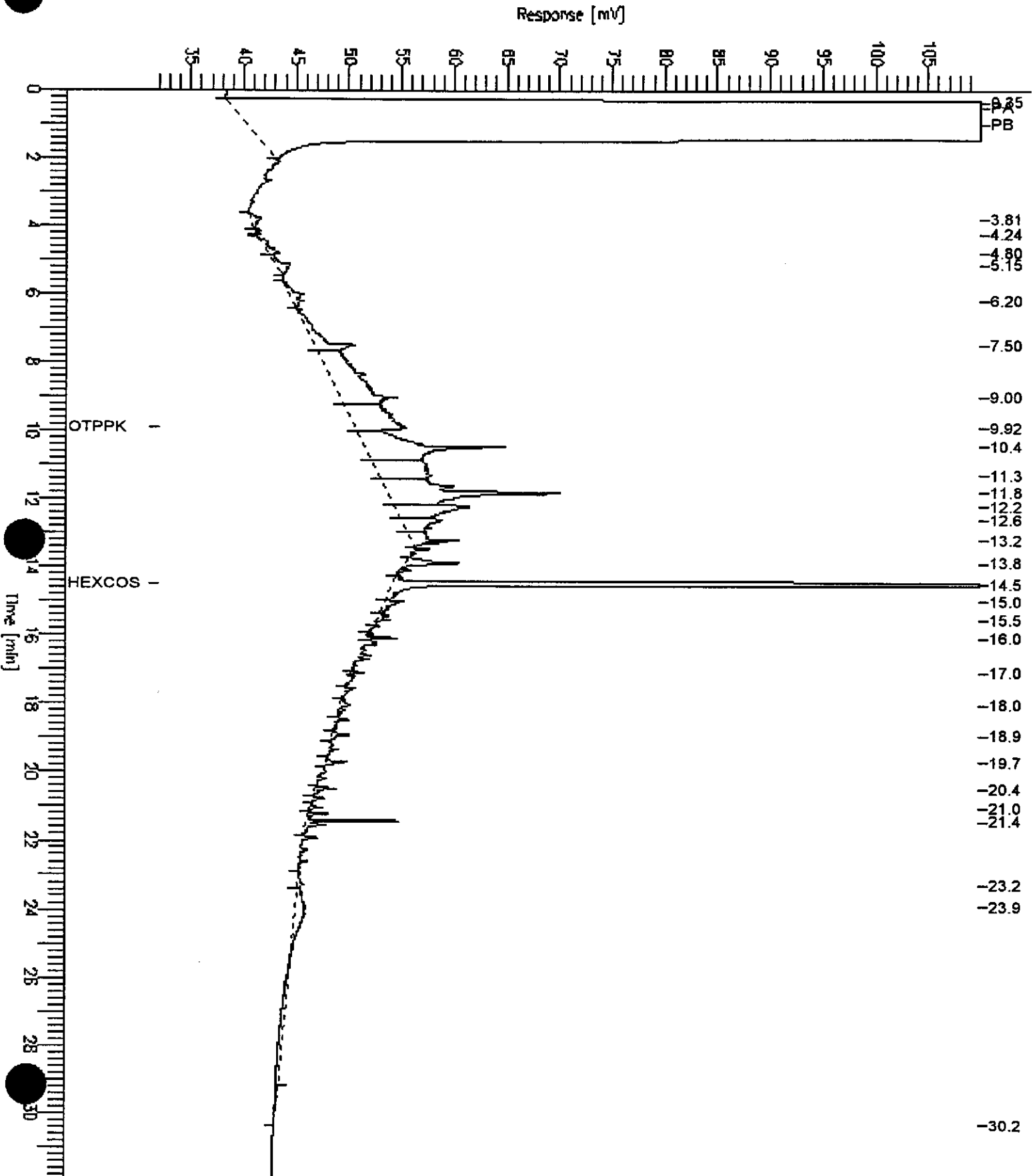
GC15 Channel B Surrogate

Sample Name : S,125727-002,27914
FileName : C:\GC15\CHB\155B012.raw
Method : DUAL
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 31.90 min
Plot Offset: 32 mV

Sample #: 500:2.5
Date : 6/3/96 05:56 PM
Time of Injection: 6/3/96 05:22 PM
Low Point : 32.00 mV
Plot Scale: 78.0 mV
High Point : 110.00 mV

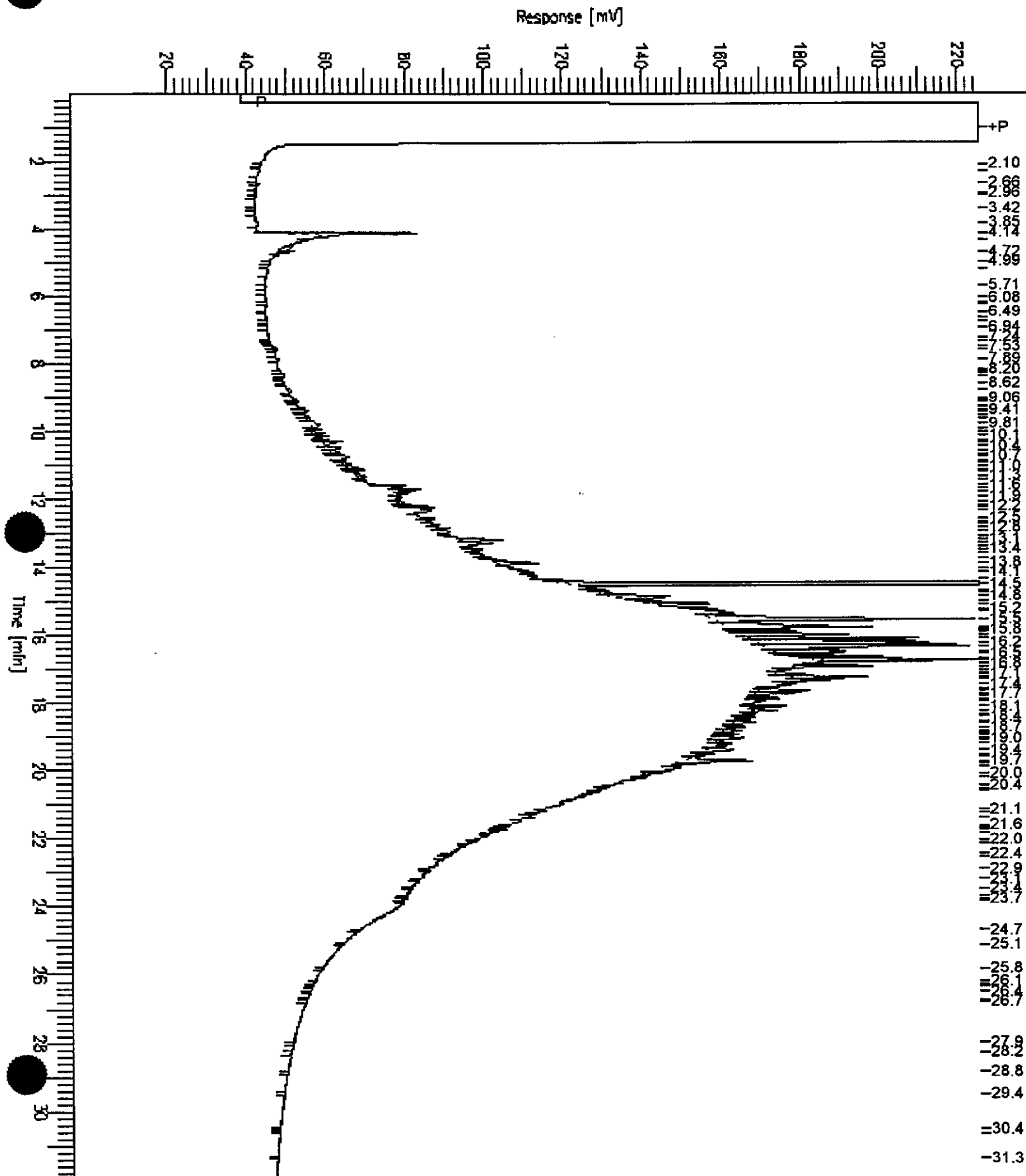
Page 1 of 1



GC15 Channel A TEH

Sample Name : S,125727-003,27914
 FileName : C:\GC15\CHB\155B014.RAW
 Method : BTEHJ.MTH
 Start Time : 0.01 min
 Scale Factor : 0.0

Sample #: 500:2.5
 Date : 6/4/96 08:15 AM
 Time of Injection: 6/3/96 06:52 PM
 Low Point : 18.92 mV
 Plot Scale: 206.5 mV
 End Time : 31.91 min
 Plot Offset: 19 mV
 High Point : 225.42 mV



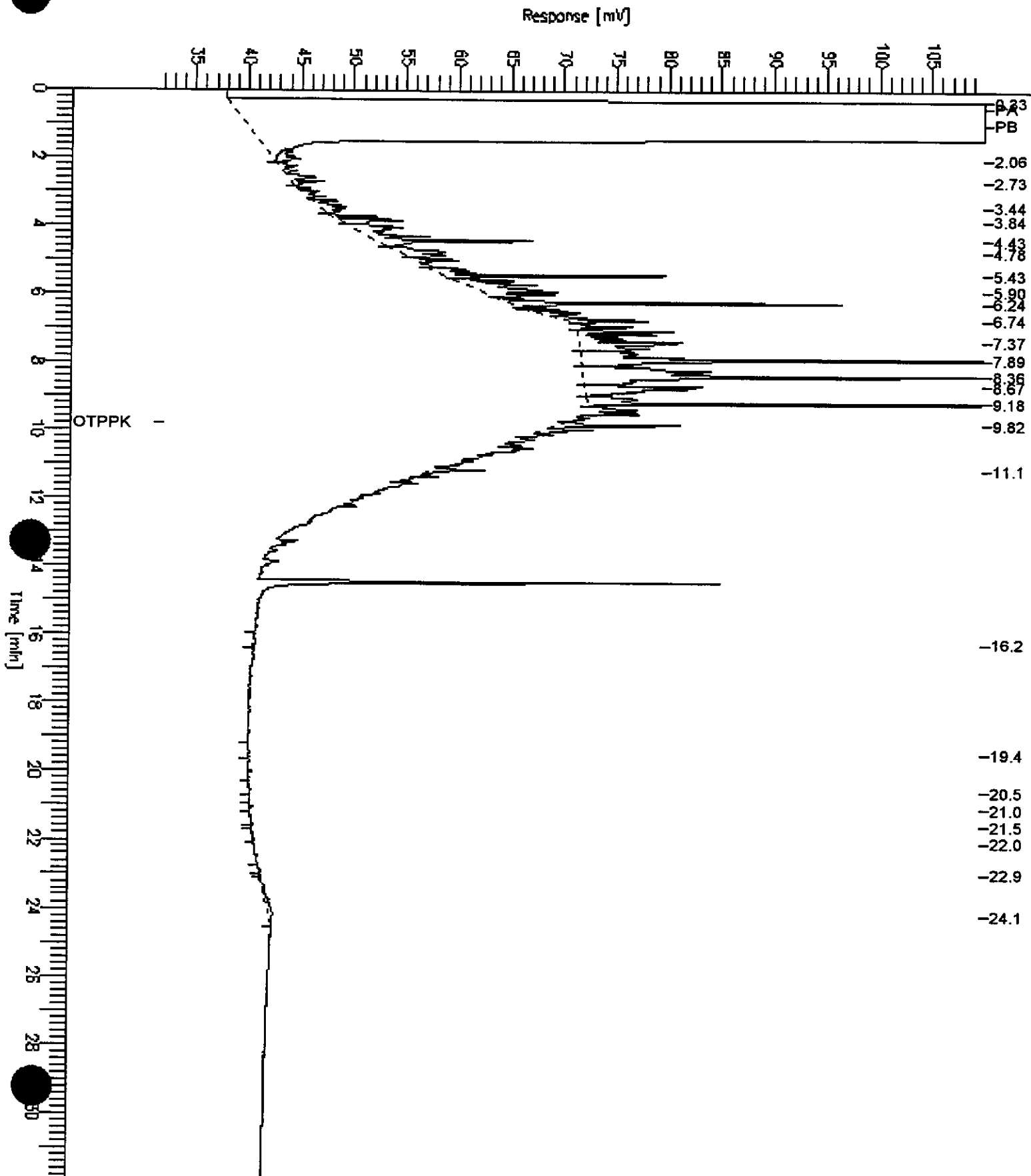
GC15 Channel B Surrogate

Sample Name : S,125727-004,27914
FileName : C:\GC15\CHB\155B018.raw
Method : DUAL
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 31.90 min
Plot Offset: 32 mV

Sample #: 500:25
Date : 6/3/96 10:22 PM
Time of Injection: 6/3/96 09:50 PM
Low Point : 32.00 mV
Plot Scale: 78.0 mV
High Point : 110.00 mV

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TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125727-005	SCI-20	27914	05/24/96	05/30/96	06/03/96	

Matrix: Water

Analyte	Units	125727-005
Diln Fac:		1
Diesel C12-C22	ug/L	16000 YH
Motor Oil C22-C50	ug/L	9800 Y
Surrogate		
Hexacosane	%REC	119

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

GC15 Channel A TEH

Sample Name : S,125727-005,27914

Sample #: 500:2.5

Page 1 of 1

FileName : C:\GC15\CHB\155B019.RAW

Date : 6/4/96 08:26 AM

Method : BTEHJ.MTH

Time of Injection: 6/3/96 10:34 PM

Start Time : 0.01 min End Time : 31.91 min

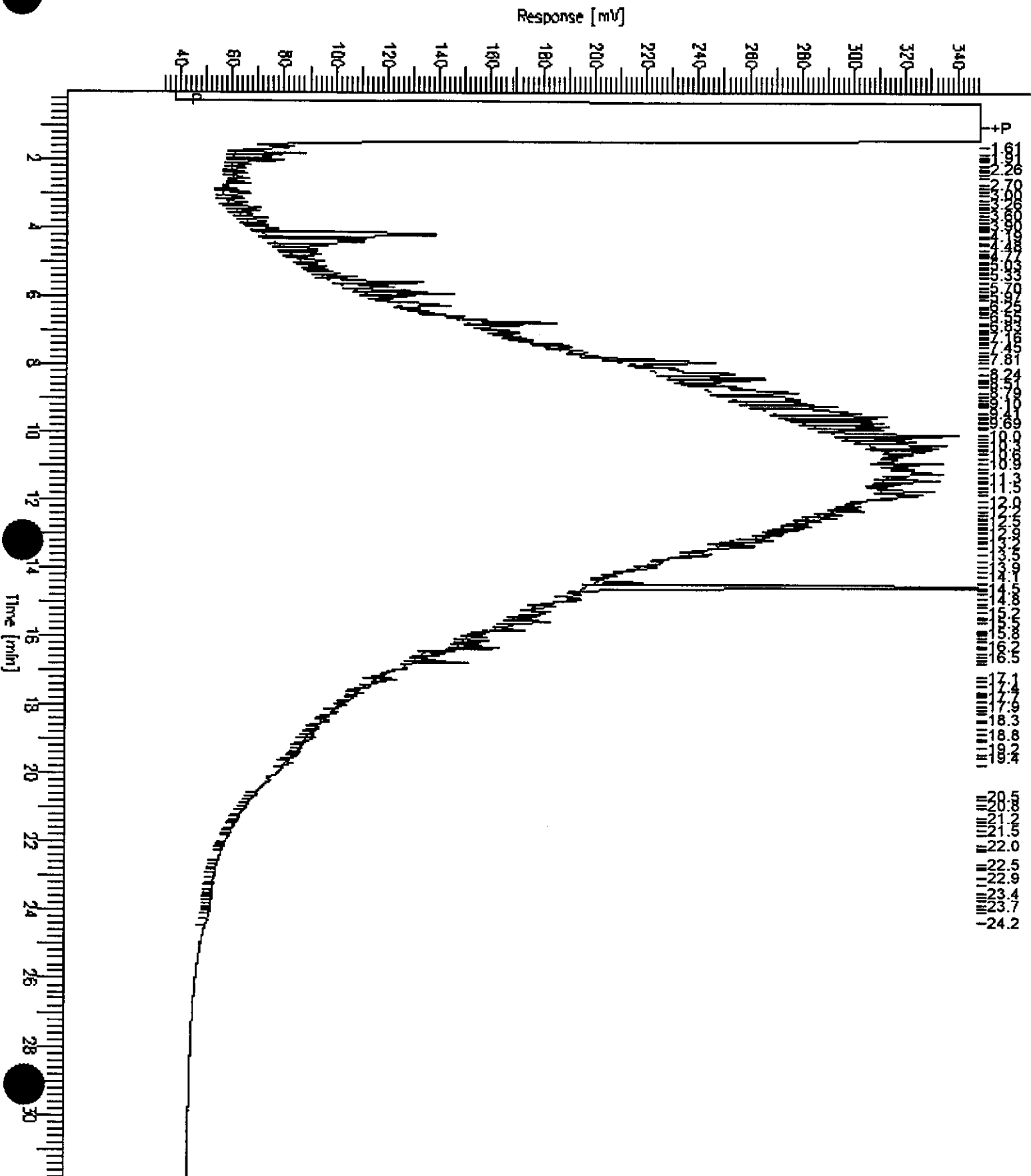
Low Point : 32.03 mV

High Point : 348.92 mV

Scale Factor: 0.0

Plot Offset: 32 mV

Plot Scale: 316.9 mV





Lab #: 125727

BATCH QC REPORT

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TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 27914
Units: ug/L
Diln Fac: 1

Prep Date: 05/30/96
Analysis Date: 06/01/96

MB Lab ID: QC23032

Analyte	Result	
Diesel C12-C22	<50	
Motor Oil C22-C50	<250	
Surrogate	%Rec	Recovery Limits
Hexacosane	113	60-140



Lab #: 125727

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27914
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/30/96
 Analysis Date: 06/01/96

BS Lab ID: QC23033

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	2201	89	60-140
Surrogate	%Rec	Limits		
Hexacosane	110	60-140		

BSD Lab ID: QC23034

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2358	95	60-140	7	<35
Surrogate	%Rec	Limits				
Hexacosane	104	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125727-001	SCI-13	27926	05/24/96	06/01/96	06/01/96	
125727-003	SCI-18	27926	05/24/96	06/01/96	06/01/96	

Matrix: Water

Analyte	Units	125727-001	125727-003
Diln Fac:		1	1
Benzene	ug/L	<0.5	<0.5
Toluene	ug/L	<0.5	<0.5
Ethylbenzene	ug/L	<0.5	<0.5
m,p-Xylenes	ug/L	<0.5	<0.5
o-Xylene	ug/L	<0.5	<0.5
Surrogate			
Trifluorotoluene	%REC	96	95
Bromobenzene	%REC	90	89



Lab #: 125727

BATCH QC REPORT

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BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27926
Units: ug/L
Diln Fac: 1

Prep Date: 05/31/96
Analysis Date: 05/31/96

MB Lab ID: QC23084

Analyte	Result		
Benzene	<0.5		
Toluene	<0.5		
Ethylbenzene	<0.5		
m,p-Xylenes	<0.5		
o-Xylene	<0.5		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	97		58-130
Bromobenzene	85		62-131



Lab #: 125727

BATCH QC REPORT

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BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 27926
Units: ug/L
Diln Fac: 1

Prep Date: 05/31/96
Analysis Date: 05/31/96

LCS Lab ID: QC23086

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	20.7	20	104	80-120
Toluene	20.7	20	104	80-120
Ethylbenzene	20.3	20	102	80-120
m,p-Xylenes	42.8	40	107	80-120
o-Xylene	21.6	20	108	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	99	58-130		
Bromobenzene	87	62-131		

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 5 outside limits



PCBs

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: PCB
Prep Method: EPA 3550
Cleanup Method: EPA acid

Field ID: SCI-19
Lab ID: 125727-004
Matrix: Water
Batch#: 27932
Units: ug/L
Diln Fac: 1

Sampled: 05/24/96
Received: 05/28/96
Extracted: 05/31/96
Analyzed: 06/03/96

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

Surrogate	%Recovery	Recovery Limits
TCMX	20*	60-150
Decachlorobiphenyl	13*	30-130

* Values outside of QC limits



PCBs

Client: Subsurface Consultants	Analysis Method: PCB
Project#: 133.005	Prep Method: EPA 3550
Location: KOT	Cleanup Method: EPA acid

Field ID: SCI-20	Sampled: 05/24/96
Lab ID: 125727-005	Received: 05/28/96
Matrix: Water	Extracted: 05/31/96
Batch#: 27932	Analyzed: 06/03/96
Units: ug/L	
Diln Fac: 1	

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

Surrogate	%Recovery	Recovery Limits
TCMX	30*	60-150
Decachlorobiphenyl	7*	30-130

* Values outside of QC limits



Lab #: 125727

BATCH QC REPORT

Page 1 of 1

Polychlorinated Biphenyls

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: PCB
Prep Method: EPA 3550
Cleanup Method: EPA acid

METHOD BLANK

Matrix: Water
Batch#: 27932
Units: ug/L
Diln Fac: 1

Prep Date: 05/31/96
Analysis Date: 06/03/96

MB Lab ID: QC23116

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Surrogate	%Rec	Recovery Limits
TCMX	75	60-150
Decachlorobiphenyl	75	30-130



Lab #: 125727

BATCH QC REPORT

Page 1 of 1

Polychlorinated Biphenyls

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: PCB
 Prep Method: EPA 3550
 Cleanup Method: EPA acid

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27932
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/31/96
 Analysis Date: 06/03/96

BS Lab ID: QC23117

Analyte	Spike Added	BS	%Rec #	Limits
Aroclor-1260	6.67	6.6	100	50-128
Surrogate	%Rec	Limits		
TCMX	73	60-150		
Decachlorobiphenyl	99	30-130		

BSD Lab ID: QC23118

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Aroclor-1260	6.67	6.7	101	50-128	1	<20
Surrogate	%Rec	Limits				
TCMX	69	60-150				
Decachlorobiphenyl	95	30-130				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



Curtis & Tompkins, Ltd.

SAMPLE ID: SCI-16
LAB ID: 125727-002
CLIENT: Subsurface Consultants
PROJECT ID: 133.005
LOCATION: KOT
MATRIX: Water

DATE SAMPLED: 05/24/96
DATE RECEIVED: 05/28/96
DATE REPORTED: 06/17/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	27878	EPA 6010A	05/30/96
Arsenic	130	5.0	1	27878	EPA 6010A	05/30/96
Barium	1700	10	1	27878	EPA 6010A	05/30/96
Beryllium	17	2.0	1	27878	EPA 6010A	05/30/96
Cadmium	11	2.0	1	27878	EPA 6010A	05/30/96
Chromium (total)	990	10	1	27878	EPA 6010A	05/30/96
Cobalt	250	20	1	27878	EPA 6010A	05/30/96
Copper	390	10	1	27878	EPA 6010A	05/30/96
Lead	230	3.0	1	27878	EPA 6010A	05/30/96
Mercury	3.6	0.20	1	27919	EPA 7470	05/31/96
Molybdenum	ND	20	1	27878	EPA 6010A	05/30/96
Nickel	1100	20	1	27878	EPA 6010A	05/30/96
Selenium	31	5.0	1	27878	EPA 6010A	05/30/96
Silver	ND	5.0	1	27878	EPA 6010A	05/30/96
Thallium	ND	5.0	1	27878	EPA 6010A	05/30/96
Vanadium	780	10	1	27878	EPA 6010A	05/30/96
Zinc	1100	20	1	27878	EPA 6010A	05/30/96

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd.

SAMPLE ID: SCI-19
LAB ID: 125727-004
CLIENT: Subsurface Consultants
PROJECT ID: 133.005
LOCATION: KOT
MATRIX: Water

DATE SAMPLED: 05/24/96
DATE RECEIVED: 05/28/96
DATE REPORTED: 06/17/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	27878	EPA 6010A	05/30/96
Arsenic	690	5.0	1	27878	EPA 6010A	05/30/96
Barium	17000	1000	100	27878	EPA 6010A	05/30/96
Beryllium	80	2.0	1	27878	EPA 6010A	05/30/96
Cadmium	130	2.0	1	27878	EPA 6010A	05/30/96
Chromium (total)	1400	10	1	27878	EPA 6010A	05/30/96
Cobalt	1000	20	1	27878	EPA 6010A	05/30/96
Copper	2100	10	1	27878	EPA 6010A	05/30/96
Lead	2500	3.0	1	27878	EPA 6010A	05/30/96
Mercury	13	0.40	1	27943	EPA 7470	06/03/96
Molybdenum	34	20	1	27878	EPA 6010A	05/30/96
Nickel	2000	20	1	27878	EPA 6010A	05/30/96
Selenium	200	5.0	1	27878	EPA 6010A	05/30/96
Silver	ND	5.0	1	27878	EPA 6010A	05/30/96
Thallium	22	5.0	1	27878	EPA 6010A	05/30/96
Vanadium	3200	10	1	27878	EPA 6010A	05/30/96
Zinc	17000	2000	100	27878	EPA 6010A	05/30/96

ND = Not detected at or above reporting limit



SAMPLE ID: SCI-20
 LAB ID: 125727-005
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Water

DATE SAMPLED: 05/24/96
 DATE RECEIVED: 05/28/96
 DATE REPORTED: 06/17/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	27878	EPA 6010A	05/30/96
Arsenic	350	5.0	1	27878	EPA 6010A	05/30/96
Barium	4400	10	1	27878	EPA 6010A	05/30/96
Beryllium	27	2.0	1	27878	EPA 6010A	05/30/96
Cadmium	29	2.0	1	27878	EPA 6010A	05/30/96
Chromium (total)	1800	10	1	27878	EPA 6010A	05/30/96
Cobalt	760	20	1	27878	EPA 6010A	05/30/96
Copper	1100	10	1	27878	EPA 6010A	05/30/96
Lead	1100	3.0	1	27878	EPA 6010A	05/30/96
Mercury	6.5	0.20	1	27919	EPA 7470	05/31/96
Molybdenum	25	20	1	27878	EPA 6010A	05/30/96
Nickel	3000	20	1	27878	EPA 6010A	05/30/96
Selenium	99	5.0	1	27878	EPA 6010A	05/30/96
Silver	ND	5.0	1	27878	EPA 6010A	05/30/96
Thallium	ND	5.0	1	27878	EPA 6010A	05/30/96
Vanadium	1400	10	1	27878	EPA 6010A	05/30/96
Zinc	5300	200	10	27878	EPA 6010A	05/30/96

ND = Not detected at or above reporting limit

CLIENT: Subsurface Consultants
JOB NUMBER: 125727

DATE REPORTED: 06/17/96

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	ug/L	1	27878	EPA 6010A	05/30/96
Arsenic	ND	5	ug/L	1	27878	EPA 6010A	05/30/96
Barium	ND	10	ug/L	1	27878	EPA 6010A	05/30/96
Beryllium	ND	2	ug/L	1	27878	EPA 6010A	05/30/96
Cadmium	ND	2	ug/L	1	27878	EPA 6010A	05/30/96
Chromium (total)	ND	10	ug/L	1	27878	EPA 6010A	05/30/96
Cobalt	ND	20	ug/L	1	27878	EPA 6010A	05/30/96
Copper	ND	10	ug/L	1	27878	EPA 6010A	05/30/96
Lead	ND	3	ug/L	1	27878	EPA 6010A	05/30/96
Mercury	ND	0.2	ug/L	1	27919	EPA 7470	05/31/96
Mercury	ND	0.2	ug/L	1	27943	EPA 7470	06/03/96
Molybdenum	ND	20	ug/L	1	27878	EPA 6010A	05/30/96
Nickel	ND	20	ug/L	1	27878	EPA 6010A	05/30/96
Selenium	ND	5	ug/L	1	27878	EPA 6010A	05/30/96
Silver	ND	5	ug/L	1	27878	EPA 6010A	05/30/96
Thallium	ND	5	ug/L	1	27878	EPA 6010A	05/30/96
Vanadium	ND	10	ug/L	1	27878	EPA 6010A	05/30/96
Zinc	ND	20	ug/L	1	27878	EPA 6010A	05/30/96

ND = Not Detected at or above reporting limit

CLIENT: Subsurface Consultants
 JOB NUMBER: 125727

DATE REPORTED: 06/17/96

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	500	549	553	ug/L	110	111	80-120	1	35	27878	EPA 6010A	05/30/96
Arsenic	2000	1960	1960	ug/L	98	98	80-120	0	35	27878	EPA 6010A	05/30/96
Barium	2000	1910	1910	ug/L	96	96	80-120	0	35	27878	EPA 6010A	05/30/96
Beryllium	50	51.4	51.8	ug/L	103	104	80-120	1	35	27878	EPA 6010A	05/30/96
Cadmium	50	50.2	50.6	ug/L	100	101	80-120	1	35	27878	EPA 6010A	05/30/96
Chromium (total)	200	189	192	ug/L	95	96	80-120	2	35	27878	EPA 6010A	05/30/96
Cobalt	500	472	474	ug/L	94	95	80-120	0	35	27878	EPA 6010A	05/30/96
Copper	250	248	251	ug/L	99	100	80-120	1	35	27878	EPA 6010A	05/30/96
Lead	500	490	495	ug/L	98	99	80-120	1	35	27878	EPA 6010A	05/30/96
Mercury	5	5.278	5.125	ug/L	106	103	80-120	3	35	27919	EPA 7470	05/31/96
Mercury	5	4.812	4.741	ug/L	96	95	80-120	2	35	27943	EPA 7470	06/03/96
Molybdenum	400	377	377	ug/L	94	94	80-120	0	35	27878	EPA 6010A	05/30/96
Nickel	500	510	511	ug/L	102	102	80-120	0	35	27878	EPA 6010A	05/30/96
Selenium	2000	1950	1950	ug/L	98	98	80-120	0	35	27878	EPA 6010A	05/30/96
Silver	100	99.1	101	ug/L	99	101	80-120	2	35	27878	EPA 6010A	05/30/96
Thallium	2000	1940	1970	ug/L	97	99	80-120	2	35	27878	EPA 6010A	05/30/96
Vanadium	500	482	487	ug/L	96	97	80-120	1	35	27878	EPA 6010A	05/30/96
Zinc	500	478	480	ug/L	96	96	80-120	0	35	27878	EPA 6010A	05/30/96



Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

Field ID: SCI-16
 Lab ID: 125727-002
 Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 5

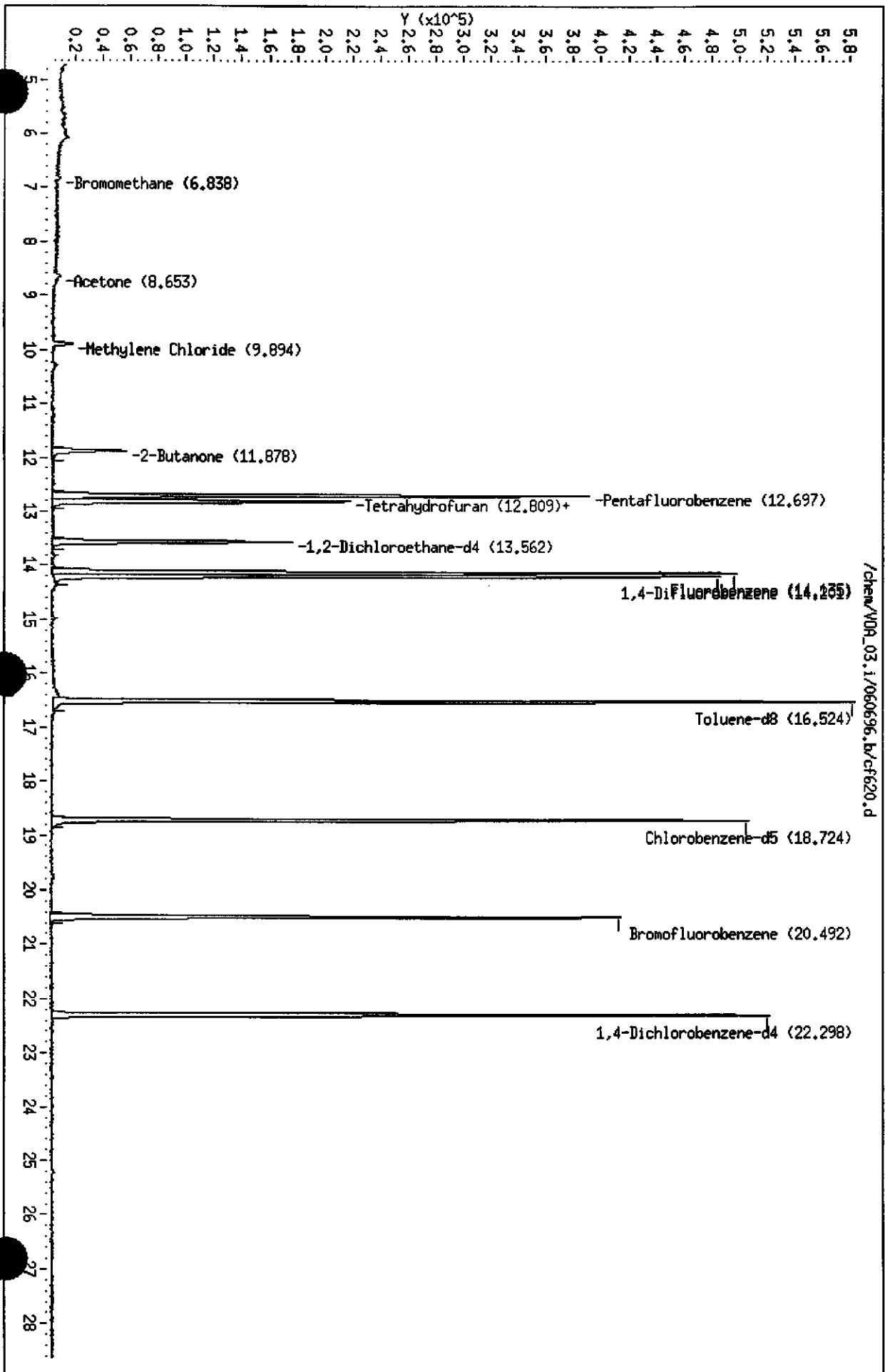
Sampled: 05/24/96
 Received: 05/28/96
 Extracted: 06/06/96
 Analyzed: 06/06/96

Analyte	Result	Reporting Limit
Chloromethane	ND	50
Bromomethane	ND	50
Vinyl Chloride	ND	50
Chloroethane	ND	50
Methylene Chloride	ND	100
Acetone	ND	100
Carbon Disulfide	ND	25
Trichlorofluoromethane	ND	25
1,1-Dichloroethene	ND	25
1,1-Dichloroethane	ND	25
trans-1,2-Dichloroethene	ND	25
cis-1,2-Dichloroethene	ND	25
Chloroform	ND	25
Freon 113	ND	25
1,2-Dichloroethane	ND	25
2-Butanone	640	50
1,1,1-Trichloroethane	ND	25
Carbon Tetrachloride	ND	25
Vinyl Acetate	ND	250
Bromodichloromethane	ND	25
1,2-Dichloropropane	ND	25
cis-1,3-Dichloropropene	ND	25
Trichloroethene	ND	25
Dibromochloromethane	ND	25
1,1,2-Trichloroethane	ND	25
Benzene	ND	25
trans-1,3-Dichloropropene	ND	25
Bromoform	ND	25
2-Hexanone	ND	50
4-Methyl-2-Pentanone	ND	50
1,1,2,2-Tetrachloroethane	ND	25
Tetrachloroethene	ND	25
Toluene	ND	25
Chlorobenzene	ND	25
Ethylbenzene	ND	25
Styrene	ND	25
m,p-Xylenes	ND	25
o-Xylene	ND	25
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	101	68-126
Toluene-d8	96	87-125
Bromofluorobenzene	88	79-122

Data File: /chem/V09_03.1/060696.b/cf620.d
Date: 06-JUN-96 20:50
Client ID: DYNA P&T
Sample Info: S.125727-002

Column phase: RTX Volatiles

Instrument: V09_03.1
Operator: LLH
Column diameter: 0.32





Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

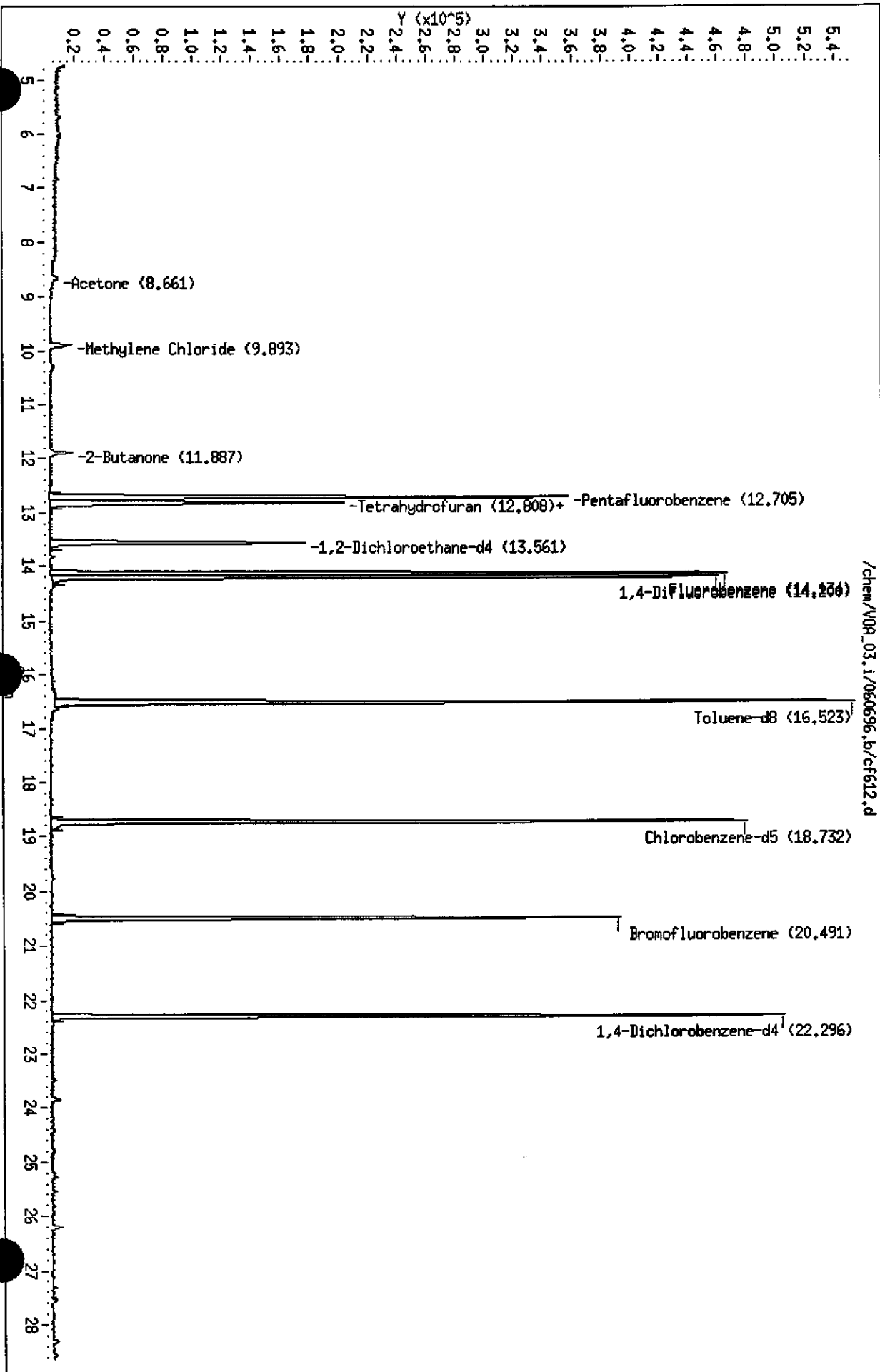
Field ID: SCI-19
 Lab ID: 125727-004
 Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

Sampled: 05/24/96
 Received: 05/28/96
 Extracted: 06/06/96
 Analyzed: 06/06/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	34	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	110	68-126
Toluene-d8	95	87-125
Bromofluorobenzene	90	79-122

Data File: /chem/V09_03.1/060696.b/cf612.d
Date: 06-JUN-96 16:29
Client ID: DYNA PaT
Sample Info: S.125727-004
Column phase: RTX Volatiles

Instrument: V09_03.1
Operator: LLH
Column diameter: 0.32





Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

Field ID: SCI-20
 Lab ID: 125727-005
 Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

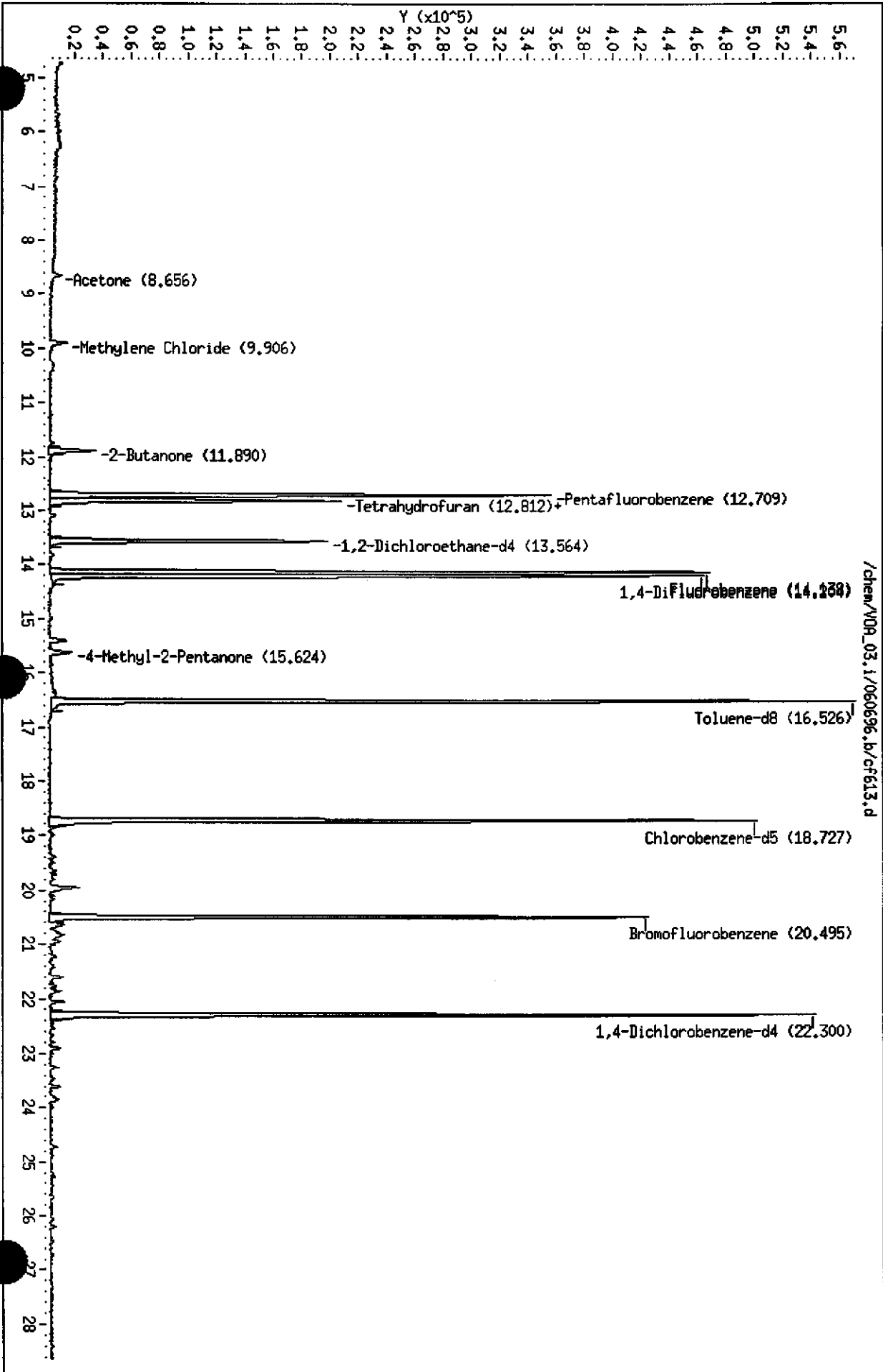
Sampled: 05/24/96
 Received: 05/28/96
 Extracted: 06/06/96
 Analyzed: 06/06/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	87	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	112	68-126
Toluene-d8	98	87-125
Bromofluorobenzene	96	79-122

Data File: /chem/V09_03.i/060696.b/cf613.d
Date: 06-JUN-96 17:06
Client ID: DYNA PaT
Sample Info: S.125727-005

Column phase: RTX Volatiles

Instrument: V09_03.i
Operator: LLH
Column diameter: 0.32



Lab #: 125727

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: EPA 8240
 Prep Method: EPA 5030

METHOD BLANK

 Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

 Prep Date: 06/06/96
 Analysis Date: 06/06/96

MB Lab ID: QC23479

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	107	68-126
Toluene-d8	97	87-125
Bromofluorobenzene	90	79-122

Lab #: 125727

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: EPA 8240
 Prep Method: EPA 5030

METHOD BLANK

 Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

 Prep Date: 06/06/96
 Analysis Date: 06/06/96

MB Lab ID: QC23480

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	102	68-126
Toluene-d8	99	87-125
Bromofluorobenzene	91	79-122

Lab #: 125727

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: EPA 8240
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

 Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

 Prep Date: 06/06/96
 Analysis Date: 06/06/96

LCS Lab ID: QC23478

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	49.92	50	100	51-180
Trichloroethene	48.67	50	97	73-141
Benzene	46.81	50	94	78-142
Toluene	49.66	50	99	76-150
Chlorobenzene	49.16	50	98	83-129
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	108	68-126		
Toluene-d8	98	87-125		
Bromofluorobenzene	93	79-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits



Lab #: 125727

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125702-004
 Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

Sample Date: 05/23/96
 Received Date: 05/24/96
 Prep Date: 06/06/96
 Analysis Date: 06/06/96

MS Lab ID: QC23509

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	<5.000	45.69	91	51-180
Trichloroethene	50	<5.000	44.32	89	73-141
Benzene	50	<0.5000	43.08	86	78-142
Toluene	50	<0.5000	44.43	89	76-150
Chlorobenzene	50	<5.000	45.95	92	83-129
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	111	68-126			
Toluene-d8	97	87-125			
Bromofluorobenzene	94	79-122			

MSD Lab ID: QC23510

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	47.32	95	51-180	4	<14
Trichloroethene	50	45.14	90	73-141	2	<14
Benzene	50	45.55	91	78-142	6	<11
Toluene	50	46.51	93	76-150	5	<13
Chlorobenzene	50	46.75	94	83-129	2	<13
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	109	68-126				
Toluene-d8	99	87-125				
Bromofluorobenzene	93	79-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

Field ID: SCI-19
Lab ID: 125727-004
Matrix: Water
Batch#: 27913
Units: ug/L
Diln Fac: 1

Sampled: 05/24/96
Received: 05/28/96
Extracted: 05/30/96
Analyzed: 06/12/96

Analyte	Result	Reporting Limit
Phenol	ND	9.4
2-Chlorophenol	ND	9.4
Benzyl alcohol	ND	9.4
2-Methylphenol	ND	9.4
4-Methylphenol	ND	9.4
2-Nitrophenol	ND	47
2,4-Dimethylphenol	ND	9.4
Benzoic acid	ND	47
2,4-Dichlorophenol	ND	9.4
4-Chloro-3-methylphenol	ND	9.4
2,4,6-Trichlorophenol	ND	9.4
2,4,5-Trichlorophenol	ND	47
2,4-Dinitrophenol	ND	47
4-Nitrophenol	ND	47
4,6-Dinitro-2-methylphenol	ND	47
Pentachlorophenol	ND	47
N-Nitrosodimethylamine	ND	9.4
Aniline	ND	9.4
bis(2-Chloroethyl)ether	ND	9.4
1,3-Dichlorobenzene	ND	9.4
1,4-Dichlorobenzene	ND	9.4
1,2-Dichlorobenzene	ND	9.4
bis(2-Chloroisopropyl) ether	ND	9.4
N-Nitroso-di-n-propylamine	ND	9.4
Hexachloroethane	ND	9.4
Nitrobenzene	ND	9.4
Isophorone	ND	9.4
bis(2-Chloroethoxy)methane	ND	9.4
1,2,4-Trichlorobenzene	ND	9.4
Naphthalene	ND	9.4
4-Chloroaniline	ND	9.4
Hexachlorobutadiene	ND	9.4
2-Methylnaphthalene	ND	9.4
Hexachlorocyclopentadiene	ND	9.4
2-Chloronaphthalene	ND	9.4
2-Nitroaniline	ND	47
Dimethylphthalate	ND	9.4
Acenaphthylene	ND	9.4



Semivolatile Organics by GC/MS

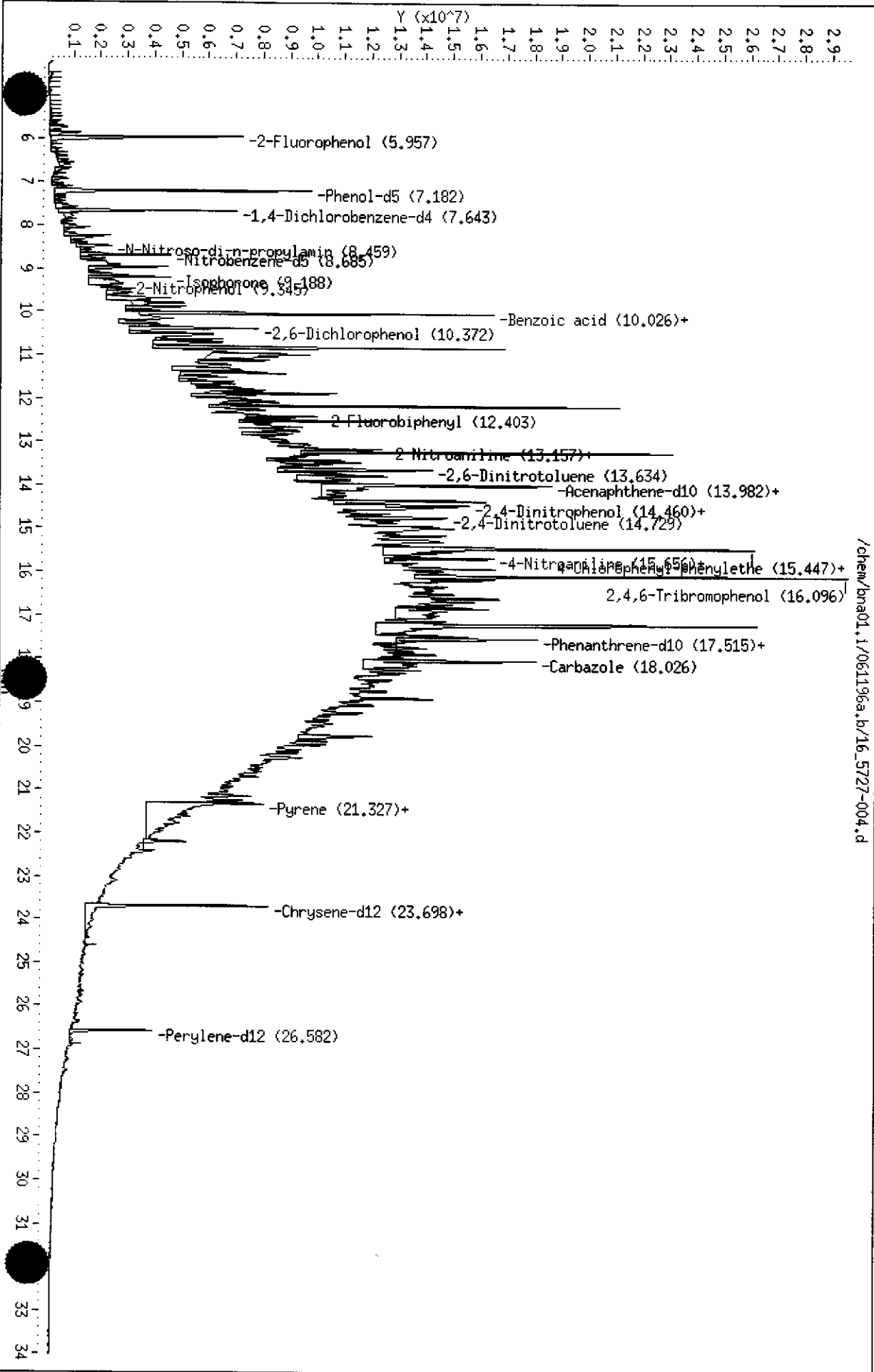
Field ID: SCI-19	Sampled: 05/24/96
Lab ID: 125727-004	Received: 05/28/96
Matrix: Water	Extracted: 05/30/96
Batch#: 27913	Analyzed: 06/12/96
Units: ug/L	
Diln Fac: 1	

Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	9.4
3-Nitroaniline	ND	47
Acenaphthene	ND	9.4
Dibenzofuran	ND	9.4
2,4-Dinitrotoluene	ND	9.4
Diethylphthalate	ND	9.4
4-Chlorophenyl-phenylether	ND	9.4
Fluorene	ND	9.4
4-Nitroaniline	ND	47
N-Nitrosodiphenylamine	ND	9.4
Azobenzene	ND	9.4
4-Bromophenyl-phenylether	ND	9.4
Hexachlorobenzene	ND	9.4
Phenanthrene	ND	9.4
Anthracene	ND	9.4
Di-n-butylphthalate	ND	9.4
Fluoranthene	ND	9.4
Pyrene	ND	9.4
Butylbenzylphthalate	ND	9.4
3,3'-Dichlorobenzidine	ND	47
Benzo(a)anthracene	ND	9.4
Chrysene	ND	9.4
bis(2-Ethylhexyl)phthalate	ND	9.4
Di-n-octylphthalate	ND	9.4
Benzo(b)fluoranthene	ND	9.4
Benzo(k)fluoranthene	ND	9.4
Benzo(a)pyrene	ND	9.4
Indeno(1,2,3-cd)pyrene	ND	9.4
Dibenz(a,h)anthracene	ND	9.4
Benzo(g,h,i)perylene	ND	9.4

Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	76	21-110
Phenol-d5	82	10-110
2,4,6-Tribromophenol	51	10-123
Nitrobenzene-d5	46	35-114
2-Fluorobiphenyl	41*	43-116
Terphenyl-d14	35	33-141

* Values outside of QC limits

125727-004



Data File: /chem/bna01.i/061196a.b/16_5727-004.d
Date: 12-JUN-1996 01:45
Client ID: CURTISATONPKINS,LTD
Sample Info:
Volume Injected (uL): 1.0
Column phase: Xti 5 x .5 u

Instrument: bna01.i
Operator: dsh
Column diameter: 0.25

/chem/bna01.i/061196a.b/16_5727-004.d



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

Field ID: SCI-20
Lab ID: 125727-005
Matrix: Water
Batch#: 27913
Units: ug/L
Diln Fac: 1

Sampled: 05/24/96
Received: 05/28/96
Extracted: 05/30/96
Analyzed: 06/12/96

Analyte	Result	Reporting Limit
Phenol	ND	9.4
2-Chlorophenol	ND	9.4
Benzyl alcohol	ND	9.4
2-Methylphenol	ND	9.4
4-Methylphenol	ND	9.4
2-Nitrophenol	ND	47
2,4-Dimethylphenol	ND	9.4
Benzoic acid	ND	47
2,4-Dichlorophenol	ND	9.4
4-Chloro-3-methylphenol	ND	9.4
2,4,6-Trichlorophenol	ND	9.4
2,4,5-Trichlorophenol	ND	47
2,4-Dinitrophenol	ND	47
4-Nitrophenol	ND	47
4,6-Dinitro-2-methylphenol	ND	47
Pentachlorophenol	ND	47
N-Nitrosodimethylamine	ND	9.4
Aniline	ND	9.4
bis(2-Chloroethyl)ether	ND	9.4
1,3-Dichlorobenzene	ND	9.4
1,4-Dichlorobenzene	ND	9.4
1,2-Dichlorobenzene	ND	9.4
bis(2-Chloroisopropyl) ether	ND	9.4
N-Nitroso-di-n-propylamine	ND	9.4
Hexachloroethane	ND	9.4
Nitrobenzene	ND	9.4
Isophorone	ND	9.4
bis(2-Chloroethoxy)methane	ND	9.4
1,2,4-Trichlorobenzene	ND	9.4
Naphthalene	ND	9.4
4-Chloroaniline	ND	9.4
Hexachlorobutadiene	ND	9.4
2-Methylnaphthalene	ND	9.4
Hexachlorocyclopentadiene	ND	9.4
2-Chloronaphthalene	ND	9.4
2-Nitroaniline	ND	47
Dimethylphthalate	ND	9.4
Acenaphthylene	ND	9.4



Semivolatile Organics by GC/MS

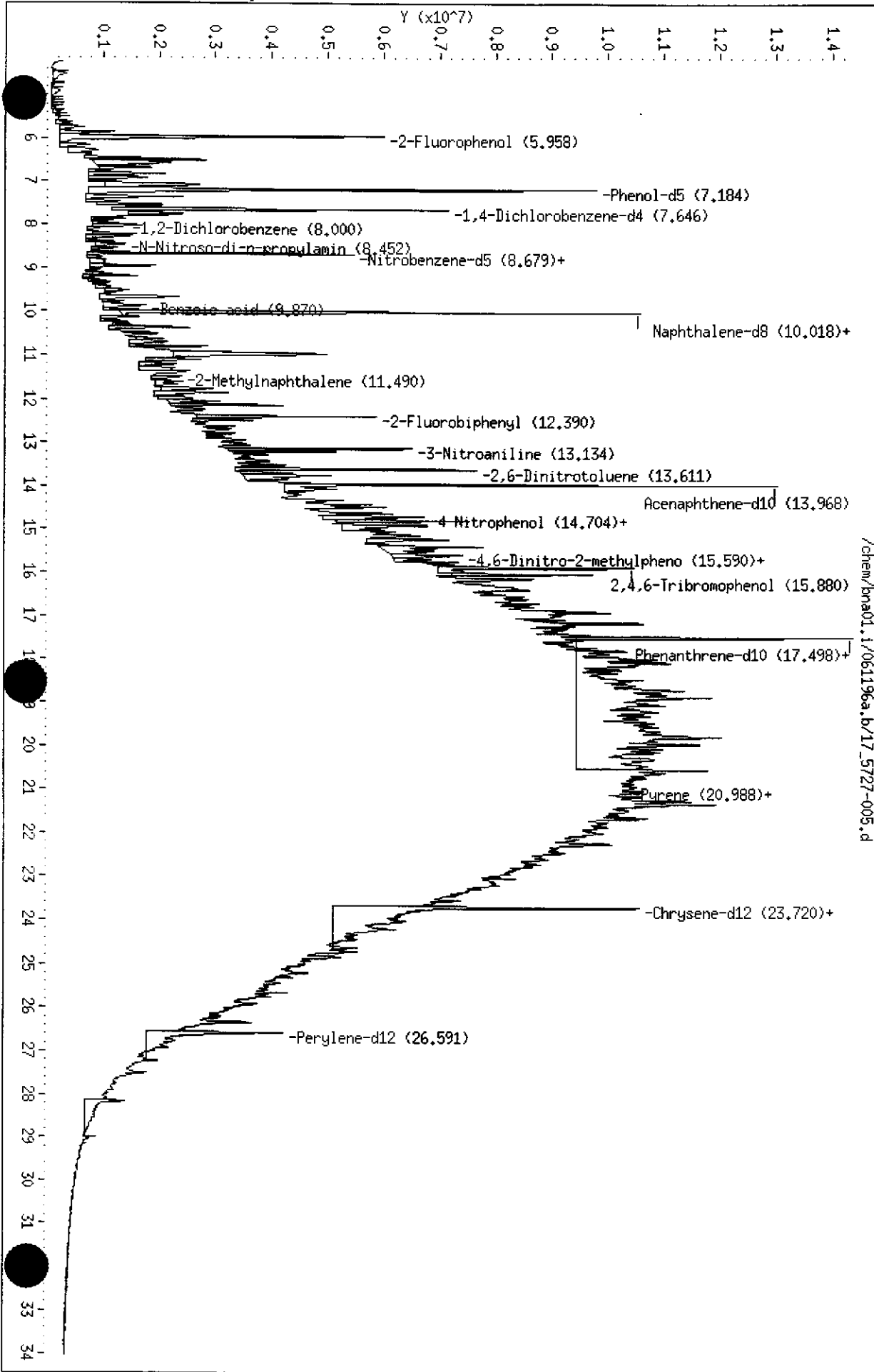
Field ID: SCI-20	Sampled: 05/24/96
Lab ID: 125727-005	Received: 05/28/96
Matrix: Water	Extracted: 05/30/96
Batch#: 27913	Analyzed: 06/12/96
Units: ug/L	
Diln Fac: 1	

Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	9.4
3-Nitroaniline	ND	47
Acenaphthene	ND	9.4
Dibenzofuran	ND	9.4
2,4-Dinitrotoluene	ND	9.4
Diethylphthalate	ND	9.4
4-Chlorophenyl-phenylether	ND	9.4
Fluorene	ND	9.4
4-Nitroaniline	ND	47
N-Nitrosodiphenylamine	ND	9.4
Azobenzene	ND	9.4
4-Bromophenyl-phenylether	ND	9.4
Hexachlorobenzene	ND	9.4
Phenanthrene	ND	9.4
Anthracene	ND	9.4
Di-n-butylphthalate	ND	9.4
Fluoranthene	ND	9.4
Pyrene	ND	9.4
Butylbenzylphthalate	ND	9.4
3,3'-Dichlorobenzidine	ND	47
Benzo(a)anthracene	ND	9.4
Chrysene	ND	9.4
bis(2-Ethylhexyl)phthalate	ND	9.4
Di-n-octylphthalate	ND	9.4
Benzo(b)fluoranthene	ND	9.4
Benzo(k)fluoranthene	ND	9.4
Benzo(a)pyrene	ND	9.4
Indeno(1,2,3-cd)pyrene	ND	9.4
Dibenz(a,h)anthracene	ND	9.4
Benzo(g,h,i)perylene	ND	9.4

Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	76	21-110
Phenol-d5	84	10-110
2,4,6-Tribromophenol	61	10-123
Nitrobenzene-d5	85	35-114
2-Fluorobiphenyl	39*	43-116
Terphenyl-d14	33	33-141

* Values outside of QC limits

125127-005



Data File: /chem/bna01.i/061196a.b/17_5727-005.d
Date: 12-JUN-1996 02:37
Client ID: CURTIS&TOMPKINS,LTD
Sample Info:
Volume Injected (uL): 1.0
Column phase: Xti 5 x .5 u

/chem/bna01.i/061196a.b/17_5727-005.d

Instrument: bna01.i
Operator: dsh
Column diameter: 0.25



Lab #: 125727

BATCH QC REPORT

Page 1 of 2

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 27913
Units: ug/L
Diln Fac: 1

Prep Date: 05/30/96
Analysis Date: 06/11/96

MB Lab ID: QC23029

Analyte	Result	Reporting Limit
Phenol	ND	10
2-Chlorophenol	ND	10
Benzyl alcohol	ND	10
2-Methylphenol	ND	10
4-Methylphenol	ND	10
2-Nitrophenol	ND	50
2,4-Dimethylphenol	ND	10
Benzoic acid	ND	50
2,4-Dichlorophenol	ND	10
4-Chloro-3-methylphenol	ND	10
2,4,6-Trichlorophenol	ND	10
2,4,5-Trichlorophenol	ND	50
2,4-Dinitrophenol	ND	50
4-Nitrophenol	ND	50
4,6-Dinitro-2-methylphenol	ND	50
Pentachlorophenol	ND	10
N-Nitrosodimethylamine	ND	10
Aniline	ND	10
bis(2-Chloroethyl)ether	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
1,2-Dichlorobenzene	ND	10
bis(2-Chloroisopropyl) ether	ND	10
N-Nitroso-di-n-propylamine	ND	10
Hexachloroethane	ND	10
Nitrobenzene	ND	10
Isophorone	ND	10
bis(2-Chloroethoxy)methane	ND	10
1,2,4-Trichlorobenzene	ND	10
Naphthalene	ND	10
4-Chloroaniline	ND	10
Hexachlorobutadiene	ND	10
2-Methylnaphthalene	ND	10
Hexachlorocyclopentadiene	ND	10
2-Chloronaphthalene	ND	10
2-Nitroaniline	ND	50
Dimethylphthalate	ND	10
Acenaphthylene	ND	10
2,6-Dinitrotoluene	ND	10
3-Nitroaniline	ND	50



Lab #: 125727

BATCH QC REPORT

Page 2 of 2

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8270
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 27913
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/30/96
 Analysis Date: 06/11/96

MB Lab ID: QC23029

Analyte	Result	Reporting Limit
Acenaphthene	ND	10
Dibenzofuran	ND	10
2,4-Dinitrotoluene	ND	10
Diethylphthalate	ND	10
4-Chlorophenyl-phenylether	ND	10
Fluorene	ND	10
4-Nitroaniline	ND	50
N-Nitrosodiphenylamine	ND	10
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	10
Hexachlorobenzene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Di-n-butylphthalate	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Butylbenzylphthalate	ND	10
3,3'-Dichlorobenzidine	ND	50
Benzo(a)anthracene	ND	10
Chrysene	ND	10
bis(2-Ethylhexyl)phthalate	ND	10
Di-n-octylphthalate	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(a)pyrene	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Dibenz(a,h)anthracene	ND	10
Benzo(g,h,i)perylene	ND	10
Surrogate	%Rec	Recovery Limits
2-Fluorophenol	84	21-110
Phenol-d5	88	10-110
2,4,6-Tribromophenol	100	10-123
Nitrobenzene-d5	90	35-114
2-Fluorobiphenyl	101	43-116
Terphenyl-d14	111	33-141



Lab #: 125727

BATCH QC REPORT

Page 1 of 1

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8270
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27913
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/30/96
 Analysis Date: 06/11/96

BS Lab ID: QC23030

Analyte	Spike Added	BS	%Rec	#	Limits
Phenol	100	70.52	71		12-110
2-Chlorophenol	100	75.83	76		27-123
4-Chloro-3-methylphenol	100	76.1	76		23-97
4-Nitrophenol	100	74.74	75		10-80
Pentachlorophenol	100	58.5	59		9-103
1,4-Dichlorobenzene	50	39	78		36-97
N-Nitroso-di-n-propylamine	50	35.78	72		41-116
1,2,4-Trichlorobenzene	50	42.74	85		39-98
Acenaphthene	50	45.51	91		46-118
2,4-Dinitrotoluene	50	38.78	78		24-96
Pyrene	50	47.97	96		26-127
Surrogate	%Rec	Limits			
2-Fluorophenol	77	21-110			
Phenol-d5	79	10-110			
2,4,6-Tribromophenol	100	10-123			
Nitrobenzene-d5	83	35-114			
2-Fluorobiphenyl	96	43-116			
Terphenyl-d14	107	33-141			

BSD Lab ID: QC23031

Analyte	Spike Added	BSD	%Rec	#	Limits	RPD	#	Limit
Phenol	100	75.48	75		12-110	5		<42
2-Chlorophenol	100	82.11	82		27-123	8		<40
4-Chloro-3-methylphenol	100	78.32	78		23-97	3		<42
4-Nitrophenol	100	73.51	74		10-80	1		<50
Pentachlorophenol	100	59.62	60		9-103	2		<50
1,4-Dichlorobenzene	50	41.78	84		36-97	7		<28
N-Nitroso-di-n-propylamine	50	36.73	73		41-116	1		<38
1,2,4-Trichlorobenzene	50	46.28	93		39-98	9		<28
Acenaphthene	50	47.7	95		46-118	4		<31
2,4-Dinitrotoluene	50	39.27	79		24-96	1		<38
Pyrene	50	48.73	97		26-127	1		<31
Surrogate	%Rec	Limits						
2-Fluorophenol	82	21-110						
Phenol-d5	83	10-110						
2,4,6-Tribromophenol	101	10-123						
Nitrobenzene-d5	87	35-114						
2-Fluorobiphenyl	98	43-116						
Terphenyl-d14	108	33-141						

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits
 RPD: 0 out of 11 outside limits
 Spike Recovery: 0 out of 22 outside limits
 DO: Surrogate diluted out

CHAIN OF CUSTODY FORM

105727

PROJECT NAME: KCT
 JOB NUMBER: 133.005 LAB: Central & Triplings
 PROJECT CONTACT: Jeniam Alexander TURNAROUND: standard
 SAMPLED BY: Jeanne de Verne REQUESTED BY: Jeniam Alexander

ANALYSIS REQUESTED	
<input checked="" type="checkbox"/>	TEH (CS&GS)
<input checked="" type="checkbox"/>	TH/BTEX
<input checked="" type="checkbox"/>	CGC
<input checked="" type="checkbox"/>	TH
<input checked="" type="checkbox"/>	PCB
<input checked="" type="checkbox"/>	Metals (Title 26)
<input checked="" type="checkbox"/>	8270
<input checked="" type="checkbox"/>	MAAs
<input checked="" type="checkbox"/>	8240

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H ₂ SO ₄	HNO ₃	ICE	NONE	MONTH	DAY	YEAR	TIME	
-1	SCI-13	X				4	3		1	1				2	05	24	96	14:00	X
-2	SCI-16	X				4	4		1	2				2				08:00	X
-3	SCI-18	X				4	4		1	2				2				14:00	X
-4	SCI-19	X				4	4		1	2				2				14:00	X
-5	SCI-20	X				4	4		1	2				2				14:00	X

check instructions

CHAIN OF CUSTODY RECORD			
RELEASED BY: (Signature) <i>Jeniam Alexander</i>	DATE / TIME 5/28/96 3:15 PM	RECEIVED BY: (Signature) <i>Jeanne de Verne</i>	DATE / TIME 5-28-96 3:15
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:
 Note: hold time - sampling last week
 if not enough sample, omit O&G

Subsurface Consultants, Inc.
 171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
 (510) 268-0461 • FAX: 510-268-0137



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710. Phone (510) 486-0900

June 19, 1996

Mr. Jerome de Verrier
Subsurface Consultants
171 12th St. Suite 201
Oakland, CA 94607

Subject: Curtis & Tompkins report submitted for lab project #125822


Dear Mr. de Verrier:

Attached to this letter is a revised report dated June 19, 1996 for lab project #125822 (Subsurface job number 133.005). The following changes were made in the submittal of June 19, 1996 from the report issued on June 17, 1996:

1. Certificates of analysis are not included for gasoline by USEPA SW-846 modified method 8015 per California LUFT manual and benzene, toluene, ethylbenzene and xylenes (BTEX) by USEPA SW-846 method 8020 for sample number 125822-12. Due to a laboratory error in sample preparation for sample number 125822-12 analyzed for gasoline and BTEX, the data submitted in the report dated June 17, 1996 are unusable and should be rejected. Additionally the sample was misplaced. We apologize for this error and have changed the invoice omitting the above noted sample analyses. Corrective action has been implemented to ensure that this error does not occur again.
2. Certificates of analysis are included for semivolatile organic analyses by USEPA SW-846 method 8270, because they were missing in the data package submitted on June 17, 1996.
3. Certificates of analysis have been revised for the metals analyses for mercury.

We apologize for any inconvenience. If you have any questions or concerns, please phone me at 510-486-0900. Thank you for your continual support of Curtis & Tompkins.

Sincerely,


Carolyn Brizzolara
QA Director

001



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 19-JUN-96
Lab Job Number: 125822
Project ID: 133.005
Location: KOT

Reviewed by: _____

Reviewed by: _____

This package may be reproduced only in its entirety.

002

Client: Subsurface Consultants

Laboratory Login Number: 125822

 Project Name: KOT
 Project Number: 133.005

Report Date: 19 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520EF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
125822-010	SCI-26 @3.5	Soil	31-MAY-96	04-JUN-96	06-JUN-96	120	mg/Kg	50	TR	28037
125822-012	SCI-27 @3.5	Soil	03-JUN-96	04-JUN-96	06-JUN-96	480	mg/Kg	50	TR	28037
125822-015	SCI-31 @4.0	Soil	03-JUN-96	04-JUN-96	06-JUN-96	2800	mg/Kg	50	TR	28037

ND = Not Detected at or above Reporting Limit (RL).

Q C B a t c h R e p o r t

 Client: Subsurface Consultants
 Project Name: KOT
 Project Number: 133.005

 Laboratory Login Number: 125822
 Report Date: 19 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 28037

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	50	mg/Kg	SMWW 17:5520EF	06-JUN-96

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	86%	SMWW 17:5520EF	06-JUN-96
BSD	83%	SMWW 17:5520EF	06-JUN-96

		Control Limits
Average Spike Recovery	84%	80% - 120%
Relative Percent Difference	4.4%	< 20%

Client: Subsurface Consultants

Laboratory Login Number: 125822

 Project Name: KOT
 Project Number: 133.005

Report Date: 19 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520BF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
125822-003	SCI-22	Water	31-MAY-96	04-JUN-96	07-JUN-96	14.	mg/L	5	TR	28061
125822-013	SCI-27	Water	03-JUN-96	04-JUN-96	07-JUN-96	ND	mg/L	5	TR	28061
125822-014	SCI-30	Water	03-JUN-96	04-JUN-96	07-JUN-96	ND	mg/L	5	TR	28061

ND = Not Detected at or above Reporting Limit (RL).

Q C B a t c h R e p o r t

Client: Subsurface Consultants
 Project Name: KOT
 Project Number: 133.005

Laboratory Login Number: 125822
 Report Date: 19 June 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 28061

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	07-JUN-96

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	95%	SMWW 17:5520BF	07-JUN-96
BSD	88%	SMWW 17:5520BF	07-JUN-96

		Control Limits
Average Spike Recovery	92%	80% - 120%
Relative Percent Difference	7.1%	< 20%

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

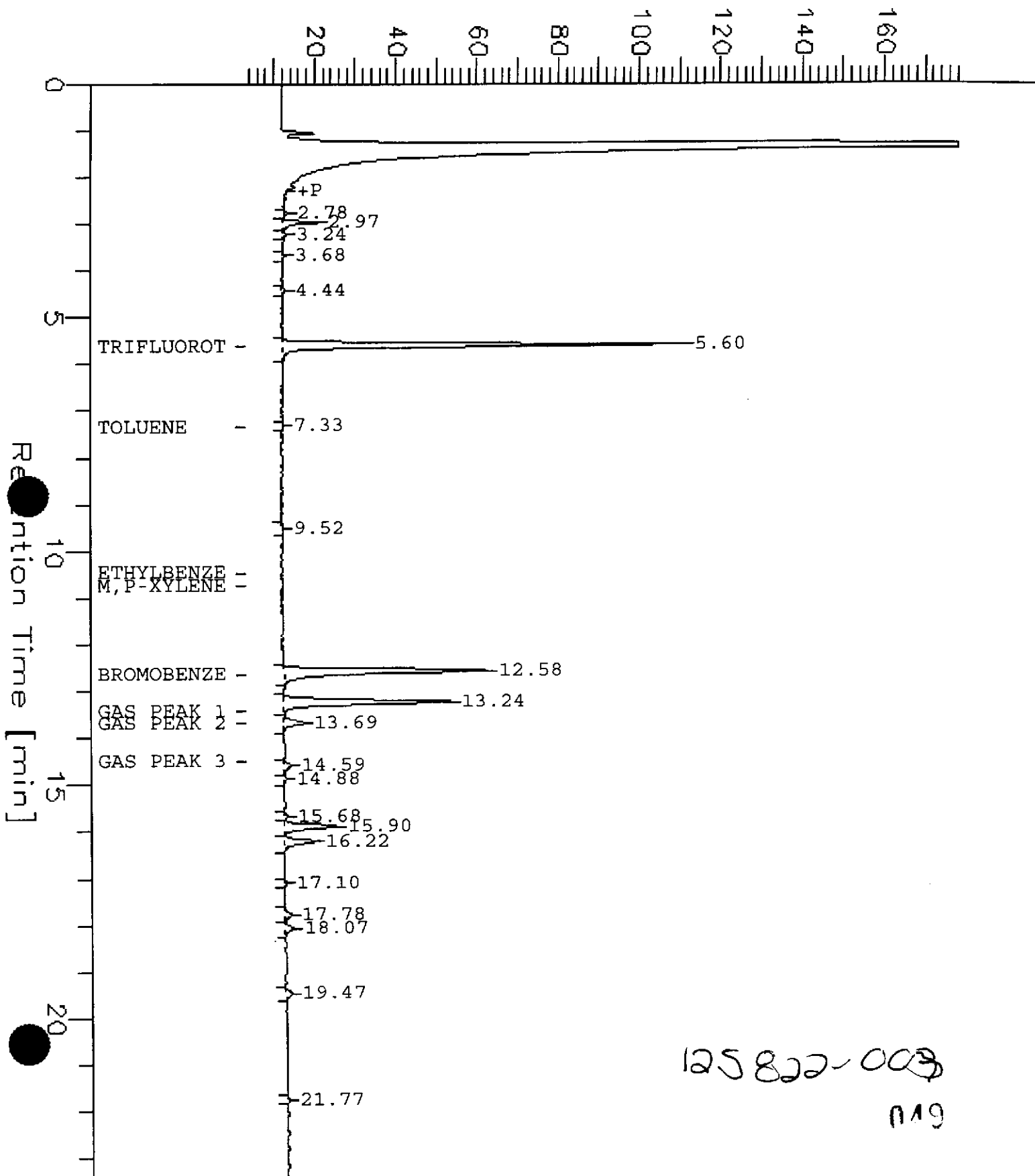
Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125822-001	SCI-21	28009	05/31/96	06/05/96	06/05/96	
125822-003	SCI-22	28009	05/31/96	06/05/96	06/05/96	
125822-005	SCI-23	28009	05/31/96	06/05/96	06/05/96	
125822-007	SCI-24	28030	05/31/96	06/07/96	06/07/96	

Matrix: Water

Analyte	Units	125822-001	125822-003	125822-005	125822-007
Diln Fac:		1	1	10	1
Gasoline	ug/L	<50	170 Z	1600 YH	<50
Surrogate					
Trifluorotoluene	%REC	89	85	85	86
Bromobenzene	%REC	70	75	80	77

Y: Sample exhibits fuel pattern which does not resemble standard
 Z: Sample exhibits unknown single peak or peaks
 H: Heavier hydrocarbons than indicated standard

Response [mV]



125822-003

019

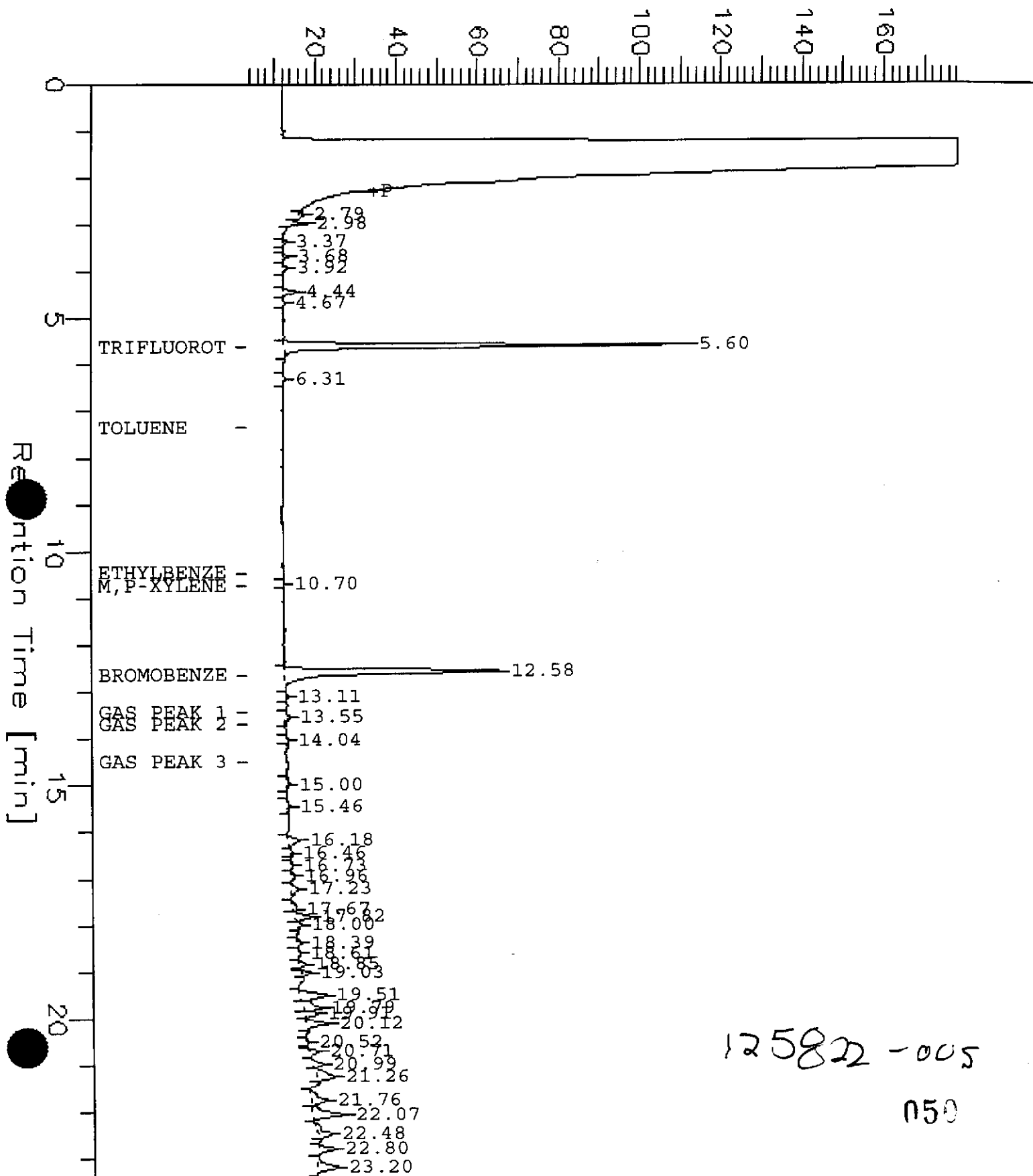
FileName : G:\GC05\157H012.raw
Start Time : 0.00 min
Scale Factor: -1

End Time : 23.42 min
Plot Offset: 3 mV

Date : 6/5/96 8:27 PM
Low Point : 3.37 mV
Plot Scale: 175 mV

Page 1 of 1
High Point : 178.37 mV

Response [mV]



125822-005

050



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125822-009	SCI-25	28009	05/31/96	06/06/96	06/06/96	
125822-013	SCI-27	28009	06/03/96	06/10/96	06/10/96	
125822-014	SCI-30	28030	06/03/96	06/07/96	06/07/96	
125822-016	SCI-31	28009	06/03/96	06/06/96	06/06/96	

Matrix: Water

Analyte	Units	125822-009	125822-013	125822-014	125822-016
Diln Fac:		20	1	1	2
Gasoline	ug/L	2700 YH	<50	<50	110 Y
Surrogate					
Trifluorotoluene	%REC	84	86	84	85
Bromobenzene	%REC	79	78	74	75

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

051

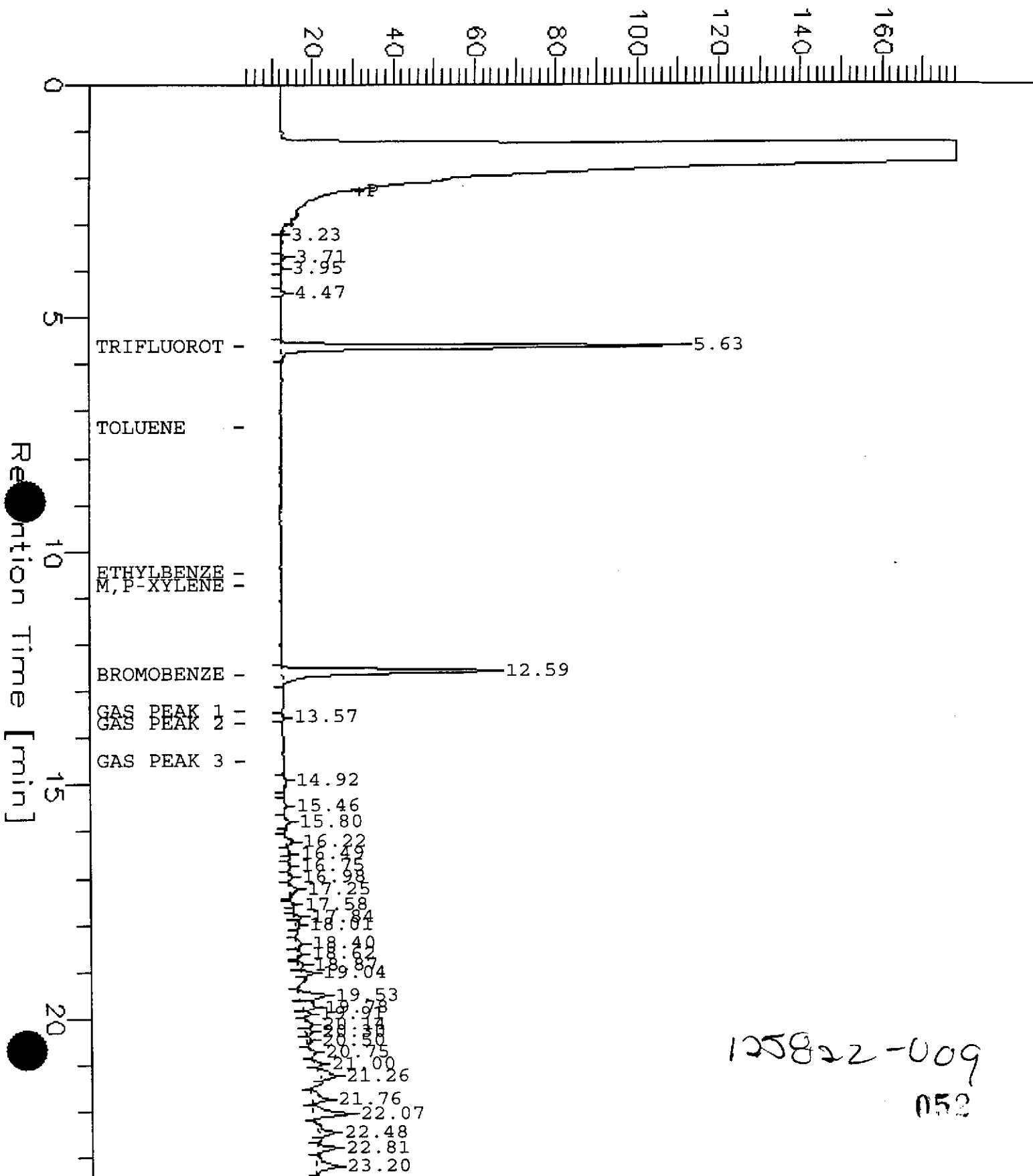
FileName : G:\GC05\157H019.raw
 Start Time : 0.00 min
 Scale Factor: -1

End Time : 23.42 min
 Plot Offset: 4 mV

Date : 6/6/96 1:00 AM
 Low Point : 3.51 mV
 Plot Scale: 175 mV

Page 1 of 1
 High Point : 178.51 mV

Response [mV]



125822-009
 052



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125822-002	SCI-22 @3.5	28076	05/31/96	06/10/96	06/10/96	
125822-004	SCI-23 @6.5	28076	05/31/96	06/10/96	06/10/96	
125822-006	SCI-24 @4.5	28076	05/31/96	06/10/96	06/10/96	
125822-008	SCI-25 @6	28086	05/31/96	06/10/96	06/10/96	

Matrix: Soil

Analyte	Units	125822-002	125822-004	125822-006	125822-008
Diln Fac:		1	1	1	1
Gasoline	mg/Kg	<1	<1	<1	24 YH
Surrogate					
Trifluorotoluene	%REC	93	95	94	83
Bromobenzene	%REC	83	89	86	78

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

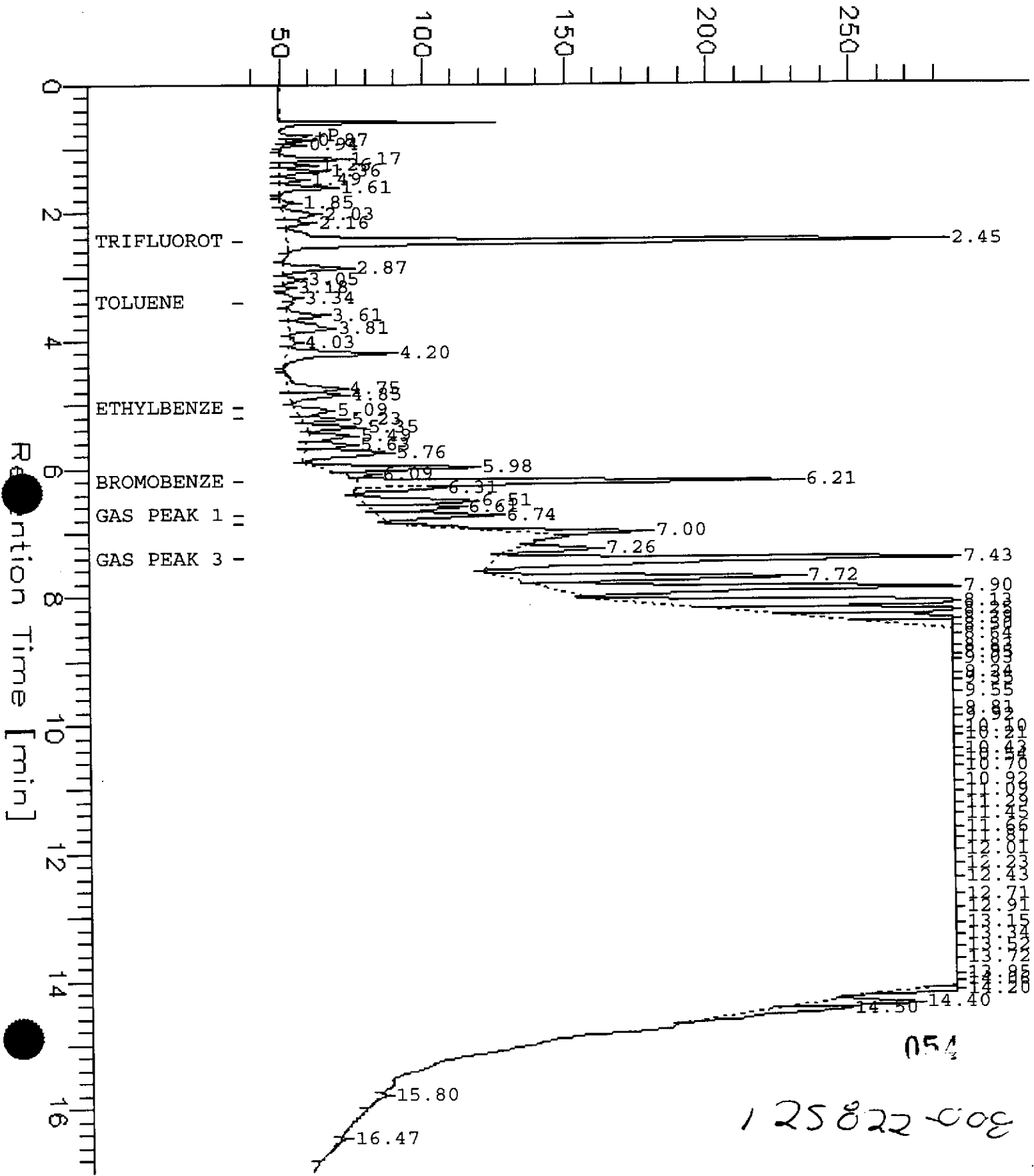
FileName : G:\GC04\162J006.raw
Start Time : 0.00 min
Scale Factor: -1

End Time : 17.00 min
Plot Offset: 37 mV

Date : 6/10/96 3:34 PM
Low Point : 36.98 mV
Plot Scale: 250 mV

Page 1 of 1
High Point : 286.98 mV

Response [mV]





TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125822-010	SCI-26 @3.5	28076	05/31/96	06/10/96	06/10/96	
125822-015	SCI-31 @4.0	28076	06/03/96	06/10/96	06/10/96	

Matrix: Soil

Analyte	Units	125822-010	125822-015
Diln Fac:		1	1
Gasoline	mg/Kg	<1	<1
Surrogate			
Trifluorotoluene	%REC	96	94
Bromobenzene	%REC	90	84



Lab #: 125822

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 28009
Units: ug/L
Diln Fac: 1

Prep Date: 06/05/96
Analysis Date: 06/05/96

MB Lab ID: QC23428

Analyte	Result		
Gasoline	<50		
Surrogate	%Rec	Recovery Limits	
Trifluorotoluene	89	69-120	
Bromobenzene	79	70-122	

050



Lab #: 125822

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 28030
Units: ug/L
Diln Fac: 1

Prep Date: 06/06/96
Analysis Date: 06/06/96

MB Lab ID: QC23528

Analyte	Result		
Gasoline	<50		
Surrogate	%Rec	Recovery Limits	
Trifluorotoluene	84	69-120	
Bromobenzene	72	70-122	



Lab #: 125822

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

METHOD BLANK

Matrix: Soil
Batch#: 28076
Units: mg/Kg
Diln Fac: 1

Prep Date: 06/09/96
Analysis Date: 06/09/96

MB Lab ID: QC23732

Analyte	Result	
Gasoline	<1.0	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	93	52-127
Bromobenzene	80	45-140

058



Lab #: 125822

BATCH QC REPORT

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TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

METHOD BLANK

Matrix: Soil
Batch#: 28086
Units: mg/Kg
Diln Fac: 1

Prep Date: 06/10/96
Analysis Date: 06/10/96

MB Lab ID: QC23791

Analyte	Result		
Gasoline	<1.0		
Surrogate	%Rec	Recovery Limits	
Trifluorotoluene	103	52-127	
Bromobenzene	106	45-140	

059



Lab #: 125822

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 28009
Units: ug/L
Diln Fac: 1

Prep Date: 06/05/96
Analysis Date: 06/05/96

LCS Lab ID: QC23429

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	1964	2000	98	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	93	69-120		
Bromobenzene	97	70-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 125822

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 28030
Units: ug/L
Diln Fac: 1

Prep Date: 06/06/96
Analysis Date: 06/06/96

LCS Lab ID: QC23529

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	1825	2000	91	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	80	69-120		
Bromobenzene	83	70-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 125822

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil
Batch#: 28076
Units: mg/Kg
Diln Fac: 1

Prep Date: 06/09/96
Analysis Date: 06/09/96

LCS Lab ID: QC23733

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	10.73	10	107	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	98	52-127		
Bromobenzene	102	45-140		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 125822

BATCH QC REPORT

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TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil
 Batch#: 28086
 Units: mg/Kg
 Diln Fac: 1

Prep Date: 06/10/96
 Analysis Date: 06/10/96

LCS Lab ID: QC23789

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	9.13	10	91	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	93	52-127		
Bromobenzene	96	45-140		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

063



Lab #: 125822

BATCH QC REPORT

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TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125790-001
 Matrix: Water
 Batch#: 28009
 Units: ug/L
 Diln Fac: 1

Sample Date: 05/30/96
 Received Date: 06/03/96
 Prep Date: 06/05/96
 Analysis Date: 06/05/96

MS Lab ID: QC23431

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	2000	247.2	2163	96	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	92	69-120			
Bromobenzene	99	70-122			

MSD Lab ID: QC23432

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	2000	2182	97	75-125	1	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	90	69-120				
Bromobenzene	98	70-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

064



Lab #: 125822

BATCH QC REPORT

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TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125837-003
 Matrix: Water
 Batch#: 28030
 Units: ug/L
 Diln Fac: 1

Sample Date: 05/23/96
 Received Date: 06/05/96
 Prep Date: 06/06/96
 Analysis Date: 06/06/96

MS Lab ID: QC23531

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	2000	<50.00	2263	113	75-125
Surrogate	%Rec	Limits			
Trifluorotoluene	91	69-120			
Bromobenzene	95	70-122			

MSD Lab ID: QC23532

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	2000	2178	109	75-125	4	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	92	69-120				
Bromobenzene	95	70-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

065



Lab #: 125822

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ	Sample Date: 06/07/96
Lab ID: 125877-003	Received Date: 06/07/96
Matrix: Soil	Prep Date: 06/09/96
Batch#: 28076	Analysis Date: 06/09/96
Units: mg/Kg	
Diln Fac: 1	

MS Lab ID: QC23735

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	10	<1.000	10.02	100	65-135
Surrogate	%Rec	Limits			
Trifluorotoluene	98	52-127			
Bromobenzene	101	45-140			

MSD Lab ID: QC23736

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	10	10.06	101	65-135	0	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	101	52-127				
Bromobenzene	105	45-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



Lab #: 125822

BATCH QC REPORT

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TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125877-004
 Matrix: Soil
 Batch#: 28086
 Units: mg/Kg
 Diln Fac: 1

Sample Date: 06/06/96
 Received Date: 06/07/96
 Prep Date: 06/10/96
 Analysis Date: 06/10/96

MS Lab ID: QC23845

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	10	1.12	10.69	96	65-135
Surrogate	%Rec	Limits			
Trifluorotoluene	92	52-127			
Bromobenzene	96	45-140			

MSD Lab ID: QC23846

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	10	10.56	94	65-135	1	<20
Surrogate	%Rec	Limits				
Trifluorotoluene	87	52-127				
Bromobenzene	90	45-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

067



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125822-001	SCI-21	28044	05/31/96	06/06/96	06/08/96	
125822-003	SCI-22	28044	05/31/96	06/06/96	06/08/96	
125822-005	SCI-23	28044	05/31/96	06/06/96	06/10/96	
125822-007	SCI-24	28044	05/31/96	06/06/96	06/08/96	

Matrix: Water

Analyte	Units	125822-001	125822-003	125822-005	125822-007
Diln Fac:		1	1	20	1
Diesel C12-C22	ug/L	440 YH	13000 YLH	350000	1100 YLH
Motor Oil C22-C50	ug/L	2200 Y	9100 YL	8300 YL	750 YL
Surrogate					
Hexacosane	%REC	73	79	DO	86

DO: Surrogate diluted out

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

L: Lighter hydrocarbons than indicated standard

GC15 Channel B Surrogate

Sample Name : S,125822-001,28044

FileName : C:\GC15\CHB\159B042.raw

Method : DUAL

Start Time : 0.00 min

Scale Factor: 0.0

End Time : 31.90 min

Plot Offset: 32 mV

Sample #: 500:2.5

Date : 6/8/96 07:26 PM

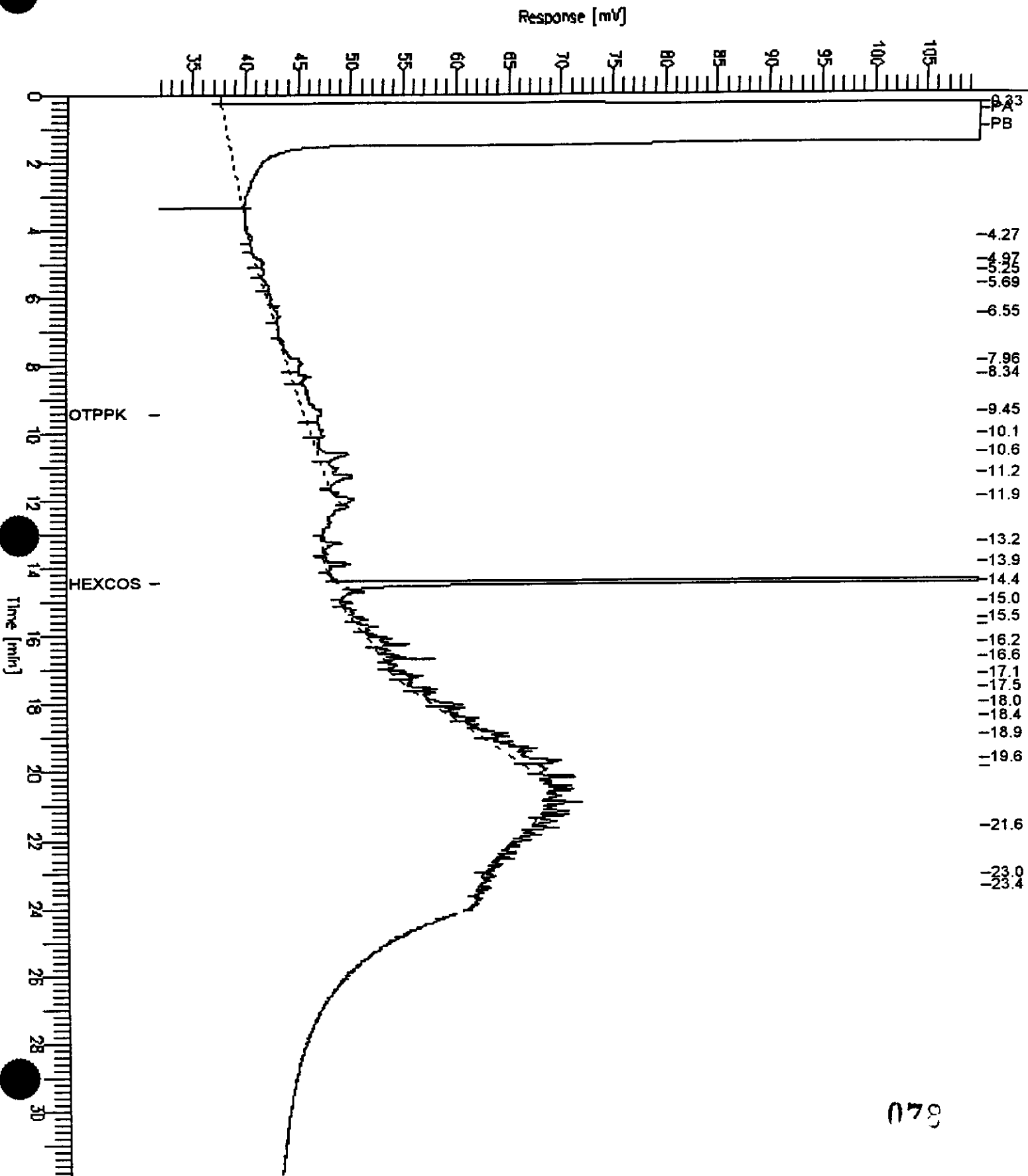
Time of Injection: 6/8/96 06:54 PM

Low Point : 32.00 mV

Plot Scale: 78.0 mV

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High Point : 110.00 mV



078

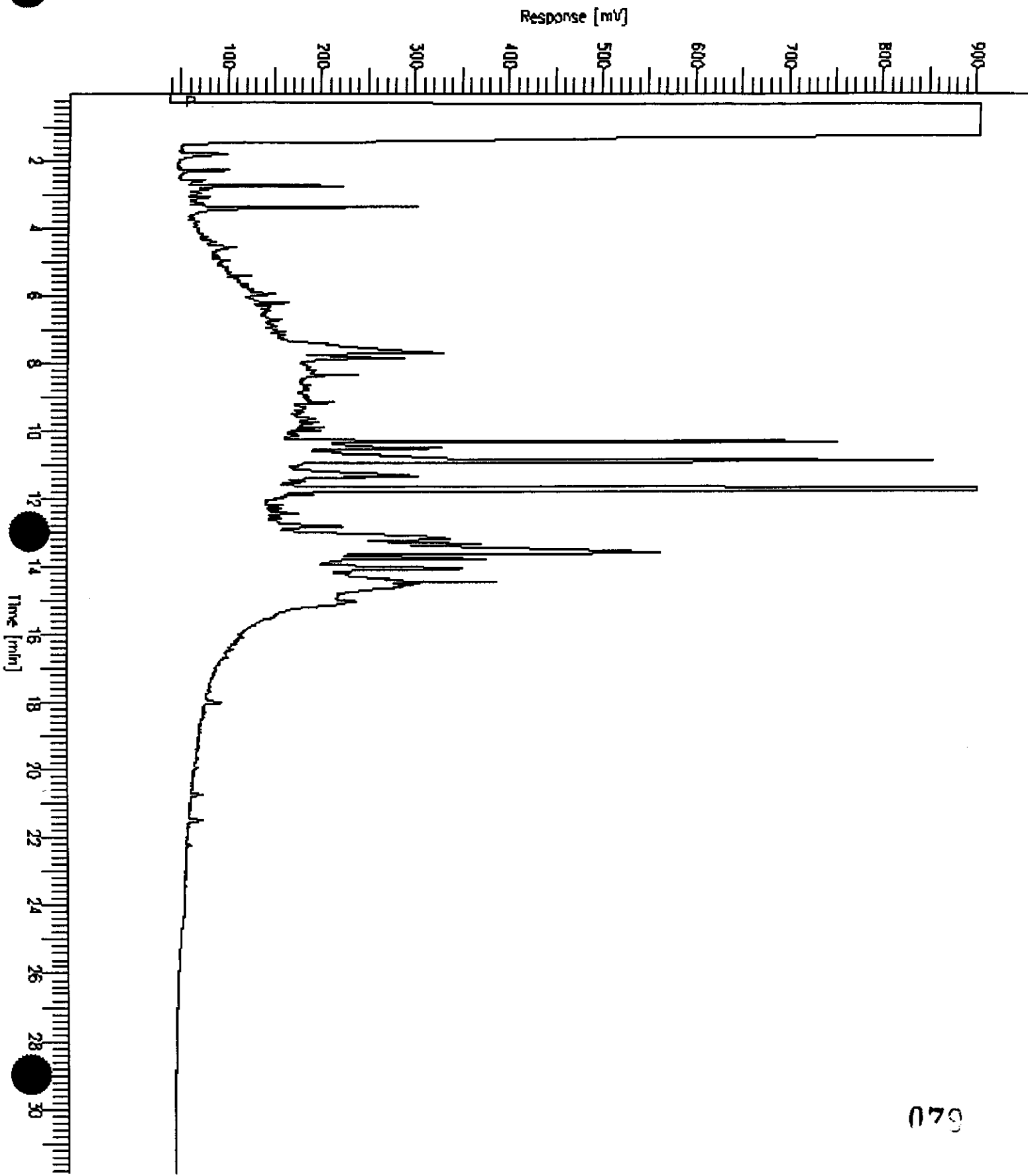
GC15 Channel A TEH

Sample Name : S,125822-003,28044
FileName : C:\GC15\CHB\159B043.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: 31 mV

Sample #: 500:2.5
Date : 6/10/96 11:05 AM
Time of Injection: 6/8/96 07:38 PM
Low Point : 31.09 mV
High Point : 905.15 mV
Plot Scale: 874.1 mV

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079

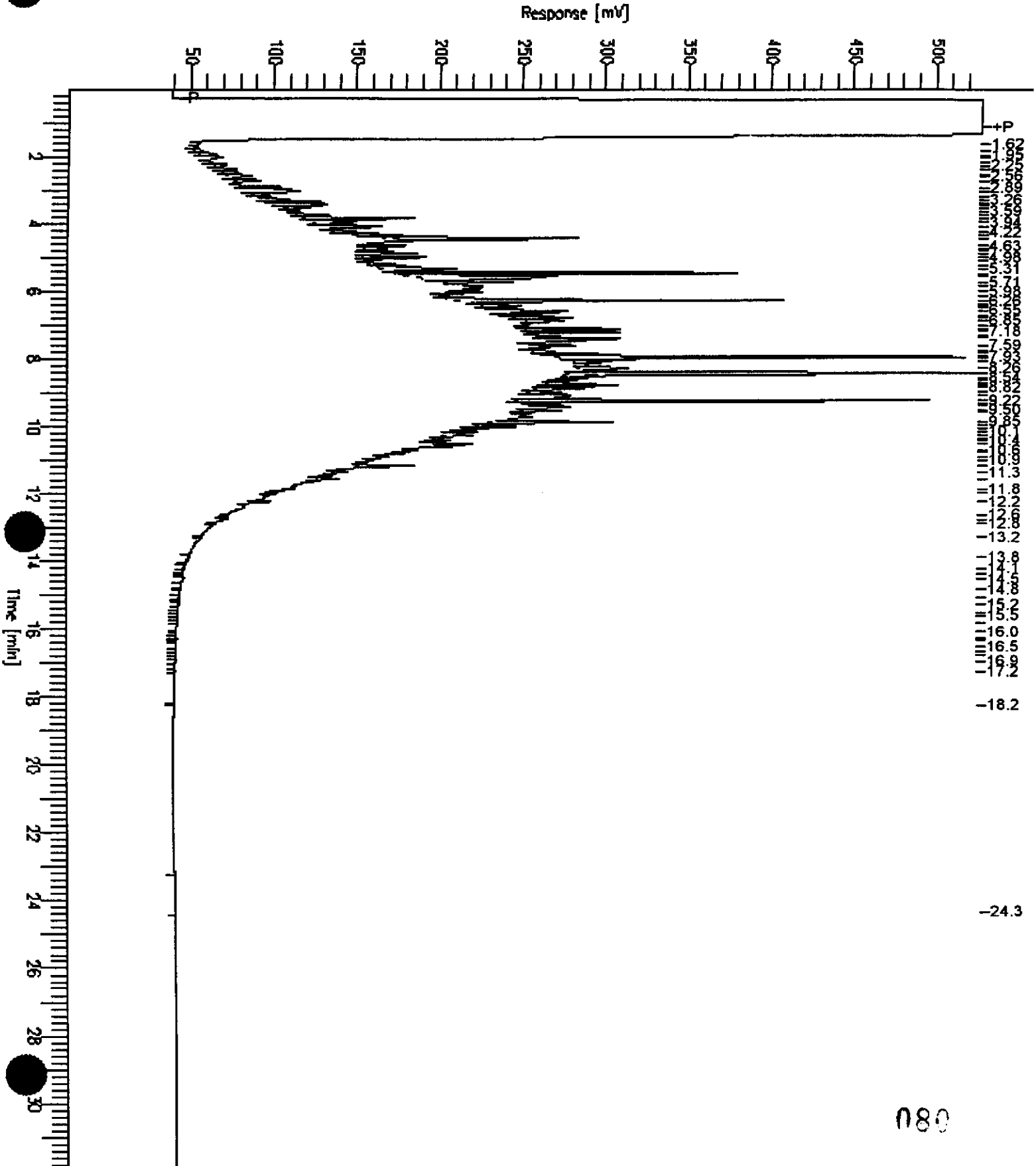
GC15 Channel A TEH

Sample Name : S,125822-005,28044
FileName : C:\GC15\CHB\162B018.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: 33 mV

Sample #: 500:50
Date : 6/11/96 11:43 AM
Time of Injection: 6/10/96 07:42 PM
Low Point : 32.55 mV
High Point : 528.52 mV
Plot Scale: 496.0 mV

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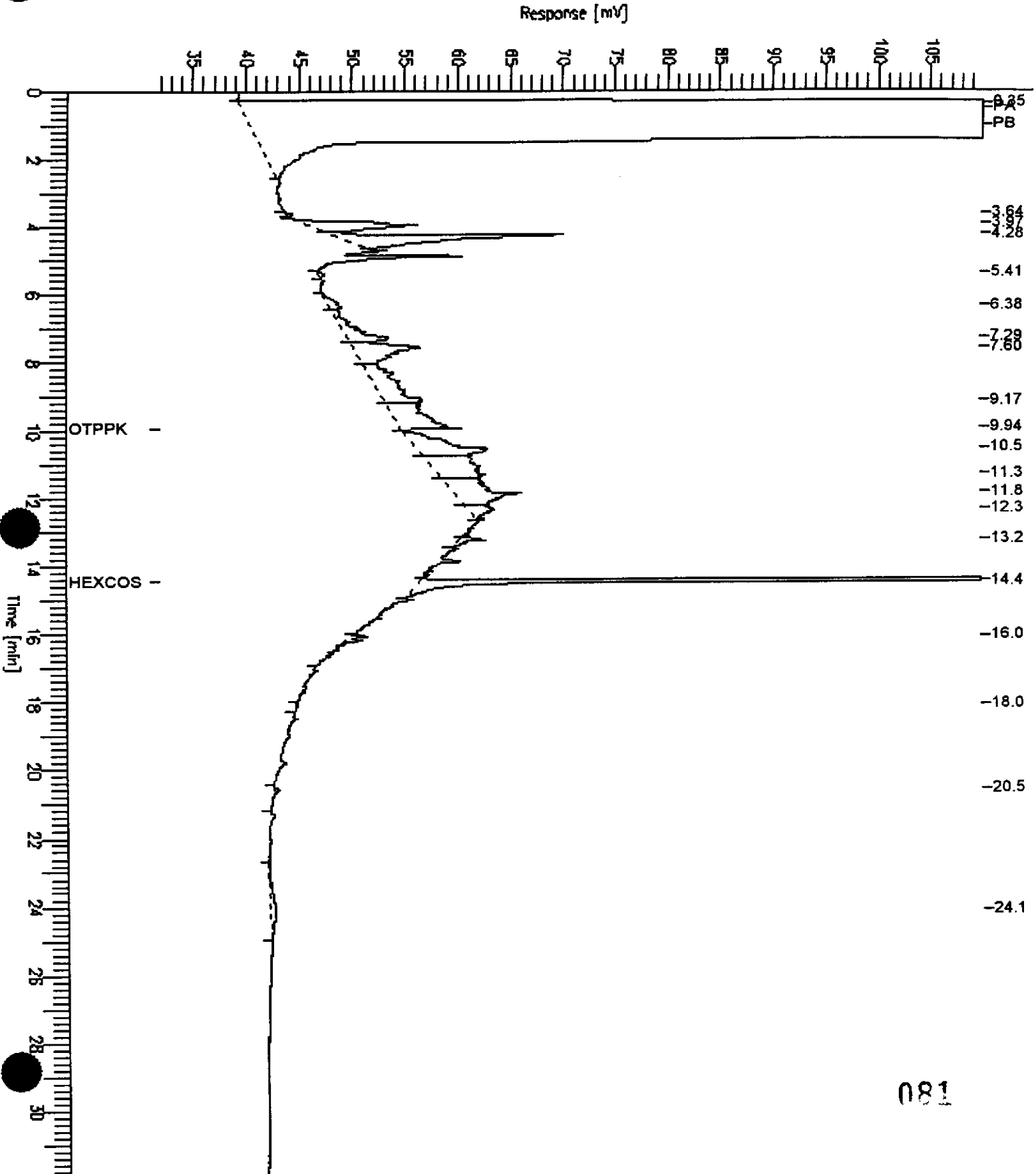


GC15 Channel B Surrogate

Sample Name : S,125822-007,28044
FileName : C:\GC15\CHB\159B027.raw
Method : DUAL
Start Time : 0.00 min
End Time : 31.90 min
Plot Offset: 32 mV
Gain Factor: 0.0

Sample #: 500:2.5
Date : 6/8/96 09:53 AM
Time of Injection: 6/8/96 09:20 AM
Low Point : 32.00 mV
High Point : 110.00 mV
Plot Scale: 78.0 mV

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081



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125822-009	SCI-25	28044	05/31/96	06/06/96	06/10/96	
125822-011	SCI-26	28130	05/31/96	06/11/96	06/13/96	
125822-013	SCI-27	28130	06/03/96	06/11/96	06/13/96	
125822-014	SCI-30	28130	06/03/96	06/11/96	06/13/96	

Matrix: Water

Analyte	Units	125822-009	125822-011	125822-013	125822-014
Diln Fac:		20	1	1	1
Diesel C12-C22	ug/L	210000	520 YH	240 Z	1500 YH
Motor Oil C22-C50	ug/L	6200 YL	<250	<250	3300
Surrogate					
Hexacosane	%REC	DO	94	112	98

DO: Surrogate diluted out

Y: Sample exhibits fuel pattern which does not resemble standard

Z: Sample exhibits unknown single peak or peaks

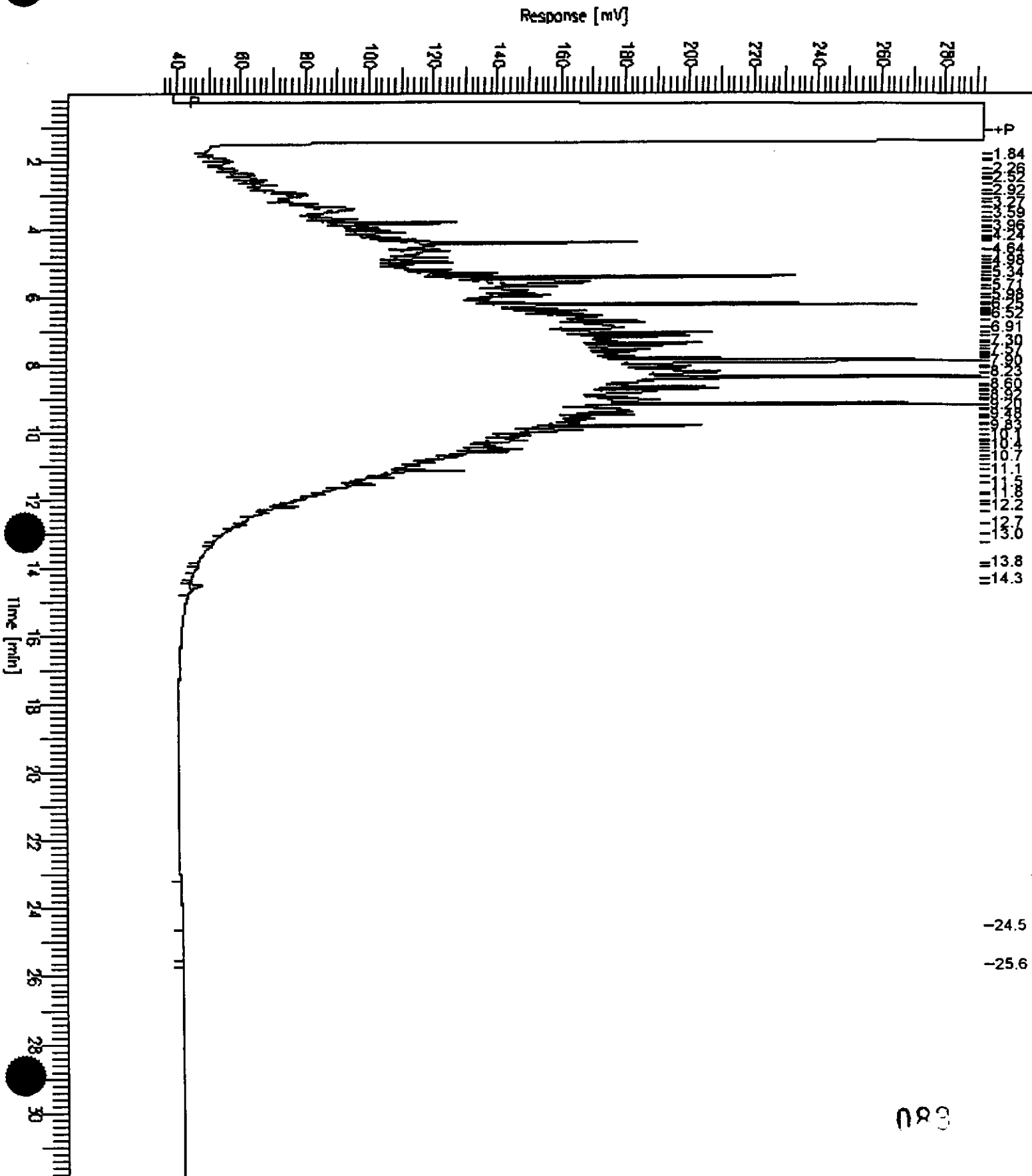
H: Heavier hydrocarbons than indicated standard

L: Lighter hydrocarbons than indicated standard

GC15 Channel A TEH

Sample Name : S,125822-009,28044
 FileName : C:\GC15\CHB\162B019.RAW
 Method : BTEHJ.MTH
 Start Time : 0.01 min
 Scale Factor: 0.0

Sample #: 500:50
 Date : 6/11/96 11:45 AM
 Time of Injection: 6/10/96 08:28 PM
 Low Point : 35.01 mV
 High Point : 292.23 mV
 End Time : 31.91 min
 Plot Offset: 35 mV
 Plot Scale: 257.2 mV



GC15 Channel A TEH

Sample Name : S,125822-011,28130

FileName : C:\GC15\CHB\164B026.RAW

Method : BTEHJ.MTH

Start Time : 0.01 min

Scale Factor: 0.0

Sample #: 500:2.5

Date : 6/13/96 11:19 AM

Time of Injection: 6/13/96 10:15 AM

Low Point : 40.08 mV

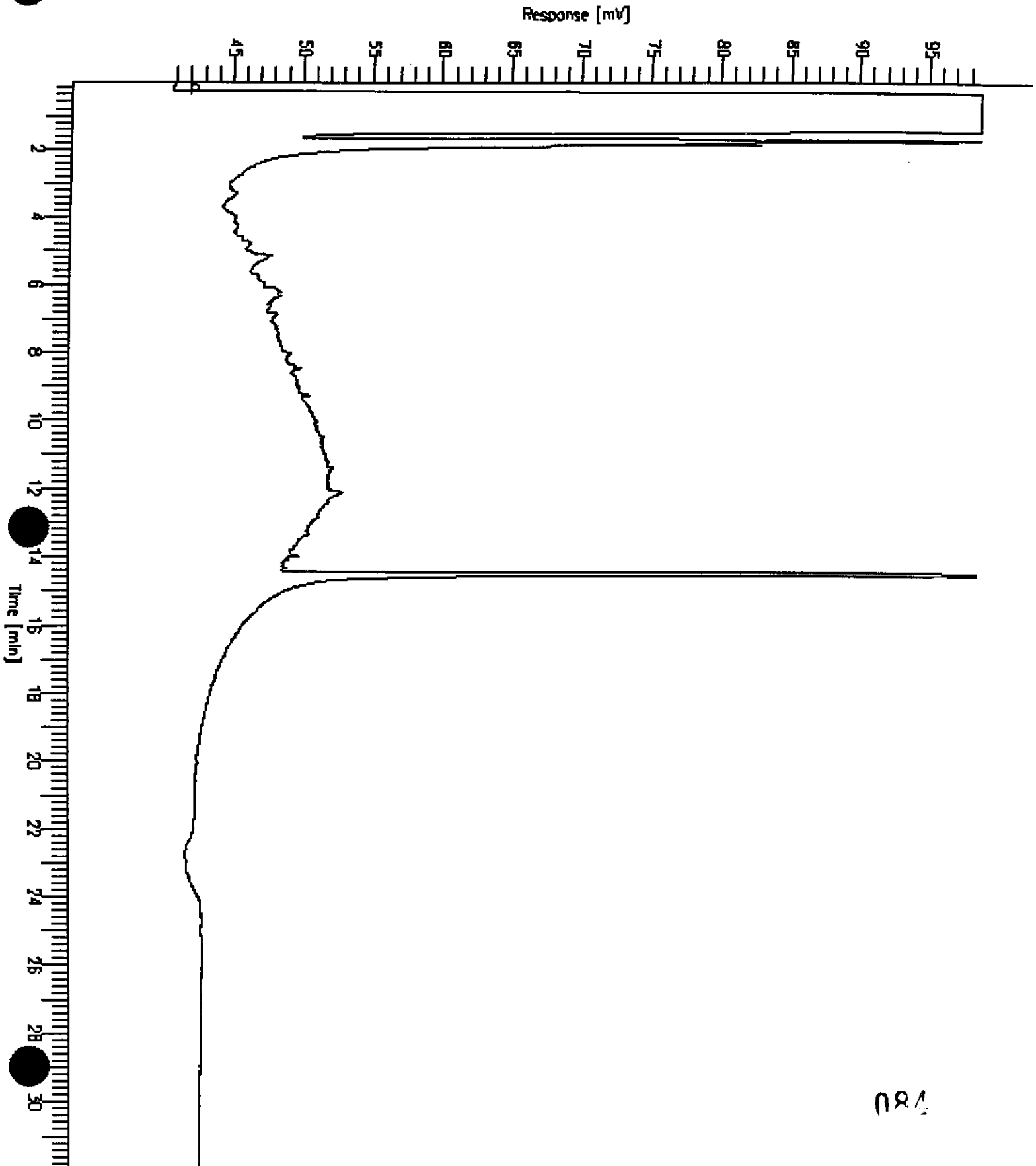
Plot Scale: 58.7 mV

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High Point : 98.79 mV

End Time : 31.91 min

Plot Offset: 40 mV



024

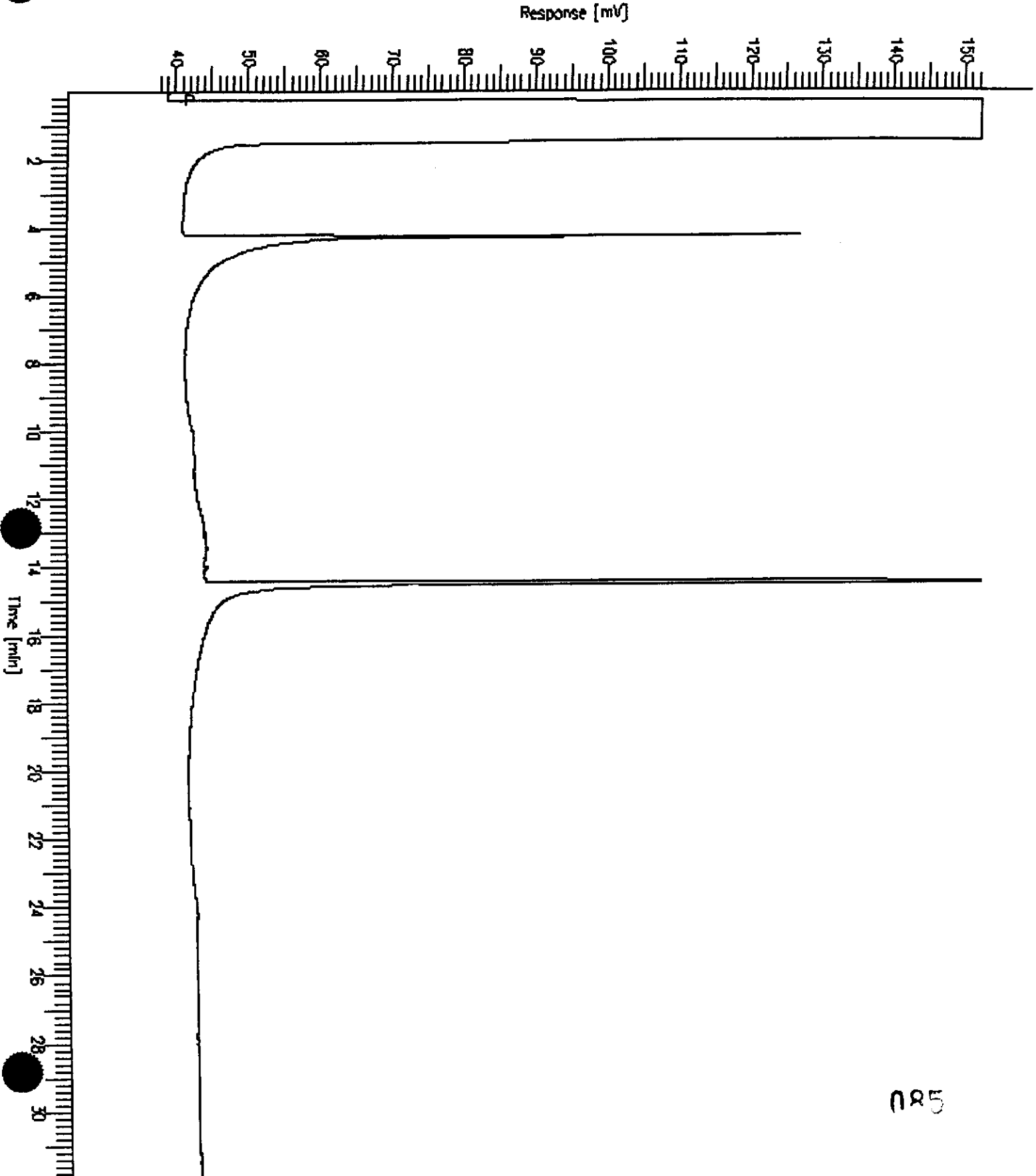
GC15 Channel A TEH

Sample Name : S,125822-013,28130
FileName : C:\GC15\CHB\1648027.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min
Gain Factor: 0.0

End Time : 31.91 min
Plot Offset: 38 mV

Sample #: 500:2.5
Date : 6/13/96 11:55 AM
Time of Injection: 6/13/96 10:59 AM
Low Point : 37.94 mV
High Point : 152.37 mV
Plot Scale: 114.4 mV

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085

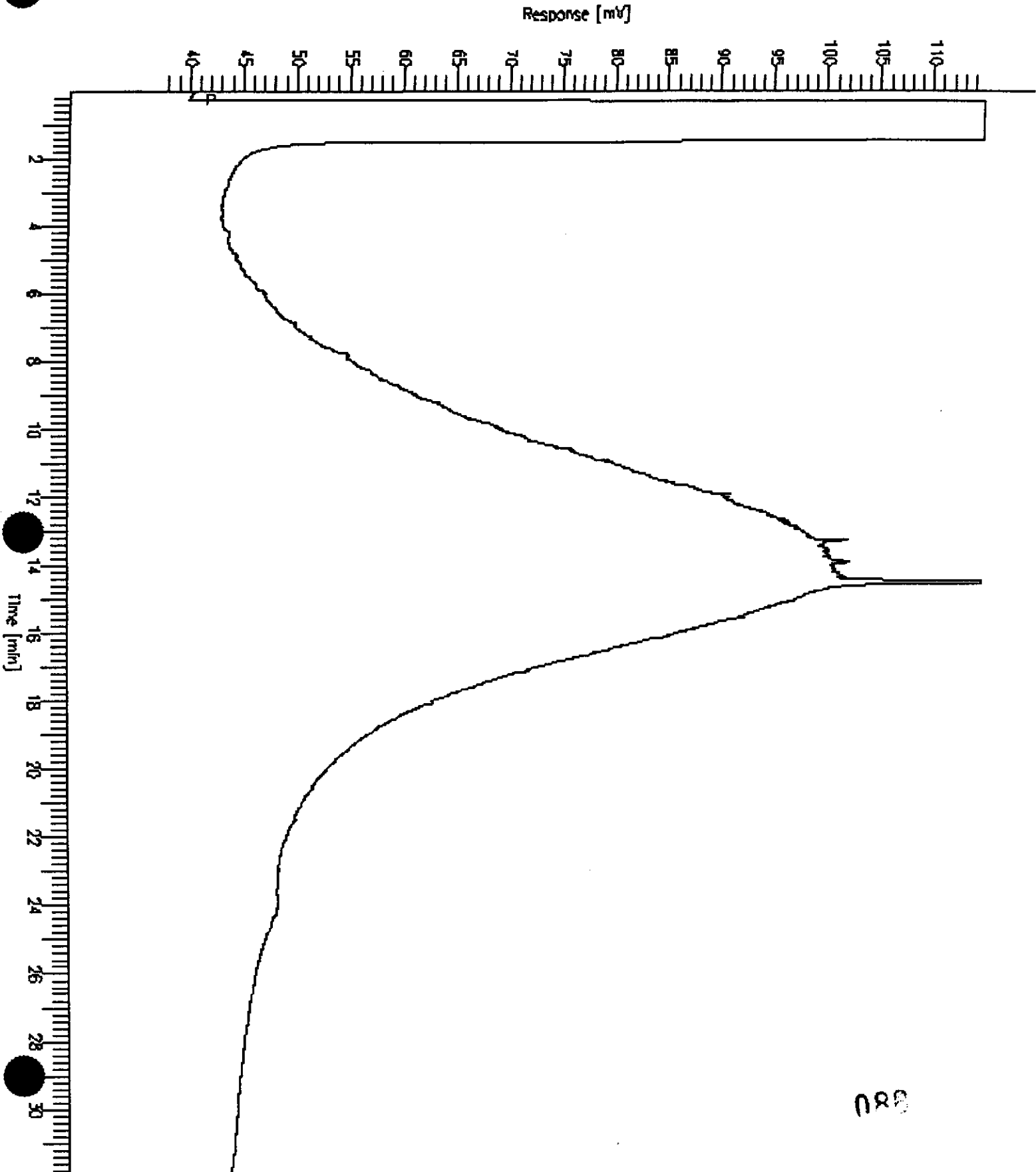
GC15 Channel A TEH

Sample Name : S,125822-014,28130
FileName : C:\GC15\CHBA\164B028.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: 37 mV

Sample #: 500:2.5
Date : 6/13/96 12:19 PM
Time of Injection: 6/13/96 11:43 AM
Low Point : 37.42 mV
High Point : 114.81 mV
Plot Scale: 77.4 mV

Page 1 of 1





TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125822-016	SCI-31	28130	06/03/96	06/11/96	06/13/96	

Matrix: Water

Analyte	Units	125822-016
Diln Fac:		1
Diesel C12-C22	ug/L	2300 YHZ
Motor Oil C22-C50	ug/L	2400
Surrogate		
Hexacosane	%REC	104

- Y: Sample exhibits fuel pattern which does not resemble standard
- Z: Sample exhibits unknown single peak or peaks
- H: Heavier hydrocarbons than indicated standard

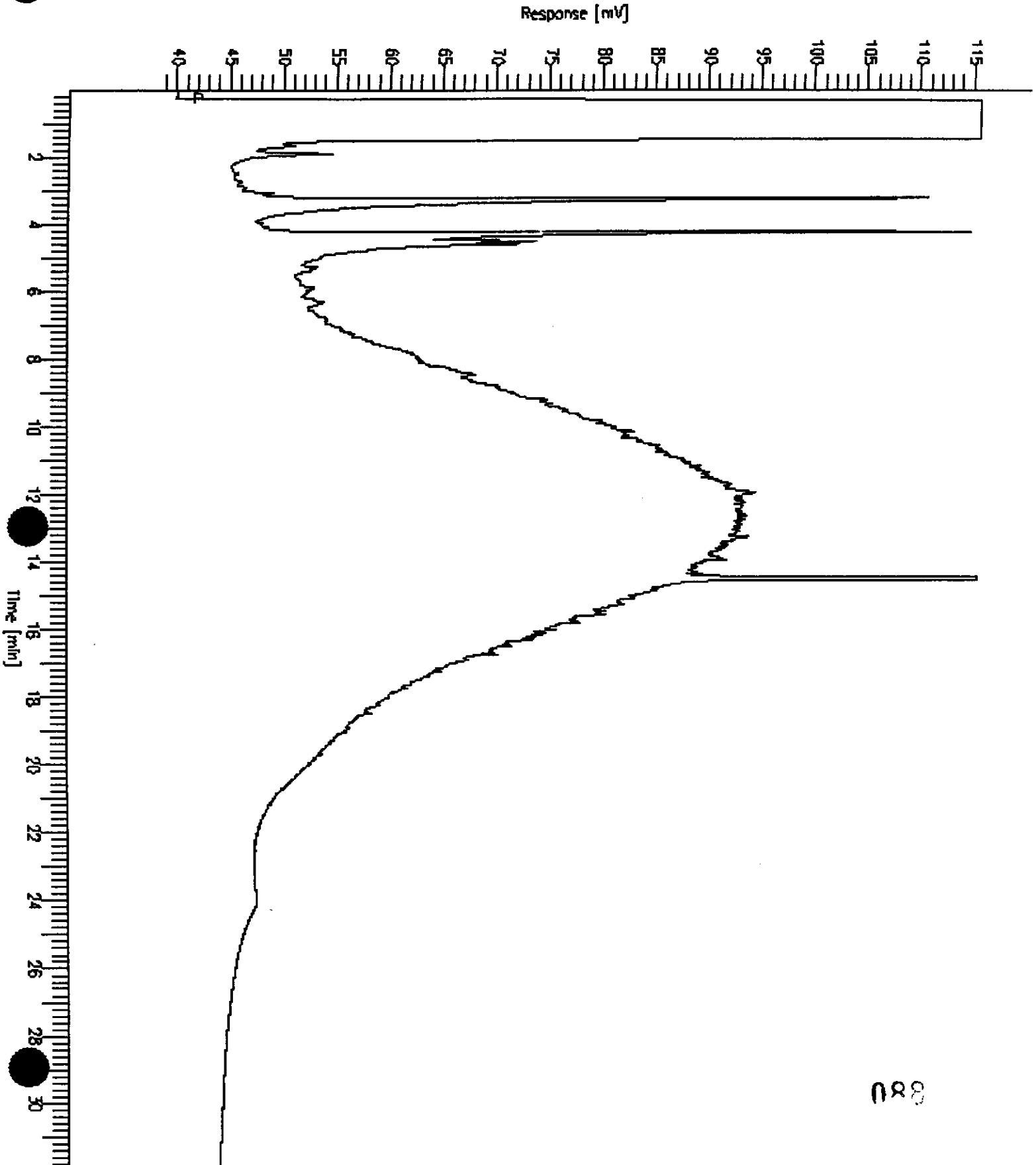
GC15 Channel A TEH

Sample Name : S,125822-016,28130
FileName : C:\GC15\CHB\164B029.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: 39 mV

Sample #: 500:2.5
Date : 6/13/96 01:03 PM
Time of Injection: 6/13/96 12:25 PM
Low Point : 38.62 mV
Pic. Scale: 77.1 mV
High Point : 115.73 mV

Page 1 of 1





Lab #: 125822

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 28044
Units: ug/L
Diln Fac: 1

Prep Date: 06/06/96
Analysis Date: 06/08/96

MB Lab ID: QC23586

Analyte	Result	
Diesel C12-C22	<50	
Motor Oil C22-C50	<250	
Surrogate	%Rec	Recovery Limits
Hexacosane	90	60-140

neg



Lab #: 125822

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 28130
Units: ug/L
Diln Fac: 1

Prep Date: 06/11/96
Analysis Date: 06/12/96

MB Lab ID: QC23979

Analyte	Result	
Diesel C12-C22	<50	
Motor Oil C22-C50	<250	
Surrogate	%Rec	Recovery Limits
Hexacosane	98	60-140



Lab #: 125822

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 28044
 Units: ug/L
 Diln Fac: 1

Prep Date: 06/06/96
 Analysis Date: 06/08/96

BS Lab ID: QC23587

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	1965	79	60-140
Surrogate	%Rec	Limits		
Hexacosane	82	60-140		

BSD Lab ID: QC23588

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2128	86	60-140	8	<35
Surrogate	%Rec	Limits				
Hexacosane	88	60-140				

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits
 RPD: 0 out of 1 outside limits
 Spike Recovery: 0 out of 2 outside limits

091



Lab #: 125822

BATCH QC REPORT

Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 28130
 Units: ug/L
 Diln Fac: 1

Prep Date: 06/11/96
 Analysis Date: 06/13/96

BS Lab ID: QC23980

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	1983	80	60-140
Surrogate	%Rec	Limits		
Hexacosane	98	60-140		

BSD Lab ID: QC23981

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2165	87	60-140	9	<35
Surrogate	%Rec	Limits				
Hexacosane	92	60-140				

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits
 RPD: 0 out of 1 outside limits
 Spike Recovery: 0 out of 2 outside limits

092



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: LUFT

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125822-002	SCI-22 @3.5	28003	05/31/96	06/05/96	06/11/96	
125822-004	SCI-23 @6.5	28003	05/31/96	06/05/96	06/11/96	
125822-006	SCI-24 @4.5	28003	05/31/96	06/05/96	06/07/96	
125822-008	SCI-25 @6	28003	05/31/96	06/05/96	06/11/96	

Matrix: Soil

Analyte	Units	125822-002	125822-004	125822-006	125822-008
Diln Fac:		5	20	1	30
Diesel C12-C22	mg/Kg	1000 H	790 YH	<1	2400
Motor Oil C22-C50	mg/Kg	810 YH	4800 YH	<5	<150
Surrogate					
Hexacosane	%REC	79	DO	81	DO

DO: Surrogate diluted out

Y: Sample exhibits fuel pattern which does not resemble standard

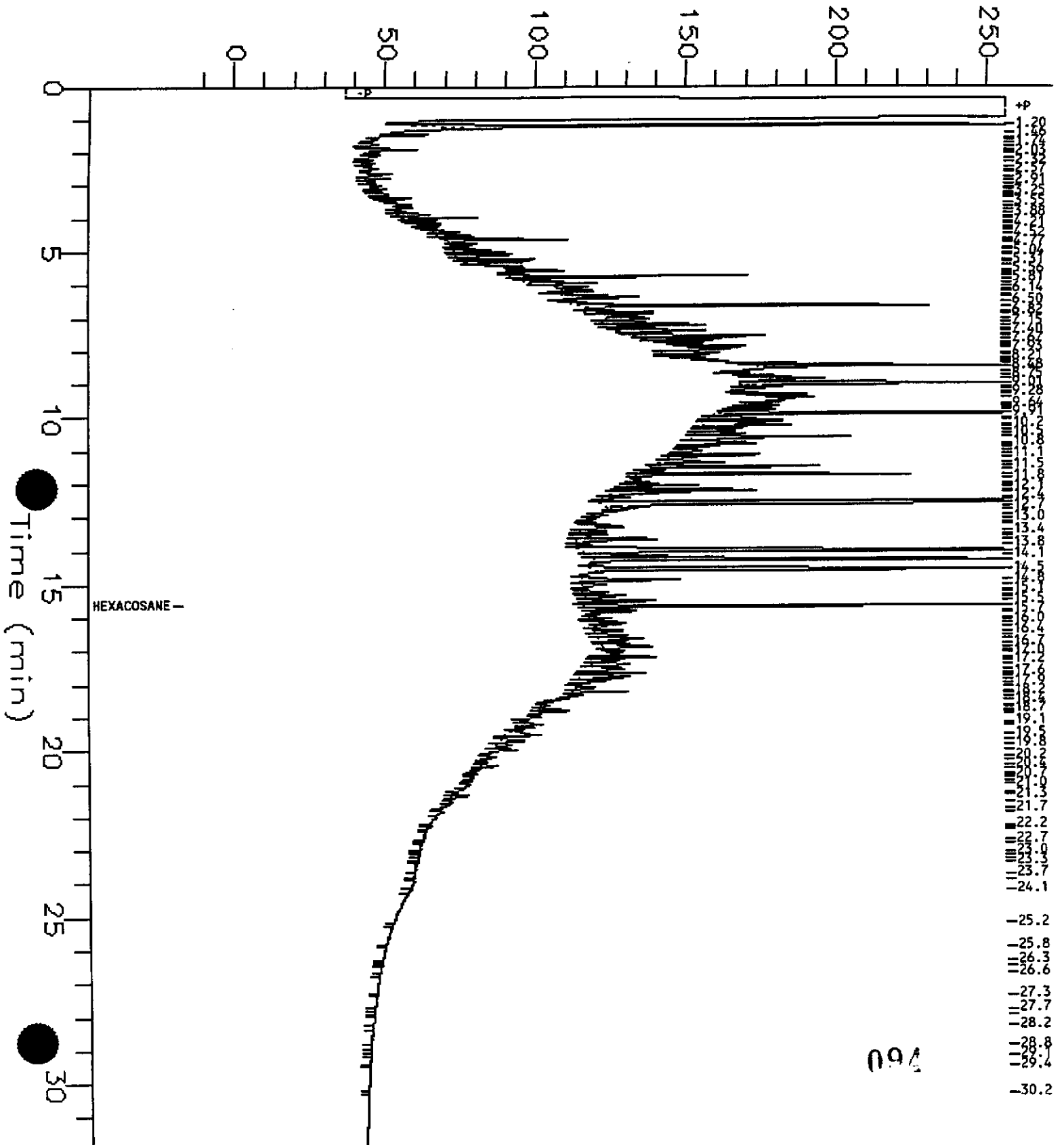
H: Heavier hydrocarbons than indicated standard

Sample Name : 125822-002,50:25
FileName : G:\GC11\CHB\162B044.raw
Method : DUL32BSL.ins
Start Time : 0.00 min
Scale Factor : 0

End Time : 31.92 min
Plot Offset: -16 mV

Sample #: 28003
Date : 6/11/96 09:44 AM
Time of Injection: 6/11/96 08:34 AM
Low Point : -16.39 mV
High Point : 256.44 mV
Plot Scale: 273 mV

Response (mV)



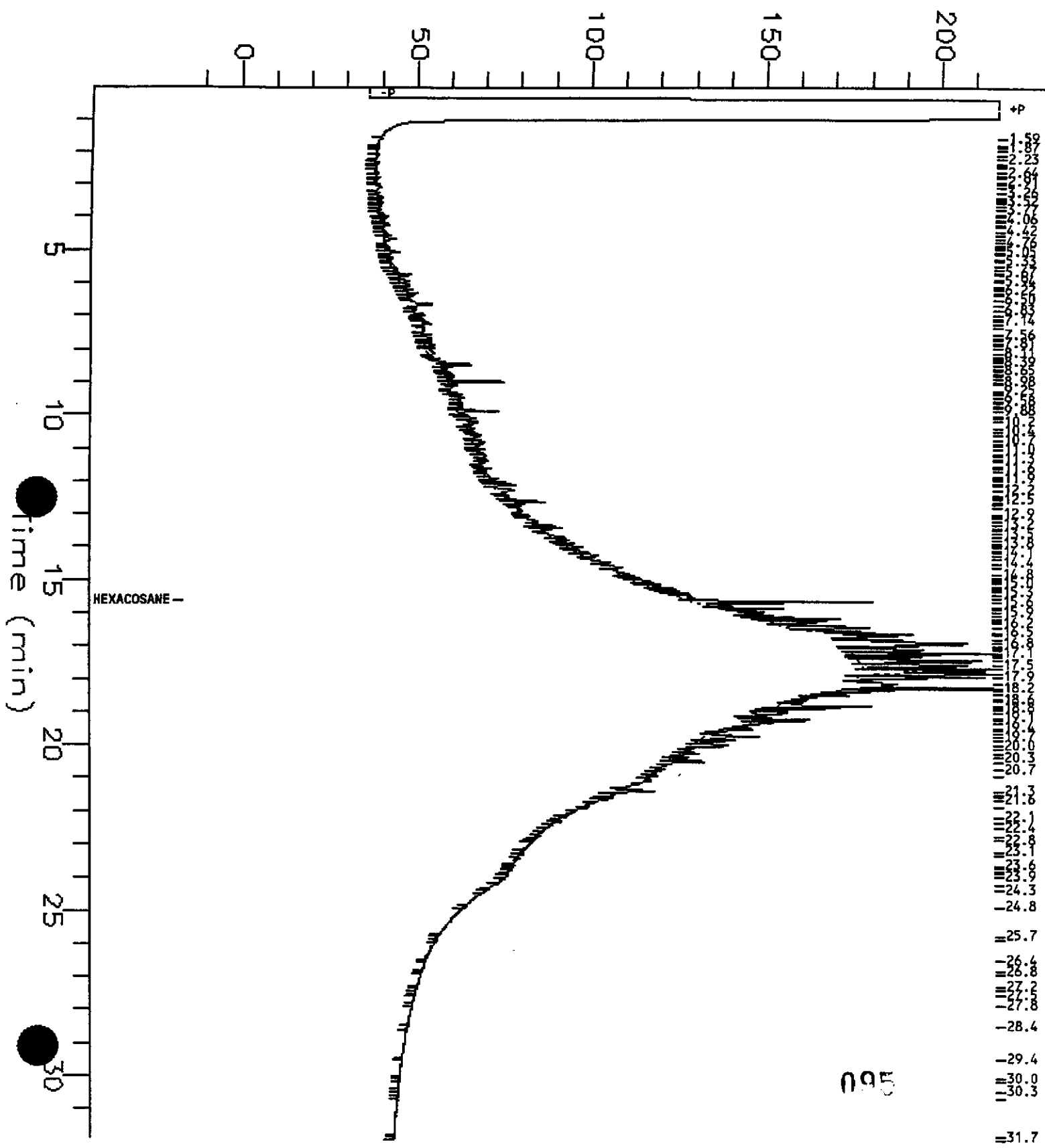
094

Sample Name : 125822-004_50:100
FileName : G:\GC11\CHB\162B045.raw
Method : DUL32BSL.ins
Start Time : 0.01 min
Scale Factor: 0

End Time : 31.92 min
Plot Offset: -16 mV

Sample #: 28003
Date : 6/11/96 10:23 AM
Time of Injection: 6/11/96 09:17 AM
Low Point : -15.58 mV
Plot Scale: 232 mV
Page 1 of 1
High Point : 216.40 mV

Response (mV)

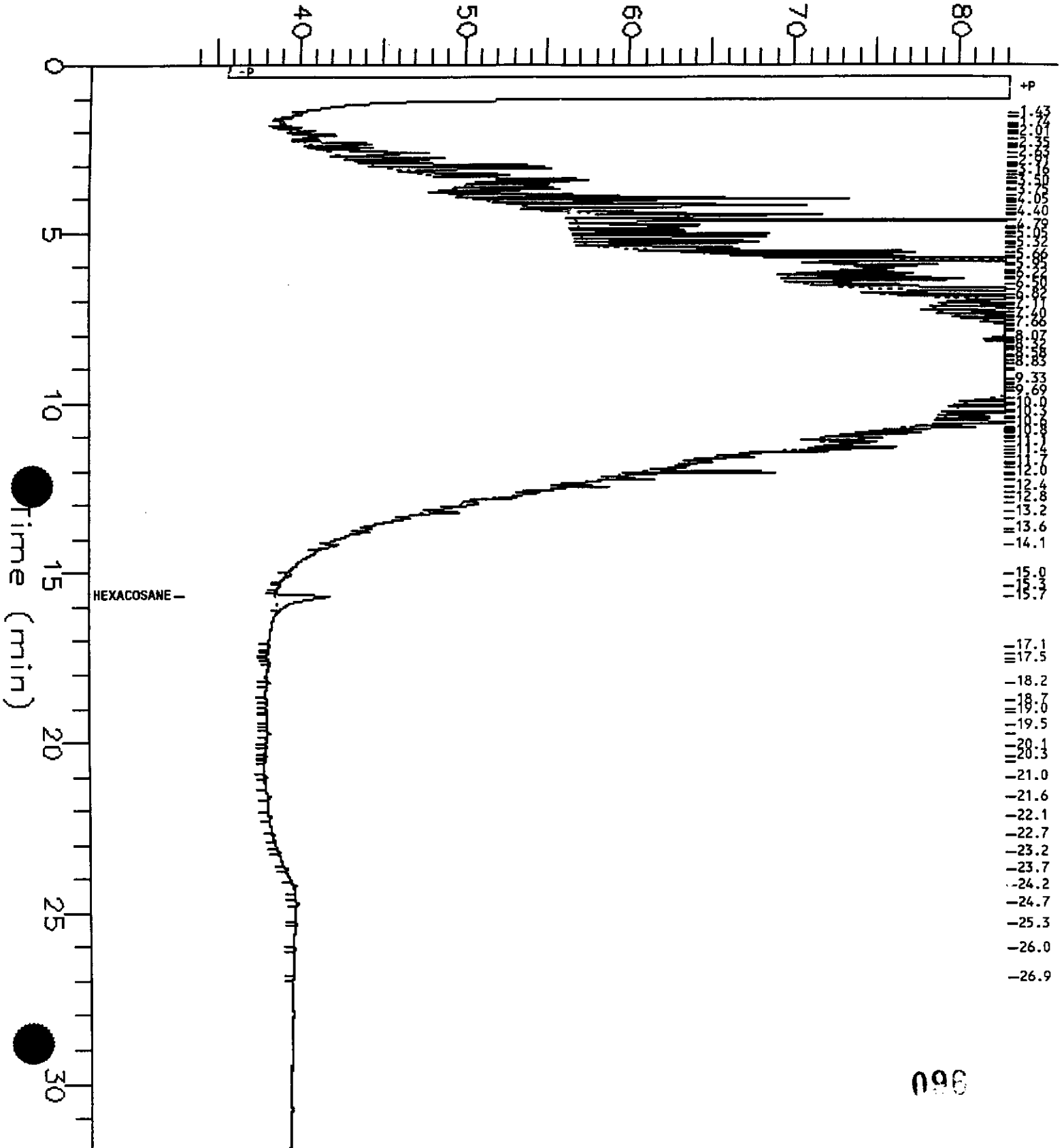


Sample Name : 125822-008,50:150
FileName : g:\gc11\chb\1628041.raw
Method : DUL32BSL.ins
Start Time : 0.00 min
Scale Factor: -1

End Time : 31.92 min
Plot Offset: 33 mV

Sample #: 28003
Date : 6/11/96 06:58 AM
Time of Injection: 6/11/96 06:25 AM
Low Point : 33.12 mV
High Point : 83.12 mV
Plot Scale: 50 mV

Response (mV)





TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: LUFT

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125822-010	SCI-26 @3.5	28003	05/31/96	06/05/96	06/11/96	
125822-012	SCI-27 @3.5	28003	06/03/96	06/05/96	06/12/96	
125822-015	SCI-31 @4.0	28003	06/03/96	06/05/96	06/11/96	

Matrix: Soil

Analyte	Units	125822-010	125822-012	125822-015
Diln Fac:		1	1	15
Diesel C12-C22	mg/Kg	1300	1900 YH	2500 YH
Motor Oil C22-C50	mg/Kg	84 YHL	4600 Y	3100 Y
Surrogate				
Hexacosane	%REC	DO	DO	65

DO: Surrogate diluted out

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

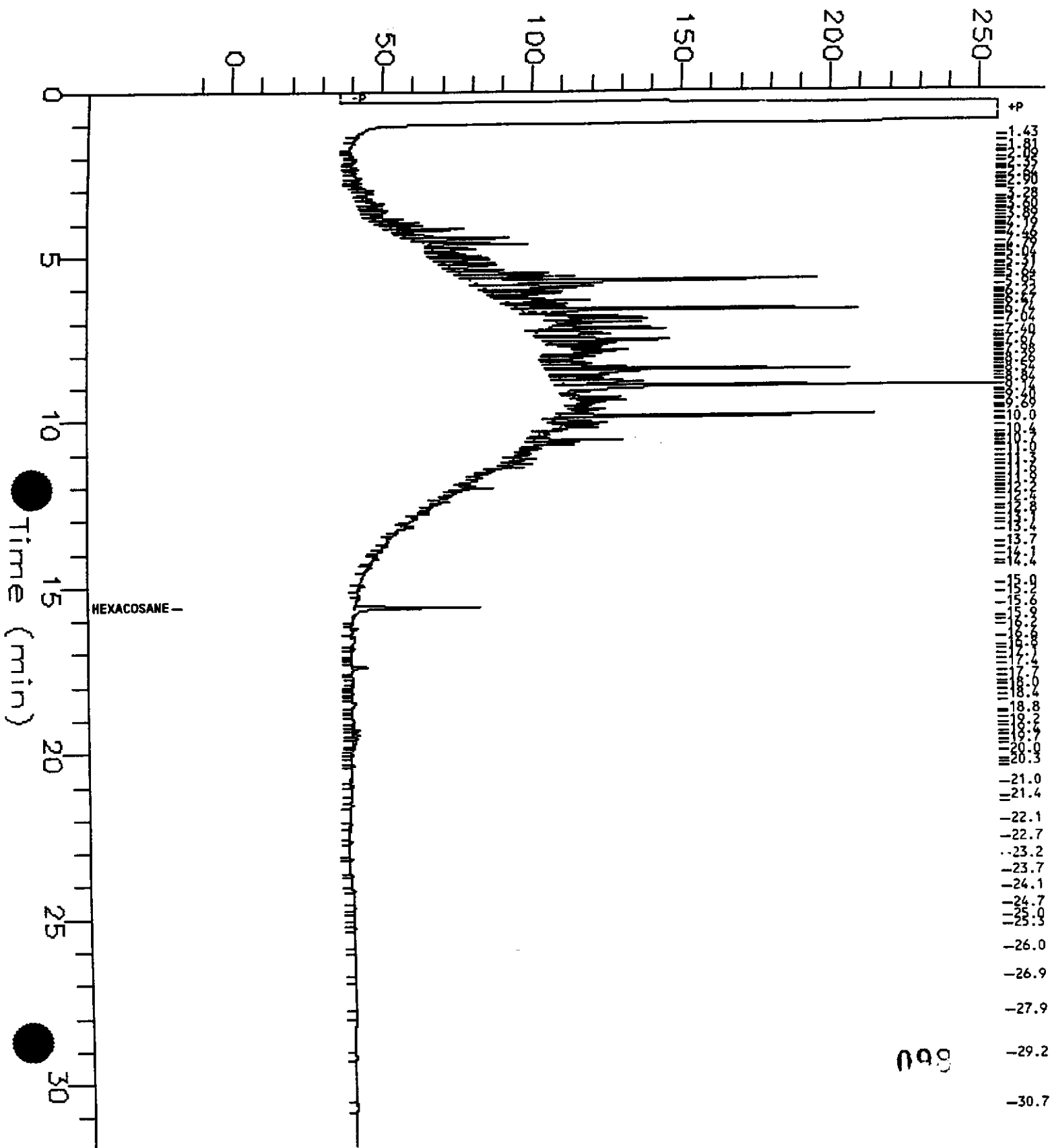
L: Lighter hydrocarbons than indicated standard

Sample Name : 125822-010,50:50
 FileName : G:\GC11\CHB\162B042.raw
 Method : DUL32BSL.ins
 Start Time : 0.00 min
 Scale Factor : 0

End Time : 31.92 min
 Plot Offset: -16 mV

Sample #: 28003
 Date : 6/11/96 09:42 AM
 Time of Injection: 6/11/96 07:08 AM
 Low Point : -16.40 mV
 Plot Scale: 273 mV
 High Point : 256.52 mV

Response (mV)



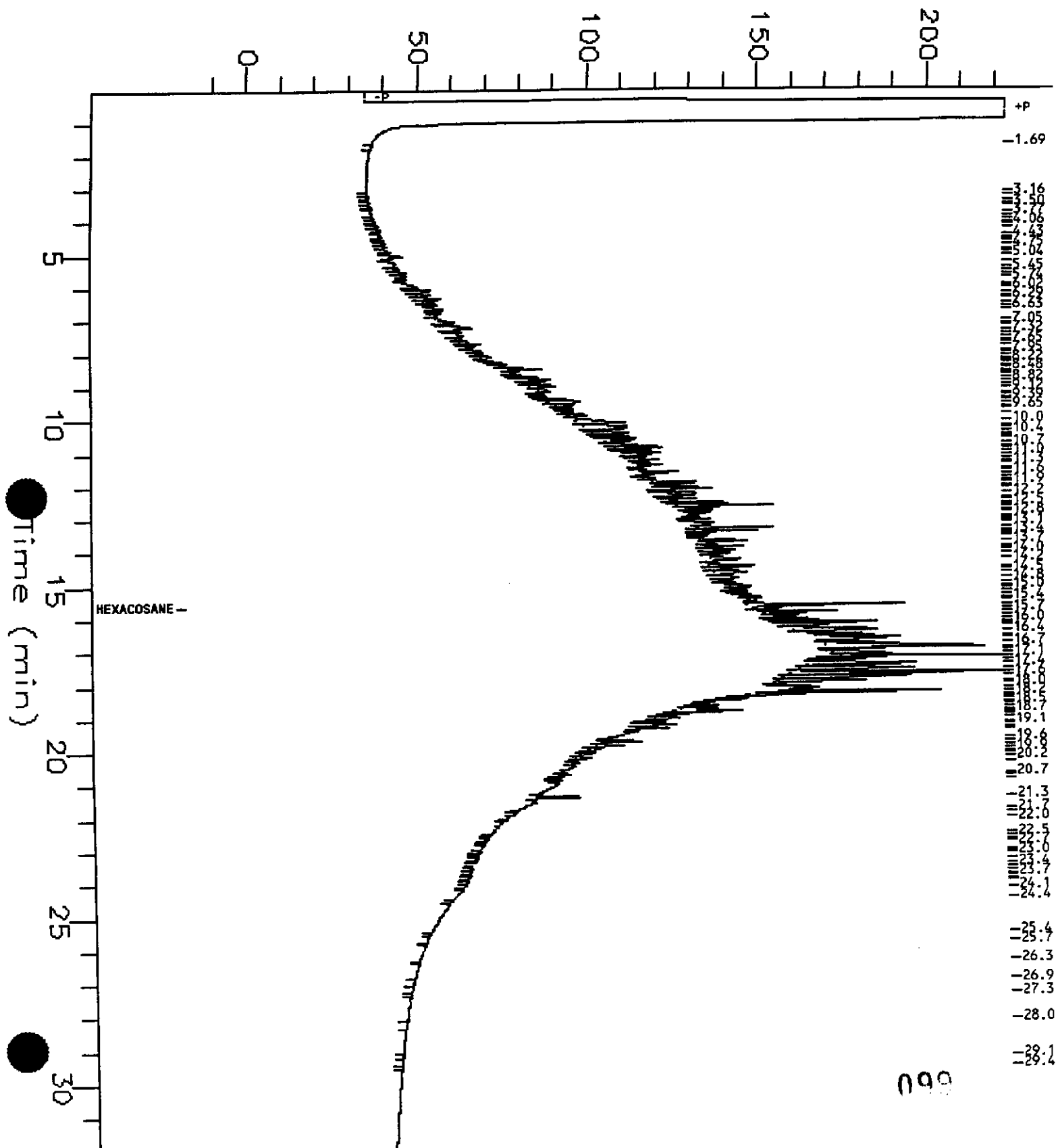
000

Sample Name : 125822-012,50:100
FileName : G:\GC11\CHB\1628077.raw
Method : DUL32BSL.ins
Start Time : 0.01 min
Scale Factor : 0

End Time : 31.92 min
Plot Offset: -18 mV

Sample #: 28003
Date : 6/12/96 10:07 AM
Time of Injection: 6/12/96 05:27 AM
Low Point : -17.51 mV
Plot Scale: 241 mV
High Point : 223.44 mV

Response (mV)



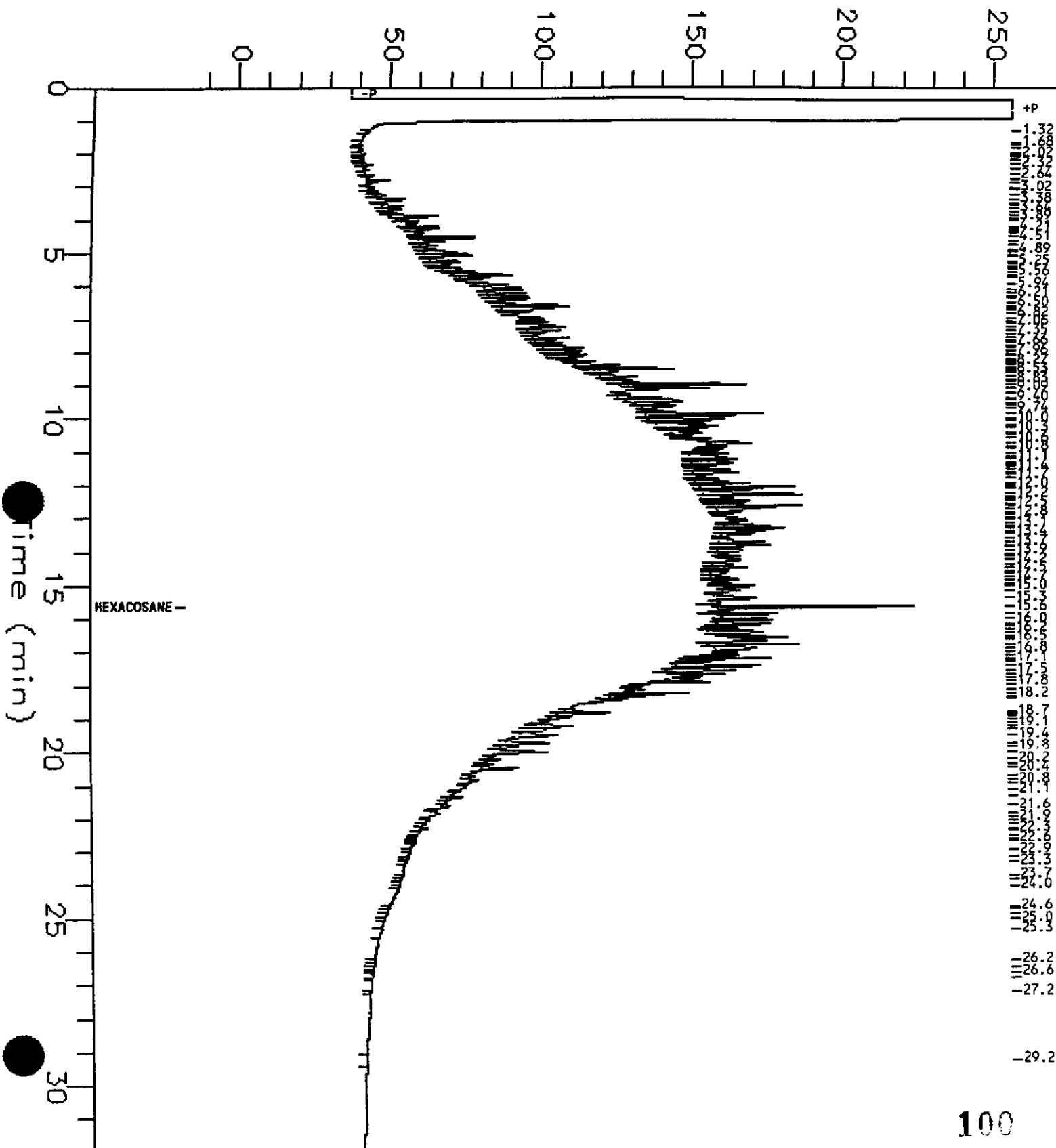
090

Sample Name : 125822-015,50:75
FileName : G:\GC11\CHB\162B043.raw
Method : DUL32BSL.ins
Start Time : 0.00 min
Scale Factor : 0

End Time : 31.92 min
Plot Offset : -16 mV

Sample #: 28003
Date : 6/11/96 09:43 AM
Time of Injection: 6/11/96 07:51 AM
Low Point : -16.40 mV
Plot Scale: 273 mV
High Point : 256.48 mV

Response (mV)





Lab #: 125822

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: LUFT

METHOD BLANK

Matrix: Soil
Batch#: 28003
Units: mg/Kg
Diln Fac: 1

Prep Date: 06/05/96
Analysis Date: 06/08/96

MB Lab ID: QC23407

Analyte	Result	
Diesel C12-C22	<1.0	
Motor Oil C22-C50	<5.0	
Surrogate	%Rec	Recovery Limits
Hexacosane	90	60-140



Lab #: 125822

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: LUFT

LABORATORY CONTROL SAMPLE

Matrix: Soil
Batch#: 28003
Units: mg/Kg
Diln Fac: 1

Prep Date: 06/05/96
Analysis Date: 06/08/96

LCS Lab ID: QC23408

Analyte	Result	Spike Added	%Rec #	Limits
Diesel C12-C22	43.11	49.5	87	60-140
Surrogate	%Rec	Limits		
Hexacosane	93	60-140		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 125822

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
 Prep Method: LUFT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 125789-002
 Matrix: Soil
 Batch#: 28003
 Units: mg/Kg
 Diln Fac: 1

Sample Date: 05/30/96
 Received Date: 05/31/96
 Prep Date: 06/05/96
 Analysis Date: 06/08/96

MS Lab ID: QC23409

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Diesel C12-C22	49.5	<1.000	41.83	85	60-140
Surrogate	%Rec	Limits			
Hexacosane	92	60-140			

MSD Lab ID: QC23410

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	49.5	38.9	79	60-140	7	<30
Surrogate	%Rec	Limits				
Hexacosane	77	60-140				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



BTXE

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8020
 Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125822-002	SCI-22 @3.5	28076	05/31/96	06/10/96	06/10/96	
125822-004	SCI-23 @6.5	28076	05/31/96	06/10/96	06/10/96	
125822-006	SCI-24 @4.5	28076	05/31/96	06/10/96	06/10/96	
125822-008	SCI-25 @6	28086	05/31/96	06/10/96	06/10/96	

Matrix: Soil

Analyte	Units	125822-002	125822-004	125822-006	125822-008
Diln Fac:		1	1	1	1
Benzene	ug/Kg	<5	<5	<5	<5
Toluene	ug/Kg	<5	<5	<5	<5
Ethylbenzene	ug/Kg	<5	<5	<5	27
m,p-Xylenes	ug/Kg	<5	<5	<5	23 C
o-Xylene	ug/Kg	<5	<5	<5	39
Surrogate					
Trifluorotoluene	%REC	95	100	99	87
Bromobenzene	%REC	88	94	90	80

C: Presence of this compound confirmed by second column,
 however, the confirmation concentration differed from the reported
 result by more than a factor of two



BTXE

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8020
 Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125822-010	SCI-26 @3.5	28076	05/31/96	06/10/96	06/10/96	
125822-015	SCI-31 @4.0	28076	06/03/96	06/10/96	06/10/96	

Matrix: Soil

Analyte	Units	125822-010	125822-015
Diln Fac:		1	1
Benzene	ug/Kg	<5	<5
Toluene	ug/Kg	<5	<5
Ethylbenzene	ug/Kg	<5	<5
m,p-Xylenes	ug/Kg	<5	<5
o-Xylene	ug/Kg	<5	<5
Surrogate			
Trifluorotoluene	%REC	100	97
Bromobenzene	%REC	94	88

BTXE

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8020
 Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125822-007	SCI-24	28030	05/31/96	06/07/96	06/07/96	
125822-014	SCI-30	28030	06/03/96	06/07/96	06/07/96	

Matrix: Water

Analyte	Units	125822-007	125822-014
Diln Fac:		1	1
Benzene	ug/L	<0.5	<0.5
Toluene	ug/L	<0.5	<0.5
Ethylbenzene	ug/L	<0.5	<0.5
m,p-Xylenes	ug/L	<0.5	<0.5
o-Xylene	ug/L	<0.5	<0.5
Surrogate			
Trifluorotoluene	%REC	94	92
Bromobenzene	%REC	86	82



Lab #: 125822

BATCH QC REPORT

Page 1 of 1

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 28030
Units: ug/L
Diln Fac: 1

Prep Date: 06/06/96
Analysis Date: 06/06/96

MB Lab ID: QC23528

Analyte	Result		
Benzene	<0.5		
Toluene	<0.5		
Ethylbenzene	<0.5		
m,p-Xylenes	<0.5		
o-Xylene	<0.5		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	90		58-130
Bromobenzene	78		62-131

071



Lab #: 125822

BATCH QC REPORT

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

METHOD BLANK

Matrix: Soil
Batch#: 28076
Units: ug/Kg
Diln Fac: 1

Prep Date: 06/09/96
Analysis Date: 06/09/96

MB Lab ID: QC23732

Analyte	Result	
Benzene	<5.0	
Toluene	<5.0	
Ethylbenzene	<5.0	
m,p-Xylenes	<5.0	
o-Xylene	<5.0	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	95	43-114
Bromobenzene	84	47-112



Lab #: 125822

BATCH QC REPORT

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

METHOD BLANK

Matrix: Soil
Batch#: 28086
Units: ug/Kg
DiIn Fac: 1

Prep Date: 06/10/96
Analysis Date: 06/10/96

MB Lab ID: QC23791

Analyte	Result	
Benzene	<5.0	
Toluene	<5.0	
Ethylbenzene	<5.0	
m,p-Xylenes	<5.0	
o-Xylene	<5.0	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	102	43-114
Bromobenzene	102	47-112



Lab #: 125822

BATCH QC REPORT

Page 1 of 1

BTXE

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8020
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
 Batch#: 28030
 Units: ug/L
 Diln Fac: 1

Prep Date: 06/06/96
 Analysis Date: 06/06/96

LCS Lab ID: QC23530

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	22.3	20	112	80-120
Toluene	22.6	20	113	80-120
Ethylbenzene	22.2	20	111	80-120
m,p-Xylenes	44.8	40	112	80-120
o-Xylene	22.8	20	114	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	94	58-130		
Bromobenzene	86	62-131		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

074



Lab #: 125822

BATCH QC REPORT

Page 1 of 1

BTXE

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8020
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil
 Batch#: 28076
 Units: ug/Kg
 Diln Fac: 1

Prep Date: 06/09/96
 Analysis Date: 06/09/96

LCS Lab ID: QC23734

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	109.9	100	110	80-120
Toluene	111.4	100	111	80-120
Ethylbenzene	109.1	100	109	80-120
m,p-Xylenes	111.1	200	111	80-120
o-Xylene	110.5	100	111	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	96	43-114		
Bromobenzene	87	47-112		

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits
 Spike Recovery: 0 out of 5 outside limits



Lab #: 125822

BATCH QC REPORT

Page 1 of 1

BTXE

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8020
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil
 Batch#: 28086
 Units: ug/Kg
 Diln Fac: 1

Prep Date: 06/10/96
 Analysis Date: 06/10/96

LCS Lab ID: QC23790

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	102.9	100	103	80-120
Toluene	106.7	100	107	80-120
Ethylbenzene	104.7	100	105	80-120
m,p-Xylenes	216.7	200	108	80-120
o-Xylene	110.7	100	111	80-120
Surrogate	%Rec	Limits		
Trifluorotoluene	86	43-114		
Bromobenzene	86	47-112		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

078



PCBs

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: PCB
Prep Method: EPA 3550
Cleanup Method: EPA Acid

Field ID: SCI-31 @4.0
Lab ID: 125822-015
Matrix: Soil
Batch#: 28024
Units: ug/Kg
Diln Fac: 1

Sampled: 06/03/96
Received: 06/04/96
Extracted: 06/06/96
Analyzed: 06/08/96

Analyte	Result	Reporting Limit
---------	--------	-----------------

Aroclor-1016	ND	20
Aroclor-1221	ND	20
Aroclor-1232	ND	20
Aroclor-1242	ND	20
Aroclor-1248	ND	20
Aroclor-1254	ND	20
Aroclor-1260	ND	20

Surrogate	%Recovery	Recovery Limits
-----------	-----------	-----------------

TCMX	121	65-135
Decachlorobiphenyl	108	65-135



Lab #: 125822

BATCH QC REPORT

Polychlorinated Biphenyls

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: PCB
Prep Method: EPA 3550
Cleanup Method: EPA Acid

METHOD BLANK

Matrix: Soil
Batch#: 28024
Units: ug/Kg
Diln Fac: 1

Prep Date: 06/06/96
Analysis Date: 06/08/96

MB Lab ID: QC23496

Analyte	Result	Reporting Limit
Aroclor-1016	ND	20
Aroclor-1221	ND	20
Aroclor-1232	ND	20
Aroclor-1242	ND	20
Aroclor-1248	ND	20
Aroclor-1254	ND	20
Aroclor-1260	ND	20
Surrogate	%Rec	Recovery Limits
TCMX	119	65-135
Decachlorobiphenyl	122	65-135



Lab #: 125822

BATCH QC REPORT

Polychlorinated Biphenyls

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: PCB
Prep Method: EPA 3550
Cleanup Method: EPA Acid

LABORATORY CONTROL SAMPLE

Matrix: Soil
Batch#: 28024
Units: ug/Kg
Diln Fac: 1

Prep Date: 06/06/96
Analysis Date: 06/08/96

LCS Lab ID: QC23497

Analyte	Result	Spike Added	%Rec #	Limits
Aroclor-1260	214	220	97	65-135
Surrogate	%Rec	Limits		
TCMX	111	65-135		
Decachlorobiphenyl	122	65-135		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

like Recovery: 0 out of 1 outside limits



PCBS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: PCB
Prep Method: EPA 3550

Field ID: SCI-31
Lab ID: 125822-016
Matrix: Water
Batch#: 28035
Units: ug/L
Diln Fac: 1

Sampled: 06/03/96
Received: 06/04/96
Extracted: 06/06/96
Analyzed: 06/11/96

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

Surrogate	%Recovery	Recovery Limits
TCMX	18*	60-150
Decachlorobiphenyl	10*	30-130

* Values outside of QC limits



Lab #: 125822

BATCH QC REPORT

Page 1 of 1

Polychlorinated Biphenyls

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: PCB
Prep Method: EPA 3550

METHOD BLANK

Matrix: Water
Batch#: 28035
Units: ug/L
Diln Fac: 1

Prep Date: 06/06/96
Analysis Date: 06/11/96

MB Lab ID: QC23549

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Surrogate	%Rec	Recovery Limits
TCMX	96	60-150
Decachlorobiphenyl	89	30-130



Lab #: 125822

BATCH QC REPORT

Page 1 of 1

Polychlorinated Biphenyls

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: PCB
 Prep Method: EPA 3550

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 28035
 Units: ug/L
 Diln Fac: 1

Prep Date: 06/06/96
 Analysis Date: 06/11/96

BS Lab ID: QC23550

Analyte	Spike Added	BS	%Rec #	Limits
Aroclor-1260	6.67	6.1	93	50-128
Surrogate	%Rec	Limits		
TCMX	98	60-150		
Decachlorobiphenyl	87	30-130		

BSD Lab ID: QC23551

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Aroclor-1260	6.67	6.3	95	50-128	2	<20
Surrogate	%Rec	Limits				
TCMX	99	60-150				
Decachlorobiphenyl	72	30-130				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

023



Organochlorine Pesticides and PCBs

Client: Subsurface Consultants	Analysis Method: EPA 8080
Project#: 133.005	Prep Method: EPA 3520
Location: KOT	

Field ID: SCI-27	Sampled: 06/03/96
Lab ID: 125822-013	Received: 06/04/96
Matrix: Water	Extracted: 06/06/96
Batch#: 28032	Analyzed: 06/10/96
Units: ug/L	
Diln Fac: 1	

Analyte	Result	Reporting Limit
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alpha-BHC	ND	0.05
beta-BHC	ND	0.05
gamma-BHC	ND	0.05
delta-BHC	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor epoxide B	ND	0.05
Heptachlor epoxide A	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.09
4,4'-DDE	ND	0.09
Endrin	ND	0.09
Endosulfan II	ND	0.09
Endosulfan sulfate	ND	0.09
4,4'-DDD	ND	0.09
Endrin aldehyde	ND	0.09
4,4'-DDT	ND	0.09
Chlordane	ND	0.5
Methoxychlor	ND	0.5
Toxaphene	ND	0.9
Aroclor-1016	ND	0.5
Aroclor-1221	ND	0.9
Aroclor-1232	ND	0.5
Aroclor-1242	ND	0.5
Aroclor-1248	ND	0.5
Aroclor-1254	ND	0.5
Aroclor-1260	ND	0.5

Surrogate	%Recovery	Recovery Limits
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TCMX	40*	47-133
Decachlorobiphenyl	99	35-132

* Values outside of QC limits



Lab #: 125822

BATCH QC REPORT

Page 1 of 1

EPA 8080 Pesticides & PCBs

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8080
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 28032
 Units: ug/L
 Diln Fac: 1

Prep Date: 06/06/96
 Analysis Date: 06/10/96

BS Lab ID: QC23539

Analyte	Spike Added	BS	%Rec #	Limits
gamma-BHC	0.5	0.44	88	67-116
Heptachlor	0.5	0.35	70	69-109
Aldrin	0.5	0.41	82	64-115
Dieldrin	1	0.78	78	76-126
Endrin	1	0.83	83	78-122
4,4'-DDT	1	0.81	81	72-123
Surrogate	%Rec	Limits		
TCMX	85	47-133		
Decachlorobiphenyl	102	35-132		

BSD Lab ID: QC23540

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
gamma-BHC	0.5	0.44	88	67-116	0	<20
Heptachlor	0.5	0.36	72	69-109	3	<20
Aldrin	0.5	0.42	84	64-115	2	<20
Dieldrin	1	0.76	76	76-126	3	<20
Endrin	1	0.85	85	78-122	2	<20
4,4'-DDT	1	0.82	82	72-123	1	<20
Surrogate	%Rec	Limits				
TCMX	83	47-133				
Decachlorobiphenyl	101	35-132				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits

025



Lab #: 125822

BATCH QC REPORT

Page 1 of 1

EPA 8080 Pesticides & PCBs

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8080
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 28032
 Units: ug/L
 Diln Fac: 1

Prep Date: 06/06/96
 Analysis Date: 06/10/96

MB Lab ID: QC23538

Analyte	Result	Reporting Limit
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
gamma-BHC	ND	0.05
delta-BHC	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor epoxide B	ND	0.05
Heptachlor epoxide A	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.1
4,4'-DDE	ND	0.1
Endrin	ND	0.1
Endosulfan II	ND	0.1
Endosulfan sulfate	ND	0.1
4,4'-DDD	ND	0.1
Endrin aldehyde	ND	0.1
4,4'-DDT	ND	0.1
Chlordane	ND	0.5
Methoxychlor	ND	0.5
Toxaphene	ND	1.0
Aroclor-1016	ND	0.5
Aroclor-1221	ND	1.0
Aroclor-1232	ND	0.5
Aroclor-1242	ND	0.5
Aroclor-1248	ND	0.5
Aroclor-1254	ND	0.5
Aroclor-1260	ND	0.5
Surrogate	%Rec	Recovery Limits
TCMX	73	47-133
Decachlorobiphenyl	90	35-132

SAMPLE ID: SCI-23
 LAB ID: 125822-005
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Water

DATE SAMPLED: 05/31/96
 DATE RECEIVED: 06/04/96
 DATE REPORTED: 06/20/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28007	EPA 6010A	06/06/96
Arsenic	210	5.0	1	28007	EPA 6010A	06/06/96
Barium	4400	10	1	28007	EPA 6010A	06/06/96
Beryllium	22	2.0	1	28007	EPA 6010A	06/06/96
Cadmium	23	2.0	1	28007	EPA 6010A	06/06/96
Chromium (total)	1400	10	1	28007	EPA 6010A	06/06/96
Cobalt	470	20	1	28007	EPA 6010A	06/06/96
Copper	910	10	1	28007	EPA 6010A	06/06/96
Lead	570	3.0	1	28007	EPA 6010A	06/06/96
Mercury	2.9	0.20	1	28029	EPA 7470	06/07/96
Molybdenum	ND	20	1	28007	EPA 6010A	06/06/96
Nickel	1600	20	1	28007	EPA 6010A	06/06/96
Selenium	46	5.0	1	28007	EPA 6010A	06/06/96
Silver	ND	5.0	1	28007	EPA 6010A	06/06/96
Thallium	ND	5.0	1	28007	EPA 6010A	06/06/96
Vanadium	1100	10	1	28007	EPA 6010A	06/06/96
Zinc	1900	20	1	28007	EPA 6010A	06/06/96

ND = Not detected at or above reporting limit



SAMPLE ID: SCI-27
 LAB ID: 125822-013
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Water

DATE SAMPLED: 06/03/96
 DATE RECEIVED: 06/04/96
 DATE REPORTED: 06/20/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28007	EPA 6010A	06/06/96
Arsenic	4300	5.0	1	28007	EPA 6010A	06/06/96
Barium	37000	1000	100	28007	EPA 6010A	06/06/96
Beryllium	65	2.0	1	28007	EPA 6010A	06/06/96
Cadmium	990	2.0	1	28007	EPA 6010A	06/06/96
Chromium (total)	3600	10	1	28007	EPA 6010A	06/06/96
Cobalt	1000	20	1	28007	EPA 6010A	06/06/96
Copper	100000	1000	100	28007	EPA 6010A	06/06/96
Lead	140000	300	100	28007	EPA 6010A	06/06/96
Mercury	350	9.0	45	28305	EPA 7470	06/20/96
Molybdenum	29	20	1	28007	EPA 6010A	06/06/96
Nickel	2900	20	1	28007	EPA 6010A	06/06/96
Selenium	110	5.0	1	28007	EPA 6010A	06/06/96
Silver	ND	5.0	1	28007	EPA 6010A	06/06/96
Thallium	ND	5.0	1	28007	EPA 6010A	06/06/96
Vanadium	3100	10	1	28007	EPA 6010A	06/06/96
Zinc	250000	2000	100	28007	EPA 6010A	06/06/96

ND = Not detected at or above reporting limit

CLIENT: Subsurface Consultants
JOB NUMBER: 125822

DATE REPORTED: 06/20/96

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	ug/L	1	28007	EPA 6010A	06/06/96
Arsenic	ND	5	ug/L	1	28007	EPA 6010A	06/06/96
Barium	ND	10	ug/L	1	28007	EPA 6010A	06/06/96
Beryllium	ND	2	ug/L	1	28007	EPA 6010A	06/06/96
Cadmium	ND	2	ug/L	1	28007	EPA 6010A	06/06/96
Chromium (total)	ND	10	ug/L	1	28007	EPA 6010A	06/06/96
Cobalt	ND	20	ug/L	1	28007	EPA 6010A	06/06/96
Copper	ND	10	ug/L	1	28007	EPA 6010A	06/06/96
Lead	ND	3	ug/L	1	28007	EPA 6010A	06/06/96
Mercury	ND	0.2	ug/L	1	28029	EPA 7470	06/07/96
Mercury	ND	0.2	ug/L	1	28305	EPA 7470	06/20/96
Molybdenum	ND	20	ug/L	1	28007	EPA 6010A	06/06/96
Nickel	ND	20	ug/L	1	28007	EPA 6010A	06/06/96
Selenium	ND	5	ug/L	1	28007	EPA 6010A	06/06/96
Silver	ND	5	ug/L	1	28007	EPA 6010A	06/06/96
Thallium	ND	5	ug/L	1	28007	EPA 6010A	06/06/96
Vanadium	ND	10	ug/L	1	28007	EPA 6010A	06/06/96
Zinc	ND	20	ug/L	1	28007	EPA 6010A	06/06/96

ND = Not Detected at or above reporting limit



CLIENT: Subsurface Consultants
JOB NUMBER: 125822

DATE REPORTED: 06/20/96

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	500	506	497	ug/L	101	99	80-120	2	35	28007	EPA 6010A	06/06/96
Arsenic	2000	1870	1890	ug/L	94	95	80-120	1	35	28007	EPA 6010A	06/06/96
Barium	2000	1840	1940	ug/L	92	97	80-120	5	35	28007	EPA 6010A	06/06/96
Beryllium	50	49.4	50.7	ug/L	99	101	80-120	3	35	28007	EPA 6010A	06/06/96
Cadmium	50	46.6	47.9	ug/L	93	96	80-120	3	35	28007	EPA 6010A	06/06/96
Chromium (total)	200	181	185	ug/L	91	93	80-120	2	35	28007	EPA 6010A	06/06/96
Cobalt	500	441	448	ug/L	88	90	80-120	2	35	28007	EPA 6010A	06/06/96
Copper	250	242	248	ug/L	97	99	80-120	2	35	28007	EPA 6010A	06/06/96
Lead	500	457	460	ug/L	91	92	80-120	1	35	28007	EPA 6010A	06/06/96
Mercury	5	4.802	4.903	ug/L	96	98	80-120	2	35	28029	EPA 7470	06/07/96
Mercury	5	4.12	5.25	ug/L	82	105	80-120	24	35	28305	EPA 7470	06/20/96
Molybdenum	400	362	370	ug/L	91	93	80-120	2	35	28007	EPA 6010A	06/06/96
Nickel	500	449	463	ug/L	90	93	80-120	3	35	28007	EPA 6010A	06/06/96
Selenium	2000	1870	1900	ug/L	94	95	80-120	2	35	28007	EPA 6010A	06/06/96
Silver	100	93.7	98.7	ug/L	94	99	80-120	5	35	28007	EPA 6010A	06/06/96
Thallium	2000	1870	1900	ug/L	94	95	80-120	2	35	28007	EPA 6010A	06/06/96
Vanadium	500	471	485	ug/L	94	97	80-120	3	35	28007	EPA 6010A	06/06/96
Zinc	500	449	462	ug/L	90	92	80-120	3	35	28007	EPA 6010A	06/06/96



CLIENT: Subsurface Consultants
JOB NUMBER: 125822

DATE REPORTED: 06/20/96

BATCH QC REPORT
SAMPLE DUPLICATE

Compound	Sample	Sample Result	Duplicate Result	Units	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	125804-001	<60.000	<60.000	ug/L	NC	35	28007	EPA 6010A	06/06/96
Arsenic	125804-001	<5.000	<5.000	ug/L	NC	35	28007	EPA 6010A	06/06/96
Barium	125804-001	1700	1700	ug/L	0	35	28007	EPA 6010A	06/06/96
Beryllium	125804-001	<2.000	<2.000	ug/L	NC	35	28007	EPA 6010A	06/06/96
Cadmium	125804-001	<2.000	<2.000	ug/L	NC	35	28007	EPA 6010A	06/06/96
Chromium (total)	125804-001	61.5	61.2	ug/L	0	35	28007	EPA 6010A	06/06/96
Cobalt	125804-001	<20.000	<20.000	ug/L	NC	35	28007	EPA 6010A	06/06/96
Copper	125804-001	<10.000	<10.000	ug/L	NC	35	28007	EPA 6010A	06/06/96
Lead	125804-001	9.06	10.1	ug/L	11	35	28007	EPA 6010A	06/06/96
Mercury	125804-001	0.505	0.206	ug/L	84*	35	28029	EPA 7470	06/07/96
Mercury	125974-002	0.267	<0.200	ug/L	NC	35	28305	EPA 7470	06/20/96
Molybdenum	125804-001	<20.000	<20.000	ug/L	NC	35	28007	EPA 6010A	06/06/96
Nickel	125804-001	305	296	ug/L	3	35	28007	EPA 6010A	06/06/96
Selenium	125804-001	<5.000	<5.000	ug/L	NC	35	28007	EPA 6010A	06/06/96
Silver	125804-001	<5.000	<5.000	ug/L	NC	35	28007	EPA 6010A	06/06/96
Thallium	125804-001	<5.000	<5.000	ug/L	NC	35	28007	EPA 6010A	06/06/96
Vanadium	125804-001	20.6	20.5	ug/L	0	35	28007	EPA 6010A	06/06/96
Zinc	125804-001	33	36.9	ug/L	11	35	28007	EPA 6010A	06/06/96

* = Out of Limits
NC = Not Calculable



CLIENT: Subsurface Consultants
JOB NUMBER: 125822

DATE REPORTED: 06/20/96

BATCH QC REPORT
SAMPLE SPIKE

Compound	Spike Amount	Sample	Sample Result	Spike Result	Units	Percent Rec.	Rec. Limit	QC Batch	Method	Analysis Date
Antimony	500	125804-001	<60.000	443	ug/L	89	75-125	28007	EPA 6010A	06/06/96
Arsenic	2000	125804-001	<5.000	1820	ug/L	91	75-125	28007	EPA 6010A	06/06/96
Barium	2000	125804-001	1700	3640	ug/L	97	75-125	28007	EPA 6010A	06/06/96
Beryllium	50	125804-001	<2.000	47.8	ug/L	96	75-125	28007	EPA 6010A	06/06/96
Cadmium	50	125804-001	<2.000	47.6	ug/L	95	75-125	28007	EPA 6010A	06/06/96
Chromium (total)	200	125804-001	61.5	241	ug/L	90	75-125	28007	EPA 6010A	06/06/96
Cobalt	500	125804-001	<20.000	423	ug/L	85	75-125	28007	EPA 6010A	06/06/96
Copper	250	125804-001	<10.000	268	ug/L	107	75-125	28007	EPA 6010A	06/06/96
Lead	500	125804-001	9.06	438	ug/L	86	75-125	28007	EPA 6010A	06/06/96
Mercury	5	125804-001	0.505	3.565	ug/L	61*	75-125	28029	EPA 7470	06/07/96
Mercury	5	125974-002	0.267	2.096	ug/L	37*	75-125	28305	EPA 7470	06/20/96
Molybdenum	400	125804-001	<20.000	350	ug/L	88	75-125	28007	EPA 6010A	06/06/96
Nickel	500	125804-001	305	739	ug/L	87	75-125	28007	EPA 6010A	06/06/96
Selenium	2000	125804-001	<5.000	1810	ug/L	91	75-125	28007	EPA 6010A	06/06/96
Silver	100	125804-001	<5.000	92.9	ug/L	93	75-125	28007	EPA 6010A	06/06/96
Thallium	2000	125804-001	<5.000	1750	ug/L	88	75-125	28007	EPA 6010A	06/06/96
Vanadium	500	125804-001	20.6	488	ug/L	93	75-125	28007	EPA 6010A	06/06/96
Zinc	500	125804-001	33	481	ug/L	90	75-125	28007	EPA 6010A	06/06/96

* = Out of Limits



Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

Field ID: SCI-21
 Lab ID: 125822-001
 Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

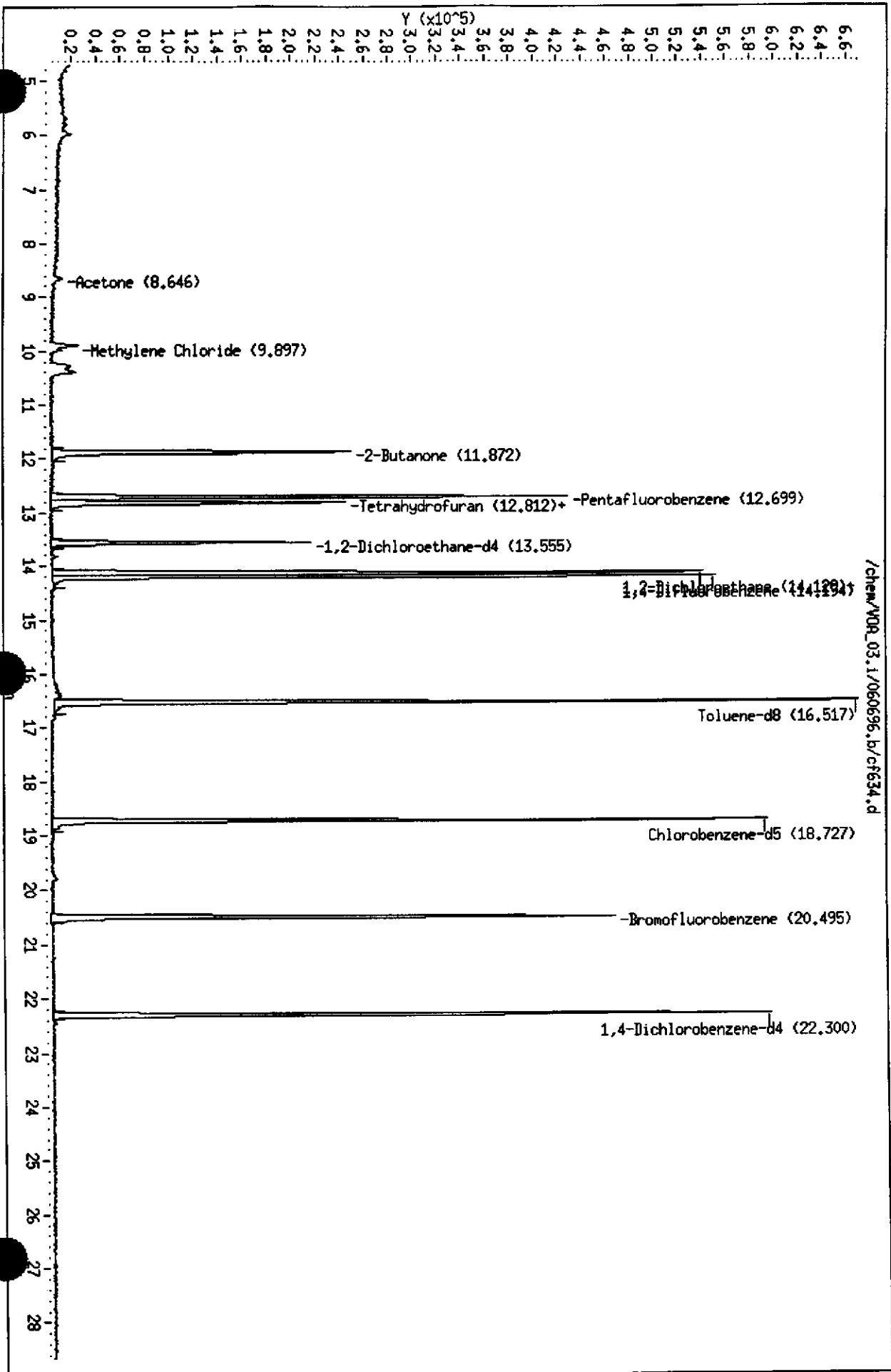
Sampled: 05/31/96
 Received: 06/04/96
 Extracted: 06/07/96
 Analyzed: 06/07/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	400	50
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	103	68-126
Toluene-d8	96	87-125
Bromofluorobenzene	87	79-122

Data File: /chem/VOR_03.1/060696.b/cf634.d
Date: 07-JUN-96 05:11
Client ID: DYNR P&T
Sample Info: S,125822-001

Column phase: RTX Volatiles

Instrument: VOR_03.1
Operator: LLH
Column diameter: 0.32





Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

Field ID: SCI-22
 Lab ID: 125822-003
 Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

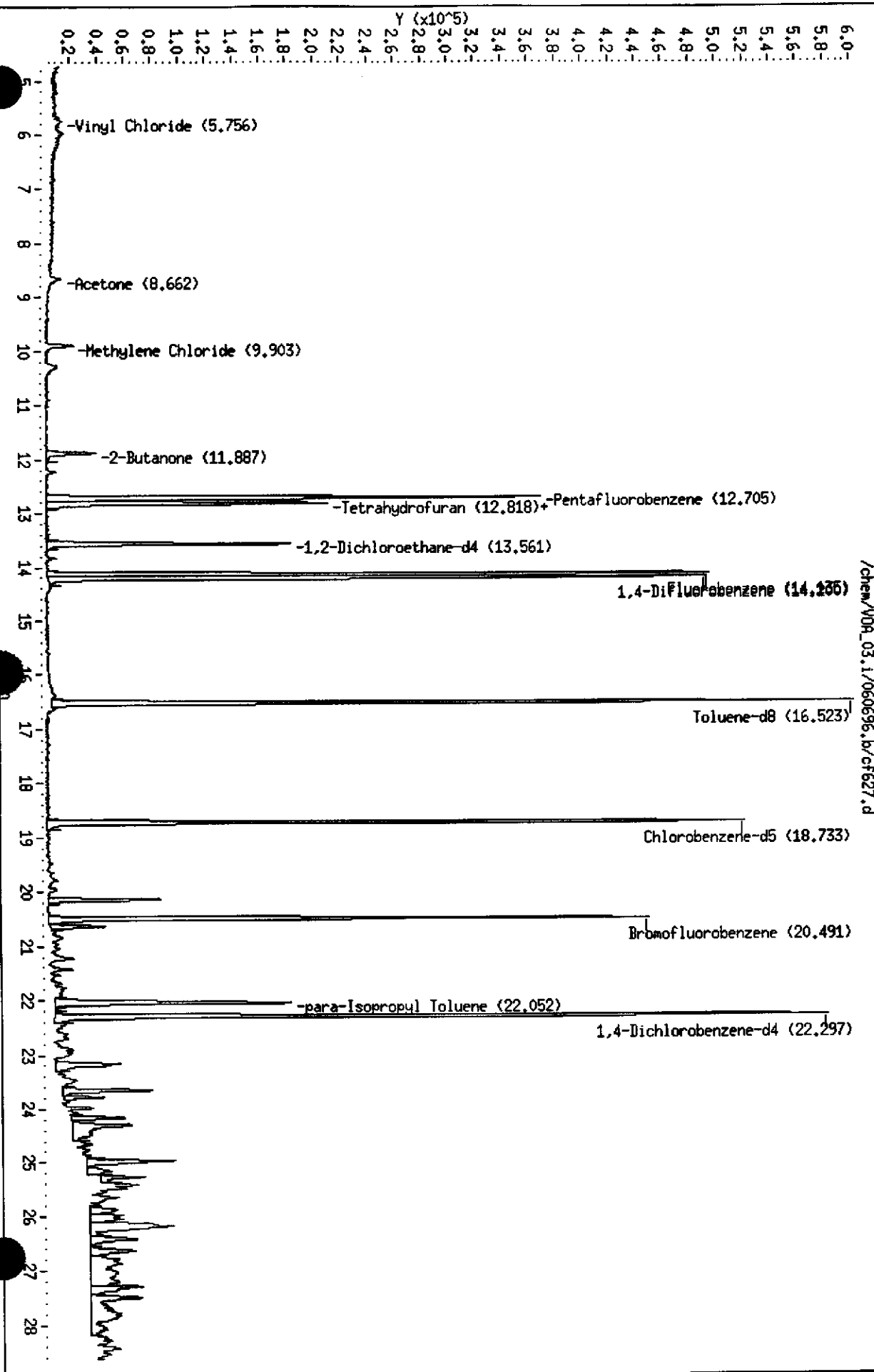
Sampled: 05/31/96
 Received: 06/04/96
 Extracted: 06/07/96
 Analyzed: 06/07/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	88	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	108	68-126
Toluene-d8	98	87-125
Bromofluorobenzene	96	79-122

Data File: /chem/V09_03.1/060696.b/cf627.d
Date: 07-JUN-96 01:00
Client ID: JYNA P&T
Sample Info: S.125822-003

Column phase: RTX Volatiles

Instrument: V09_03.1
Operator: LLH
Column diameter: 0.32



030



Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

Field ID: SCI-23
 Lab ID: 125822-005
 Matrix: Water
 Batch#: 28108
 Units: ug/L
 Diln Fac: 2.5

Sampled: 05/31/96
 Received: 06/04/96
 Extracted: 06/12/96
 Analyzed: 06/12/96

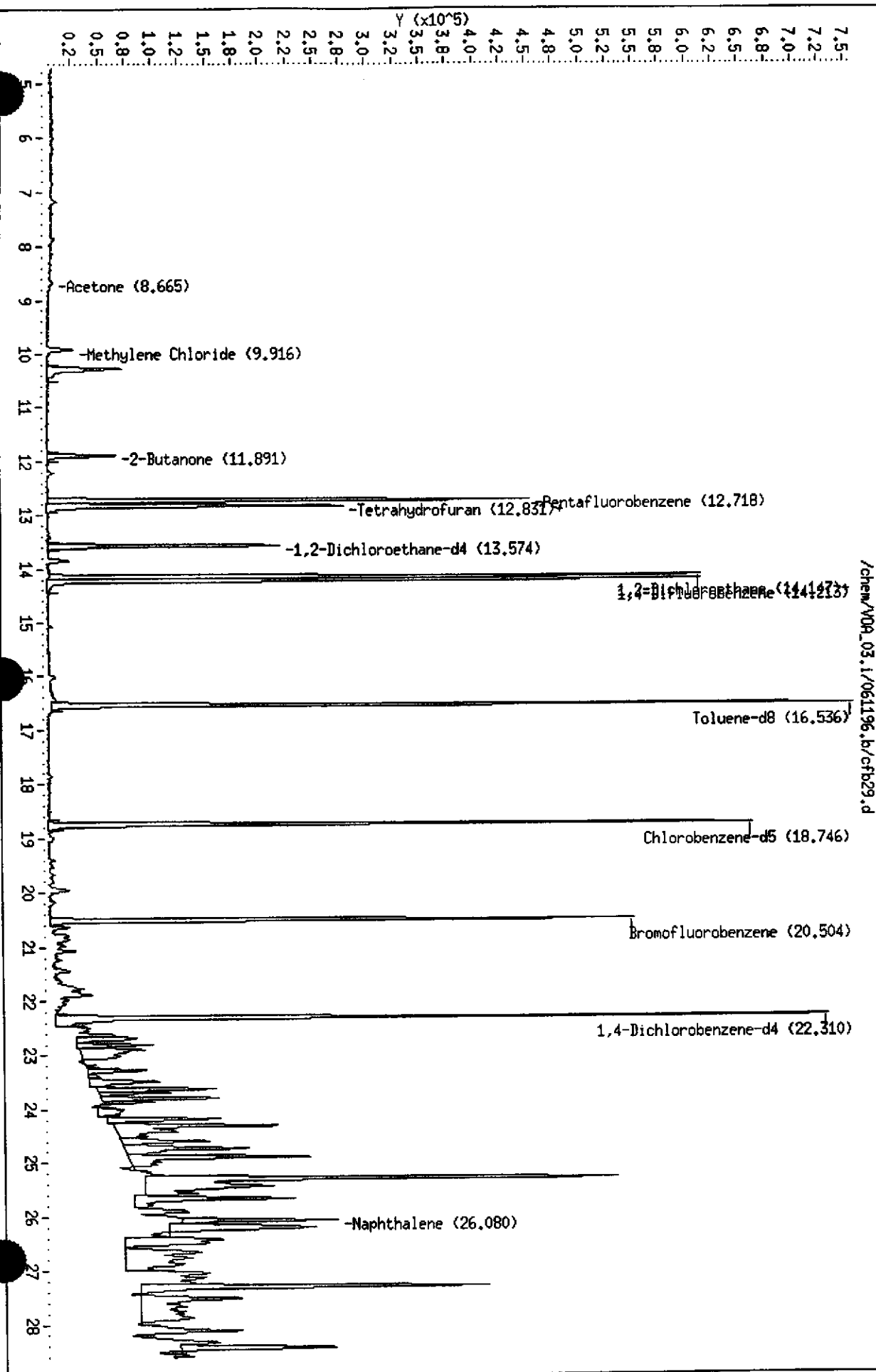
Analyte	Result	Reporting Limit
Chloromethane	ND	25
Bromomethane	ND	25
Vinyl Chloride	ND	25
Chloroethane	ND	25
Methylene Chloride	ND	50
Acetone	ND	50
Carbon Disulfide	ND	13
Trichlorofluoromethane	ND	13
1,1-Dichloroethene	ND	13
1,1-Dichloroethane	ND	13
trans-1,2-Dichloroethene	ND	13
cis-1,2-Dichloroethene	ND	13
Chloroform	ND	13
Freon 113	ND	13
1,2-Dichloroethane	ND	13
2-Butanone	310	25
1,1,1-Trichloroethane	ND	13
Carbon Tetrachloride	ND	13
Vinyl Acetate	ND	130
Bromodichloromethane	ND	13
1,2-Dichloropropane	ND	13
cis-1,3-Dichloropropene	ND	13
Trichloroethene	ND	13
Dibromochloromethane	ND	13
1,1,2-Trichloroethane	ND	13
Benzene	ND	13
trans-1,3-Dichloropropene	ND	13
Bromoform	ND	13
2-Hexanone	ND	25
4-Methyl-2-Pentanone	ND	25
1,1,2,2-Tetrachloroethane	ND	13
Tetrachloroethene	ND	13
Toluene	ND	13
Chlorobenzene	ND	13
Ethylbenzene	ND	13
Styrene	ND	13
m,p-Xylenes	ND	13
o-Xylene	ND	13

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	104	68-126
Toluene-d8	98	87-125
Bromofluorobenzene	93	79-122

Data File: /chem/V09_03.1/061196.b/cfb29.d
Date: 12-JUN-96 03:02
Client ID: DYNA P&T
Sample Info: S,125822-005

Column phase: RTX Volatiles

Instrument: V09_03.1
Operator: LLH
Column diameter: 0.32





Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

Field ID: SCI-25
 Lab ID: 125822-009
 Matrix: Water
 Batch#: 28108
 Units: ug/L
 Diln Fac: 2.5

Sampled: 05/31/96
 Received: 06/04/96
 Extracted: 06/12/96
 Analyzed: 06/12/96

Analyte	Result	Reporting Limit
Chloromethane	ND	25
Bromomethane	ND	25
Vinyl Chloride	ND	25
Chloroethane	ND	25
Methylene Chloride	ND	50
Acetone	ND	50
Carbon Disulfide	ND	13
Trichlorofluoromethane	ND	13
1,1-Dichloroethene	ND	13
1,1-Dichloroethane	ND	13
trans-1,2-Dichloroethene	ND	13
cis-1,2-Dichloroethene	ND	13
Chloroform	ND	13
Freon 113	ND	13
1,2-Dichloroethane	ND	13
2-Butanone	310	25
1,1,1-Trichloroethane	ND	13
Carbon Tetrachloride	ND	13
Vinyl Acetate	ND	130
Bromodichloromethane	ND	13
1,2-Dichloropropane	ND	13
cis-1,3-Dichloropropene	ND	13
Trichloroethene	ND	13
Dibromochloromethane	ND	13
1,1,2-Trichloroethane	ND	13
Benzene	12 J	13
trans-1,3-Dichloropropene	ND	13
Bromoform	ND	13
2-Hexanone	ND	25
4-Methyl-2-Pentanone	ND	25
1,1,2,2-Tetrachloroethane	ND	13
Tetrachloroethene	ND	13
Toluene	ND	13
Chlorobenzene	ND	13
Ethylbenzene	ND	13
Styrene	ND	13
m,p-Xylenes	ND	13
o-Xylene	ND	13
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	101	68-126
Toluene-d8	101	87-125
Bromofluorobenzene	100	79-122

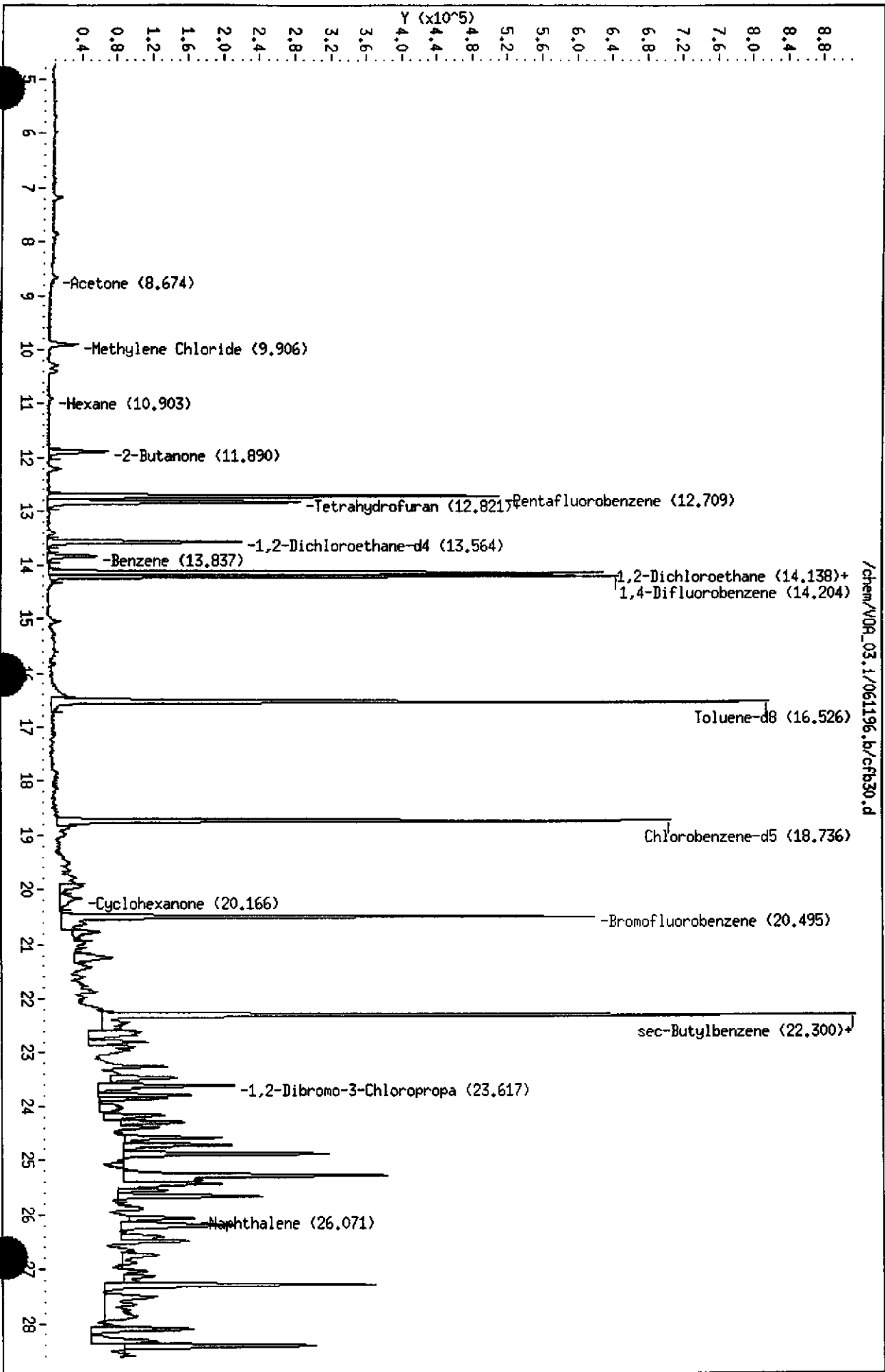
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Data File: /chem/V09_03.1/061196.b/cf830.d
Date: 12-JUN-96 03:37
Client ID: DYNA P&T
Sample Info: S.125822-009

Column phase: RTX Volatiles

Instrument: V09_03.1
Operator: LLH
Column diameter: 0.32



/chem/V09_03.1/061196.b/cf830.d



Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

Field ID: SCI-26
 Lab ID: 125822-011
 Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

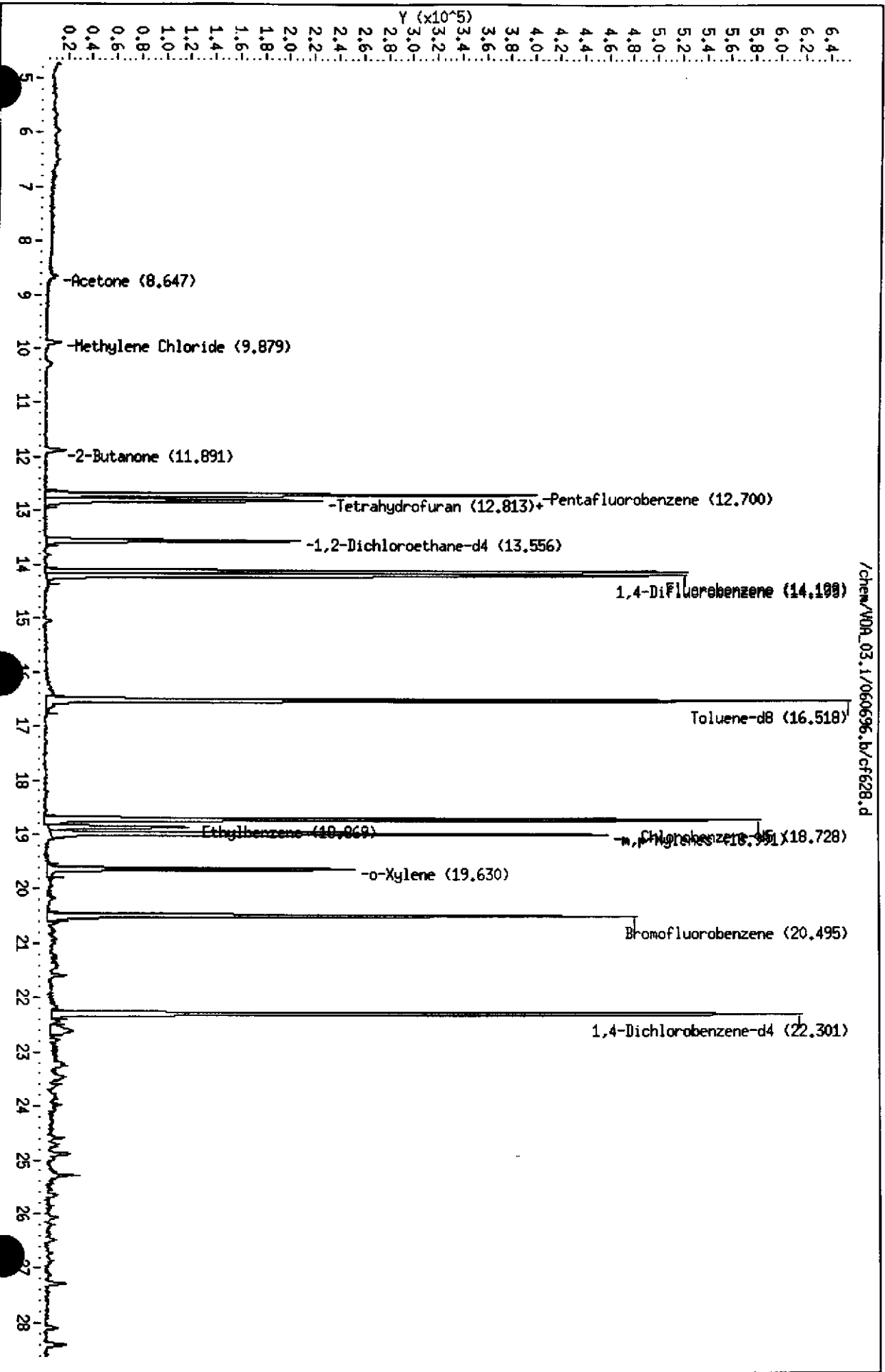
Sampled: 05/31/96
 Received: 06/04/96
 Extracted: 06/07/96
 Analyzed: 06/07/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	36	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	7.9	5.0
Styrene	ND	5.0
m,p-Xylenes	33	5.0
o-Xylene	18	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	111	68-126
Toluene-d8	100	87-125
Bromofluorobenzene	98	79-122

Data File: /chem/MOR_03.1/060696.b/cf628.d
Date: 07-JUN-96 01:35
Client ID: DYNA P&I
Sample Info: S.125822-011

Column phase: RTX Volatiles

Instrument: MOR_03.1
Operator: LLH
Column diameter: 0.32





Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

Field ID: SCI-27
 Lab ID: 125822-013
 Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

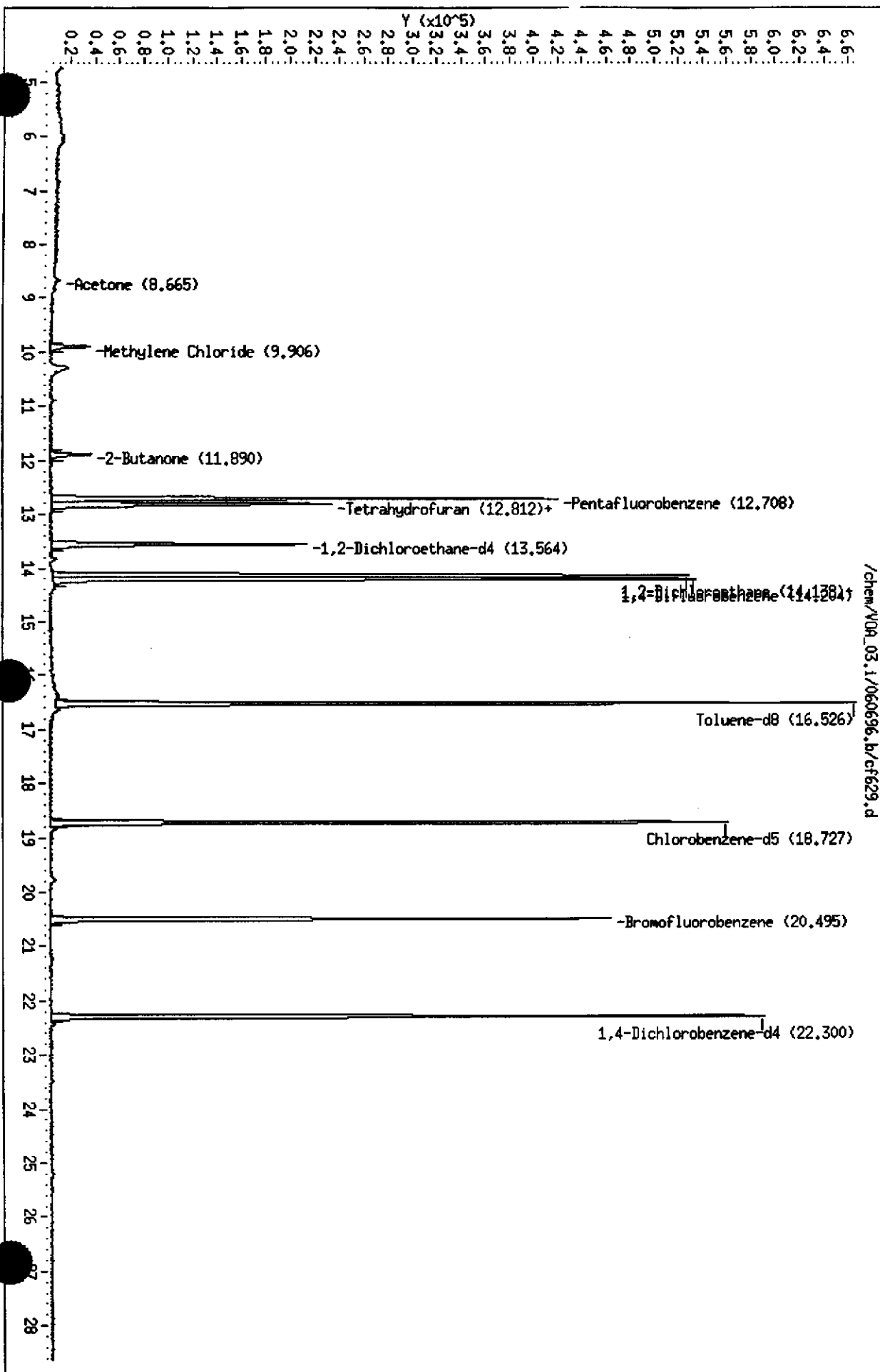
Sampled: 06/03/96
 Received: 06/04/96
 Extracted: 06/07/96
 Analyzed: 06/07/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	80	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	113	68-126
Toluene-d8	97	87-125
Bromofluorobenzene	91	79-122

Data File: /chem/V09_03.1/060696.b/cf629.d
Date : 07-JUN-96 02:11
Client ID: DYNA PeI
Sample Info: S.125622-013

Column phase: RTX Volatiles

Instrument: V09_03.1
Operator: LLH
Column diameter: 0.32





Volatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

Field ID: SCI-31
Lab ID: 125822-016
Matrix: Water
Batch#: 28021
Units: ug/L
Diln Fac: 1

Sampled: 06/03/96
Received: 06/04/96
Extracted: 06/07/96
Analyzed: 06/07/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	33	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	2.9 J	5.0
Styrene	ND	5.0
m,p-Xylenes	2.7 J	5.0
o-Xylene	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	110	68-126
Toluene-d8	97	87-125
Bromofluorobenzene	94	79-122

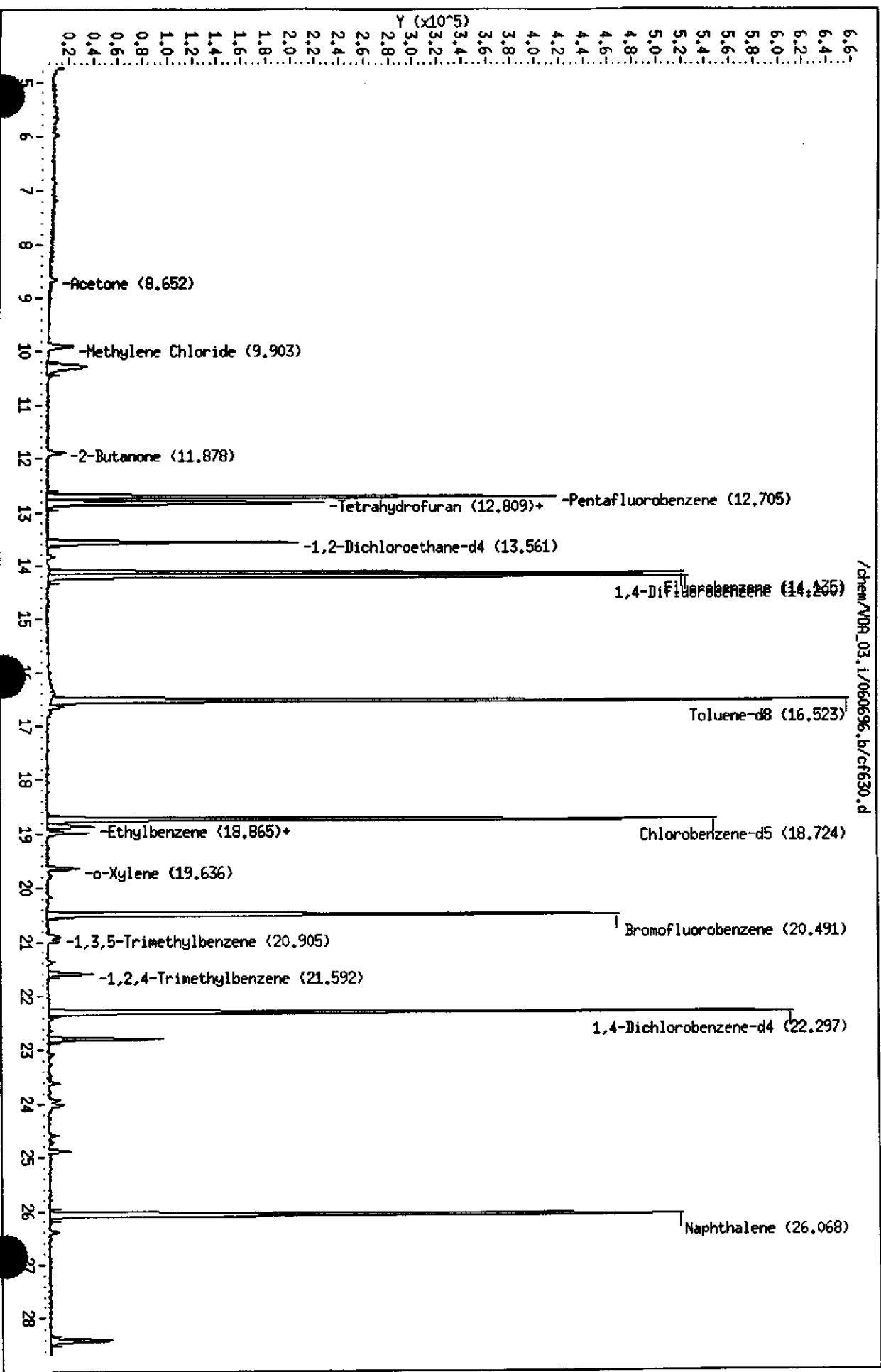
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Data File: /chem/V0A_03.1/060696.b/cf630.d
Date : 07-JUN-96 02:48
Client ID: DYNA Pa.T
Sample Info: S.125822-016

Column phase: RTX Volatiles

Instrument: V0A_03.1
Operator: LLH
Column diameter: 0.32





Lab #: 125822

BATCH QC REPORT

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EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

Prep Date: 06/06/96
 Analysis Date: 06/06/96

MB Lab ID: QC23479

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	107	68-126
Toluene-d8	97	87-125
Bromofluorobenzene	90	79-122

Lab #: 125822

BATCH QC REPORT

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EPA 8240 Volatile Organics

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: EPA 8240
 Prep Method: EPA 5030

METHOD BLANK

 Matrix: Water
 Batch#: 28021
 Units: ug/L
 Diln Fac: 1

 Prep Date: 06/06/96
 Analysis Date: 06/06/96

MB Lab ID: QC23480

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	102	68-126
Toluene-d8	99	87-125
Bromofluorobenzene	91	79-122

042



Lab #: 125822

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
 Batch#: 28108
 Units: ug/L
 Diln Fac: 1

Prep Date: 06/11/96
 Analysis Date: 06/11/96

MB Lab ID: QC23891

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	104	68-126
Toluene-d8	98	87-125
Bromofluorobenzene	90	79-122

043



Lab #: 125822

BATCH QC REPORT

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EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 28021
Units: ug/L
Diln Fac: 1

Prep Date: 06/06/96
Analysis Date: 06/06/96

LCS Lab ID: QC23478

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	49.92	50	100	51-180
Trichloroethene	48.67	50	97	73-141
Benzene	46.81	50	94	78-142
Toluene	49.66	50	99	76-150
Chlorobenzene	49.16	50	98	83-129
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	108	68-126		
Toluene-d8	98	87-125		
Bromofluorobenzene	93	79-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

044



Lab #: 125822

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
 Batch#: 28108
 Units: ug/L
 Diln Fac: 1

Prep Date: 06/11/96
 Analysis Date: 06/11/96

LCS Lab ID: QC23890

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	46.84	50	94	51-180
Trichloroethene	43.63	50	87	73-141
Benzene	43.02	50	86	78-142
Toluene	44.97	50	90	76-150
Chlorobenzene	46.61	50	93	83-129
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	99	68-126		
Toluene-d8	97	87-125		
Bromofluorobenzene	89	79-122		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

045

Lab #: 125822

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants	Analysis Method: EPA 8240
Project#: 133.005	Prep Method: EPA 5030
Location: KOT	

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ	Sample Date: 05/23/96
Lab ID: 125702-004	Received Date: 05/24/96
Matrix: Water	Prep Date: 06/06/96
Batch#: 28021	Analysis Date: 06/06/96
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC23509

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	<5.000	45.69	91	51-180
Trichloroethene	50	<5.000	44.32	89	73-141
Benzene	50	<0.5000	43.08	86	78-142
Toluene	50	<0.5000	44.43	89	76-150
Chlorobenzene	50	<5.000	45.95	92	83-129
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	111	68-126			
Toluene-d8	97	87-125			
Bromofluorobenzene	94	79-122			

MSD Lab ID: QC23510

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	47.32	95	51-180	4	<14
Trichloroethene	50	45.14	90	73-141	2	<14
Benzene	50	45.55	91	78-142	6	<11
Toluene	50	46.51	93	76-150	5	<13
Chlorobenzene	50	46.75	94	83-129	2	<13
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	109	68-126				
Toluene-d8	99	87-125				
Bromofluorobenzene	93	79-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

018

Lab #: 125822

BATCH QC REPORT

Page 1 of 1

EPA 8240 Volatile Organics

 Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

 Analysis Method: EPA 8240
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

 Field ID: SCI-21
 Lab ID: 125822-001
 Matrix: Water
 Batch#: 28108
 Units: ug/L
 Diln Fac: 5

 Sample Date: 05/31/96
 Received Date: 06/04/96
 Prep Date: 06/12/96
 Analysis Date: 06/12/96

MS Lab ID: QC23894

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	250	<5.000	231.3	93	51-180
Trichloroethene	250	<5.000	223.5	89	73-141
Benzene	250	<5.000	219.1	88	78-142
Toluene	250	<5.000	231.1	92	76-150
Chlorobenzene	250	<5.000	238.9	96	83-129
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	109	68-126			
Toluene-d8	99	87-125			
Bromofluorobenzene	91	79-122			

MSD Lab ID: QC23895

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	250	221.7	89	51-180	4	<14
Trichloroethene	250	208.9	84	73-141	7	<14
Benzene	250	209.4	84	78-142	5	<11
Toluene	250	223.1	89	76-150	4	<13
Chlorobenzene	250	235	94	83-129	2	<13
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	106	68-126				
Toluene-d8	98	87-125				
Bromofluorobenzene	92	79-122				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

047



Semivolatile Organics by GC/MS

Client: Subsurface Consultants Analysis Method: EPA 8270
Project#: 133.005 Prep Method: EPA 3520
Location: KOT

Field ID: SCI-27 Sampled: 06/03/96
Lab ID: 125822-013 Received: 06/04/96
Matrix: Water Extracted: 06/09/96
Batch#: 28079 Analyzed: 06/17/96
Units: ug/L
Diln Fac: 1

Analyte	Result	Reporting Limit
Phenol	ND	9.4
2-Chlorophenol	ND	9.4
Benzyl alcohol	ND	9.4
2-Methylphenol	ND	9.4
4-Methylphenol	ND	9.4
2-Nitrophenol	ND	47
2,4-Dimethylphenol	ND	9.4
Benzoic acid	ND	47
2,4-Dichlorophenol	ND	9.4
4-Chloro-3-methylphenol	ND	9.4
2,4,6-Trichlorophenol	ND	9.4
2,4,5-Trichlorophenol	ND	47
2,4-Dinitrophenol	ND	47
4-Nitrophenol	ND	47
4,6-Dinitro-2-methylphenol	ND	47
Pentachlorophenol	ND	47
N-Nitrosodimethylamine	ND	9.4
Aniline	ND	9.4
bis(2-Chloroethyl)ether	ND	9.4
1,3-Dichlorobenzene	ND	9.4
1,4-Dichlorobenzene	ND	9.4
1,2-Dichlorobenzene	ND	9.4
bis(2-Chloroisopropyl) ether	ND	9.4
N-Nitroso-di-n-propylamine	ND	9.4
Hexachloroethane	ND	9.4
Nitrobenzene	ND	9.4
Isophorone	ND	9.4
bis(2-Chloroethoxy)methane	ND	9.4
1,2,4-Trichlorobenzene	ND	9.4
Naphthalene	ND	9.4
4-Chloroaniline	ND	9.4
Hexachlorobutadiene	ND	9.4
2-Methylnaphthalene	ND	9.4
Hexachlorocyclopentadiene	ND	9.4
2-Chloronaphthalene	ND	9.4
2-Nitroaniline	ND	47
Dimethylphthalate	ND	9.4
Acenaphthylene	ND	9.4

009



Semivolatile Organics by GC/MS

Field ID: SCI-27	Sampled: 06/03/96
Lab ID: 125822-013	Received: 06/04/96
Matrix: Water	Extracted: 06/09/96
Batch#: 28079	Analyzed: 06/17/96
Units: ug/L	
Diln Fac: 1	

Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	9.4
3-Nitroaniline	ND	47
Acenaphthene	ND	9.4
Dibenzofuran	ND	9.4
2,4-Dinitrotoluene	ND	9.4
Diethylphthalate	ND	9.4
4-Chlorophenyl-phenylether	ND	9.4
Fluorene	ND	9.4
4-Nitroaniline	ND	47
N-Nitrosodiphenylamine	ND	9.4
Azobenzene	ND	9.4
4-Bromophenyl-phenylether	ND	9.4
Hexachlorobenzene	ND	9.4
Phenanthrene	ND	9.4
Anthracene	ND	9.4
Di-n-butylphthalate	ND	9.4
Fluoranthene	ND	9.4
Pyrene	ND	9.4
Butylbenzylphthalate	ND	9.4
3,3'-Dichlorobenzidine	ND	47
Benzo(a)anthracene	ND	9.4
Chrysene	ND	9.4
bis(2-Ethylhexyl)phthalate	ND	9.4
Di-n-octylphthalate	ND	9.4
Benzo(b)fluoranthene	ND	9.4
Benzo(k)fluoranthene	ND	9.4
Benzo(a)pyrene	5.3 J	9.4
Indeno(1,2,3-cd)pyrene	ND	9.4
Dibenz(a,h)anthracene	ND	9.4
Benzo(g,h,i)perylene	ND	9.4

Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	59	21-110
Phenol-d5	75	10-110
2,4,6-Tribromophenol	13	10-123
Nitrobenzene-d5	36	35-114
2-Fluorobiphenyl	11*	43-116
Terphenyl-d14	25*	33-141

J: Estimated Value

* Values outside of QC limits

010



Lab #: 125822

BATCH QC REPORT

Page 1 of 2

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8270
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 28079
 Units: ug/L
 Diln Fac: 1

Prep Date: 06/09/96
 Analysis Date: 06/13/96

MB Lab ID: QC23753

Analyte	Result	Reporting Limit
Phenol	ND	10
2-Chlorophenol	ND	10
Benzyl alcohol	ND	10
2-Methylphenol	ND	10
4-Methylphenol	ND	10
2-Nitrophenol	ND	50
2,4-Dimethylphenol	ND	10
Benzoic acid	ND	50
2,4-Dichlorophenol	ND	10
4-Chloro-3-methylphenol	ND	10
2,4,6-Trichlorophenol	ND	10
2,4,5-Trichlorophenol	ND	50
2,4-Dinitrophenol	ND	50
4-Nitrophenol	ND	50
4,6-Dinitro-2-methylphenol	ND	50
Pentachlorophenol	ND	10
N-Nitrosodimethylamine	ND	10
Aniline	ND	10
bis(2-Chloroethyl) ether	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
1,2-Dichlorobenzene	ND	10
bis(2-Chloroisopropyl) ether	ND	10
N-Nitroso-di-n-propylamine	ND	10
Hexachloroethane	ND	10
Nitrobenzene	ND	10
Isophorone	ND	10
bis(2-Chloroethoxy)methane	ND	10
1,2,4-Trichlorobenzene	ND	10
Naphthalene	ND	10
4-Chloroaniline	ND	10
Hexachlorobutadiene	ND	10
2-Methylnaphthalene	ND	10
Hexachlorocyclopentadiene	ND	10
2-Chloronaphthalene	ND	10
2-Nitroaniline	ND	50
Dimethylphthalate	ND	10
Acenaphthylene	ND	10
2,6-Dinitrotoluene	ND	10
3-Nitroaniline	ND	50



Lab #: 125822

BATCH QC REPORT

Page 2 of 2

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8270
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 28079
 Units: ug/L
 Diln Fac: 1

Prep Date: 06/09/96
 Analysis Date: 06/13/96

MB Lab ID: QC23753

Analyte	Result	Reporting Limit
Acenaphthene	ND	10
Dibenzofuran	ND	10
2,4-Dinitrotoluene	ND	10
Diethylphthalate	ND	10
4-Chlorophenyl-phenylether	ND	10
Fluorene	ND	10
4-Nitroaniline	ND	50
N-Nitrosodiphenylamine	ND	10
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	10
Hexachlorobenzene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Di-n-butylphthalate	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Butylbenzylphthalate	ND	10
3,3'-Dichlorobenzidine	ND	50
Benzo(a)anthracene	ND	10
Chrysene	ND	10
bis(2-Ethylhexyl)phthalate	ND	10
Di-n-octylphthalate	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(a)pyrene	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Dibenz(a,h)anthracene	ND	10
Benzo(g,h,i)perylene	ND	10
Surrogate	%Rec	Recovery Limits
2-Fluorophenol	83	21-110
Phenol-d5	84	10-110
2,4,6-Tribromophenol	84	10-123
Nitrobenzene-d5	88	35-114
2-Fluorobiphenyl	96	43-116
Terphenyl-d14	92	33-141

012



Lab #: 125822

BATCH QC REPORT

Page 1 of 1

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8270
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 28079
 Units: ug/L
 Diln Fac: 1

Prep Date: 06/09/96
 Analysis Date: 06/13/96

BS Lab ID: QC23754

Analyte	Spike Added	BS	%Rec #	Limits
Phenol	100	71.12	71	12-110
2-Chlorophenol	100	76.6	77	27-123
4-Chloro-3-methylphenol	100	69.41	69	23-97
4-Nitrophenol	100	64.47	64	10-80
Pentachlorophenol	100	47.67	48	9-103
1,4-Dichlorobenzene	50	37.17	74	36-97
N-Nitroso-di-n-propylamine	50	31.95	52	41-116
1,2,4-Trichlorobenzene	50	36.99	74	39-98
Acenaphthene	50	44.94	90	46-118
2,4-Dinitrotoluene	50	38.4	77	24-96
Pyrene	50	44.3	89	26-127
Surrogate	%Rec	Limits		
2-Fluorophenol	77	21-110		
Phenol-d5	79	10-110		
2,4,6-Tribromophenol	93	10-123		
Nitrobenzene-d5	84	35-114		
2-Fluorobiphenyl	94	43-116		
Terphenyl-d14	95	33-141		

BSD Lab ID: QC23755

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Phenol	100	73.04	73	12-110	3	<42
2-Chlorophenol	100	80.9	81	27-123	5	<40
4-Chloro-3-methylphenol	100	71.44	71	23-97	3	<42
4-Nitrophenol	100	68.11	68	10-80	6	<50
Pentachlorophenol	100	55.93	56	9-103	15	<50
1,4-Dichlorobenzene	50	39.46	79	36-97		<28
N-Nitroso-di-n-propylamine	50	33.76	56	41-116	7	<38
1,2,4-Trichlorobenzene	50	37.69	75	39-98	1	<28
Acenaphthene	50	46.03	92	46-118	2	<31
2,4-Dinitrotoluene	50	39.79	80	24-96	4	<38
Pyrene	50	44.13	88	26-127	1	<31
Surrogate	%Rec	Limits				
2-Fluorophenol	83	21-110				
Phenol-d5	80	10-110				
2,4,6-Tribromophenol	94	10-123				
Nitrobenzene-d5	86	35-114				
2-Fluorobiphenyl	91	43-116				
Terphenyl-d14	91	33-141				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits

DO: Surrogate diluted out

CHAIN OF CUSTODY FORM

12502

PROJECT NAME: LOT
 JOB NUMBER: 133-005 LAB: Curtis & Tompkins
 PROJECT CONTACT: Jerome Alexander TURNAROUND: standard
 SAMPLED BY: Jerome Alexander REQUESTED BY: SNA

ANALYSIS REQUESTED									
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES																				
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME																					
-1	SCI-21	X				4	5	1		5		1	X		05	31	96																						
-2	SCI-22 & 3.5		X						X						05	31	96																						
-3	SCI-22	X				4	5	1							05	31	96																						
-4	SCI-23 & 6.5		X						X						05	31	96																						
-5	SCI-23	X				4	5	1		5					05	31	96																						
-6	SCI-24 & 4.5		X						X						05	31	96																						
-7	SCI-24	X				4	5	1		5					05	31	96																						
-8	SCI-25 & 6		X						X						05	31	96																						
-9	SCI-25	X				4	5	1		5					05	31	96																						
-10	SCI-26 & 3.5		X						X						05	31	96																						
-11	SCI-26	X				4	5	1		5					05	31	96																						

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature) <i>Jerome Alexander</i>	DATE / TIME <i>6/4/96 1:15 p.m.</i>	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE / TIME <i>6.4.96 1:15</i>
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:

Subsurface Consultants, Inc.
 171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
 (510) 268-0461 • FAX: 510-268-0137

CHAIN OF CUSTODY FORM

125022

PAGE 01

PROJECT NAME: LCT
 JOB NUMBER: 133 005 LAB: Leaves & Samples
 PROJECT CONTACT: Jennifer Gardner TURNAROUND: Standard
 SAMPLED BY: Jennifer Gardner REQUESTED BY: LCT

ANALYSIS REQUESTED										

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES										
		WATER	SOIL	WASTE	AIR	VOL	LITER	PINT	TUBE	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME											
12	SCI-27 @ 3.5		X						X				X		6	6	96				X	X	X	X					
13	SCI-27	X				4	5	1		5		1	X								X	X	X	X	X	X	X		
14	SCI-27	X							X				X								X	X	X	X	X	X	X		
15	SCI-30	X				4	5	1		5		1	X								X	X	X	X	X	X			
15	SCI-31 @ 4.0		X						X				X								X	X	X	X	X	X			
16	SCI-31	X				4	5	1		5		1	X								X	X	X	X	X	X			
	2/1/25/96																												

CHAIN OF CUSTODY RECORD				COMMENTS & NOTES:	
RELEASED BY: (Signature) <i>Derrin Gardner</i>	DATE / TIME 6/4/96 1:15 PM	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE / TIME 6-4-96 1:15		
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME		
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME		
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME		
Subsurface Consultants, Inc. 171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607 (510) 268-0461 • FAX: 510-268-0137					



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

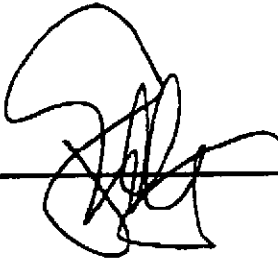
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900


ANALYTICAL REPORT

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 11-JUL-96
Lab Job Number: 126119
Project ID: 133.005
Location: KOT

Reviewed by:  _____

Reviewed by:  _____

This package may be reproduced only in its entirety.



SAMPLE ID: SCI-4
 LAB ID: 126119-001
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Filtrate

DATE SAMPLED: 05/22/96
 DATE RECEIVED: 05/22/96
 DATE REPORTED: 07/10/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28446	EPA 6010A	07/09/96
Arsenic	ND	5.0	1	28446	EPA 6010A	07/09/96
Barium	32	10	1	28446	EPA 6010A	07/09/96
Beryllium	ND	2.0	1	28446	EPA 6010A	07/09/96
Cadmium	ND	2.0	1	28446	EPA 6010A	07/09/96
Chromium (total)	ND	10	1	28446	EPA 6010A	07/09/96
Cobalt	ND	20	1	28446	EPA 6010A	07/09/96
Copper	ND	10	1	28446	EPA 6010A	07/09/96
Lead	ND	3.0	1	28446	EPA 6010A	07/09/96
Mercury	1.3	1.0	1	28476	EPA 7470	07/02/96
Molybdenum	ND	20	1	28446	EPA 6010A	07/09/96
Nickel	ND	20	1	28446	EPA 6010A	07/09/96
Selenium	8.9	5.0	1	28446	EPA 6010A	07/09/96
Silver	ND	5.0	1	28446	EPA 6010A	07/09/96
Thallium	ND	5.0	1	28446	EPA 6010A	07/09/96
Vanadium	ND	10	1	28446	EPA 6010A	07/09/96
Zinc	ND	20	1	28446	EPA 6010A	07/09/96

ND = Not detected at or above reporting limit



SAMPLE ID: SCI-5
 LAB ID: 126119-002
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Filtrate

DATE SAMPLED: 05/22/96
 DATE RECEIVED: 05/22/96
 DATE REPORTED: 07/10/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28446	EPA 6010A	07/09/96
Arsenic	ND	5.0	1	28446	EPA 6010A	07/09/96
Barium	240	10	1	28446	EPA 6010A	07/09/96
Beryllium	ND	2.0	1	28446	EPA 6010A	07/09/96
Cadmium	ND	2.0	1	28446	EPA 6010A	07/09/96
Chromium (total)	ND	10	1	28446	EPA 6010A	07/09/96
Cobalt	ND	20	1	28446	EPA 6010A	07/09/96
Copper	34	10	1	28446	EPA 6010A	07/09/96
Lead	ND	3.0	1	28446	EPA 6010A	07/09/96
Mercury	2.8	2.0	1	28476	EPA 7470	07/02/96
Molybdenum	ND	20	1	28446	EPA 6010A	07/09/96
Nickel	32	20	1	28446	EPA 6010A	07/09/96
Selenium	6.9	5.0	1	28446	EPA 6010A	07/09/96
Silver	ND	5.0	1	28446	EPA 6010A	07/09/96
Thallium	ND	5.0	1	28446	EPA 6010A	07/09/96
Vanadium	ND	10	1	28446	EPA 6010A	07/09/96
Zinc	80	20	1	28446	EPA 6010A	07/09/96

ND = Not detected at or above reporting limit



SAMPLE ID: SCI-11
 LAB ID: 126119-003
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Filtrate

DATE SAMPLED: 05/23/96
 DATE RECEIVED: 05/24/96
 DATE REPORTED: 07/10/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28446	EPA 6010A	07/09/96
Arsenic	ND	5.0	1	28446	EPA 6010A	07/09/96
Barium	290	10	1	28446	EPA 6010A	07/09/96
Beryllium	2.8	2.0	1	28446	EPA 6010A	07/09/96
Cadmium	3.4	2.0	1	28446	EPA 6010A	07/09/96
Chromium (total)	ND	10	1	28446	EPA 6010A	07/09/96
Cobalt	ND	20	1	28446	EPA 6010A	07/09/96
Copper	73	10	1	28446	EPA 6010A	07/09/96
Lead	4.0	3.0	1	28446	EPA 6010A	07/09/96
Mercury	0.25	0.20	1	28476	EPA 7470	07/02/96
Molybdenum	ND	20	1	28446	EPA 6010A	07/09/96
Nickel	180	20	1	28446	EPA 6010A	07/09/96
Selenium	23	5.0	1	28446	EPA 6010A	07/09/96
Silver	ND	5.0	1	28446	EPA 6010A	07/09/96
Thallium	ND	5.0	1	28446	EPA 6010A	07/09/96
Vanadium	11	10	1	28446	EPA 6010A	07/09/96
Zinc	320	20	1	28446	EPA 6010A	07/09/96

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd.

SAMPLE ID: SCI-14
 LAB ID: 126119-004
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Filtrate

DATE SAMPLED: 05/23/96
 DATE RECEIVED: 05/24/96
 DATE REPORTED: 07/10/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28446	EPA 6010A	07/09/96
Arsenic	ND	5.0	1	28446	EPA 6010A	07/09/96
Barium	59	10	1	28446	EPA 6010A	07/09/96
Beryllium	2.6	2.0	1	28446	EPA 6010A	07/09/96
Cadmium	ND	2.0	1	28446	EPA 6010A	07/09/96
Chromium (total)	ND	10	1	28446	EPA 6010A	07/09/96
Cobalt	ND	20	1	28446	EPA 6010A	07/09/96
Copper	ND	10	1	28446	EPA 6010A	07/09/96
Lead	ND	3.0	1	28446	EPA 6010A	07/09/96
Mercury	3.5	2.0	1	28476	EPA 7470	07/02/96
Molybdenum	27	20	1	28446	EPA 6010A	07/09/96
Nickel	72	20	1	28446	EPA 6010A	07/09/96
Selenium	12	5.0	1	28446	EPA 6010A	07/09/96
Silver	ND	5.0	1	28446	EPA 6010A	07/09/96
Thallium	ND	5.0	1	28446	EPA 6010A	07/09/96
Vanadium	ND	10	1	28446	EPA 6010A	07/09/96
Zinc	270	20	1	28446	EPA 6010A	07/09/96

ND = Not detected at or above reporting limit



Curtis & Tompkins, Inc.

SAMPLE ID: SCI-15
 LAB ID: 126119-005
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Filtrate

DATE SAMPLED: 05/23/96
 DATE RECEIVED: 06/24/96
 DATE REPORTED: 07/10/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28446	EPA 6010A	07/09/96
Arsenic	ND	5.0	1	28446	EPA 6010A	07/09/96
Barium	93	10	1	28446	EPA 6010A	07/09/96
Beryllium	2.0	2.0	1	28446	EPA 6010A	07/09/96
Cadmium	ND	2.0	1	28446	EPA 6010A	07/09/96
Chromium (total)	ND	10	1	28446	EPA 6010A	07/09/96
Cobalt	ND	20	1	28446	EPA 6010A	07/09/96
Copper	12	10	1	28446	EPA 6010A	07/09/96
Lead	ND	3.0	1	28446	EPA 6010A	07/09/96
Mercury	0.32	0.20	1	28476	EPA 7470	07/02/96
Molybdenum	ND	20	1	28446	EPA 6010A	07/09/96
Nickel	ND	20	1	28446	EPA 6010A	07/09/96
Selenium	12	5.0	1	28446	EPA 6010A	07/09/96
Silver	ND	5.0	1	28446	EPA 6010A	07/09/96
Thallium	ND	5.0	1	28446	EPA 6010A	07/09/96
Vanadium	ND	10	1	28446	EPA 6010A	07/09/96
Zinc	50	20	1	28446	EPA 6010A	07/09/96

ND = Not detected at or above reporting limit



SAMPLE ID: SCI-MW-1
 LAB ID: 126119-006
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Filtrate

DATE SAMPLED: 05/24/96
 DATE RECEIVED: 05/24/96
 DATE REPORTED: 07/10/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28446	EPA 6010A	07/09/96
Arsenic	ND	5.0	1	28446	EPA 6010A	07/09/96
Barium	170	10	1	28446	EPA 6010A	07/09/96
Beryllium	2.0	2.0	1	28446	EPA 6010A	07/09/96
Cadmium	ND	2.0	1	28446	EPA 6010A	07/09/96
Chromium (total)	ND	10	1	28446	EPA 6010A	07/09/96
Cobalt	ND	20	1	28446	EPA 6010A	07/09/96
Copper	ND	10	1	28446	EPA 6010A	07/09/96
Lead	ND	3.0	1	28446	EPA 6010A	07/09/96
Mercury	ND	0.20	1	28476	EPA 7470	07/02/96
Molybdenum	ND	20	1	28446	EPA 6010A	07/09/96
Nickel	ND	20	1	28446	EPA 6010A	07/09/96
Selenium	8.3	5.0	1	28446	EPA 6010A	07/09/96
Silver	ND	5.0	1	28446	EPA 6010A	07/09/96
Thallium	ND	5.0	1	28446	EPA 6010A	07/09/96
Vanadium	ND	10	1	28446	EPA 6010A	07/09/96
Zinc	ND	20	1	28446	EPA 6010A	07/09/96

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd.

SAMPLE ID: SCI-MW-2
 LAB ID: 126119-007
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Filtrate

DATE SAMPLED: 05/23/96
 DATE RECEIVED: 05/24/96
 DATE REPORTED: 07/10/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28446	EPA 6010A	06/29/96
Arsenic	11	5.0	1	28446	EPA 6010A	06/29/96
Barium	490	10	1	28446	EPA 6010A	06/29/96
Beryllium	ND	2.0	1	28446	EPA 6010A	06/29/96
Cadmium	ND	2.0	1	28446	EPA 6010A	06/29/96
Chromium (total)	ND	10	1	28446	EPA 6010A	06/29/96
Cobalt	ND	20	1	28446	EPA 6010A	06/29/96
Copper	69	10	1	28446	EPA 6010A	06/29/96
Lead	62	3.0	1	28446	EPA 6010A	06/29/96
Mercury	ND	0.20	1	28476	EPA 7470	07/02/96
Molybdenum	ND	20	1	28446	EPA 6010A	06/29/96
Nickel	ND	20	1	28446	EPA 6010A	06/29/96
Selenium	22	5.0	1	28446	EPA 6010A	06/29/96
Silver	ND	5.0	1	28446	EPA 6010A	06/29/96
Thallium	ND	5.0	1	28446	EPA 6010A	06/29/96
Vanadium	ND	10	1	28446	EPA 6010A	06/29/96
Zinc	110	20	1	28446	EPA 6010A	06/29/96

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd

SAMPLE ID: MW-6 BEFORE PURGE
 LAB ID: 126119-009
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Filtrate

DATE SAMPLED: 05/24/96
 DATE RECEIVED: 05/24/96
 DATE REPORTED: 07/10/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28446	EPA 6010A	07/09/96
Arsenic	ND	5.0	1	28446	EPA 6010A	07/09/96
Barium	320	10	1	28446	EPA 6010A	07/09/96
Beryllium	ND	2.0	1	28446	EPA 6010A	07/09/96
Cadmium	ND	2.0	1	28446	EPA 6010A	07/09/96
Chromium (total)	ND	10	1	28446	EPA 6010A	07/09/96
Cobalt	ND	20	1	28446	EPA 6010A	07/09/96
Copper	ND	10	1	28446	EPA 6010A	07/09/96
Lead	ND	3.0	1	28446	EPA 6010A	07/09/96
Mercury	0.43	0.24	1	28476	EPA 7470	07/02/96
Molybdenum	ND	20	1	28446	EPA 6010A	07/09/96
Nickel	ND	20	1	28446	EPA 6010A	07/09/96
Selenium	13	5.0	1	28446	EPA 6010A	07/09/96
Silver	ND	5.0	1	28446	EPA 6010A	07/09/96
Thallium	ND	5.0	1	28446	EPA 6010A	07/09/96
Vanadium	ND	10	1	28446	EPA 6010A	07/09/96
Zinc	ND	20	1	28446	EPA 6010A	07/09/96

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd.

SAMPLE ID: SCI-MW-3
 LAB ID: 126119-008
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Filtrate

DATE SAMPLED: 05/23/96
 DATE RECEIVED: 05/24/96
 DATE REPORTED: 07/10/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28446	EPA 6010A	07/09/96
Arsenic	ND	5.0	1	28446	EPA 6010A	07/09/96
Barium	42	10	1	28446	EPA 6010A	07/09/96
Beryllium	ND	2.0	1	28446	EPA 6010A	07/09/96
Cadmium	ND	2.0	1	28446	EPA 6010A	07/09/96
Chromium (total)	ND	10	1	28446	EPA 6010A	07/09/96
Cobalt	ND	20	1	28446	EPA 6010A	07/09/96
Copper	ND	10	1	28446	EPA 6010A	07/09/96
Lead	ND	3.0	1	28446	EPA 6010A	07/09/96
Mercury	ND	0.20	1	28476	EPA 7470	07/02/96
Molybdenum	ND	20	1	28446	EPA 6010A	07/09/96
Nickel	ND	20	1	28446	EPA 6010A	07/09/96
Selenium	8.2	5.0	1	28446	EPA 6010A	07/09/96
Silver	ND	5.0	1	28446	EPA 6010A	07/09/96
Thallium	ND	5.0	1	28446	EPA 6010A	07/09/96
Vanadium	ND	10	1	28446	EPA 6010A	07/09/96
Zinc	ND	20	1	28446	EPA 6010A	07/09/96

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd

SAMPLE ID: SCI-16
 LAB ID: 126119-010
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Filtrate

DATE SAMPLED: 05/24/96
 DATE RECEIVED: 05/28/96
 DATE REPORTED: 07/10/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28446	EPA 6010A	07/09/96
Arsenic	5.1	5.0	1	28446	EPA 6010A	07/09/96
Barium	310	10	1	28446	EPA 6010A	07/09/96
Beryllium	ND	2.0	1	28446	EPA 6010A	07/09/96
Cadmium	ND	2.0	1	28446	EPA 6010A	07/09/96
Chromium (total)	ND	10	1	28446	EPA 6010A	07/09/96
Cobalt	ND	20	1	28446	EPA 6010A	07/09/96
Copper	ND	10	1	28446	EPA 6010A	07/09/96
Lead	ND	3.0	1	28446	EPA 6010A	07/09/96
Mercury	ND	2.0	1	28476	EPA 7470	07/02/96
Molybdenum	30	20	1	28446	EPA 6010A	07/09/96
Nickel	ND	20	1	28446	EPA 6010A	07/09/96
Selenium	18	5.0	1	28446	EPA 6010A	07/09/96
Silver	ND	5.0	1	28446	EPA 6010A	07/09/96
Thallium	ND	5.0	1	28446	EPA 6010A	07/09/96
Vanadium	26	10	1	28446	EPA 6010A	07/09/96
Zinc	ND	20	1	28446	EPA 6010A	07/09/96

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd

SAMPLE ID: SCI-19
 LAB ID: 126119-011
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Filtrate

DATE SAMPLED: 05/24/96
 DATE RECEIVED: 05/28/96
 DATE REPORTED: 07/10/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28446	EPA 6010A	07/09/96
Arsenic	15	5.0	1	28446	EPA 6010A	07/09/96
Barium	56	10	1	28446	EPA 6010A	07/09/96
Beryllium	ND	2.0	1	28446	EPA 6010A	07/09/96
Cadmium	ND	2.0	1	28446	EPA 6010A	07/09/96
Chromium (total)	ND	10	1	28446	EPA 6010A	07/09/96
Cobalt	ND	20	1	28446	EPA 6010A	07/09/96
Copper	ND	10	1	28446	EPA 6010A	07/09/96
Lead	ND	3.0	1	28446	EPA 6010A	07/09/96
Mercury	ND	0.20	1	28476	EPA 7470	07/02/96
Molybdenum	ND	20	1	28446	EPA 6010A	07/09/96
Nickel	ND	20	1	28446	EPA 6010A	07/09/96
Selenium	7.4	5.0	1	28446	EPA 6010A	07/09/96
Silver	ND	5.0	1	28446	EPA 6010A	07/09/96
Thallium	ND	5.0	1	28446	EPA 6010A	07/09/96
Vanadium	16	10	1	28446	EPA 6010A	07/09/96
Zinc	ND	20	1	28446	EPA 6010A	07/09/96

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd.

SAMPLE ID: SCI-20
 LAB ID: 126119-012
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Filtrate

DATE SAMPLED: 05/24/96
 DATE RECEIVED: 05/28/96
 DATE REPORTED: 07/10/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28446	EPA 6010A	07/09/96
Arsenic	6.1	5.0	1	28446	EPA 6010A	07/09/96
Barium	650	10	1	28446	EPA 6010A	07/09/96
Beryllium	2.2	2.0	1	28446	EPA 6010A	07/09/96
Cadmium	ND	2.0	1	28446	EPA 6010A	07/09/96
Chromium (total)	ND	10	1	28446	EPA 6010A	07/09/96
Cobalt	ND	20	1	28446	EPA 6010A	07/09/96
Copper	ND	10	1	28446	EPA 6010A	07/09/96
Lead	ND	3.0	1	28446	EPA 6010A	07/09/96
Mercury	ND	0.20	1	28476	EPA 7470	07/02/96
Molybdenum	ND	20	1	28446	EPA 6010A	07/09/96
Nickel	37	20	1	28446	EPA 6010A	07/09/96
Selenium	18	5.0	1	28446	EPA 6010A	07/09/96
Silver	ND	5.0	1	28446	EPA 6010A	07/09/96
Thallium	ND	5.0	1	28446	EPA 6010A	07/09/96
Vanadium	ND	10	1	28446	EPA 6010A	07/09/96
Zinc	26	20	1	28446	EPA 6010A	07/09/96

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd.

SAMPLE ID: SCI-17
 LAB ID: 126119-013
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Filtrate

DATE SAMPLED: 05/28/96
 DATE RECEIVED: 05/29/96
 DATE REPORTED: 07/10/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28446	EPA 6010A	07/09/96
Arsenic	10	5.0	1	28446	EPA 6010A	07/09/96
Barium	270	10	1	28446	EPA 6010A	07/09/96
Beryllium	2.8	2.0	1	28446	EPA 6010A	07/09/96
Cadmium	5.5	2.0	1	28446	EPA 6010A	07/09/96
chromium (total)	ND	10	1	28446	EPA 6010A	07/09/96
Cobalt	ND	20	1	28446	EPA 6010A	07/09/96
Copper	440	10	1	28446	EPA 6010A	07/09/96
Lead	270	3.0	1	28446	EPA 6010A	07/09/96
Mercury	ND	0.20	1	28476	EPA 7470	07/02/96
Molybdenum	ND	20	1	28446	EPA 6010A	07/09/96
Nickel	48	20	1	28446	EPA 6010A	07/09/96
Selenium	13	5.0	1	28446	EPA 6010A	07/09/96
Silver	ND	5.0	1	28446	EPA 6010A	07/09/96
Thallium	ND	5.0	1	28446	EPA 6010A	07/09/96
Vanadium	14	10	1	28446	EPA 6010A	07/09/96
Zinc	2200	20	1	28446	EPA 6010A	07/09/96

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd.

SAMPLE ID: SCI-23
 LAB ID: 126119-014
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Filtrate

DATE SAMPLED: 05/31/96
 DATE RECEIVED: 06/04/96
 DATE REPORTED: 07/10/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28446	EPA 6010A	07/09/96
Arsenic	6.7	5.0	1	28446	EPA 6010A	07/09/96
Barium	440	10	1	28446	EPA 6010A	07/09/96
Beryllium	2.2	2.0	1	28446	EPA 6010A	07/09/96
Cadmium	ND	2.0	1	28446	EPA 6010A	07/09/96
Chromium (total)	ND	10	1	28446	EPA 6010A	07/09/96
Cobalt	ND	20	1	28446	EPA 6010A	07/09/96
Copper	ND	10	1	28446	EPA 6010A	07/09/96
Lead	ND	3.0	1	28446	EPA 6010A	07/09/96
Mercury	ND	0.20	1	28476	EPA 7470	07/02/96
Molybdenum	ND	20	1	28446	EPA 6010A	07/09/96
Nickel	ND	20	1	28446	EPA 6010A	07/09/96
Selenium	22	5.0	1	28446	EPA 6010A	07/09/96
Silver	ND	5.0	1	28446	EPA 6010A	07/09/96
Thallium	ND	5.0	1	28446	EPA 6010A	07/09/96
Vanadium	ND	10	1	28446	EPA 6010A	07/09/96
Zinc	ND	20	1	28446	EPA 6010A	07/09/96

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd.

SAMPLE ID: SCI-27
 LAB ID: 126119-015
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Filtrate

DATE SAMPLED: 06/03/96
 DATE RECEIVED: 06/04/96
 DATE REPORTED: 07/10/96

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	28446	EPA 6010A	07/09/96
Arsenic	ND	5.0	1	28446	EPA 6010A	07/09/96
Barium	190	10	1	28446	EPA 6010A	07/09/96
Beryllium	2.3	2.0	1	28446	EPA 6010A	07/09/96
Cadmium	130	2.0	1	28446	EPA 6010A	07/09/96
Chromium (total)	ND	10	1	28446	EPA 6010A	07/09/96
Cobalt	130	20	1	28446	EPA 6010A	07/09/96
Copper	180	10	1	28446	EPA 6010A	07/09/96
Lead	13	3.0	1	28446	EPA 6010A	07/09/96
Mercury	0.23	0.20	1	28476	EPA 7470	07/02/96
Molybdenum	32	20	1	28446	EPA 6010A	07/09/96
Nickel	67	20	1	28446	EPA 6010A	07/09/96
Selenium	19	5.0	1	28446	EPA 6010A	07/09/96
Silver	ND	5.0	1	28446	EPA 6010A	07/09/96
Thallium	ND	5.0	1	28446	EPA 6010A	07/09/96
Vanadium	ND	10	1	28446	EPA 6010A	07/09/96
Zinc	2000	20	1	28446	EPA 6010A	07/09/96

ND = Not detected at or above reporting limit



Curtis & Tompkins Ltd

CLIENT: Subsurface Consultants
JOB NUMBER: 126119

DATE REPORTED: 07/10/96

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BSX Rec.	BSDX Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	500	494	524	ug/L	99	105	80-120	6	35	28446	EPA 6010A	06/29/96
Arsenic	2000	1950	1920	ug/L	98	96	80-120	2	35	28446	EPA 6010A	06/29/96
Berium	2000	2010	2000	ug/L	101	100	80-120	1	35	28446	EPA 6010A	06/29/96
Beryllium	50	53	51.8	ug/L	106	104	80-120	2	35	28446	EPA 6010A	06/29/96
Cadmium	50	51.9	50.4	ug/L	104	101	80-120	3	35	28446	EPA 6010A	06/29/96
Chromium (total)	200	205	200	ug/L	103	100	80-120	3	35	28446	EPA 6010A	06/29/96
Cobalt	500	498	481	ug/L	100	96	80-120	4	35	28446	EPA 6010A	06/29/96
Copper	250	255	254	ug/L	102	102	80-120	0	35	28446	EPA 6010A	06/29/96
Lead	500	505	494	ug/L	101	99	80-120	2	35	28446	EPA 6010A	06/29/96
Mercury	5	4.912	5.068	ug/L	98	101	80-120	3	35	28476	EPA 7470	07/02/96
Molybdenum	400	384	381	ug/L	96	95	80-120	1	35	28446	EPA 6010A	06/29/96
Nickel	500	516	506	ug/L	103	101	80-120	2	35	28446	EPA 6010A	06/29/96
Selenium	2000	1940	1910	ug/L	97	96	80-120	2	35	28446	EPA 6010A	06/29/96
Silver	100	101	101	ug/L	101	101	80-120	0	35	28446	EPA 6010A	06/29/96
Thallium	2000	2060	2020	ug/L	103	101	80-120	2	35	28446	EPA 6010A	06/29/96
Vanadium	500	500	492	ug/L	100	98	80-120	2	35	28446	EPA 6010A	06/29/96
Zinc	500	508	498	ug/L	102	100	80-120	2	35	28446	EPA 6010A	06/29/96



Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants
JOB NUMBER: 126119

DATE REPORTED: 07/10/96

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	ug/L	1	28446	EPA 6010A	06/29/96
Arsenic	ND	5	ug/L	1	28446	EPA 6010A	06/29/96
Barium	ND	10	ug/L	1	28446	EPA 6010A	06/29/96
Beryllium	ND	2	ug/L	1	28446	EPA 6010A	06/29/96
Cadmium	ND	2	ug/L	1	28446	EPA 6010A	06/29/96
Chromium (total)	ND	10	ug/L	1	28446	EPA 6010A	06/29/96
Cobalt	ND	20	ug/L	1	28446	EPA 6010A	06/29/96
Copper	ND	10	ug/L	1	28446	EPA 6010A	06/29/96
Lead	ND	3	ug/L	1	28446	EPA 6010A	06/29/96
Mercury	ND	0.2	ug/L	1	28476	EPA 7470	07/02/96
Molybdenum	ND	20	ug/L	1	28446	EPA 6010A	06/29/96
Nickel	ND	20	ug/L	1	28446	EPA 6010A	06/29/96
Selenium	ND	5	ug/L	1	28446	EPA 6010A	06/29/96
Silver	ND	5	ug/L	1	28446	EPA 6010A	06/29/96
Thallium	ND	5	ug/L	1	28446	EPA 6010A	06/29/96
Vanadium	ND	10	ug/L	1	28446	EPA 6010A	06/29/96
Zinc	ND	20	ug/L	1	28446	EPA 6010A	06/29/96

ND = Not Detected at or above reporting limit



CLIENT: Subsurface Consultants
 JOB NUMBER: 126119

DATE REPORTED: 07/10/96

**BATCH QC REPORT
 SAMPLE DUPLICATE**

Compound	Sample	Sample Result	Duplicate Result	Units	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	126119-007	<60.000	<60.000	ug/L	NC	20	28446	EPA 6010A	06/29/96
Arsenic	126119-007	11	10.5	ug/L	5	20	28446	EPA 6010A	06/29/96
Barium	126119-007	491	502	ug/L	2	20	28446	EPA 6010A	06/29/96
Beryllium	126119-007	<2.000	<2.000	ug/L	NC	20	28446	EPA 6010A	06/29/96
Cadmium	126119-007	<2.000	<2.000	ug/L	NC	20	28446	EPA 6010A	06/29/96
Chromium (total)	126119-007	<10.000	<10.000	ug/L	NC	20	28446	EPA 6010A	06/29/96
Cobalt	126119-007	<20.000	<20.000	ug/L	NC	20	28446	EPA 6010A	06/29/96
Copper	126119-007	69.1	70.2	ug/L	2	20	28446	EPA 6010A	06/29/96
Lead	126119-007	62	60	ug/L	3	20	28446	EPA 6010A	06/29/96
Mercury	126119-003	0.252	0.357	ug/L	35	20	28476	EPA 7470	07/02/96
Molybdenum	126119-007	<20.000	<20.000	ug/L	NC	20	28446	EPA 6010A	06/29/96
Nickel	126119-007	<20.000	<20.000	ug/L	NC	20	28446	EPA 6010A	06/29/96
Selenium	126119-007	21.5	19.6	ug/L	9	20	28446	EPA 6010A	06/29/96
Silver	126119-007	<5.000	<5.000	ug/L	NC	20	28446	EPA 6010A	06/29/96
Thallium	126119-007	<5.000	<5.000	ug/L	NC	20	28446	EPA 6010A	06/29/96
Vanadium	126119-007	<10.000	<10.000	ug/L	NC	20	28446	EPA 6010A	06/29/96
Zinc	126119-007	108	110	ug/L	2	20	28446	EPA 6010A	06/29/96

* = Out of Limits
 NC = Not Calculable



CLIENT: Subsurface Consultants
 JOB NUMBER: 126119

DATE REPORTED: 07/10/96

BATCH QC REPORT
 SAMPLE SPIKE

Compound	Spike Amount	Sample	Sample Result	Spike Result	Units	Percent Rec.	Rec. Limit	QC Batch	Method	Analysis Date
Antimony	500	126119-007	<60.000	527	ug/L	105	75-125	28446	EPA 6010A	06/29/96
Arsenic	2000	126119-007	11	1780	ug/L	88	75-125	28446	EPA 6010A	06/29/96
Barium	2000	126119-007	491	2750	ug/L	113	75-125	28446	EPA 6010A	06/29/96
Beryllium	50	126119-007	<2.000	48.4	ug/L	97	75-125	28446	EPA 6010A	06/29/96
Cadmium	50	126119-007	<2.000	48.6	ug/L	97	75-125	28446	EPA 6010A	06/29/96
Chromium (total)	200	126119-007	<10.000	209	ug/L	105	75-125	28446	EPA 6010A	06/29/96
Cobalt	500	126119-007	<20.000	483	ug/L	97	75-125	28446	EPA 6010A	06/29/96
Copper	250	126119-007	69.1	427	ug/L	143*	75-125	28446	EPA 6010A	06/29/96
Lead	500	126119-007	62	577	ug/L	103	75-125	28446	EPA 6010A	06/29/96
Mercury	5	126119-003	0.252	4.05	ug/L	76	75-125	28476	EPA 7470	07/02/96
Molybdenum	400	126119-007	<20.000	363	ug/L	91	75-125	28446	EPA 6010A	06/29/96
Nickel	500	126119-007	<20.000	538	ug/L	108	75-125	28446	EPA 6010A	06/29/96
Selenium	2000	126119-007	21.5	1900	ug/L	94	75-125	28446	EPA 6010A	06/29/96
Silver	100	126119-007	<5.000	129	ug/L	129*	75-125	28446	EPA 6010A	06/29/96
Thallium	2000	126119-007	<5.000	1910	ug/L	96	75-125	28446	EPA 6010A	06/29/96
Vanadium	500	126119-007	<10.000	510	ug/L	102	75-125	28446	EPA 6010A	06/29/96
Zinc	500	126119-007	108	610	ug/L	100	75-125	28446	EPA 6010A	06/29/96

* = Out of Limits

CURTIS & TOMPKINS, LTD. BERKELEY

LOGIN CHANGE FORM

Reason for change: Client Request: By: J. Alexander Date/Time: 6/26/96 Initials: [Signature]
 Login Review Data Review 10:20

Current Lab ID	Previous Lab ID	Client ID	Matrix	Add/Cancel	Analysis	Due date	
126119-1	see attached		Water	Add	Dissolved	1-wk	
-2					T26 Metals		
-3							
-4							
-5							
-6							
-7							
-8							
-9							
-10							
-11							
-12							
-13							
-14							
-15							

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