PORT OF OAKLAND

August 15, 2003

Mr. Barney Chan
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

RE: Site Investigation Report – Fuel Leak Case RO0000485
Suspected Site of UST HF-16 - Building H-204 at Ninth Avenue Terminal
79 - 8th Avenue, Oakland, CA 94606 (LOP 6894)

Dear Mr. Chan:

Please find enclosed for your review is our site investigation report prepared by GAIA Consulting, Inc. (GAIA) for suspected underground storage tank (UST) HF-16 near Building H-204 at Ninth Avenue Terminal. This report is being submitted in accordance with Alameda County Health Care Services Agency (County) requirements pursuant to your letter dated December 11, 2002. The site investigation was performed in accordance with the Final Site Investigation Workplan dated October 8, 2002, with oversight and approval of the City of Oakland Fire Service Agency – Office of Emergency Services (OFSA-OES). The suspected underground storage tank site is identified as LOP 6894, also known as fuel leak case RO0000485.

As we discussed during our phone conversation on June 3, 2003, the Ninth Avenue Terminal property, including this suspected UST site, is contained within a larger development area referred to as the "Oak to Ninth Project", which is slated for redevelopment. All further UST work, if necessary, will be incorporated into site remediation and management formulated as part of ongoing discussions between the selected developer, Oakland Harbor Partners and their consultant, Erler & Kalinowski, Inc.

Similar to the our requests in letters to you dated June 4, 2003 (regarding USTs at Ninth Avenue), June 19, 2003 (regarding the former Seabreeze Yacht Center), and July 29, 2003 (regarding groundwater monitoring at Ninth Avenue), the Port requests suspension of potential future UST work until redevelopment. The schedule for this work is uncertain because it is based on the time required for the Port to close escrow with Oakland Harbor Partners; it is anticipated that close of escrow will be sometime between September 2005 and September 2007. We trust this approach is amenable to both the County and the OFSA-OES.

Please provide your review and comments at your convenience. This transmittal letter and enclosed report are being sent to you concurrent with another transmittal letter and investigation report for suspected UST site, HF-17, located near building H-227. These two transmittal letters and reports will be the last correspondence you will receive from the Port related to the Oak to Ninth Project. If you have any questions, please do not hesitate to contact me at (510) 627-1134.

Sincerely,

Jeffrey L. Rubin, CPSS, REA
Port Associate Environmental Scientist
Environmental Health and Safety Compliance

Enclosure: noted

Cc (w/encl.): Keith Matthews, City of Oakland Fire Service Agency – Office of Emerg. Services
Jeriann Alexander, Fugro West
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Diane Mims, URS Corporation
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August 15, 2003

R0485

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Mr. Jeff Rubin
Port of Oakland
530 Water Street
Oakland, California 94607

SUBJECT: FINAL UST Site Investigation Report
UST HF-16 (LOP #6894), Former Building H-204
Ninth Avenue Terminal, Oakland

Dear Mr. Rubin:

GAIA Consulting, Inc (GAIA) is pleased to present this UST Site Investigation Report for underground storage tank HF-16 (LOP 6894) located at former building H-204 at the Ninth Avenue Terminal. The investigation was performed in accordance with the approved workplan submitted by GAIA on October 8, 2002. This report is ready for submittal to Alameda County.

We appreciate the opportunity to serve the Port of Oakland on this project. Please contact me at (510) 663-4177 if you have any questions.

Cordially,
GAIA Consulting, Inc.

Susanne von Rosenberg, P.E.
Project Manager

Jeriann Alexander, P.E., REA
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UST SITE INVESTIGATION

UST HF-16, LOP #6894 at Former Building H-204

Ninth Avenue Terminal, Oakland, CA

August 14, 2003

Prepared for

Port of Oakland
530 Water Street
Oakland, California 94607

Prepared by:

GAIA consulting, inc.

2101 Webster Street, 12th Floor
Oakland, California 94612

Table of Contents

LIST OF TABLES

LIST OF FIGURES

APPENDICES

List of Acronyms

1,2 DCA	1,2 Dichloroethane
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylene
CUS	California Utility Surveys
DIPE	Isopropyl Ether
EDB	Dibromoethane
EPA	Environmental Protection Agency
ETBE	Ethyl tert-Butyl Ether
FOSS	FOSS Environmental Services
GAIA	GAIA Consulting, Inc
HF	Identification prefix for Port Area H Fuel tank
KOT	Keep on Trucking
LOP	Local Oversight Program
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
MTBE	methyl tert-Butyl ether
RBSLs	Risk Based Screening Levels
RMA	R. Morrison & Associates, Inc.
SCI	Subsurface Consultants, Inc.
SCITP	SCI Test Pit
SCIMW	SCI Monitoring Well
TAME	Methyl tert-amyl ether

1.0 INTRODUCTION

This report summarizes the site investigation activities performed at underground storage (UST) site HF-16[1] located at former Building H-204 at the 9th Avenue Terminal in Oakland (Figures 1 and 2). This tank site is currently part of the Local Oversight Program (LOP 6894). The listed address for this UST site is 79 8th Avenue, Oakland. The tank site is physically located on 8th Avenue, approximately 1,100 feet southwest of Embarcadero Road and 125 feet south of Clinton Basin. This UST site is part of a larger development area, designated as the Oak to Ninth District, which will be redeveloped. The redeveloped property encompasses 60 acres of property on the Oakland Estuary, including the Ninth Avenue Terminal and Clinton Basin areas. The goal of the redevelopment is to create a mixed-use waterfront neighborhood.[2]

The activities described herein were performed in general accordance with a workplan prepared by GAIA Consulting, Inc. (GAIA) entitled "Final Site Investigation Workplan, UST Site HF-16 at Building H-204, 9th Avenue Terminal" dated October 8, 2002. The workplan was reviewed and approved by the Alameda County Health Care Services Agency (County) in their letter dated December 11, 2002. A copy of this letter is provided in Appendix A. The purpose of this investigation was to define the extent of chemically-impacted soil and groundwater in the vicinity of the suspect tank site, including any "hot spots", and confirm or refute the presence of the suspect UST.

2.0 BACKGROUND

The Ninth Avenue Terminal is a break bulk cargo facility located on the Oakland Inner Harbor in East Oakland, California (Figure 1). The Terminal has been owned by the Port since at least the late 1920s and leased to a variety of tenants. The Terminal study area is an irregularly shaped parcel of land, encompassing approximately 25 acres excluding the wharves. It was leased to a variety of tenants, and continues to have limited light industrial and commercial activity (Subsurface Consultants [SCI] 1997). The Terminal is bordered by Embarcadero Road, Interstate 880, and railroad tracks to the north, Clinton Basin to the west, the Inner Harbor Channel/Oakland Estuary to the south, and Brooklyn Basin to the east. The land use in the Terminal vicinity is commercial/industrial. The majority of the Terminal is paved with asphaltic concrete. The remainder of the Terminal is occupied by buildings or concrete foundation slabs remaining from former buildings. Wharves constructed of concrete or asphalt over a wood frame extend along the southeast and southwest sides of the Terminal. UST HF-16 is situated approximately 100 feet inland from the Clinton Basin shoreline; the shoreline in this area is unprotected (i.e., there is no bulkhead).

The Ninth Avenue Terminal is generally flat with elevations ranging from approximately 9 to 14 feet above Port datum, which is the mean lower low water mark, or 3.2 feet below mean sea level. Previous studies have shown that the soils beneath the site consist primarily of an organic-rich clay (Young Bay Mud) overlain by approximately 3 to 6 feet of fill materials. The fill material consists primarily of an angular gravel with silt and sand lenses. Shoreline areas tend to be underlain by up to 7 to 9 feet of fill consisting of interbedded layers of sand, gravel, silt and clay. The majority of the borings installed at the Terminal terminate in the Young Bay Mud (they extend to depths between 10 and 20 feet below ground surface [bgs]). Based on the limited number of deeper borings installed, the Young Bay Mud extends to depths of 23 to 27 feet bgs at the Ninth Avenue Terminal. It is underlain by another series of clay layers. Immediately below the Young Bay Mud is a thin layer of stiff greenish clay approximately 3 feet thick. This layer is underlain by a pale brown silty clay with sand that grades into a silty sand. This formation is most likely the Merritt Sand (SCI, 1996b and 1997b).

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[1] HF refers to the Port system of numbering tanks; the tanks are located in Port Area H, and are fuel (F) tanks.
[2] This information reflects the conceptual redevelopment plan.

Groundwater at the Terminal is typically encountered at 3 to 10 feet below ground surface. General groundwater elevation contour patterns have remained relatively consistent since 1996, although localized mounds and depressions have appeared and disappeared in certain areas. In general, groundwater elevations tend to be higher in the central portion of the site, with flow radiating outward toward the shorelines of Clinton Basin and Brooklyn Basin (SCI 1998).

Tidal influence on groundwater elevations and storm drains has been observed at the site. Wells located along the Clinton and Brooklyn Basin shorelines are tidally influenced, while interior wells and those adjacent to the concrete bulkhead wall, which extends along the southeastern and southwestern portions of the Terminal, are not. Tidal fluctuations of as much as two feet have been observed in near-shore wells. Research suggests that tidal influence extends inland more than 80 feet along that portion of the northern shoreline that is not protected by the concrete bulkhead. Very minor changes in groundwater levels were recorded approximately 10 feet from the bulkhead during tidal changes (SCI 1997b). UST Site HF-16 is located within 100 feet of the Clinton Basin and is most likely subject to tidal influence. A storm drain is located approximately 19 feet south of this UST site. A main storm drain line for the Terminal, which runs along the south side of 8th Avenue, is approximately 75 feet south of HF-16 (Figure 2).

3.0 PREVIOUS SITE INVESTIGATIONS AND RESULTS

Site investigations have been conducted at the Terminal since 1992. Multiple companies have conducted numerous rounds of investigation. Investigation activities included tank removals, soil borings, test pits, hydropunch sampling, monitoring well installation, subsurface utility investigations, geophysical investigations, and tide studies. Flux chamber sampling, to evaluate the flux of volatile organic compounds through a specific area of site soils, has also been conducted. Regular groundwater monitoring at the Terminal has been conducted since late 1996. Soil and groundwater data from these previous investigations are presented in Tables 1 and 2 of this report.

A 1945 contractor's working drawing, included in Appendix B, shows a proposed service station with two USTs at Building H-204 (Port 1945). It is believed that two 1,000-gallon gasoline tanks were installed and utilized at this location between 1945 and 1974. Research indicates that various tenants of the Ninth Avenue Terminal operated the tank system. At minimum, these tenants included Bay City Fuel Oil Company, East Bay Oil Company (now Gold Shield Distributors), C.D. Ericson, and Groeniger. Building H-204 was demolished in 1974. There is no record of removal of any tank(s). Only limited information regarding the tank system could be obtained from the former tenants (SCI 1997). Previous investigations were conducted at this site; however, no USTs were encountered.

A UST survey and a separate geophysical survey were conducted in this area of former Building H-204 to determine the location of any tank(s). Norcal Geophysical performed the geophysical survey of the area in March 1997. The UST survey located a metallic anomaly perpendicular to the Clinton Basin shoreline. SCI test pit 14 (SCITP-14), excavated to locate the metallic anomaly, showed that the anomaly consisted of a 1-inch diameter cast iron pipe. No tank was found in this area. Norcal identified two other anomalies. One, which was irregular in shape, was determined to most likely be metal debris. The second anomaly however, was rectangular in shape (SCI 1996b). This anomaly was not investigated due to the acknowledgement of chemical impact in area. The extent of this anomaly was one target of GAIA's investigation.

Other investigations pertaining specifically to this tank location included the installation of monitoring well SCIMW-24, located approximately 15 feet northwest (and apparently downgradient of the suspected tank location), boring SCI-12, located in the area of the suspect tank location, and boring RMA-24,

located approximately 40 feet northeast of the suspect tank location identified in the 1945 Contractor's Plan (Figure 3 and Figure 4).

Soil samples collected from SCIMW-24 contained total gasoline-range, diesel-range, and motor oil-range petroleum hydrocarbons (TPH-g, TPH-d, and TPH-mo), as well as benzene, ethylbenzene, toluene, and xylene (BTEX). Elevated concentrations of TPH-g were detected in both the 3-foot and the 6-foot sample at 440 milligrams per kilogram (mg/kg) and 910 mg/kg, respectively. Concentrations of BTEX were higher in the shallower sample than in the deeper sample.

Elevated concentrations of TPH and related compounds were also detected in soil samples collected from nearby downgradient location SCI-12. A sample collected at 6 feet bgs showed concentrations of TPH-g, TPH-d, and TPH-mo at 800 mg/kg, 330 mg/kg and 940 mg/kg, respectively. BTEX concentrations were detected at concentrations of 12 mg/kg, 34 mg/kg, 13 mg/kg, and 48.1 mg/kg, respectively. A soil sample collected from test pit SCITP-14 at 4 feet bgs showed TPH-g, TPH-mo, and TPH-d at 270 mg/kg, 99 mg/kg, and 420 mg/kg, respectively (SCI 1996e).

RMA-24, located 40 feet east of SCITP-14, was installed on behalf of Keep on Trucking (KOT) in 1996. According to field observations by SCI, free product was found in RMA-24. However, the grab groundwater sample collected from this boring did not show any TPH compounds (the samples were not analyzed for BTEX). Furthermore, no TPH compounds were detected in the soil sample collected from this boring (SCI, 1997b).

SCIMW-24 has been monitored 12 times since 1997. Concentrations of TPH constituents have fluctuated, with no apparent trend. TPH-d concentrations have ranged from 330 micrograms/Liter (µg/L) (September 1998) to 8,900 µg/L (January 2003). TPH-mo concentrations have ranged from non-detect to the most recent concentration of 11,000 µg/L. TPH-g concentrations have fluctuated between 4,500 µg/L to 25,000 µg/L. The most recent concentration detected was 23,000 µg/L. THP-g concentrations have consistently remained higher than TPH-d and TPH-mo concentrations. Benzene concentrations have also fluctuated between 760 µg/L and 2,700 µg/L. The most recent monitoring event (January 2003) showed benzene at a concentration of 2,200 µg/L. This fluctuation was seen for the other BTEX compounds as well.

A grab groundwater sample collected from boring SCI-12, located approximately 15-20 feet south of monitoring well SCIMW-24, contained elevated levels of TPH compounds and BTEX. TPH-g, TPH-d, and TPH-mo were detected at concentrations of 18,000 µg/L, 2,400 µg/L, and 14,000 µg/L, respectively. BTEX concentrations ranged from 680 µg/L (ethylbenzene) to 3,900 µg/L (total xylenes); benzene was detected at 810 µg/L.

The grab groundwater sample collected from SCITP-14, located slightly east of monitoring well SCIMW-24 contained elevated concentrations of TPH-g, TPH-d, and TPH-mo, at 18,000 µg/L, 15,000 µg/L, and 41,000 µg/L, respectively. Benzene was detected at a concentration of 1,700 µg/L.

4.0 2003 FIELD INVESTIGATION

On April 22, 2003, California Utility Surveys (CUS) screened the proposed trenching area at UST Site HF-16 for underground utility lines. The area of investigation was bounded by the storm drain line to the southeast and Clinton Basin to the northwest. CUS located a water line running parallel to 8th Avenue approximately 30 feet from the UST site on the southeast side of the storm drain line. According to site maps, a firewater line exists approximately 12 feet northwest of the storm drain inlet running parallel to 8th Avenue. CUS could not locate this line because it is constructed of non-metallic material. The 1945 contractor's drawing showed that the USTs were to be located less than 2 feet from this firewater line (Port 1945).

Two test pits, GAIA TP-5 and GAIA TP-6, were excavated within the UST area on April 25 and 29, 2003 (Figure 4). GAIA observed FOSS Environmental Services Company (FOSS) in the excavation of test pits. FOSS utilized a backhoe equipped with a 36-inch bucket to excavate each test pit. A photo log of the excavated test pits is presented in Appendix C. The lithology of each test pit was logged by a GAIA geologist. A brief description of the material found within each test pit is summarized below and also included on Figure 5.

GAIA Test Pit 5

GAIA TP-5 was approximately 20 feet long and 3 feet wide. This test pit was excavated parallel to 8th Avenue and approximately 19 feet northwest of a storm drain inlet (Figure 4). Test pit GAIA TP-5 was also excavated 6 feet northwest of the existing firewater line to prevent any possible damage to the line.

Three subsurface concrete structures were identified in GAIA TP-5, however no UST was encountered. These structures consisted of a wall at 3 feet bgs along the southeastern side of the test pit, a concrete slab directly adjacent to the concrete wall at 7.5 feet bgs, and a concrete slab at 2 feet bgs in the northern and northeastern legs of the test pit. Figure 5 provides the approximate location of each concrete structure that was uncovered by the excavation. None of the concrete structures were fully uncovered, and therefore the full extent of the structures is not known.

During excavation, the concrete wall was encountered at approximately 3.0 feet bgs and extended to a depth of approximately 7.5 feet bgs along the southeastern side of the test pit. The wall ran parallel to 8th Avenue. A 3-foot wide concrete slab was also encountered at the bottom of the test pit (approximately 7.5 feet bgs) and directly adjacent to the wall. Several metal strap pieces were encountered within this area of the test pit. The straps were approximately 3 inches wide and were between 3 to 6 feet in length. The straps looked like remnants of old UST straps.

A concrete slab was also encountered at 2 feet bgs at the northeast side of the test pit. The test pit was extended at an angle to the north, and it was determined that the concrete slab extended further northeast and north (Figure 5-Note 1). The concrete slab may have been the former floor slab of Building H-204.

A strong hydrocarbon odor was noted emanating from test pit GAIA TP-5. Due to the strong hydrocarbon odors present within the trench and the metal straps found, the initial test pit was excavated an additional 8 feet toward the northwest, perpendicular to 8th Avenue. Large concrete slab pieces were encountered approximately 3 feet bgs along the northwestern edge of the test pit (Figure 5-Note3).

Groundwater entered the pit at approximately 5 feet bgs. A petroleum sheen was observed on the water. Two soil samples and one grab groundwater sample were collected from this test pit. Soil samples were collected at 3.5 feet and 4 feet bgs. An organic vapor meter (OVM) was used to monitor volatile organic levels in the soil. OVM readings were reported at 1,900 parts per million from a sample collected at 3.5 feet bgs and at 2,500 ppm from a sample collected at 4 feet bgs.

GAIA Test Pit 6

GAIA TP-6 was excavated in the area of an identified rectangular anomaly. The anomaly measured approximately 10 feet long by 8 feet wide. The test pit was excavated along an approximately westerly strike and was located approximately 12 feet west of GAIA TP-5 (Figure 4). A strong hydrocarbon odor was also apparent emanating from this test pit. Beneath several layers of asphalt, concrete, and crushed rock fill, a layer of bluish-gray silty sand backfill was encountered from approximately 2.5 feet to 6.5 feet bgs. The silty sand layer was underlain by a layer of 3-inch drain rock and a bottom layer of rounded cobble-sized gravel import (See Figure 5). The type of sand and gravel encountered is similar to backfill found in some UST pits. The test pit was excavated to approximately 8.0 feet bgs. A dark amber colored

separate-phase, approximately 0.02 feet thick, was observed on the water in this test pit. No UST was encountered. One soil sample (at 3 feet bgs) and one grab groundwater sample were collected from this test pit.

Sample Protocols and Analyses

A total of 3 soil samples and 2 groundwater samples were collected from test pits GAIA TP-5 and GAIA TP-6. All test pit samples obtained for chemical analysis were collected in laboratory-provided sample jars and placed into a cooler with ice. Samples were documented on a chain-of-custody form. The samples were transported under chain of custody to Curtis & Tompkins, Ltd., a California-certified laboratory. All soil and groundwater samples were analyzed for TPH compounds by U.S. Environmental Protection Agency (EPA) Method 8015-Modified with silica gel clean-up for THP-d and TPH-mo and BTEX using EPA Method 8021. Samples were also tested for fuel oxygenates and lead scavengers by EPA Method 8260. Samples collected from GAIA TP-5 were also analyzed for total lead. Chain-of-Custody forms and analytical test reports are presented in Appendix D. Test pit sample analytical data are presented in Tables 1 and 2 and Figure 6. Analytical results are also discussed in Section 5.0 below.

Soil Management and Test Pit Backfill

Soil excavated from each test pit was placed on a layer of visqueen adjacent to the test pit. Test pits were backfilled with the excavated soil. Backfilled soil was loosely compacted in place with the backhoe bucket. A layer of 3/4-inch size road base aggregate was compacted over the backfilled soil. A 6-inch thick layer of asphalt was used to complete the former test pits to grade.

5.0 SAMPLE ANALYTICAL RESULTS

Elevated levels of TPH-d, TPH-mo, and TPH-g were detected in soil samples from test pits GAIA TP-5 and GAIA TP-6 (Table 1). The TPH compound detected at the highest concentrations was TPH-g with concentrations ranging from 2,400 mg/kg in GAIA TP-5 at 4 feet bgs to 5,300 mg/kg in GAIA TP-6 at 3 feet bgs. TPH-d and TPH-mo concentrations ranged from 770 mg/kg to 1,800 mg/kg. BTEX was also detected at elevated levels in all these test pit samples. Benzene concentrations ranged from 11 mg/kg to 12 mg/kg. Total lead was analyzed in samples GAIA TP-5@3' and GAIA TP@4' and was detected at concentrations of 46 mg/kg and 71 mg/kg, respectively. Lead was not analyzed in test pit GAIA TP-6. No fuel oxygenates or lead scavengers were detected in any of the soil samples analyzed.

Groundwater samples also contained elevated TPH compounds and BTEX (Table 2). As with the soil samples, concentrations of TPH-g were greater than concentrations of TPH-d and TPH-mo. TPH-g was detected at concentrations of 17,000 µg/L in GAIA TP-5 and 260,000 µg/L in GAIA TP-6. Concentrations of TPH-d in GAIA TP-5 and GAIA TP-6 water samples were 8,400 µg/L and 56,000 µg/L, respectively, and TPH-mo concentrations were 6,700 µg/L and 21,000 µg/L, respectively. Benzene concentrations in GAIA TP-5 and GAIA TP-6 were 3,100 µg/L and 2,000 µg/L, respectively. Total lead was detected in GAIA TP-5 at a concentration of 570 µg/L. However, because this water sample was not filtered by the laboratory prior to analysis, this lead concentration is likely reflective of the presence of small amounts of soil in the sample, rather than a reflection of the groundwater conditions within the area [3]. Lead was not analyzed in water sample GAIA TP-6. No fuel oxygenates or lead scavengers, except Isopropyl Ether (DIPE) were detected in groundwater. DIPE concentrations of 16 µg/L and 21 µg/L were detected in groundwater from GAIA TP-5 and GAIA TP-6, respectively.

[3] Nearby monitoring well SCIMW-24 has been monitored for lead a total of six times since 1997. Lead has only been detected twice in this well, May 1997 and April 2000, at concentrations of 6.3 and 8.3 µg/L, respectively. Lead was last monitored in April 2000.

6.0 CONCLUSIONS

Two test pits were excavated in the area of former UST site HF-16 during this phase of investigation. No USTs were encountered during the excavation work conducted within the UST HF-16 area. Field observations indicate that USTs may have been previously present in this area because of metal straps and a deep concrete floor that were encountered in test pit GAIA TP-5, and sand and gravel backfill encountered in test pit GAIA TP-6. Based on the available information, it appears that the USTs were removed at some point in the past.

Three soil and two groundwater samples were collected from the test pits. Separate-phase (approximately 0.02 feet) was noted on the groundwater in test pit GAIA TP-6. Both test pits contained elevated levels of TPH compounds and BTEX in both soil and groundwater samples. Consistent with data collected during prior investigations, TPH-g concentrations in both soil and groundwater were higher than TPH-d and TPH-mo concentrations suggesting, 1) the former UST likely stored gasoline and 2) the area may be impacted by other fuel related releases given the former bulk fuel processing activities conducted in the area.

The nearest groundwater monitoring well, SCIMW-24, which is located approximately 8 to 15 feet from the test pits, previously contained separate-phase hydrocarbons (approximately 0.5 inches) and continues to show elevated levels of TPH and BTEX compounds. The results of the soil and groundwater samples from the test pits are consistent with elevated TPH and BTEX concentrations detected at monitoring well SCIMW-24 and previously drilled boring SCI-12. Based on the information collected from this and previous investigations, it is likely that the source of the elevated TPH-g and BTEX in groundwater, as well as the separate-phase hydrocarbon product, was associated with USTs.

7. REFERENCES

Note: the references relevant to this report are shown in bold.

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44. **Subsurface Consultants, Inc. (SCI 2000e).** ***Results of Soil Gas and Surface Vapor Flux Testing Study, Port of Oakland, Ninth Avenue Terminal, Oakland, California,*** **March 2001.**

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53. Uribe & Associates. (U&A 1993c). *Report of the Source Area Primary Pathway Investigation at Keep on Trucking*, March 30, 1993.

54. Uribe & Associates. (U&A 1993d). *Investigation of Diesel Spill at Keep on Trucking, 370 8th Avenue, Oakland, California,* April 1993.

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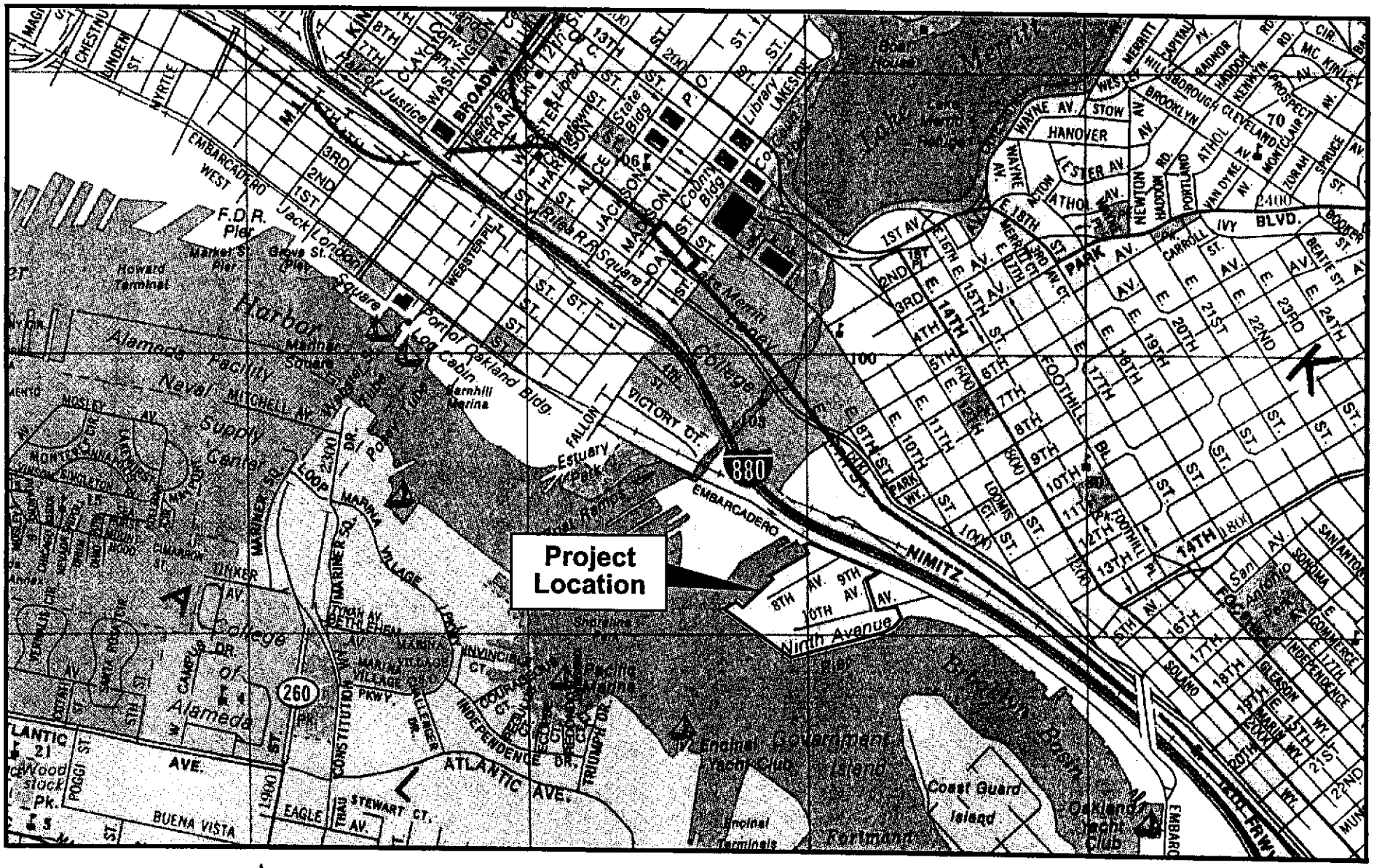
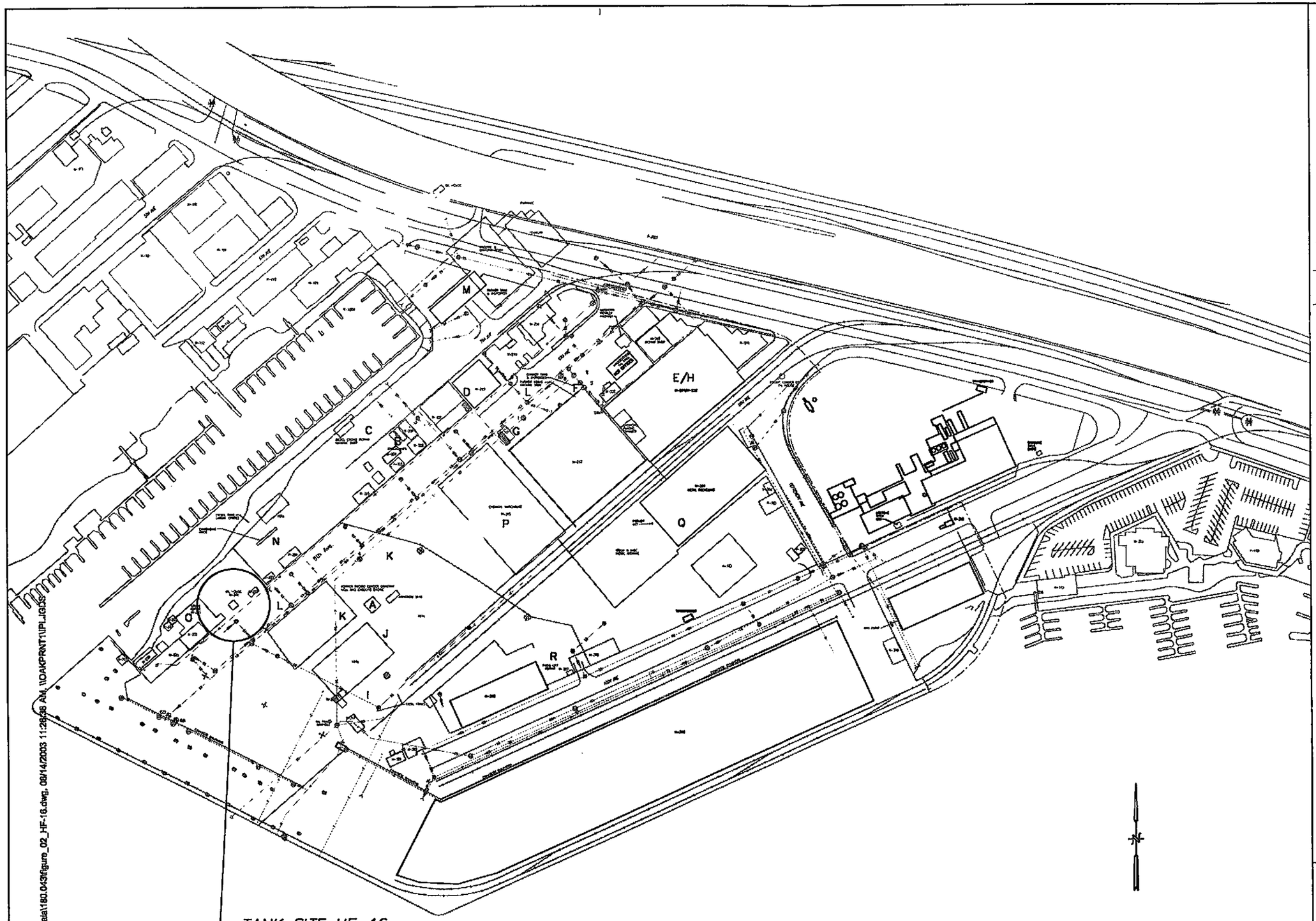


Figure 1
Vicinity Map
Port of Oakland
Ninth Avenue Terminal

GAIA consulting, inc.

168344.A5.01 •Vicinity Map •11/9/01 •ccc-SFO



LEGEND:

- DEMOLISHED BUILDING
- EXISTING BUILDING
- EXISTING BUILDING FOUNDATION
- FENCE LINE
- RAILROAD
- BOUNDARY LINE
- OVERHEAD LIGHT STANDARD
- EXISTING ABOVE OR UNDERGROUND STORAGE TANK
- FORMER ABOVE OR UNDERGROUND STORAGE TANK
- K DESIGNATED INVESTIGATION AREA

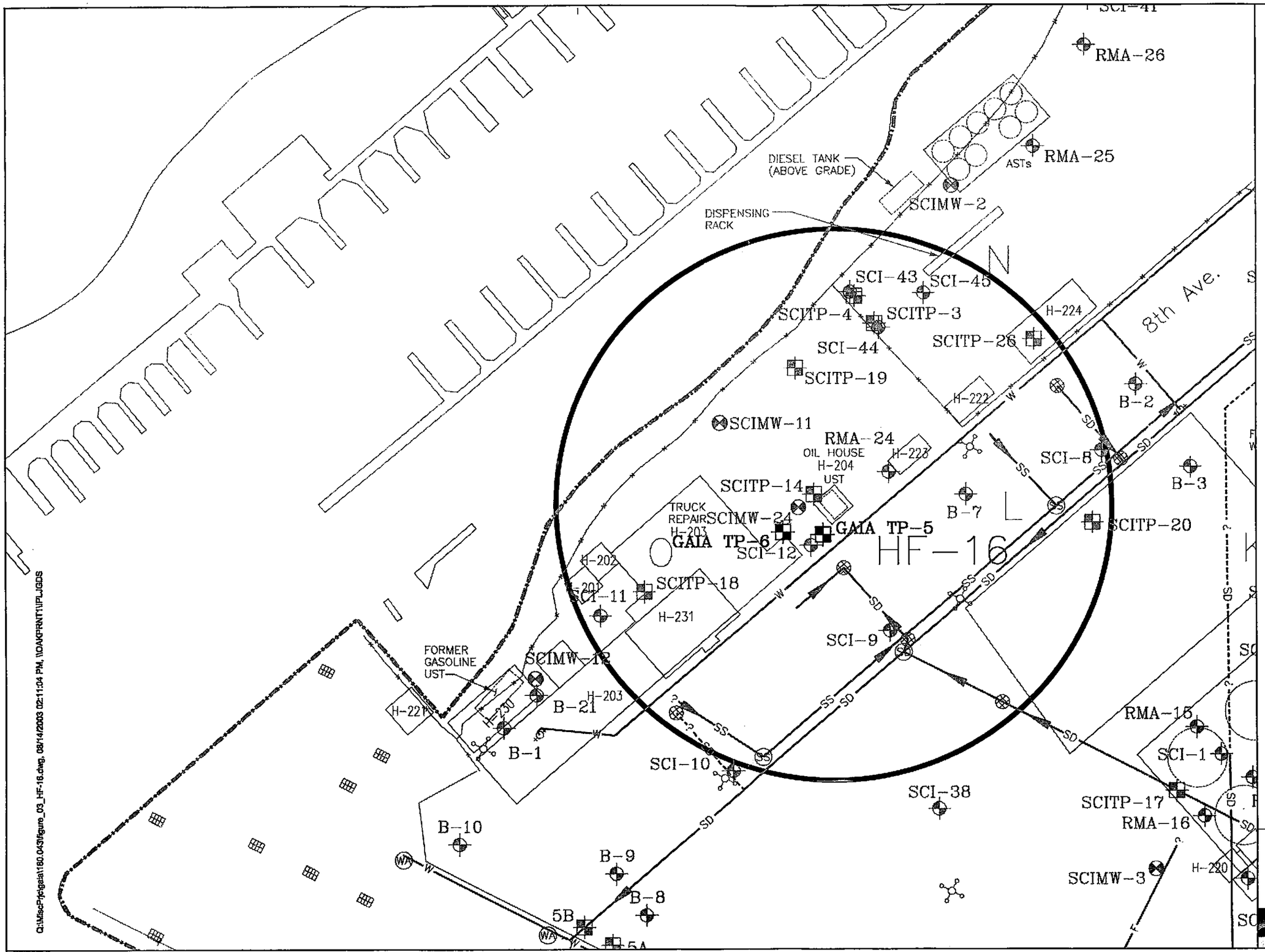
INVESTIGATION AREA
UST SITE HF-16
9th Avenue Terminal
Port of Oakland

GAIA consulting, inc.

Project No.	Figure
180.043	2

Q:\MiscPrjc\gaia\180.043\figure_02_HF-16.dwg, 08/14/2003 11:28:36 AM, \\OAKPRNT1\PLJGDS

Plot Date: 08-14-03 File: Q:\MiscPrjc\gaia\180.043\figure_02_HF-16.dwg



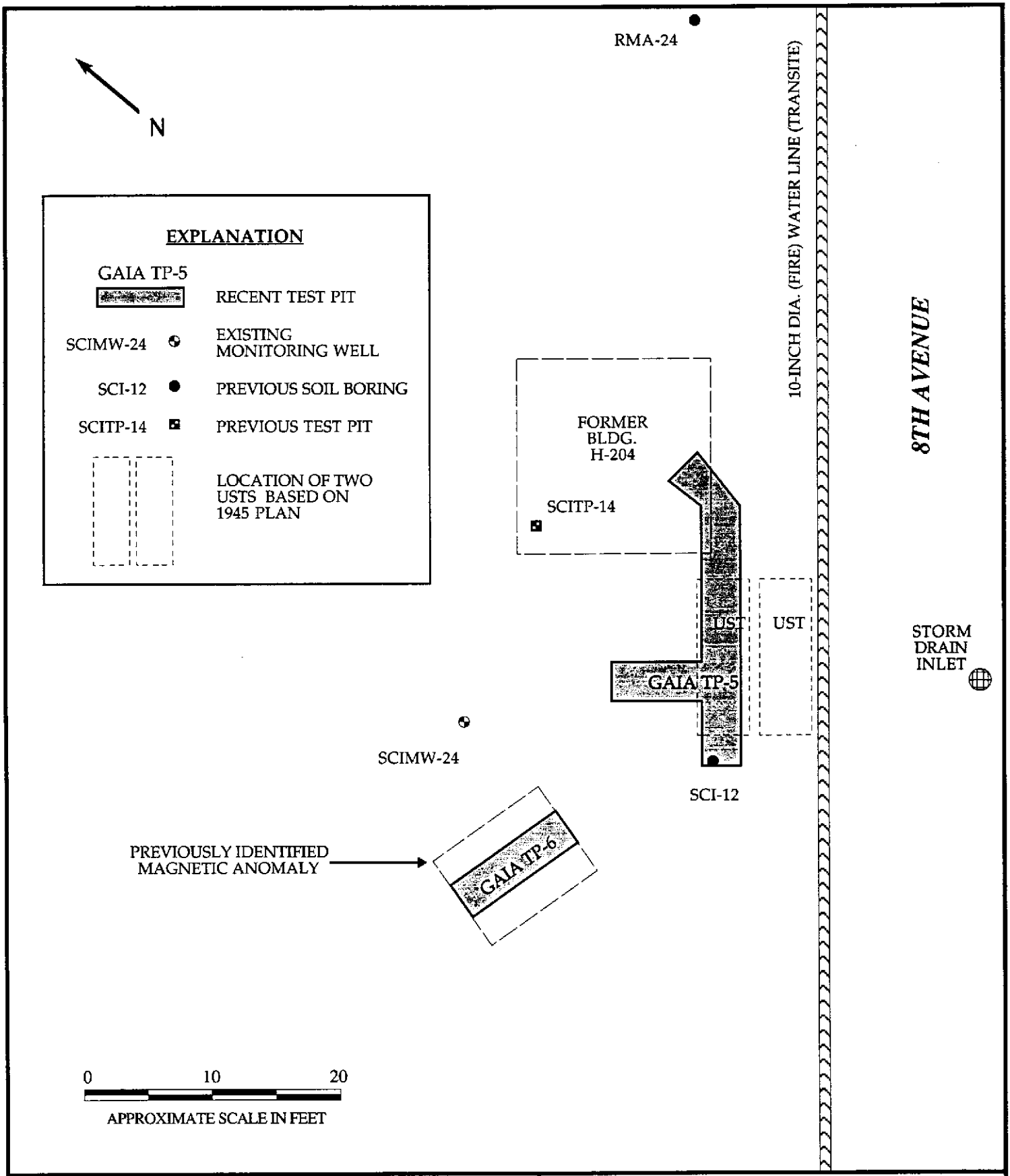
LEGEND:

- GAIA TEST PIT LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- TEST PIT LOCATION
- DEMOLISHED BUILDING
- FENCE LINE
- RAILROAD
- BOUNDARY LINE
- OVERHEAD LIGHT STANDARD
- EXISTING ABOVE OR UNDERGROUND STORAGE TANK
- FORMER ABOVE OR UNDERGROUND STORAGE TANK

GRAPHIC SCALE
0 50 100

SITE LOCATION
UST HF-16 (BLDG. H-204)
9th Avenue Terminal
Port of Oakland

GAIA consulting, inc.	Project No. 180.043	Figure 3



TEST PIT LOCATION MAP
UST Site HF-16
Building H-204
9th Avenue Terminal
Port of Oakland

GAIA CONSULTING, INC.

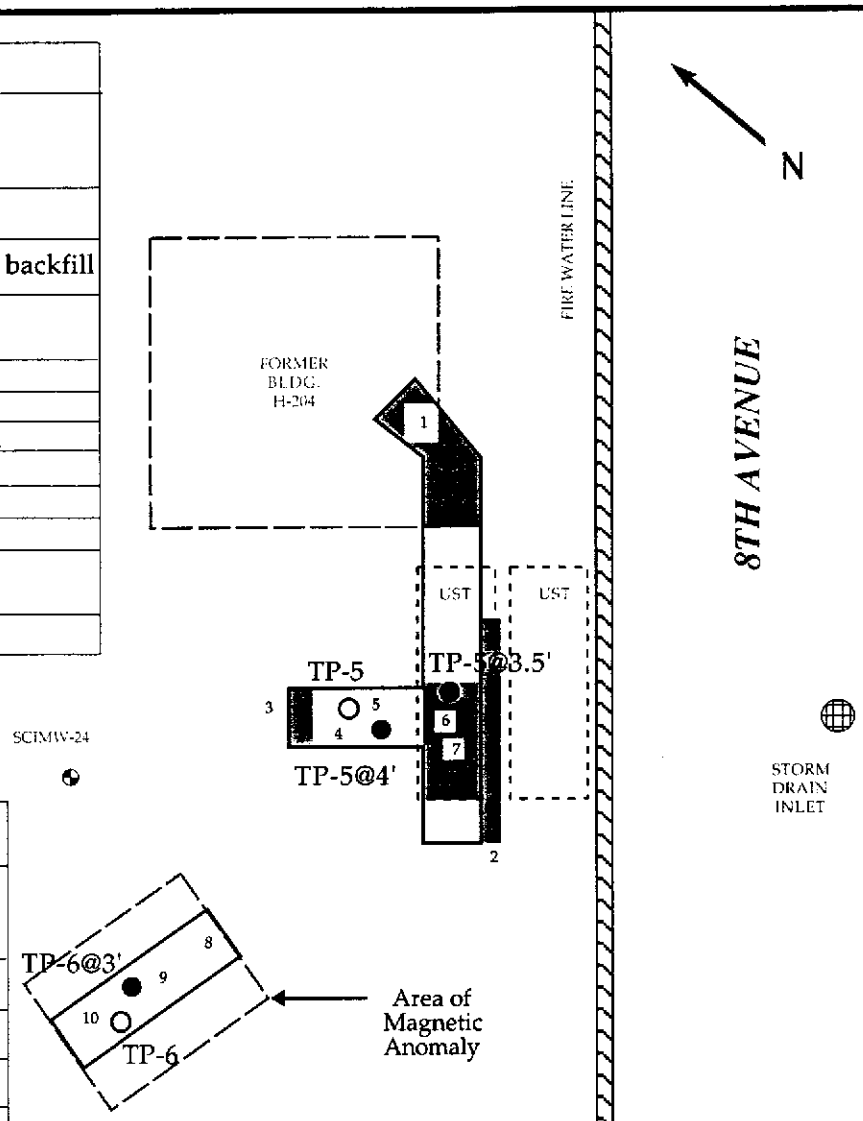
Project No.	Figure Date	Figure
180.041	**8/03**	**4**

GAIA TP-5 (4-25-03)	
Depth bgs	Log
0-0.5'	asphaltic concrete
0.5'-3'	crushed rock fill
3'-8'	greenish-gray silty sand backfill

NOTES:	
	Groundwater @ 5 ' bgs.
1	Top of concrete slab @ 2' bgs.
2	Top of concrete wall @ 2.5' bgs.
3	Large concrete pieces @ 3' bgs.
4	Petroleum sheen on water.
5	Pieces of wire.
6	Metal straps remnants @ 4'bgs.
7	Top of concrete slab @ 7.5' bgs.

GAIA TP-6 (4-29-03)	
Depth bgs	Log
0-0.5'	asphaltic concrete
0.5'-1.0'	crushed rock fill
1.0'-1.25'	rough concrete pour, no steel
1.25-1.5'	asphaltic concrete
1.5-2'	crushed rock
2'-2.5'	broken concrete, crushed rock
2.5-6.5	bluish-gray silty sand backfill
6.5'-7.5'	3" drain rock
7.5-8'	cobble-sized gravel import

NOTES:	
	Groundwater @ 5' bgs.
8	Wood debris @ 5.5' bgs
9	Bolts & sheet metal debris @ 3' bgs.
10	Dark amber colored separate-phase approximately 0.02 feet thick on water.



0 10 20

APPROXIMATE SCALE IN FEET

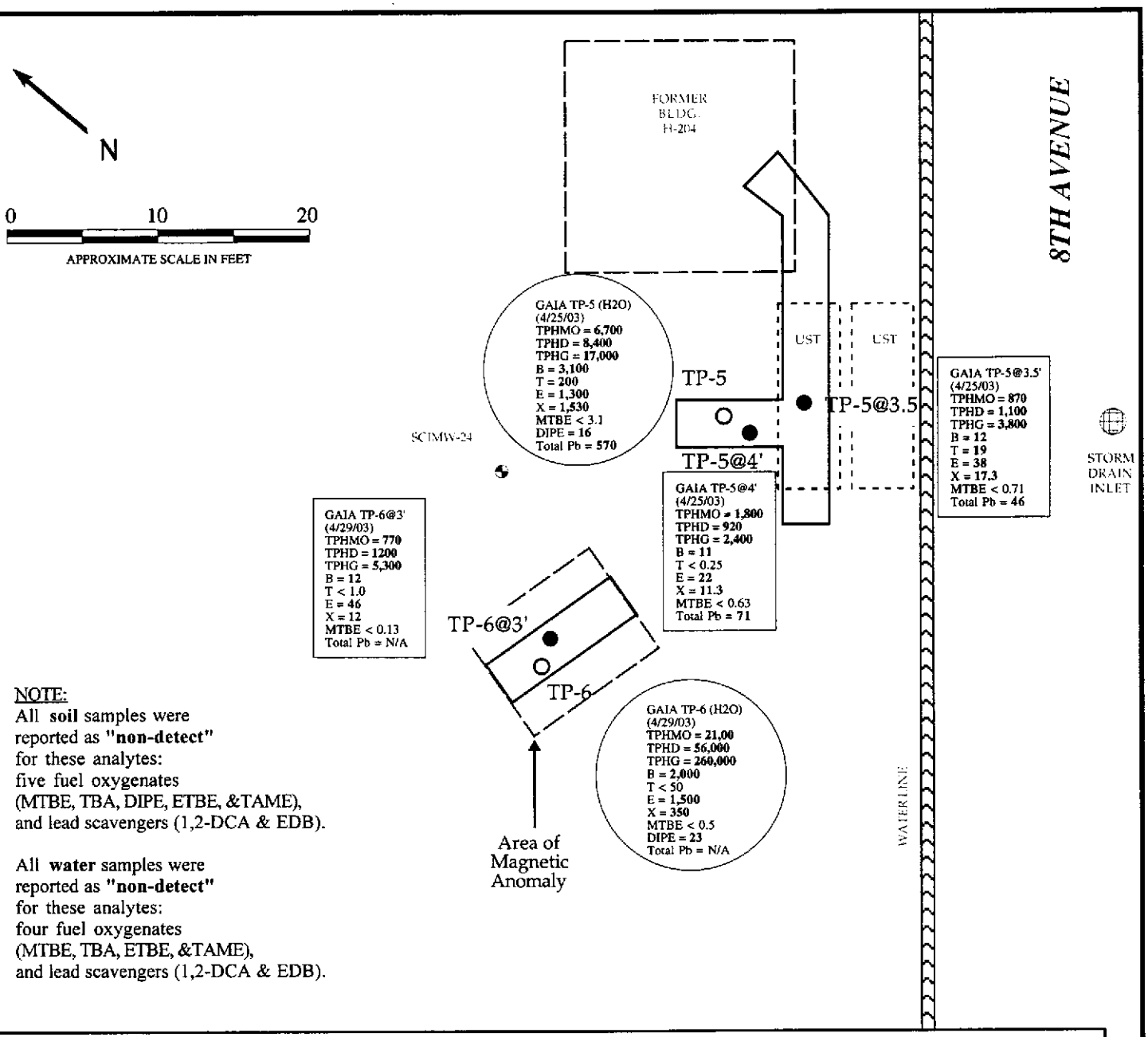
EXPLANATION

- TP-5@4' ● SOIL SAMPLE/DEPTH
- TP-5 ○ WATER SAMPLE
- SCIMW-24 ⊕ EXISTING MONITORING WELL
- ▭ TEST PIT
- ▮ SUBSURFACE CONCRETE FEATURE UNCOVERED

TEST PIT SAMPLING MAP & LOGS
UST Site HF-16
Building H-204
9th Avenue Terminal
Port of Oakland

GAIA CONSULTING, INC.

Project No.	Figure Date	Figure
180.041	**8/03**	**5**



NOTE:
All **soil** samples were reported as **"non-detect"** for these analytes:
five fuel oxygenates (MTBE, TBA, DIPE, ETBE, &TAME), and lead scavengers (1,2-DCA & EDB).

All **water** samples were reported as **"non-detect"** for these analytes:
four fuel oxygenates (MTBE, TBA, ETBE, &TAME), and lead scavengers (1,2-DCA & EDB).

EXPLANATION

● TP-5@3.5' SOIL SAMPLE/DEPTH ○ TP-5 WATER SAMPLE ▭ TEST PIT

GAIA TP-5@3.5'
(4/25/03)
TPHMO = 870
TPHD = 1,100
TPHG = 3,800
B = 12
T = 19
E = 38
X = 17.3
MTBE < 0.71
Total Pb = 46

Concentration of total petroleum hydrocarbons as motor oil (TPHMO), diesel (TPHD) and gasoline (TPHG) range, concentrations of btex (BTEX) and mtbe (MTBE), and total lead (Pb) in **soil** samples collected from test pit. Soil results in **mg/kg.**

GAIA TP-6 (H2O)
(4/29/03)
TPHMO = 21,00
TPHD = 56,000
TPHG = 260,000
B = 2,000
T < 50
E = 1,500
X = 350
MTBE < 0.5
DIPE = 23
Total Pb = N/A

Concentration of total petroleum hydrocarbons as motor oil (TPHMO), diesel (TPHD) and gasoline (TPHG) range, concentrations of btex (BTEX), mtbe (MTBE), dipe (DIPE), and total lead (Pb) in **water** samples collected from test pit. Water results in **µg/L.**

HYDROCARBON DISTRIBUTION MAP
UST Site HF-16
Building H-204
9th Avenue Terminal
Port of Oakland

GAIA CONSULTING, INC.

Project No.	Figure Date	Figure
180.041	**8/03**	**6**

Table 1
SOIL SAMPLE ANALYTICAL RESULTS
UST Site HF-16 at Former Building H-204 (LOP#6894)
Ninth Avenue Terminal, Port of Oakland

			Total Petroleum Hydrocarbons & BTEX (mg/kg)							*Fuel Oxygenates, Lead Scavengers, & Total Lead (mg/kg)*							
SAMPLE ID	**DEPTH (ft. bgs)**	**SAMPLE DATE**	TPH-d	TPH-mo	TPH-g	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	1,2-DCA	EDB	Total Lead
HISTORIC SITE INVESTIGATION																	
SCI-12@6.5	6.5	5/22/1996	**800**	**330YHL**	**940YH**	**12.0**	**34.0**	**13.0**	**48.1**		--	--	--	--	--	--	--
RMA-24@6.5-7	6.5	11/22/1996	<10	--	<10	--	--	--	--	--	--	--	--	--	--	--	--
SCITP-14@4	4.0	2/5/1997	**99YHL**	**420**	**270**	<0.13	<0.13	<0.13	**5.2**	--	--	--	--	--	--	--	**57**
SCIMW-24@3	3.0	4/29/1997	**20YHL**	**140**	**440**	**1.6**	**0.31J**	**11**	**6.4**	--	--	--	--	--	--	--	**18**
SCIMW-24@6	6.0	4/29/1997	**140HL**	**200**	**910**	**0.63**	<0.5	**2.4**	**3.9**	--	--	--	--	--	--	--	--
GAIA UST INVESTIGATION																	
GAIA TP-5@3.5	3.5	4/25/2003	**1,100 HLY**	**870**	**3,800**	**12.0**	**19.0**	**38.0**	**17.3**	<0.71	<14	<0.71	<0.71	<0.71	<0.71	<0.71	**46**
GAIA TP-5@4.0	4	4/25/2003	**920 HLY**	**1,800**	**2,400**	**11.0**	<0.25	**22.0**	**11.3 C**	<0.63	<13	<0.63	<0.63	<0.63	<0.63	<0.63	**71**
GAIA TP-6@3	3	4/29/2003	**1,200 HLY**	**770**	**5,300**	**12.0**	**<1.0**	**46.0**	**12 C**	<0.13	<2.5	<0.13	<0.13	<0.13	<0.13	<0.13	--

Notes:

<0.05 Analyte not detected above the stated reporting limit
-- Sample not analyzed
H Heavier hydrocarbons contributed to the quantitation
L Lighter hydrocarbons contributed to the quantitation
Y Sample exhibits chromatographic pattern which does not resemble standard
C Presence confirmed, but relative percent difference btwn colums exceeds 40%
TPH-d Total Petroleum Hydrocarbons as diesel by EPA Method 8015M w/ silica gel cleanup
TPH-mo Total Petroleum Hydrocarbons as motor oil by EPA Method 8015M w/silica gel cleanup
TPH-g Total Petroleum Hydrocarbons as gasoline by EPA Method 8015M
BTEX Benzene, Toluene, Ethyl-Benzene, Total Xylenes by EPA Method 8021

mg/kg miligrams per kilogram
Fuel Oxygenates MTBE, TBA, DIPE, ETBE, & TAME by EPA Method 8260B
Lead Scavengers 1,2-DCA and EDB by EPA Method 8260B
MTBE methyl tert-Butyl ether
TBA tert-Butyl Alcohol
DIPE Isopropyl Ether
ETBE Ethyl tert-Butyl Ether
TAME Methyl tert-amyl ether
1,2-DCA 1,2-Dichloroethane
EDB 1,2 Dibromoethane

Table 2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
UST Site HF-16 at Former Building H-204 (LOP#6894)
Ninth Avenue Terminal, Port of Oakland

SAMPLE ID	GW Elevation (ft)	SAMPLE DATE	*Total Petroleum Hydrocarbons & BTEX (µg/L)*							*Fuel Oxygenates, Lead Scavengers, & Total Lead (µg/L)*							
			TPH-d	TPH-mo	TPH-g	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	1,2-DCA	EDB	Total Lead
HISTORIC SITE INVESTIGATION																	
SCI-12	--	5/22/1996	**2,400YHL**	**14,000Y**	**18,000**	**810**	**680**	**2,200**	**3,900**	--	--	--	--	--	--	--	
RMA-24@6.5-7	--	11/22/1996	<500	--	<500	--	--	--	--	--	--	--	--	--	--	--	
SCITP-14@4	--	2/5/1997	**15,000YLH**	**41,000 L**	**18,000 L**	**1,700**	**1,100**	**110**	**690**		--	--	--	--	--	--	
SCIMW-24	4.44	5/6/1997	**2,700 L**	**2,100 L**	**5,000**	**720**	**37**	**220**	**120**	--	--	--	--	--	--	--	**6.3**
SCIMW-24	4.96	9/18/1998	**330YL**	<300	**7,100**	**950**	**53**	**99**	**98**	--	--	--	--	--	--	--	<3
SCIMW-24	5.79	12/11/1998	**800YL**	<300	**8,300**	**1,200**	**56**	**180**	**111**	--	--	--	--	--	--	--	<3
SCIMW-24	5.14	5/6/1999	**1,900YL**	**660YL**	**6,700**	**1,100**	**31**	**120**	**89**	--	--	--	--	--	--	--	<3
SCIMW-24	4.59	8/25/1999	**FREE PRODUCT (0.5 inches) - NOT SAMPLED**														
SCIMW-24	4.99	12/1/1999	**960YL**	<300	**7,000**	**860**	**35**	**25**	**53.6**	--	--	--	--	--	--	--	<3
SCIMW-24	5.05	4/6/2000	**2,600YL**	**2,100**	**4,500**	**1,700**	**41**	**87**	**81**	--	--	--	--	--	--	--	**8.3**
SCIMW-24	4.95	10/10/2000	**1,200LY**	<300	**5,400**	**1,600**	**59**	**36**	**69**	--	--	--	--	--	--	--	--
SCIMW-24	4.94	5/4/2001	**5,300HLY**	**3,600**	**7,100**	**2,700**	**64**	**160**	**100**	--	--	--	--	--	--	--	--
SCIMW-24	5.37	11/28/2001	**5,800 HLY**	**5,000**	**8,900**	**1,000**	**44**	**51**	**57**	--	--	--	--	--	--	--	--
SCIMW-24	5.17	7/30/2002	**2,300 HLY**	**1,700**	**25,000**	**1,600**	**<2.5**	**160**	**66**	--	--	--	--	--	--	--	--
SCIMW-24	5.74	1/21/2003	**8,900 HLY**	**11,000**	**23,000**	**2,200**	**55**	**170**	**107**	--	--	--	--	--	--	--	--
GAIA INVESTIGATION SAMPLING																	
GAIA TP-5	--	4/25/2003	**8,400 HLY**	**6,700**	**17,000**	**3,100**	**200**	**1,300**	**1,530**	<3.1	<63	**16**	<3.1	<3.1	<3.1	<3.1	**570***
GAIA TP-6	--	4/29/2003	**56,000 HLY**	**21,000 L**	**260,000**	**2,000**	<50	**1,500**	**350 C**	<0.5	<10	**23**	<0.5	<0.5	<0.5	<0.5	--

Notes:

* This sample was not filtered prior to analysis, therefore the concentration reported does not reflect the true conditions at the site.

<0.05 Analyte not detected above the stated reporting limit
-- Sample not analyzed
H Heavier hydrocarbons contributed to the quantitation
L Lighter hydrocarbons contributed to the quantitation
Y Sample exhibits chromatographic pattern which does not resemble standard
C Presence confirmed, but relative percent difference between colums exceeds 40%
TPH-d Total diesel range petroleum hydrocarbons by EPA Method 8015M w/ silica gel cleanup
TPH-mo Total motor oil range petroleum hydrocarbons by EPA Method 8015M w/ silica gel cleanup
TPH-g Total gasoline range petroleum hydrocarbons by EPA Method 8015M
BTEX Benzene, Toluene, Ethyl-Benzene, Total Xylenes by EPA Method 8021

µg/L micrograms per Liter
Fuel Oxygenates MTBE, TBA, DIPE, ETBE, & TAME by EPA Method 8260B
Lead Scavengers 1,2-DCA and EDB by EPA Method 8260B
MTBE methyl tert-Butyl ether
TBA tert-Butyl Alcohol
DIPE Isopropyl Ether
ETBE Ethyl tert-Butyl Ether
TAME Methyl tert-Amyl Ether
1,2-DCA 1,2-Dichloroethane
EDB 1,2 Dibromoethane

APPENDIX A
County Workplan Approval Letter

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

December 11, 2002

Mr. Doug Herman
Port of Oakland
P.O. Box 2064
Oakland, CA 94604-2064

Dear Mr. Herman:

Subject: Fuel Leak Case RO0000485, 79 8th Ave., Suspected site of UST HF-16, Building H-204, Oakland, CA 94606

Alameda County Environmental Health, Local Oversight Program (LOP), has received and reviewed the October 8, 2002 Final Site Investigation Work Plan for the referenced site. As you are aware, this site is located within a larger area of environmental impact commonly referred to as the Ninth Ave. Terminal site. This report also states that this Ninth Ave. site is within an even larger potential development area designated as the Oak to Ninth District. Although the proposed future use of this area is commercial, UST and SLIC closures must either evaluate **all** potential exposure scenarios or ensure the site is re-evaluated if a more conservative site usage is planned. At least one, possibly two underground tanks were at this site. The work plan proposes the investigation of the presumed area of the UST by trenching within and along the tank profile and collecting soil and groundwater samples for chemical analysis. In regards to the referenced site investigation work plan, I have the following technical comments:

- Please submit a signed, stamped cover letter from your consultant for this report.
- Should a UST be found, the removal of the UST should be done through the City of Oakland Fire Department. If product is found in the tank, it should be analyzed to confirm that the proposed analytes are consistent with the contents.
- Any significant delays in the removal of the USTs should be approved by the City of Oakland.
- After reviewing the results of the tank removal/tank investigation, please submit a specific work plan for further investigation.
- Groundwater gradient is not predictable and cannot be assumed at this site, therefore, monitoring wells near the former USTs will be required to establish gradient.
- Please make note of any utilities found during the investigation since they pose a potential preferential migration pathway.
- Please attempt to distinguish, if possible, the release from the UST versus that from non-UST sources, as this will be necessary to "close" the UST site.
- Given the known biases of collection "grab" groundwater samples, collection of such samples from trenches is not recommended. If groundwater is sampled, it should be collected from either a boring or well casing.
- Please notify our office when the UST removal/investigation is scheduled.

You may contact me at (510) 567-6765 if you have any questions.

Sincerely,

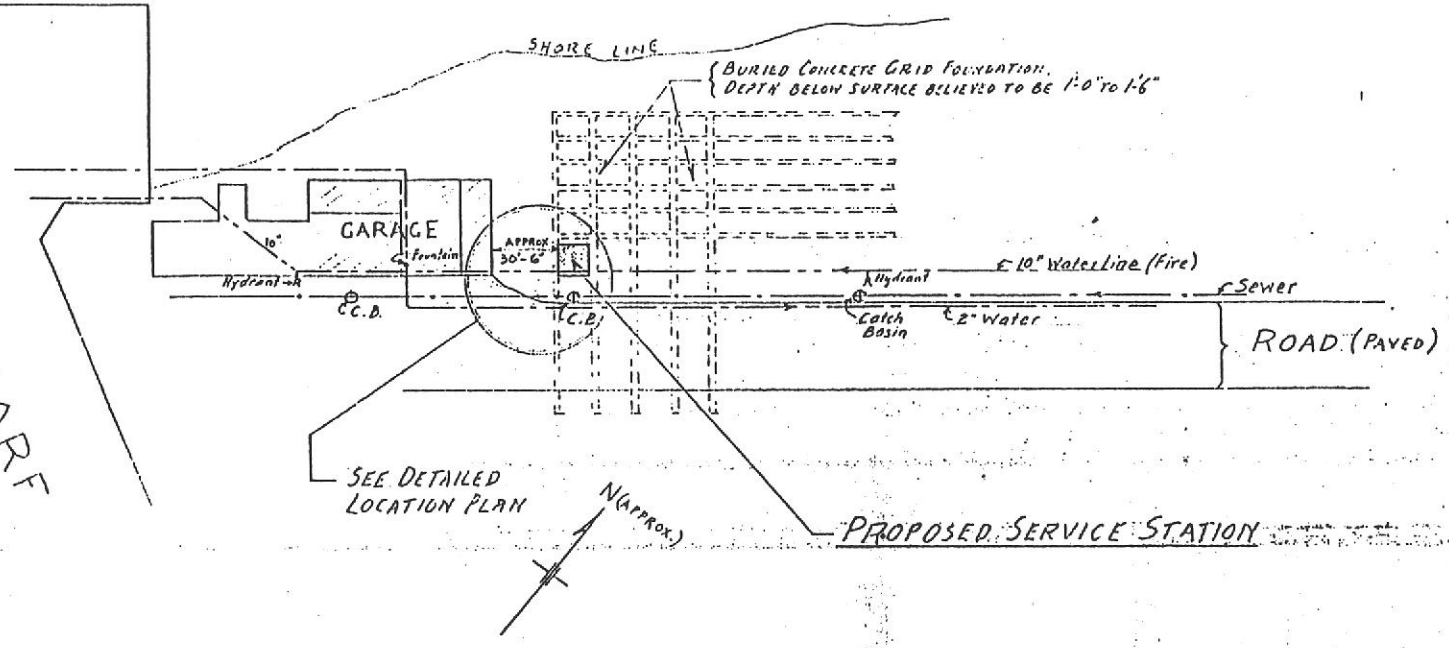
Barney M. Chan
Hazardous Materials Specialist

C/B. Chan, files
Ms. S. von Rosenberg, GAIA Consulting, 2101 Webster St., 12th Floor, Oakland, CA 94612
Ms. J. Alexander, Fugro, 1000 Broadway, Suite 200, Oakland, CA 94607
Mr. L. Griffin, City of Oakland Fire Dept., 1605 Martin Luther King Jr. Way, Oakland, CA 94612

HF16Invwp

APPENDIX B
1945 Contractor's Working Drawing

CLINTON BASIN



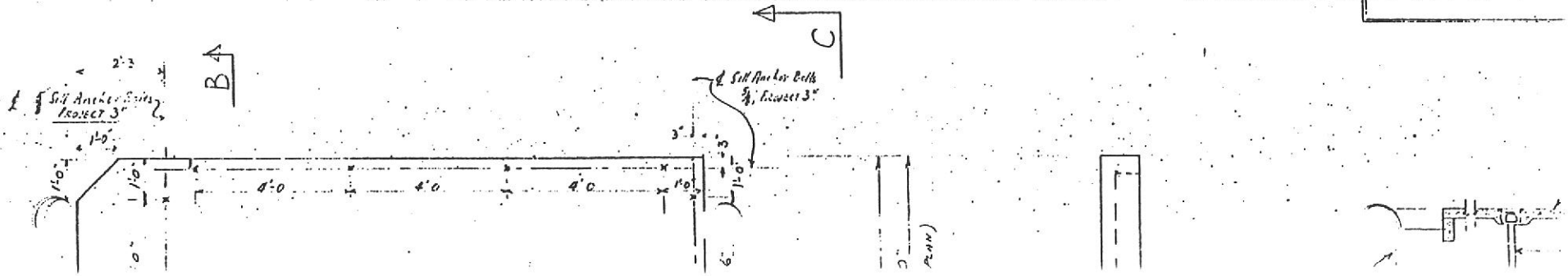
OPEN PORTION OF GARAGE

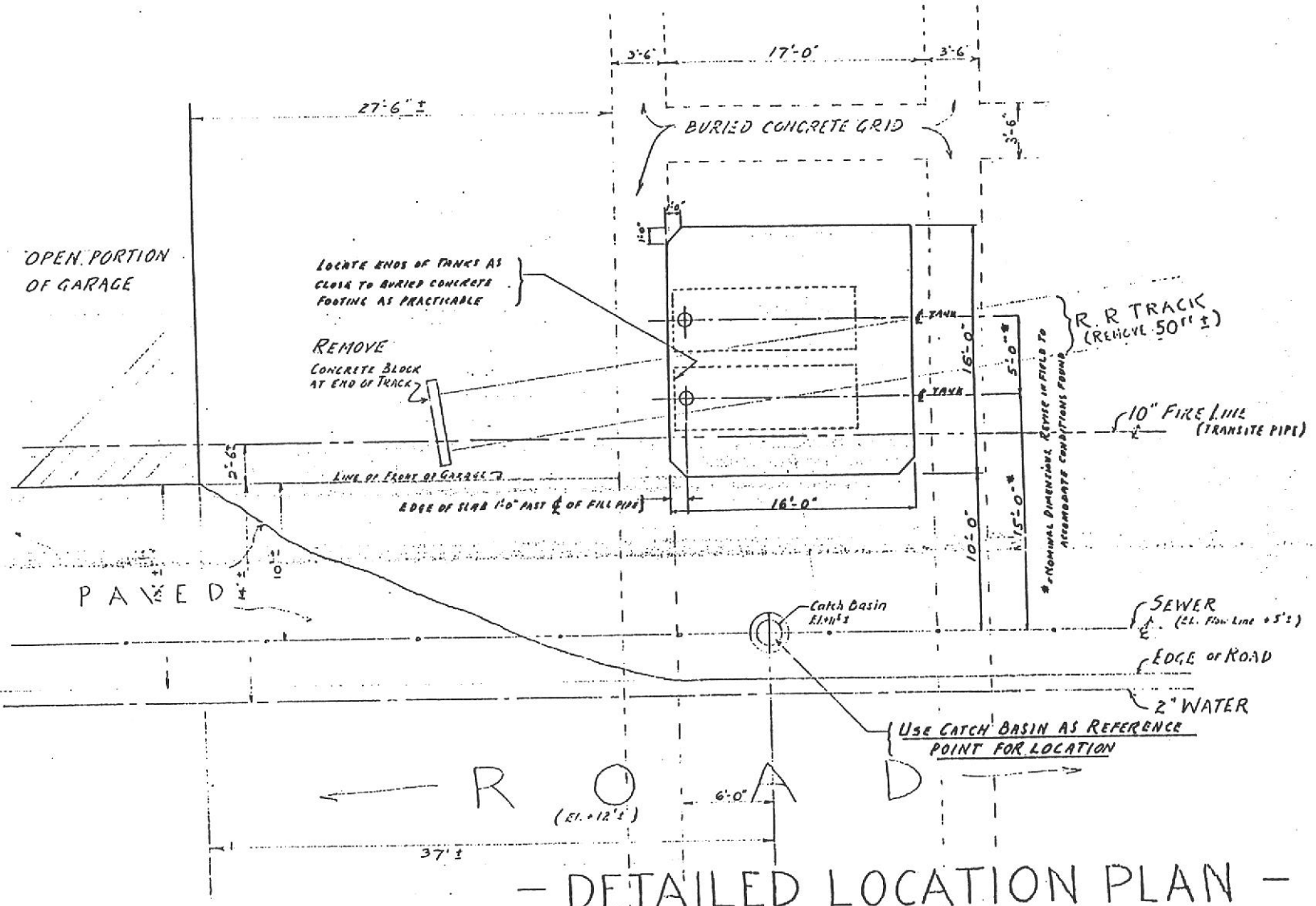
PAVE

LOCATION PLAN

SCALE 1" = 50 FT.

Contractor's Working Drawing 1945

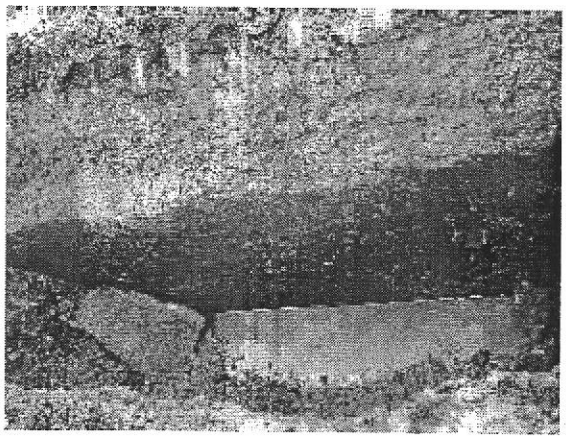




— DETAILED LOCATION PLAN —

SCALE 1" = 5 FT

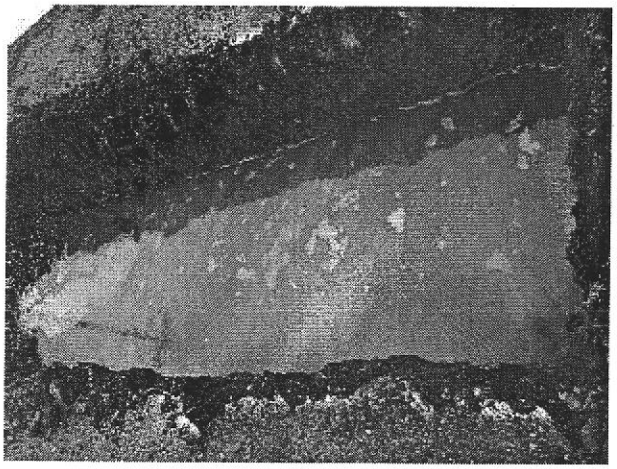
APPENDIX C
Photo Log



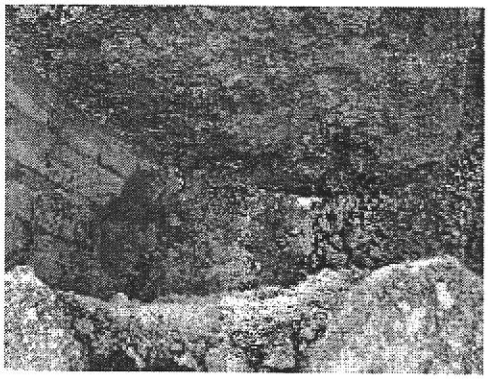
#1 Concrete wall located on Eastern side of GAIA TP-5 located approx. 2.5 feet bgs

#2 Soil stockpile located adjacent to GAIA TP-5

#3 Eastern sidewall of GAIA TP-5. Various colored crush rock fill layer. Metal strap encountered in test pit approx. 4 feet bgs. Sheen noted on water.

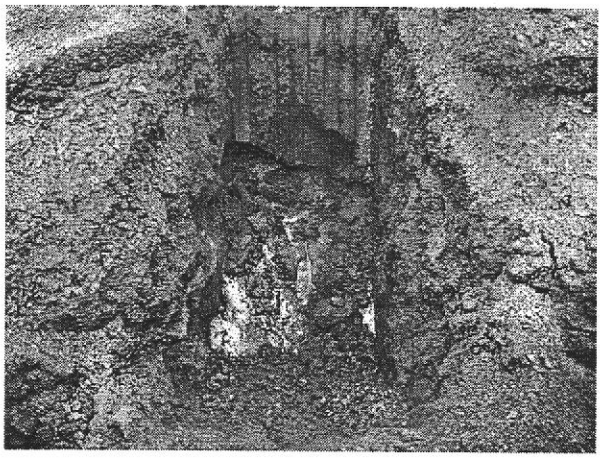


#4 Southern end of GAIA TP-5. Various colored crush rock fill layer visible. Metal strap visible. Sheen noted on water.



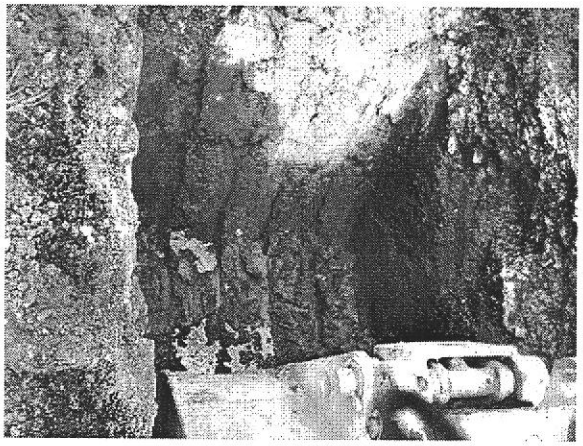
#5 Southwestern end of GAIA TP-6. Crushed rock underlain by bluish-gray sand backfill at 2.5' bgs

#6 (right photo) Northern sidewall of GAIA TP-6. Asphaltic concrete underlain by various colored crushed rock fill layer to approx. 2.5' bgs.

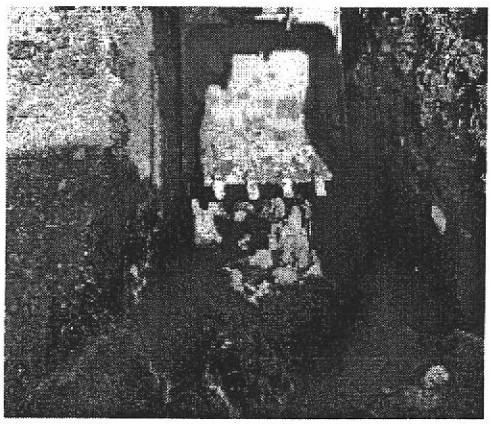


#7 Western end of GAIA TP-6. Groundwater entering the test pit.

#8 Western end of GAIA TP-6. 3-inch size drain rock encountered at 6.5 feet bgs.



#9 Western end of GAIA TP-6. Approx. 0.02 ft. of separate- phase visible within test pit.



#10 Western end of GAIA TP-6. Rounded cobble-size gravel encountered at approx. 7.5' bgs.

APPENDIX D

Laboratory Certified Analytical Reports

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

ANALYTICAL REPORT

Prepared for:

GAIA Consulting, Inc.
2101 Webster Street
12th Floor
Oakland, CA 94612

Date: 15-MAY-03
Lab Job Number: 164976
Project ID: H-227
Location: 9th Avenue

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: 164976
Client: Gaia Consulting Inc.
Project#: H-227
Location: 9th Avenue

Receipt Date: 04/28/03

CASE NARRATIVE

This hardcopy data package contains sample and QC results for one water and one soil sample that were received on April 28, 2003. The samples were received cold and intact.

Total Volatile Hydrocarbons/BTXE by EPA 8015B/8021B

High bromofluorobenzene surrogate recovery was observed in soil sample GAIA TP-5 @4.0 (164976-001). This outlier was due to heavy hydrocarbons coeluting with the surrogate peak. The associated trifluorotoluene surrogate was within acceptance criteria. No other analytical problems were encountered.

Total Extractable Hydrocarbons by EPA 8015B

No analytical problems were encountered.

Gasoline Oxygenates/Lead Scavengers by EPA 8260B

No analytical problems were encountered.

Lead by EPA 6010B

No analytical problems were encountered.

CHAIN OF CUSTODY FORM

Page ____ of ____

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

C&T LOGIN # 164976

Project No: H-204
Project Name: 9th Avenue
Project P.O.:
Turnaround Time: Standard

Sampler: Henry Hurkmans
Report To: Melba Policicchio
Company: GAIA
Telephone: 663-4257 (510)
Fax: 663-4141

Analyses

Laboratory Number	Sample ID.	Sampling Date Time	Matrix: Soil	Matrix: Water	Matrix: Waste		# of Containers	Preservative: HCL	Preservative: H_2SO	Preservative: HNO_3	Preservative: ICE		Field Notes	TPH-g, d, mo (8015M)	Fuel Oxygenates (5) 8260	BTEX	Lead	Lead Scavengers-EDB, 1,2DCA						
		4-25-03																						
-1	GAIA TP-5	4.0' 12:50	X				1 jar				X			X	X	X	X	X						
For Laboratory Use																								
	GAIA TP-5	13:40 ↓					5 voas 1 amber	X					Voas are preserved	X	X	X	X	X						
							1 poly				X													

Notes:
8015 w/ silica gel cleanup
SAMPLE -602:4 PRESERVED WITH HNO_3 (403023)

RELINQUISHED BY:

Signature	DATE/TIME
Melba Policicchio	4-28-03 12:35

RECEIVED BY:

Signature	DATE/TIME
[signature]	4/28/03 1235

Signature

rec'd intact in ice cooler at room temp

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD		
Field ID:	GAIA TP-5	Batch#:	81152
Matrix:	Water	Sampled:	04/25/03
Units:	ug/L	Received:	04/28/03

Type: SAMPLE Lab ID: 164976-002

Analyte	Result	RL	Diln Fac	Analyzed	Analysis
Gasoline C7-C12	17,000	250	5.000	04/29/03	8015B
Benzene	3,100	5.0	10.00	04/30/03	EPA 8021B
Toluene	200	2.5	5.000	04/29/03	EPA 8021B
Ethylbenzene	1,300	2.5	5.000	04/29/03	EPA 8021B
m,p-Xylenes	1,300	2.5	5.000	04/29/03	EPA 8021B
o-Xylene	230	2.5	5.000	04/29/03	EPA 8021B

Surrogate	%REC	Limits	Diln Fac	Analyzed	Analysis
Trifluorotoluene (FID)	131	68-145	5.000	04/29/03	8015B
Bromofluorobenzene (FID)	108	66-143	5.000	04/29/03	8015B
Trifluorotoluene (PID)	102	53-143	5.000	04/29/03	EPA 8021B
Bromofluorobenzene (PID)	91	52-142	5.000	04/29/03	EPA 8021B

Type: BLANK Diln Fac: 1.000
Lab ID: QC212391 Analyzed: 04/29/03

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	8015B
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)	85	68-145	8015B
Bromofluorobenzene (FID)	87	66-143	8015B
Trifluorotoluene (PID)	78	53-143	EPA 8021B
Bromofluorobenzene (PID)	80	52-142	EPA 8021B

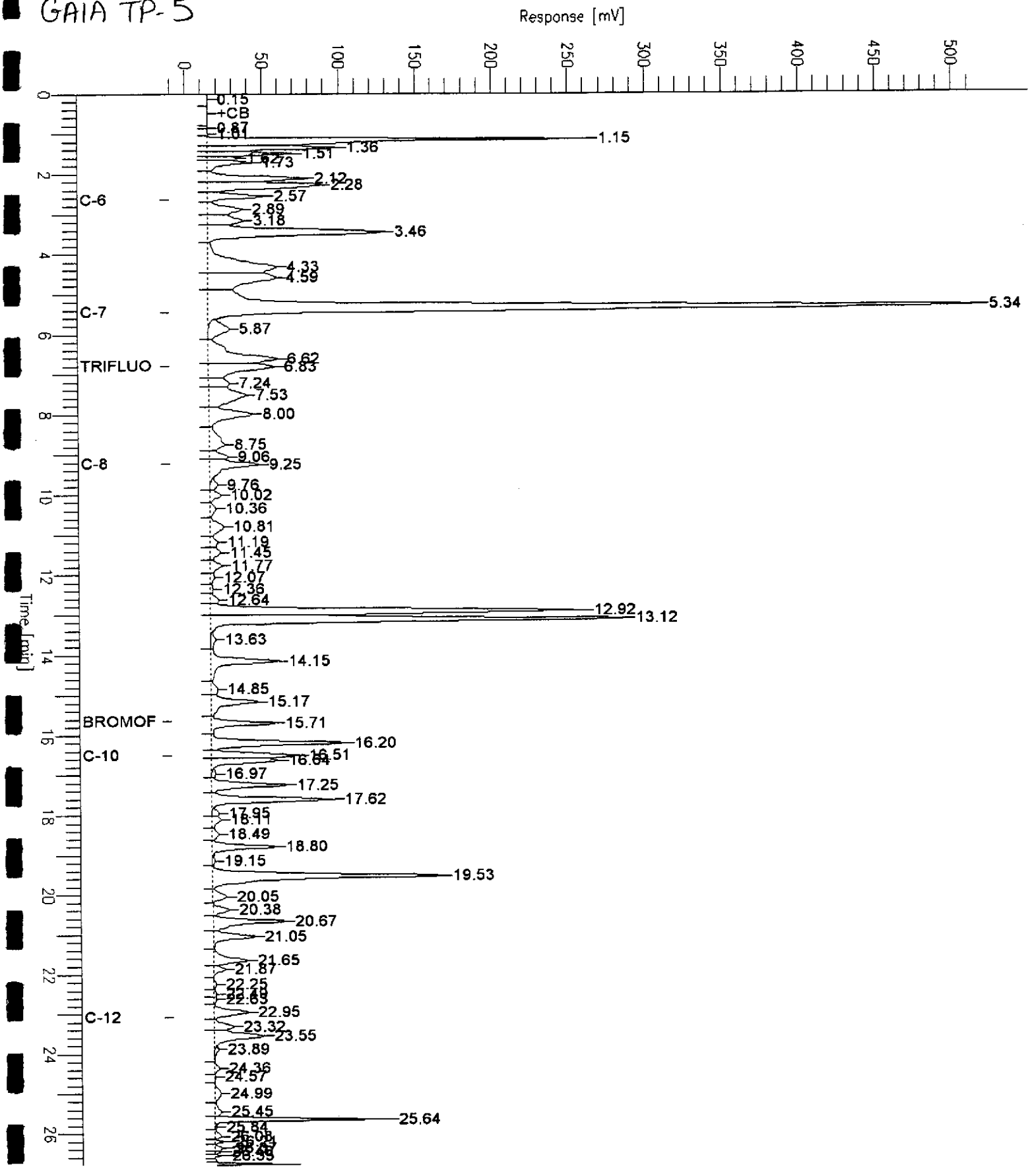
ND= Not Detected
RL= Reporting Limit

GC19 TVH 'X' Data File (FID)

[redacted]ample Name : 164976-002,81152,tvh+btxe
[redacted]ileName : G:\GC19\DATA\119X023.raw
[redacted]ethod : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: -11 mV

Sample #: f7 Page 1 of 1
Date : 4/29/03 10:10 PM
Time of Injection: 4/29/03 09:43 PM
Low Point : -10.55 mV High Point : 518.38 mV
Plot Scale: 528.9 mV

GAIA TP-5

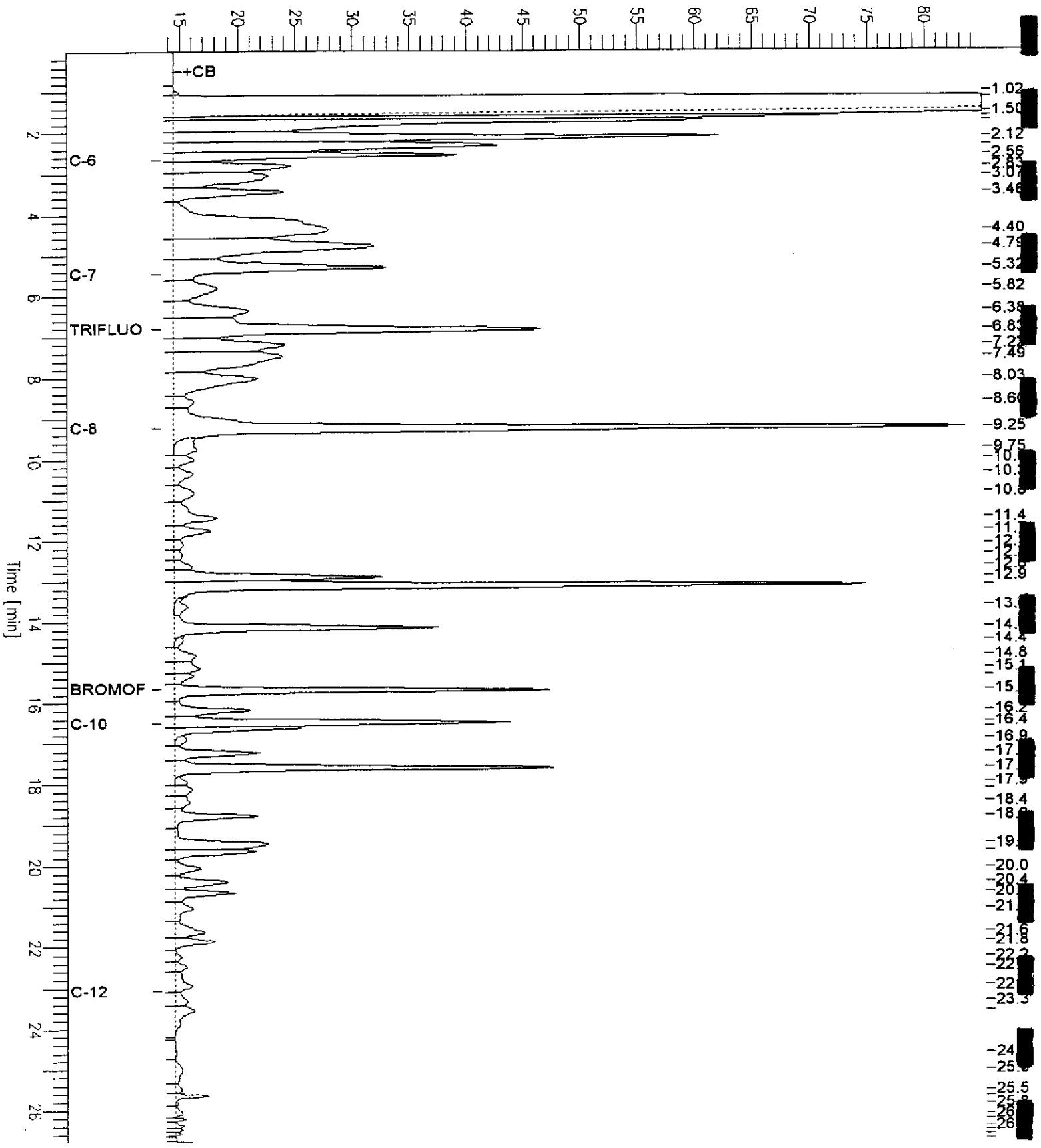


GC19 TVH 'X' Data File (FID)

Sample Name : ccv/lcs,qc212393,81152,03ws06B2,2.5/5000
FileName : G:\GC19\DATA\119X002.RAW
Method :
Start Time : 0.02 min End Time : 26.80 min
Scale Factor: 0.0 Plot Offset: 13 mV

Sample #: Page 1 of 1
Date : 4/30/03 10:52 AM
Time of Injection: 4/29/03 09:51 AM
Low Point : 13.33 mV High Point : 84.93 mV
Plot Scale: 71.6 mV

Gasoline



Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC212393	Batch#:	81152
Matrix:	Water	Analyzed:	04/29/03
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	928.1	93	79-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	97	68-145
Bromofluorobenzene (FID)	79	66-143

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC212392	Batch#:	81152
Matrix:	Water	Analyzed:	04/29/03
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Benzene	10.00	10.26	103	65-122
Toluene	10.00	9.394	94	67-121
Ethylbenzene	10.00	9.777	98	70-121
m,p-Xylenes	20.00	18.08	90	72-125
o-Xylene	10.00	9.083	91	73-122

Surrogate	%REC	Limits
Trifluorotoluene (PID)	74	53-143
Bromofluorobenzene (PID)	76	52-142

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8021B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	164943-005	Batch#:	81152
Matrix:	Water	Sampled:	04/24/03
Units:	ug/L	Received:	04/25/03

Type: MS Analyzed: 04/29/03
Lab ID: QC212445

Analyte	MSS Result	Spiked	Result	%REC	Limits
Benzene	<0.06500	20.00	21.73	109	52-149
Toluene	<0.03700	20.00	20.44	102	69-130
Ethylbenzene	<0.04500	20.00	20.56	103	70-131
m,p-Xylenes	<0.07200	40.00	39.77	99	68-137
o-Xylene	<0.05700	20.00	20.08	100	73-133

Surrogate	%REC	Limits
Trifluorotoluene (PID)	86	53-143
Bromofluorobenzene (PID)	89	52-142

Type: MSD Analyzed: 04/30/03
Lab ID: QC212446

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	20.00	22.11	111	52-149	2	30
Toluene	20.00	20.34	102	69-130	0	30
Ethylbenzene	20.00	21.72	109	70-131	6	30
m,p-Xylenes	40.00	40.11	100	68-137	1	30
o-Xylene	20.00	20.45	102	73-133	2	30

Surrogate	%REC	Limits
Trifluorotoluene (PID)	87	53-143
Bromofluorobenzene (PID)	92	52-142

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD		
Field ID:	GAIA TP5@4.0	Sampled:	04/25/03
Matrix:	Soil	Received:	04/28/03
Basis:	as received	Analyzed:	04/28/03
Batch#:	81136		

Type: SAMPLE
Lab ID: 164976-001
Diln Fac: 50.00

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	2,400	50	mg/Kg	8015B
Benzene	11,000	250	ug/Kg	EPA 8021B
Toluene	ND	250	ug/Kg	EPA 8021B
Ethylbenzene	22,000	250	ug/Kg	EPA 8021B
m,p-Xylenes	7,100 C	250	ug/Kg	EPA 8021B
o-Xylene	4,200 C	250	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	142	58-144	8015B
Bromofluorobenzene (FID)	179 *	60-146	8015B
Trifluorotoluene (PID)	113	67-146	EPA 8021B
Bromofluorobenzene (PID)	116	60-137	EPA 8021B

Type: BLANK
Lab ID: QC212330
Diln Fac: 1.000

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.0	mg/Kg	8015B
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)	98	58-144	8015B
Bromofluorobenzene (FID)	104	60-146	8015B
Trifluorotoluene (PID)	88	67-146	EPA 8021B
Bromofluorobenzene (PID)	98	60-137	EPA 8021B

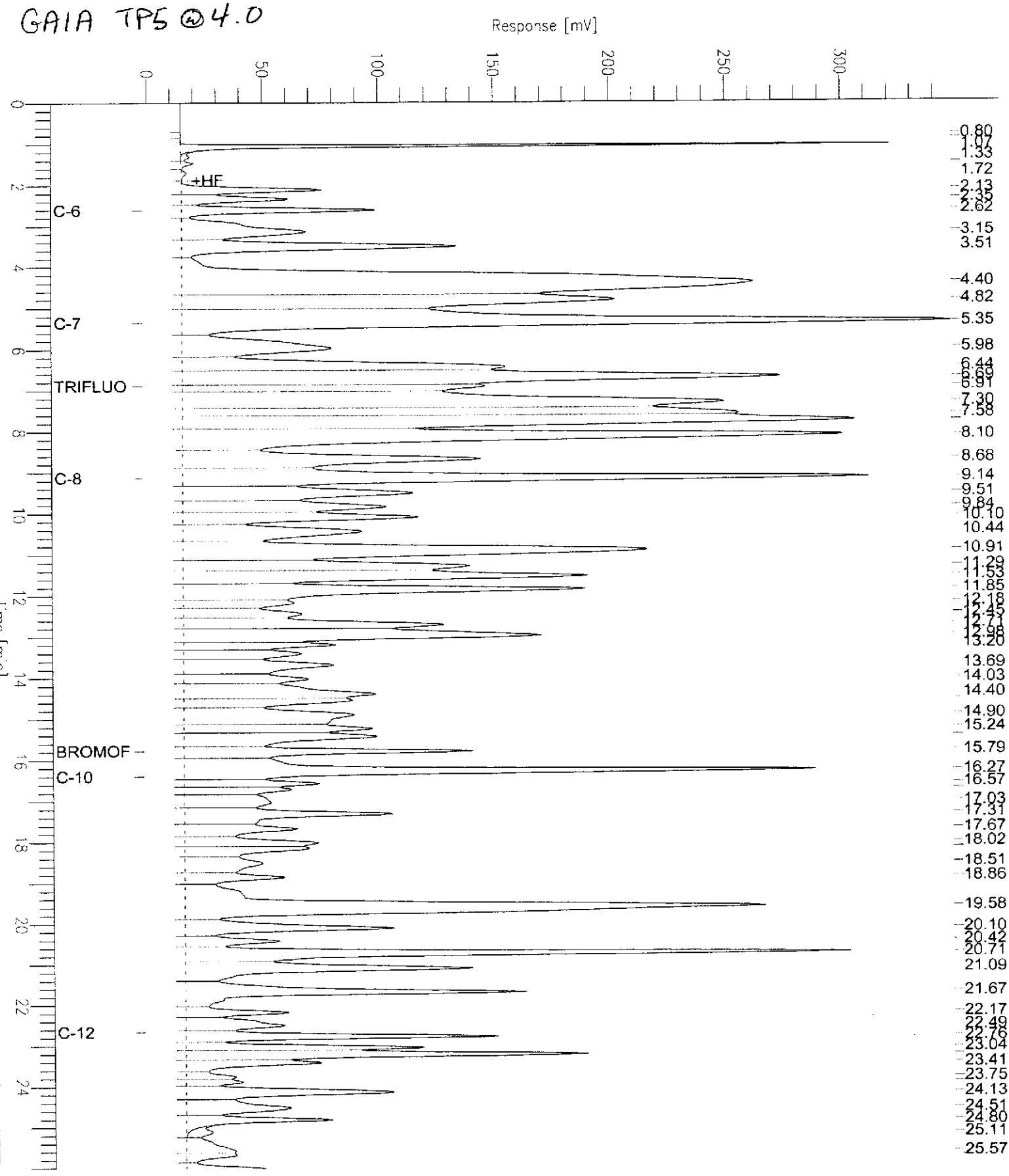
*= Value outside of QC limits; see narrative
C= Presence confirmed, but RPD between columns exceeds 40%
ND= Not Detected
RL= Reporting Limit

GC07 TVH 'A' Data File RTX 502

[redacted]ample Name : 164976-001,81136
[redacted]ileName : G:\GC07\DATA\118A005.raw
[redacted]ethod : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: -2 mV

Sample #: a
Date : 4/29/03 07:47 AM
Time of Injection: 4/28/03 05:51 PM
Low Point : -1.97 mV High Point : 347.89 mV
Plot Scale: 349.9 mV

GAIA TP5 @ 4.0



GC07 TVH 'A' Data File RTX 502

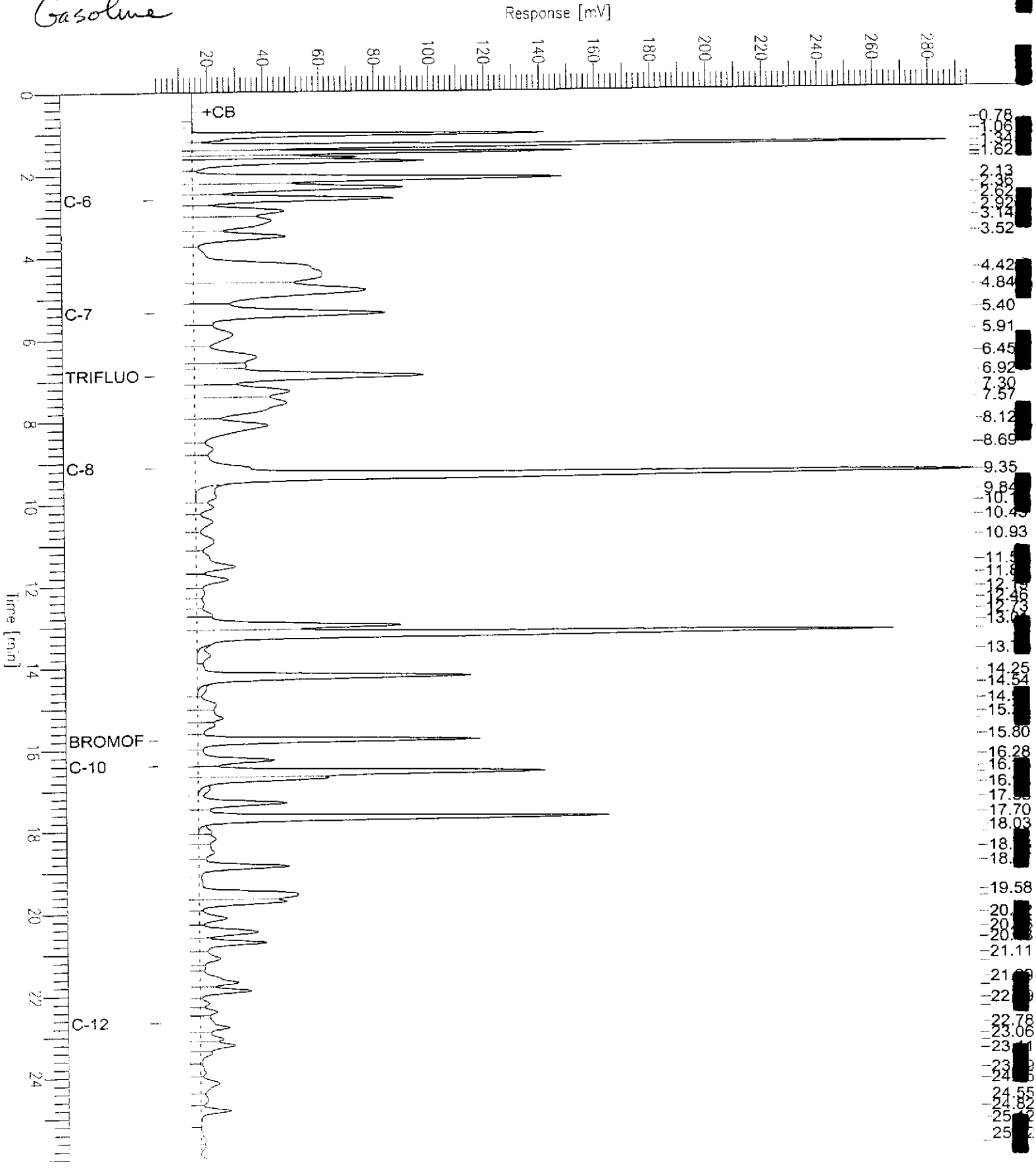
Sample Name : ccv/lcs,qc212332,81136,03ws0682,5/5000
FileName : G:\GC07\DATA\118A002.raw
Method : TVHBTXE
Start Time : 0.00 min
Scale Factor: 1.0

End Time : 26.00 min
Plot Offset: 1 mV

Sample #:
Date : 4/28/03 02:43 PM
Time of Injection: 4/28/03 02:16 PM
Low Point : 0.74 mV
Plot Scale: 293.9 mV

High Point : 294.66 mV

Gasoline



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8021B
Type:	LCS	Basis:	as received
Lab ID:	QC212331	Diln Fac:	1.000
Matrix:	Soil	Batch#:	81136
Units:	ug/Kg	Analyzed:	04/28/03

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12		NA		
Benzene	100.0	97.73	98	65-120
Toluene	100.0	91.79	92	69-120
Ethylbenzene	100.0	90.58	91	68-121
m,p-Xylenes	200.0	179.1	90	70-124
o-Xylene	100.0	91.51	92	73-121

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		90	67-146
Bromofluorobenzene (PID)		91	60-137

NA= Not Analyzed

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	8015B
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Batch#:	81136
Basis:	as received	Analyzed:	04/28/03

Type: BS Lab ID: QC212332

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	10.24	102	78-120
Benzene		NA		
Toluene		NA		
Ethylbenzene		NA		
m,p-Xylenes		NA		
o-Xylene		NA		

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		116	58-144
Bromofluorobenzene (FID)		108	60-146
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

Type: BSD Lab ID: QC212369

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.00	10.42	104	78-120	2	20
Benzene		NA				
Toluene		NA				
Ethylbenzene		NA				
m,p-Xylenes		NA				
o-Xylene		NA				

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		113	58-144
Bromofluorobenzene (FID)		105	60-146
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

NA= Not Analyzed
RPD= Relative Percent Difference

4.0

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	GAIA TP-5	Sampled:	04/25/03
Matrix:	Water	Received:	04/28/03
Units:	ug/L	Prepared:	04/30/03
Batch#:	81176	Analyzed:	05/01/03

Type:	SAMPLE	Diln Fac:	2.000
Lab ID:	164976-002	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	8,400 H L Y	100
Motor Oil C24-C36	6,700	600

Surrogate	%REC	Limits
Hexacosane	110	39-137

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC212488	Cleanup Method:	EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane	119	39-137

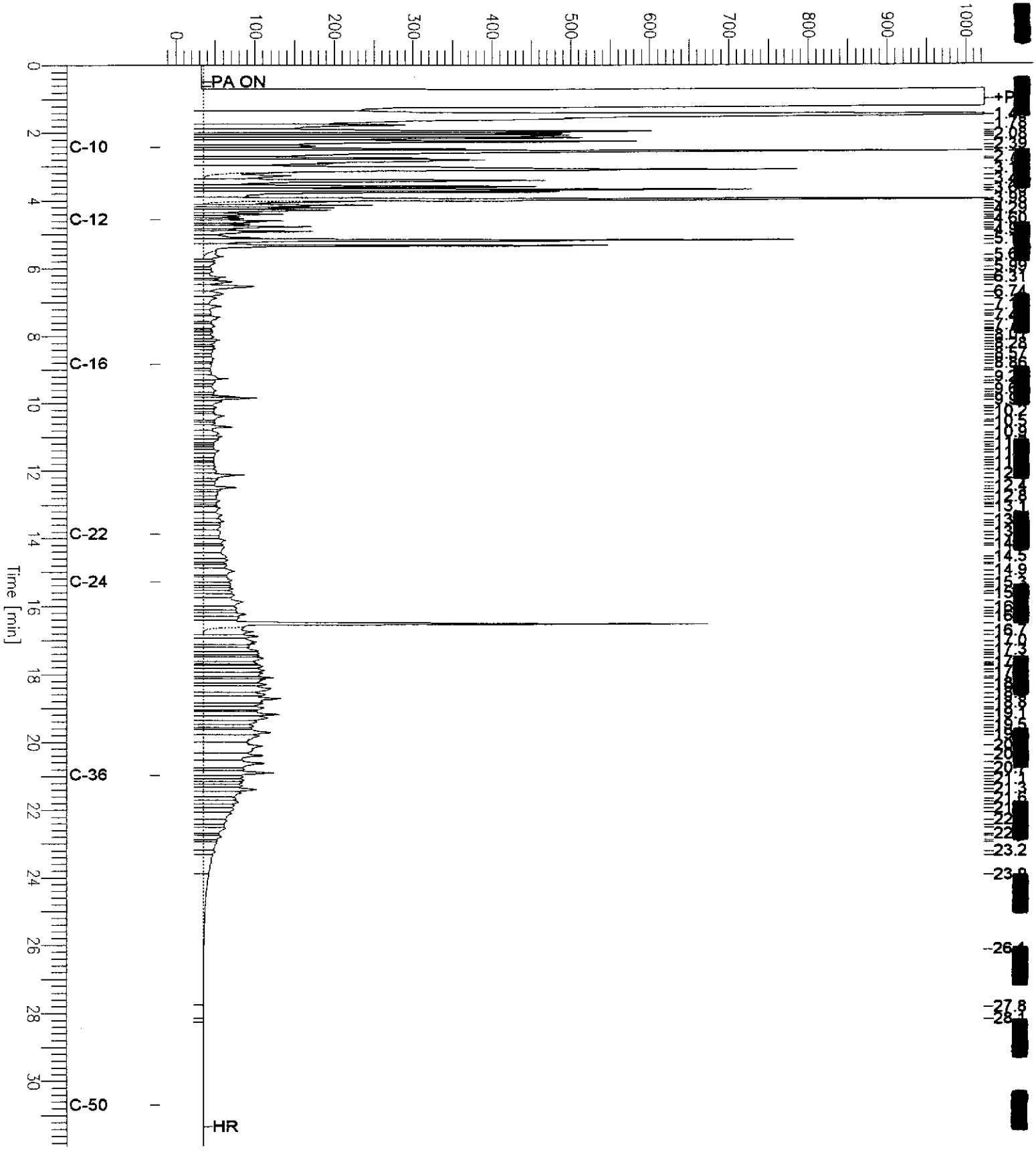
H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 164976-002sg,81176
FileName : G:\GC17\CHA\121A009.RAW
Method : ATEH107.MTH
Start Time : 0.00 min End Time : 31.90 min
Scale Factor: 0.0 Plot Offset: -20 mV

Sample #: 81176
Date : 5/2/03 08:20 AM
Time of Injection: 5/1/03 11:04 PM
Low Point : -19.98 mV High Point : 1024.00 mV
Plot Scale: 1044.0 mV

GAIA TP-5

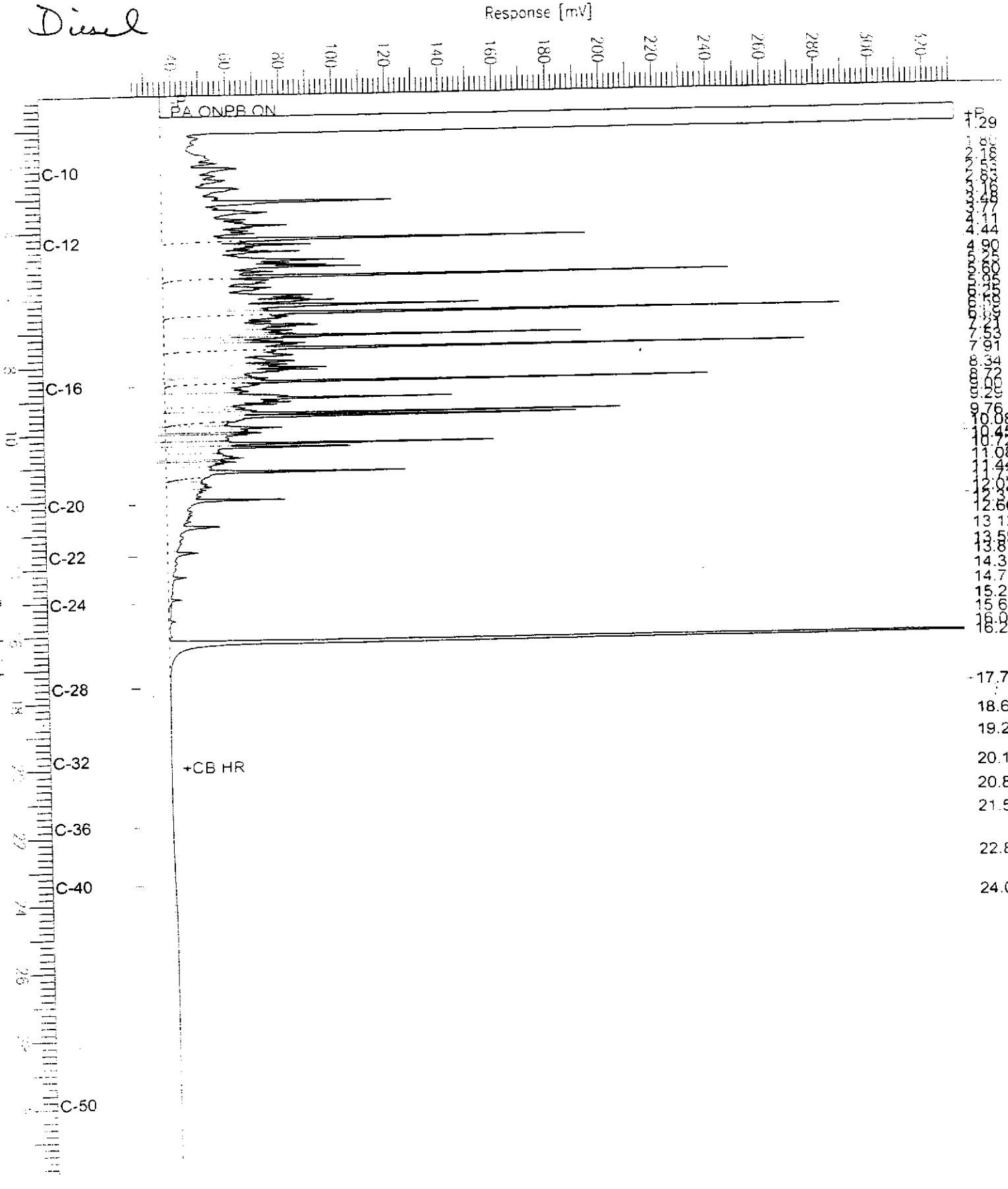


Chromatogram

ple Name : ccv,03ws0520,dsl
eName : G:\GC13\CHB\120B002.RAW
Method : BTEH106.MTH
Start Time : 0.01 min End Time : 31.91 min
le Factor: 0.0 Plot Offset: 25 mV

Sample #: 500mg/L
Date : 4/30/03 10:26 AM
Time of Injection: 4/30/03 09:18 AM
Low Point : 25.23 mV High Point : 331.98 mV
Plot Scale: 306.7 mV

Diesel

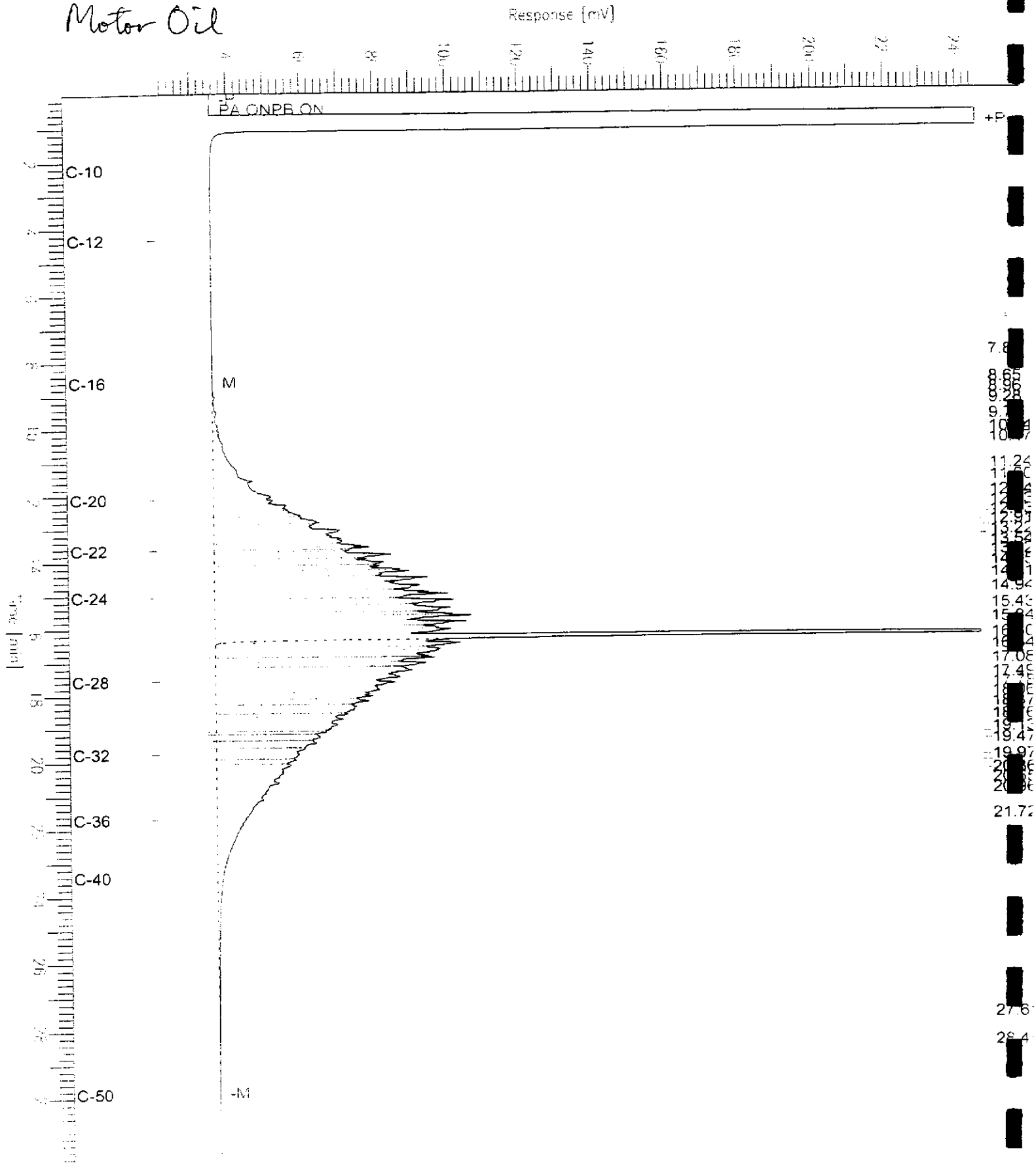


Chromatogram

Sample Name : ccv,03ws0550,mo
FileName : G:\GC13\CHB\120B003.RAW
Method : BTEH106.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 21 mV

Sample #: 500mg/L
Date : 4/30/03 10:40 AM
Time of Injection: 4/30/03 09:57 AM
Low Point : 20.75 mV High Point : 245.40 mV
Plot Scale: 224.6 mV

Motor Oil



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	81176
Units:	ug/L	Prepared:	04/30/03
Diln Fac:	1.000		

Type: BS
Lab ID: QC212489
Analyzed: 04/30/03
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,469	99	37-120

Surrogate	%REC	Limits
Hexacosane	111	39-137

Type: BSD
Lab ID: QC212490
Analyzed: 05/01/03
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,740	110	37-120	10	26

Surrogate	%REC	Limits
Hexacosane	117	39-137

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	SHAKER TABLE
Project#:	H-227	Analysis:	EPA 8015B
Field ID:	GAIA TP5@4.0	Batch#:	81224
Matrix:	Soil	Sampled:	04/25/03
Units:	mg/Kg	Received:	04/28/03
Basis:	as received	Prepared:	05/01/03

Type:	SAMPLE	Analyzed:	05/07/03
Lab ID:	164976-001	Cleanup Method:	EPA 3630C
Diln Fac:	5.000		

Analyte	Result	RL
Diesel C10-C24	920 H L Y	5.0
Motor Oil C24-C36	1,800	25

Surrogate	%REC	Limits
Hexacosane	115	48-137

Type:	BLANK	Analyzed:	05/05/03
Lab ID:	QC212688	Cleanup Method:	EPA 3630C
Diln Fac:	1.000		

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

Surrogate	%REC	Limits
Hexacosane	93	48-137

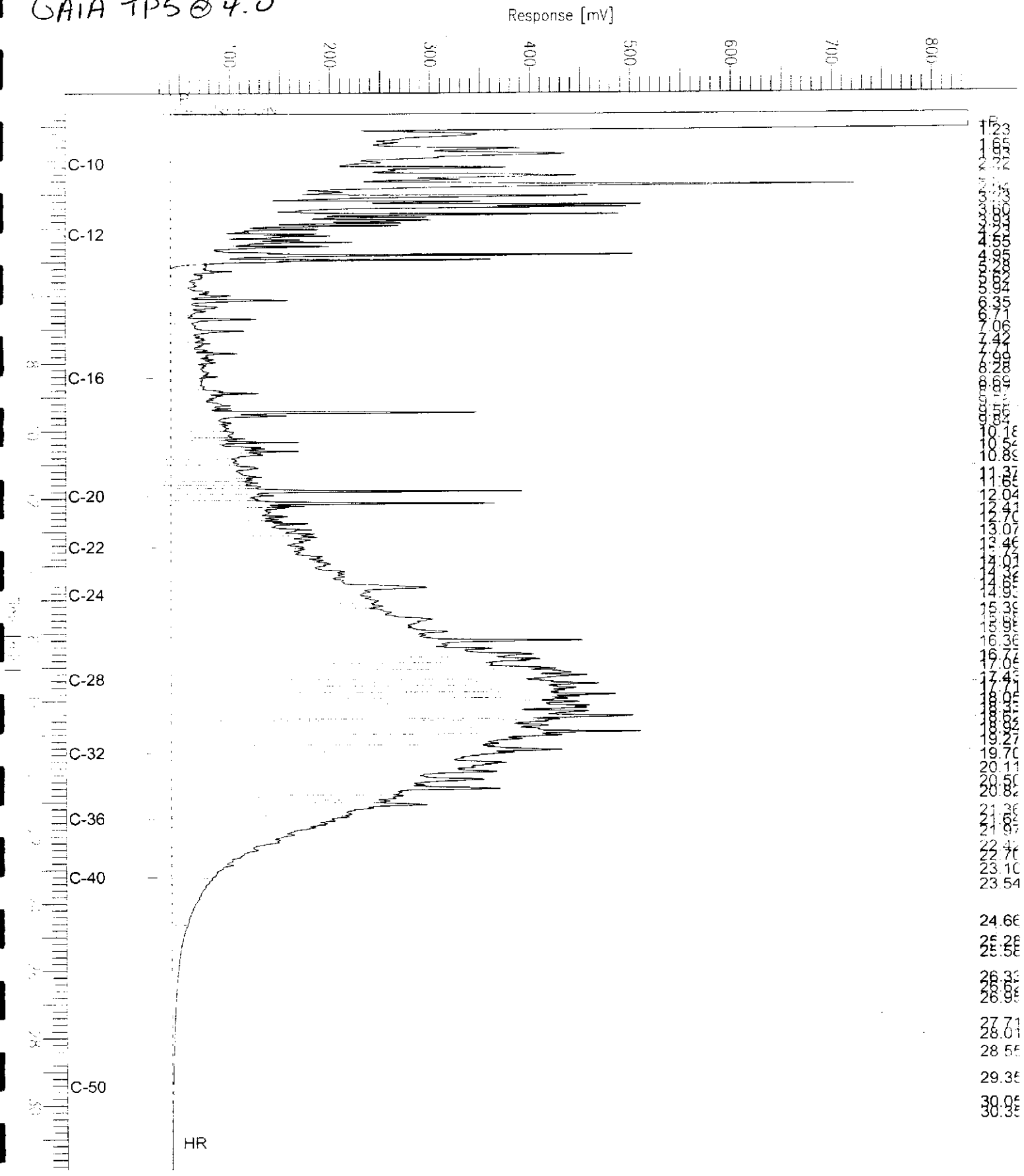
H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 164976-001sg,81224
FileName : G:\GC13\CHB\124B089.RAW
Method : BTEH122.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 27 mV

Sample #: 81224 Page 1 of 1
Date : 5/7/03 08:53 AM
Time of Injection: 5/7/03 04:47 AM
Low Point : 26.73 mV High Point : 836.59 mV
Plot Scale: 809.9 mV

GAIA TP5@4.0



Chromatogram

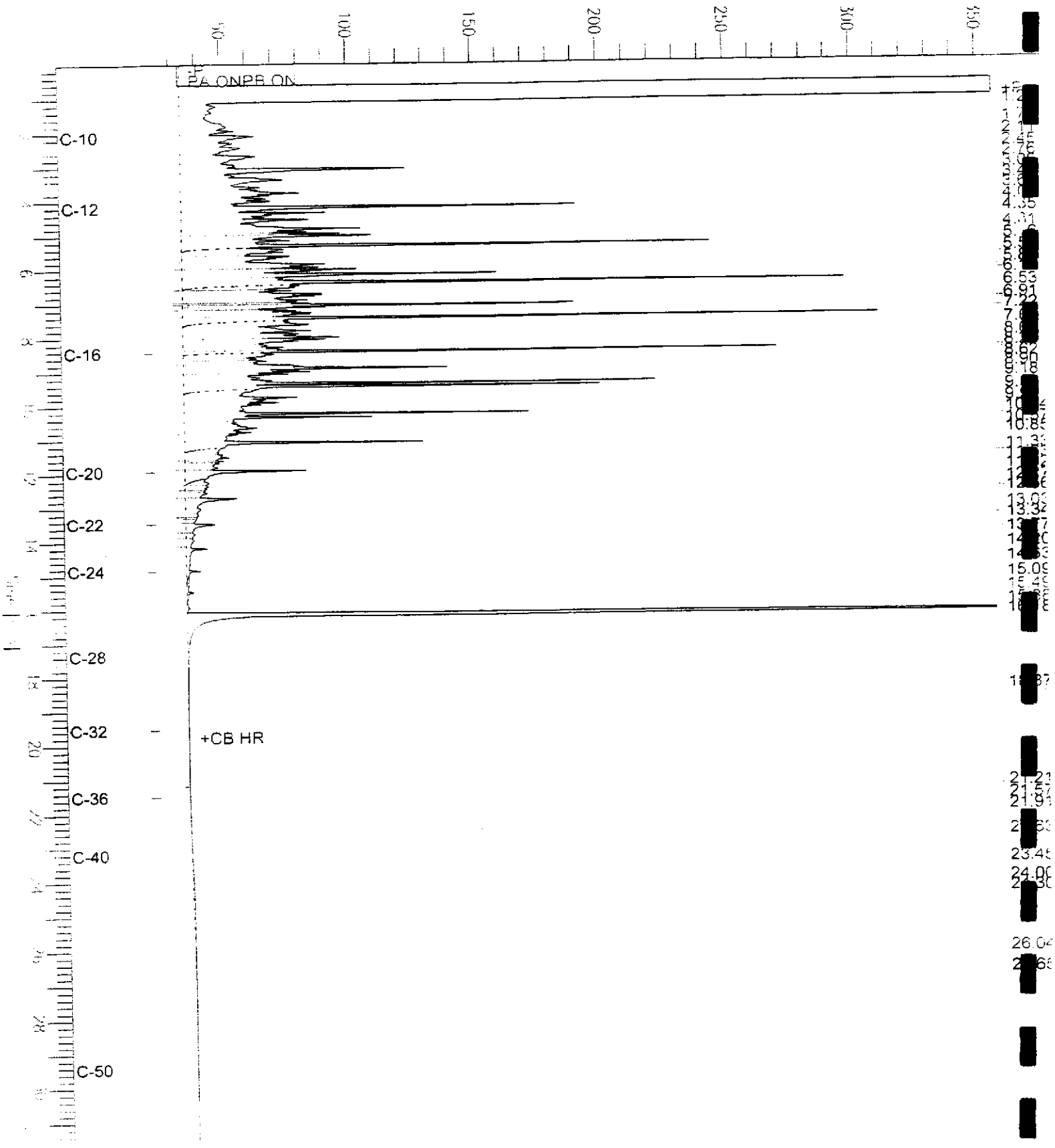
Sample Name : ccv,03ws0520,dsl
FileName : G:\GC13\CHB\121B006.RAW
Method : BTEH122.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: 23 mV

Sample #: 500mg/L
Date : 5/2/03 10:12 AM
Time of Injection: 5/1/03 07:32 PM
Low Point : 22.80 mV
Plot Scale: 333.7 mV

High Point : 356.48 mV

Diesel



Chromatogram

le Name : ccv,03ws0550,mo
Name : G:\GC13\CHB\121B007.RAW
ethod : BTEH122.MTH
tart Time : 0.01 min
e Factor: 0.0

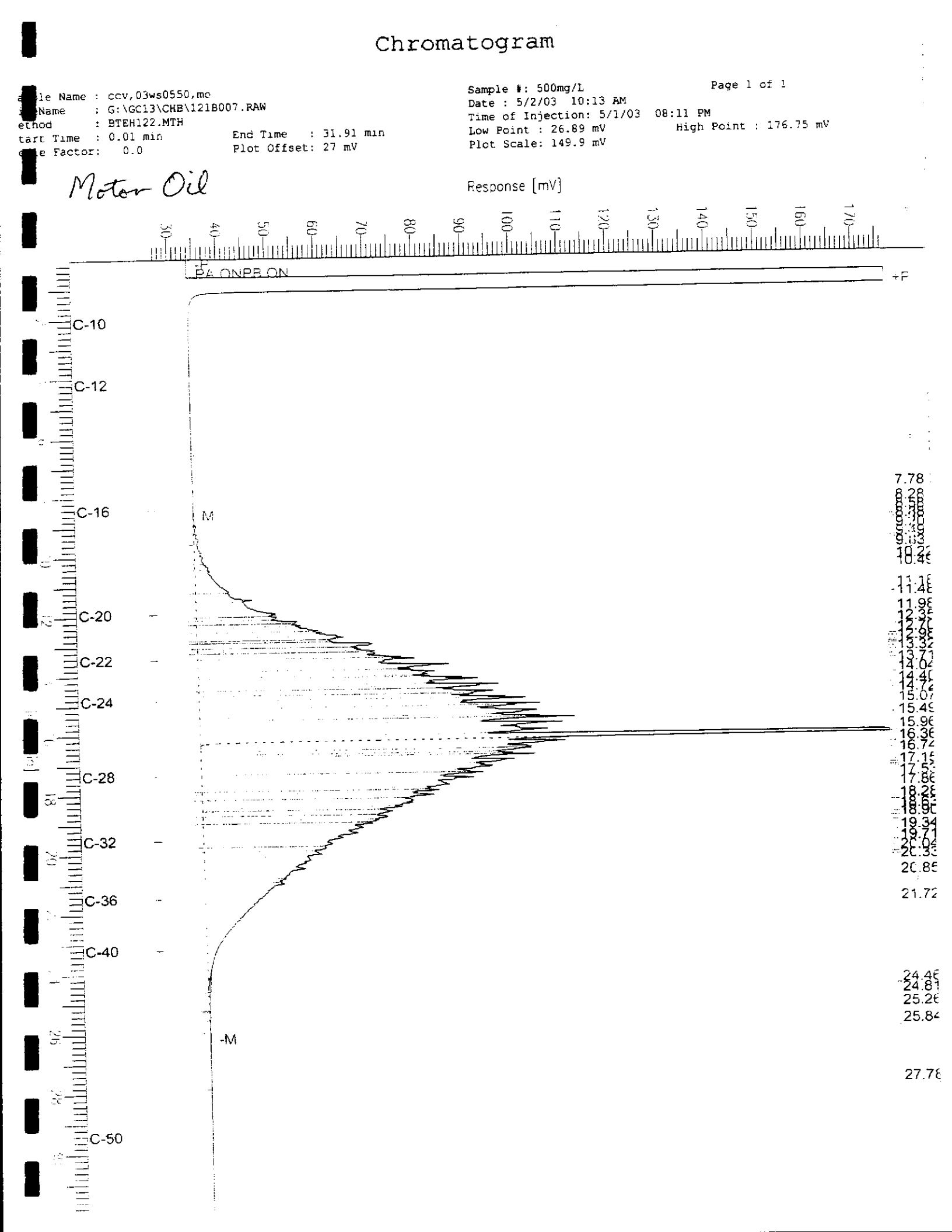
End Time : 31.91 min
Plot Offset: 27 mV

Sample #: 500mg/L
Date : 5/2/03 10:13 AM
Time of Injection: 5/1/03 08:11 PM
Low Point : 26.89 mV
Plot Scale: 149.9 mV

High Point : 176.75 mV

Motor Oil

Response [mV]



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	SHAKER TABLE
Project#:	H-227	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC212689	Batch#:	81224
Matrix:	Soil	Prepared:	05/01/03
Units:	mg/Kg	Analyzed:	05/05/03
Basis:	as received		

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	50.32	61.12	121	56-121

Surrogate	%REC	Limits
Hexacosane	116	48-137

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	SHAKER TABLE
Project#:	H-227	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	81224
MSS Lab ID:	165011-013	Sampled:	04/29/03
Matrix:	Soil	Received:	04/30/03
Units:	mg/Kg	Prepared:	05/01/03
Basis:	as received	Analyzed:	05/01/03
Diln Fac:	1.000		

Type: MS Lab ID: QC212690

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	2.657	49.95	47.61	90	37-128

Surrogate	%REC	Limits
Hexacosane	94	48-137

Type: MSD Lab ID: QC212691

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.74	55.46	106	37-128	16	37

Surrogate	%REC	Limits
Hexacosane	103	48-137

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	GAIA TP-5	Sampled:	04/25/03
Matrix:	Water	Received:	04/28/03
Units:	ug/L	Analyzed:	04/30/03
Batch#:	81187		

Type:	SAMPLE	Diln Fac:	6.250
Lab ID:	164976-002		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	63
MTBE	ND	3.1
Isopropyl Ether (DIPE)	16	3.1
Ethyl tert-Butyl Ether (ETBE)	ND	3.1
Methyl tert-Amyl Ether (TAME)	ND	3.1
1,2-Dichloroethane	ND	3.1
1,2-Dibromoethane	ND	3.1

Surrogate	%REC	Limits
Dibromofluoromethane	105	80-121
1,2-Dichloroethane-d4	97	77-130
Toluene-d8	97	80-120
Bromofluorobenzene	98	80-120

NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	GAIA TP-5	Sampled:	04/25/03
Matrix:	Water	Received:	04/28/03
Units:	ug/L	Analyzed:	04/30/03
Batch#:	81187		

Type: BLANK Diln Fac: 1.000
Lab ID: QC212546

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
1,2-Dichloroethane	ND	0.5
1,2-Dibromoethane	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	106	80-121
1,2-Dichloroethane-d4	100	77-130
Toluene-d8	96	80-120
Bromofluorobenzene	99	80-120

Type: BLANK Lab ID: QC212547

Analyte	Result
tert-Butyl Alcohol (TBA)	NA
MTBE	NA
Isopropyl Ether (DIPE)	NA
Ethyl tert-Butyl Ether (ETBE)	NA
Methyl tert-Amyl Ether (TAME)	NA
1,2-Dichloroethane	NA
1,2-Dibromoethane	NA

Surrogate	Result
Dibromofluoromethane	NA
1,2-Dichloroethane-d4	NA
Toluene-d8	NA
Bromofluorobenzene	NA

NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	81187
Units:	ug/L	Analyzed:	04/30/03
Diln Fac:	1.000		

Type: BS Lab ID: QC212544

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	49.02	98	49-144

Surrogate	%REC	Limits
Dibromofluoromethane	104	80-121
1,2-Dichloroethane-d4	98	77-130
Toluene-d8	96	80-120
Bromofluorobenzene	96	80-120

Type: BSD Lab ID: QC212545

Analyte	Spiked	Result	%REC	Limits	RPD	Li
MTBE	50.00	50.55	101	49-144	3	21

Surrogate	%REC	Limits
Dibromofluoromethane	105	80-121
1,2-Dichloroethane-d4	99	77-130
Toluene-d8	97	80-120
Bromofluorobenzene	97	80-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	GAIA TP5@4.0	Sampled:	04/25/03
Basis:	as received	Received:	04/28/03
Batch#:	81162	Analyzed:	04/29/03

Type:	SAMPLE	Units:	ug/Kg
Lab ID:	164976-001	Diln Fac:	125.0
Matrix:	Soil		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	13,000
MTBE	ND	630
Isopropyl Ether (DIPE)	ND	630
Ethyl tert-Butyl Ether (ETBE)	ND	630
Methyl tert-Amyl Ether (TAME)	ND	630
1,2-Dichloroethane	ND	630
1,2-Dibromoethane	ND	630

Surrogate	%REC	Limits
Dibromofluoromethane	94	74-124
1,2-Dichloroethane-d4	104	75-128
Toluene-d8	95	80-111
Bromofluorobenzene	91	75-127

Type:	BLANK	Units:	ug/L
Lab ID:	QC212428	Diln Fac:	1.000
Matrix:	Water		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	100
MTBE	ND	5.0
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	ND	5.0
Methyl tert-Amyl Ether (TAME)	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dibromoethane	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	97	74-124
1,2-Dichloroethane-d4	105	75-128
Toluene-d8	100	80-111
Bromofluorobenzene	93	75-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC212427	Batch#:	81162
Matrix:	Water	Analyzed:	04/29/03
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	46.05	92	63-121

Surrogate	%REC	Limits
Dibromofluoromethane	99	74-124
1,2-Dichloroethane-d4	107	75-128
Toluene-d8	98	80-111
Bromofluorobenzene	93	75-127

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Diln Fac:	100.0
MSS Lab ID:	164962-005	Batch#:	81162
Matrix:	Soil	Sampled:	04/24/03
Units:	ug/Kg	Received:	04/25/03
Basis:	as received	Analyzed:	04/30/03

Type: MS Lab ID: QC212516

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<20.00	5,000	4,659	93	53-131

Surrogate	%REC	Limits
Dibromofluoromethane	91	74-124
1,2-Dichloroethane-d4	100	75-128
Toluene-d8	100	80-111
Bromofluorobenzene	92	75-127

Type: MSD Lab ID: QC212517

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	5,000	4,775	96	53-131	2	30

Surrogate	%REC	Limits
Dibromofluoromethane	94	74-124
1,2-Dichloroethane-d4	99	75-128
Toluene-d8	100	80-111
Bromofluorobenzene	94	75-127

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Lead

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 3010
Project#:	H-227	Analysis:	EPA 6010B
Analyte:	Lead	Batch#:	81221
Field ID:	GAIA TP-5	Sampled:	04/25/03
Matrix:	Water	Received:	04/28/03
Units:	ug/L	Prepared:	05/01/03
Diln Fac:	1.000	Analyzed:	05/02/03

Type	Lab ID	Result	RL
SAMPLE	164976-002	570	3.0
BLANK	QC212673	ND	3.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Lead

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 3010
Project#:	H-227	Analysis:	EPA 6010B
Analyte:	Lead	Batch#:	81221
Matrix:	Water	Prepared:	05/01/03
Units:	ug/L	Analyzed:	05/02/03
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC212674	100.0	96.70	97	78-120		
BSD	QC212675	100.0	96.30	96	78-120	0	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Lead

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 3010
Project#:	H-227	Analysis:	EPA 6010B
Analyte:	Lead	Batch#:	81221
Field ID:	ZZZZZZZZZZ	Sampled:	04/24/03
MSS Lab ID:	164950-001	Received:	04/25/03
Matrix:	Water	Prepared:	05/01/03
Units:	ug/L	Analyzed:	05/02/03
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC212676	6.180	100.0	94.40	88	58-129		
MSD	QC212677		100.0	94.80	89	58-129	0	28

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Lead

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 3050
Project#:	H-227	Analysis:	EPA 6010B
Analyte:	Lead	Batch#:	81209
Field ID:	GAIA TP5@4.0	Sampled:	04/25/03
Matrix:	Soil	Received:	04/28/03
Units:	mg/Kg	Prepared:	04/30/03
Basis:	as received	Analyzed:	05/01/03
Diln Fac:	1.000		

Type	Lab ID	Result	RL
SAMPLE	164976-001	71	0.15
BLANK	QC212615	ND	0.15

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Lead

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 3050
Project#:	H-227	Analysis:	EPA 6010B
Analyte:	Lead	Diln Fac:	1.000
Matrix:	Soil	Batch#:	81209
Units:	mg/Kg	Prepared:	04/30/03
Basis:	as received	Analyzed:	05/01/03

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC212616	100.0	83.50	84	70-120		
BSD	QC212617	100.0	85.00	85	70-120	2	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Lead

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 3050
Project#:	H-227	Analysis:	EPA 6010B
Analyte:	Lead	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	81209
MSS Lab ID:	164946-004	Sampled:	04/24/03
Matrix:	Soil	Received:	04/25/03
Units:	mg/Kg	Prepared:	04/30/03
Basis:	as received	Analyzed:	05/01/03

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC212618	21.66	75.47	86.42	86	46-128		
MSD	QC212619		80.32	97.59	95	46-128	7	39

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Lead

Lab #:	164976	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 3050
Project#:	H-227	Analysis:	EPA 6010B
Analyte:	Lead	Basis:	as received
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
Type:	SSPIKE	Batch#:	81209
MSS Lab ID:	164946-004	Sampled:	04/24/03
Lab ID:	QC212725	Received:	04/25/03
Matrix:	Soil	Prepared:	04/30/03
Units:	mg/Kg	Analyzed:	05/01/03

MSS Result	Spiked	Result	%REC	Limits
21.72	89.69	96.91	84	46-128

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

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

Prepared for:

GAIA Consulting, Inc.
2101 Webster Street
12th Floor
Oakland, CA 94612

Date: 27-MAY-03
Lab Job Number: 165008
Project ID: H-227
Location: 9th Avenue

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 Numbers: **165008**
Client: **GAIA Consulting, Inc.**
Project #: **H-227**
Location: **9th Avenue**

Sampled Date: **04/29/03**
Received Date: **04/29/03**

CASE NARRATIVE

This hardcopy data package contains sample and QC results for one water sample and one soil sample, which were received from the site referenced above on April 29, 2003. The samples were received cold and intact.

Total Volatile Hydrocarbons-Gasoline/BTXE by EPA 8015B/8021B

High surrogate recoveries were observed for both samples as a result of hydrocarbons coeluting with the surrogate. No other analytical problems were encountered.

Total Extractable Hydrocarbons-Diesel, Motor Oil by EPA 8015B

Sample GAIA TP-6 (165008-002) was analyzed at a dilution, which caused the surrogate to be diluted out. No other analytical problems were encountered.

Gasoline Oxygenates, Lead Scavengers by EPA 8260B

High Bromofluorobenzene surrogate recovery was observed for sample GAIA TP-6 @3.0 (CT# 165008-001) as a result of matrix interference. No other 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 # 165008

Project No:
Project Name: 9th Avenue
Project P.O.: A-204
Turnaround Time: Standard

Sampler: Henry Hurkmans
Report To: Melba Politicchio
Company: GAIA Consulting Inc
Telephone: 663-4257
Fax: 663-4141

Laboratory Number (Laboratory For Use)	Sample ID.	Sampling Date Time	Matrix: Soil	Matrix: Water	Matrix: Waste	# of Containers	Preservative: HCL	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: ICE	Field Notes	TPH-g, d, mo (8015M)	8260 Fuel Oxygenates (5 oxy)	8260 Lead Scavengers EDB, 1,2 DCA	BTEX 8021
-1	GAIA TP-6 20	4-29-03 9:35	X			1 Jar				X		X	X	X	+
	GAIA TP-6	4-29-03 10:10		X		5 voas	X					X	X	X	X
	GAIA TP-6					1 amber				X		X	X	X	X

Notes:
TPH w/ silica gel cleanup

RELINQUISHED BY:		RECEIVED BY:	
[signature]	4-29-03 11:50 DATE/TIME	[signature]	4/29/03 12:12 DATE/TIME
	DATE/TIME		DATE/TIME
	DATE/TIME		DATE/TIME

Signature

Rec'd intact in cooler at room temp

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD		
Field ID:	GAIA TP-6	Sampled:	04/29/03
Matrix:	Water	Received:	04/29/03
Units:	ug/L	Analyzed:	04/30/03
Batch#:	81198		

Type: SAMPLE
Lab ID: 165008-002
Diln Fac: 100.0

Analyte	Result	RL	Analysis
Gasoline C7-C12	260,000	5,000	8015B
Benzene	2,000	50	EPA 8021B
Toluene	ND	50	EPA 8021B
Ethylbenzene	1,500	50	EPA 8021B
m,p-Xylenes	350 C	50	EPA 8021B
o-Xylene	ND	50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	154 *	68-145	8015B
Bromofluorobenzene (FID)	164 *	66-143	8015B
Trifluorotoluene (PID)	157 *	53-143	EPA 8021B
Bromofluorobenzene (PID)	134	52-142	EPA 8021B

Type: BLANK
Lab ID: QC212578
Diln Fac: 1.000

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	8015B
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)	123	68-145	8015B
Bromofluorobenzene (FID)	123	66-143	8015B
Trifluorotoluene (PID)	129	53-143	EPA 8021B
Bromofluorobenzene (PID)	126	52-142	EPA 8021B

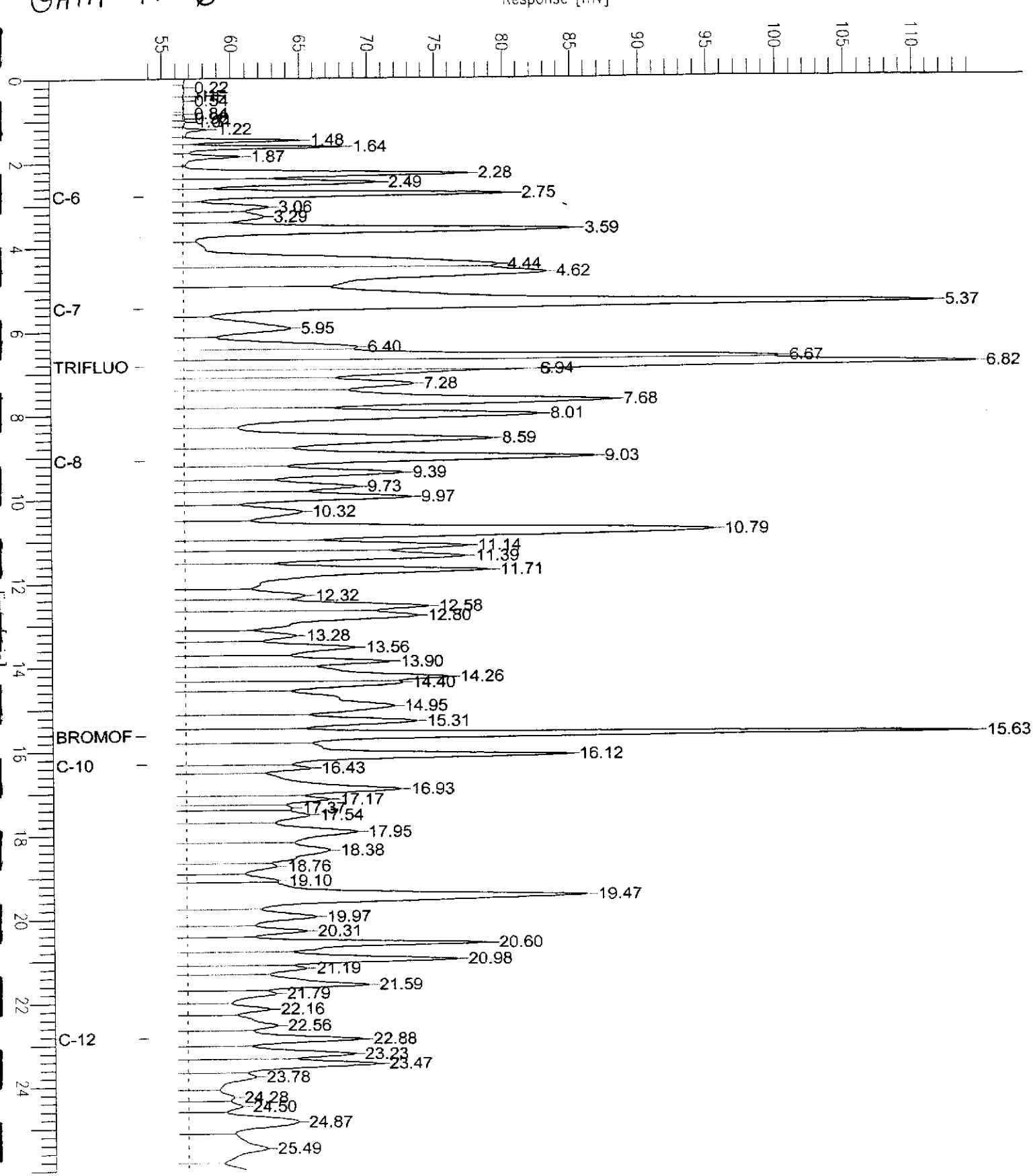
*= Value outside of QC limits; see narrative
C= Presence confirmed, but RPD between columns exceeds 40%
ND= Not Detected
RL= Reporting Limit

GC04 TVH 'J' Data File FID

mple Name : 165008-002,81198
leName : G:\GC04\DATA\120J004.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
ale Factor: 1.0 Plot Offset: 54 mV

Sample #: d1 Page 1 of 1
Date : 4/30/03 03:38 PM
Time of Injection: 4/30/03 03:06 PM
Low Point : 53.64 mV High Point : 114.54 mV
Plot Scale: 60.9 mV

GAIA TP-6



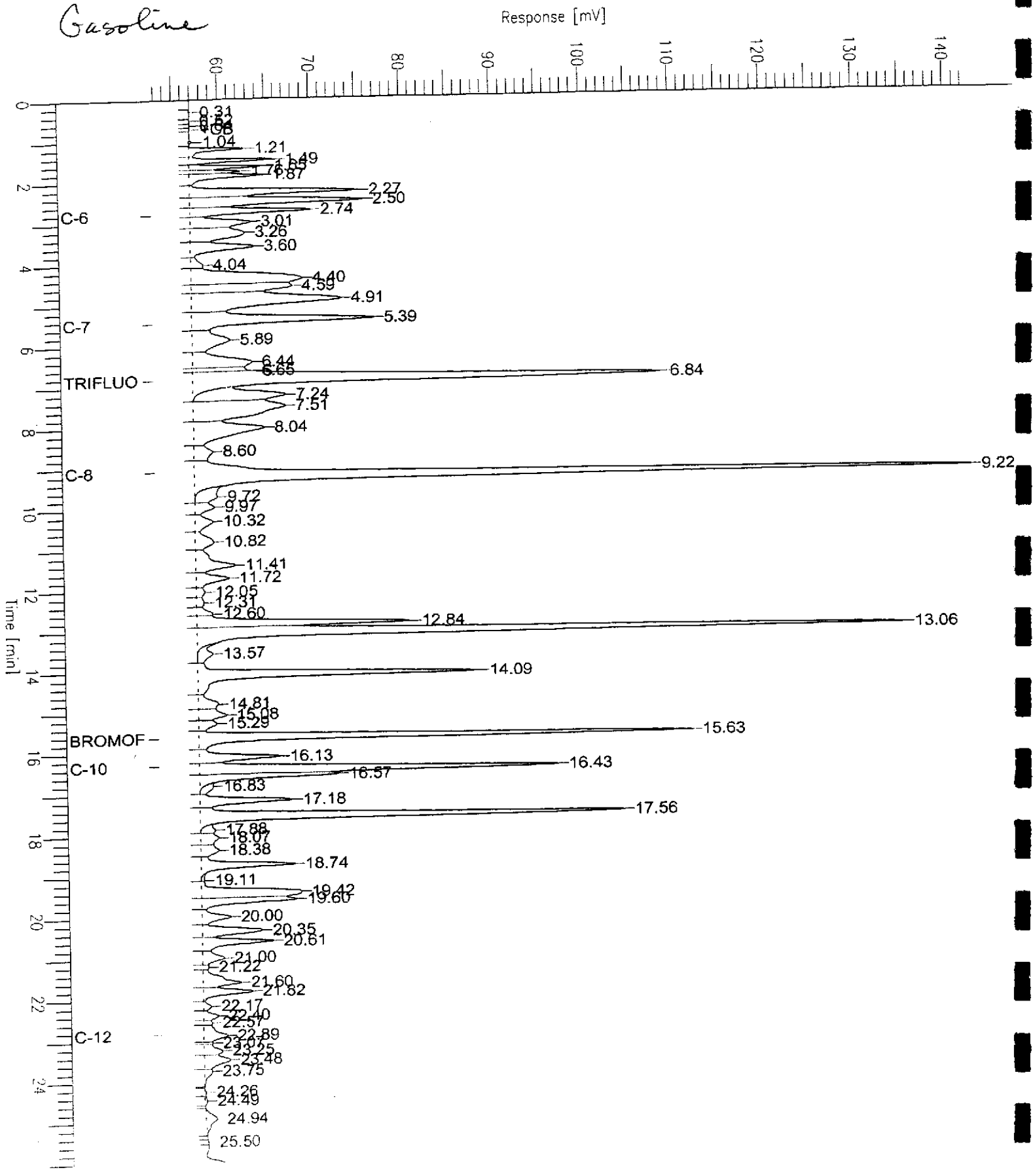
GC04 TVH 'J' Data File FID

mple Name : ccv/lcs,qc212580,81198,03ws0682,2.5/5000
leName : G:\GC04\DATA\120J002.raw
thod : TVHBTXE
art Time : 0.00 min
ale Factor: 1.0

End Time : 26.00 min
Plot Offset: 53 mV

Sample #:
Date : 5/1/03 08:19 AM
Time of Injection: 4/30/03 01:03 PM
Low Point : 52.63 mV
High Point : 142.52 mV
Plot Scale: 89.9 mV

Gasoline



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC212579	Batch#:	81198
Matrix:	Water	Analyzed:	04/30/03
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12		NA		
Benzene	10.00	9.052	91	65-122
Toluene	10.00	8.831	88	67-121
Ethylbenzene	10.00	9.036	90	70-121
m,p-Xylenes	20.00	18.45	92	72-125
o-Xylene	10.00	9.069	91	73-122

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		115	53-143
Bromofluorobenzene (PID)		112	52-142

NA= Not Analyzed

7.0

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	8015B
Matrix:	Water	Batch#:	81198
Units:	ug/L	Analyzed:	04/30/03
Diln Fac:	1.000		

Type: BS Lab ID: QC212580

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,139	114	79-120
Benzene		NA		
Toluene		NA		
Ethylbenzene		NA		
m,p-Xylenes		NA		
o-Xylene		NA		

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		136	68-145
Bromofluorobenzene (FID)		127	66-143
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

Type: BSD Lab ID: QC212603

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,166	108	79-120	5	20
Benzene		NA				
Toluene		NA				
Ethylbenzene		NA				
m,p-Xylenes		NA				
o-Xylene		NA				

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		134	68-145
Bromofluorobenzene (FID)		129	66-143
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

NA= Not Analyzed
RPD= Relative Percent Difference

8.0

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD		
Field ID:	GAIA TP-6@3.0	Sampled:	04/29/03
Matrix:	Soil	Received:	04/29/03
Basis:	as received	Analyzed:	04/30/03
Batch#:	81182		

Type: SAMPLE Diln Fac: 200.0
Lab ID: 165008-001

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	5,300	200	mg/Kg	8015B
Benzene	12,000 C	1,000	ug/Kg	EPA 8021B
Toluene	ND	1,000	ug/Kg	EPA 8021B
Ethylbenzene	46,000	1,000	ug/Kg	EPA 8021B
m,p-Xylenes	12,000 C	1,000	ug/Kg	EPA 8021B
o-Xylene	ND	1,000	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	173 *	58-144	8015B
Bromofluorobenzene (FID)	194 *	60-146	8015B
Trifluorotoluene (PID)	112	67-146	EPA 8021B
Bromofluorobenzene (PID)	122	60-137	EPA 8021B

Type: BLANK Diln Fac: 1.000
Lab ID: QC212524

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	0.20	mg/Kg	8015B
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)	93	58-144	8015B
Bromofluorobenzene (FID)	99	60-146	8015B
Trifluorotoluene (PID)	83	67-146	EPA 8021B
Bromofluorobenzene (PID)	93	60-137	EPA 8021B

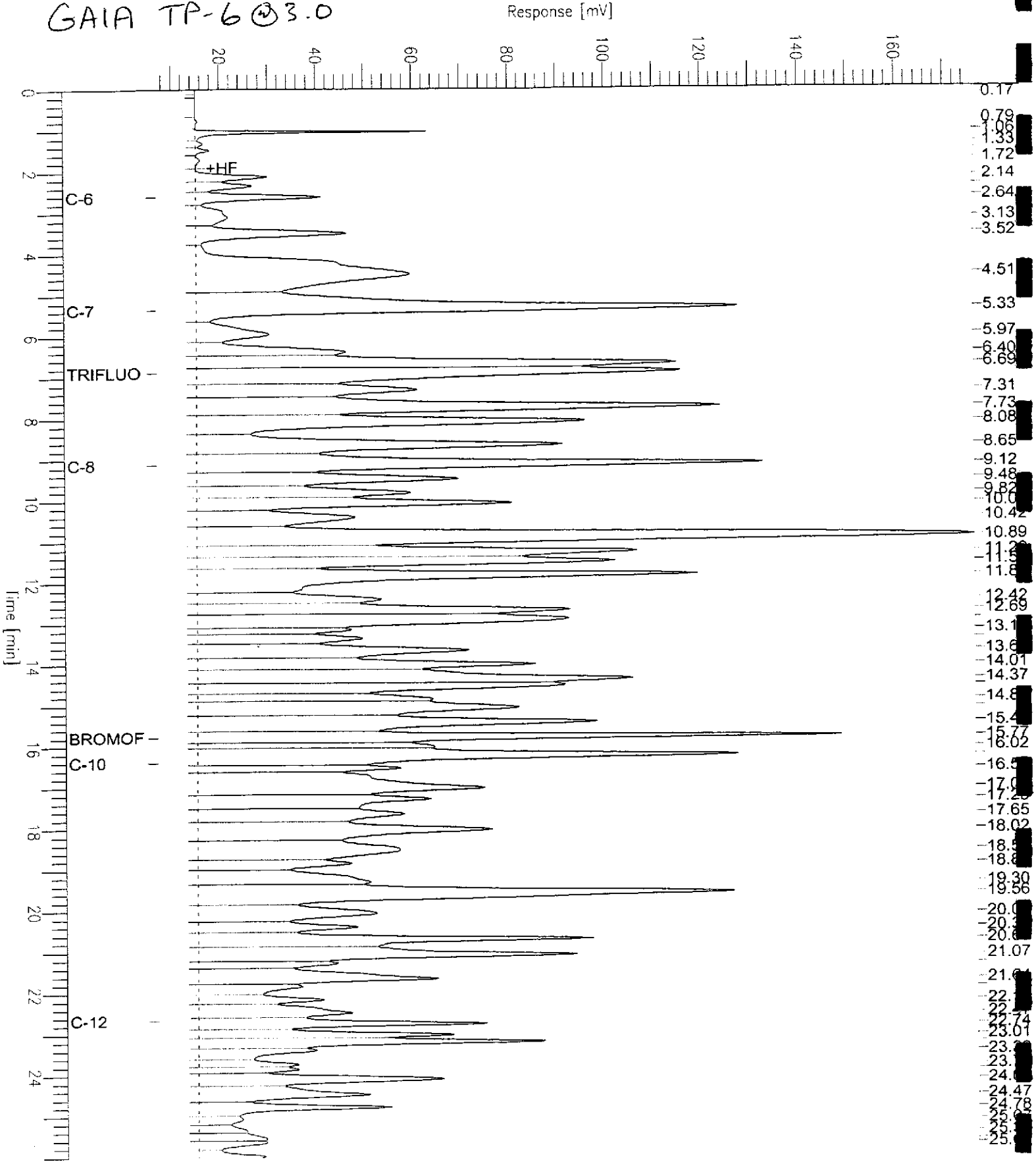
*= Value outside of QC limits; see narrative
C= Presence confirmed, but RPD between columns exceeds 40%
ND= Not Detected
RL= Reporting Limit

GC07 TVH 'A' Data File RTX 502

Sample Name : 165008-001,81182
FileName : G:\GC07\DATA\120A022.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 7 mV

Sample #: a
Date : 5/1/03 08:09 AM
Time of Injection: 4/30/03 09:31 PM
Low Point : 7.03 mV High Point : 175.95 mV
Plot Scale: 168.9 mV

GAIA TP-6 @ 3.0



GC07 TVH 'A' Data File RTX 502

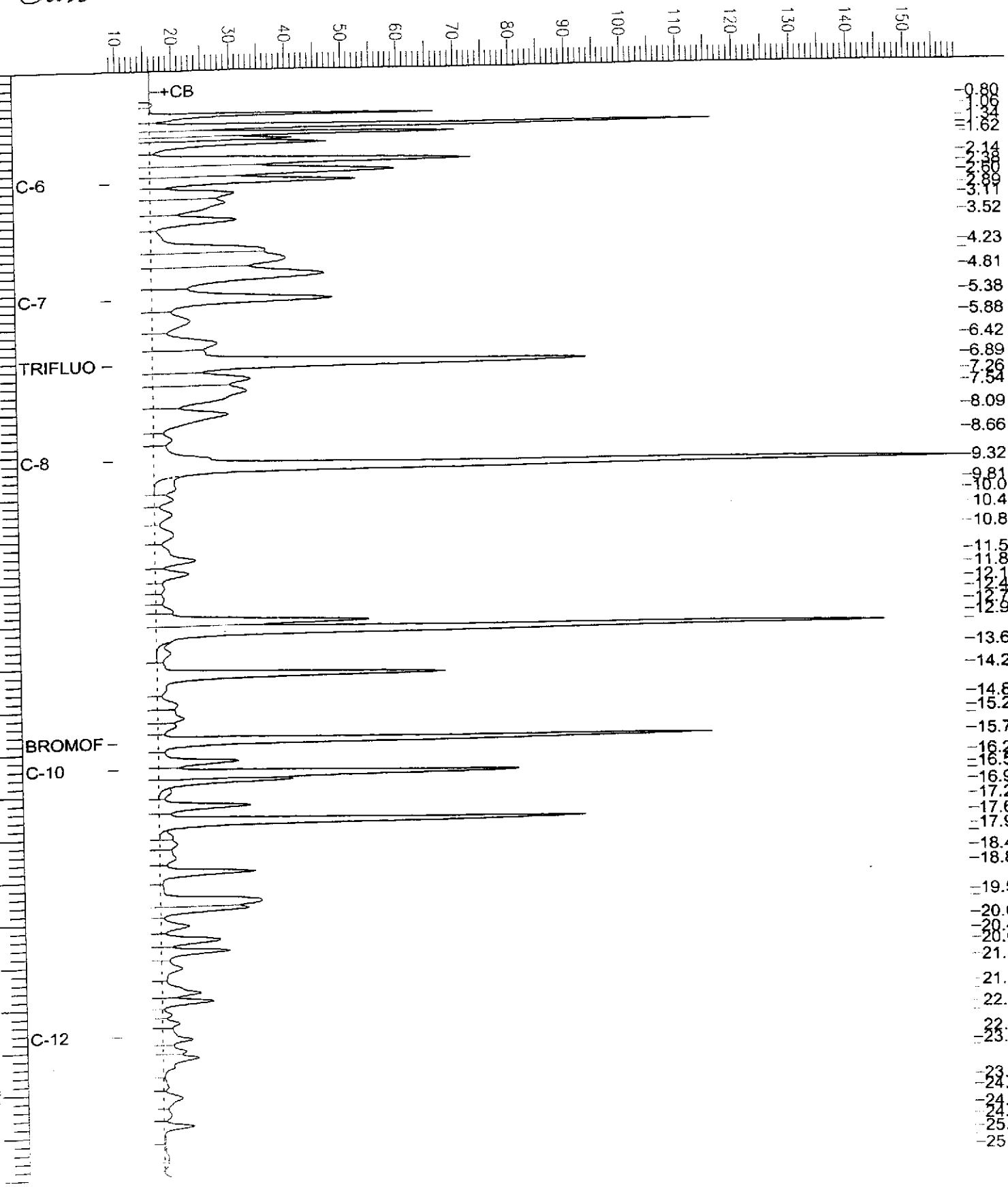
le Name : ccv/lcs,qc212526,81182,03ws0682,2.5/5000
leName : G:\GC07\DATA\120A003.raw
thod : TVHBTXE
t Time : 0.00 min
e Factor: 1.0

End Time : 26.00 min
Plot Offset: 9 mV

Sample #:
Date : 4/30/03 10:12 AM
Time of Injection: 4/30/03 09:46 AM
Low Point : 8.92 mV
High Point : 159.08 mV
Plot Scale: 150.2 mV

Gasoline

Response [mV]



Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	8015B
Type:	LCS	Basis:	as received
Lab ID:	QC212526	Diln Fac:	1.000
Matrix:	Soil	Batch#:	81182
Units:	mg/Kg	Analyzed:	04/30/03

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	5.000	5.190	104	78-120
Benzene		NA		
Toluene		NA		
Ethylbenzene		NA		
m,p-Xylenes		NA		
o-Xylene		NA		

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		112	58-144
Bromofluorobenzene (FID)		103	60-146
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

NA= Not Analyzed

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8021B
Type:	BS	Basis:	as received
Lab ID:	QC212525	Diln Fac:	1.000
Matrix:	Soil	Batch#:	81182
Units:	ug/Kg	Analyzed:	04/30/03

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12		NA		
Benzene	100.0	104.2	104	65-120
Toluene	100.0	102.0	102	69-120
Ethylbenzene	100.0	98.74	99	68-121
m,p-Xylenes	200.0	203.8	102	70-124
o-Xylene	100.0	101.3	101	73-121

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		87	67-146
Bromofluorobenzene (PID)		97	60-137

NA= Not Analyzed

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8021B
Type:	BSD	Basis:	as received
Lab ID:	QC212528	Diln Fac:	1.000
Matrix:	Soil	Batch#:	81182
Units:	ug/Kg	Analyzed:	04/30/03

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12		NA				
Benzene	100.0	103.7	104	65-120	0	20
Toluene	100.0	102.3	102	69-120	0	20
Ethylbenzene	100.0	97.82	98	68-121	1	20
m,p-Xylenes	200.0	208.2	104	70-124	2	20
o-Xylene	100.0	103.5	103	73-121	2	20

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		87	67-146
Bromofluorobenzene (PID)		99	60-137

NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	165005-001	Batch#:	81182
Matrix:	Soil	Sampled:	04/29/03
Units:	mg/Kg	Received:	04/29/03
Basis:	as received	Analyzed:	04/30/03

Type: MS Lab ID: QC212595

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<0.08700	10.87	9.258	85	44-133
Benzene			NA		
Toluene			NA		
Ethylbenzene			NA		
m,p-Xylenes			NA		
o-Xylene			NA		

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		127	58-144
Bromofluorobenzene (FID)		108	60-146
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

Type: MSD Lab ID: QC212596

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	9.259	7.322	79	44-133	7	31
Benzene		NA				
Toluene		NA				
Ethylbenzene		NA				
m,p-Xylenes		NA				
o-Xylene		NA				

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)		112	58-144
Bromofluorobenzene (FID)		110	60-146
Trifluorotoluene (PID)	NA		
Bromofluorobenzene (PID)	NA		

NA= Not Analyzed
RPD= Relative Percent Difference

5.0

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 3520C
Project#:	H-227	Analysis:	EPA 8015B
Field ID:	GAIA TP-6	Sampled:	04/29/03
Matrix:	Water	Received:	04/29/03
Units:	ug/L	Prepared:	04/30/03
Batch#:	81208	Analyzed:	05/02/03

Type: SAMPLE
Lab ID: 165008-002

Diln Fac: 10.00
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	56,000 H L Y	500
Motor Oil C24-C36	21,000 L	3,000

Surrogate	%REC	Limits
Hexacosane	DO	39-137

Type: BLANK
Lab ID: QC212612

Diln Fac: 1.000
Cleanup Method: EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane	84	39-137

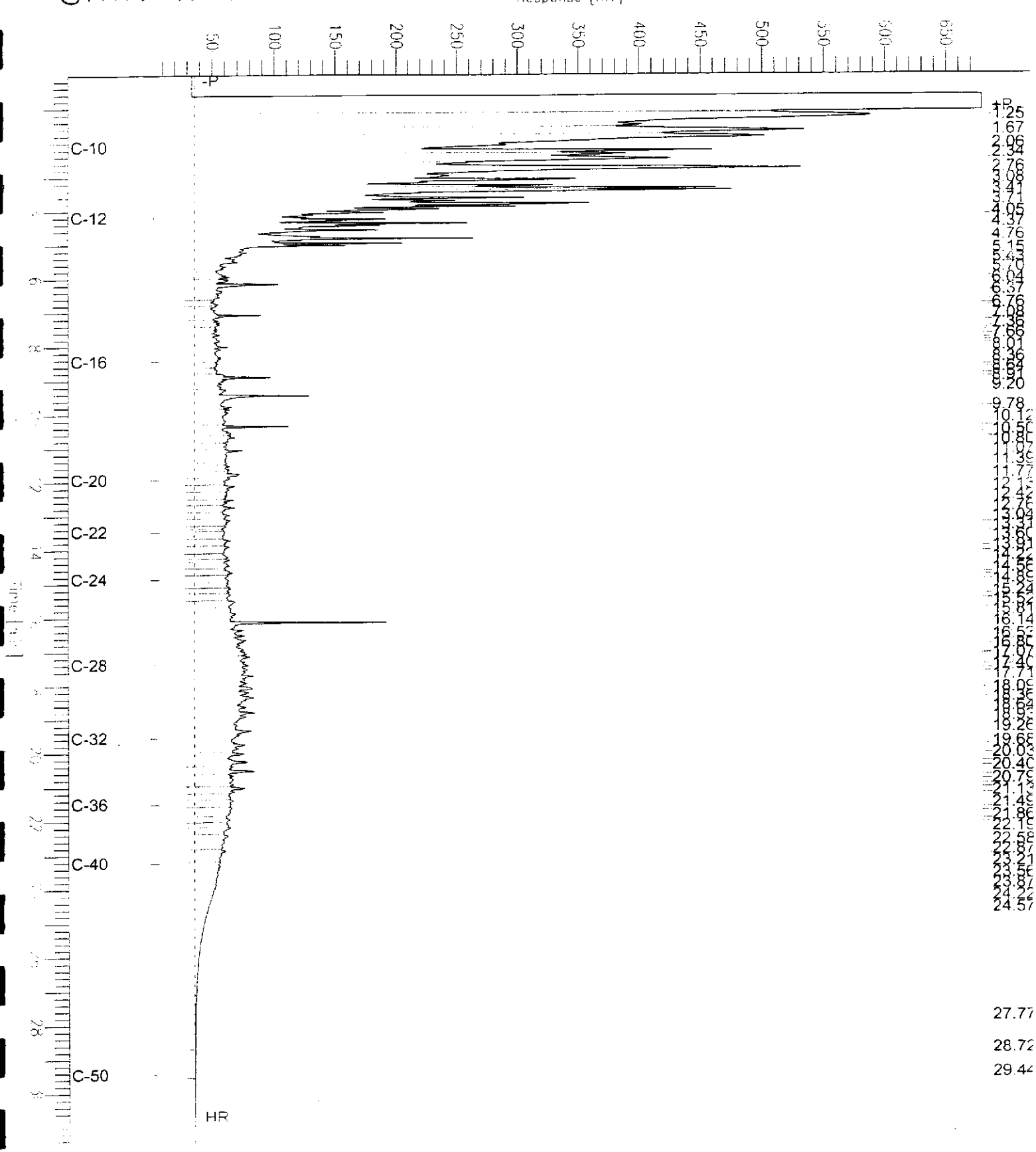
H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
DO= Diluted Out
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 165008-002sg,81208
FileName : G:\GC13\CHB\121B035.RAW
Method : BTEH122.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 8 mV

Sample #: 81208 Page 1 of 1
Date : 5/4/03 11:16 AM
Time of Injection: 5/2/03 04:29 PM
Low Point : 7.86 mV High Point : 679.03 mV
Plot Scale: 671.2 mV

GAIA TP-6



Chromatogram

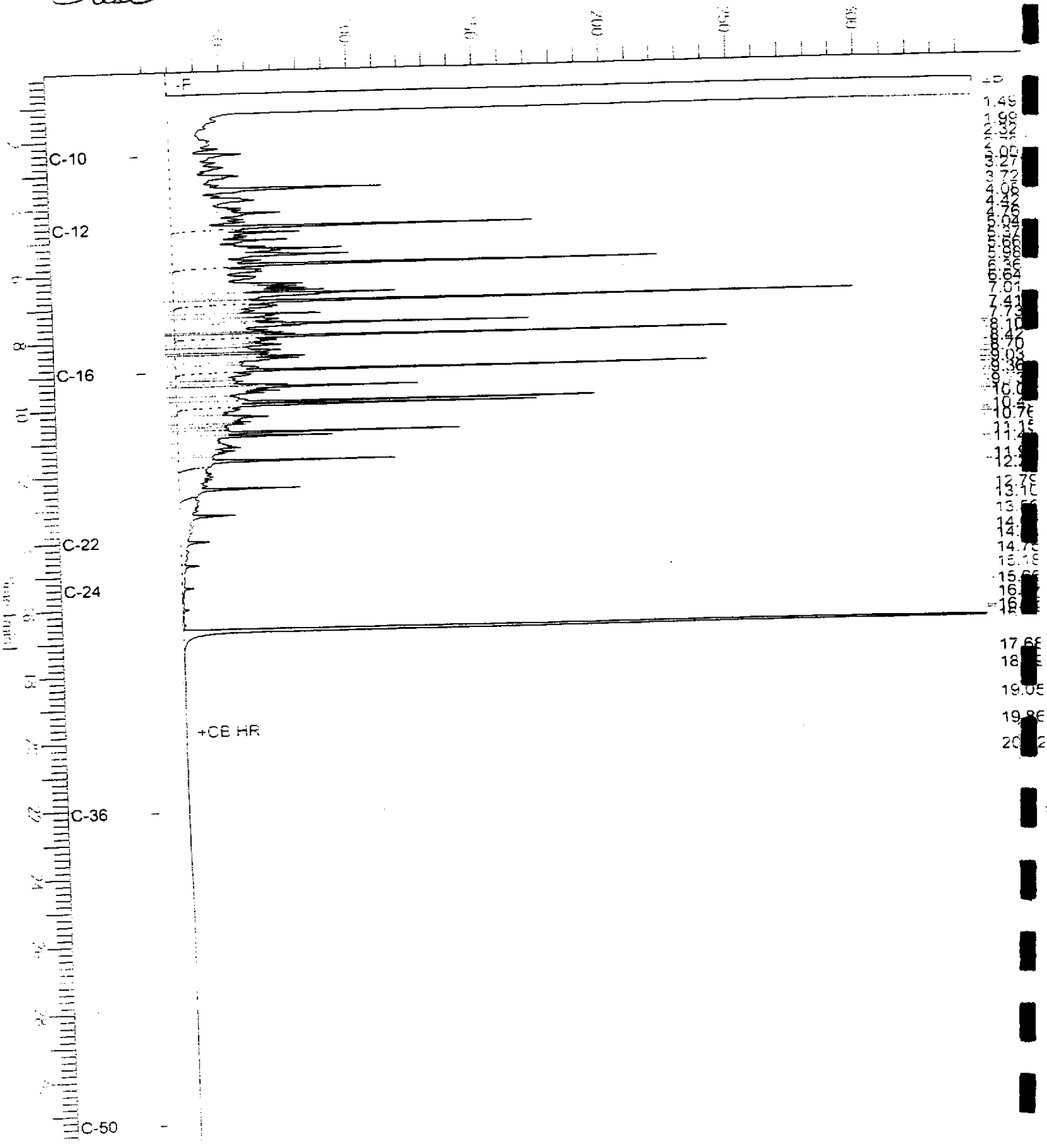
le Name : ccv,03ws0520,dsl
Name : G:\GC11\CHA\121A002.RAW
od : ATEH120.MTH
t Time : 0.01 min
e Factor: 0.0

End Time : 31.91 min
Plot Offset: 18 mV

Sample #: 500mg/L
Date : 5/1/03 10:39 AM
Time of Injection: 5/1/03 09:30 AM
Low Point : 18.37 mV
High Point : 346.02 mV
Plot Scale: 327.6 mV

Diesel

Response [mV]



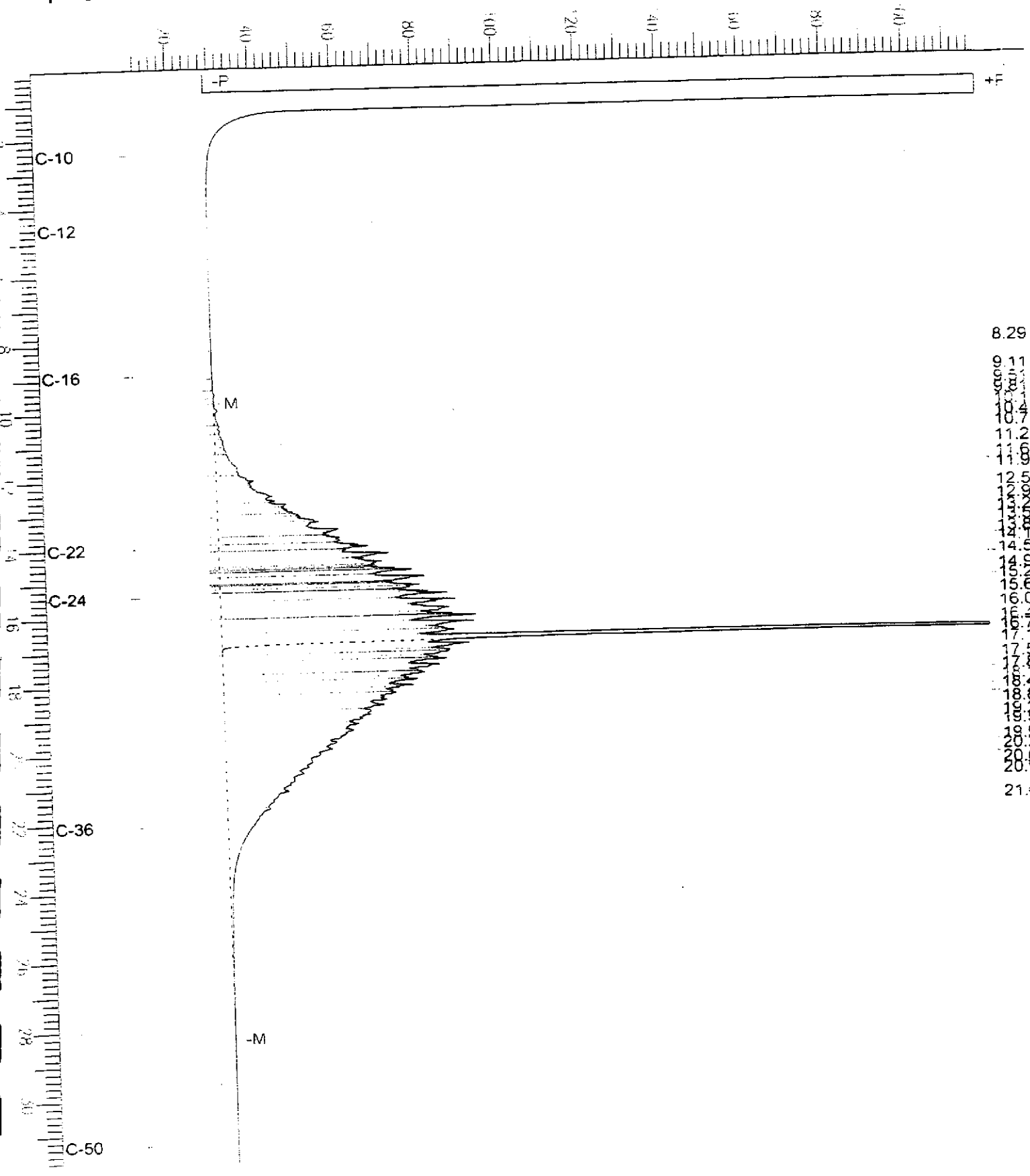
Chromatogram

e Name : ccv,03ws0550,mo
eName : G:\GC11\CHA\121A003.RAW
hod : ATEH120.MTH
Time : 0.01 min End Time : 31.91 min
Factor: 0.0 Plot Offset: 11 mV

Sample #: 500mg/L
Date : 5/1/03 10:49 AM
Time of Injection: 5/1/03 10:10 AM
Low Point : 10.65 mV High Point : 217.83 mV
Plot Scale: 207.2 mV

Motor Oil

Response [mV]



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 3520C
Project#:	H-227	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	81208
Units:	ug/L	Prepared:	04/30/03
Diln Fac:	1.000	Analyzed:	05/02/03

Type: BS
Lab ID: QC212613

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,237	89	37-120

Surrogate	%REC	Limits
Hexacosane	98	39-137

Type: BSD
Lab ID: QC212614

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,044	82	37-120	9	26

Surrogate	%REC	Limits
Hexacosane	88	39-137

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	SHAKER TABLE
Project#:	H-227	Analysis:	EPA 8015B
Field ID:	GAIA TP-6@3.0	Batch#:	81224
Matrix:	Soil	Sampled:	04/29/03
Units:	mg/Kg	Received:	04/29/03
Basis:	as received	Prepared:	05/01/03

Type:	SAMPLE	Analyzed:	05/06/03
Lab ID:	165008-001	Cleanup Method:	EPA 3630C
Diln Fac:	5.000		

Analyte	Result	RL
Diesel C10-C24	1,200 H L Y	5.0
Motor Oil C24-C36	770	25

Surrogate	%REC	Limits
Hexacosane	88	48-137

Type:	BLANK	Analyzed:	05/05/03
Lab ID:	QC212688	Cleanup Method:	EPA 3630C
Diln Fac:	1.000		

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

Surrogate	%REC	Limits
Hexacosane	93	48-137

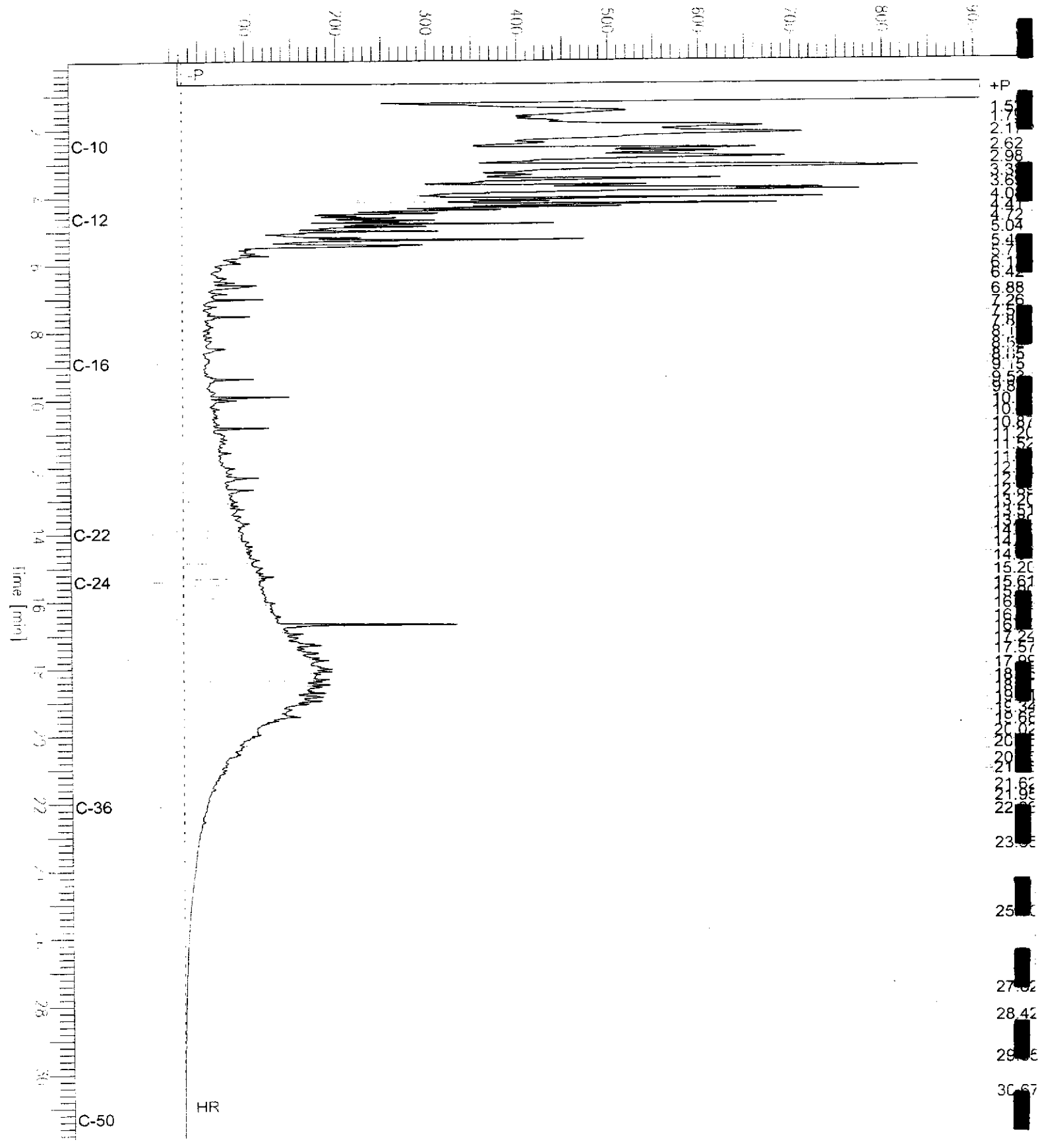
H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 165008-001sg,81224
FileName : G:\GC11\CHA\124A059.RAW
Method : ATEH126.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 10 mV

Sample #: 81224 Page 1 of 1
Date : 5/6/03 09:54 AM
Time of Injection: 5/6/03 07:13 AM
Low Point : 10.43 mV High Point : 907.12 mV
Plot Scale: 896.7 mV

GAIA TP-6 @ 3.0



Chromatogram

le Name : ccv,03ws0520,dsl
Name : G:\GC13\CHB\121B006.RAW
thod : BTEH122.MTH
art Time : 0.01 min
e Factor: 0.0

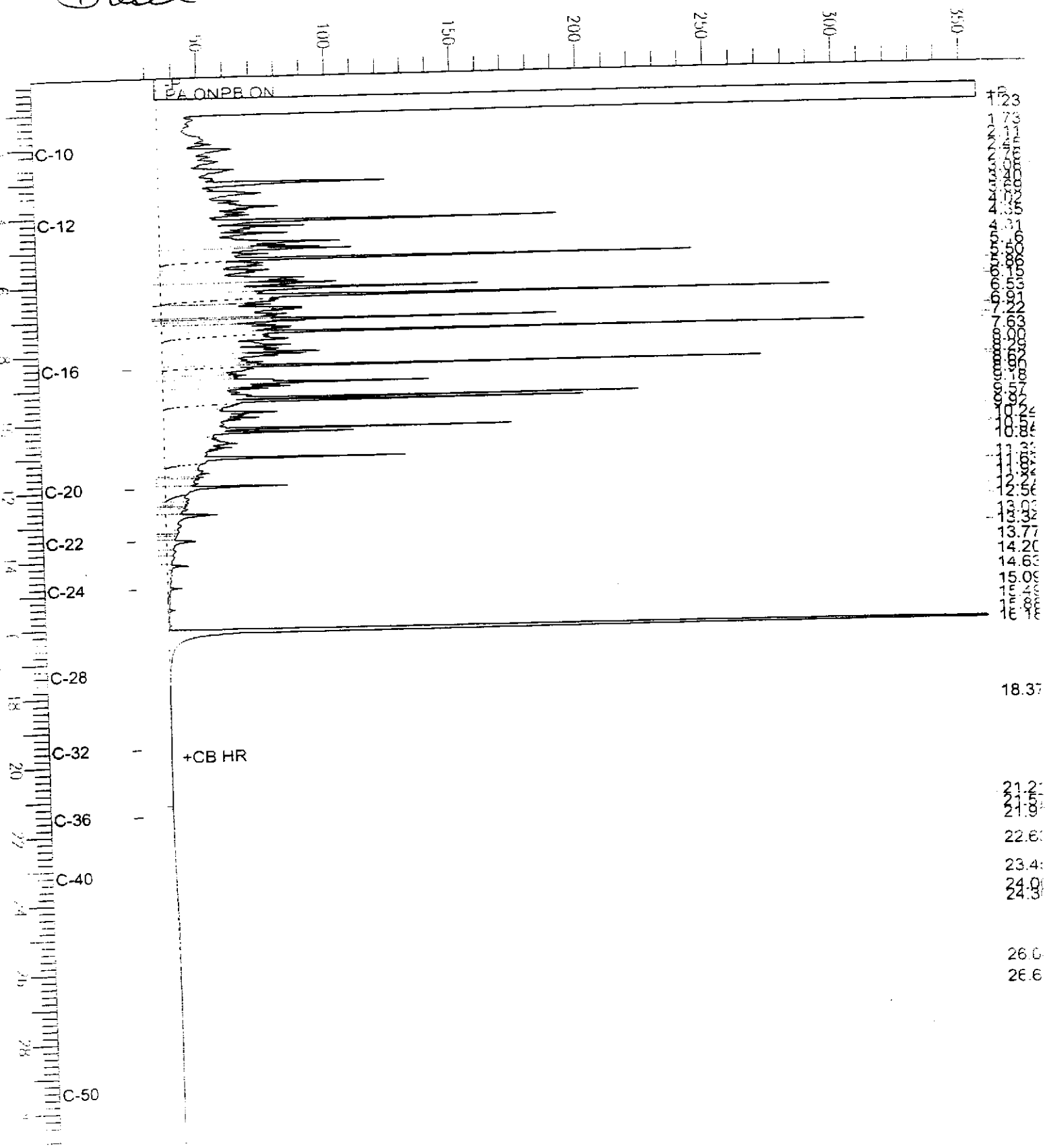
End Time : 31.91 min
Plot Offset: 23 mV

Sample #: 500mg/L
Date : 5/2/03 10:12 AM
Time of Injection: 5/1/03 07:32 PM
Low Point : 22.80 mV
Plot Scale: 333.7 mV

High Point : 356.48 mV

Diesel

Response [mV]



Chromatogram

nple Name : ccv,03ws0550,mo
leName : G:\GC13\CHB\121B007.RAW
thod : BTEH122.MTH
art Time : 0.01 min
ale Factor: 0.0

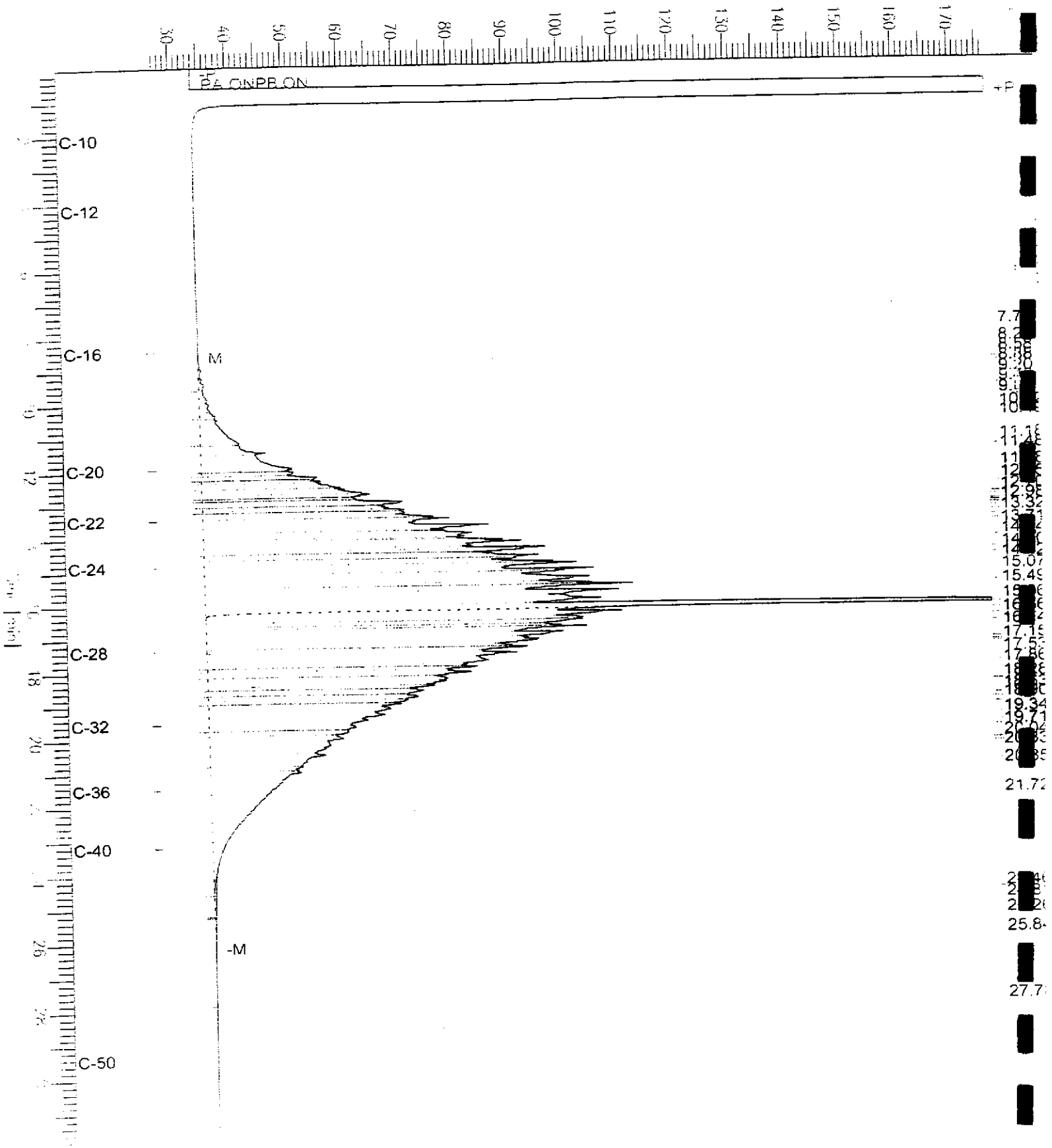
End Time : 31.91 min
Plot Offset: 27 mV

Sample #: 500mg/L
Date : 5/2/03 10:13 AM
Time of Injection: 5/1/03 08:11 PM
Low Point : 26.89 mV
Plot Scale: 149.9 mV

High Point : 176.75 mV

Motor Oil

Response [mV]



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	SHAKER TABLE
Project#:	H-227	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC212689	Batch#:	81224
Matrix:	Soil	Prepared:	05/01/03
Units:	mg/Kg	Analyzed:	05/05/03
Basis:	as received		

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	50.32	61.12	121	56-121

Surrogate	%REC	Limits
Hexacosane	116	48-137

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	SHAKER TABLE
Project#:	H-227	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	81224
MSS Lab ID:	165011-013	Sampled:	04/29/03
Matrix:	Soil	Received:	04/30/03
Units:	mg/Kg	Prepared:	05/01/03
Basis:	as received	Analyzed:	05/01/03
Diln Fac:	1.000		

Type: MS Lab ID: QC212690

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	2.657	49.95	47.61	90	37-128

Surrogate	%REC	Limits
Hexacosane	94	48-137

Type: MSD Lab ID: QC212691

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.74	55.46	106	37-128	16	37

Surrogate	%REC	Limits
Hexacosane	103	48-137

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	GAIA TP-6	Batch#:	81217
Matrix:	Water	Sampled:	04/29/03
Units:	ug/L	Received:	04/29/03
Diln Fac:	1.000	Analyzed:	05/01/03

Type: SAMPLE Lab ID: 165008-002

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	23	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
1,2-Dichloroethane	ND	0.5
1,2-Dibromoethane	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-121
1,2-Dichloroethane-d4	97	77-130
Toluene-d8	96	80-120
Bromofluorobenzene	100	80-120

Type: BLANK Lab ID: QC212660

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
1,2-Dichloroethane	ND	0.5
1,2-Dibromoethane	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	108	80-121
1,2-Dichloroethane-d4	102	77-130
Toluene-d8	96	80-120
Bromofluorobenzene	99	80-120

Type: BLANK Lab ID: QC212661

Analyte	Result
tert-Butyl Alcohol (TBA)	NA
MTBE	NA
Isopropyl Ether (DIPE)	NA
Ethyl tert-Butyl Ether (ETBE)	NA
Methyl tert-Amyl Ether (TAME)	NA
1,2-Dichloroethane	NA
1,2-Dibromoethane	NA

Surrogate	Result
Dibromofluoromethane	NA
1,2-Dichloroethane-d4	NA
Toluene-d8	NA
Bromofluorobenzene	NA

NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	GAIA TP-6@3.0	Sampled:	04/29/03
Basis:	as received	Received:	04/29/03
Batch#:	81214	Analyzed:	05/01/03

Type:	SAMPLE	Units:	ug/Kg
Lab ID:	165008-001	Diln Fac:	25.00
Matrix:	Soil		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	2,500
MTBE	ND	130
Isopropyl Ether (DIPE)	ND	130
Ethyl tert-Butyl Ether (ETBE)	ND	130
Methyl tert-Amyl Ether (TAME)	ND	130
1,2-Dichloroethane	ND	130
1,2-Dibromoethane	ND	130

Surrogate	%REC	Limits
Dibromofluoromethane	83	74-124
1,2-Dichloroethane-d4	100	75-128
Toluene-d8	99	80-111
Bromofluorobenzene	146 *	75-127

Type:	BLANK	Units:	ug/L
Lab ID:	QC212648	Diln Fac:	1.000
Matrix:	Water		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	NA	
MTBE	ND	5.0
Isopropyl Ether (DIPE)	NA	
Ethyl tert-Butyl Ether (ETBE)	NA	
Methyl tert-Amyl Ether (TAME)	NA	
1,2-Dichloroethane	ND	5.0
1,2-Dibromoethane	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	100	74-124
1,2-Dichloroethane-d4	112	75-128
Toluene-d8	100	80-111
Bromofluorobenzene	98	75-127

*= Value outside of QC limits; see narrative
NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	81217
Units:	ug/L	Analyzed:	05/01/03
Diln Fac:	1.000		

Type: BS Lab ID: QC212658

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	54.43	109	49-144

Surrogate	%REC	Limits
Dibromofluoromethane	104	80-121
1,2-Dichloroethane-d4	98	77-130
Toluene-d8	96	80-120
Bromofluorobenzene	97	80-120

Type: BSD Lab ID: QC212659

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	50.00	55.26	111	49-144	2	21

Surrogate	%REC	Limits
Dibromofluoromethane	105	80-121
1,2-Dichloroethane-d4	99	77-130
Toluene-d8	96	80-120
Bromofluorobenzene	97	80-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Field ID:	GAIA TP-6@3.0	Sampled:	04/29/03
Basis:	as received	Received:	04/29/03
Batch#:	81214	Analyzed:	05/01/03

Type:	BLANK	Units:	ug/L
Lab ID:	QC212649	Diln Fac:	1.000
Matrix:	Water		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	100
MTBE	ND	5.0
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	ND	5.0
Methyl tert-Amyl Ether (TAME)	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dibromoethane	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	97	74-124
1,2-Dichloroethane-d4	102	75-128
Toluene-d8	101	80-111
Bromofluorobenzene	97	75-127

*= Value outside of QC limits; see narrative
NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline Oxygenates by GC/MS

Lab #:	165008	Location:	9th Avenue
Client:	GAIA Consulting, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	81214
Units:	ug/L	Analyzed:	05/01/03
Diln Fac:	1.000		

Type: BS Lab ID: QC212646

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	47.47	95	63-121

Surrogate	%REC	Limits
Dibromofluoromethane	100	74-124
1,2-Dichloroethane-d4	111	75-128
Toluene-d8	102	80-111
Bromofluorobenzene	95	75-127

Type: BSD Lab ID: QC212647

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	50.00	46.89	94	63-121	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	95	74-124
1,2-Dichloroethane-d4	105	75-128
Toluene-d8	100	80-111
Bromofluorobenzene	95	75-127

RPD= Relative Percent Difference