LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT 3645 SAN PABLO AVENUE EMERYVILLE, CALIFORNIA

PREPARED FOR:
City of Emeryville Redevelopment Agency
1333 Park Avenue
Emeryville, California 94608-3517

PREPARED BY:
Ninyo & Moore
Geotechnical and Environmental Sciences Consultants
1956 Webster Street, Suite 400
Oakland, California 94612

March 30, 2004
Project No. 400596002

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Mr. Ignacio Dayrit
Redevelopment Agency of the City of Emeryville
1333 Park Avenue
Emeryville, California 94608

Subject: Limited Phase II Environmental Site Assessment
3645 San Pablo Avenue, Oakland, California.

Reference: 2002 Ninyo & Moore Phase I Environmental Site Assessment, 3645 San Pablo Avenue, dated February 6, 2002.
2002 Ninyo & Moore Proposal for a Limited Phase II Environmental Site Assessment, 3645 San Pablo Avenue, Emeryville, California, dated February 25.
2004 Limited Phase II Environmental Site Assessment, Sampling Analysis Plan, 3645 San Pablo Avenue, Emeryville, California, dated February 11.

Dear Mr. Dayrit:

At your request, we have prepared this Limited Phase II Environmental Site Assessment report for the property located at 3645 San Pablo Avenue in Emeryville, California. The purpose of our Limited Phase II ESA was to characterize, if such conditions exist on site, impacted subsurface soil and/or groundwater and the location of underground storage tanks (USTs).

We appreciate the opportunity to be of service to the City of Emeryville on this project. Should you have any questions or comments regarding our report, please contact the undersigned at your convenience.

Sincerely,
NINYO & MOORE

Kris M. Larson
Project Environmental Geologist

Jonathan D. Hoffman, R.G.
Senior Environmental Geologist

KML/JDH/jms
Distribution: (2) Addressee
(1) USEPA, Ms. Susan Perkins

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1. INTRODUCTION

The site is located at 3645 San Pablo Avenue, in the City of Emeryville, California (Figure 1) and is currently a liquor store with a parking lot. Based on the results of a Phase I Environmental Site Assessment (ESA) prepared for the site on February 6, 2002, evidence of recognized environmental conditions (RECs) were revealed in connection with the property. Ninyo & Moore recommended that environmental subsurface investigation activities in the form of a Limited Phase II ESA be conducted at the site because of hazardous materials storage and waste storage activities occurring from approximately 1947 until 1966 when the site was occupied by a gasoline service station. It was not determined during our Phase I ESA regulatory records search if USTs and related piping associated with gasoline service station use were removed during or after the station was demolished in 1966. The following Scope of Work was conducted in accordance with the Limited Phase II activities for the site.

2. SCOPE OF WORK

Ninyo & Moore's Scope of Services for the Phase II ESA included a subsurface evaluation of the site parking lot which potentially contained underground storage tanks (USTs) and related piping. Permit No. W04-0119 was issued by the Alameda County Public Works Department on February 4, 2004 for the subsurface activity associated with the Limited Phase II ESA. A copy of the permit is presented in Appendix A.

The subsurface evaluation consisted of two components, a geophysical survey and the installation of five soil borings within the site parking area (Figure 2). The parking area is triangularly shaped and located between MacArthur Boulevard and Adeline Street.

Activities also included contacting Underground Service Alert for utility clearance, laboratory chemical analysis of soil samples collected from the five borings on site and the preparation of this report.

3. SUBSURFACE EVALUATION

The subsurface evaluation which included a geophysical survey and soil boring installation, are discussed below.

3.1. Geophysical Evaluation

A geophysical survey was conducted on January 29, 2004 to evaluate the potential for subsurface structures and voids within the site parking area. A magnetometer and ground penetrating radar (GPR) were used to evaluate the subsurface for geophysical anomalies. The entire site parcel, except for the liquor store building, was surveyed during the evaluation. Sidewalk and street areas adjacent to the site boundaries where subsurface structures were suspected were also surveyed.

The geophysical survey revealed an oval area of possible excavation (Figure 2) adjacent to San Pablo Avenue, approximately 70-feet northwest of the liquor store. The GPR unit detected disturbance in the underlying soils and the magnetometer indicated an interruption in underground utilities in the area of possible excavation. Soil boring B-3 was located at the southern area of the excavation to evaluate soil contamination in the potential excavation. A rectangular area of reinforced concrete located approximately 20-feet north of the liquor store was also detected by the magnetometer; however, the GPR readings were inconclusive as to the status of the underlying soils. No other anomalies were detected in the subsurface during the geophysical evaluation of the site.

3.2. Soil Boring Installation

Sampling and analysis activities were performed in accordance with the approved Sampling and Analysis Plan (SAP) for the site dated February 11, 2003. Five soil borings were installed in the parking area on site on February 6, 2004. Soil borings were installed by Precision Sampling of Richmond California using a truck mounted Geoprobe rig to an approximate depth of 10 feet below ground surface (bgs). Groundwater was not encountered during Geoprobe activities on site.

Soil samples were collected by removing a portion of the acetate sleeve (inserted into the Geoprobe rod) relating to the sampling depth at 2, 5 and 10 feet bgs. Samples were analyzed at depths of five and ten feet bgs. As per the SAP, none of the samples collected at 2 feet bgs were analyzed because no physical properties of contamination were noted in the two-foot samples. One duplicate soil sample and one equipment blank were also collected as part of Quality Control (QC) sampling. Samples analyzed for purgeable hydrocarbons and oxygenates were collected with Encore sampling devices directly from the acetate sleeves. Samples analyzed for extractable petroleum hydrocarbons and metals were retained within the acetate sleeves, which were sealed with Teflon tape and plastic caps. Equipment blank samples were collected by pouring distilled water over the Geoprobe rods directly into the appropriate sample containers. All samples were placed in zip-lock baggies and stored in a cooler with ice. The samples were transferred to Curtis & Tompkins, Ltd. (C&T), a California state-certified analytical laboratory, located in Berkeley, California, with completed Chain of Custody (COC) documentation. The two samples collected from each boring (B-1 through B-5) were analyzed for total petroleum hydrocarbons as diesel (TPH-D), gasoline (TPH-G), benzene, toluene, ethylbenzene and total xylenes (BTEX) and methyl tertiary-butyl ether (MTBE) using EPA Method 8015B/8021, and LUFT 5 Metals (cadmium, chromium, nickel, lead and zinc) using EPA Method 6010B within a standard turn around time of ten working days. A laboratory matrix spike/matrix spike duplicate (MS/MSD) sample was collected as an additional QC sample.

Head space tests were conducted on all soil samples during sample collection using a photo ionization detection meter (PID) to evaluate concentrations of organic vapors (in parts per million). The procedure for head space testing included placing a portion of the soil sample in an air tight baggie, and penetrating the baggie with the probe of the PID after the baggie had remained sealed for approximately fifteen minutes.

The breathing air space in the vicinity of the boring installation was also monitored with a PID during drilling activities to detect vapors potentially exceeding personal exposure limits (PELs) for worker safety.

One five-gallon container of soil cuttings was removed from the site by the Geoprobe operator for proper disposal, and the rinsate water resulting from decontamination activities was recycled into the grout mixture used to fill the borings subsequent to sampling.

4. SUBSURFACE CONDITIONS

Soil borings were installed on February 6, 2004 and were advanced to a maximum depth of 10 feet bgs at each location using direct push Geoprobe equipment. A Ninyo & Moore geologist observed and recorded the soil lithology of the borings using the Unified Soil Classification System (USCS). A copy of the boring logs is presented in Appendix B. Approximately 4 inches of concrete was at the surface at all of the boring locations. In general, the concrete was underlain by black, moist, silty clay with gravel to approximately 4 feet bgs; and green-grey, silty clay with gravel to the bottom of the borings at 10 feet bgs. The gravel encountered were approximately 0.25 inch in diameter. No odor was noted or organic vapors detected by PID readings except at boring B-4, where a hydrocarbon odor was noted in a black, silty clay layer at a depth of 5 feet bgs. A PID measurement of 0.5 ppm was detected from the headspace sample collected from the 5-foot sample. Each boring remained open for approximately 1 hour subsequent to soil sample collection to evaluate the presence of groundwater in the borings. No groundwater entered the borings after the 1 hour elapsed. The borings were subsequently grouted to the surface using Type I-II Portland Cement.

For a more complete description of the soil conditions encountered in the borings, refer to the boring logs.

5. SOIL SAMPLE ANALYSIS

The soil samples were analyzed by C & T using the following analytical methods:

- Extractable hydrocarbons, including TPH-D and TPH-MO using EPA method 8015B;
- Purgeable hydrocarbons and oxygenates, including TPH-G, BTEX and MTBE using EPA method 8260B;

- LUFT 5 metals (cadmium, chromium, nickel, lead and zinc) using EPA Method 6010B.

Soil sample analytical results were reported with qualifiers for TPH-G and TPH-D. The qualifiers indicated that lighter hydrocarbons contributed to the quantitation and samples exhibited chromographic patterns which did not resemble the standards. According to C & T, degradation of hydrocarbon compounds may be responsible for the anomalies. Relative percentage difference (RPD) of sample analytical sets for BTEX and MTBE was also determined to be outside laboratory control limits of 40%. C & T indicated that the gas chromatogram (GC) method used for the 8015B analysis sometimes has difficulty in determining the exact constituent in the gasoline range due to the coelution of the hydrocarbon peaks.

Copies of the C & T laboratory analytical report is presented in Appendix C.

5.1. EPA Level IV Data Validation

An EPA Level IV analysis was conducted by C & T on soil sample B3-S-10-1. Aquatus Environmental (Aquatus) of Albany, California also conducted a Level IV QC Data Validation on the same sample. According to C & T, no analytical problems were encountered in the Level IV QC analysis other than the sample surrogate recoveries being outside control limits due to the coelution or integration of the surrogate peaks with other hydrocarbon peaks.

According to the QC Data Validation by Aquatus, the result of the C & T data validation was of acceptable quality. The evaluation criteria by Aquatus included verifying that analytes were quantified correctly based on soil digestion data, dilution factors and moistures, and verifying that the chromatographic peaks were accounted for in the laboratory chromatograms. They also confirmed that the analytes were reported as detected in the lab reports. Data validation on C & T's MS/MSD analysis indicated that diesel and LUFT 5 metal compounds were in the sample recovery range however TPH-G and BTEX results were not applicable because a non project sample was used for the MS/MSD. Aquatus reported that this procedure is normal, and does not require further investigation. Copies of the C & T Level IV analytical data are attached in a CD. A copy of the Aquatus Data Validation Report is presented in Appendix D.

6. SAMPLE ANALYTICAL RESULTS

A summary of sample laboratory analytical data for primary, duplicate and QC samples is discussed below. A copy of the analytical reports prepared by C & T is presented in Appendix C.

6.1. Soil Sample Analytical Results for Total Petroleum Hydrocarbons as Gasoline, Diesel and Motor Oil

Concentrations of TPH-G were reported in most soil samples collected from borings B-1 through B-4 ranging from 0.41 milligrams per kilograms (mg/kg) in sample B-1-S-5-1 to 78 mg/kg in sample B3-S-10-1. Concentrations of TPH-D were reported in most samples collected from borings B-1 through B-5 ranging from 2.2 mg/kg in sample B2-S-5-1 to 100 mg/kg in sample B6-S-5-1. Concentrations of TPH-MO were reported in samples collected from borings B-4 and B-5 ranging from 7.6 mg/kg in sample B4-S-10-1 to 230 mg/kg in sample B4-S-5-1. The samples analyzed where TPH-G and TPH-D were detected contained qualifiers indicating that lighter or heavier hydrocarbons contributed to the quantitation and/or the samples exhibited chromatographic patterns that did not resemble the standard. Aquatus reported that the chromatograms exhibit the characteristic hump indicative of petroleum hydrocarbons. A summary of TPH-G, TPH-D and TPH-MO results are presented in Table 1.

6.2. Soil Sample Laboratory Analytical Results for BTEX and MTBE

Benzene was reported in samples collected from borings B-1, B-2, B-3 and B-4, with the highest concentration reported at 77 micrograms per kilogram (µg/kg) in B-2 at a depth of 5 feet (sample B2-S-5-1).

Toluene was reported in samples collected from borings B-1, B-2, B-3 and B-4, with the highest concentration reported at 390 µg/kg in B-2 at a depth of 5 feet (sample B2-S-5-1).

Ethylbenzene was reported in samples collected from borings B-1, B-2, B-3 and B-4, with the highest concentration reported at 690 µg/kg in B-2 at a depth of 10 feet (sample B2-S-10-1).

Total xylene was reported in samples collected from borings B-1, B-2, B-3 and B-4, with the highest concentration reported at 440 µg/kg in B-2 at a depth of 10 feet (sample B2-S-10-1).

MTBE was reported in samples collected from borings B-1and B-2, with the highest concentration reported at 11 µg/kg in B-2 at a depth of 5 feet (sample No. B2-S-5-1). A summary of BTEX and MTBE results are presented in Table 1. C & T indicated that the RPD of sample analytical sets for several of the samples analyzed for BTEX and MTBE was determined to be outside laboratory control limits of 40%.

6.3. Soil Sample Analytical Results for LUFT 5 Metals

LUFT 5 metals, including cadmium, chromium, lead, nickel and zinc were analyzed in the 11 soil samples collected on site. Cadmium was not detected above laboratory reporting limits in all borings except B-4 and B-5 at 5 feet below bgs. Chromium, lead, nickel and zinc were detected above laboratory reporting limits in all samples, however below USEPA Preliminary Remediation Goals (PRGs) for residential areas (Table 2).

6.4. Soil and Water Sample Laboratory Analytical Results for Field and Laboratory Quality Control (QC) Samples

6.4.1. Duplicate Sample

One duplicate sample was collected from boring B-3 (SB6-S-5-1) at 5 feet bgs. The duplicate sample was analyzed for TPH-D, TPH-MO, TPH-G, BTEX, MTBE and LUFT 5 Metals using the same analytical methods as the primary samples discussed in Sections 6.1 through 6.3. The analytical laboratory results were within one order of magnitude and comparable to the primary sample, SB3-S-5-1, for each constituent analyzed. A summary of duplicate sample results are presented in Tables 1 and 2.

6.4.2. Equipment Blank Sample

An equipment blank sample (B3-GW-1) was collected after sampling boring B-3 by pouring distilled water over the Geoprobe rods into the appropriate containers subsequent

to decontaminating the rods. The sample was analyzed for TPH-D, TPH-MO, TPH-G, BTEX, MTBE and LUFT 5 Metals using the same methods discussed in Sections 6.1 through 6.3. Laboratory analytical results for the equipment blank sample were below laboratory reporting limits for every constituent. A summary of equipment blank sample results are presented in Table 3.

6.4.3. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Sample

Additional soil samples were collected from boring B-5 at 10-feet bgs (B5-S-10-1) for MS/MSD laboratory QA/QC analysis. The MS/MSD samples were within the control limits set by C & T for TPH-G, TPH-D and LUFT 5 metals. One surrogate recovery was outside of QC limits, which was due to the coelution or integration of the surrogate peaks with other hydrocarbon peaks. Aquatus also indicated in their Level IV data validation that no MS/MSD recoveries were outside data quality objectives.

7. SUMMARY AND CONCLUSIONS

During the geophysical evaluation of the site, GPR measured one anomaly in the northeast section of the parking area. The anomaly indicated a disturbed soil pattern that may have resulted from an excavation relating to removed USTs associated with the former gasoline station.

Two soil samples were collected from each of the five borings on site, including in the areas where the former gasoline pump stations were located and an excavated area where the location of the former USTs may have been located. Petroleum hydrocarbons constituents (TPH-G, TPH-D and TPH-MO), were detected below RWQCB Environmental Screening Levels (ESLs) for a residential use area where groundwater is not a drinking water source. The ESL for TPH-G is 100 mg/kg, and for TPH-D and TPH-MO are 500 mg/kg each. BTEX and MTBE were not detected above PRGs for a site with residential use in any sample collected on site. PRGs from benzene are 600 µg/kg, and for toluene, ethylbenzene and total xylenes PRGs are greater than 1,000 µg/kg. Additionally, LUFT 5 Metals were not detected above residential PRGs for cad-

mium (37 mg/kg), chromium (210 mg/kg), Cal Mod total lead (150 mg/kg), nickel (1,600 mg/kg) and zinc (23,000 mg/kg).

The subsurface evaluation results for the site indicate that no USTs were identified and soil contamination exists below regulatory guidelines for ESLs and PRGs. Therefore, additional environmental subsurface evaluation or remedial actions are not recommended at the subject site.

8. LIMITATIONS

The field investigation, laboratory testing, and soil sample analyses presented in this report have been conducted in general accordance with current engineering practice and the standard of care exercised by reputable environmental consultants performing similar tasks in the area. No other warranty, expressed or implied, is made regarding the conclusions and professional opinions presented in this report. There is no investigation detailed enough to reveal every soil condition. Variations may exist and conditions not observed or described in this report may be encountered at a later time. Uncertainties relative to soil conditions can be reduced through additional soil sampling. An additional soil investigation will be performed upon request.

Ninyo & Moore's summary and conclusions regarding environmental considerations as presented in this report are based on a limited soil assessment and chemical analysis. Further assessment of potential adverse environmental impacts from past on-site and/or nearby use of hazardous materials may be accomplished by a more comprehensive assessment. The samples collected and used for testing, and the observations made are believed to be representative of the area(s) evaluated; however, conditions can vary significantly between sampling locations. Variations in soil conditions will exist beyond the points explored in this investigation.

The environmental interpretations and opinions contained in this report are based on the results of laboratory tests and analyses intended to detect the presence and concentration of certain chemical or physical constituents in samples collected from the subject site. The testing and analyses have been conducted by an independent laboratory that is accredited by the EPA or certified by the State of California to conduct such tests. Ninyo & Moore has no involvement in, or

control over, such testing and analysis. Ninyo & Moore, therefore, disclaims responsibility for any inaccuracy in such laboratory results.

This report is intended for preliminary design purposes only and may not provide sufficient data to prepare an accurate bid by some contractors. This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document.

Our summary and conclusions are based on an analysis of the observed site conditions. It should be understood that the conditions of a site can change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no control.

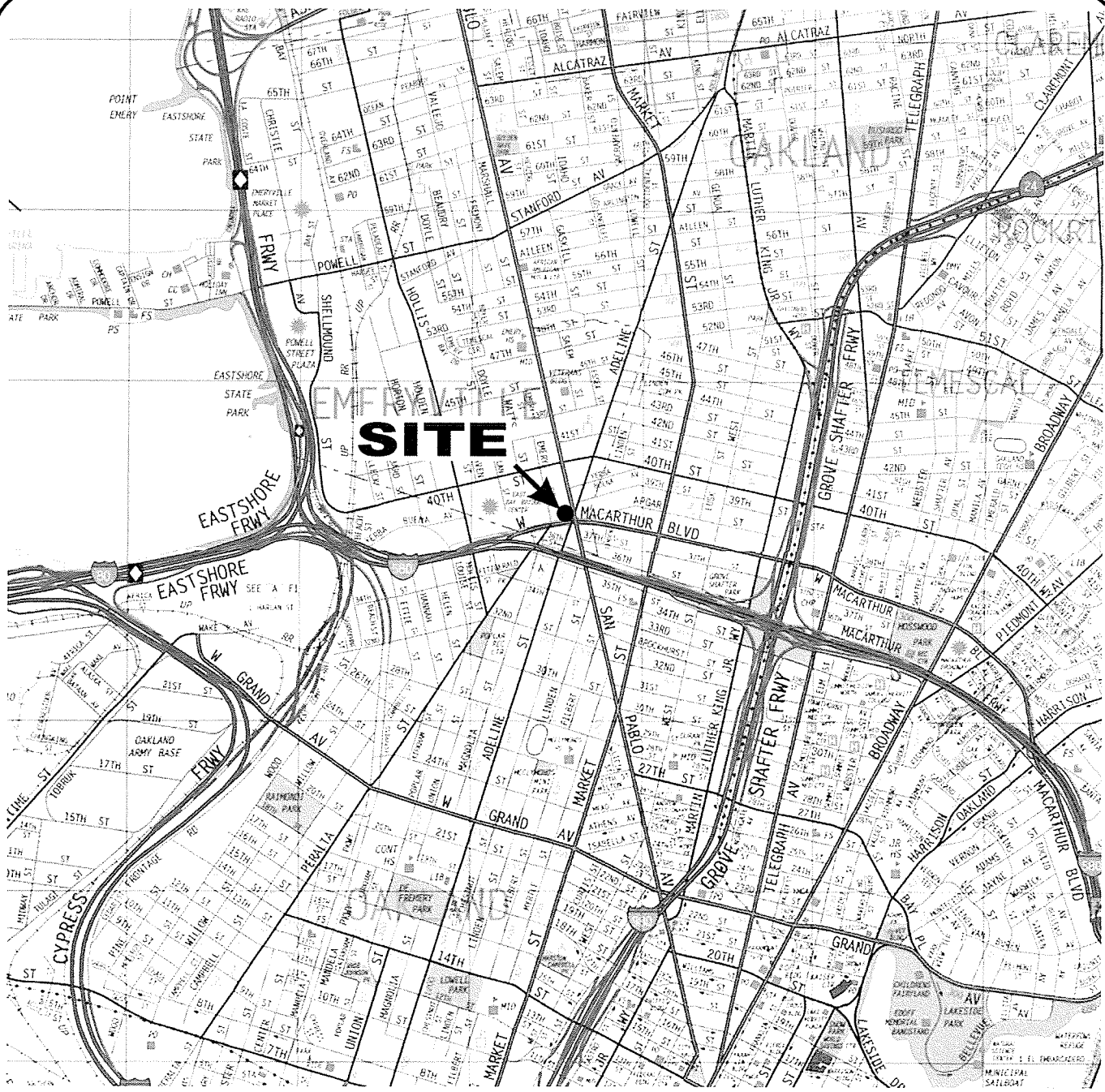
8. SELECTED REFERENCES

2003 Regional Water Quality Control Board, Bay Area Region Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater,(Interim Final - July 2003)

2003 Ninyo & Moore Limited Phase II Environmental Site Assessment Workplan, 3645 San Pablo Avenue, Emeryville, California, dated October 8;

2002 United States Environmental Protection Agency Region IX Preliminary Remediation Goals, updated April 23;

2002 Ninyo & Moore Phase I Environmental Site Assessment, 3645 San Pablo Avenue, Emeryville, California, dated February 6;



REFERENCE: 1998 THOMAS BROTHERS FOR ALAMEDA AND CONTRA COSTA COUNTIES, STREET GUIDE AND DIRECTORY.

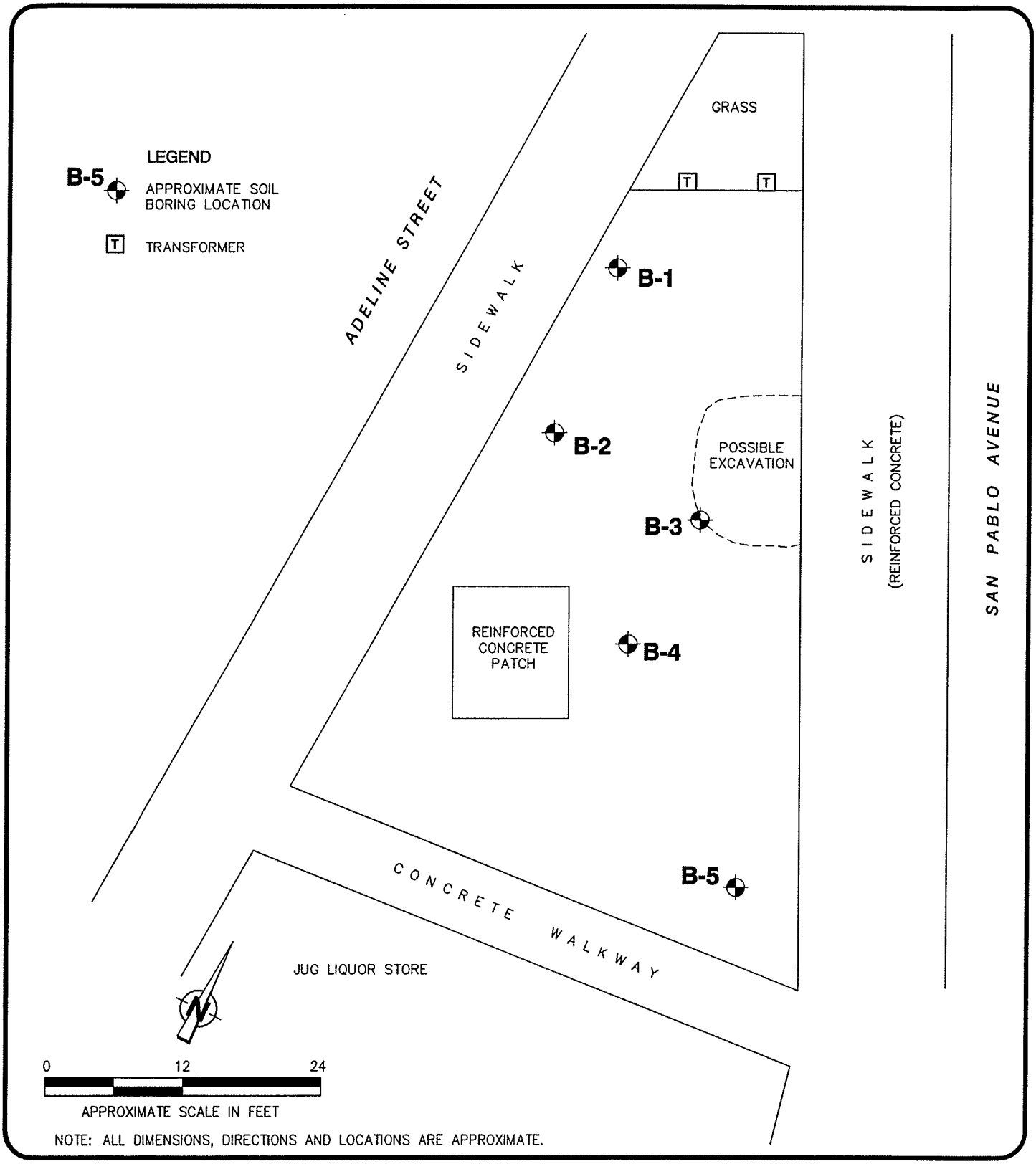
400596002slm

Ninyo & Moore

SITE LOCATION MAP

3645 SAN PABLO AVENUE
EMERYVILLE, CALIFORNIA

PROJECT NO.	DATE	FIGURE
400596002	3/2004	1



NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

400596-A2.DWG

Ninyo & Moore

BORING LOCATION MAP

3645 SAN PABLO AVEUE
EMERYVILLE, CALIFORNIA

PROJECT NO.	DATE	FIGURE
400596002	3/2004	2

TABLE 1
SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE, DIESEL AND MOTOR OIL, BTEX AND MTBE
3645 SAN PABLO AVENUE
CITY OF EMERYVILLE, CALIFORNIA

Boring I.D.	Date	TPH-G (mg/kg)	TPH-D (mg/kg)	TPH-MO (mg/kg)	MTBE (µg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl-Benzene (µg/kg)	Total Xylenes (µg/kg)
B1-S-5-1	2/6/04	**0.41 L Y**	<0.99	<5.0	<3.3	**7.5 C**	<0.83	**3.4 C**	<0.83
B1-S-10-1	2/6/04	**3.5 Y**	**17 L Y**	<5.0	**7.4 C**	**18 C**	**18 C**	**37 C**	**22 C**
B2-S-5-1	2/6/04	**2.4 L Y**	**2.2 L Y**	<5.0	**11 C**	**30 C**	**14 C**	**20 C**	**7.0 C**
B2-S-10-1	2/6/04	**40 Y**	**51 L Y**	<5.0	**17**	**77 C**	**52 C**	**120**	**66 C**
B3-S-5-1	2/6/04	**46 Y**	**37 L Y**	<5.0	<100	<25	**110 C**	**420 C**	**350 C**
B3-S-10-1	2/6/04	**78 Y**	**28 L Y**	<5.0	<100	<25	**390 C**	**690**	**440 C**
B4-S-5-1	2/6/04	<0.19	**88 H L Y**	**230**	<3.7	<0.93	<0.93	<0.93	<0.93
B4-S-10-1	2/6/04	**2.2 L Y**	**3.8 H L Y**	**7.6**	<3.8	**62**	**14 C**	**14 C**	**6.6 C**
B5-S-5-1	2/6/04	<0.19	**18 H L Y**	**52**	<3.8	<0.95	<0.95	<0.95	<0.95
B5-S-10-1	2/6/04	<0.20	**20 H L Y**	**79**	<3.9	<0.99	<0.99	<0.99	<0.99
*B6-S-5-1	2/6/04	**71 Y**	**100 L Y**	<5.0	<3.6	**36 C**	**79 C**	**150**	**71**
PRGs	N/A	NA	NA	NA	620,000	600	520,000	8,900	270,000
ESLs	N/A	100	500	500	N/A	N/A	N/A	N/A	N/A

Notes

TPH-G = Total Petroleum Hydrocarbons as Gasolinel analyzed by EPA Method 8015B.
TPH-MO = Total Petroleum Hydrocarbons as Motor Oil analyzed by EPA Method 8015B.
TPH-D = Total Petroleum Hydrocarbons as Diesel analyzed by EPA Method 8015B.
BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes analyzed by EPA Method 8020.
MTBE = Methyl Tertiary Butyl Ether analyzed by EPA Method 8020.
mg/kg = milligrams per kilograms
µg/kg = micrograms per kilograms
*B6-S-5-1 = Duplicate sample for B3-S-5-1
PRGs = USEPA Preliminary Reporting Limits for Residential Use
ESLs = RWQCB Environmetnal Screening Levels for Residential Use Within Three Meters of the Surface Where Groundwater is Not a Source of Drinking Water
C = Presence confirmed , but RPD between columns exceeds 40%
L = Lighter hydrocarbons contributed to the quantitation
Y = Sample exhibits chromatographic pattern which does not resemble standard
ND = Not Dectected
N/A = Not Applicable

TABLE 2
SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
LUFT 5 METALS
3645 SAN PABLO AVENUE
CITY OF EMERYVILLE, CALIFORNIA

Boring I.D.	Date	CADIUM (mg/kg)	CHROMIUM (mg/kg)	LEAD (mg/kg)	NICKEL (mg/kg)	ZINC (mg/kg)
B1-S-5-1	2/6/04	<0.23	**22**	**6.4**	**17**	**28**
B1-S-10-1	2/6/04	<0.26	**31**	**4.9**	**55**	**35**
B2-S-5-1	2/6/04	<0.25	**21**	**5.0**	**9**	**15**
B2-S-10-1	2/6/04	<0.22	**31**	**4.9**	**60**	**34**
B3-S-5-1	2/6/04	<0.26	**27**	**4.4**	**44**	**31**
B3-S-10-1	2/6/04	<0.22	**28**	**4.8**	**60**	**33**
B4-S-5-1	2/6/04	**0.41**	**29**	**59**	**37**	**460**
B4-S-10-1	2/6/04	<0.27	**32**	**5.2**	**50**	**39**
B5-S-5-1	2/6/04	**0.74**	**28**	**95**	**40**	**180**
B5-S-10-1	2/6/04	<0.26	**20**	**60**	**31**	**64**
B6-S-5-1	2/6/04	<0.25	**20**	**3.9**	**19**	**17**
PRGs	N/A	37	210	150	1,600	23,000

Notes
mg/kg = milligrams per kilograms
PRGs = USEPA Preliminary Reporting Limits for Residential Use

TABLE 3
EQUIPMENT BLANK SAMPLE LABORATORY ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS AS GAS, DIESEL AND MOTOR OIL; BTEX AND MTBE; and LUFT 5 METALS
3645 SAN PABLO AVENUE
CITY OF EMERYVILLE, CALIFORNIA

Boring I.D.	Date	Gasoline C7-C12 (µg/L)	TPH-D (µg/L)	TPH-MO (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	CADMIUM (µg/L)	CHROMIUM (µg/L)	LEAD (µg/L)	NICKEL (µg/L)	ZINC (µg/L)
B3-GW-1	2/6/04	<50	<50	<300	<2	<0.5	<0.5	<0.5	<0.5	<10	<3.0	<20	<20	<20

Notes
TPH-G = Total Petroleum Hydrocarbons as Gasoline analyzed by EPA Method 8015M.
TPH-D = Total Petroleum Hydrocarbons as Diesel analyzed by EPA Method 8015M.
TPH-MO = Total Petroleum Hydrocarbons as Motor Oil analyzed by EPA Method 8015M.
MTBE = Methyl Tertiary Butyl Ether analyzed by EPA Method 8020.
µg/L = micrograms per kilograms

APPENDIX A

PERTINENT SITE DOCUMENTS

COUNTY OF ALAMEDA
PUBLIC WORKS AGENCY
WATER RESOURCES SECTION
399 Elmhurst Street, Hayward, CA 94544-1395
James Yoo PH: (510) 670-6633 FAX: (510) 782-1939

FOR GENERAL DRILLING PERMIT INFO: WWW.ACFCWCD.ORG

FAX TRANSMITTAL

TO: Mayo & Moore **DATE:** 2-4-04

Attn: Kris Larson

FAX NO.: (510) 633-5646

TRANSMITTING THE FOLLOWING:

SHEETS	DATED	TITLE/DESCRIPTION
2	—	DPA-W04-0119 & conditions

3 TOTAL PAGES INCLUDING THIS SHEET.

FROM WATER RESOURCES SECTION

NAME: JAMES YOO **TEL:** (510) 670-6633 **FAX:** (510) 782-1939

E-MAIL: jamesy@acpwa.org

IF YOU EXPERIENCE PROBLEMS WITH THIS TRANSMISSION, PLEASE CALL ME.

REMARKS:

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510) 782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 3645 San Pablo Ave
Emeryville, Ca

CLIENT
Name CITY OF EMERYVILLE
Address 1333 Park Ave Phone (510) 596-4356
City Emeryville, CA Zip 94608

APPLICANT
Name Nikyo & Moore Fax (510) 633-5646
Address 1956 Webster St Phone (510) 633-5640
City Oakland CA Zip 94612

TYPE OF PROJECT
Well Construction — Geotechnical Investigation
Cathodic Protection — General
Water Supply — Contamination X
Monitoring — Well Destruction

PROPOSED WATER SUPPLY WELL USE
New Domestic — Replacement Domestic
Municipal — Irrigation
Industrial — Other

DRILLING METHOD:
Mud Rotary — Air Rotary — Auger
Cable — Other X

DRILLER'S NAME Precision Geoprobe Sampling
DRILLER'S LICENSE NO 636387

WELL PROJECTS
Drill Hole Diameter in — Maximum
Casing Diameter in — Depth ft
Surface Seal Depth ft — Owner's Well Number

GEOTECHNICAL PROJECTS
Number of Borings 5 — Maximum
Hole Diameter 2 in. — Depth 8 ft.

STARTING DATE 2/6/04
COMPLETION DATE 2/6/04

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.
APPLICANT'S SIGNATURE DATE 1/30/04
PLEASE PRINT NAME Kris Larsen

Rev.9-18-02

FOR OFFICE USE

PERMIT NUMBER W04-0119
WELL NUMBER
APN

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
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.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL / Contamination
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with ~~compacted cuttings~~

E. CATHODIC
Fill hole anode zone with concrete placed by tremie

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS BH-1

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED DATE 2-4-04

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD, CA. 94544-1395
PHONE (510) 670-6633 James Yoo FAX (510) 782-1939

PERMIT NO. W04-0119

WATER RESOURCES SECTION
GROUNDWATER PROTECTION ORDINANCE
B#1-GENERAL CONDITIONS: GEOTECHNICAL & CONTAMINATION BOREHOLES

1. Prior to any drilling activities shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that Federal, State, County or to the City and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained.

2. Boreholes shall not be left open for a period of more than **24 hours**. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permitte, pennittee's, contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statues regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on-or off site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

4. Permit is valid only for the purpose specified herein **February 6 to February 6, 2004**. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

5. Drilling Permit(s) can be voided/ canceled only in writing. It is the applicants responsibilities to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.

6. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

APPENDIX B

BORING LOGS

DATE DRILLED 2/6/04 BORING NO. B-1

GROUND ELEVATION _____ SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY KML LOGGED BY KML REVIEWED BY JDH

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE: Approximately 4" thick.
						0.0		CL	FILL: Dark gray and black, moist, silty CLAY; small (1/4") gravel; no odor.
5						0.0		CL	ALLUVIUM: Green gray, moist, silty CLAY; small (1/4") gravel; no odor.
10						0.0			Total Depth = 10 feet bgs. No groundwater encountered. Boring backfilled with Portland cement grout on 2/6/04.
15									
20									

Ninyo & Moore

BORING LOG

3645 San Pablo Avenue
Emeryville, California

PROJECT NO.	DATE	FIGURE
400596002	03/04	A-1

DATE DRILLED 2/6/04 BORING NO. B-2

GROUND ELEVATION _____ SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY KML LOGGED BY KML REVIEWED BY JDH

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE: Approximately 4" thick.
						0.0		CL	FILL: Dark gray and black, moist, silty CLAY; gravel; no odor.
						0.0		CL	ALLUVIUM: Greenish gray, moist, silty CLAY; gravel; no odor.
5									
						0.0			Gray.
10									Total Depth = 10 feet bgs. No groundwater encountered. Boring backfilled with Portland cement grout on 2/6/04.
15									
20									

Ninyo & Moore

BORING LOG

3645 San Pablo Avenue
Emeryville, California

PROJECT NO.	DATE	FIGURE
400596002	03/04	A-2

DATE DRILLED 2/6/04 BORING NO. B-3

GROUND ELEVATION _____ SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY KML LOGGED BY KML REVIEWED BY JDH

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								CONCRETE: Approximately 4" thick.
							CL	FILL: Black, moist, silty CLAY; gravel; no odor. Broken concrete approximately 6" thick.
					0.0		CL	Black, moist, silty CLAY; gravel; no odor.
5					0.0		CL	ALLUVIUM: Gray green, moist, silty CLAY; no odor.
10					0.0			Gray.
								Total Depth = 10 feet bgs. No groundwater encountered. Boring backfilled with Portland cement grout on 2/6/04.
15								
20								

Ninyo & Moore

BORING LOG

3645 San Pablo Avenue
Emeryville, California

PROJECT NO.	DATE	FIGURE
400596002	03/04	A-3

DATE DRILLED 2/6/04 BORING NO. B-4

GROUND ELEVATION _____ SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY KML LOGGED BY KML REVIEWED BY JDH

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								CONCRETE: Approximately 4" thick.
					0.0		CL	FILL: Black, moist, silty CLAY; gravel; no odor.
								Concrete encountered, approximately 18" thick.
5					0.5		CL	Black, moist, silty CLAY; moderate petroleum odor.
					0.0		CL	ALLUVIUM: Greenish gray, moist, silty CLAY; no odor. Gray.
10								Total Depth = 10 feet bgs. No groundwater encountered. Boring backfilled with Portland cement grout on 2/6/04.
15								
20								

Ninyo & Moore

BORING LOG

3645 San Pablo Avenue
Emeryville, California

PROJECT NO.	DATE	FIGURE
400596002	03/04	A-4

DATE DRILLED 2/6/04 BORING NO. B-5

GROUND ELEVATION _____ SHEET 1 OF 1

METHOD OF DRILLING Geoprobe

DRIVE WEIGHT _____ DROP _____

SAMPLED BY KML LOGGED BY KML REVIEWED BY JDH

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	PID READING (PPM)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0									CONCRETE: Approximately 4" thick.
						0.0		CL	FILL: Black and brown, moist, silty CLAY; gravel; no odor.
						0.0		CL	ALLUVIUM: Gray green, moist, silty CLAY; no odor.
5									
						0.0			Gray.
10									Total Depth = 10 feet bgs. No groundwater encountered. Boring backfilled with Portland cement grout on 2/6/04.
15									
20									

Ninyo & Moore

BORING LOG

3645 San Pablo Avenue
Emeryville, California

PROJECT NO.	DATE	FIGURE
400596002	03/04	A-5

APPENDIX C

LABORATORY ANALYTICAL REPORT

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

ANALYTICAL REPORT

Prepared for:

Ninyo & Moore
1956 Webster St.
Suite 400
Oakland, CA 94612

Date: 02-MAR-04
Lab Job Number: 170458
Project ID: STANDARD
Location: 3645 San Pablo

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by: _____
Project Manager

Reviewed by: _____
Operations Manager

Curtis & Tompkins, Ltd.

Laboratory Number: **170458**
Client: **Ninyo & Moore**
Project: **3645 San Pablo**
Request Date: **2/20/04**

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for one water and eleven soil samples requested on February 20, 2004. The samples were received cold and intact. Soil samples were submitted in Encore devices.

TVH/BTXE:
In the soil samples, many of the surrogates recoveries are outside control limits due to coelution of the surrogate peak with other hydrocarbon peaks.

No other analytical problems were encountered.

Total Extractable Hydrocarbons:
No analytical problems were encountered.

Metals:
No analytical problems were encountered.

CHAIN OF CUSTODY FORM

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510)486-0900 Phone
(510)486-0532 Fax

C&T LOGIN # 170458

Sampler: Kris Larsen
Report To: " "
Company: Ninyo & Moore
Telephone: (510) 633-5640
Fax: " 633-5646

Project No: 427596002
Project Name: 3645 San Pablo
Project P.O.:
Turnaround Time: Standard

Laboratory Number	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCL	H_2SO	HNO_3	ICE		Field Notes	Analyses: TPH-g (BTEX/MTBE 8015)	TPH-d 8015	LUFT 5 metals GC/MS
-1	B1-5-5-1	2/6 940	X			13							X	X	X
-2	B1-5-10-1	950				13									
-3	B2-5-5-1	1005				13									
-4	B2-5-10-1	1030				13									
-5	B3-5-5-1	1045				13									
-6	B3-5-10-1	1115				13									
-7	B4-5-5-1	1130				13									
-8	B4-5-10-1	1135				13									
-9	B5-5-5-1	1150				13									
-10	B5-5-10-1	1200				13						Lab QC MS/MSD			
-11	B6-5-5-1	1100	X			13									
-12	B3-GW-1	1400		X		6	3						X	X	X

For Laboratory Use

Notes: The core for sample -3 arrived "squashed" & the core has a hole in it. I placed the core into a jar. JGW 2-6-04

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
Signature	2/6/04	Signature	2/6/04 1245
	DATE/TIME		DATE/TIME
	DATE/TIME		DATE/TIME

Rec'd on ice, intact

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	STANDARD		
Field ID:	B3-GW-1	Batch#:	88274
Matrix:	Water	Sampled:	02/06/04
Units:	ug/L	Received:	02/06/04
Diln Fac:	1.000	Analyzed:	02/06/04

Type: SAMPLE Lab ID: 170458-012

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	98	57-150	EPA 8015B
Bromofluorobenzene (FID)	117	65-144	EPA 8015B
Trifluorotoluene (PID)	94	54-149	EPA 8021B
Bromofluorobenzene (PID)	112	58-143	EPA 8021B

Type: BLANK Lab ID: QC240218

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	99	57-150	EPA 8015B
Bromofluorobenzene (FID)	114	65-144	EPA 8015B
Trifluorotoluene (PID)	94	54-149	EPA 8021B
Bromofluorobenzene (PID)	112	58-143	EPA 8021B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC240219	Batch#:	88274
Matrix:	Water	Analyzed:	02/06/04
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12		NA		
MTBE	20.00	20.00	100	63-133
Benzene	20.00	20.72	104	78-123
Toluene	20.00	19.19	96	79-120
Ethylbenzene	20.00	19.97	100	80-120
m,p-Xylenes	40.00	38.02	95	76-120
o-Xylene	20.00	20.71	104	80-121

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		95	54-149
Bromofluorobenzene (PID)		114	58-143

NA= Not Analyzed

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC240220	Batch#:	88274
Matrix:	Water	Analyzed:	02/06/04
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,144	107	80-120
MTBE		NA		
Benzene		NA		
Toluene		NA		
Ethylbenzene		NA		
m,p-Xylenes		NA		
o-Xylene		NA		

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		124	57-150
Bromofluorobenzene (FID)		134	65-144
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

NA= Not Analyzed

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8021B
Field ID:	ZZZZZZZZZZ	Batch#:	88274
MSS Lab ID:	170452-004	Sampled:	02/06/04
Matrix:	Water	Received:	02/06/04
Units:	ug/L	Analyzed:	02/07/04
Diln Fac:	1.000		

Type: MS Lab ID: QC240232

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12			NA		
MTBE	1.515	20.00	18.25	84	38-149
Benzene	<0.1200	20.00	20.43	102	75-128
Toluene	<0.03500	20.00	18.79	94	79-127
Ethylbenzene	<0.03800	20.00	19.96	100	78-124
m,p-Xylenes	<0.05100	40.00	35.63	89	67-121
o-Xylene	<0.03400	20.00	19.80	99	77-131

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		93	54-149
Bromofluorobenzene (PID)		97	58-143

Type: MSD Lab ID: QC240233

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12		NA				
MTBE	20.00	19.48	90	38-149	7	38
Benzene	20.00	20.92	105	75-128	2	20
Toluene	20.00	18.83	94	79-127	0	20
Ethylbenzene	20.00	19.75	99	78-124	1	20
m,p-Xylenes	40.00	35.95	90	67-121	1	20
o-Xylene	20.00	19.58	98	77-131	1	20

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		94	54-149
Bromofluorobenzene (PID)		98	58-143

NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	STANDARD		
Matrix:	Soil	Sampled:	02/06/04
Basis:	as received	Received:	02/06/04

Field ID:	B1-S-5-1	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	88289
Lab ID:	170458-001	Analyzed:	02/09/04

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	0.41 L Y	0.17	mg/Kg	EPA 8015B
MTBE	ND	3.3	ug/Kg	EPA 8021B
Benzene	7.5 C	0.83	ug/Kg	EPA 8021B
Toluene	ND	0.83	ug/Kg	EPA 8021B
Ethylbenzene	3.4 C	0.83	ug/Kg	EPA 8021B
m,p-Xylenes	ND	0.83	ug/Kg	EPA 8021B
o-Xylene	ND	0.83	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	86	56-144	EPA 8015B
Bromofluorobenzene (FID)	75	51-142	EPA 8015B
Trifluorotoluene (PID)	69	45-150	EPA 8021B
Bromofluorobenzene (PID)	62	42-138	EPA 8021B

Field ID:	B1-S-10-1	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	88289
Lab ID:	170458-002	Analyzed:	02/09/04

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	3.5 Y	0.19	mg/Kg	EPA 8015B
MTBE	7.4 C	3.7	ug/Kg	EPA 8021B
Benzene	18 C	0.93	ug/Kg	EPA 8021B
Toluene	18 C	0.93	ug/Kg	EPA 8021B
Ethylbenzene	37 C	0.93	ug/Kg	EPA 8021B
m,p-Xylenes	ND	0.93	ug/Kg	EPA 8021B
o-Xylene	22 C	0.93	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	186 *	56-144	EPA 8015B
Bromofluorobenzene (FID)	209 *	51-142	EPA 8015B
Trifluorotoluene (PID)	135	45-150	EPA 8021B
Bromofluorobenzene (PID)	137	42-138	EPA 8021B

*= Value outside of QC limits; see narrative
C= Presence confirmed, but RPD between columns exceeds 40%
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	STANDARD		
Matrix:	Soil	Sampled:	02/06/04
Basis:	as received	Received:	02/06/04

Field ID:	B2-S-5-1	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	88289
Lab ID:	170458-003	Analyzed:	02/09/04

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	2.4 L Y	0.18	mg/Kg	EPA 8015B
MTBE	11 C	3.5	ug/Kg	EPA 8021B
Benzene	30 C	0.88	ug/Kg	EPA 8021B
Toluene	14 C	0.88	ug/Kg	EPA 8021B
Ethylbenzene	20 C	0.88	ug/Kg	EPA 8021B
m,p-Xylenes	ND	0.88	ug/Kg	EPA 8021B
o-Xylene	7.0 C	0.88	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	361 *	>LR b 56-144	EPA 8015B
Bromofluorobenzene (FID)	180 *	51-142	EPA 8015B
Trifluorotoluene (PID)	121	45-150	EPA 8021B
Bromofluorobenzene (PID)	128	42-138	EPA 8021B

Field ID:	B2-S-10-1	Lab ID:	170458-004
Type:	SAMPLE		

Analyte	Result	RL	Units	Diln Fac	Batch#	Analyzed	Analysis
Gasoline C7-C12	40 Y	5.0	mg/Kg	5.000	88336	02/10/04	EPA 8015B
MTBE	17	3.5	ug/Kg	1.000	88289	02/09/04	EPA 8021B
Benzene	77 C	0.88	ug/Kg	1.000	88289	02/09/04	EPA 8021B
Toluene	52 C	0.88	ug/Kg	1.000	88289	02/09/04	EPA 8021B
Ethylbenzene	120	0.88	ug/Kg	1.000	88289	02/09/04	EPA 8021B
m,p-Xylenes	ND	0.88	ug/Kg	1.000	88289	02/09/04	EPA 8021B
o-Xylene	66 C	0.88	ug/Kg	1.000	88289	02/09/04	EPA 8021B

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed	Analysis
Trifluorotoluene (FID)	122	56-144	5.000	88336	02/10/04	EPA 8015B
Bromofluorobenzene (FID)	147 *	51-142	5.000	88336	02/10/04	EPA 8015B
Trifluorotoluene (PID)	153 *	45-150	1.000	88289	02/09/04	EPA 8021B
Bromofluorobenzene (PID)	197 *	42-138	1.000	88289	02/09/04	EPA 8021B

*= Value outside of QC limits; see narrative
C= Presence confirmed, but RPD between columns exceeds 40%
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	STANDARD		
Matrix:	Soil	Sampled:	02/06/04
Basis:	as received	Received:	02/06/04

Field ID:	B3-S-5-1	Diln Fac:	5.000
Type:	SAMPLE	Batch#:	88336
Lab ID:	170458-005	Analyzed:	02/10/04

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	46 Y	5.0	mg/Kg	EPA 8015B
MTBE	ND	100	ug/Kg	EPA 8021B
Benzene	ND	25	ug/Kg	EPA 8021B
Toluene	110 C	25	ug/Kg	EPA 8021B
Ethylbenzene	420 C	25	ug/Kg	EPA 8021B
m,p-Xylenes	ND	25	ug/Kg	EPA 8021B
o-Xylene	350 C	25	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	119	56-144	EPA 8015B
Bromofluorobenzene (FID)	172 *	51-142	EPA 8015B
Trifluorotoluene (PID)	95	45-150	EPA 8021B
Bromofluorobenzene (PID)	122	42-138	EPA 8021B

Field ID:	B3-S-10-1	Diln Fac:	5.000
Type:	SAMPLE	Batch#:	88336
Lab ID:	170458-006	Analyzed:	02/10/04

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	78 Y	5.0	mg/Kg	EPA 8015B
MTBE	ND	100	ug/Kg	EPA 8021B
Benzene	ND	25	ug/Kg	EPA 8021B
Toluene	390 C	25	ug/Kg	EPA 8021B
Ethylbenzene	690	25	ug/Kg	EPA 8021B
m,p-Xylenes	ND	25	ug/Kg	EPA 8021B
o-Xylene	440 C	25	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	157 *	56-144	EPA 8015B
Bromofluorobenzene (FID)	187 *	51-142	EPA 8015B
Trifluorotoluene (PID)	117	45-150	EPA 8021B
Bromofluorobenzene (PID)	127	42-138	EPA 8021B

*= Value outside of QC limits; see narrative
C= Presence confirmed, but RPD between columns exceeds 40%
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	STANDARD		
Matrix:	Soil	Sampled:	02/06/04
Basis:	as received	Received:	02/06/04

Field ID:	B4-S-5-1	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	88336
Lab ID:	170458-007	Analyzed:	02/10/04

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	0.19	mg/Kg	EPA 8015B
MTBE	ND	3.7	ug/Kg	EPA 8021B
Benzene	ND	0.93	ug/Kg	EPA 8021B
Toluene	ND	0.93	ug/Kg	EPA 8021B
Ethylbenzene	ND	0.93	ug/Kg	EPA 8021B
m,p-Xylenes	ND	0.93	ug/Kg	EPA 8021B
o-Xylene	ND	0.93	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	112	56-144	EPA 8015B
Bromofluorobenzene (FID)	108	51-142	EPA 8015B
Trifluorotoluene (PID)	102	45-150	EPA 8021B
Bromofluorobenzene (PID)	101	42-138	EPA 8021B

Field ID:	B4-S-10-1	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	88289
Lab ID:	170458-008	Analyzed:	02/09/04

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	2.2 L Y	0.19	mg/Kg	EPA 8015B
MTBE	ND	3.8	ug/Kg	EPA 8021B
Benzene	62	0.96	ug/Kg	EPA 8021B
Toluene	14 C	0.96	ug/Kg	EPA 8021B
Ethylbenzene	14 C	0.96	ug/Kg	EPA 8021B
m,p-Xylenes	ND	0.96	ug/Kg	EPA 8021B
o-Xylene	6.6 C	0.96	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	165 *	56-144	EPA 8015B
Bromofluorobenzene (FID)	164 *	51-142	EPA 8015B
Trifluorotoluene (PID)	117	45-150	EPA 8021B
Bromofluorobenzene (PID)	129	42-138	EPA 8021B

*= Value outside of QC limits; see narrative
C= Presence confirmed, but RPD between columns exceeds 40%
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	STANDARD		
Matrix:	Soil	Sampled:	02/06/04
Basis:	as received	Received:	02/06/04

Field ID:	B5-S-5-1	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	88289
Lab ID:	170458-009	Analyzed:	02/09/04

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	0.19	mg/Kg	EPA 8015B
MTBE	ND	3.8	ug/Kg	EPA 8021B
Benzene	ND	0.95	ug/Kg	EPA 8021B
Toluene	ND	0.95	ug/Kg	EPA 8021B
Ethylbenzene	ND	0.95	ug/Kg	EPA 8021B
m,p-Xylenes	ND	0.95	ug/Kg	EPA 8021B
o-Xylene	ND	0.95	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	103	56-144	EPA 8015B
Bromofluorobenzene (FID)	122	51-142	EPA 8015B
Trifluorotoluene (PID)	93	45-150	EPA 8021B
Bromofluorobenzene (PID)	116	42-138	EPA 8021B

Field ID:	B5-S-10-1	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	88336
Lab ID:	170458-010	Analyzed:	02/10/04

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	0.20	mg/Kg	EPA 8015B
MTBE	ND	3.9	ug/Kg	EPA 8021B
Benzene	ND	0.99	ug/Kg	EPA 8021B
Toluene	ND	0.99	ug/Kg	EPA 8021B
Ethylbenzene	ND	0.99	ug/Kg	EPA 8021B
m,p-Xylenes	ND	0.99	ug/Kg	EPA 8021B
o-Xylene	ND	0.99	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	90	56-144	EPA 8015B
Bromofluorobenzene (FID)	73	51-142	EPA 8015B
Trifluorotoluene (PID)	86	45-150	EPA 8021B
Bromofluorobenzene (PID)	67	42-138	EPA 8021B

*= Value outside of QC limits; see narrative
C= Presence confirmed, but RPD between columns exceeds 40%
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	STANDARD		
Matrix:	Soil	Sampled:	02/06/04
Basis:	as received	Received:	02/06/04

Field ID: B6-S-5-1 Lab ID: 170458-011
Type: SAMPLE

Analyte	Result	RL	Units	Diln Fac	Batch#	Analyzed	Analysis
Gasoline C7-C12	71 Y	5.0	mg/Kg	5.000	88336	02/11/04	EPA 8015B
MTBE	ND	3.6	ug/Kg	1.000	88289	02/09/04	EPA 8021B
Benzene	36 C	0.89	ug/Kg	1.000	88289	02/09/04	EPA 8021B
Toluene	79 C	0.89	ug/Kg	1.000	88289	02/09/04	EPA 8021B
Ethylbenzene	150	0.89	ug/Kg	1.000	88289	02/09/04	EPA 8021B
m,p-Xylenes	ND	0.89	ug/Kg	1.000	88289	02/09/04	EPA 8021B
o-Xylene	71	0.89	ug/Kg	1.000	88289	02/09/04	EPA 8021B

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed	Analysis
Trifluorotoluene (FID)	117	56-144	5.000	88336	02/11/04	EPA 8015B
Bromofluorobenzene (FID)	195 *	51-142	5.000	88336	02/11/04	EPA 8015B
Trifluorotoluene (PID)	163 *	45-150	1.000	88289	02/09/04	EPA 8021B
Bromofluorobenzene (PID)	240 *	>LR b 42-138	1.000	88289	02/09/04	EPA 8021B

Type: BLANK Batch#: 88289
Lab ID: QC240278 Analyzed: 02/09/04
Diln Fac: 1.000

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.0	mg/Kg	EPA 8015B
MTBE	ND	20	ug/Kg	EPA 8021B
Benzene	ND	5.0	ug/Kg	EPA 8021B
Toluene	ND	5.0	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.0	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.0	ug/Kg	EPA 8021B
o-Xylene	ND	5.0	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	99	56-144	EPA 8015B
Bromofluorobenzene (FID)	105	51-142	EPA 8015B
Trifluorotoluene (PID)	90	45-150	EPA 8021B
Bromofluorobenzene (PID)	101	42-138	EPA 8021B

*= Value outside of QC limits; see narrative
C= Presence confirmed, but RPD between columns exceeds 40%
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	STANDARD		
Matrix:	Soil	Sampled:	02/06/04
Basis:	as received	Received:	02/06/04

Type:	BLANK	Batch#:	88336
Lab ID:	QC240437	Analyzed:	02/10/04
Diln Fac:	1.000		

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	0.20	mg/Kg	EPA 8015B
MTBE	ND	4.0	ug/Kg	EPA 8021B
Benzene	ND	1.0	ug/Kg	EPA 8021B
Toluene	ND	1.0	ug/Kg	EPA 8021B
Ethylbenzene	ND	1.0	ug/Kg	EPA 8021B
m,p-Xylenes	ND	1.0	ug/Kg	EPA 8021B
o-Xylene	ND	1.0	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	97	56-144	EPA 8015B
Bromofluorobenzene (FID)	104	51-142	EPA 8015B
Trifluorotoluene (PID)	89	45-150	EPA 8021B
Bromofluorobenzene (PID)	99	42-138	EPA 8021B

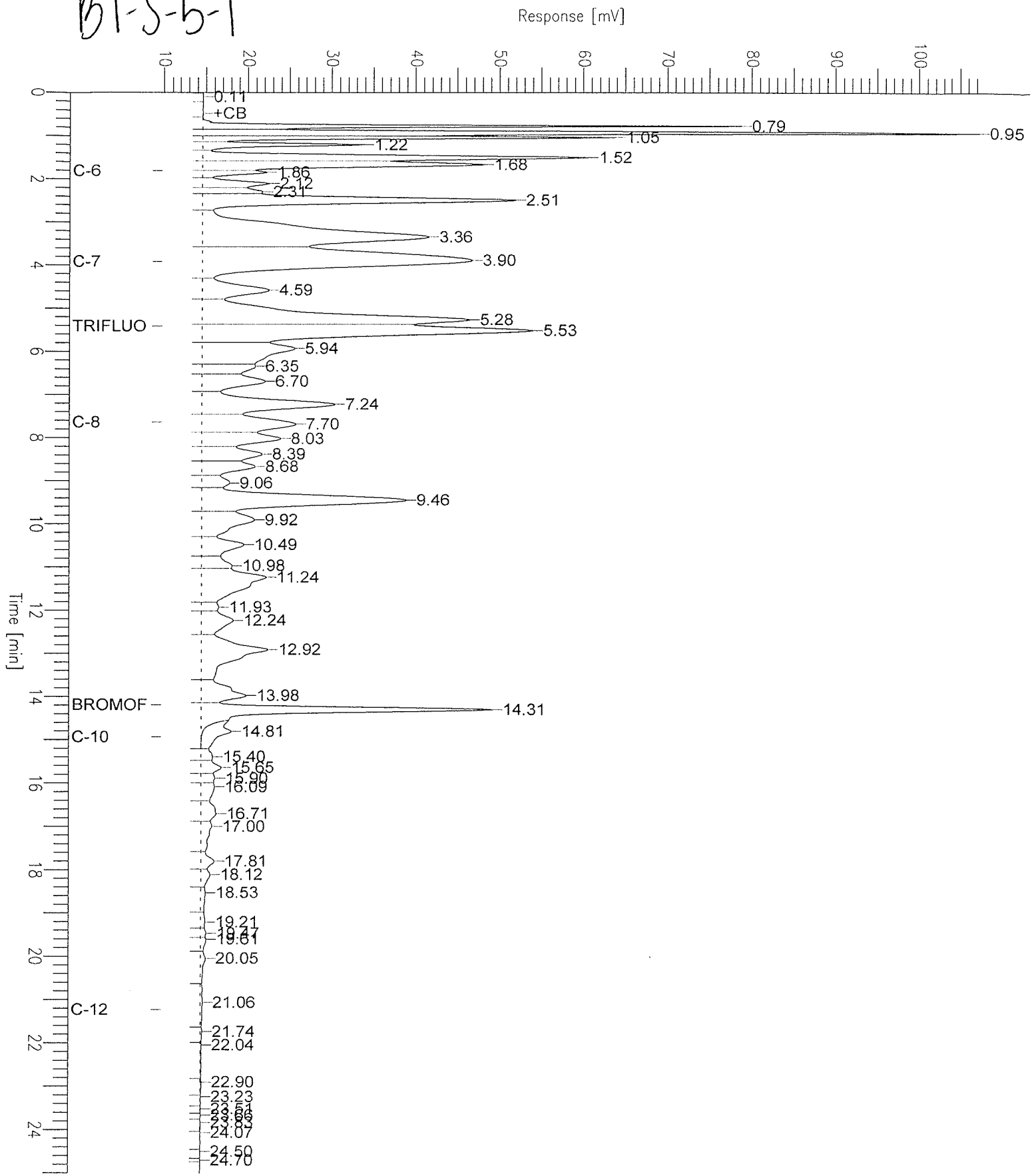
*= Value outside of QC limits; see narrative
C= Presence confirmed, but RPD between columns exceeds 40%
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

Chromatogram

Sample Name : 170458-001,88289
FileName : G:\GC05\DATA\040G005.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 25.00 min
Scale Factor: 1.0 Plot Offset: 10 mV

Sample #: c Page 1 of 1
Date : 2/9/04 01:20 PM
Time of Injection: 2/9/04 12:54 PM
Low Point : 9.80 mV High Point : 107.26 mV
Plot Scale: 97.5 mV

B1-S-5-1

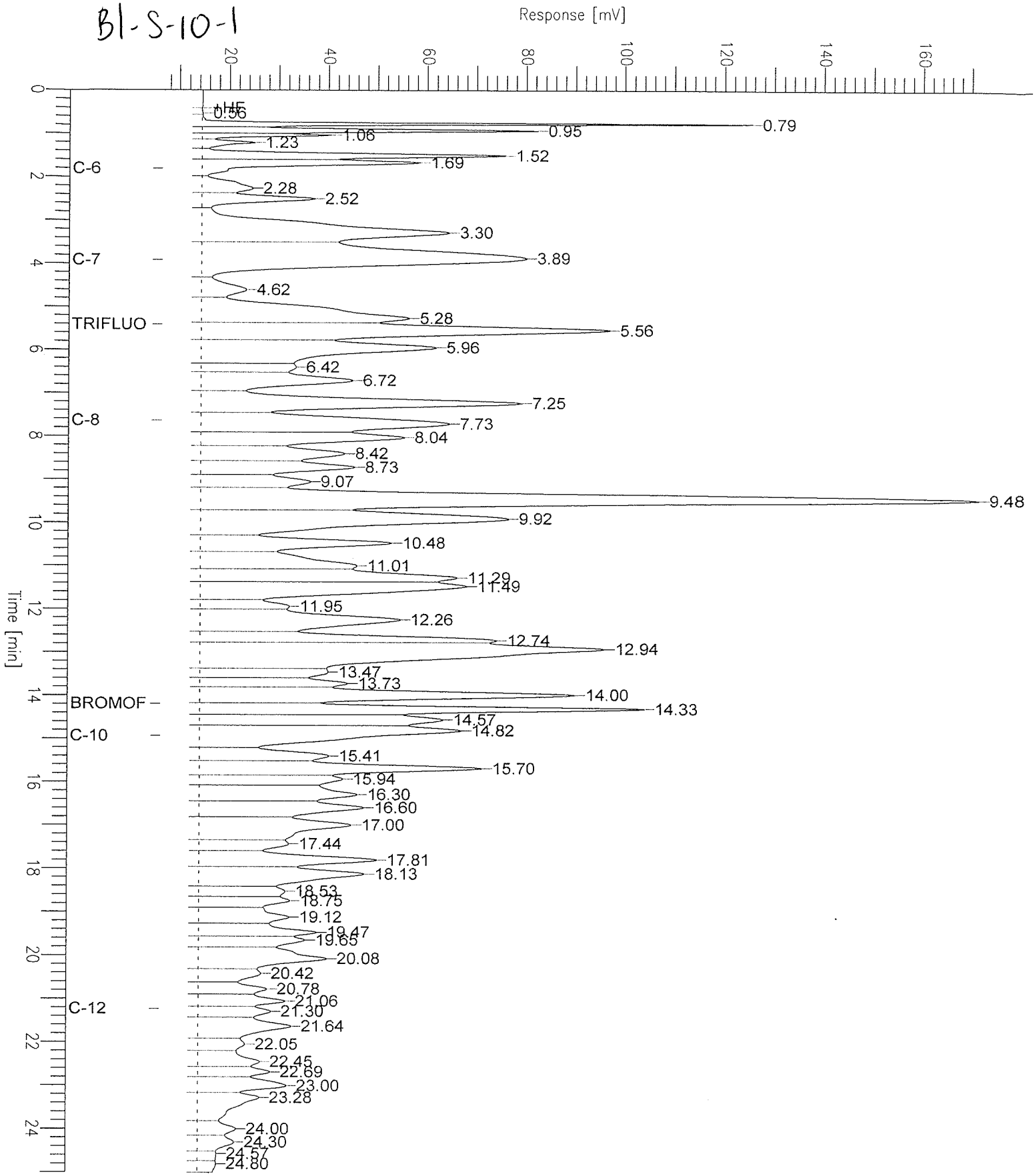


Chromatogram

Sample Name : 170458-002,88289
FileName : G:\GC05\DATA\040G006.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 25.00 min
Scale Factor: 1.0 Plot Offset: 7 mV

Sample #: c
Date : 2/9/04 02:00 PM
Time of Injection: 2/9/04 01:28 PM
Low Point : 6.51 mV High Point : 171.75 mV
Plot Scale: 165.2 mV

B1-S-10-1

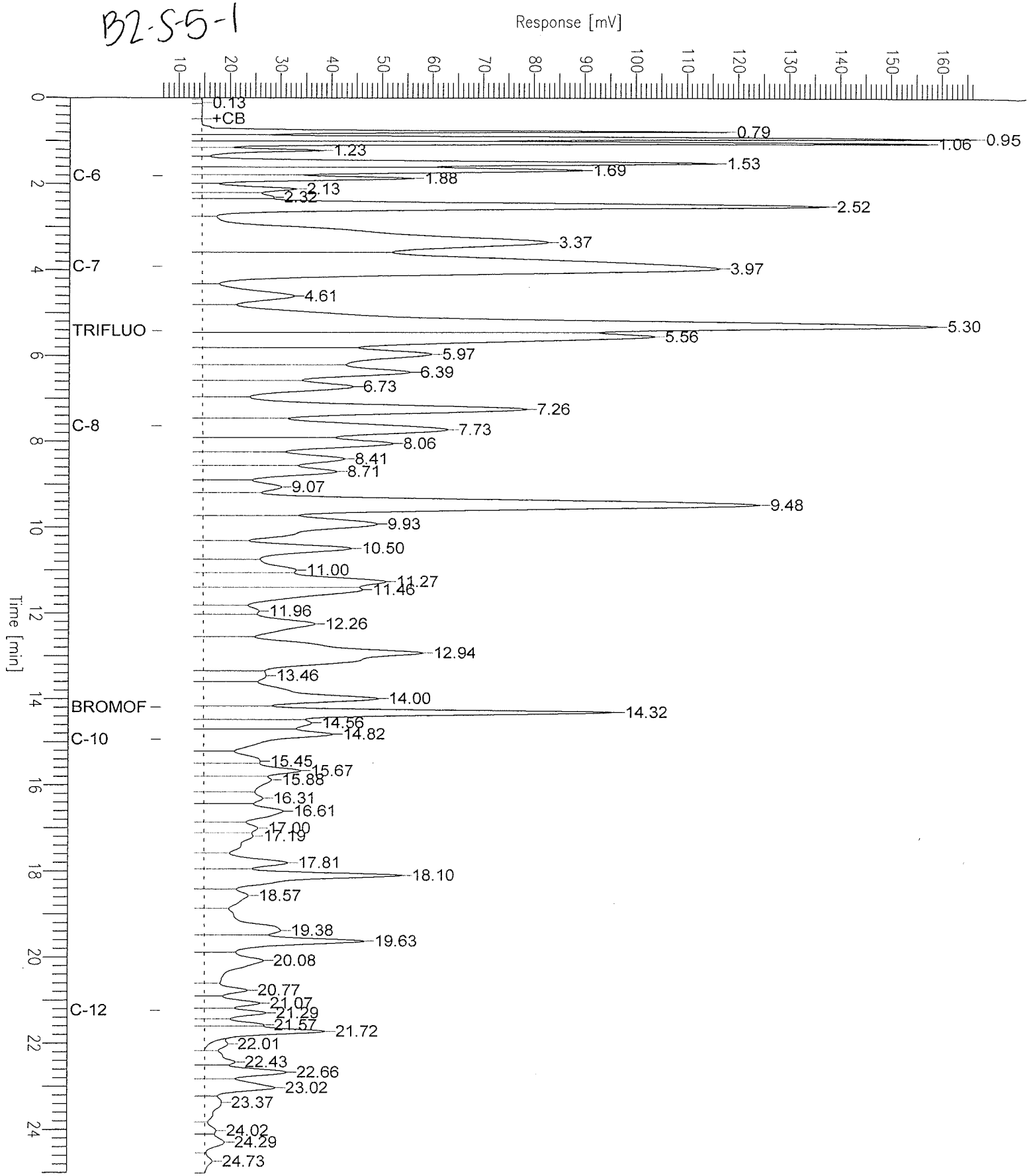


Chromatogram

Sample Name : 170458-003,88289
FileName : G:\GC05\DATA\040G007.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 25.00 min
Scale Factor: 1.0 Plot Offset: 7 mV

Sample #: c Page 1 of 1
Date : 2/9/04 02:27 PM
Time of Injection: 2/9/04 02:02 PM
Low Point : 6.82 mV High Point : 166.69 mV
Plot Scale: 159.9 mV

B2-S-5-1

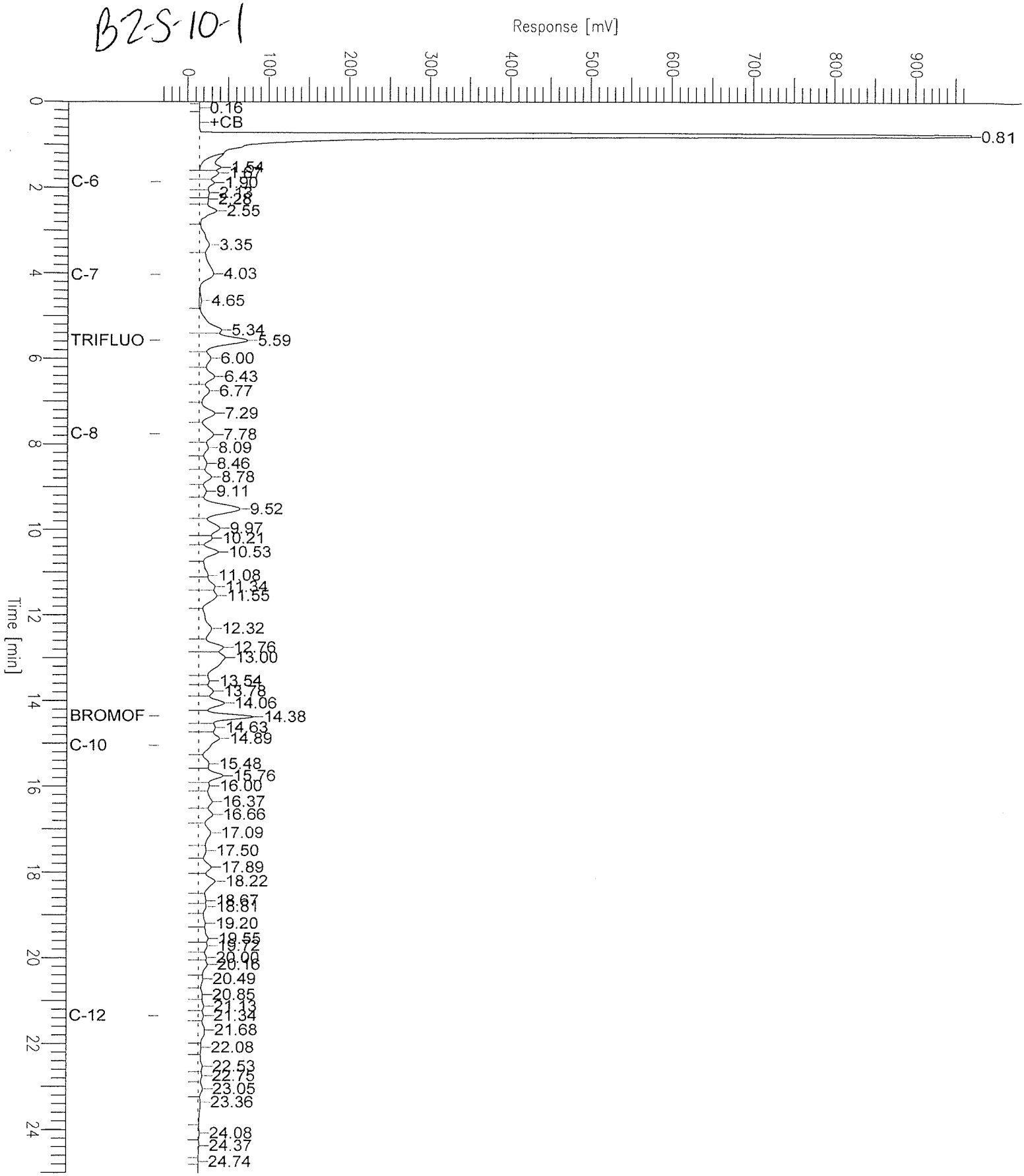


Chromatogram

Sample Name : 170458-004,88336,tvh
FileName : G:\GC05\DATA\041G018.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 25.00 min
Scale Factor: 1.0 Plot Offset: -33 mV

Sample #: d Page 1 of 1
Date : 2/10/04 07:52 PM
Time of Injection: 2/10/04 07:27 PM
Low Point : -33.34 mV High Point : 969.29 mV
Plot Scale: 1002.6 mV

B2-S-10-1

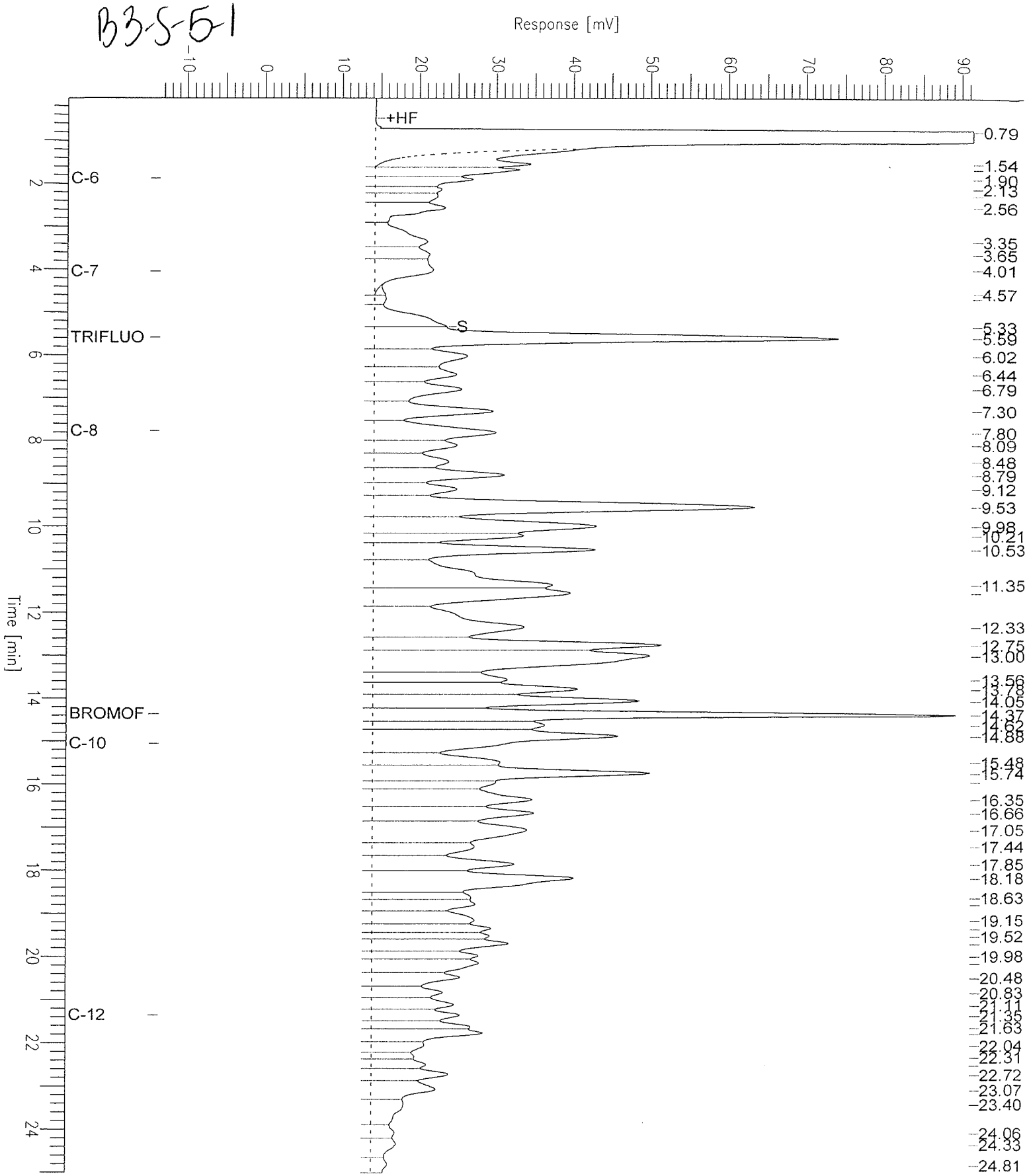


Chromatogram

Sample Name : 170458-005,88336
FileName : G:\GC05\DATA\041G016.RAW
Method :
Start Time : 0.02 min End Time : 25.00 min
Scale Factor: 0.0 Plot Offset: -14 mV

Sample #: e
Date : 2/11/04 08:07 AM
Time of Injection: 2/10/04 06:19 PM
Low Point : -13.53 mV High Point : 91.42 mV
Plot Scale: 104.9 mV

B3-S-51

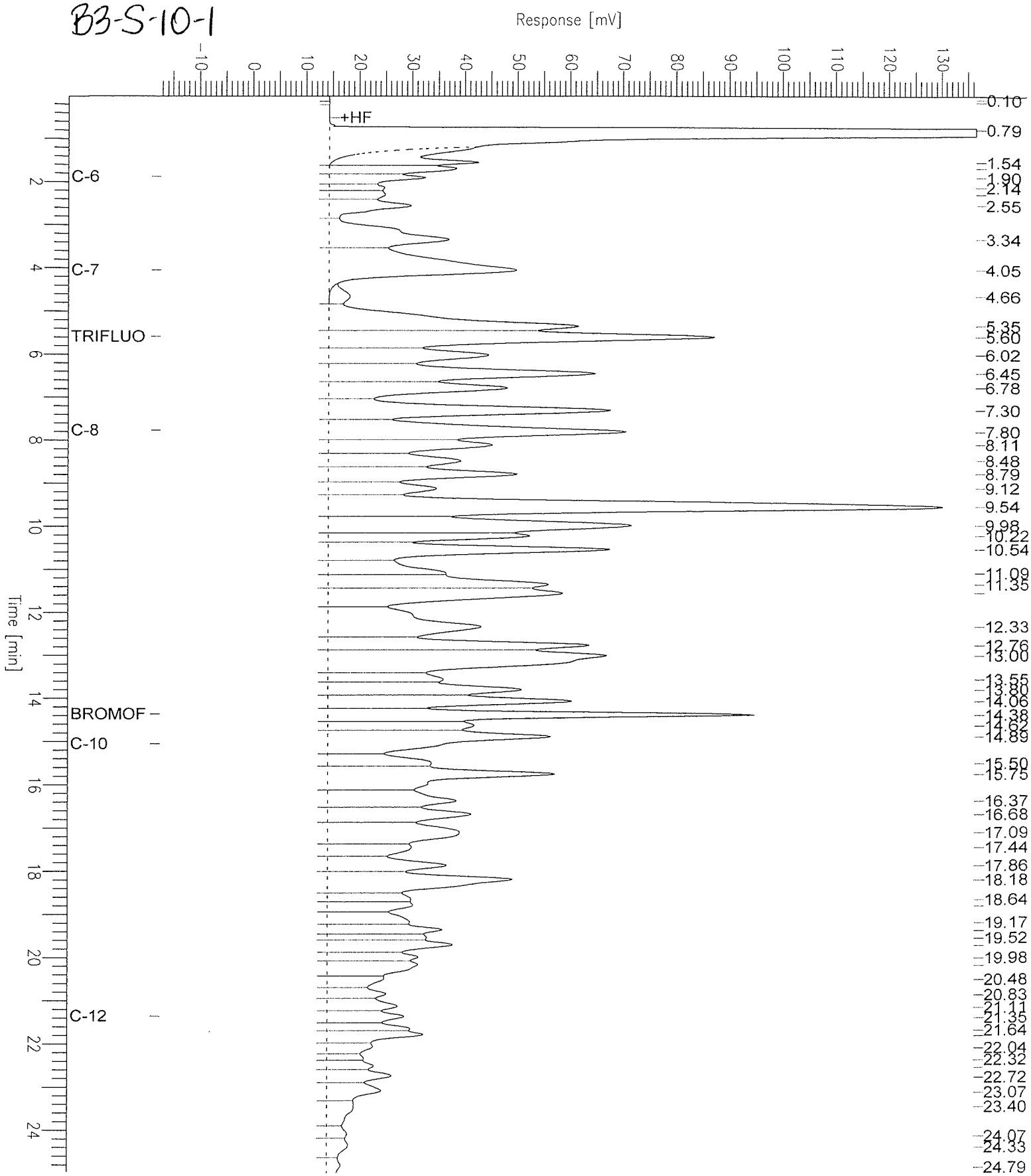


Chromatogram

Sample Name : 170458-006,88336
FileName : G:\GC05\DATA\041G017.RAW
Method :
Start Time : 0.02 min End Time : 24.97 min
Scale Factor: 0.0 Plot Offset: -17 mV

Sample #: d
Date : 2/11/04 08:09 AM
Time of Injection: 2/10/04 06:53 PM
Low Point : -17.27 mV High Point : 136.50 mV
Plot Scale: 153.8 mV

B3-S-10-1

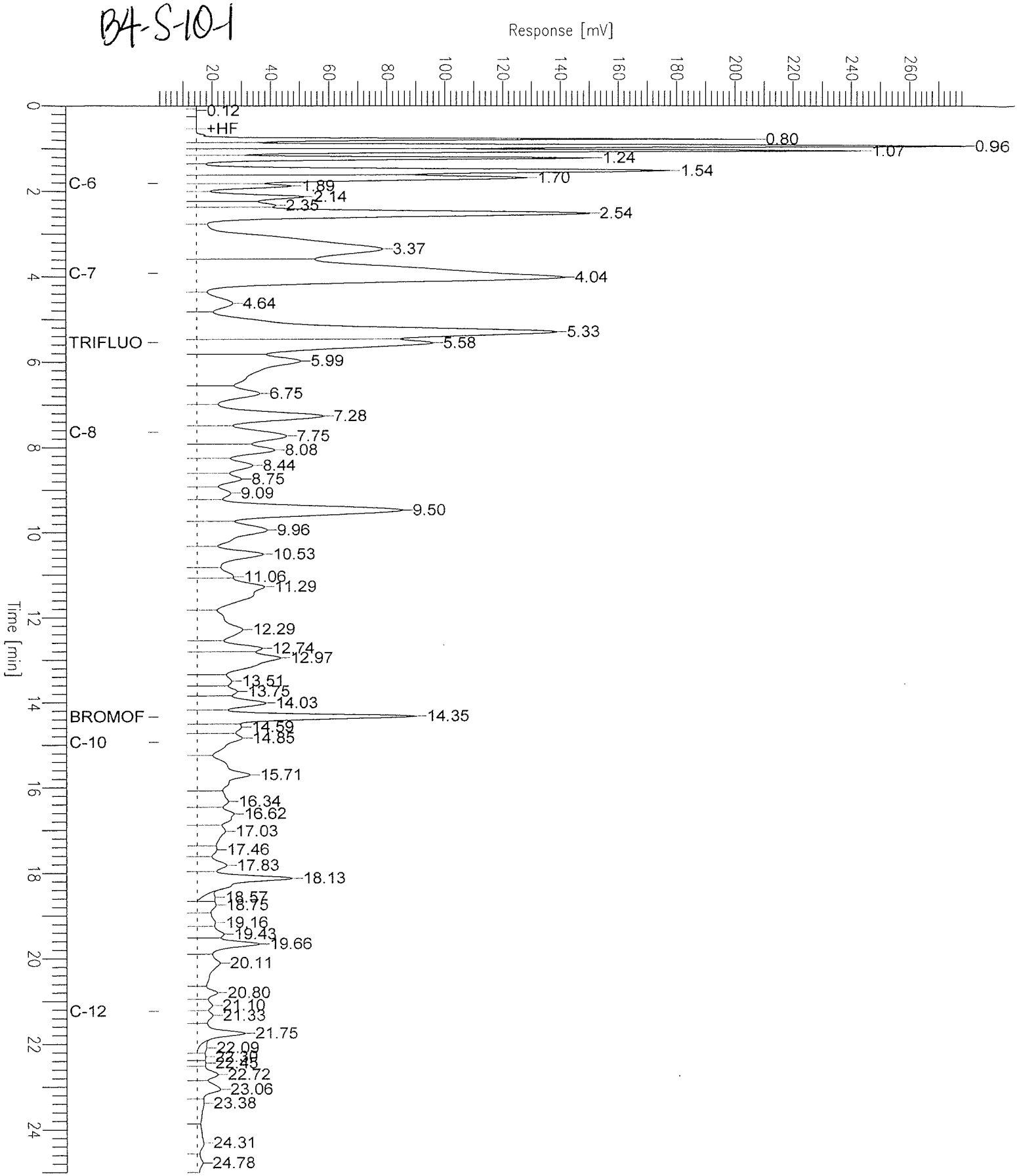


Chromatogram

Sample Name : 170458-008,88289
FileName : G:\GC05\DATA\040G019.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 25.00 min
Scale Factor: 1.0 Plot Offset: 1 mV

Sample #: b Page 1 of 1
Date : 2/10/04 09:34 AM
Time of Injection: 2/9/04 08:45 PM
Low Point : 1.34 mV High Point : 279.19 mV
Plot Scale: 277.9 mV

B4-S-10-1

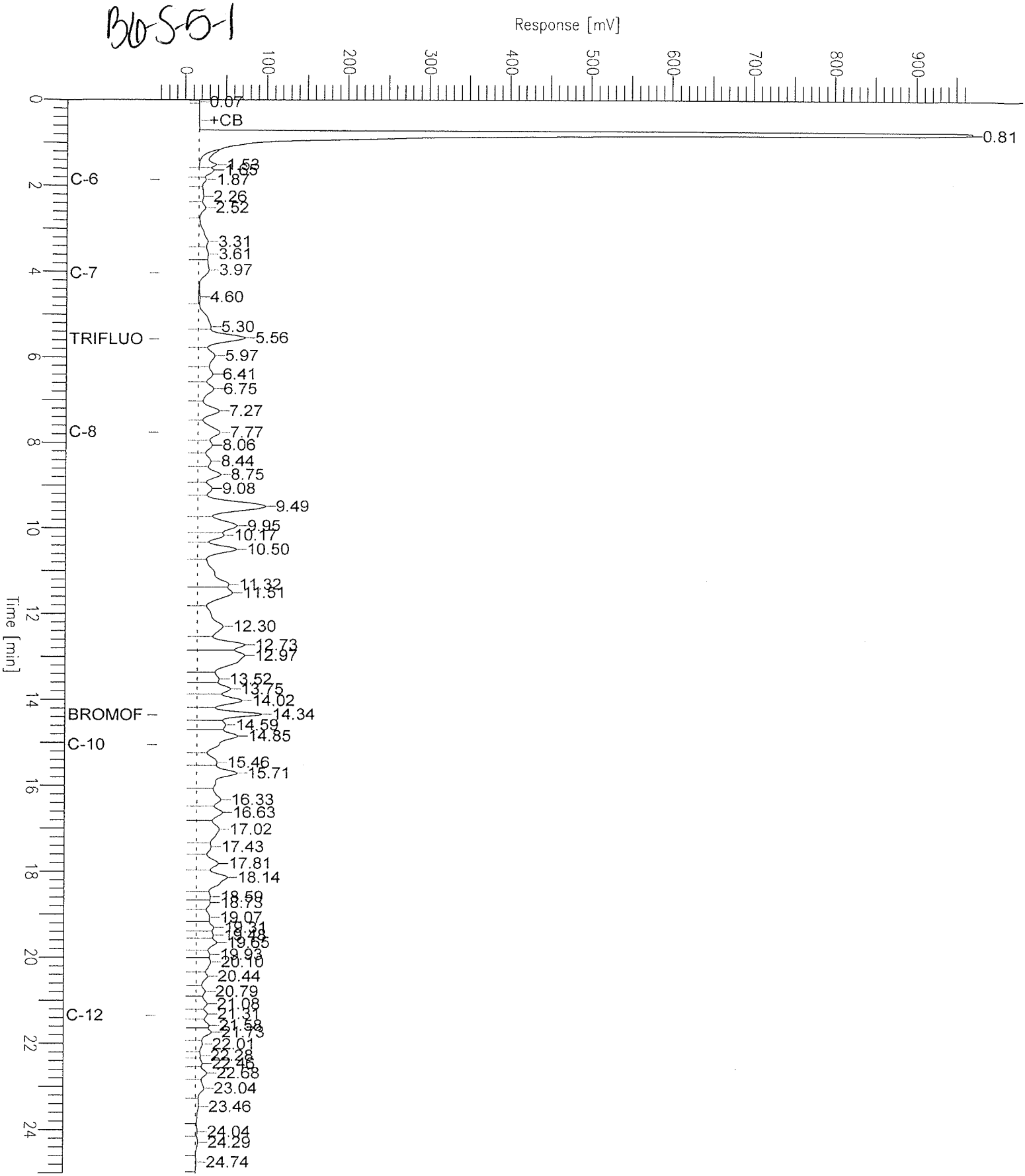


Chromatogram

Sample Name : 170458-011,88336,etvh only
FileName : G:\GC05\DATA\041G022.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 25.00 min
Scale Factor: 1.0 Plot Offset: -31 mV

Sample #: c Page 1 of 1
Date : 2/11/04 09:19 AM
Time of Injection: 2/11/04 08:54 AM
Low Point : -31.05 mV High Point : 969.32 mV
Plot Scale: 1000.4 mV

B0S-5-1

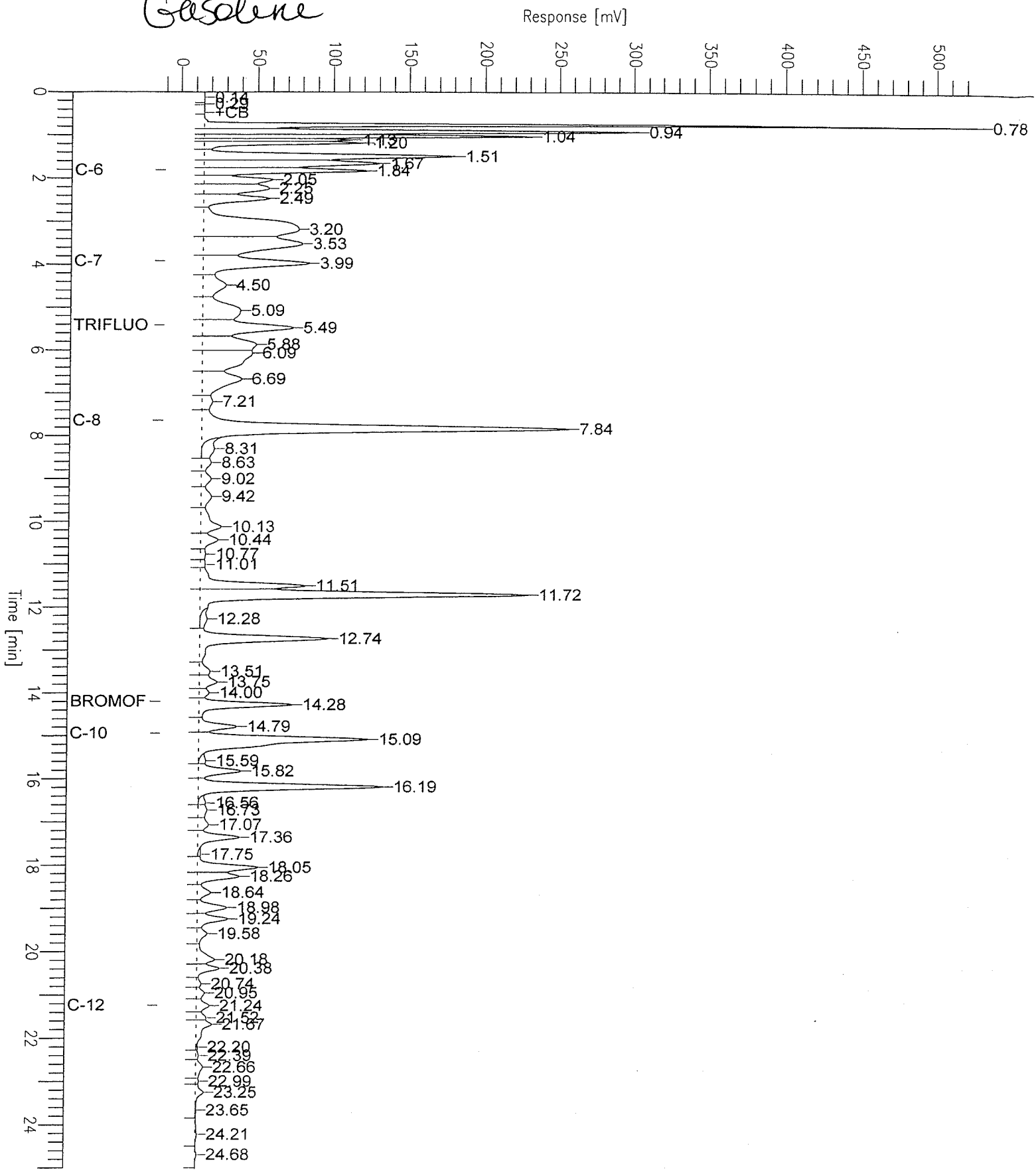


Chromatogram

Sample Name : ccv/lcs,qc240280,88289,04ws0146,5/5000
FileName : G:\GC05\DATA\040G003.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 25.00 min
Scale Factor: 1.0 Plot Offset: -11 mV

Sample #: Page 1 of 1
Date : 2/9/04 12:01 PM
Time of Injection: 2/9/04 11:35 AM
Low Point : -10.89 mV High Point : 529.88 mV
Plot Scale: 540.8 mV

Gasoline



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	STANDARD	Analysis:	EPA 8021B
Type:	LCS	Basis:	as received
Lab ID:	QC240279	Diln Fac:	1.000
Matrix:	Soil	Batch#:	88289
Units:	ug/Kg	Analyzed:	02/09/04

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12		NA		
MTBE	100.0	91.17	91	74-121
Benzene	100.0	100.4	100	80-121
Toluene	100.0	91.61	92	80-120
Ethylbenzene	100.0	93.71	94	79-120
m,p-Xylenes	200.0	170.0	85	76-120
o-Xylene	100.0	93.21	93	80-120

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		91	45-150
Bromofluorobenzene (PID)		96	42-138

NA= Not Analyzed

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Basis:	as received
Lab ID:	QC240280	Diln Fac:	1.000
Matrix:	Soil	Batch#:	88289
Units:	mg/Kg	Analyzed:	02/09/04

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	11.13	111	80-120
MTBE		NA		
Benzene		NA		
Toluene		NA		
Ethylbenzene		NA		
m,p-Xylenes		NA		
o-Xylene		NA		

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		121	56-144
Bromofluorobenzene (FID)		120	51-142
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

NA= Not Analyzed

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	B5-S-10-1	Diln Fac:	1.000
MSS Lab ID:	170458-010	Batch#:	88289
Matrix:	Soil	Sampled:	02/06/04
Units:	mg/Kg	Received:	02/06/04
Basis:	as received	Analyzed:	02/11/04

Type: MS Lab ID: QC240281

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.01784	1.815	0.9539	52	24-134
MTBE			NA		
Benzene			NA		
Toluene			NA		
Ethylbenzene			NA		
m,p-Xylenes			NA		
o-Xylene			NA		

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		116	56-144
Bromofluorobenzene (FID)		110	51-142
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

Type: MSD Lab ID: QC240282

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2.016	0.9858	48	24-134	7	32
MTBE		NA				
Benzene		NA				
Toluene		NA				
Ethylbenzene		NA				
m,p-Xylenes		NA				
o-Xylene		NA				

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		151 *	56-144
Bromofluorobenzene (FID)		109	51-142
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

*= Value outside of QC limits; see narrative
NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	STANDARD	Analysis:	EPA 8021B
Type:	LCS	Basis:	as received
Lab ID:	QC240438	Diln Fac:	1.000
Matrix:	Soil	Batch#:	88336
Units:	ug/Kg	Analyzed:	02/10/04

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12		NA		
MTBE	20.00	17.24	86	74-121
Benzene	20.00	20.17	101	80-121
Toluene	20.00	17.97	90	80-120
Ethylbenzene	20.00	18.89	94	79-120
m,p-Xylenes	40.00	34.59	86	76-120
o-Xylene	20.00	18.97	95	80-120

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		88	45-150
Bromofluorobenzene (PID)		100	42-138

NA= Not Analyzed

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Basis:	as received
Lab ID:	QC240439	Diln Fac:	1.000
Matrix:	Soil	Batch#:	88336
Units:	mg/Kg	Analyzed:	02/10/04

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	10.86	109	80-120
MTBE		NA		
Benzene		NA		
Toluene		NA		
Ethylbenzene		NA		
m,p-Xylenes		NA		
o-Xylene		NA		

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		119	56-144
Bromofluorobenzene (FID)		121	51-142
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

NA= Not Analyzed

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 5035
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	170490-002	Batch#:	88336
Matrix:	Soil	Sampled:	02/09/04
Units:	mg/Kg	Received:	02/10/04
Basis:	as received	Analyzed:	02/11/04

Type: MS Lab ID: QC240506

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.1284	10.20	10.63	103	24-134
MTBE			NA		
Benzene			NA		
Toluene			NA		
Ethylbenzene			NA		
m,p-Xylenes			NA		
o-Xylene			NA		

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		127	56-144
Bromofluorobenzene (FID)		135	51-142
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

Type: MSD Lab ID: QC240507

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.64	10.66	99	24-134	4	32
MTBE		NA				
Benzene		NA				
Toluene		NA				
Ethylbenzene		NA				
m,p-Xylenes		NA				
o-Xylene		NA				

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		130	56-144
Bromofluorobenzene (FID)		136	51-142
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	B3-GW-1	Batch#:	88322
Matrix:	Water	Sampled:	02/06/04
Units:	ug/L	Received:	02/06/04
Diln Fac:	1.000	Prepared:	02/09/04

Type: SAMPLE Analyzed: 02/12/04
Lab ID: 170458-012

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	91	44-146

Type: BLANK Analyzed: 02/11/04
Lab ID: QC240399 Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	71	44-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC240400	Batch#:	88322
Matrix:	Water	Prepared:	02/09/04
Units:	ug/L	Analyzed:	02/11/04

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,150	86	38-137

Surrogate	%REC	Limits
Hexacosane	84	44-146

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	88322
MSS Lab ID:	170412-003	Sampled:	02/04/04
Matrix:	Water	Received:	02/04/04
Units:	ug/L	Prepared:	02/09/04
Diln Fac:	1.000	Analyzed:	02/11/04

Type: MS Cleanup Method: EPA 3630C
Lab ID: QC240401

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	<35.00	2,500	1,706	68	35-138

Surrogate	%REC	Limits
Hexacosane	64	44-146

Type: MSD Cleanup Method: EPA 3630C
Lab ID: QC240402

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,252	90	35-138	28	33

Surrogate	%REC	Limits
Hexacosane	80	44-146

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	SHAKER TABLE
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	88331
Units:	mg/Kg	Sampled:	02/06/04
Basis:	as received	Received:	02/06/04
Diln Fac:	1.000	Prepared:	02/09/04

Field ID: B1-S-5-1 Lab ID: 170458-001
Type: SAMPLE Analyzed: 02/11/04

Analyte	Result	RL
Diesel C10-C24	ND	0.99
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	93	36-141

Field ID: B1-S-10-1 Lab ID: 170458-002
Type: SAMPLE Analyzed: 02/11/04

Analyte	Result	RL
Diesel C10-C24	17 L Y	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	98	36-141

Field ID: B2-S-5-1 Lab ID: 170458-003
Type: SAMPLE Analyzed: 02/11/04

Analyte	Result	RL
Diesel C10-C24	2.2 L Y	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	90	36-141

Field ID: B2-S-10-1 Lab ID: 170458-004
Type: SAMPLE Analyzed: 02/11/04

Analyte	Result	RL
Diesel C10-C24	51 L Y	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	94	36-141

H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	SHAKER TABLE
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	88331
Units:	mg/Kg	Sampled:	02/06/04
Basis:	as received	Received:	02/06/04
Diln Fac:	1.000	Prepared:	02/09/04

Field ID: B3-S-5-1 Lab ID: 170458-005
Type: SAMPLE Analyzed: 02/11/04

Analyte	Result	RL
Diesel C10-C24	37 L Y	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	95	36-141

Field ID: B3-S-10-1 Lab ID: 170458-006
Type: SAMPLE Analyzed: 02/11/04

Analyte	Result	RL
Diesel C10-C24	28 L Y	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	90	36-141

Field ID: B4-S-5-1 Lab ID: 170458-007
Type: SAMPLE Analyzed: 02/11/04

Analyte	Result	RL
Diesel C10-C24	88 H L Y	1.0
Motor Oil C24-C36	230	5.0

Surrogate	%REC	Limits
Hexacosane	88	36-141

Field ID: B4-S-10-1 Lab ID: 170458-008
Type: SAMPLE Analyzed: 02/11/04

Analyte	Result	RL
Diesel C10-C24	3.8 H L Y	1.0
Motor Oil C24-C36	7.6	5.0

Surrogate	%REC	Limits
Hexacosane	87	36-141

H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	SHAKER TABLE
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	88331
Units:	mg/Kg	Sampled:	02/06/04
Basis:	as received	Received:	02/06/04
Diln Fac:	1.000	Prepared:	02/09/04

Field ID: B5-S-5-1 Lab ID: 170458-009
Type: SAMPLE Analyzed: 02/11/04

Analyte	Result	RL
Diesel C10-C24	18 H L Y	1.0
Motor Oil C24-C36	52	5.0

Surrogate	%REC	Limits
Hexacosane	84	36-141

Field ID: B5-S-10-1 Lab ID: 170458-010
Type: SAMPLE Analyzed: 02/11/04

Analyte	Result	RL
Diesel C10-C24	20 H L Y	1.0
Motor Oil C24-C36	79	5.0

Surrogate	%REC	Limits
Hexacosane	94	36-141

Field ID: B6-S-5-1 Lab ID: 170458-011
Type: SAMPLE Analyzed: 02/12/04

Analyte	Result	RL
Diesel C10-C24	100 L Y	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	88	36-141

Type: BLANK Analyzed: 02/11/04
Lab ID: QC240418

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	91	36-141

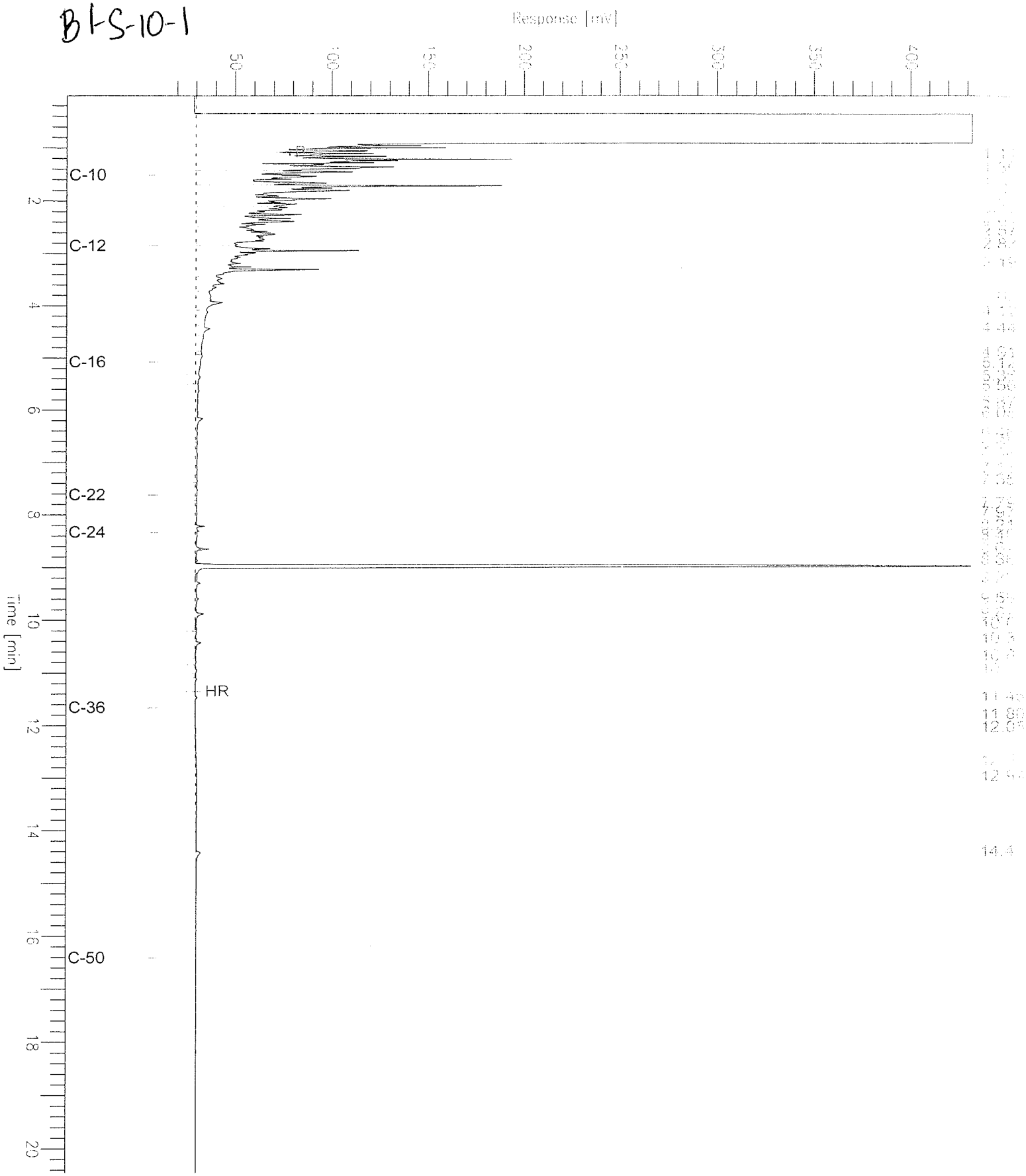
H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 170458-002,88331
FileName : G:\GC11\CHA\040A070.RAW
Method : ATEH040S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: 10 mV

Sample #: 88331 Page 1 of 1
Date : 2/11/04 09:21 AM
Time of Injection: 2/11/04 07:33 AM
Low Point : 10.05 mV High Point : 432.22 mV
Plot Scale: 422.2 mV

BTS-10-1

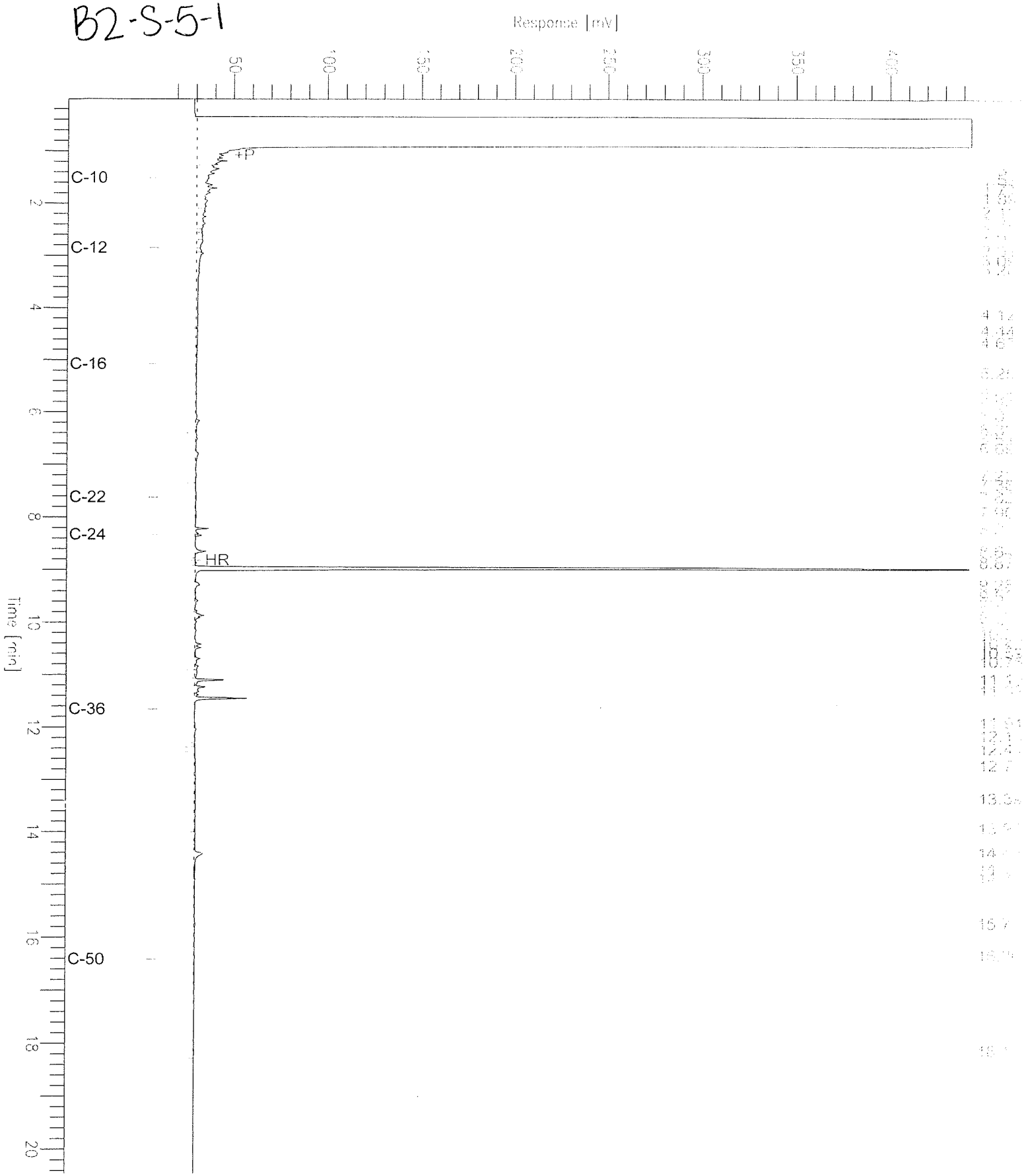


Chromatogram

Sample Name : 170458-003,88331
FileName : G:\GC11\CHA\040A071.RAW
Method : ATEH040S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: 10 mV

Sample #: 88331 Page 1 of 1
Date : 2/11/04 09:21 AM
Time of Injection: 2/11/04 08:02 AM
Low Point : 10.12 mV High Point : 443.59 mV
Plot Scale: 433.5 mV

B2-S-5-1

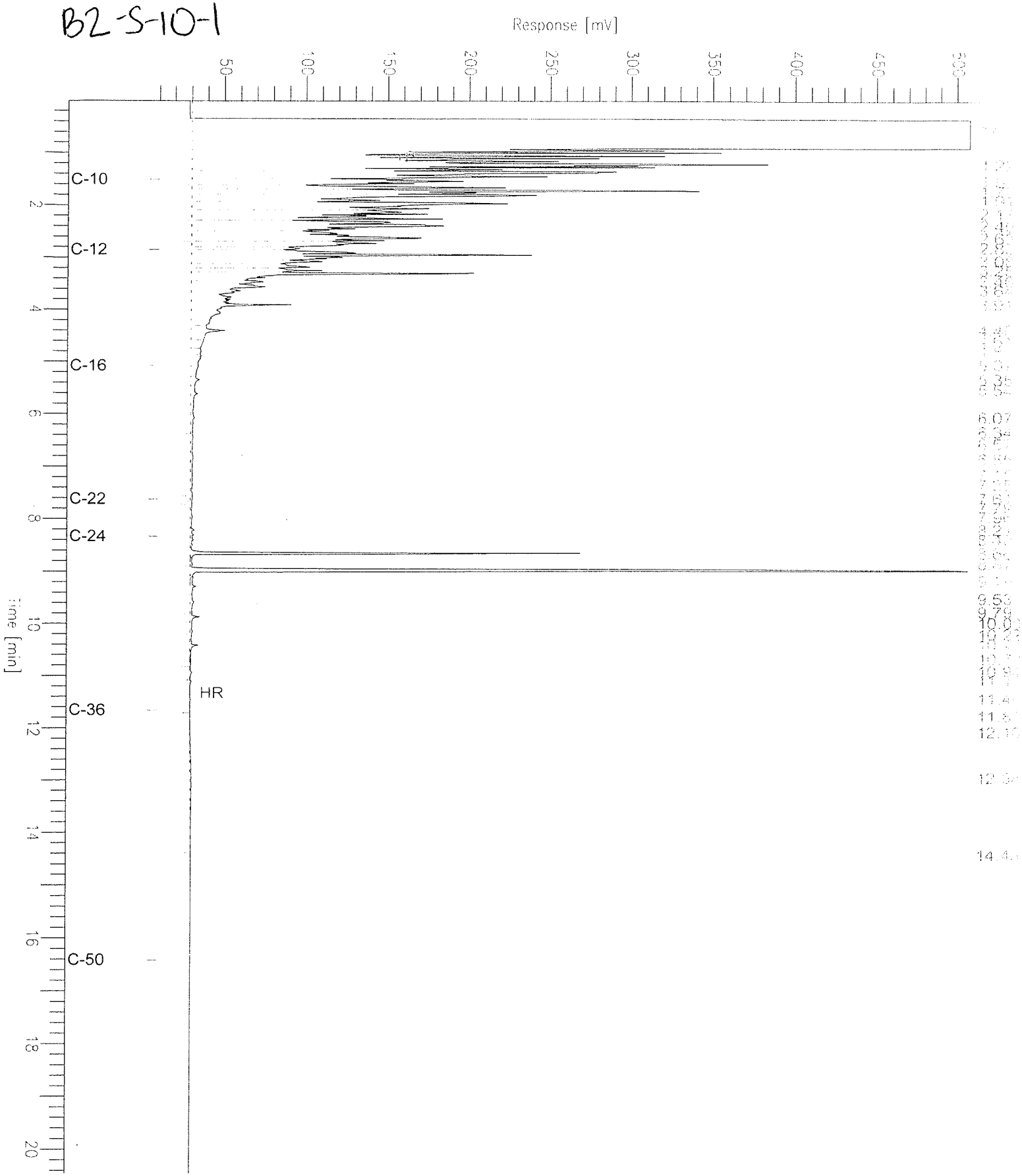


Chromatogram

Sample Name : 170458-004,88331
FileName : G:\GC11\CHA\040A066.RAW
Method : ATEH040S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: 10 mV

Sample #: 88331 Page 1 of 1
Date : 2/11/04 09:16 AM
Time of Injection: 2/11/04 05:38 AM
Low Point : 9.93 mV High Point : 507.50 mV
Plot Scale: 497.6 mV

B2-S-10-1

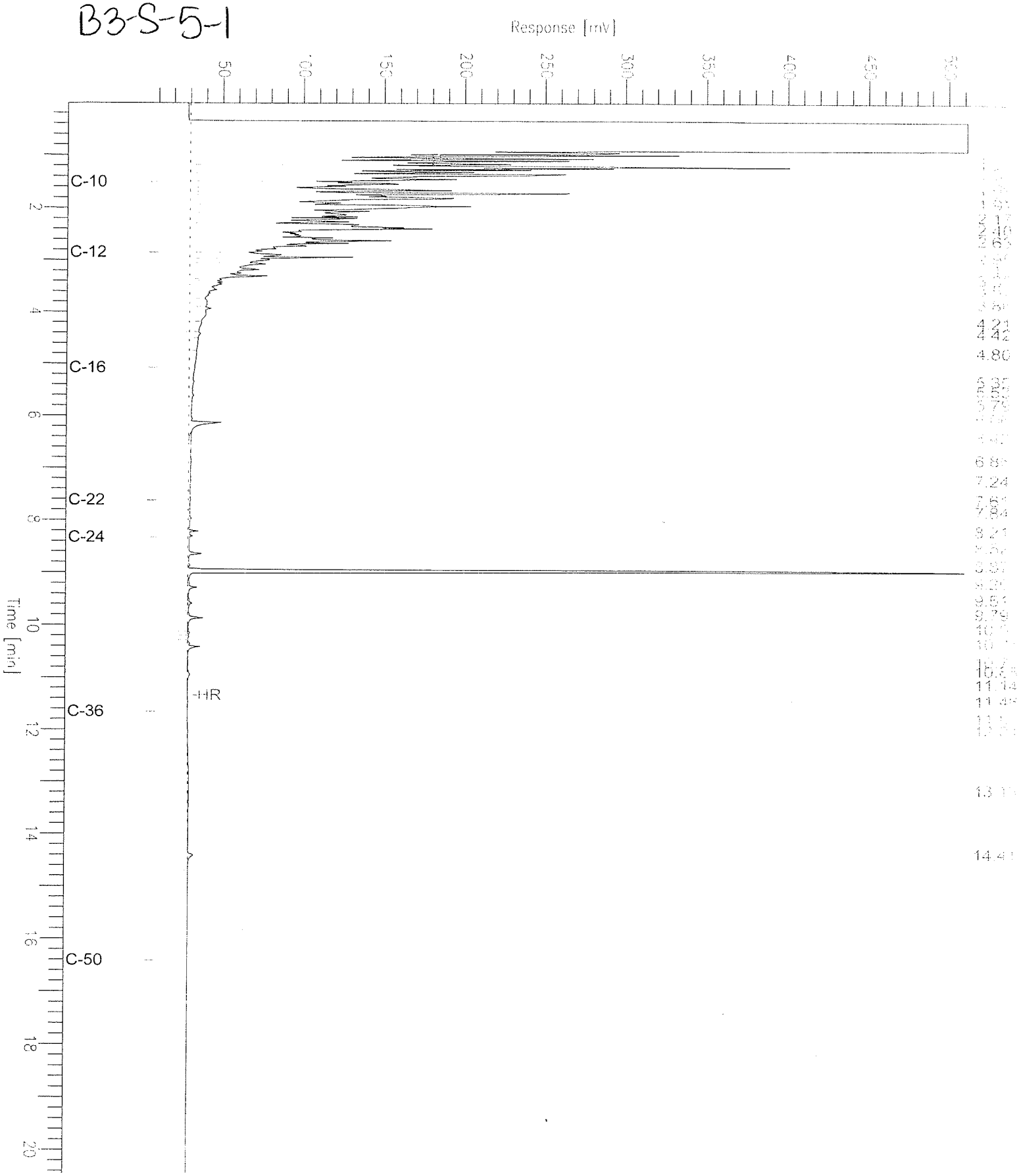


Chromatogram

Sample Name : 170458-005,88331
FileName : G:\GC11\CHA\040A067.RAW
Method : ATEH040S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: 10 mV

Sample #: 88331 Page 1 of 1
Date : 2/11/04 09:17 AM
Time of Injection: 2/11/04 06:07 AM
Low Point : 9.93 mV High Point : 511.25 mV
Plot Scale: 501.3 mV

B3-S-5-1

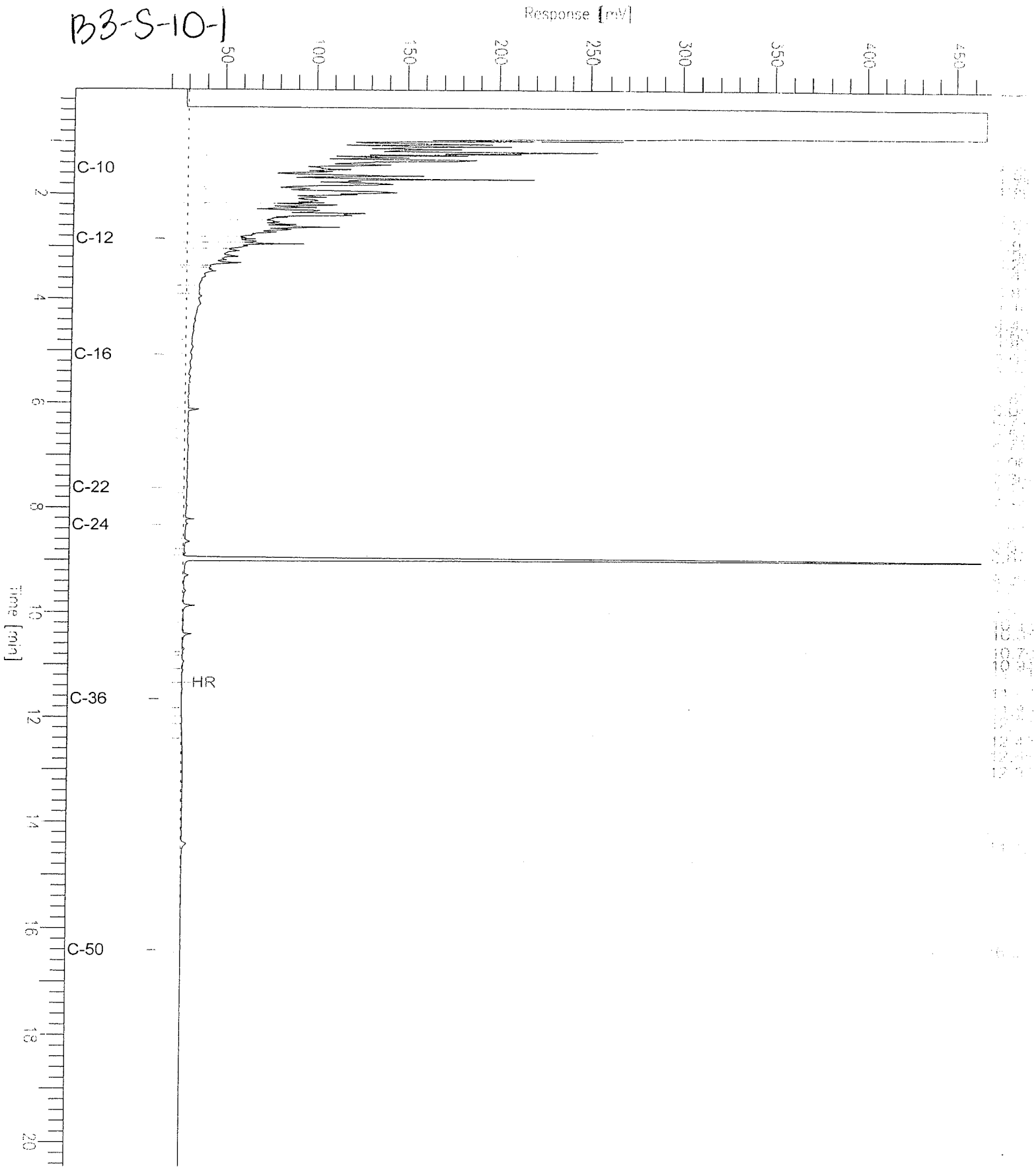


Chromatogram

Sample Name : 170458-006,88331
FileName : G:\GC11\CHA\040A068.RAW
Method : ATEH040S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: 17 mV

Sample #: 88331
Date : 2/11/04 09:18 AM
Time of Injection: 2/11/04 06:36 AM
Low Point : 17.46 mV High Point : 466.12 mV
Plot Scale: 448.7 mV

B3-S-10-1

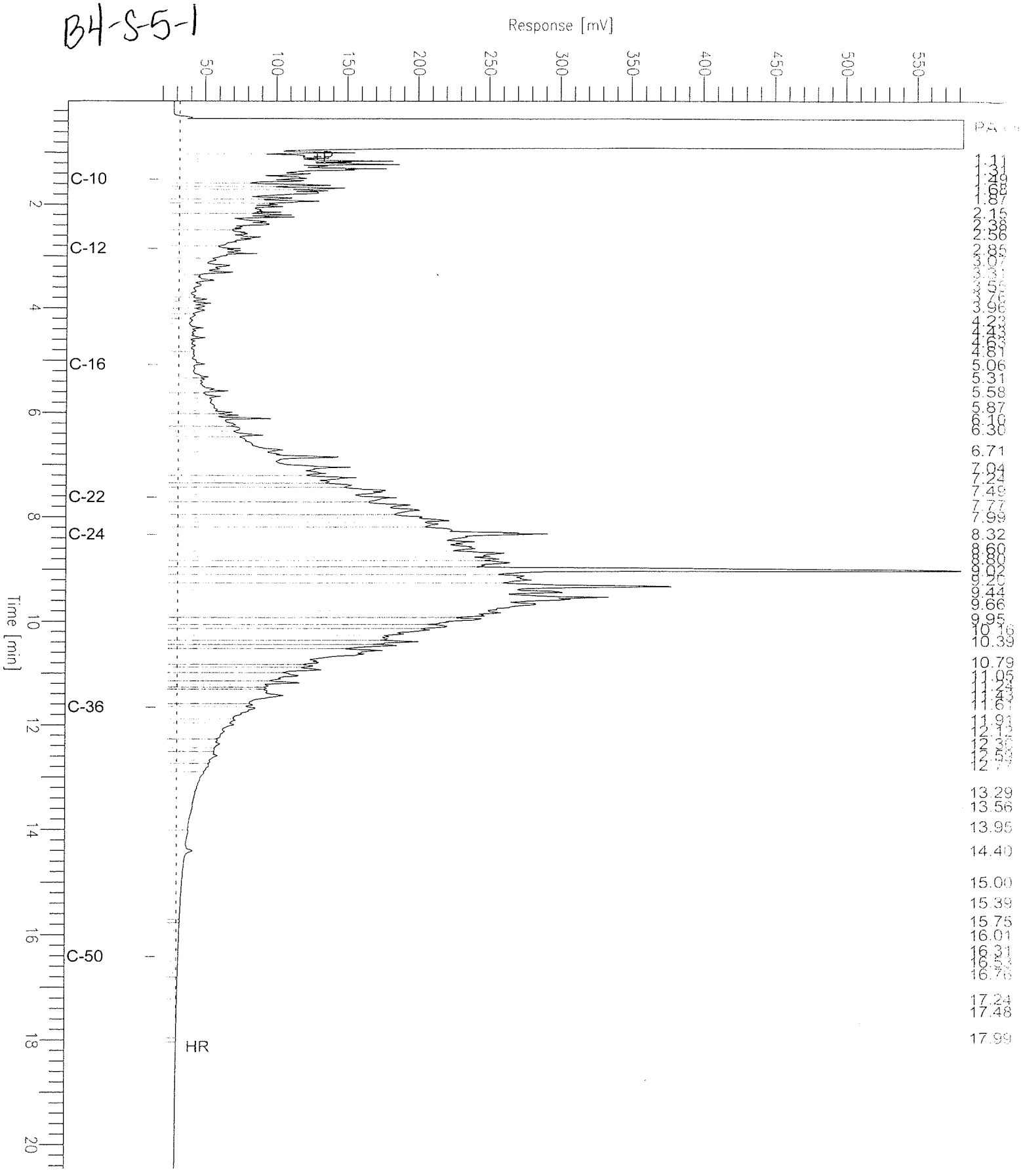


Chromatogram

Sample Name : 170458-007,88331
FileName : G:\GC11\CHA\040A055.RAW
Method : ATEH040S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: 17 mV

Sample #: 88331 Page 1 of 1
Date : 2/11/04 09:05 AM
Time of Injection: 2/11/04 12:23 AM
Low Point : 16.82 mV High Point : 582.70 mV
Plot Scale: 565.9 mV

B4-S-5-1

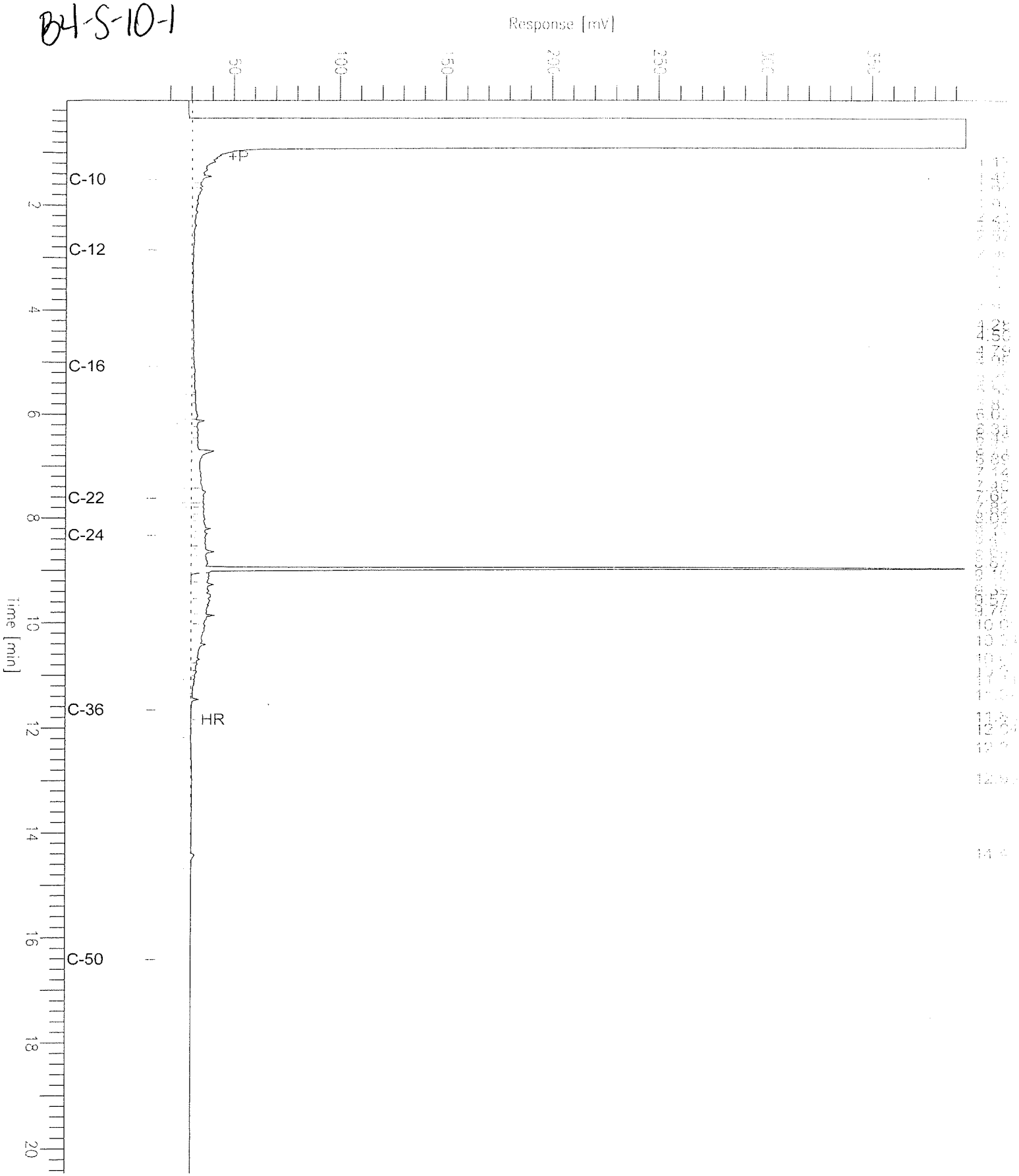


Chromatogram

Sample Name : 170458-008,88331
FileName : G:\GC11\CHA\040A069.RAW
Method : ATEH040S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: 14 mV

Sample #: 88331
Date : 2/11/04 09:19 AM
Time of Injection: 2/11/04 07:04 AM
Low Point : 13.80 mV High Point : 394.50 mV
Plot Scale: 380.7 mV

B4-S-10-1

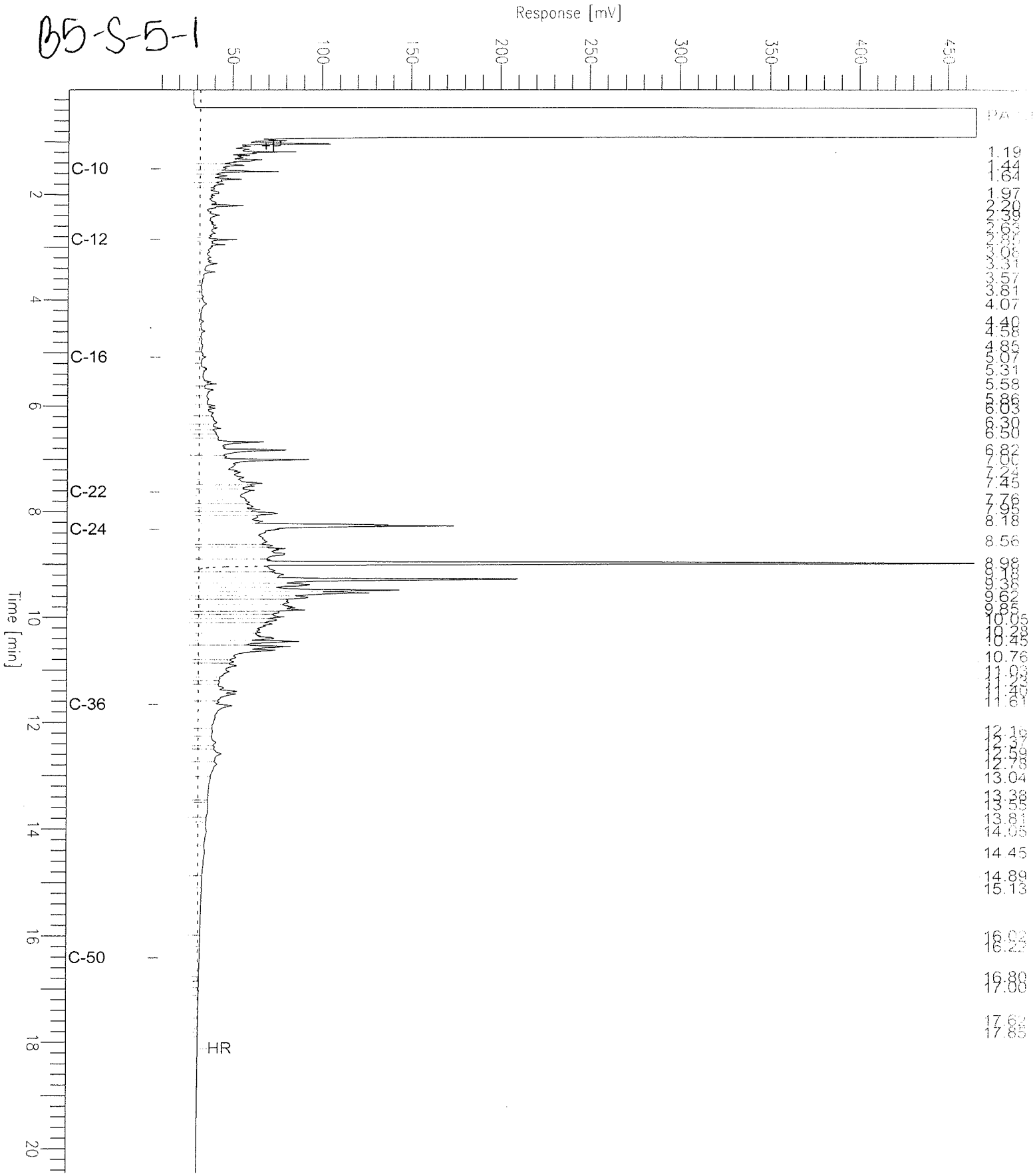


Chromatogram

Sample Name : 170458-009,88331
FileName : G:\GC11\CHA\040A058.RAW
Method : ATEH040S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: 10 mV

Sample #: 88331 Page 1 of 1
Date : 2/11/04 09:08 AM
Time of Injection: 2/11/04 01:49 AM
Low Point : 9.59 mV High Point : 465.86 mV
Plot Scale: 456.3 mV

B5-S-5-1

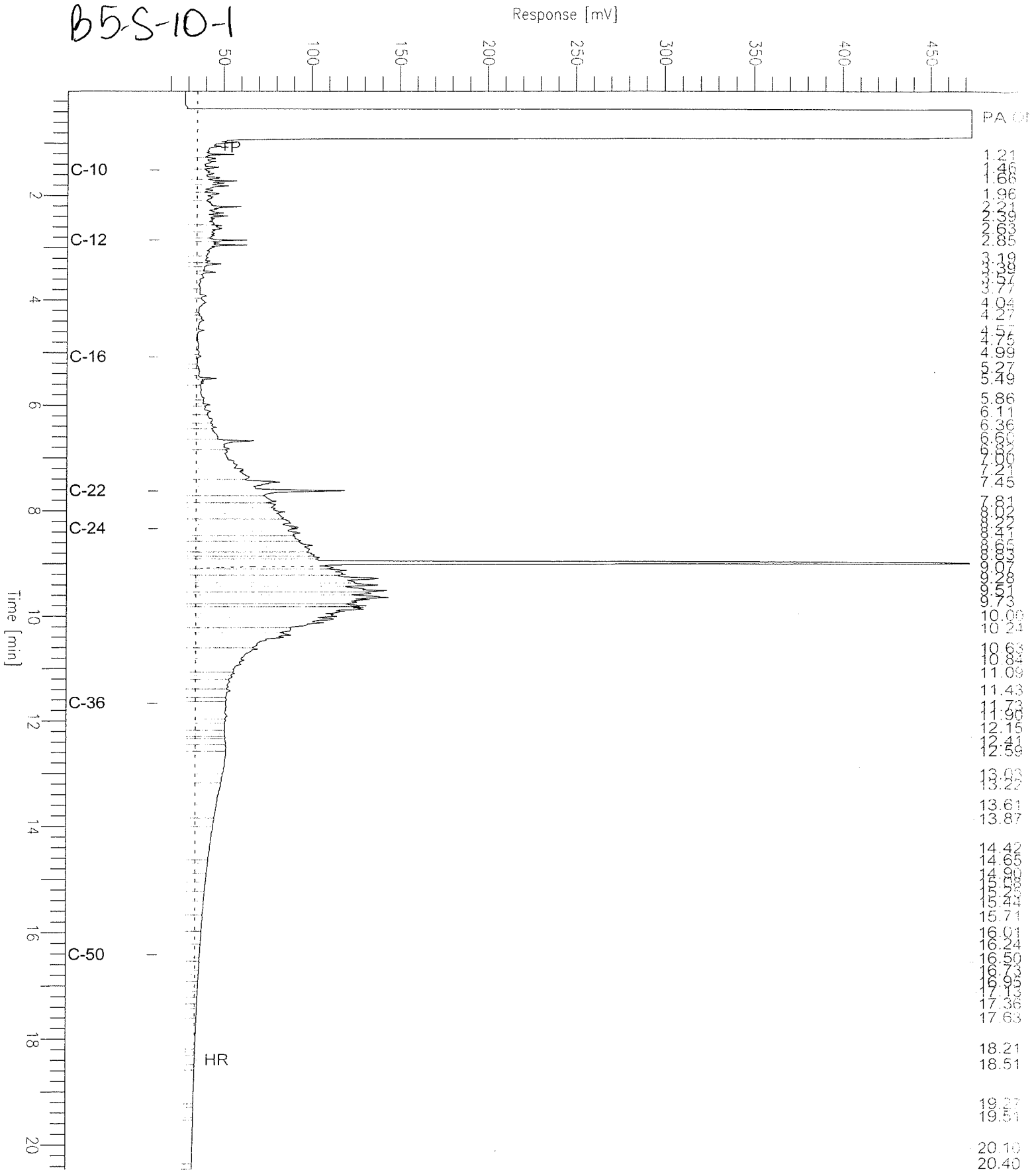


Chromatogram

Sample Name : 170458-010,88331
FileName : G:\GC11\CHA\040A059.RAW
Method : ATEH040S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: 13 mV

Sample #: 88331 Page 1 of 1
Date : 2/11/04 09:09 AM
Time of Injection: 2/11/04 02:18 AM
Low Point : 13.38 mV High Point : 473.47 mV
Plot Scale: 460.1 mV

B5-S-10-1

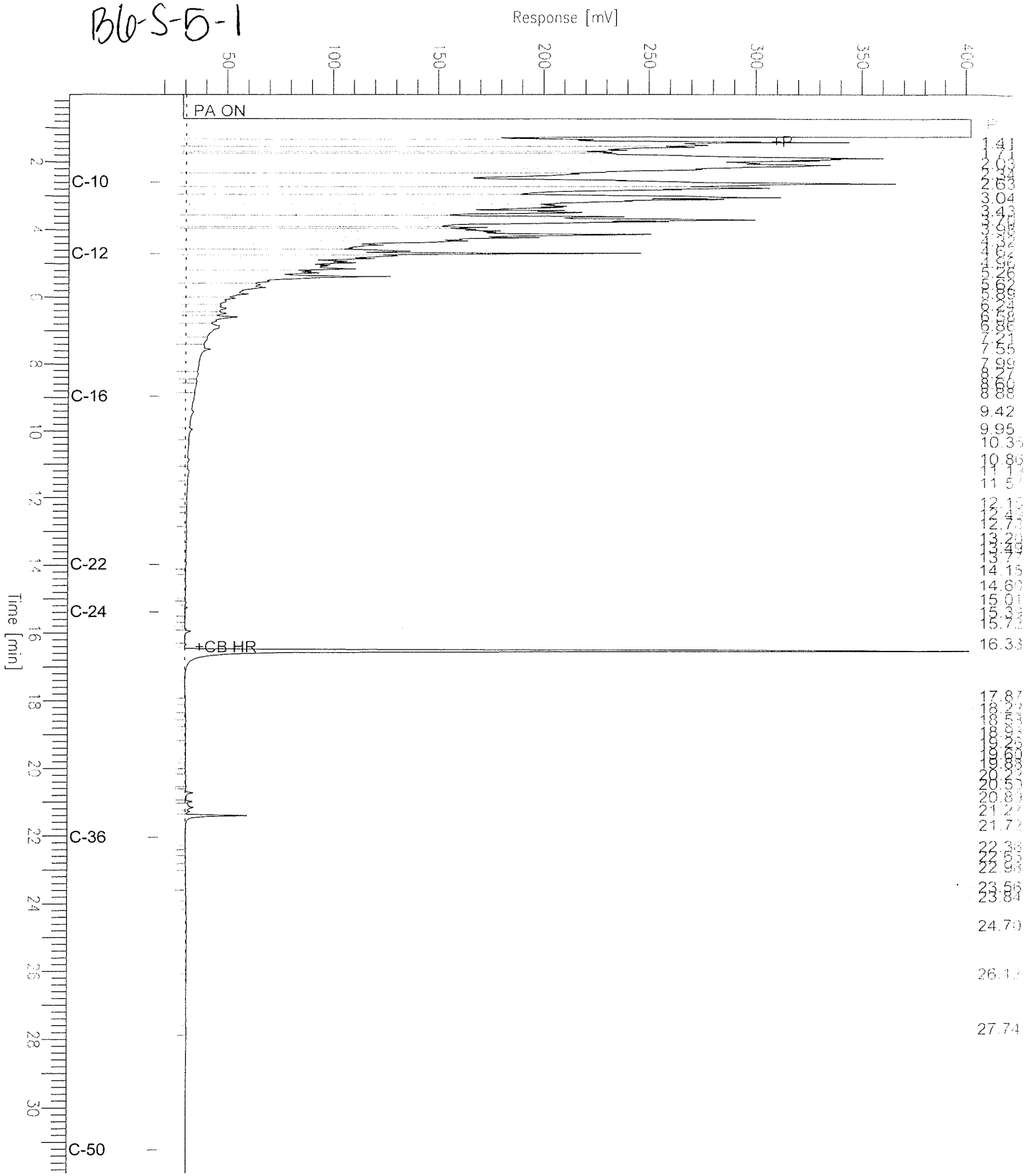


Chromatogram

Sample Name : 170458-011,88331
FileName : G:\GC17\CHA\042A024.RAW
Method : ATEH356.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 18 mV

Sample #: 88331 Page 1 of 1
Date : 2/12/04 08:58 AM
Time of Injection: 2/12/04 05:48 AM
Low Point : 18.10 mV High Point : 402.37 mV
Plot Scale: 384.3 mV

B6-S-5-1

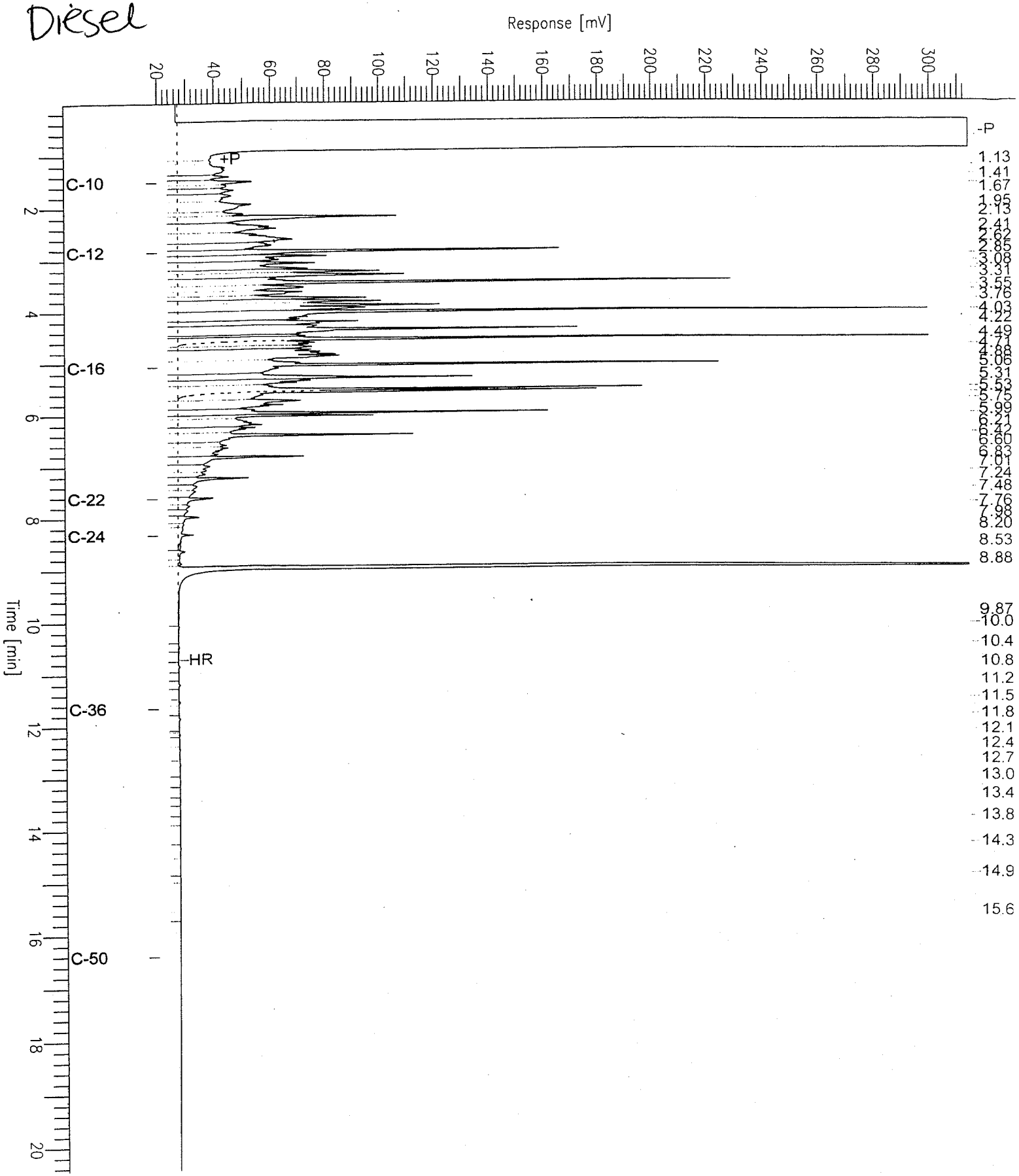


Chromatogram

Sample Name : ccv,03ws2078,dsl
FileName : G:\GC11\CHA\040A002.RAW
Method : ATEH039S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: 20 mV

Sample #: 500mg/L Page 1 of 1
Date : 2/9/04 01:41 PM
Time of Injection: 2/9/04 12:15 PM
Low Point : 19.91 mV High Point : 313.77 mV
Plot Scale: 293.9 mV

Diesel

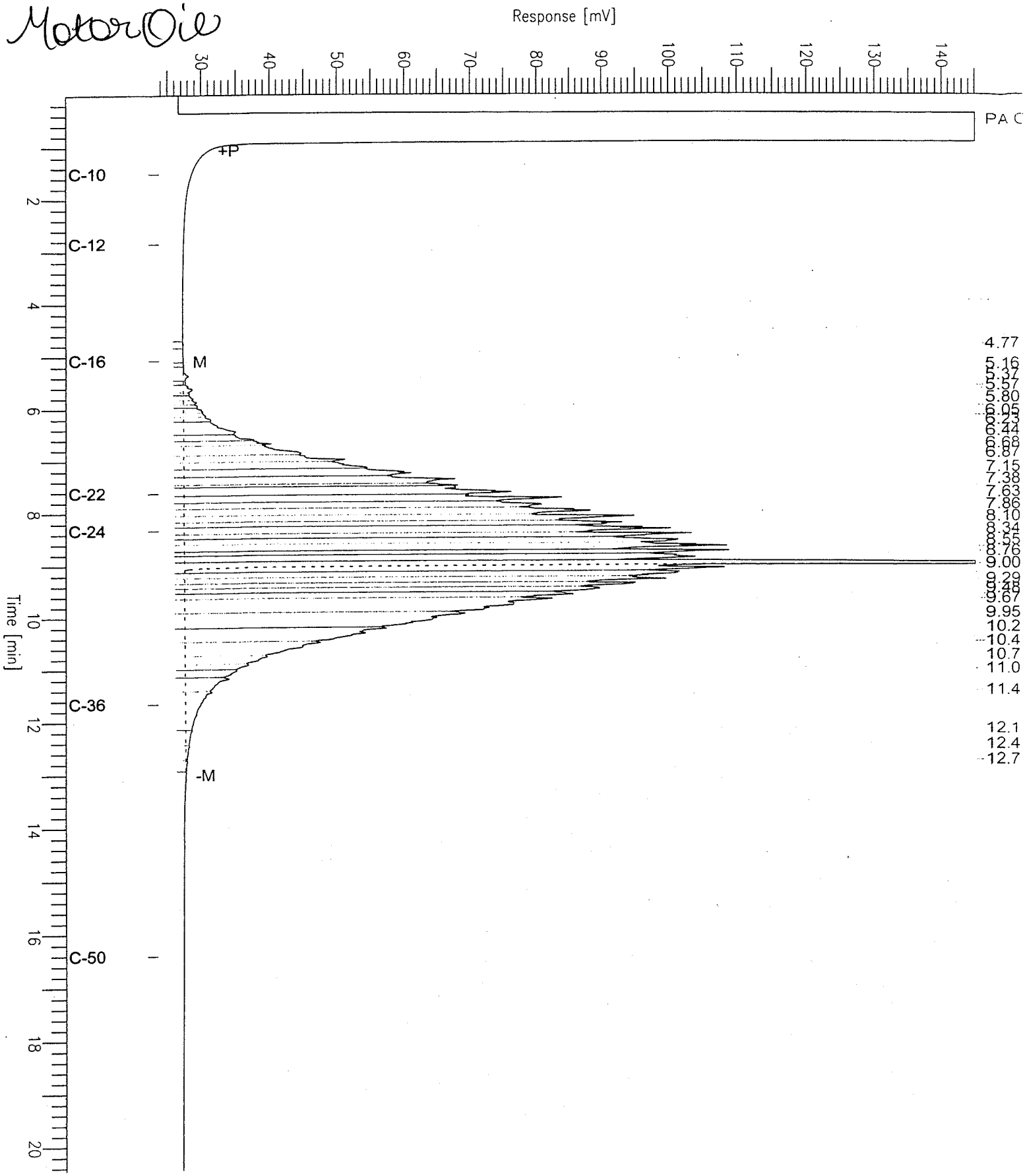


Chromatogram

Sample Name : ccv,04ws0244,mo
FileName : G:\GC11\CHA\040A003.RAW
Method : ATEH039S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: 24 mV

Sample #: 500mg/L Page 1 of 1
Date : 2/9/04 05:20 PM
Time of Injection: 2/9/04 12:44 PM
Low Point : 23.79 mV High Point : 145.08 mV
Plot Scale: 121.3 mV

Motor Oil



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	SHAKER TABLE
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC240419	Batch#:	88331
Matrix:	Soil	Prepared:	02/09/04
Units:	mg/Kg	Analyzed:	02/10/04
Basis:	as received		

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.79	48.79	98	49-129

Surrogate	%REC	Limits
Hexacosane	98	36-141

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	SHAKER TABLE
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	B5-S-10-1	Batch#:	88331
MSS Lab ID:	170458-010	Sampled:	02/06/04
Matrix:	Soil	Received:	02/06/04
Units:	mg/Kg	Prepared:	02/09/04
Basis:	as received	Analyzed:	02/10/04
Diln Fac:	1.000		

Type: MS Lab ID: QC240420

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	19.86	50.34	66.50	93	32-134

Surrogate	%REC	Limits
Hexacosane	88	36-141

Type: MSD Lab ID: QC240421

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	50.06	63.67	88	32-134	4	48

Surrogate	%REC	Limits
Hexacosane	89	36-141

RPD= Relative Percent Difference

17.0

Curtis & Tompkins, Ltd.

California LUFT Metals

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 3010
Project#:	STANDARD	Analysis:	EPA 6010B
Field ID:	B3-GW-1	Sampled:	02/06/04
Units:	ug/L	Received:	02/06/04
Diln Fac:	1.000	Prepared:	02/10/04
Batch#:	88348	Analyzed:	02/10/04

Type: SAMPLE Matrix: Filtrate
Lab ID: 170458-012

Analyte	Result	RL
Cadmium	ND	5.0
Chromium	ND	10
Lead	ND	3.0
Nickel	ND	20
Zinc	ND	20

Type: BLANK Matrix: Water
Lab ID: QC240482

Analyte	Result	RL
Cadmium	ND	5.0
Chromium	ND	10
Lead	ND	3.0
Nickel	ND	20
Zinc	ND	20

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California LUFT Metals

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 3010
Project#:	STANDARD	Analysis:	EPA 6010B
Matrix:	Water	Batch#:	88348
Units:	ug/L	Prepared:	02/10/04
Diln Fac:	1.000	Analyzed:	02/10/04

Type: BS Lab ID: QC240483

Analyte	Spiked	Result	%REC	Limits
Cadmium	50.00	53.70	107	79-120
Chromium	200.0	203.0	102	80-120
Lead	100.0	108.0	108	68-123
Nickel	500.0	514.0	103	76-120
Zinc	500.0	517.0	103	73-120

Type: BSD Lab ID: QC240484

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Cadmium	50.00	53.20	106	79-120	1	20
Chromium	200.0	203.0	102	80-120	0	20
Lead	100.0	109.0	109	68-123	1	27
Nickel	500.0	514.0	103	76-120	0	20
Zinc	500.0	516.0	103	73-120	0	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

California LUFT Metals

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 3010
Project#:	STANDARD	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Batch#:	88348
MSS Lab ID:	170484-001	Sampled:	01/14/04
Matrix:	Water	Received:	01/15/04
Units:	ug/L	Prepared:	02/10/04
Diln Fac:	1.000	Analyzed:	02/10/04

Type: MS Lab ID: QC240485

Analyte	MSS Result	Spiked	Result	%REC	Limits
Cadmium	5.550	50.00	58.00	105	54-129
Chromium	77.50	200.0	264.0	93	55-129
Lead	22.40	100.0	134.0	112	33-145
Nickel	245.0	500.0	719.0	95	50-132
Zinc	844.0	500.0	1,400	111	39-142

Type: MSD Lab ID: QC240486

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Cadmium	50.00	57.60	104	54-129	1	24
Chromium	200.0	262.0	92	55-129	1	20
Lead	100.0	128.0	106	33-145	5	43
Nickel	500.0	713.0	94	50-132	1	28
Zinc	500.0	1,400	111	39-142	0	26

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

California LUFT Metals

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 3050
Project#:	STANDARD	Analysis:	EPA 6010B
Matrix:	Soil	Sampled:	02/06/04
Units:	mg/Kg	Received:	02/06/04
Basis:	as received	Prepared:	02/10/04
Batch#:	88334	Analyzed:	02/10/04

Field ID: B1-S-5-1 Lab ID: 170458-001
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
Cadmium	ND	0.23
Chromium	22	0.47
Lead	6.4	0.14
Nickel	17	0.93
Zinc	28	0.93

Field ID: B1-S-10-1 Lab ID: 170458-002
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
Cadmium	ND	0.26
Chromium	31	0.52
Lead	4.9	0.16
Nickel	55	1.0
Zinc	35	1.0

Field ID: B2-S-5-1 Lab ID: 170458-003
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
Cadmium	ND	0.25
Chromium	21	0.50
Lead	5.0	0.15
Nickel	9.1	1.0
Zinc	15	1.0

Field ID: B2-S-10-1 Lab ID: 170458-004
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
Cadmium	ND	0.22
Chromium	31	0.43
Lead	5.5	0.13
Nickel	60	0.87
Zinc	34	0.87

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California LUFT Metals

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 3050
Project#:	STANDARD	Analysis:	EPA 6010B
Matrix:	Soil	Sampled:	02/06/04
Units:	mg/Kg	Received:	02/06/04
Basis:	as received	Prepared:	02/10/04
Batch#:	88334	Analyzed:	02/10/04

Field ID: B3-S-5-1 Lab ID: 170458-005
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
Cadmium	ND	0.26
Chromium	27	0.52
Lead	4.4	0.16
Nickel	44	1.0
Zinc	31	1.0

Field ID: B3-S-10-1 Lab ID: 170458-006
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
Cadmium	ND	0.22
Chromium	28	0.44
Lead	4.8	0.13
Nickel	60	0.88
Zinc	33	0.88

Field ID: B4-S-5-1 Lab ID: 170458-007
Type: SAMPLE

Analyte	Result	RL	Diln Fac
Cadmium	0.41	0.25	1.000
Chromium	29	0.49	1.000
Lead	59	0.15	1.000
Nickel	37	0.98	1.000
Zinc	460	9.8	10.00

Field ID: B4-S-10-1 Lab ID: 170458-008
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
Cadmium	ND	0.27
Chromium	32	0.53
Lead	5.2	0.16
Nickel	50	1.1
Zinc	39	1.1

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California LUFT Metals

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 3050
Project#:	STANDARD	Analysis:	EPA 6010B
Matrix:	Soil	Sampled:	02/06/04
Units:	mg/Kg	Received:	02/06/04
Basis:	as received	Prepared:	02/10/04
Batch#:	88334	Analyzed:	02/10/04

Field ID: B5-S-5-1 Lab ID: 170458-009
Type: SAMPLE

Analyte	Result	RL	Diln Fac
Cadmium	0.74	0.27	1.000
Chromium	28	0.54	1.000
Lead	95	0.16	1.000
Nickel	40	1.1	1.000
Zinc	180	11	10.00

Field ID: B5-S-10-1 Lab ID: 170458-010
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
Cadmium	ND	0.26
Chromium	20	0.51
Lead	60	0.15
Nickel	31	1.0
Zinc	64	1.0

Field ID: B6-S-5-1 Lab ID: 170458-011
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
Cadmium	ND	0.25
Chromium	20	0.49
Lead	3.9	0.15
Nickel	19	0.98
Zinc	17	0.98

Type: BLANK Diln Fac: 1.000
Lab ID: QC240430

Analyte	Result	RL
Cadmium	ND	0.25
Chromium	ND	0.50
Lead	ND	0.15
Nickel	ND	1.0
Zinc	ND	1.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California LUFT Metals

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 3050
Project#:	STANDARD	Analysis:	EPA 6010B
Matrix:	Soil	Batch#:	88334
Units:	mg/Kg	Prepared:	02/10/04
Basis:	as received	Analyzed:	02/10/04
Diln Fac:	1.000		

Type: BS Lab ID: QC240431

Analyte	Spiked	Result	%REC	Limits
Cadmium	10.00	9.600	96	72-120
Chromium	100.0	98.00	98	74-120
Lead	100.0	98.50	99	71-120
Nickel	25.00	24.00	96	72-120
Zinc	25.00	24.05	96	68-120

Type: BSD Lab ID: QC240432

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Cadmium	10.00	9.750	98	72-120	2	20
Chromium	100.0	99.50	100	74-120	2	20
Lead	100.0	99.50	100	71-120	1	20
Nickel	25.00	24.25	97	72-120	1	20
Zinc	25.00	24.25	97	68-120	1	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

California LUFT Metals

Lab #:	170458	Location:	3645 San Pablo
Client:	Ninyo & Moore	Prep:	EPA 3050
Project#:	STANDARD	Analysis:	EPA 6010B
Field ID:	B5-S-10-1	Batch#:	88334
MSS Lab ID:	170458-010	Sampled:	02/06/04
Matrix:	Soil	Received:	02/06/04
Units:	mg/Kg	Prepared:	02/10/04
Basis:	as received	Analyzed:	02/10/04
Diln Fac:	1.000		

Type: MS Lab ID: QC240433

Analyte	MSS Result	Spiked	Result	%REC	Limits
Cadmium	0.1612	10.20	9.643	93	47-120
Chromium	20.31	102.0	115.3	93	35-131
Lead	60.20	102.0	156.1	94	23-137
Nickel	30.51	25.51	50.00	76	32-136
Zinc	64.29	25.51	81.63	68	20-147

Type: MSD Lab ID: QC240434

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Cadmium	9.709	9.126	92	47-120	1	24
Chromium	97.09	111.7	94	35-131	1	29
Lead	97.09	149.0	91	23-137	2	40
Nickel	24.27	47.96	72	32-136	2	35
Zinc	24.27	78.16	57	20-147	3	32

RPD= Relative Percent Difference

APPENDIX D

DATA VALIDATION REPORT

Aquatus Environmental

731 Talbot Avenue, Albany, CA 94706
Phone 510-527-6299 Fax 510-527-3009
www.aquatus.com

March 29, 2004

Mr. Kristopher M. Larson
Project Environmental Geologist
Ninyo & Moore
1956 Webster Street, Suite 400
Oakland, CA 94612

SUBJECT: City of Emeryville Data Validation Report, Soil Sample B3-S-10-1

Dear Mr. Larson:

This letter report summarizes the data validation results for the City of Emeryville project. The data validation was performed for one soil sample (B3-S-10-1), analyzed for LUFT 5 metals (EPA 6010B); TPH-gasoline/BTEX/MTBE (EPA 8015B/8021B); and TPH-diesel and TPH-motor oil (EPA 8015B). Curtis and Tompkins, Ltd., in Berkeley, CA, performed the analyses.

The data validation procedures followed EPA guidelines, which include the following:

- Requirements in specific analytical method protocols
- Contract Laboratory Program National Functional Guidelines for data review (where appropriate)
- Guidance for data verification and validation, and data quality indicators
- Region 9 guidance for laboratory documentation and data evaluation/validation guidance.

A description of the quality control parameters is provided in the next section. The results for sample B3-S-10-1 are summarized on page 6 and in Attachment A.

QUALITY CONTROL (QC) PARAMETERS

Method Holding Time

EPA analytical methods have prescribed holding times. The method holding time is the maximum amount of time after collection that a sample may be held prior to extraction and/or analysis. Sample integrity is questionable for samples extracted and/or analyzed outside the prescribed holding time due to degradation and/or volatilization of the sample. The analytical results of samples extracted and/or analyzed outside the prescribed method holding time are suspect. The validation process identifies exceeded holding times and evaluates the quality of samples processed outside of holding time.

Blank Samples

Blanks provide a measure of various cross-contamination sources, background levels in reagents, and other potential error that can be introduced from sources other than the sample. Blanks evaluated for this project include:

> *Method Blank.* A method blank is an ASTM Type II water or reagent soil sample that analyzed to evaluate potential sources of contamination from laboratory procedures (e.g. contaminated reagents, improperly cleaned laboratory equipment), or persistent contamination due to presence of certain compounds in the ambient laboratory environment. A method blank is required for each analytical batch.
>
> *Calibration Blanks* (metals only). An initial calibration blank must be analyzed within a certain sequence order during the analytical procedures. A continuing calibration blank must be analyzed within a certain sequence order and frequency during the analytical procedures. They are used to evaluate potential contamination introduced during the calibration process for metals.

For the data validation process, blank results are checked for the presence of detected compounds. If detected compounds are present, their effects on the associated sample data are evaluated.

Initial Calibration

Calibration of an analytical instrument is the delineation of the relationship between the response of the instrument and the amount or concentration of an analyte introduced into the instrument. In order to perform quantitative measurements, this relationship must be established prior to the analysis of environmental samples. The lowest calibration standard established is the practical quantitation limit (PQL).

Initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve. The initial calibration involves the analysis of standards containing target analytes at a number of varying concentrations covering the working range of the instrument (requirements differ depending on the method). For example, per EPA Method 8000, calibration linearity is considered acceptable when the relative standard deviation (RSD) of the average calibration or response factors does not exceed analytical method requirements (i.e., 20%).

A second source standard was run for the initial calibration for LUFT metals and TPH-gasoline/BTEX/MTBE. Second source standards are routinely used to validate the technique and methodology of primary calibration standards. They are purchased or prepared from a different source than that used in the preparation of standards for use in the standard curve and

are analyzed immediately following primary calibration. National Institute of Standards and Technology-traceable reference materials are used when available.

A contract required quantitation limit check standard (CRI) was also run for the metals initial calibration. A CRI must be prepared and analyzed at the beginning and end of each sample analysis run, and for every 20 samples. The CRI verifies the initial calibration near the PQL. Calibration results should be within laboratory-established control limits for the percent difference between the true value of the standard and the value obtained during the calibration analysis.

Continuing Calibration Verification

The calibration relationship established during the initial calibration must be verified at periodic intervals. Generally, the calibration must be verified at the beginning of each 12-hour analytical shift. The difference between the response for an analyte in the calibration verification and the initial calibration must be within laboratory-established control limits for the initial calibration to remain valid.

Matrix Spikes

Matrix spikes (MS) and matrix spike duplicates (MSD) are prepared by adding a known mass of a target analyte to a specified amount of environmental sample for which an independent estimate of the target analyte concentration is available. Results of the MS and MSD are used to evaluate the effectiveness of sample extraction or digestion procedures, and to evaluate the presence of matrix interference. Matrix interference is the effect of the sample matrix on the analysis, which may partially or completely mask the response of the analytical instrumentation to the target analyte(s). Matrix interference may affect the accuracy of the extraction and/or analysis procedures to varying degrees, and may bias sample results high or low. Matrix spike data are typically expressed as percent recovery. A MS analysis should be performed with each analytical batch; the laboratory may perform a LCSD in lieu of the MS analysis. MS and MSD recoveries are reviewed for compliance with laboratory-established control limits to evaluate accuracy.

Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) are prepared exactly like MSs and MSDs, except a clean control matrix, such as clean sand is used. LCS percent recoveries are used to evaluate the accuracy of the analytical procedures, independent of matrix effects. LCS and LCSD recoveries are reviewed for compliance with laboratory-established control limits. Typically, control limits for the LCS/LCSD are more stringent than control limits for the MS/MSD.

Surrogate Compounds (organics only)

Surrogates are organic compounds that are similar to the target analytes in terms of their chemical structures and response to the analytical instrumentation, but are not usually detected in

environmental samples. Surrogates are added to each environmental and laboratory QC sample to monitor the effect of the matrix on the accuracy of the extraction and/or analysis. Results of surrogate analyses are reported in terms of percent recovery. The recoveries are compared to laboratory-established control limits to evaluate accuracy on a sample-specific basis.

Duplicate Analyses

Laboratory duplicates include MS/MSD and LCS/LCSD analyses, which are a measure of analytical precision. Duplicates are evaluated by comparing relative percent differences (RPDs) to laboratory control limits.

ICP Interference Check Sample (metals only)

The ICP interference check sample is analyzed to verify the absence of spectral interferences. It contains similar concentrations of the major components of samples that are analyzed on a continuing basis to verify the absence of effects at the wavelengths selected. The interference check sample must be analyzed at the beginnings and end of each sample run and with every twenty analytical samples. If the check sample confirms an interference that is ≥ 20% of the analyte concentration, the analyte must be determined using (1) analytical and background correction wavelengths free of the interference, (2) by an alternative wavelength, or (3) by another documented test procedure.

Target Compound Identification

Qualitative criteria for compound identification have been established to minimize the number of false positives (reporting a compound as present when it is not) and false negatives (not reporting a compound that is present). Target compound identification consisted of the following checks:

Organic Analyses. The laboratory is required to establish retention time windows in compliance with the analytical methods to compensate for minor shifts in absolute retention times as a result of sample loadings and normal chromatographic variability. During the data validation process, retention times for detected analytes are checked to make sure they fall within established windows (windows established in a laboratory study). Also evaluated are potential cross-contamination of samples due to carryover (e.g., high concentration samples preceding low concentration samples). Sample chromatograms are reviewed to verify that major peaks were identified correctly (and were consistent with the standard if applicable). Second column confirmation is also relevant and is discussed under Raw Data Evaluation.

Metals Analyses. Metals results are verified using replicate inductively coupled plasma (ICP) signals for each analyte. For each sample, RSDs for replicate ICP signals are compared to laboratory-established control limits.

Raw Data Evaluation

The objective is to ensure that the reported quantitative results and practical quantitation limits are accurate. Compound quantitation must be calculated according to the equations provided in the method. Raw data evaluation consists of the following checks:

Organics

- Verification of correct calculation of sample results reported by the laboratory. Sample preparation logs and chromatograms are compared to reported positive sample results and quantitation limits. Sample results are recalculated based on sample digestion, dilution and moisture data.
- Verification that the correct numbers of calibration standards were used.
- Adequacy of second column confirmation (i.e., analyte eluted on both columns).
- Consistency between sample and standard chromatogram peaks.

Metals

- Verification that analyses were run in correct sequence order and at proper frequency (e.g., continuing calibration verification).
- Verification of correct calculation of sample results reported by the laboratory using soil digestion, dilution and moisture data.

Petroleum Hydrocarbon Identification (fuels only)

False positive petroleum hydrocarbon identification refers to hydrocarbons that eluted (either fully or partially) within the boiling range of the fuel specified for analysis (e.g., gasoline, diesel, motor oil), but did not match the laboratory standard. In the analytical data report, the laboratory assigned qualifiers to results containing heavier or lighter hydrocarbons than the specified fuel, or to results with generally different chromatographic patterns than the laboratory fuel standard. Depending on the laboratory, weathered fuels may be flagged as not matching the standard, which is fresh fuel. The data validation process assigns the "H" qualifier to results with laboratory qualifiers indicating the results are not completely representative of the fuel specified for analysis. Sample and standard chromatograms should be examined in detail for better identification of fuels or non-petroleum hydrocarbons that may be present. The "H" qualifier is not a standard EPA qualifier.

RESULTS

Data validation summary forms for sample B3-S-10-1 are included as Attachment A. Qualified results are summarized in Table 1. Data qualifiers were assigned based on EPA guidelines (except for petroleum hydrocarbon identification).

TABLE 1
Qualified Results for Sample B3-S-10-1

Analytical Method	Analyte	Result	Qualifier	Reason
EPA 8021B	Toluene	480 µg/Kg	J	High surrogate recoveries (2)
EPA 8021B	Ethylbenzene	850 µg/Kg	J	High surrogate recoveries (2)
EPA 8021B	o-Xylene	540 µg/Kg	J	High surrogate recoveries (2)
EPA 8015B	TPH-gasoline	95 mg/Kg	JH	High surrogate recoveries (2); pattern does not resemble gasoline standard.
EPA 8015B	TPH-diesel	95 mg/Kg	H	Pattern does not resemble diesel standard; lighter hydrocarbons contributed to the concentration.

As indicated in Table 1, some sample results were qualified do to high surrogate recoveries and petroleum hydrocarbon identifications. The "J" qualifier indicates the results are of acceptable quality, but should be considered estimated concentrations. However, results can be used "as is" for their intended purpose. The "H" qualifier indicates the sample exhibits a pattern different from the gasoline and diesel standards used to quantify the sample. However, the chromatograms do exhibit the characteristic hump indicative of petroleum hydrocarbons. There were no qualified results for metals. In summary, the data validation found the results to be of acceptable quality.

If you have any questions about this report, please contact me at 510-527-6299 or dbodine@aquatus.com.

Sincerely,
AQUATUS ENVIRONMENTAL

Donna L. Bodine

Donna L. Bodine, Principal

ATTACHMENT A
DATA VALIDATION SUMMARY FORMS FOR B3-S-10-1

CLIENT/PROJECT	LAB	PACKAGE ID	METHOD	MATRIX	# SAMPLES	DATE
Ninyo & Moore/ City of Emeryville	Curtis & Tompkins	170458	EPA8015B/8021B: TPH-g/BTEX	Soil	1	3/12/04

METHOD HOLDING TIME				BLANKS				
Sample Date	HT	Exceedences	Qualifier	Type of Blank	Extraction Date	Analysis Date	Detected Analyte & Concentration	Qualifier
2/6/04	14 days							
Extraction Date: N/A		N/A	N/A	Method	N/A	2/10/04	None	None
Analysis Date: 2/10/04		None	None					

LABORATORY CONTROL SAMPLES			Sample: Non-project MATRIX SPIKES			SURROGATES
Spikes & Control Limits RPD MTBE = 74-121% Benzene = 80-121% Toluene = 80-120%	Extraction Date N/A	Analysis Date 2/10/04	Spikes & Control Limits RPD Note, a non-project sample was used for the MS/MSD. Therefore, results are N/A	Extraction Date N/A	Analysis Date N/A	Spikes & Control Limits Trifluorotoluene (FID) = 56%-144% Bromofluorobenzene (FID) = 51% - 142%
Ethylbenzene = 79-120%; m,p-Xylenes = 76-120%; o-Xylene = 80-120%; Gasoline 80-120%						Trifluorotoluene (PID)= 45% - 150% Bromofluorobenzene (PID) = 42% - 138%
Sample Recoveries and RPDs 86% - 109% No LCSD			Sample Recoveries and RPDs N/A			Sample Recoveries 88% - 187%
Recoveries/RPDs Outside Data Quality Objectives None			Recoveries/ RPDs Outside Data Quality Objectives N/A			Recoveries Outside Data Quality Objectives B3-S-10-1 TFT FID = 157% BFB FID = 187%
Qualifier None			Qualifier N/A			Qualifier J for detected analytes, no qualification for NDs.

SAMPLES REVIEWED/ NOTES & COMMENTS:

B3-S-10-1 (170458-006) Analyzed 2/10/04 @ 18:53.

Lab reported that original and 2nd column confirmation results for toluene and ortho xylene had an RPD greater than 40%. No qualification, as 2nd confirmation is for presence of analyte, not for quantification.

MS/MSD was requested on sample, but was not performed by the lab.

Lab flagged gasoline result as exhibiting a chromatographic pattern that does not resemble the std. (Pattern is indicative of petroleum). H Qual

CLIENT/PROJECT	LAB	PACKAGE ID	METHOD	MATRIX	# SAMPLES	
Ninyo & Moore/ City of Emeryville	Curtis & Tompkins	170458	EPA8015B/8021B: TPH-g/BTEX	Soil	1	PAGE 2

INITIAL CALIBRATION

Control Limits:
Max RSD = 20%

Analysis Date/Time	RSD	Out of Control/Qualifier
Gas 7/18/03 20:18	9-12%	None
BTEX/MTBE 12/18/03 11:11	4-20%	None
Second Source 12/18/03 16:12	2% - 15%	None
TFT/BFB 11/19/03 9:11	3-8%	None

CONTINUING CALIBRATION

Control Limits:
Dmax = 15%

Analysis Date/Time	%D	Out of Control/Qualifier
Before 2/10/04 16:38	3% - 14%	None
After 2/11/04 7:09	1% - 12%	None

TARGET COMPOUND IDENTIFICATION AND RAW DATA EVALUATION

Evaluation Criteria:

Initial Calibration: a minimum of 5 standards.
Retention Times: Retention time windows were established using EPA Method 8000 protocol.
Sample detections: Check that analytes were quantified correctly based on soil digestion data, dilution factors and moisture. Verify peaks are accounted for in chromatograms. Check that analytes reported as detected eluted on both columns.

Results:

Initial calibration: 6 stds for BTEX, 7 for MTBE, 5 for surrogates
Retention times: Windows established in a 72-hour study on 5/8/02 in compliance with method.
Sample detections: Analytes quantified correctly and peaks accounted for. Second column confirmation adequate.

ADDITIONAL NOTES & COMMENTS

None

CLIENT/PROJECT	LAB	PACKAGE ID	METHOD	MATRIX	# SAMPLES	DATE
Ninyo & Moore/ City of Emeryville	Curtis & Tompkins	170458	EPA8015B:TPH diesel, motor oil	Soil	1	3/23/04

METHOD HOLDING TIME				BLANKS				
Sample Date	HT 14 day analysis	Exceedences	Qualifier	Type of Blank	Extraction Date	Analysis Date	Detected Analyte & Concentration	Qualifier
2/6/04								
Extraction Date: 2/9/04		N/A	N/A	Method	2/9/04	2/11/04	None	None
Analysis Date: 2/11/04		None	None					

LABORATORY CONTROL SAMPLES			Sample: B5-S-10-1 MATRIX SPIKES			SURROGATES
Spikes & Control Limits RPD: Diesel = 49%-129%	Extraction Date 2/9/04	Analysis Date 2/10/04	Spikes & Control Limits RPD: Diesel = 32%-134% RPD = 48%	Extraction Date 2/9/04	Analysis Date 2/10/04	Spikes & Control Limits: Hexacosane 36% - 141%
Sample Recoveries and RPDs: 98% No LCSD			Sample Recoveries and RPDs: 93%, 88% RPD 4%			Sample Recoveries: 88% - 98%
Recoveries/RPDs Outside Data Quality Objectives: None			Recoveries/ RPDs Outside Data Quality Objectives: None			Recoveries Outside Data Quality Objectives: None
Qualifier: None			Qualifier: None			Qualifier: None

SAMPLES REVIEWED/ NOTES & COMMENTS:

B3-S-10-1 (170458-006) Analyzed 2/9/04 @ 15:43.

Lab flagged diesel result as exhibiting a chromatographic pattern that does not resemble the std, and indicated lighter hydrocarbons contributed to concentration reported as diesel. (pattern is indicative of petroleum) H Qual

CLIENT/PROJECT	LAB	PACKAGE ID	METHOD	MATRIX	# SAMPLES	
Ninyo & Moore/ City of Emeryville	Curtis & Tompkins	170458	EPA8015B:TPH diesel, motor oil	Soil	1	PAGE 2

INITIAL CALIBRATION

Control Limits:
Max RSD = 20%

Analysis Date/Time	RSD	Out of Control/Qualifier
Diesel 12/03/03 18:39	10% - 13%	None
Motor Oil 2/6/04 20:42	13% - 20%	None
Hexacosane 11/23/03 22:40	5%	None

CONTINUING CALIBRATION

Control Limits:
Dmax = 15%

Analysis Date/Time	%D	Out of Control/Qualifier
Diesel		
Before 2/11/04 4:13	3%	None
After 2/11/04 9:28	2%	
Motor Oil		
Before 2/11/04 4:41	6%	None
After 2/11/04 9:57	6%	

TARGET COMPOUND IDENTIFICATION AND RAW DATA EVALUATION

Evaluation Criteria:

Initial Calibration: a minimum of 5 standards.
Retention Times: Note Curtis and Tompkins does not use retention time windows for petroleum hydrocarbon analysis.
Sample detections: Check that analytes were quantified correctly based on soil digestion data, dilution factors and moisture. Verify peaks are accounted for in chromatograms. Check that analytes reported as detected eluted on both columns.

Results:

Initial calibration: 6 standards for motor oil, 5 for hexacosane, 7 for diesel
Sample detections: Analytes quantified correctly and peaks accounted for.

ADDITIONAL NOTES & COMMENTS

None

CLIENT/PROJECT	LAB	PACKAGE ID	METHOD	MATRIX	# SAMPLES	DATE
Ninyo & Moore/ Bessie Carmichael	Curtis & Tompkins	170458	EPA 6010B LUFT Metals (5)	Soil	1	3//23/04

METHOD HOLDING TIME

Sample Date	HT	Exceedances	Qualifier
2/6/04	6 mos analysis		
Preparation Date: 2/10/04		N/A	N/A
Analysis Date: 2/10/04		None	None

BLANKS

Type of Blank	Prep Date	Analysis Date	Detected Analyte & Concentration	Qualifier
Method	2/10/04	2/10/04	None	None
ICB		2/10/04 7:08	None	None
CCB (before smp)		2/10/04 9:33	< Reporting Limit	None
CCB (after smp)		2/10/04 10:37	< Reporting Limit	None

INITIAL CALIBRATION

Control Limits: Initial Dmax=5%, Second Source Dmax=10%, CRI Dmax=50%

Parameter	Analysis Date/Time	%D	Out of Control/Qualifier
Initial	2/10/04 6:43	1%-2%	None
Second Source	2/10/04 6:55	0%-2%	None
CRI	2/10/04 7:16	1% - 21%	None

MATRIX SPIKES

Prep Date: Analysis Date: 2/10/04

Control Limits: Cd 47-120%; Cr 35-131%; Pb 23-137%; Ni 32-136%; Zn 20-147%

Recovery	RPD	Out of Control/Qualifier:
57% - 94%	1% - 3%	None

Notes: Sample used for MS/MSD = B5-S-10-1

ICP INTERFERENCE CHECK SAMPLE

Control Limits: Dmax = 20%

Results:

Solution AB = 3% - 8%

Qualifier

None

CONTINUING CALIBRATION

Control Limits: Dmax=10%

Analysis Date/Time	%D	Out of Control/Qualifier
2/10/04 9:26	0% - 7%	None
2/10/04 10:33	1% - 5%	None

LABORATORY CONTROL SAMPLES

Prep Date: 2/10/04 Analysis Date: 2/10/04

Control Limits: Cd, Ni 72-120%; Cr 74-125%; Pb 71-120%; Zn 68-120%; RPD = 20%

Recovery	RPD	Out of Control/Qualifier
96% - 100%	1%-2%	None

SAMPLES REVIEWED & NOTES

Sample B3-S-10-1, Analyzed 2/10/04 9:42

Continuing calibration (verification and blank) results are provided for before and after sample.

RAW DATA EVALUATION

Criteria: %RSDmax for replicate ICP signals = 20% (for environmental and QC samples). Verify that analyses (e.g., blanks, CCVs) were run in correct order and @ proper frequency. Check soil digestion log and raw data to verify correct sample concentration.

Results: %RSD for sample = Cd 0.045; Cr 0.347; Pb 1.70; Zn 0.311- all within control limits; %RSD for associated QC= 0.011% - 1560%. RSDs for Method blank and ICB and CCBs were above criteria, but results are N/A (e.g., acceptable) because results are non-detect. Analyses run in proper sequence and at correct frequency. Sample concentrations calculated correctly.